

**SUSTAINABLE INTERIOR DESIGN:
A MODEL TO PROMOTE SUSTAINABLE PRACTICES**

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Abstract

Design professionals in the built environment have an increasingly important responsibility for the delivery of sustainability. Whilst much guidance and regulations are being introduced across Europe and elsewhere globally in order to encourage uptake, this does not hold true for the field of interior design and its professionals. Against this backdrop, this research aims to investigate the extent to which a range of interventions derived from a proposed model can raise participants' awareness and understanding of the role played by interior design in delivering sustainability within the built environment. In addition, it aims to promote the uptake of sustainability practices in the discipline and more specifically, across two groups of stakeholders; interior designers, as well as their clients on the island of Cyprus. To that end, an action research was prepared and educational and theoretical foundations were applied through three phases of actions. Each phase was found to be effective in influencing participants' behaviour. Importantly, research observations supported the findings derived from questionnaires and interviews conducted after each phase. Phase I demonstrates that the traditional delivery of learning using IT and experiential learning led participants to respond to the sustainability practices presented and *unfreeze* their attitudes. Phase II confirms that participants' valued new information and *change* their behaviours. Similarly, Phase III demonstrates that the main learning method of collaborative learning was particularly beneficial and led stakeholders to *refreeze* their attitudes and behaviours. During the last phase, a number of case studies are presented in order to underline the embrace of sustainable interior design practices by participants. This research has been effective in successfully promoting sustainability principles within the field of interior design and explores opportunities to promote them among the stakeholders. The contribution of this study lies within the context of interior design, in fostering the interest of both professionals and clients whilst enhancing the comprehension and employment of sustainable practices.

Key words: Sustainability, Interior Design, Change, Learning, Practices.

To that April.....

To my family

To my teachers –of all kinds



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Author's Declaration

This dissertation is submitted in order to complete the Ph.D. award requirements from the University of Nicosia. It's a prototype product work, solely on my own, except in the cases mentioned, through bibliographic references.



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List of Abbreviations

ASID: American Society of Interior Designers

BEDA: The Bureau of European Design Association

BIDA: British Interior Design Association (UK)

CPI: Cyprus Pedagogical Institute

CYMEPA: Cyprus Marine Environment Protection Association

EAC: Electricity Authority of Cyprus

ECIA: European Council of Interior Architects

ESC: Environmental Studies Centre

ESD: Education for Sustainable Development

IDEC: Interior Designers Educators Council (USA)

IFI: International Federation of Interior Architecture/Design

LEED: Leadership in Energy and Environmental Design

RES: Renewable Energy Sources

SEMEK (CYIDA): Cyprus Interior Designers Association

Chapter 1: Introduction

1.1 Problem Statement

The impact of interior design practice on humans and their environment is apparent. There is an emergent requirement for interior design stakeholders to adapt the way they prepare, practice, and repeat this practice to a new reality. By its nature, a sustainable approach to an interior design project means considering the whole life cycle of a project and its social, economic, and environmental effects and contrary to many assumptions, sustainable design can be elegant and sophisticated.

Amland (2004) writes that design as we know it—a synthesis of skills known from crafts, architecture, and engineering—has gradually adapted its own professional identity during the last half of the twentieth century. He adds that today design is inseparably linked to the way in which society, culture, and the environment interrelate. The environmental, social, and moral responsibilities of designers are decisive factors in our mutual effort to foster a sustainable and harmonious society.

There is still no generally accepted method to determine appropriate sustainable interior design approaches that allow the present and future needs of end users to be fulfilled or allow a straightforward understanding of actions that should be taken during the design process.

The Bureau of European Designers Association (BEDA) member, Ezio Manzini (2004) describes design as an activity that links the gap between the socio-cultural and the technological extents of the construction and consumption systems. Design professionals in the built environment have a significant responsibility for the delivery of sustainability, and while

considerable guidance and regulations are being introduced across Europe, and indeed the world, to encourage uptake, this is not the case for the field of interior design and its professionals.

Therefore, the purpose of this research and its academic rationale are to evaluate the effectiveness of a range of methodologies designed to provide future researchers and practitioners with an entrée into the literature of sustainable interiors and to develop, apply, and evaluate methods to promote the uptake of sustainability in the discipline and practice of interior design.

1.1.1 The Scope of Interior Design

The establishment of the meaning and scope of interior design and its professionals within this context is necessary. It is apparent that both interior architecture and interior design describe the work that should be done by professionals in the field. This research uses the term interior design as is acknowledged by the local association, the Cyprus Interior Design Association (CyIDA /SEMEK) that is registered within the Bureau of European Designers Association (BEDA). The research takes place in Cyprus and the participants are members of the Cyprus Interior Design Association.

The profession of interior architecture/design is classified in the International Standard Industrial Classification (ISIC, rev. 4, 2006, United Nations Statistical Commission) and the Statistical Classification of Economic Activities EC Regulation (NACE 1893/2006) and reported in the European Charter of Interior Architecture Training as follows: This industry comprises establishments primarily engaged in planning, designing and administering projects in interior spaces to meet the physical and aesthetic needs of people using them, taking into consideration building codes, health and safety regulations, traffic patterns and floor planning mechanical and electrical needs, and interior fittings and furniture.

The International Federation of Interior Design (IFI) states that a professional interior architect/interior designer is a person qualified by education, experience, and recognised skills, who identifies, researches, and creatively solves problems pertaining to the function and quality of the interior environment. He/she performs services relative to interior spaces including programming, design analysis, space planning, aesthetics, and inspection of work on-site, using specialised knowledge of interior construction, building systems and components, building regulations, equipment, materials, and furnishings; and prepares drawings and documents relative to the design of interior space to enhance the quality of life and protect the health, safety, and welfare of the public. Furthermore, the British Interior Design Association (BIDA) defines interior designers as persons qualified by training and experience to plan the design and execution of interior projects and their furnishings, and to organise the various arts and crafts essential to their completion.

A designer applies pertinent research and creatively solves problems relating to the function and quality of the interior environment. An interior designer provides a full consultancy service that includes programming; design analysis; space planning; guidance on aesthetics; monitoring work on-site; applying specialised knowledge of interior construction, building systems and components, building regulations, equipment, materials, and furnishings, as well as the most widely acknowledged preparation of drawings and documents relative to the design of interior space. It can be said that interior design, however it is defined, is a creative practice that analyses programmatic information, establishes a conceptual direction, refines the design direction, and produces graphic communication and construction documents to enable reality to be constructed.

1.1.2 Sustainable Design Implications

Sustainability can be described as a state or process that can be maintained indefinitely. The principles of sustainability integrate three closely interlinked aspects, namely the environment, economy, and social (Coleman, 2000). Moreover, the sustainable design includes using design methods, products, and procedures that minimise the ecological influence of design and construction upon the earth (Pollack & Pillote 2006). In addition, a sustainable home provides accommodation and facilities for present and future generations in a way that has the lowest possible impact on the ecology and on natural resources. This must be seen to apply to all stages of the building process: build, operation, and finally its eventual demolition and/or reuse (Pullen, 2008). Further, Stegall (2006) states that the designer's role in developing a sustainable society is not simply to create sustainable products but rather to envision products, procedures, and services that encourage a widespread sustainable behaviour. Furthermore, a sustainable design project/product goes beyond being well-organised, good-looking, on time, and within budget like conventional projects/products. It is a design that reflects concern for the achievement of sustainability values and that considers consequences for people and the environment. Environmentally responsible professionals concern themselves with a repeated search for methods to reduce the impacts of their design on global systems.

What are the various association guidelines on the issue? How can designers promptly respond? How can widespread sustainability be encouraged? The International Federation of Interior Architects/Designers' position on sustainable design is that designers should aim to use natural materials, avoid plastic or other non-renewable products, use sustainable materials, and consider the maintenance implications of their design solutions. Further towards the aims of the IFI, the American Society of Interior Designers (ASID) believes that interior designers should

endeavour to, whenever feasible, practice sustainable design. Interior designers should meet present-day needs without compromising the ability to meet the needs of future generations. In their position on sustainable design, the ASID recognises that sustainability should be an essential part of the interior designer's professional responsibilities. ASID acknowledges that sustainable interior design embraces, among others, an integrated building design through collaborative multidisciplinary teams, indoor environments that support occupant well-being and productivity, resource and energy efficiency, social equity at local and global levels, and protection of the natural environment. It also suggests advocacy for safe products and services and they suggest that interior designers should advocate to their clients and employers that the development of buildings, spaces, and products should be environmentally benign. It adds that buildings should be produced in a socially just manner, and safer for all living things, and should be made with the sustainable use of natural resources. Also, that interior designers should make use of renewable resources, including the protection of vegetation, wildlife habitats, open spaces, and wilderness.

How can these guidelines be followed? What are the specificities of applying the above guiding principles? Manzini (2004) asserts that environmental and social sustainability needs an interruption, as he notes, from a society where a typical healthy condition implied that manufacture and material use was on the rise and that, we must move on to a society that can develop by decreasing both manufacturing and material use while refining the quality of the overall environment. He points that it may be difficult to predict how this can be achieved. However, he suggests that a 'break' will certainly occur, and we must participate in a long period of transition. In this extensive process of change, the design may be considered to have an important role, allowing the facilitating of approaches of systemic innovation on an everyday level.

1.1.3 Promotion of Sustainability

In every project, interior designers make many decisions that affect the environment either positively or negatively. However, the most important are related and may be summarised to be relevant to environmental issues, such as tropical deforestation, waste, resource consumption, climate change, as well as water shortages and pollution. An analysis of each of these issues, in turn, can enable a more complete comprehension of the designers' potential to promote sustainability in their work (Mckenzie, 1991). Correspondingly, Pilatowicz (1995) notes that interior designers can have an impact on conserving natural resources and lowering outdoor pollution by promoting recycling, or using recycled and recyclable materials and products. How can all these procedures be adopted by designers in Cyprus? There are no previous studies on the issue on the island, however, we have examples of good practices from allied professions and organisations such as the Electricity Authority of Cyprus, the Cyprus Pedagogical Institute, the Cyprus Marine Environmental Protection Association (CYMEPA), and the Environmental Studies Centre (ESC). A pilot study clearly stated that the understanding of designers on the issue of sustainability is limited. How should the promotion of sustainability take place? As Manzini (2008) proposes, we should promote a social learning process that can lead us towards a society based on networking, knowledge, and sustainability.

1.2 Need for Research

On the one hand, Bruce Mau in his book *Massive Change* quotes Arnold J. Toynbee (1889-1975) says that this century will be mainly remembered by future generations not as an era of political battles or technical discoveries, but as an age in which human society dared to think of the well-being of the entire human race as a practical objective. Later on in the same book he says that from the moment we came across Toynbee's quotation, we knew we had work ahead of us,

because it encompassed the phrase ‘practical objective’; it lifted the objective of the well-being of the human race from an ideal ambition- one that is by meaning out of reach and will remain in the realm of art- to a design project; a practical objective.

On the other hand, the International Federation of Interior Architects/Designers (IFI) emphasises the role of new national laws that have been formulated since the Rio Summit. These laws aim to protect health and the environment, to protect nature and the cultural environment, to secure good economic use of land and water and efficient use of resources, and to support recycling and reuse of materials. Based on this rationale, the IFI suggests specific environmental ambitions for interior designers, namely, to avoid materials hazardous to health or the environment in their design proposals. Significantly, the IFI clarifies that these impacts may occur during the manufacture, use, and disposal phases of materials used in design projects, and any adverse effects associated with such use should be considered relevant by their members (Kazamia & Gwilliam, 2011). These suggested ambitions and relevant information from various sources for example, the International Federation of Interior Architecture /Design (IFI) and the American Society of Interior Designers (ASID) as well as literature review, are issues that professional designers can promote during practicing so as to enhance the design for sustainable interiors. Nevertheless, even if the literature describes several ways that measure how much design work can affect the environment or how designers can offer more sustainable interiors, all of these involve a number of specific considerations that are rather confusing and thus risk being neglected among the stakeholders. As has been defined by the Danish Design Centre (2003) appearing in Forum Design and Innovation (2015) design at this stage describes either a non-design phase, where design is an invisible part of product development and the task is not handled by trained designers or is viewed exclusively as a form-giving phase of the production. So how

can sustainability objectives be practical for the field of interior design? This research aims to explore the extent to which a series of interventions resulting from a proposed model can promote the uptake of sustainability practices in the discipline of interior design and to explore the scope for implementation of sustainability principles in the field. The research responds to the call for ‘practical objectives’ and builds a model that facilitates a social learning process and promotes sustainability.

1.3 Aim of Research

The research aims to investigate the extent to which a range of interventions consequent from a proposed model can raise participants’ awareness and understanding of the role of interior design in the delivery of sustainability in the built environment and promote the uptake of sustainability practices (dependent variables) in the discipline of interior design and more specifically among two groups of stakeholders, interior designers and their clients (subjects of the research) on the island of Cyprus.

1.4 Research Questions

The research questions that were answered in order to achieve the aim of the research are:

Q1: To what extent does the proposed model promote sustainable practices among designers and clients?

a. What are the pieces of evidence for ‘unfreezing’ designers’ and clients’ behaviour after Phase 1 interventions?

b. What are the pieces of evidence for ‘change’ in designers’ and clients’ behaviour after Phase 2 interventions?

c. What are the pieces of evidence for ‘refreezing’ designers’ and clients’ behaviour after Phase 3 interventions?

Q2: Which sustainable practices are the more widespread among designers and their clients?

- a. Which practices are the most prevalent for a sustainable space design approach?
- b. Which practices are the most prevalent for a sustainable materials approach?

1.5 Importance of Research

The contribution of this research and its academic rationale is to provide future researchers and practitioners with an entrée into the literature of sustainable interiors and to propose the classification of sustainable approaches in different stages, that of short, medium, and long-term, and the formation of specific practices that bring social, economic, and particularly real environmental benefits to the user, the owner, and the investor. Additionally the research designed and evaluated a model that has been developed to promote the uptake of sustainability in the discipline and practicing of interior design.

1.5.1 The Importance of Classification

All the approaches suggested in this research include the involvement of designers at different stages of the design process. This thesis accepts the rate of change in the lifespan of a building as described by Brand (1994). For the first inner layer of objects and materials [‘stuff’] (e.g., furniture), to be 5–15 years and the lifespan for space (e.g., space dividers) to be 5–20 years; The writer notes that interior designers are—in most cases—dealing with the layers that are closer to the surface and consequently involve a more rapid replacement. More specifically, innovative space design and materials and furniture fixture and equipment (FF&E) selection have been analysed and produced an identification of appropriate sustainable practices to be promoted, these practices have been classified as follows to enhance the adaptation of sustainable design decisions during interior design practice.

1.5.1.1 Material and Furniture, Fixture & Equipment (FF&E) Approaches

Immediate-term approach is interpreted as the use of new materials. The usual process of selecting materials during design practice is based on the properties and aesthetic qualities of the material as well as its price in the market. Pile (1995) indicates that organising the selection of materials demands knowledge on what is available and an awareness of what is best suited to specific needs and uses. The first approach is immediate as it can be achieved in any interior design project as soon as the designer is in agreement with the client/user. The usual practice is to use new materials and products but for this practice sustainable alternative, low impact materials can be obtained through a life circle analysis. Woolley and Kimmins (2000) observe that: Life cycle analysis is a complex and time-consuming action, but it is essential if you want to make a complete analysis of the environmental impact of materials. The cyclical model allows practitioners who use it to discover, realise and decide if the material or product is appropriate for use in the interior after they determine the resource, process, use and disposal methods. Consequently, this is considered to be an immediate term approach as it can be adapted in the space straightforwardly by the designers and/or the clients.

Medium-term approach is interpreted as the use of recycled materials. Regarding recycled materials, Georgiadou (2017) writes that they derived from the use of materials, which have completed their first life cycle and are reintroduced into the production cycle as new raw materials. The medium-term approach then, presumes the agreement of the owner and earlier involvement of the interior designer in the design process. This solution can be initiated during the

programming stage when the designer conducts interviews to collect data on requirements that include, among others, preferences on materials that should be developed through the preliminary programme and its review from the client. This will enable the designer to carefully select products and materials from the local market that will be derived from recycled sources. Additionally, for the medium-term approach the involvement of the client, the designer, and the contractor and/or supplier are required. Concerning this approach, the advantage of recycling materials lies in reducing the need for the industry to reconstruct them. All the energy that is spent in developing the new products can be saved. The raw materials that would be drawn from the earth can be protected. The need to throw the item in the local landfill can be changed. Anderson (2003) writes that well-organised and fair use of resources is a fundamental social state.

Long-term approach involves the use of reclaimed materials and furniture, fixture and equipment (FF&E). Re-use and recycling are not interchangeable strategies because design for re-use is almost always preferable to design for recycling in terms of overall environmental impact, providing that transportation is not excessive, and that re-usable products are still recyclable at the end of their life. This approach involves the long-term solutions, which have to do with the possibility of an interior space that allows the use of re-use and reclaimed materials. Further, the re-use of materials is utilised as an approach and embraces up-cycling. According to Residential Waste Systems (2017) this is described as a way to change old things and turn them into something new without breaking the product down into its raw materials. Instead, upcycling takes an old object and gives it new life.

In order for this to happen, the involvement of the interior designer is required from the project beginning stage in the design process, in order to outline the scope of the project from the start. As Manum (2009) writes that ‘this challenge of achieving long-time usability has been

discussed by influential writers on architecture” (p.1). The removal/transportation and re-use of materials and products in any given shell in order to offer services/function within a new environment is the most sustainable choice one can make during the design process. This approach can be part of a more holistic sustainable approach, but above all ensures resource and waste reduction.

1.5.1.2 Innovation & Space Design

Immediate-term approach is interpreted as the use of multipurpose furnishings. The use of multipurpose furnishings can be achieved in any interior design project, as soon as the designer is in agreement with the client, or by the users themselves. Also, this solution can be achieved at any stage of the design process, even at the stage of working drawings and biddings. Consequently, it is considered to be an immediate-term approach as it can be adapted straightforwardly for use by the designers and/or the client of the space. During this process, one can work at the level of objects and their adaptability and multipurpose use; if one use does not fit you adopt another. As discussed by Rewi (2004), adaptation is any change in a structure or function that allows it to deal better with its settings and be suitable for a new or special application or circumstance. It is the result of a deliberate policy based on an awareness that situations have changed or are about to change and that action is essential to return to, maintain or achieve the desired state.

Medium-term approach is interpreted as the utilisation of the properties of flexible space design. The approach of flexible space design and the use of versatile space design is considered to be a medium-term solution as it presumes the agreement of the owner and the designer; the approach is applied earlier in the design process than in the previous case. It is suggested that this should start during the programming stage in order to enable the design of an interior that is flexible and versatile, and with the potential to serve more than one programme or function to

meet the owners' needs. As Kieran and Timberlake (2004) write, “In this century we desire choice, expression, individuality and the ability to change our minds at the last minute. The new client mandate for choice has already swept through the commercial products industry” (p.133). The way that we live today requires us to look for interior space solutions which accommodate different functions within one space; we need to think of how we can make the most of our spaces.

Long-term approach is involved to serve the design for deconstruction and the use of deconstruction principles with interior elements. These can be achieved in any interior design project, as soon as the designer is in agreement with the client. It is suggested that this approach should start very early, at the beginning of the project when outlining the scope of the project. As Charter and Tischner (2001) write, “Sustainable solutions require multi-stakeholder engagement and involve changes or shifts in consumption and production patterns” (p.17). The approach can commence from the initial building construction and go through to the objects and materials, although as designers practice within an existing structure, they will deal with the ‘stuff’ and the ‘space’ layers. Whatever the case, the result is considered as a long-term approach that can be adapted from the designers for their clients and will offer longevity. It has the possibility of a total deconstruction of the interior space that will allow its removal/transportation and re-construction in any given structure and skin in order to offer services/functions within a new environment.

The classification of the two selected issues that can contribute to the support of a sustainable interior design practice can be combined. The combination of the above approaches: sustainability and space design innovation; and sustainability and materials and FF&E during interior design practice, can offer stakeholders a variety of solutions and options. They can be

employed and applied in the formation of any interior design space to achieve specific sustainability requirements.

1.5.2 The Importance of Proposed Model

The thesis proposes a new concept, 'A Model to Promote Sustainable Practices'. This model is based on the combination of existing models and theories, more specifically the combination of Lewin's (1943) change management model, which has been utilised towards the gradual involvement of stakeholders in the action research process and manages the change among participants, and Bloom et al. (1964) affective domain learning theory, which is utilised to attain objectives that "emphasize a feeling tone, an emotion, or a degree of acceptance or rejection" (p. 7). Consequently, affective learning can be useful in the context of achieving a change of behaviours related to the use of sustainable practices. Moreover, traditional learning with the use of IT and experiential and problem-based learning are the methods that have been implemented to meet the objectives.

An extensive literature review was conducted in order to identify and apply appropriate educational and theoretical foundations for the model used during the research. The literature on attitude and behavioural change is substantial and addresses various theories about attitude and behaviour. Nevertheless, as noted by Darnton (2008), "Models importantly demonstrate that change is a process, not an event" (p. 41). The series of interventions that are applied through the action research consists of three successive phases ('Unfreeze', 'change' and 'refreeze', Lewin, 1943) that support a process that will facilitate the aim of the study. This process follows the action research method, and as Coghlan and Brannick (2001) note, action research works in cycles of diagnosing, planning, taking action, and evaluating action. Three cycles have been adapted for the research by incorporating specific objectives relevant to sustainability practices.

More specifically, the cycles of this research are explained as three subsequent phases that occurred to manage change. Phase 1 includes: a) the diagnosing, which is the need to unfreeze, b) planning action, which included the planning of two interventions (one for designers and one for clients), c) taking action, which included interventions made for the delivery of new information, and d) evaluating action, which indicated the receiving and responding of participants to the new information. Phase 2 includes the following: a) diagnosing, which for this phase is the need to change, b) planning action, which included three interventions (two for designers and one for clients), c) taking action, which offered a holistic approach to sustainability issues and d) evaluating action, which indicated how much participants valued the new information. Phase 3 involves: a) diagnosing, which was the need for participants to refreeze their attitudes, b) planning, that scheduled one intervention (one common intervention for both designers and clients), c) taking action to assist to reconcile the outcomes, and d) evaluating action, which showed the organisation and the characterisation of the participants' actions according to the new knowledge.

The results have been evaluated through the above mentioned affective domain learning theory by Bloom et al. (1964) by offering a step-by-step guide to measure the evidence of participants' actions. The method of action research and the process followed can be repeated in similar cases in order to produce a change of the same (sustainability) or other thematic concern.

1.6 Summary of Chapters

Chapter 1 (Introduction) defines the problem of the research and sets the need for the research by explaining why design professionals in the built environment have a significant responsibility for the delivery of sustainability and demonstrates the fact of insufficient systematic guidance on this issue and within the field of interior design. The chapter describes what the

literature says about this issue and presents the context and meaning of interior design, it also discusses the spectrum of the work that professional designers deal with during practice. The chapter defines the aim of the research and forms the questions. It discusses the importance of the research and explains how the problem will be addressed. The chapter concludes with a short summary of chapters.

Chapter 2 (Background and Literature Review) is separated into three parts. The first part indicates the context and the background of the research. It explains the historical background and the contemporary scheme in the context of Cyprus, reports on the scope of interior design, and defines interior design. It then discusses the spectrum of the work that professional designers deal with during practice, along with the harmonisation of the education system of the field. It further describes the rate of change for interior spaces as specified by Brand (1994) and the interrelationships between the stakeholders. It also presents how others promote sustainability on the island of Cyprus, including the Electricity Authority of Cyprus, the Cyprus Pedagogical Institute, the Cyprus Marine Environment Protection Association, and the Environmental Studies Centre.

The second part presents the context of sustainability in interior design. The scope of sustainability in interior design practice is clarified, explaining the different ways in which an interior designer can contribute towards sustainability. This explanation comes from a review of the current literature on sustainability for the built environment and, particularly what is produced by various interior design associations for their members. Then, two major issues of interior practice are carefully chosen for further analysis: 'space design' and 'stuff' (materials, furniture, and equipment [FF&E]). The two are divided into specific practices. This part generally aims to explore the scope of sustainability within the professional practice of interior design as a thematic

concern of the action research and establish those sustainable interior design practices that can be promoted among the stakeholders of interior design projects.

The third part develops the theoretical background that supports the proposed model. This includes literature on behaviour change and learning styles, change and design, change and behaviour, learning theories, and change through learning. It also discusses Lewin's (1946) three-step model of change that consists of the steps: Unfreeze, Change, and Refreeze; Krathwohl's (1964) affective learning domain that consists of five levels Receive and Respond, Value, Organisation and Characterisation; and the different learning methods, such as traditional learning with the use of IT, experiential learning, and collaborative learning, which are all utilised as foundations for the creation of the proposed model. This part aims to introduce educational and theoretical foundations to support the identification of appropriate intervention methods for the promotion of sustainability learning. A new construct, 'A Model for Promoting Sustainable Interior Practices', is introduced in order to allow the promotion of preselected sustainable practices.

Chapter 3 (Methodology) explains how the model to promote sustainable practices' is utilised. The research employs the action research methodology in order to allow the promotion of preselected sustainable practices and measure participants' alteration of behaviour by a longitudinal metric of assessing evidence. This approach has been selected as there are no earlier studies in the interior design domain to which reference can be made. Gilmore et al. (1986) and O'Brien (2001) explain that action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to promote the goals of the group. In their view, there is a dual commitment in action research: to study a system and concurrently to collaborate with members of the system in changing it. The chapter then refers to the population and sample

of the research: the 50 interior designer members of the Cyprus Interior Designers Association (SEMEK) and 120 individual clients. It also presents the dependent variables of the research and the operational definitions that are the pieces of evidence to be measured. Moreover, the chapter describes the research instruments used that include questionnaires, observer notes, interviews, and some case studies. The chapter discusses the data analysis approaches that include both quantitative and qualitative approaches and a step-by-step process of the data analysis. The chapter ends with a description of the process of conducting the research which includes the pilot and preliminary study, Phases 1, 2, and 3.

Chapter 4, (Results) presents the results of the research, and is separated into three parts. These parts describe the evaluation of the action research cycles and the results derived from the three phases. The first part explains the action research cycle of the first phase and begins by introducing the way that the educational and theoretical foundations are reflected. The aim of this phase was to unfreeze stakeholders' attitudes, and the general objective was to enable stakeholders to receive new information and respond accordingly. The results indicate the receiving and the responding of participants to the actions.

The second part explains the action research cycle of the second phase. The aim of this phase was to create the actual change, and the general objective was to enable stakeholders to attach values and express personal opinions. After the interventions of the second phase, data was collected again, and the results were analysed and discussed. The results show that the participants value the new information.

The third part explains the action research cycle of the third phase. The aim of this phase was to refreeze participants' attitudes, and the general objective was to enable the participants to reconcile internal conflicts, develop a value system and adopt a belief system and philosophy. The

data collected during this phase is presented along with the case studies obtainable during the third cycle of action research. All data collected indicate refreezing of participants' behaviour.

However, the selected practices appear to be different between the case study results and the interview responses.

Chapter 5 (Discussion) considers the transformation in sustainable thinking throughout the three phases of the research. This chapter discusses the implications of each phase of action in connection with the foundations of the model for promoting sustainability practices. The first phase of 'Unfreezing' (Lewin 1943), which aims to unfreeze the stakeholders' attitudes, was set as the first step towards change. Behaviour involving receiving and responding was set as the first step towards affective learning (Bloom et al., 1964). Traditional delivery of learning using IT as well as experiential learning were applied as learning methods and contributed to producing specific behaviours among participants. The expected behaviours to be acquired according to the proposed model were as follows: open to experience/willing to hear and attend and react to a particular phenomenon (sustainable interior design practices). As the 'Model for Promoting Sustainable Interior Practices' suggests, these behaviours have been achieved through the engagement of participants in traditional learning with the use of IT and experiential learning.

The second phase aims to change stakeholders' attitudes as the second step towards a change of attitudes and behaviours (Lewin, 1943), where valuing of the new behaviour was set as the second step towards affective learning (Bloom et al., 1964). Traditional delivery of learning using IT as well as collaborative and problem-based learning were applied as learning methods during this phase. These methods contributed to the creation of the following behaviours: attach values and express personal opinions and report sustainable interior design practices. As the 'Model for Promoting Sustainable Interior Practices' suggests, these behaviours have been

achieved through the engagement of participants with collaborative learning and problem-based learning.

The third phase aims to refreeze designers' and clients' attitudes as the third step towards a change of attitudes and behaviours on sustainable interior design (Lewin, 1943). Organisation and characterisation have been set as the last step towards affective learning (Bloom et al., 1964). Collaborative learning was applied as the main learning method during this phase. This method contributes to the acquisition of the following behaviours: reconcile internal conflicts, develop a value system, and adopt a belief system and philosophy. As the model suggests, these behaviours have been achieved through the engagement of participants in collaborative learning activities.

Chapter 6, (Conclusion) presents the conclusions of the set objectives of the research. The final part of this chapter discusses the aspects of the research where further work could be conducted. Considering the benefits associated with this shift, from the conventional design process to one that embraces stakeholders' engagement in many aspects, it may be possible to impart new values to interior spaces through designs. If designers can offer clients sustainable solutions, clients eventually ask for more sustainable design solutions. As a result of this cooperation, designs will carry essential, and more lasting values: first, the use of approaches which are not harmful to the environment; second, stakeholders' involvement; and finally, the potential of involving more users, owners, and investors. The final sustainable design space has the potential to transfer its environmental and sustainable values at different levels. It creates an interdependent relationship between the professionals and other stakeholders that is suggested in this study and should be tested and promoted further.

Chapter 2: Background and Literature Review

2.1 Introduction

The literature review consists of three parts. The first part, the introduction, provides an overview of the background of the research. This involves discussing the context and definition of interior design, the scope of work interior designers deal with, within their professional practice, and the interrelationships between stakeholders. In addition, the rate of change for interior spaces, as specified by Brand (1994) and the promotion of sustainability on the island of Cyprus are discussed.

The second part focuses on the context of sustainability in interior design. Sustainable practices are the dependent variables of the research. This part aims to explore the scope of sustainability within the professional practice of interior design and to establish sustainable practices that can be promoted among the stakeholders of interior design projects. Therefore, the scope of sustainability in interior design practice is clarified by explaining the diverse ways in which an interior designer can contribute towards sustainability through a review of the current literature on sustainability for the built environment and particularly the guidelines produced by various interior design associations for their members. This allows a broader understanding of how practicing designers can contribute towards more sustainable interior environments. Moreover, it assists in the classification of sustainability practices to be promoted. This embraces the two key issues of interior design practice that have been selected for further analysis, namely, materials furniture, fixtures, and equipment (FF&E) and space design. The analysis for materials focuses on: The use of new materials, furniture, fixtures, and equipment (FF&E); The use of recycled materials, furniture, fixtures, and equipment (FF&E); The use of reclaimed materials, furniture, fixtures, and equipment (FF&E). The analysis for space design includes: The use of

multipurpose pieces of furniture; The use of flexible space design; The use of design for deconstruction principles.

In the third part, the author develops the theoretical background that supports the proposed model. This section introduces the educational and theoretical foundations in order to support the identification of appropriate methods or models for the promotion of sustainability learning and change of behaviours related to the use of sustainable practices. This includes an overview of literature on change and design, behavioural change, and change through learning. The theoretical foundations on which the model is based is discussed in detail, specifically, Levin's (1946) three-step model, Krathwohl's adaptation of Bloom's taxonomy (1964) affective learning taxonomy, and blended learning (traditional learning with the use of IT), experiential learning, and collaborative learning. The chapter ends with concluding notes.

2.2 Context of Research

2.2.1 Historic Background

Human occupation has influenced the environment on the island of Cyprus since the first people settled there nearly 9,000 years ago. The population growth has resulted in a shortage of dwellings, particularly in urban areas. This was intensified by the war of 1974, which resulted in the displacement of more than 200,000 people and damage to 36% of the housing stock. The government provided temporary accommodations for approximately 25,000 refugees and embarked on a long-term plan to replace the lost housing units.

Consequently, between 1974 and 1990, 50,227 families were accommodated in 13,589 low-cost houses (Nations Encyclopaedia, n.d.). In 1982, the Cyprus Land Development Corporation was formed to address the housing needs of low- and middle-income families, including the replacement of old housing stock. By 1991, the corporation had disposed of 573

building plots and helped construct 391 housing units. Furthermore, between 1975 and 1991, the private sector constructed 83,197 housing units (Worldmark Encyclopaedia of the Nations, 2007).

The rapid development of the island which followed the events of 1974 initially lacked the luxury of considering environmental protection, as the focus was on meeting the needs of refugees and reactivating the economy. This resulted in serious environmental damage.

2.2.2 Contemporary Scheme

Today, the socio-political environment is again changing rapidly with Cyprus becoming an official member of the European Union in 2004, which brought environmental protection to the forefront and made it a political priority. In Europe, processes and procedures have been set and laws have been adopted that make environmental protection a fundamental social objective. Cyprus has consequently adopted the resulting institutional framework as a full member of the European Union and included in its legislation more than 300 directives and regulations and a range of related action plans concerning environmental protection. The harmonization of national and EU legislation has resulted in many laws and regulations on the following subjects:

- The assessment of environmental impacts from certain projects
- Eco-labelling, the EU Eco-Management and Audit Scheme (EMAS), and the protection and management of natural resources
- Noise management
- Waste management (Republic of Cyprus, 2015)

2.2.3 Stakeholders

For the purposes of this study, it is essential to examine the stakeholders of interior projects and acknowledge that the different type of building stock in Cyprus, are not all under the supervision of interior design professionals. A considerable number of different housing systems

exist in the region. In the private sector, development and construction companies offer a variety of housing units, but mainly apartment or terraced houses, in the free market. This type of development satisfies nearly 30% of the total demand. A substantial number of families, however, choose to build their own detached or semi-detached houses on individual plots of land, with an average surface area of 520 m². (Lapithis, Efstathiades, & Hadjimichael, 2007). Two main categories of construction financing that have been developed are mentioned here. In the first, a contractor undertakes the construction of the building, while in the second, the owner of the property plays the role of contractor–entrepreneur and undertakes the responsibility of constructing and financing the project (Lapithis et al., 2007).

In the above scheme, interior designers usually operate as freelance designers and parallel to that they can become education providers in public secondary, private tertiary, and governmental adult education programmes. Also, they commonly collaborate with

- Contractors on a full-time or part-time basis
- Retailers on a full-time or part-time basis
- Private clients.

In relation to private clients, and specifically homeowners, it is necessary to clarify that, due to the domestic development systems employed in Cyprus, not all households are likely to be potential clients. As indicated by Lapithis et.al. (2007) in ‘Technical Improvements of Housing Envelopes in Cyprus’, the domestic market on the island can be divided into various categories, including:

1. Private development: In the private sector, development and construction companies offer various types of housing units, mainly apartment or terraced houses, in the free market.

2. Custom development: Within the last category, a substantial number of families choose to build their own detached or semi-detached houses.

In the case of private development, developers offer interior design services as an advantage to promote their buildings, whereas in the case of custom development, the interior designer would respond directly to the owner's needs and lifestyle.

Moreover, and according to surveys conducted by the Statistical Service of Cyprus during 2008, authorities granted 20,082 building permits, 6,263 of which were for detached housing units. This number declined to 2,855 building permits in 2014, with 1,599 for detached housing units (Cyprus Statistical Service, 2014).

Within this fast-moving framework, the practice of interior design could be supported and regulated by the two professional associations for interior design active in Cyprus—the Cyprus Designer Association, [or Meletites Efarnosmenon Tehnon (MET)], and Cyprus Interior Designers Association (CYIDA), [or Syndesmos Enomenon Meletiton Kyprou (SEMEK)] although this is not the case. These organisations are registered as professional organisations, but the profession of interior design is not legally regulated in Cyprus. However, through them, interior designers can become involved with, and participate in, relevant activities, competitions, presentations, and seminars. It is useful to note that MET represents various design professionals, including graphic, jewellery, and furniture designers.

2.2.4 Defining Interior Design

To provide a strong basis for the development of a strategy to fulfil research aims and objectives, it is necessary to describe the interior design profession and the breadth of the interior designer's work. Therefore, in this section, the profession of interior design is clarified, the scope

of work during the design process is reviewed, and harmonisation of the educational system for professional education is examined.

The European Council of Interior Architects (ECIA) notes that interior architects/designers who are full members of the ECIA member-organisation shall comply with minimum education standards. In Europe, the term 'interior architecture' is generally used to define the profession. In many European countries, the use of the title of interior designer is not officially regulated. In the United States, some states require individuals who practice interior design to become licensed. For example, California has self-certification and Colorado has a permitting statute (Interior Design Society Website, n.d). In these cases, practicing professionals cannot use the title of interior architect unless they complete the requirements for becoming licensed architects (Glossary of Career Education Programs, n.d). In Greece, and more specifically in Cyprus, there is no legal regulation of the profession of interior design or interior architecture, and indeed the term 'interior design' is widely known and used interchangeably with the term 'decoration' [diakosmisi]. In this context 'decoration' refers to the work done in an existing space to enhance the aesthetics of that particular space, which sometimes includes identifying or analysing the aesthetic needs of the occupant. The Greek meaning of the word 'diakosmisi' is 'the process of decorating/ ornamenting a space' (Babiniotis, 1998).

Before introducing other parameters, it is essential to provide a clear description for the practice of interior design as it appears in the contemporary scheme. According to the European Council of Interior Architects (ECIA) the professional interior architect/interior designer is a person, qualified by education, experience and recognised skills, who:

- Identifies, researches and creatively solves problems pertaining to the function and quality of the interior environment; and

- Performs services relative to interior spaces including programming, design analysis, space planning, aesthetics and inspection of work on site, using specialised knowledge of interior construction, building systems and components, building regulations, equipment, materials and furnishings; and

- Prepares drawings and documents relative to the design of interior space, in order to enhance the quality of life and protect the health, safety and welfare of the public (ECIA, 2007, p. 5).

This description accurately captures the nature of interior design and the issues interior design professionals deal with in practice. Further, the definition provides an indication of the design process the professional designer follows to complete any project, whatever its type, size, and location. The International Standard Industrial Classification for all economic activities (ISIC) and statistical classification of economic activities in the European Community (NACE) classification system aligns with this definition:

This industry comprises of establishments primarily engaged in planning, designing and administering projects in interior spaces to meet the physical and aesthetic needs of people using them, taking into consideration building codes, health and safety regulations, traffic patterns and floor planning, mechanical and electrical needs, and interior fittings and furniture. Interior designers and interior design consultants work in areas such as hospitality design, health care design, institutional design, commercial and corporate design, and residential design (US Census Bureau, 1997, p 63).

Furthermore, numerous authors explain interior design in similar ways by emphasizing specific aspects of design. For example, Pile (1988) notes that the term ‘interior design’ describes all the decisions that determine how a particular space will be decorated and Pilatowicz (1995)

provides a more succinct definition in the context of interiors when she notes that interior design refers to the art of building aesthetically and functionally pleasing spaces.

The objective of interior design training is preparing professionals to perform this role in society. Success requires creative talent combined with a methodological and functional expertise, and training is founded on knowledge of specific areas within the humanities and the applied sciences, and on specific techniques.

2.2.5 Harmonization of the Education System

The education systems related to interior designers in Europe has been harmonised. In 2004, European Charter of Interior Architecture (ECIA) member organisations agreed to implement common admission standards for individual membership of interior designers based upon the European Charter of Interior Architecture Education. Subsequently, a guest membership was introduced to support associated interior designers when working, teaching, or studying abroad. The Bologna Declaration introduced a Europe-wide harmonisation of education systems, including readable and comparable degrees, adopting a system of two main cycles (bachelor's and master's programmes), and establishing a system of credits (ECTS). As a result, interior design education in many European countries was reconsidered and revised, leading to the introduction of new master's courses and even PhD programmes.

2.2.6 Scope of Work Identified Through Design Process

In this section, the interior design process is explained in order to clarify the scope of the work of the interior designer to enhance comprehension of the proposed sustainable practices.

When visiting an interior space or looking at photographs of completed projects, it is often difficult to imagine how the many elements present were brought together in an organised and pleasing totality. The ability to manage this process is one of the key skills of the interior designer.

Every interior design project must be taken through several working steps—the design process—in a logical and usually an overlapping order.

The interior design process, as derived from personal experience and a combination of other sources (Brooker & Stone, 2008; Pile, 1988), begins with the commencement of the project and includes establishing contact with clients, outlining the scope of the project, outlining the time schedule and budget, determining the need for specialised consultants, agreeing on the designer–client relationship, scheduling the design work, and of course selecting the space to be dealt with. The next step is programming, which includes preparation of a survey of the space, conducting interviews to collect data on requirements (this includes, among others, preferences on materials), developing a preliminary programme, reviewing the preliminary programme with the client, preparing the final programme and obtaining the client’s approval, and developing space allocation with the preparation of adjacency studies.

The process continues with the preliminary steps, which include developing the preliminary design with indicative materials and colours, reviewing the preliminary design with the client, revising and finalising the preliminary design, and obtaining the client’s approval of the preliminary design. Subsequently, design development begins, which includes the development of a detailed design; making final material selections; selecting purchased items, colours, and finishes; estimating the costs; preparing the final design and detailed budget; preparing the client presentation; reviewing the budget with the client; and obtaining the client’s approval of the design and budget.

Once the preliminary steps have been completed, the designer proceeds with working drawings and bidding, which includes the preparation of construction, detailed drawings, and specifications, and the estimation of costs and collection of bids. Then, the time schedule for

construction and installation is prepared; the selection of contractors and issuing of work orders follow. Finally, the task involves supervision and post-completion follow up, as well as making the required adjustments and changes and preparing the post-occupation evaluation.

2.2.7 The Role of Interior Designers/ the Importance of Designers' Work

In practice, interior design typically takes place under two conditions. First, interior designers usually must consider the existing circumstances a particular space, and they are often limited by the more or less fixed elements of the construction (Pile, 1988). This applies when designers work with existing spaces and when architectural planning has been completed before interior design begins. Therefore, designers seldom contribute to spatial design. The second condition, which is ideal, is for the process of interior design planning to begin along with the architectural planning.

In both cases, the selection of materials and furniture, fixtures, and equipment (FF&E) fall within the province of the interior designers, even if the designers have the smallest projects or even if they enter projects at a later stage. Additionally, as Brown and Farrelly (2012) explained, the choice of materials is critical to the success of an interior. Thus, the selection of materials begins in the preliminary design stage and continues until the end of the process. Materials and FF&E also are important for all stakeholders. Stakeholders who contribute to the completion of an interior design project are the interior designer, the client (developer, private individual, or corporate client), the supplier, and the contractor. The results reflect the perceptions of the designer, the status of the owner or client, the skills of the contractor and its team, and the ability of the supplier or retailer to provide the needed and appropriate materials for every project.

2.2.8 The Lifespan of the Building

The above realities within the interior design practice also are addressed by Stewart Brand (1994) in his book *How Buildings Learn*, in which he provides a helpful conceptual framework for dividing the parts of a building into different lifespan elements. He notes that interior designers are—in most cases—dealing with the layers that are closer to the surface and therefore require faster replacement. Consequently, the decisions they make are crucial for the longevity of the life cycle of a building.

Thus, interior designers consider this and it is one of the reasons designers need to adopt a more sustainable practice. Their decisions can determine the rate of change. Each layer depicted in Figure 2.1 performs a different function and can be expected to last a certain time before replacement. Those with faster replacement cycles are closer to the surface, more easily accessed, and able to be removed from more permanent components beneath, without unnecessary disruption or damage.

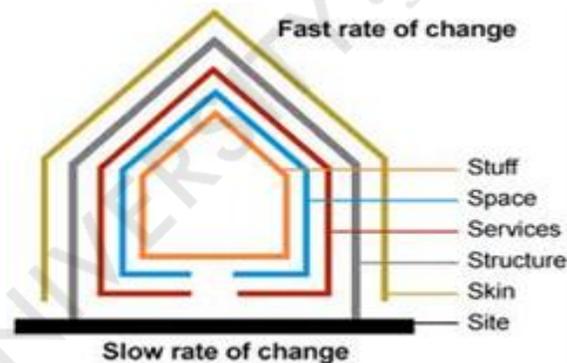


Figure 2.1: Rate of Change in the Lifespan of a Building (Brand, 1994, p. 13)

As Brand (1994) noted (Figure 2.1) the lifespan for stuff, or objects, (e.g., furniture) its 5–15 years; for space (e.g., space dividers) its 5–20 years; for services (e.g., electrical installations) its 5–30 years; for the skin, including exterior surfaces, its 30–60 years; and for the structure

(including the load-bearing elements) its 60–200 years. The site, or geographical setting, outlives the building.

Therefore, as interior designers are intensely involved with clients and other stakeholders of interior design projects; choose materials, furniture, and fixtures, which affects not only users but also the environment; and influence the longevity of the life cycles of buildings, designers' work is important. The relationships between stakeholders and the intermediate role the designer can play is enforced by, and agrees with, the Council for Interior Design Qualification's contention that:

Interior design is a multi-faceted profession in which creative and technical solutions are applied within a structure to achieve a built interior environment. These solutions are functional, enhance the quality of life and culture of occupants, and are aesthetically attractive. (n.d.)

Moreover, Pilatowicz (1995) highlighted another aspect that contributes to the importance of design by explaining that the quality of the environment, both natural and manufactured, has a limitless influence on people's behaviour and physical and psychological well-being. Some effects of the influence are directly obvious; others occur in subtler ways. Thus, interior designers, within the scope of their work, can influence building occupants' experience in numerous ways.

Designers have a unique role and responsibility as the intermediary between industry and clients, and while much guidance and regulation is being introduced across Europe, this is not the case for the field of interior design and its professionals in Cyprus, as the interior design profession is not yet legally regulated. Unfortunately, no data is available regarding the scale of interior design practice or the proportion of interior design-associated expenditure controlled by professionals, and indeed this research is the first that deals with the interior design profession on the island.

In the section that follows, the researcher investigates how others have promoted sustainability in Cyprus in order to determine the relevance of their actions for this research and to determine which aspects can be learnt from and emulated.

2.2.9 Promotion of Sustainability in Cyprus: Important Cases

Various governmental and non-governmental organisations (NGOs) have established policies for environmental and sustainability issues according either to EU directives or to the bylaws of professional organisations. Of course, other cases exist where NGOs have established their priorities regarding relevant issues and are working towards planning strategies that facilitate the promotion and realisation of those priorities. However, this research focused on the efforts of four organisations: The Electricity Authority of Cyprus, the Cyprus Pedagogical Institute, the Cyprus Marine Environmental Protection Association (CYMEPA), and the Environmental Studies Centre (ESC).

2.2.9.1 The Electricity Authority of Cyprus

This organisation provides a good example of the measures taken to achieve strategic objectives. Cyprus relies heavily on fossil fuel imports, as it has no energy resources other than solar and wind energy (Lapithis, 2007). The implementation of energy policies for the development of renewable energy sources (RES) was a lengthy process for the organisation, which began with the first Renewable Energy and Energy Conservation Action Plan in 1985 and ended with the RES Action Plan 2002–2010. Different actions have provided a background for the implementation of the policies. The actions taken by the Electricity Authority of Cyprus (EAC) can be categorised as creating the required legislative framework and implementing measures to achieve the strategic objectives.

A legislative framework had to be created to provide the necessary background for the implementation of the action plan and to legally support schemes for the promotion of RES. The outcome was the Energy Performance of Buildings Directive (EPBD; CyprusNet, n.d.). To create the framework, which legitimised the actions and measures taken to achieve the organisation's strategic objectives (Kassinis, 2007), the EAC, as a semi-governmental organisation, drafted a 2003 law for the promotion of the use of RES and energy conservation investments.

Furthermore, the EAC's overarching strategic objective, according to its general manager, is to be a leader in sustainability (Electricity Authority of Cyprus, 2014). The measures the government and EAC employed included promoting greater stakeholder involvement through rewards such as sponsorship and funding.

A review of the documentation related to the legislative framework, implementation of energy policies for the development of renewable energy sources, and measures for the achievement of strategic objectives revealed the level of promotion that took place for the government and EAC to achieve their specific objectives. In the context of this study, it was important to consider the process that would allow the realisation of the research objectives related to sustainability practices. The example of the EAC indicates that endorsing the benefits of sustainability practices for participants could be an effective means of achieving the study goals. However, it was necessary to identify the rewards the interior design professionals and clients who participated in this research would reap.

2.2.9.2 The Cyprus Pedagogical Institute

The Cyprus Pedagogical Institute (CPI) is the coordinating body for the systematic promotion and implementation of actions related to education for sustainable development (ESD) in the Cyprus education system. Coordination at national and international levels began with the designation of national focal points, the development of national implementation plans, the establishment of a consultative mechanism, and the translation of the strategy into official and other relevant languages. The strategy for ESD in Europe has been translated into Greek, and it has been submitted to other governmental and non-governmental bodies. The national action plan for ESD has been distributed to various organisations for comments and suggestions within the framework of an open dialogue focusing on this issue (UNECE Steering Committee on Education for Sustainable Development, 2005).

The draft of the National Strategy for ESD encompasses eight fundamental action areas, which among others include forming an institutional and operational framework for integrating ESD in Cypriot formal and informal education systems, and unifying the national curriculum for all educational levels and focusing on the key themes of ESD (citizenship, peace, justice, human rights, health, natural resources, consumption, and production). In addition, the action areas involve extending the in-service training of teachers, from all levels of education (teachers, counsellors, stakeholders, decision-makers, and managers) to include the new methodological aspects of ESD and creating a network of environmental education centres, or green schools. The main aim of these centres will be to connect formal and informal education, according to the needs of society (UNECE Steering Committee on Education for Sustainable Development, 2005).

Cyprus has already undertaken various initiatives at a regional, national, and international level to effectively and systematically promote sustainable development in the Cypriot education

system. The projects that have been developed include ‘Sustainable Cities’, ‘Car-free Cities’, ‘Eco-tourism’, and ‘Renewable Energy Resources’, and the projects are pursued through students’ investigation of and interaction with their local communities, governmental organisations, and NGOs to propose solutions for the improvement of their communities’ living conditions.

To achieve the above, the CPI employed several actions, such as the systematic promotion of sustainable development in the Cypriot education system. Its sustained action throughout previous years has culminated in the achievement of its goals. This sustained, systematic approach and connecting formal and informal education have proven to be effective means for promoting sustainability among a wide stakeholder base.

2.2.9.3 The Cyprus Marine Environment Protection Association

The CYMEPA, an autonomous, not-for-profit organisation funded solely by its members, was formed through an initiative of the international shipping community of Cyprus with the support of the commercial community of the island. Its voluntary declaration ‘to save the seas’ was signed by its members and endorsed by the International Maritime Organisation, the Intergovernmental Oceanographic Commission of UNESCO, the World Wide Fund for Nature, the Club of Rome, the World Conservation Union, the International Group of P & I Clubs, and the International Chamber of Shipping (CYMEPA, 2009).

The principal aim of CYMEPA is to encourage and actively assist efforts to prevent all forms of pollution of the sea. The shipping community of Cyprus, comprising ship-owners, operators, ship managers and agents, masters, deck and engineer officers and seafarers, and other maritime sector industries and professions, representing a fleet of some 22 million gross tons of commercial shipping, and many other related industries and activities have voluntarily committed to eliminating ship-generated marine pollution specifically and marine pollution generally.

CYMEPA initiates environmental projects and operates extensive public awareness campaigns, prioritising the environmental education of schoolchildren. Furthermore, CYMEPA supports and assists the government of Cyprus in ratifying and implementing international conventions addressing the protection of the marine environment. CYMEPA's declaration states the following: "Information must be disseminated and environmental consciousness originated through formal and informal education; training and all kinds of networks so that needed environmental actions are as widely understood as possible" (CYMEPA, 2009).

The organisation is deeply committed to achieving its specific objectives, and its members have promoted numerous actions, for example, implementing conventions, voluntary commitment, and spreading knowledge. It was concluded that the commitment demonstrated by CYMEPA members in supporting a common aim should be encouraged in the interior design industry, and whether this can be achieved within interior design associations and in other stakeholders was identified as a point of further investigation.

2.2.9.4 Environmental Studies Centre

The Environmental Studies Centre (ESC) provides an excellent example of providing practical environmental education for Cypriots. The centre is housed in a restored primary school in the village of Kritou Terra, which is on the Laona plateau within the proposed Akamas National Park at the western tip of the island of Cyprus.

The Cyprus ESC is a notable centre for practical environmental education or field studies on the island of Cyprus. Groups of students of all ages come to study ecology, geography, tourism, and other environmental subjects appropriate to the area, following programmes from one to 10 days in length. Course programmes are designed to meet the needs of individual groups, based always on the principle that there is no better classroom to learn about nature and the

landscape than the countryside itself. The ESC represents the main educational activity of the Terra Cypria Foundation, a registered charity concerned with raising environmental awareness throughout Cypriot society.

The ESC aims to sensitise the decision-makers of today through seminars and other activities directed at specific target groups within the community; also to pass on an environmental message to the citizens of tomorrow, i.e. school pupils and students, so that they, in turn, may deal with the earth and its resources more responsibly (ESC, n.d.).

To achieve its objectives, the ESC promotes its goals through seminars and other activities that motivate society and future generations.

The actions taken by the ESC provided a valuable guide to the actions employed in this research. For example, it showed that interventions should take place to sensitise the decision-makers, namely the interior designers and their clients as the major stakeholders of interior design projects. In the case of ESC, practical issues of environmental education have been promoted through seminars and other activities. This raised the question of whether sustainable practices could be promoted in an analogous manner in this study.

2.3 Sustainability and Interior Design Practice

In this part, the scope of sustainability in interior design practice is clarified by explaining the ways in which an interior designer can contribute towards sustainability in practice. While this explanation derives in part from a review of the current literature on sustainability for the built environment, it stems mostly from material provided by interior design associations for their members to gain a broader understanding of how practicing designers can contribute towards more sustainable interior environments. This includes directions such as make efficient use of resources; use sustainable materials and resources; design by collaborative multi-disciplinary

teams; promote innovation during design. Moreover, the two major problem areas of interior design practice, those with faster replacement cycles, were chosen for further study and to create tangible sustainable practices that can be promoted among stakeholders. These are: materials or objects, (e.g., furniture) and space design (e.g., space dividers) as Brand (1994) noted ‘stuff’, and ‘space’.

Additionally, sustainable design needs to create projects that are meaningful and innovations that can drive human behaviour to consider the surrounding environment. Pullen summarises sustainable design as follows:

A sustainable home provides accommodation and facilities for present and future generations in a way that has the lowest possible impact on the ecology and on natural resources. “This must be seen to apply to all stages of the building process: build, operation and finally its eventual demolition and/or reuse” (Pullen, 2008, p. 10).

Concerning objects, or materials and FF&E selection, Null (2014) notes that American Society of Interior Designers (ASID) points that “interior designers should endeavour to practice sustainable design whenever feasible” (p.298). In ‘position on sustainable design’, the ASID recognised that sustainability should be an essential part of the interior designer’s professional responsibilities. Moreover, ASID acknowledged that sustainable interior design embraces, among other things, resource and energy efficiency, and noted that interior designers should use renewable natural resources and work to protect the environment, including vegetation, wildlife habitats, open spaces, and wilderness. In addition, (Stelmack, 2014) notes that the organisation addressed waste reduction, advising interior designers to “minimise waste through the reduction, reuse, or recycling of products, and it encouraged the development and use of reclaimed, salvaged, and recycled products” (p.85). As is noted by Georgiadou et.al. (2015):

Efforts in this direction are of considerable importance when considering the number of materials used, not only in the building's skin, but also in furnishing, fabrics and finishes which are not normally controlled to the extent that the building materials of the shell can be controlled. (p.296)

Moreover, the International Federation of Interior Architects and Designers (IFI) also highlighted the importance of resources and materials. According to Pullen (2008) “a good product starts with a good design” (p.14) and sustainability, according to the same author, means being able to keep something in existence and being maintainable. It can be concluded that common sustainability practice for designers involves the sustainable use of resources and materials. This, is applicable in all interior design projects, as it concerns objects, or material and FF&E selection. Therefore, it can provide a source of guideline for designers and clients. Similarly, in terms of innovative space design, Rewi (2004) argued that more than before, flexibility, multifunction, movability, and adaptability are the drivers of an innovative conceptual thinking that seeks to provide practical solutions to living in a world progressively conquered by advancing technology. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System includes six topics: sustainable sites, water efficiency, energy and atmosphere, materials and resources, quality of the indoor environment, and innovation and the design process. Guerin & Kang (2009) point that, “these topics relate directly and indirectly to interior design, and it is apparent that innovation and design and interior materials directly affect the performance of interior space” (p. 100). Moreover, LEED (2009) in addressing commercial interiors, reported that any combination of innovation in design can yield significant, measurable environmental performance gains, even using a strategy not published by LEED. The sources reviewed indicate that the issues of materials and design can enhance design for sustainable

interiors. But how can they be applied, and how can designers prioritise these needs, apply the required laws and regulations, and meet the necessary responsibilities?

These two issues were explored to show the degree of positive outcomes that can be derived from their application. Both were classified into three different approaches which can support design solutions at various phases during the design process, prolong the longevity of the interior space, and save resources. For example, the use of multipurpose furnishings can be combined with the use of flexible space design and the use of deconstruction principles. Likewise, the use of new materials can lead to specific interior environments that can be combined with other suggested approaches, such as the use of recycled and reclaimed materials. In addition, the above approaches to sustainability and space design can be combined with any of the practices involving the use of sustainable materials and resources, namely, the use of new materials, recycled materials, or reclaimed materials. Moreover, sustainability and materials approaches can be combined with the use of multipurpose space design, flexible space design, and the use of deconstruction principles. Similar guidelines are given by the Danish Environmental Protection Agency in the guide 'Environmental Improvement through Product Development' when they suggest the development for an environmental strategy. It is suggested to choose 10 environmental priorities and assign responsibilities within the organisation. (Danish Environmental Protection Agency, 2011). In the case of this research, the combined use of innovative space design and the appropriate use of materials and FF&E in practice can offer stakeholders a variety of options to meet their sustainability obligations. This combination of sustainable practices was used to create a classification for design approaches that was promoted to stakeholders. More specifically the following classification has been established and entail the dependent variables of the research.

2.3.1 Material, Furniture, Fixture and Equipment Selection

A brief review of the relevant literature regarding sustainable interior design practice and materials selection reveals a number of groupings of themes for sustainable practice. Materials and their application are always among those important themes. Sustainable practice in materials selection involves undertaking life-cycle assessments, supporting reduction, recycling and reuse of materials and making efficient use of resources.

2.3.1.1 Immediate Term Approach/Use of New Materials

The suggested sustainable solution relies on the fact that it is agreed that sustainability is an issue of great importance for all the sectors, it is also important for the interior design sector. As in other allied disciplines many environmental issues can be found for example the methods of generating energy, activities producing pollution, and devastation of forest, all come into focus and all are relevant to materials and products use in the interior space. Therefore, the usual practice has to change in order to facilitate sustainable practices. The cyclical model (Figure 2.2) should be promoted as a practice for interior design and the choice of new materials.

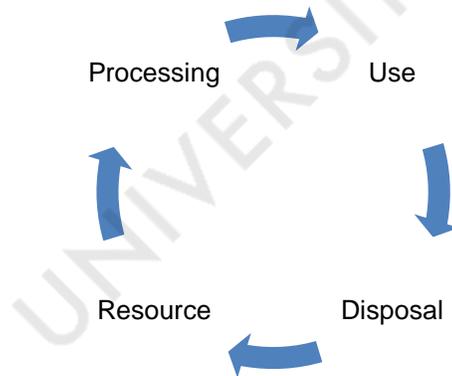


Figure 2.2: Cyclical Model, Source: Author.

When designers assign a design project they all know the process of working with it in a conventional way. The specific issue of life-cycle assessment comes where we need to take

decisions about new materials, finishes or products. As it is recognised in the Johannesburg Plan of Implementation (JPOI) of the World Summit on Sustainable Development, “Sustainable consumption and production (SCP) is an overarching objective of and an essential requirement for sustainable development” (United Nations Environment Programme, 2002). This is the very first step and will enable us to realise how inexcusable the conventional practice is when comparing the previously used linear model with the cyclical model of life assessment which it is suggested should be used in order to achieve a more sustainable interior space.

The examples below present life-cycle analysis of interior materials from interior design students of the Department of Architecture, University of Nicosia, Cyprus (UNic). Students had to develop new and innovative ideas in order to create an interior with an environmentally conscious design. One of the requirements of the project was to involve life-cycle analysis of the suggested interior materials. The following materials are sustainable as they are derived from renewable natural resources, they do not require unsustainable methods during production and use and they are recyclable and/or biodegradable, and so do not present problems for disposal. The presented examples show the life-cycle analysis of Agrifiber Board (Figure 2.3) and Medium Density Fiber (Figure 2.4).

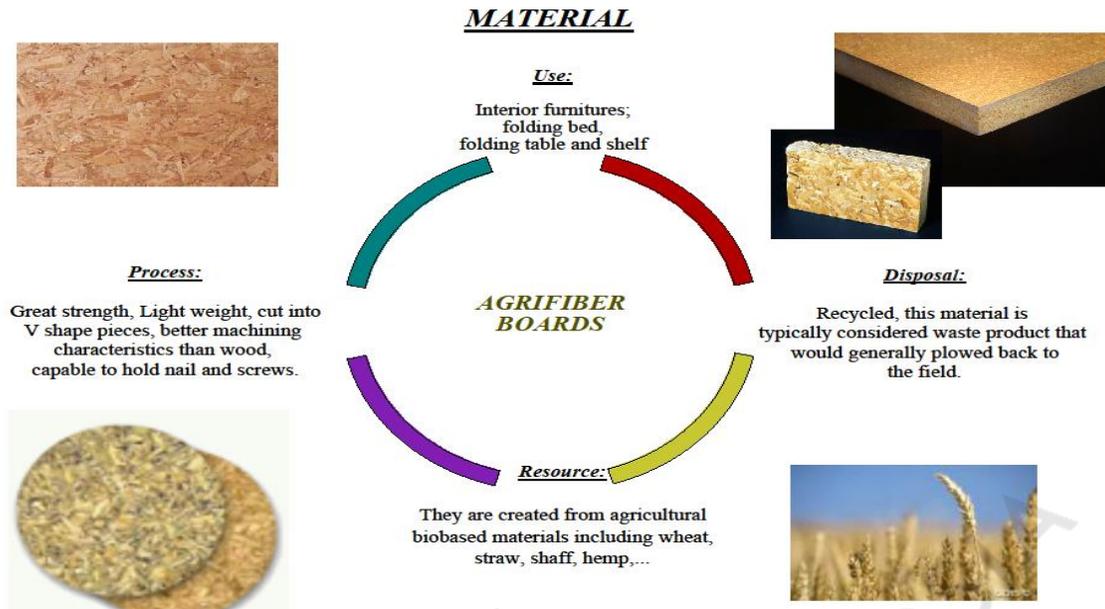


Figure 2.3: Immediate term approach/Use of new materials, Agrifiber Particleboard Life-Circle Analysis, UNIC student: Shinous R., Source: Author.

Medium-density fiberboard (MDF)

Many companies are now committed to sustainable recycling across the non-metallic material streams including paper ,plastic and wood.

MDF is a type of hardboard, which is made from wood fibers glued under heat and pressure.



<http://www.bing.com/images/search?q=Medium-density+fiberboard+disposal+process+>

Disposal



Use

MDF is denser than plywood. It is made up of separated fibers, but can be used as a building material similar in application to plywood. It is stronger and much denser than particle board. The name derives from the distinction in densities of fiberboard. Large-scale production of MDF began in the 1980s, in both North America and Europe.

Processing

It may be used to make display cabinets, wall-panels and storage units.

<http://www.design-technology.org/mdf.htm>



<http://www.fs.fed.us/research/patents/utilization/medium-density-fiberboard.php>



<http://www.recyclingconsult.com/medium-density-fiberboard-mdf.php>

Figure 2.4: Immediate term approach/Use of new materials, Medium density fiber board Life-Circle Analysis, UNIC student: Pseftodiakos K. Source Author.

2.3.1.2 Medium Term Approach/Use of Recycled Materials

As noted by Vergopoulos and Gourdoukis (2011), the recycling of materials is among the issues that become crucial in contemporary architectural design strategies. Objects and spaces that have been designed from recycled materials, gathered from the community and processed in small workshops employing local workers, represent an enhanced and holistic embodiment of sustainability. Walton and Walton (2007) write:

The conventional design process begins with an idea, and then decision is made about materials. In the world of recycling it usually works the other way around. On discovery of a box of used zips (zippers), one thousand corks or a roll of rubber tubing, the creative juices begin to flow, and in no time you find yourself analysing the materials merits, its strengths and weaknesses and most importantly its aesthetic possibilities. (p.6).

The above is the basic characteristic when working with recycled materials and in agreement with that, the researcher wrote “nothing is dead, all the recycled materials carry the warmth of their previous life and transfer it into the new space” (Themistocleous , 2004). The example below indicates how designers used recycled aluminium cans (Figure 2.5) taken from the recycling centre during the recycling process in order to use them and create a series of settees (Figure 2.6) for the Dan Region Association Centre of Environmental Education. The centre is located in Hiriya, Israel.



Figure 2.5: Medium term approach/Use of Recycled materials, Aluminum blocks, Dan Region Association Centre, 2008, Source Author.



Figure 2.6: Medium term approach/Use of Recycled materials, Sofa made from aluminum cans, Dan Region Association Centre, 2008, Source Author.

The second example is of an emerging design work that aims to illustrate the development of an innovative way of design thinking that applies evolving sustainability principles directly into the interior space. The intention of this work is to relocate all the qualities of the sustainable design process within the interior space. The specific idea, illustrated here, uses recycled paper (Figure 2.7) a raw 'waste' material not currently recycled in the author's neighborhood. An informal recycling system was already in place, where the author gathered the paper refuse of near neighbours and transported it collectively to a paper recycling facility near her place of work. This community based project highlighted that people were willing to recycle and, in fact, wanted to become more involved in this process, despite a lack of support from the state. The concept of this waste as a material emerged following research into sustainability in the context of interior design and as such the initial action was to explore the creation of paper mass (Figure 2.8). It was magnificent, warm to see and to touch, with a neutral colour overall, but some vivid areas of white paper, together with splashes of colour from the pages of magazines, were also evident. Feedback from those involved was very positive, as the concept eliminated both products and processes known to pollute air, water or earth. In addition, participants identified potential benefits of the process in terms of social equity at local and global levels, as well as the inherent protection of the biosphere as a result of recycling of materials. The design intention of this was to encourage and promote the accessibility, uptake and use of reclaimed, salvaged and recycled products. The design appeared as some cubical pieces, the paper blocks, which are able to play together by changing positions (Figure 2.9). Apart from the combinations illustrated, their scale and thickness was explored in order for the object to be more flexible. Following, a simple design for an interior object was developed, a three-piece, easily-assembled coffee table that could also be used as a small stool in a living area. This concept provides the potential for a series of modular paper blocks that can be combined together, as is required, in

order to create different interior pieces. While the initial realisation of this idea resulted in a small coffee table, these pieces can be extended from this small scale piece through to a polymorphous rectilinear partition wall.



Figure 2.7: Medium term approach/Use of Recycled materials.

Waste paper, Ioannou, 2008 Source: Author.



Figure 2.8: Medium term approach/Use of Recycled materials.

Paper mass Ioannou, 2008 Source: Author.

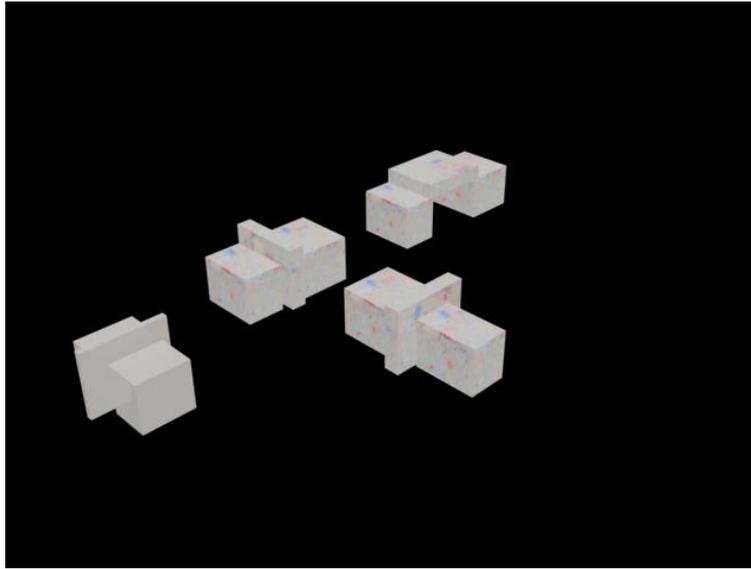


Figure 2.9: Medium term approach/Use of Recycled materials.

Paper blocks Ioannou, 2008 Source: Author.

2.3.1.3 Long Term Approach/Use of Reclaimed Materials

The waste or rubbish from one business is treasure for another business. By reusing materials, we conserve energy, resources, and landfill space, while reducing disposal, greenhouse gas emissions, and purchasing costs. There are a lot of lists with individual materials available for exchange and many links provide online options. One can use one or more resources to list or find materials. As Gil- Pérez and Vilches (2003) note, we should start reflecting on the meaning of “resource” which is defined in dictionaries as “good” or a “means of subsistence”, so a natural resource can be considered a mineable ore body or a bag of oil, like a forest, or breathable air. Moreover, it is the middle ground of stuff as identified by Brand (1994) to mean the materials used within the building envelope that is not new and has not attained the status of being an antique that we could focus on here. In any case, as Brooker and Stone (2008) write that the

designer has a duty to consider not just the likely life of a specific building or project, but also the upcoming life or use of the materials embedded within that project.

A first example of good practice relevant to long term approach/use of reclaimed materials comes from students of the University of Nicosia who were asked to create a new product/object from reclaimed materials that one could use in any interior space. They came up with very innovative ideas considering that a lot of people are reluctant to make use of items made of reused materials. Therefore, the designer needs to think twice about the aesthetics and also about the safety and the finish of the product or artefact. Another restriction that the students had was that they were not allowed to buy anything. Whatever they needed they had to find from reclaimed sources or as thrown away objects. So students utilised among other, wooden pallets with old parts from chairs (Figure 2.10) and an unused bathtub (Figure 2.11).



Figure 2.10: Long term approach/Use of reclaimed materials, chairs made from reclaimed materials, UNIC student: Hadjimichael, 2008, Source Author



Figure 2.11: Long term approach/Use of reclaimed materials, chairs and tables made from reclaimed materials, UNIC student: Arnos and Perou., 2008, Source Author.

The second example shows what designers can do in order to allow materials to be used again and again, having in mind the re-use of existing materials. This example also offers a clear connection of design issues with waste reduction and the way that both IFI and ICED are suggesting designers should use resources. This solution clearly provides an economically sustainable solution while again following the concept of reuse and resource efficiency.

This second example is taken from the personal work of the researcher that has been exhibited at the Design Biennale St. Etienne and also at a local gallery in Nicosia Cyprus. As the designer stated on the published exhibition catalogue (Art, Recycling & Design ,2003)

The role of the designer is multidimensional, as one has to work with the aesthetics, the function and the challenges of technology. The work developed as a direct result of the questions raised

concerning the future of the environment and the designer's contribution towards sustainable development. (p. 6)

In order to further develop the input that an interior designer can make so as to maximise the potentials of sustainable design and the use of reclaimed materials, a methodical design process is set out below. The design process should be followed from the beginning of the project with a focus on employing existing materials in the interior space.

It develops a step by step process of construction for a product, a memo board, which as a method has already been used for the construction of many other interior design objects, such as tables, chairs, lamp shades etc. It also includes a plan that will promote this object and similar products in the market and in our homes. The outcome of this process, a memo board, is a product made mainly out of existing materials that will be suitable for use in a domestic environment.

The use of cork is chosen due to the extensive consumption of wine in Cyprus and generally in the European region.

The material itself is flexible with the ability of going through different processes and therefore able to take different forms and shapes in order to produce a vast number of 'new' products and uses, as a chair (Figure 2.12) and a coffee table (Figure 2.13).



Figure 2.12: Long term approach/Use of reclaimed materials, chair made from used wine bottle corks, Ioannou 2003, Source author



Figure 2.13: Long term approach/Use of reclaimed materials, coffee table made from used wine bottle corks, Ioannou 2003, Source author.

2.3.2 Innovation & Space Design

The design innovation suggestions are reflected in the three different space design approaches indicated in this research. These approaches have been selected in order to facilitate innovation during interior design practice and in order to be promoted as sustainable practices among stakeholders. The three different approaches can support design solutions at various phases during the design process and all three of them can prolong the longevity of the interior space. All of them also support sustainability as a principle, as they all support and promote resources conservation. Finally, all of them can be combined with other issues that embrace sustainable solutions.

2.3.2.1 Immediate Term Approach/Use of Multipurpose Furnishings

The basic characteristics of the approach have been set in order to allow an understanding of the specific suggested practice. The design approach strategy is to use adaptable furnishings. The idea of adaptability also expands to other professions in the building industry not only interior design. As referred by Phocas and Sophocleous Lemonari (2008), control methods for attaining dynamic adaptable structural systems are examined to extend the “classical” structural design approach for earthquake resistance.

This practice, as far as this study is concerned, is user friendly as it can be employed by many people who do not have the chance to work with a professional interior designer. In this case furnishings that can be used in different ways will serve various functions. High functional products will literally reduce the number of objects, pieces of furniture or fittings one needs. Specific single-purpose kitchen appliances for example could be replaced by machines which perform several different tasks. The solution offered is to down-scale pieces of furniture and take back the areas of a particular space that have been lost to oversized furniture pieces by changing

their form and function. Transformation, as defined in the Oxford English Dictionary is “the action of transforming or fact of being transformed” and it is also explained as “the action of changing in form, shape, or appearance; metamorphosis”. A range of wardrobes, dresser, chairs, and a dining room table (in the case of a domestic interior) could be converted to multitasking pieces of furniture.

The example presents the work of Milan-based designer Emanuele Magini who has created a sofa, bed and a chair which, when put together create the object known as ‘Sosia’ (Figure 2.14). Sosia can be transformed and changed to alter its use according to users’ needs. This work indicates the efficient use of resources as one piece of furniture can accommodate a number of uses. The selection of this and similar pieces of furniture can be done with, or without, the assistance of an interior designer, but in any case it is an immediate approach to a space design issue. As the space can be equipped with similar pieces, energy and resources can be protected as less pieces of furniture will be used.



Figure 2.14: Immediate term approach/Use of multipurpose furnishings

Multipurpose piece of furniture, Magini, 2011. Kerala House Design [Online]. Source: <http://keralahousedesignidea.blogspot.com/2013/11/multipurpose-sofa-bed-and-chair-unified.html> [Accessed 30 May 2014].

The next example presents Resource Furniture that since 2000, has distributed inspired, modern space-saving furniture by the finest and most innovative European designers. The pictures below show how beds and office table unfold from an adjacent wall when required to accommodate different needs and at the same time allow for more free space in the interior when required. Figure 2.15 shows space saving bunk beds and we can see how many options the client has by using one wall unit to modify activities and serve different needs in his/her space. The client can achieve this by visiting the proper supplier and without the need of an interior designer or a builder. The result is an immediate approach to space design that incorporates saving of space, materials, energy and resources in general, as one piece of furniture can act in many different ways and serve many different needs of the client/user.



Figure 2.15: Immediate term approach/Use of multipurpose furnishings

Multipurpose piece of furniture, Resource Furniture, Source: Resource furniture web site.

(<http://www.resourcefurniture.com/>)

2.3.2.2 Medium Term Approach/Flexible Space Design

The basic characteristics of the practice are explained in order to allow an understanding of the classification of the approach. The design approach strategy is to achieve maximum flexibility. As noted by Z. Georgiadou (2005), design strategy is usually formed and based on predetermine principles, among them the flexibility and mobility, which seem like to be regarded as a conventional process which Georgiadou names 'a stereotypical procedure'. The practice is owner friendly as spaces can accommodate different needs of different users as the years pass, from parents to children or different tenants, with a minimum cost. Design is more effective when it allows for maximum flexibility of spatial configuration within a given structure as this preserves the building structure as a whole. Therefore, this can be a long lasting interior. According to Beisi (1995) and his technical approach for creating adaptability in the interior, different factors can be examined. Those are: change in size, multifunctional rooms, change in room relationship, change in room quantity and size, change in built-in accessories. By using this practice, the space under study can lend itself to quick reconfiguration. It can include mobile components such as walls, partitions, furniture, and equipment that will allow easy and quick change. The approach helps the owner to convert space in order to accommodate changes in need over different periods of time. It also gives the opportunity to be re-designed with little or no expenditure as this possibility will be planned from the beginning. Flexible design solutions allow for the expansion of some areas when the family is getting bigger and again allow the use of some spaces for other functions when children, for example, are no longer living with their parents.

The example presents the family home of the future from the London Design Festival that will feature mechanised floors and furniture that emerge from walls, floors and ceilings at the touch of a button, according to Yo! Sushi and Yotel founder Simon Woodroffe (2000). They presented a

flexible design where according to the differing needs, among others, various items of furniture emerge from the floor a dining table and chairs, as well as a sofa and the table rises to the desired height (Figure 2.16). This gives the opportunity to the user to create a personalised space with the option of changing the function when the need arises. Also it can be transformed and serve different programmes and functions required by the owner: this approach makes the space attractive for owners as it can serve the needs of many different people as the years pass. A master bedroom can be lowered down over the sunken seating area of the living room, while a breakfast counter slides out from the walls of the kitchen and a dining table folds up from the floor. Quist et.al. (2003) also support the above approaches when they note that “innovation—combining technological, behavioural and structural changes—is very important for sustainable development” (p.43).



Figure 2.16: Medium term approach/Flexible space design,
 Flexible space design, Woodroffe, S. 2000, Source: Yo! Sushi and Yotel [Online].
<http://www.yo.co.uk> [Accessed 30 May 2014].

Then next example presents Gary Chang’s own apartment which is an excellent example of flexible space design as it can support many different needs in one relatively small space (Figure

2.17). The project's name is '24 Rooms in One' and surely involved the designer, the owner, the supplier and the builder. In interior design like this, all stakeholders are involved in the process, starting from the designer-client (in this case it is the same person) and going on to the suppliers and the contractors. Changes in room relationship and changes in room quantity and size are some of its features. A design proposal like this ensures shelter and sustainability thinking.



Figure 2.17: Medium term approach/Flexible space design, Flexible space design, Gary Chang's 2000. Apartment [Online]. Source: <http://www.archivehue.com> [Accessed 30 May 2014]

2.3.2.3 Long Term Approach/Design for Deconstruction

The basic characteristics of the practice are presented in order to allow an understanding of the classification of the approach. The design approach strategy is the designing for deconstruction. This approach is investor friendly as it prolongs the existence of the constructed interior space as you can transfer it to serve more individuals in a different skin as the years pass. Designing details for deconstruction at the start of a project enables one building, at the end of its useful lifespan, to be the resource for the next and helps “close the loop” for resource use (The Scottish Ecological Design Association, 2005). Deconstruction is the systematic hand-dismantling

of a structure with the intent of maximising the yield of reusable building materials. While the process differs from standard demolition, the results are the same: a completely cleared site. As it is explained, (Morgan & Stevenson, 2005) this way of designing can also ensure that different parts of the whole can be replaced at any stage of the long life span, minimising the costs. Lack of satisfactory access is one of the single biggest obstacles of successful deconstruction. The guide by the Scottish Ecological Design Association maintains that detailing for deconstruction makes any property more attractive as an investment. Using deconstruction as a design approach provides benefits in terms of saving material resources. By adopting this practice, one has also to consider the connections of elements that one uses, as these would permit the dismantling of the specific elements. The type of connection used between elements will determine whether or not it can be effectively deconstructed. Furthermore, this approach allows the components to be readily recovered and repaired or reused directly for the next project with a minimum of cost.

The principles of sustainability integrate three closely interlinked aspects, namely, the environment, economy, and society, into a system that can be maintained indefinitely in a healthy state (Coleman, 2000). In the 21st century, the interior design industry and interior concepts are changing in far-reaching ways. The demand today is to use methods which comply with the principles of social, economic, and ecological sustainability. But what is the purpose of sustainable design? Sustainable design has many purposes, and according to McLennan (2004), one of its most important aspects is to eliminate negative environmental impact completely through skillful and sensitive design. Sustainable design follows the concept of using no non-renewable resources, minimal impact on the environment, and connecting people with the natural environment. Examples of applications show a well-known pavilion by Zumthor; it is the Swiss Pavilion at Expo 2000 in Hanover. The intuition in his design originates in a common, everyday image: simple stacking of wooden boards

in an ordinary carpenter's stockpile or warehouse. The 3000 cubic metres of the small building are composed of 45,000 boards of unseasoned wood, assembled without adhesives: the 9m high walls divide up the internal space according to a complex maze-like logic, while ceilings made of larch beams rest on vertical beams of Scotch pine. They are held in place by steel cables connected to spring tie rods with an elegant minimal design, following the nature of the wood as a changing, living material (Figure 2.18 and Figure 2.19).



Figure 2.18: Long term approach/
Design for deconstruction Interior View, Zumthor,
P.2000, Swiss Pavilion Expo 2000. [Online].
Source: Floornature website, [Accessed 30 May 2014].

Figure 2.19: Long term approach/Design for
deconstruction, Exterior View, Zumthor, P. 2000, Swiss
Pavilion Expo 2000. [Online]. Source: Floornature
website, [Accessed 30 May 2014].

The next example is by Alberto Mozã for BIP computers in Santiago, Chile, 2008 (Figure 2.15). The entire structure is made from laminated timber and can be dismantled and reconstructed elsewhere. As the architect says, the material opens up the possibility of re-construction at another site or location. The design of this attempts to give potential to this new condition and support sustainable architecture. He continues by saying that it is essential to comment that the utilised wood

is a motivation for reforestation, since it belongs to the type of wood of a renewable forest, and it is the building material which produces less carbon emissions for the consideration of our climate changes (Lloyd, 2008).



Figure 2.20: Long term approach/Design for deconstruction, Interior View, Moza, 2008, Source: Treehagger Website. Moza, 2008. BIP Computers in Santiago, Chile, [Accessed 30 May 2014]



Figure 2.21: Long term approach/Design for deconstruction, Exterior View, Moza, 2008, Source: Treehagger Website. Moza, 2008. BIP Computers in Santiago, Chile, [Accessed 30 May 2014]

2.4 The Theoretical Background

The literature on attitude and behavioural change is substantial, and it addresses a variety of theories and models about attitude and behaviour that share common arguments. For example, the theory of interpersonal behaviour (Triandis, 1977) and the theory of planned behaviour (Ajzen, 1985) acknowledge that behaviour is formed by various factors. Moreover, change models, on the one hand, present change as a systematic process, for example, Lewin's (1943) change model and McKenzie-Mohr's (2000) community-based social marketing and, on the other hand, as interdependent factors that interact for a better outcome. An example of the latter is the McKinsey 7-S model (Waterman & Peter, 1980), which appears to be a framework to improve team or organisational performance.

Nevertheless, whatever the case may be, the literature that discusses how behavioural change might be enabled converges on the fact that that changing behaviour does not involve a single act. As Dardon (2008) noted, “models importantly demonstrate that change is a process not an event” (p.41).

This section presents a response to the main objective of this study: to apply an appropriate educational and theoretical framework to identify suitable methods for the promotion of learning about sustainability. Literature on introducing change was reviewed to examine change and behaviour, and change through learning reflected as factors that can bring about change. Specifically, the review focused on the three-step model of change (Levin, 1946) and the qualities of the affective learning domain (Krathwohl, 1964). The section further contains an evaluation of teaching and learning approaches that facilitate affective learning, namely, collaborative, problem-based, experiential, and blended learning (traditional learning with the use of IT), which are presented as parameters for deliberate interventions that can promote sustainable interior design practices. These deliberate interventions, are the active independent variables of this research.

2.4.1 Change and Behaviour: Lewin’s Three-Step Change Model

Behavioural models can facilitate the task of identifying which factors are the most significant in determining behaviours. However, behavioural models do not specify how to bring about behavioural change. In addition, to understand behaviour, one needs to understand change. Consequently, change models, change theories, and the nature of change are discussed in this section in order to make informed judgments about actions that could support change towards sustainable interior design practice. Interior design projects usually require communication between stakeholders, which is significant in the context of change in the design industry and for this research, which demanded that designers and clients engage in supportive dialogue promoting

change of behaviour. According to Jackson (2005) “Dahlstrand and Biel, 1997; Lewin, 1951; Spaargaren and Viet, 2000 support that change of behavioural patterns needs to take place in a group environment and requires open and supportive communication between those involved in negotiating the change”. Additionally, Lewin’s Change Theory (1943) allows the gradual involvement of stakeholders in the process and manages the change. Harris and Blackwell (1996) support this, stating that there is a call for an approach which strives for greater literacy with informed and active citizens.

It is important to note that several authors support the view that stakeholder participation requires direct participation. For example, the elaboration likelihood model (ELM) of persuasion is based on the idea that attitudes are important because attitudes guide decisions and other behaviours. Lincoln, Hampshire, and the Australian Agency for International Development (2000) agreed with the key situational factors of the ELM and reported that sustainability cannot be achieved without the involvement and support of the stakeholders. They further explained that ‘genuine participation is not being adequately addressed if the main strategy consists of simply running workshops or briefings to let “them” know what “you” are doing’ (AusAID, 2000).

Further, Gollwitzer (1999) provides an effective guideline for successful change: “Goal attainment is more likely when people frame their good intentions as learning goals—to learn how to perform a given task”. This statement aligns with the social marketing approach to behaviour change (McKenzie-Mohr, 2000), which is based on the idea that successful behavioural change depends on the understanding of barriers to new behaviour. Moreover, the social marketing approach underscores the importance of strategically delivering programmes so that they target specific segments of the public and overcome the barriers to each segment engaging in the behaviour.

For this research, the relevant model would facilitate the involvement of stakeholders in the process of change, and Lewin's 3-Step model, was selected for further consideration. Lewin states in his change theory that one's behaviour is related both to one's personal characteristics and to the social situation in which one finds oneself (Darnton, 2008). Yet as noted by Burnes (2004), "the work of Kurt Lewin dominated the theory and practice of change management for over 40 years. However, in the past 20 years, Lewin's approach to change, particularly the 3-Step model, has attracted major criticisms" (p. 977). He further pointed out that Lewin's work on change was eventually criticised as applicable only to small-scale changes in firm conditions and for management issues such as organisational politics and conflicts. Nevertheless, Burnes (2004) argued that Lewin's approach remains appropriate for and applicable to the modern world.

Lewin's three-step change model consists of three distinct and vital stages, as illustrated in Figure 2.15.



Figure 2.22: Lewin's Planned Approach to Change (Warner, 2012).

The three steps of the model are unfreeze, change, and refreeze:

1. Unfreezing involves finding a method of making it possible for people to let go of an old pattern that was counterproductive in some way. This is necessary to overcome the strains of individual resistance and group conformity and to raise awareness that current conditions are not satisfactory, which reduces resistance to change.

2. The change stage involves a process of change in thoughts, feeling, behaviour, or all three that is in some way more liberating or more productive. It is about letting go of old ways of doing things and adopting new behaviours.

3. Refreezing refers to establishing the change as a new habit, so that it now becomes the 'standard operating procedure'.

Kritsonis (2004) supported these steps and commented that without the stage of refreezing, it is easy to return to the old ways. Reinforcing the changes stabilises the new ways of behaving. Although the elaboration likelihood model (ELM) was also acceptable for the purposes of this research, Lewin's three-step change model was selected. The ELM (Petty & Cacioppo, 1986a) integrates two situational factors—motivation (involvement) and ability (knowledge)—but most importantly it suggests that lasting behavioural change relies on people consciously engaging with the subject matter. The ELM is based on the idea that attitudes are important because attitudes guide decisions and other behaviours (Ahimbisibwe & Nangoli, 2012), and while attitudes can result from several things, persuasion is a primary source. The model features two routes of persuasive influence: central (most likely with high involvement and more knowledge) and peripheral (most likely with low involvement and less knowledge). Lewin's three-step change model was deemed more suitable for bringing about the change addressed in this research. Stakeholders should understand that there is a need for change, and adopt those attitudinal characteristics or values that are important for sustainable interior design projects. To promote attitudinal characteristics or values relevant to sustainability, other parameters also were examined in order to facilitate the creation of a model to promote sustainable interior design practices.

2.4.1.1 Measuring Change

To explore and discuss the changing attitudes of the participants it is useful to note their importance for this research; as what is evaluated are changes in attitudes and behaviour of participating stakeholders. Before proceeding to look at some of the ways in which we can measure attitudes, it is preferable to see what an attitude is and what a measure is. As Henerson, Morris and Fitz-Gibbon (1987) write, "An attitude is not something that we can measure like the rate of a heartbeat. We can only infer that a person has attitudes by her words and actions" (pp. 11-13). They add that we should not back off just because the task is a difficult one, but we should proceed with some precautions firmly in mind including the fact that when we measure attitudes we must rely on inference. Behaviours, beliefs, and feelings will not always match even when we correctly assume that they reflect a single attitude. We have no guarantee that the attitude we want to assess will "stand still" long enough for a one-time measurement to be reliable. They continue that fortunately, the task of an evaluator will not usually be to make judgments about the attitudes and feelings of individuals but of groups of people. As far as 'measure' is concerned, an answer to the question 'what is a measure' is given from Oppenheim (1992) when he writes that:

A measure is to describe the properties of a scale. A scale must satisfy the conditions of linearity and uni-dimensionality; it must be reliable; it must have units of measurement; these units will, if possible be interchangeable; the scale needs some 'anchoring points' obtained through standardisation or in relation to fixed, observable events, to give meaning to the scores; and most particularly, the scale must be valid in the sense that it measures the attribute it sets out to measure. (p153)

As far as the need for measuring the attitude of designers and clients towards more sustainable interior design practice is concerned, it is important to know how much knowledge

and understanding of related issues interior designers and clients have today and how much their attitudes can be altered or change. As Robson (1993) writes:

In carrying out a real-world inquiry, our options are essentially the same as those available to the detective and to ourselves in a day to day living. We can watch people and try to work out what is going on, we can ask them about it and we can look out for fingerprints. Put in the more usual research language, watching becomes observation, asking becomes interviewing and using questionnaires. (p.187)

2.4.1.2 Change through Learning

Learning theories have changed with time, and adaptations, or even modifications, of learning views according to the way people now live are apparent. Kauchak and Eggen (1998) note that at the beginning of this century, behaviourist views of learning predominated in education. Both Boyle (1997) and Kauchak and Eggen (1998) agreed that behaviourism emphasised the important influence of external events on learning and the role of reinforcement in influencing those events. Subsequently, constructivism became influential in teaching and learning theories. Constructivism refers to the idea that learners construct knowledge for themselves and that each learner individually (and socially) constructs meaning as he or she learns. According to Hein (1991), “constructing meaning is learning; there is no other kind” (p.89). Furthermore, social constructivism is a variety of cognitive constructivism that emphasises the collaborative nature of learning and holds that knowledge is constructed within social contexts through interactions with a knowledge community.

A substantial body of research in the field of education has established that ‘learning’ means different things for different people. One only has to consider one’s own definition of learning, and the value one ascribes to learning, to appreciate this view. Darnton (2008) stated that

“both behavioural models and theories of change reveal learning to be fundamental to the process of change” (p. 47). Therefore, learning experiences can provide participants in a learning process with the opportunity to change and, consequently, they will have an opportunity to alter their skills and/or behaviour as a result. Schuell (1986, as cited in Edwards, 1999) supports the connection between learning and change when she wrote that “learning is characterised as one of known knowledge transfer techniques leading to a change in skill or behaviour that is evidenced because of something that has happened to, or been done by, a person” (p. 26). Similarly, this aligns with the views of Arbuthnott (2008) who reports that it is entirely likely that education can influence various factors that can deliver behavioural change. She further suggests that education for sustainable development programmes should help people translate their intentions into action. This is what this study aims to achieve with the involvement of the stakeholders—professionals and clients—to help them translate their sustainable design intentions into actions towards sustainable interior design practice. For this study, a definition for learning that the above professionals agree on was used as noted by Morrison (2000), “learning refers to any relatively enduring change as a result of some experience” (p. 97).

To complement the use of Lewin’s three-step change model, it was necessary to define how the felt need for change would be transmitted and how stakeholders would adopt new behaviours. As Petty and Cacioppo (1986a) note, “the likelihood of elaboration will be determined by an individual's motivation and ability to evaluate the argument being presented” (p. 129). Therefore, the probability of expansion and of adopting new behaviour is related to the way people process information, and relevant knowledge is thus required to examine new arguments. In the context of this study, this required an examination of how new information or knowledge should pass to the stakeholders. This was achieved by reviewing learning theories and considering

how one can change through learning. Theories that can facilitate change in a social context and enable change of attitudes and behaviours within this context were selected for further study, specifically Bloom's taxonomy of affective domain classification and social learning theory. Social learning theory (Bandura, 1977) was investigated, as people learn most effectively from models that are attractive to or influential for them, or from people who are simply 'like them'.

Bloom, who led a group of educational psychologists, developed a classification of levels of intellectual behaviour significant in learning. This became a taxonomy that includes three overlapping domains: 'the cognitive, psychomotor, and affective' (Krathwohl et al., 1964). As explained by Krathwohl et al. (1964), this includes the way we deal with things emotionally, such as feelings, values, appreciation, enthusiasm, motivations, and attitudes. The consideration of the affective domain in learning for the stakeholders in this research was important, as we wanted them to alter their attitudes towards design practice.

2.4.1.3 Social Learning Theory

Social learning theory works within both cognitive and behavioural frameworks, encompassing attention, memory, and motivation. This theory of learning suggests that people learn within a social context and that learning is facilitated through concepts such as modelling, observational learning, and imitation. Bandura (1977) formulates the concept of 'reciprocal determinism', which holds that a person's behaviour, environment, and personal qualities all mutually influence each other. Bandura (1977) further contends that the four requirements for learning are observation, retention, reproduction, and motivation. This integrative approach to learning was called social learning theory. It is important to understand how behaviour is interrelated with personal and environmental factors in order to allow the creation of the proper model to promote change among participants.

2.4.2 Bloom's Taxonomy of Learning Domains

In Bloom's taxonomy, levels of intellectual behaviour exist within three overlapping domains: the cognitive, psychomotor, and affective. Distinct levels have been set for each domain to promote higher forms of thinking in education, such as analysing and evaluating concepts, processes, procedures, and principles rather than simply remembering facts (Krathwohl et al., 1964). The domain of affective learning is characterised by behaviours indicating attitudes of awareness and responsibility, and the ability to listen and respond to interactions with others; the ability to demonstrate those attitudinal characteristics or values which are appropriate to the test situation and the field of study is the most relevant here. Krathwohl et al. (1964) reported that they "found a large number of such objectives in the literature expressed as interests, attitudes, appreciations, values, and emotional sets or biases" (p. 7). According to Krathwohl et al. (1964), the affective domain is classified into five subcategories: 1. Receiving; 2. Responding; 3. Valuing; 4. Organisation; and 5. Characterisation. Affective objectives vary from simple attention to selected phenomena to complex but internally consistent qualities of character and conscience. These affective domain categories were deemed of high importance, as the researcher believed that the involvement of participants through a number of interventions should lead to demonstration of attitudes of awareness and values appropriate to the subject of sustainability and should alter behaviours, indicating change towards sustainable design practices.

2.4.2.1 The Affective Domain

In this section, affective learning and the specification of objectives and other parameters that can be targeted to achieve learning are discussed. The setting of proper objectives in the affective domain is important to manage attitude change, as it is related to emotions, attitudes, appreciations, and values, such as enjoying, conserving, respecting, and supporting. According to

the levels of the affective domain learning, examples of experience, or demonstration and evidence to be measured differ for the subcategories. The first category involves listening to teacher or trainer, take interest in session or learning experience, take notes, turn up, make time for learning experience and participate passively. The second involves active participation in activity, interest in outcomes, enthusiasm for action, question and probe ideas. The third decides worth and relevance of ideas, experiences; accept or commit to particular stance or action. The fourth category involves qualifying and quantifying personal views, state personal position and reasons and state beliefs. Finally, the learner behaves consistently with personal value sets and tests the implications of these concepts in new situations. A complete table presenting the levels of the affective domain is displayed below (Table 2.1). Above and beyond, affective learning can be useful in the context of achieving a change of behaviours related to the use of sustainable practices. As is pointed out by Krathwohl et al., (1964), affective learning is the learning domain with objectives that “emphasise a feeling tone, an emotion, or a degree of acceptance or rejection. Affective objectives vary from simple attention to selected phenomena to complex but internally consistent qualities of character and conscience” (p. 7). In addition, according to the levels of the domain, behaviour descriptions are as follow: First, learner should be open to experience and willing to hear. Second, learner should react and participate actively. Third, he/she attaches values and expresses personal opinions. Fourth, he /she reconciles internal conflicts and develops value system. Fifth, he/she adopts belief system and philosophy. Behaviour descriptions and evidence to be measured based on the taxonomy of the affective domain have been examined. Other parameters are discussed in the section that follows in order to facilitate the creation of a model that can support the promotion of sustainable interior design practice.

Table2.1:

Levels of the Affective Domain

<https://global.indiana.edu/documents/Learning-Taxonomy-Affective.pdf>

AFFECTIVE DOMAIN				
LEVEL	CATEGORY	BEHAVIOUR DESCRIPTIONS	EXAMPLES OF EXPERIENCE, OR DEMONSTRATION AND EVIDENCE TO BE MEASURED	'KEY WORDS' (VERBS WHICH DESCRIBE THE ACTIVITY TO BE TRAINED OR MEASURED AT EACH LEVEL)
1	Receive	Open to Experience, Willing to Hear	Listen to teacher or trainer, take interest in session or learning experience, take notes, turn up, make time for learning experience, participate passively	Ask, listen, focus, attend, take part, discuss, acknowledge, hear, be open to, retain, follow, concentrate, read, do, feel
2	Respond	React and Participate Actively	Participate actively in group discussion, active participation in activity, interest in outcomes, enthusiasm for action, question and probe ideas, suggest interpretation	React, respond, seek clarification, interpret, clarify, provide other references and examples, contribute, question, present, cite, become animated or excited, help team, write, perform
3	Value	Attach Values and Express Personal Opinions	Decide worth and relevance of ideas, experiences; accept or commit to particular stance or action	Argue, challenge, debate, refute, confront, justify, persuade, criticize
4	Organize or Conceptualize Values	Reconcile Internal Conflicts; Develop Value System	Qualify and quantify personal views, state personal position and reasons, state beliefs	Build, develop, formulate, defend, modify, relate, prioritize, reconcile, contrast, arrange, compare
5	Internalize or Characterize Values	Adopt Belief System and Philosophy	Self-reliant; behave consistently with personal value set	Act, display, influence, solve, practice,

2.4.3 Learning Approaches That Facilitate Affective Learning

Several learning approaches seemed suitable for contributing to the behavioural alterations required in this study. Garrison (2001) as cited in Rastegarpour (2004) notes in his article entitled ‘Teaching Methods in the Affective Domain: For Distance Learners’, “according to the behaviourists, the best teaching technique is the one that allows the teacher to most effectively and efficiently meet his course objectives” (p. 1). This suggests that different teaching techniques and approaches should be used to engage all participants in the learning process. Furthermore, Abdal-Haqq (1998) observes that “learning activities in constructivist settings are characterised by active engagement, inquiry, problem solving, and collaboration with others” (p. 2), which again endorses the use of a variety of learning approaches to facilitate the learning process. Similarly, Rogers and Freiberg (1994) as cited in Wall et al., (2005) point out that “all individuals learn in different ways from listening, watching, questioning, doing and helping others to learn” (p. 2). This study involves professionals and clients from different backgrounds. Thus, it was necessary to consider the fact that individuals would have their own ways of learning and that an effort must be made to implement several different learning approaches to involve all participants in the learning process. The following learning approaches were considered, as they could engage all participants in the learning process.

2.4.3.1 Collaborative Learning

Collaborative learning involves dealing with people in groups where individuals’ abilities are valued (Panitz, 1996 as cited in Woolfolk, 2006). Moreover, by its nature collaborative learning is both socially and intellectually involved. It invites participants to build closer connections to other participants. Further, as Golub (1988, cited in Smith et al., 1992) comments,

“collaborative learning has as its main feature a structure that allows for students talk: Students are supposed to talk with each other and it is in this talking that much of the learning occurs” (p. 12). This suggests that methods should be provided that enable people to cooperate rather than be competitive, enabling the exchange of views when working in groups. The researcher concluded that in the present study, this way of learning would satisfy the needs of many professional participants, as they usually work on projects by collaborating with others. Additionally, it would be effective with clients, as it would give them the opportunity to share experiences. As Smith et al. (1992) in their article ‘What is Collaborative Learning’ described, “collaborative learning is an umbrella term for a variety of educational approaches involving joint intellectual effort by the participants, or participants and teachers together” (p.11). Further, it is through the process of sharing information experiences and sharing cognition within the group that the members learn from each other. It is suggested that participants work in groups of two or more, mutually searching for understanding, solutions, or meanings, or creating a product.

2.4.3.2 Problem-Based Learning

This approach is widely used in professional education, and it is frequently built around collaborative learning strategies. Many of these spring from common roots, especially the work of Dewey. According to Smith et al. (1992), Dewey endorses discussion-based teaching and believed strongly in the importance of giving students direct experiential encounters with real-world problems. In addition, Dolmans (2001, as cited in Oloke et al., 2007) explains that from a cognitive perspective, participants are more likely to learn useful and practical knowledge through problem-based learning because of activation of prior knowledge and elaboration of newly acquired knowledge. Problem solving has long been a focus of professional education and it is increasingly regarded as an important aspect of the liberal arts and design. The following

definition (Ioannou & Meletiou, 2014) of design supports this view, “Design is, to analyse the existing situation or problem and synthesize a new condition or solution” (p. 82). Because the participants in this study were designers and their clients, it was felt that they would be able to comprehend and use an approach with which they are familiar as professionals. Learning through the pursuit of answers to learning problems would be an appropriate method for the participants to employ.

2.4.3.3 Blended Learning

Watson (2008) defines blended learning as the traditional delivery of learning combined with the parallel use of information technology that results in online delivery of educational content with the best features of classroom interaction and live instruction to personalise learning, allow thoughtful reflection, and differentiate instruction from learner to learner across a diverse group of learners. Blended learning is intended to secure the continuous flow of information to stakeholders through technology. This should take place alongside traditional delivery of learning. Moreover, concerning professional development Wall et. al. (2006), explained that “it is widely recognised that much of the professional development of a professional in the construction industry takes place through on-the-job training” (p. 2). The same authors considered it crucial that this be supplemented with continuing professional development. One of the ways they suggest for this professional development to be offered is through training courses. Likewise, Watson (2008) noted that “the blended approach combines the best elements of online and face-to-face learning. It is likely to emerge as the predominant model of the future—and to become far more common than either one alone” (p. 4). The blended learning approach has the potential to enable participants to access relevant information repeatedly at their own pace to offer

familiarization with the promoted sustainability solutions and allow the growth of professional development.

2.4.3.4 Experiential Learning

Kolb (1984) in *Experiential Learning: Experience as the Source of Learning and Development*, defines learning as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (p.38). Further, Bout et al. (1985) argues that experiential learning is learning from actually performing a task rather than from abstractly learning about it. This suggested that this particular way of learning would facilitate participant engagement with sustainable practices and allow them to realize from first-hand experience how they should think (rethink) about sustainability issues. In this study, both blended and experiential learning were integrated, as this facilitated the attainment of the research objectives and engaged the different types of learners participated in the study.

2.4.4 A Model to Promote Sustainable Practices

After reviewing above a number of change and learning theories and other literature on issues that impact learning, the proposed model merges the selected change model with the domain of affective learning and combines selected teaching approaches in order to facilitate change towards a more sustainable interior design practice.

Fundamentally the model occurred through the combination of three foundations. These three basic foundations are: Foundation I: Kurt Lewin’s Change Theory; Foundation II: Krathwohl, Bloom, and Masia Taxonomy – The Affective Domain; Foundation III: Learning Approaches. Consequently, this study places importance on Lewis’s Three-Step Model for bringing about this particular change: a change in stakeholders’ attitudes. Stakeholders should

understand that there is a need for change, and adopt those attitudinal characteristics or values that are important to stakeholders of interior design projects. The outcomes must be reinforced in order to facilitate a change of approach towards a sustainable practice. Kurt Lewin's model consists of three distinct and vital stages: unfreeze (create the right environment), change (support change to desired state) and refreeze (reinforce to anchor the change). The three stages of unfreezing, change and refreezing according to Lewin's (1946) model of change have been implemented in this study and the three stages are represented in the three phases of the action research.

The research, as well, places emphasis on the domain of affective learning as this is the domain that can support change in stakeholders' attitudes. By using the affective domain's classification of categories of learning we secure the step by step transition of stakeholders' attitudes into goal-directed responses and attitudes on the issue under study. As Krathwohl et al. (1964) notes: "this ordering of components seemed to describe a process by which a given phenomenon or value passed from a level of bare awareness to a position of some power to guide or control the behaviour of a person" (p.27).

Moreover, the research addresses pedagogical concerns by giving the participants the opportunity to experience different kinds of knowledge and understanding through various learning approaches. This enabled them to explore the design approaches and strategies which might be appropriate to develop a strategy for change during interior design practice. Those learning approaches are: traditional delivery of learning (face to face and the parallel using of information technology); collaborative learning; problem based learning and experiential learning. The use of the different learning approaches has been developed and combined during the various interventions to reveal the expected outcomes and moreover led to a directed involvement of the participants in the process of change and enabled the involvement of different kinds of learners.

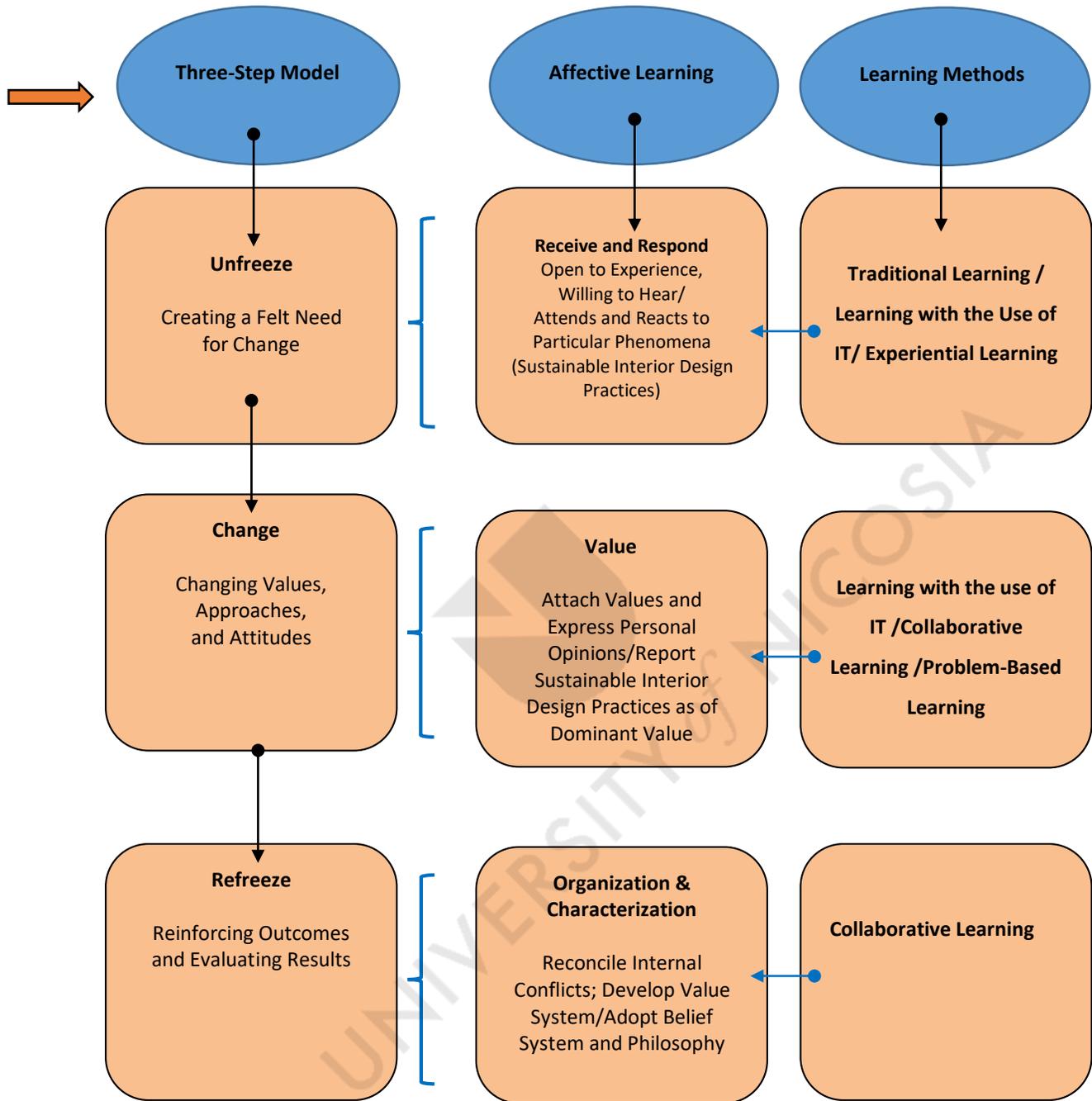


Figure 2.23: Model for Promoting Sustainable Interior Design Practice

Furthermore, each different kind of learning approach offers participants the opportunity to move from level to level of learning in the affective domain and allows change among participants. This model (Figure 2.16) is utilised as a practical tool for promoting sustainable design practice among interior design practitioners and clients. This model was developed and then applied through an action research to test its utility and observe if its use accomplishes the predetermined set of clearly stated objectives of specific phases. The proposed model is considered to be a methodological development articulating the potentials of action research in addressing challenges of sustainable interior design approaches. It builds on this experience to identify what would be important to address in further research that engages the stakeholders of interior design practice.

2.5 Conclusion

It has been acknowledged that interior design practitioners play a role in sustainability, as the decisions they make in practice affect this issue. Designers' work deals with layers that have fast rate of change in the lifespan of a building and parallel to that, through their work, they have the opportunity to deliver opinions, norms, and attitudes to their clients. In this way, they can influence clients to live in a more sustainable manner in their homes, in their places of work, and indeed in their wider lifestyle choices (Pilatowicz, 1995). The activities undertaken to promote sustainability by some organisations, as discussed in this chapter, are worthy examples and are considered for the promotion of sustainable interior design practices. For instance, following the example of the Electricity Authority of Cyprus, implementing sustainability policies was identified as a valuable long-term plan for interior designers' associations. Similarly, the urgent need for legal regulation of the profession on the island was highlighted. Furthermore, the voluntary commitment of the members of CYMEPA could be used as a guide for the interior

design industry. The example of the Cyprus Pedagogical Institute's systematic promotion of ESD among various groups could be emulated in developing a strategy for the systematic promotion of sustainable design issues. Nevertheless, because the Cyprus Pedagogical Institute has not approached designers to involve them in any activities, designers' associations should take the initiative to involve their members in activities that promote sustainability learning.

In terms of the application of sustainable practices in interior design, a survey sponsored by the International Interior Design Association revealed that 83% of professional designers understand that they have an ethical and moral responsibility to offer sustainable design options to their clients, yet the designers provide sustainable solutions in no more than 37% of projects, despite perceiving the value of sustainable design in its beneficial impact on the environment (International Interior Design Association, 2000). While designers consider it their social responsibility to protect the environment and conserve resources, they consider the greater sense of responsibility to lie in the completion of their projects on time and within budget. As the research aim is to identify methods for promoting sustainability practices, there was a need to identify the appropriate practices to be promoted, thus making the effort exploitable within the overall sustainability of the building. Consequently, the formulation of a guided holistic approach to interior design practice that will allow the widespread implementation of sustainable design solutions is significant. The promotion of sustainable practices can benefit not only interior design practitioners but also other stakeholders of interior design projects and guide them so that they can monitor and control specific decisions towards a more sustainable approach. The classification of the two issues identified and selected to contribute to the support of sustainable interior design practice as part of a holistic approach can be a combination of the different practices. This combination of sustainable practices was used to be promoted to the stakeholders. Moreover, it

was concluded that no single existing model or theory for change could be identified and adopted to facilitate the aims of this project; consequently, the suitability of various models that could be adapted for this purpose was considered. A study of the literature led to the proposal of a unique, tailored model for change which is organised around existing model for change, that is, Lewin's Change Theory (1943), specifically his three-step model of change (1946), combined with aspects of the elaboration likelihood model (Petty & Cacioppo, 1986a). It was anticipated that behavioural change in the stakeholders of interior design practice can be managed with the deployment of these models, and additional models relevant to the research were also investigated. The proposed model merges the selected change model with the domain of affective learning (Krathwohl et al., 1964) and combines selected teaching approaches to facilitate change towards a more sustainable interior design practice.

In terms of the domain of affective learning (Krathwohl et al., 1964), the following categories have been included: receiving and responding, valuing, organisation, and characterisation. These categories support the delivery of the intended outcomes through the design and application of carefully selected teaching and/or learning approaches. Additionally, it was expected that the adoption of this model would provide a framework for the proposed series of interventions or actions that would lead to the fulfilment of the diverse needs of interior design professionals and clients, namely, a more in-depth comprehension of the subject, and an alteration in both behaviour and approach towards practicing interior design in a more sustainable manner. The proposed model was subsequently used as a practical tool for promoting sustainable design practices among interior design practitioners and clients. The contribution of this study lies within the interior design context, in fostering the interest of both professionals and clients and enhancing change towards sustainable design practices through learning, comprehension, and involvement.

Chapter 3: Research Methodology

3.1 Introduction

The aim of the research is to investigate the extent to which a range of interventions can raise participants' awareness and understanding of the role of interior design in the delivery of sustainability in the built environment. Also, to promote the uptake of sustainability practices in the discipline of interior design among two groups of stakeholders, interior designers and their clients on the island of Cyprus. Within this study framework, an action research methodology was chosen. This action research contributes to the concerns of sustainable interior design practice and applies the necessary approach that will facilitate learning and active engagement of stakeholders.

Gilmore, Krantz, and Ramirez, (1986) and O'Brien (2001) explain that action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to further the goals of social science simultaneously. As they put it, there is a dual commitment in action research: to study a system and concurrently to collaborate with members of the system in changing it. Therefore, accomplishing this twin goal requires the active collaboration of researcher and participant, and thus it stresses the importance of co-learning as a primary aspect of the research process. In the case of this study, both action and research are intended outcomes of deliberated interventions and will provide the flexibility and openness needed for effective change while at the same time will provide a check on the adequacy of data and conclusions.

Moreover, this chapter presents: A discussion on action research including its definition and principles; the population and sample determination with an explanation of how designers and clients as participants have been involved; operational definitions and the variables of the research questions; what evidences and how they have been measured in this research are available. The

research instruments and explanations of how and when they are used in this research are also noted. Research instruments include questionnaires, interviews, observations and case studies. Then the pilot interventions are described.

The data analysis approaches are explained along with how reliability and validity are preserved. Then, the process of carrying out the research in a timely and accurate manner, considering the steps taken by the three different phases is described. Finally, the conclusions for the chapter are presented.

3.2 Action Research Approach

Action research is a participatory research method which is usually performed in groups of people who are active in an area and allow participants to explore solutions to real problems which concerned them (McNiff, 1998). As noted by Bennett (1983), the term of action research was coined by Lewin (1946) in an article entitled 'Action Research and Minority Problems' when he stated that he had contact with many organisations, institutions, and individuals who went to him for help in the field of group relations. He described that those people showed a great amount of goodwill to face the problem and do something about it. He states that, "These eager people feel themselves to be in a fog. They feel in a fog on three counts: 1. What is the present situation? 2. What are the dangers? 3. And most importantly of all, what shall we do?" (p.34). Furthermore, as the name suggests, action research is a methodology which has the dual aims of action and research, action to bring about change in some community or organisation or programme, and research; to increase understanding on the part of the researcher or the client, or both (and often some wider community). Lewin (1946, p. 206) states that action research '... proceeds in a spiral of steps each of which is composed of a circle of planning, action, and fact-finding about the results of the action'. In agreement with that, Kemmis and McTaggart (1988) describe action

research as to include cycles and each cycle as having four steps: plan, act, observe and reflect. Coghlan and Brannick (2001) develop similar ideas whereby the four steps of the action research of plan, action, observe and reflect become the diagnosis, planning action, taking action and evaluating action. The method that this research undertook in order to accommodate the necessary series of interventions can be seen below in Figure 3.1. It consists of three major action research cycles that take place in three subsequent phases. Each phase includes an action research cycle and according to the proposed model has as follow.

Cycle one and Phase I diagnosis is the need to unfreeze; Planning action, is the designing of the specific interventions targeting, receiving and responding among stakeholders; Taking action, is the attending and reacting to sustainable interior design practices through traditional and experiential learning; and evaluating action, will indicate the degree of creating a felt need for change among the stakeholders;

Cycle two and Phase II diagnosis is the need to change; Planning action, is the designing of the specific interventions targeting the attachment of new values; Taking action, is the reporting of sustainable interior design practices as of dominant value through collaborative and problem based learning; and evaluating action will indicate the degree of valuing.

Cycle three and Phase III diagnosis is the need to refreeze; Planning action is the designing of intervention that will assist stakeholders to organise and characterise themselves according to new values; Taking action is the adaptation of new believe system and philosophy through collaborative learning and evaluating action, is the degree of the reinforcing of the outcomes.

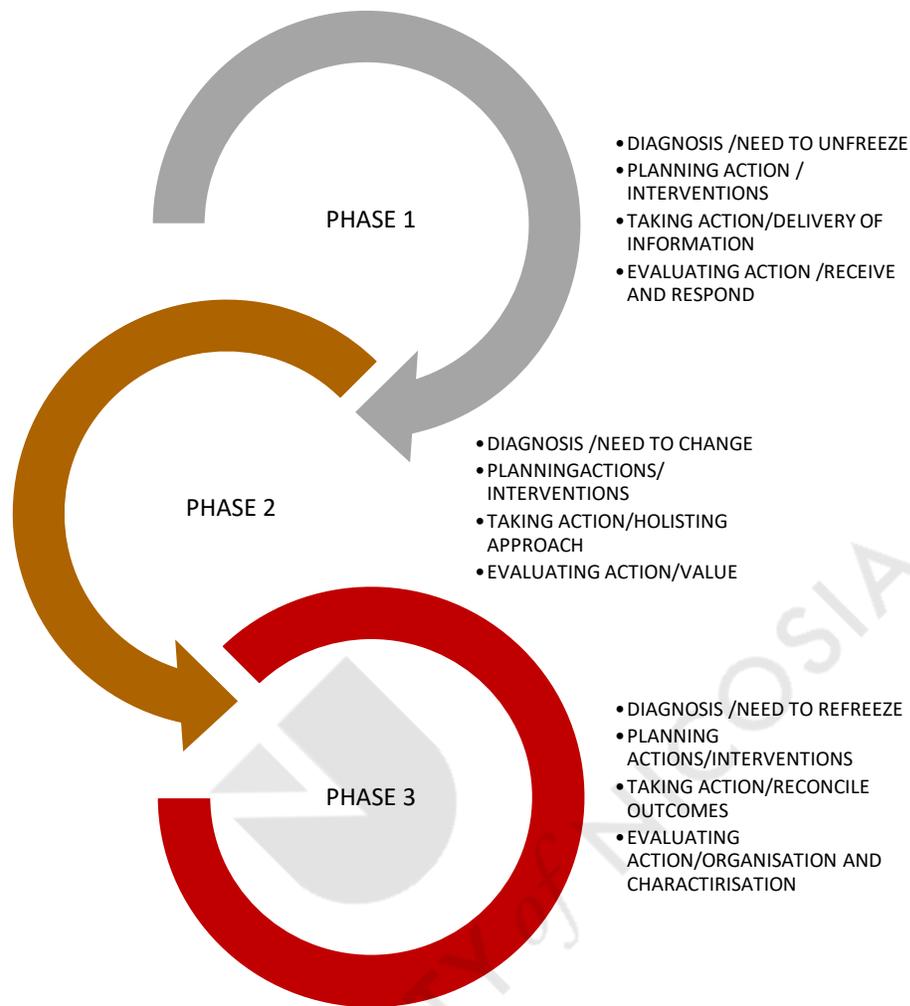


Figure 3.1: Phases of the Action Research

Through the action research, the attempt to enhance and endorse sustainable approaches and perceptions among interior design practitioners and clients has been promoted. Indeed, this work seeks to encourage stakeholders of interior design projects to investigate issues relating to interior design approaches and more specifically sustainable interior design practices as well as sustainable materials practices which both are present as dominant issues in the interior design profession. Through the three different phases of the research, a classification of the sustainable practices and guidance was offered to the stakeholders. It was expected that the participants can

act according to this guidance when needed in order to develop a sustainable interior design approach. Figure 3.2 below indicates the phases (3) and the interventions (4 for designers and 3 for clients) that were completed during the action research.

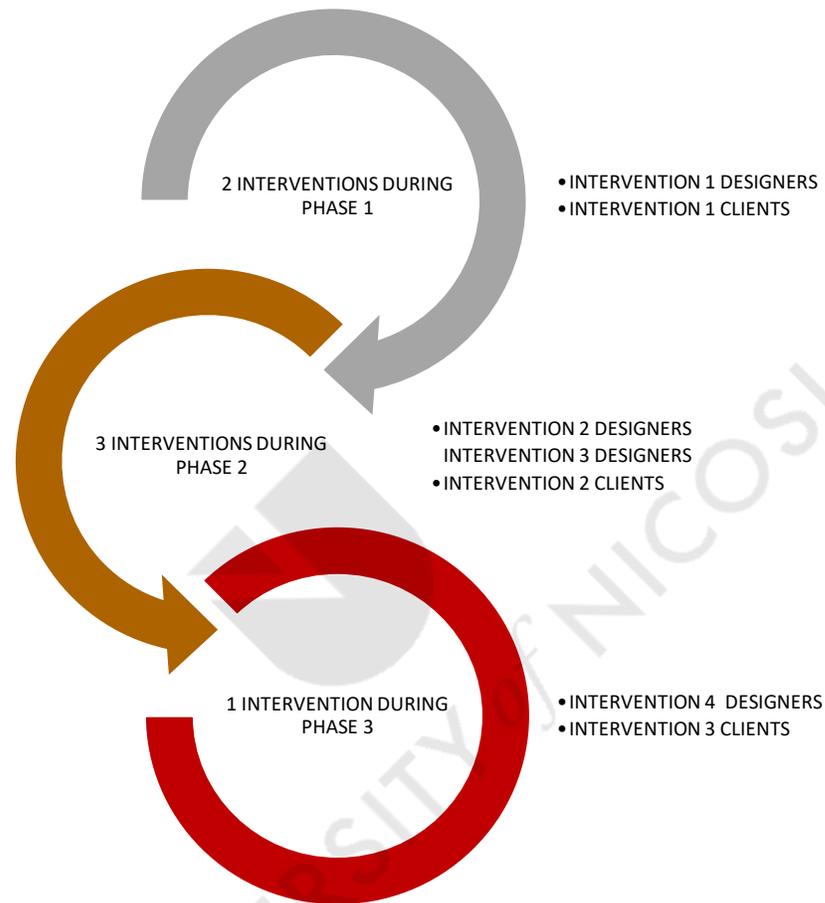


Figure 3.2: Interventions for each Phase of the Action Research

3.3 Population and Sample of the Research

The sample of the research involved all the registered members of Cyprus Designers' Association and a number of individual clients that have been dealing with construction /renovation of a space as of 2008.

The participants have been told that their participation is voluntary and a written consent for participation obtained (See Appendix C: Consent Form). Also, participants were asked for their consent to being observed. Moreover, the project did not involve children or young people under the age of 18 and there was not any realistic risk of any participants experiencing either physical or psychological distress or discomfort.

3.3.1 Designers

The Cyprus Interior Designers Association (SEMEK/CYIDA) was founded in March 2005. A group of five people, in a short time organised the association and went to search for and register members who had attended courses in Interior Design, Landscape Design, and Furniture Design. After creating the necessary documents with the assistance of an attorney and drafting of statutes, SEMEK was approved as a legitimate association from the relevant ministry on August 3, 2007, with the registration number 3033. Since 2014 SEMEK is a registered member of the Bureau of European Designers Association (BEDA) with the title Cyprus Interior Designers Association (CYIDA). To date, the association continues to record members, so far graduates and students of Interior Design /Interior Architecture and thus far promoting the correct interpretation of the profession throughout society. It organises events to discuss and resolve procedural problems in the profession, training sessions with presentations from selected companies with products and services relating to the industry and has close relationships with universities, associations abroad as well as related magazines and publishers. The research focused primarily on the members of the interior designers' association on the island, the Cyprus Interior Designers Association (CYIDA/SEMEK). Often, it is not possible to survey or use questionnaires or interviews with the whole population in which one is interested, nevertheless, with the interior designers' association the survey started with all the fifty-four members and then continued on a

voluntary basis. It is noted here that SEMEK/CYIDA members are come from all the non-occupied districts of the island- Nicosia, Limassol, Larnaca and the free district of Famagusta, this excluded Paphos where designers are not registered in the association. The sample group resulted from the fifty-four initial calls, with thirty-one designers answering the questionnaire and participating in the first phase of the research. Then, twenty-one designers participated in the second and twelve in the third. Members of SEMEK/CYIDA volunteered to support the interventions during the action research. Therefore, interventions for clients were always supported by the members of the designers' association.

During the action research process, the designers were assigned numbers as reported on their personal member registration documents, in order to facilitate the procedure during data collection and keep the anonymity of the participants.

Through the first phase the designers' majority place of professional practice is in Nicosia (n=13), Limassol (n=8) and Larnaca (n=5). Twenty-six (26) out of the thirty (30) professionals work in the private sector and eleven (11) hold an MA in interior design. More than half of the professionals (n=16) are in the 25-34 age range, seven (7) are in the 35-44 age range and two (2) are 45 to 54 years old. (See Table 3.1 Designers participant, demographics relevant to Place of Residence, Professional Practice, Age, Work Area and Sector and Education).

Table 3.1:

Participant Designers' Demographics Relevant to Place of Residence, Professional Practice, Age, Work Area and Sector and Education

Designers Demographic Information		PHASE I				
		Place of residence		Nicosia (n=12)	Limassol (n=8)	Larnaca (n=7)
		40%	27%	23%	10%	
Place of Professional practice		Nicosia (n=13)	Limassol (n=8)	Larnaca (n=5)	Famagusta (n=4)	
		43%	27%	17%	13%	
Age	Under 25 (n=3)	25-34 (n=16)	35-44 (n=7)	45-54 (n=2)	55-64 (n=2)	
	10%	53%	23%	7%	7%	
Work Area		Private (n=26)			Public (n=4)	
		87%			13%	
Work Sector		Commercial (n=5)	Retail (n=3)	Domestic (n=16)	Other (n=6)	
		17%	10%	53%	20%	
Education		BA Interior (n=19)			MA Interior (n=11)	
		63%			37%	

During the second phase some designers dropped out. We explored whether the dropout rate was associated with the designers' demographic characteristics using an X^2 test of association. If $p < 0.05$ then we have a statistical significant association of the demographic characteristic under investigation, with the dropout rate. The demographic characteristics of designers who continue to Phase II indicates that all respondents from Nicosia ($n=12$) continued to SEMEK 2 as well as 6 out of 7 professionals from Larnaca. The biggest drop, although not statistically significant ($p=0.274$) is in Limassol where 3 out of 8 did not continue to Phase II (SEMEK2). Work Area has no effect on the likelihood for continuation to Phase II ($p=0.543$). The same proportion of working private and public professionals, continued to SEMEK 2. Moreover, Work Sector ($p=0.864$), Age ($p=0.412$) and Education ($p=0.426$) are not associated with participation to Phase II (SEMEK 2). Table 3.2 breaks down and compares the proportion of the respondents across demographics within each phase.

Concerning Phase III, designers' demographics data shows that designers participated from all the districts of the island except from Paphos. That was expected, as from the beginning we knew that SEMEK/CYIDA do not have members from this district. Therefore, designers who participated through to Phase III, are: Five from Nicosia, four from Larnaca and four from Limassol. Most of them are working with projects in the domestic sector and are from 25-34 year of age. Also, the majority work in the private sector.

Table 3.2:

Chi-Square Analysis on the proportion of the designers' respondents across Demographics for Phase I and II

		Continued to Part 2		X ² Test		
		SEMEK 1 (n=30)	SEMEK 2 (n=21)	X ² value	df	p value
Place of Residence	Nicosia (n=24)	12	12	3,882	3	0,274
		40%	57%			
	Limassol (n=11)	8	3			
		27%	14%			
	Larnaca (n=13)	7	6			
		23%	29%			
Work Area	Community (n=3)	3		0,37	1	0,543
		10%				
	Private (n=45)	26	19			
		87%	90%			
	Public (n=6)	4	2			
		13%	10%			
Work Sector	Commercial (n=7)	5	2	0,737	3	0,864
		17%	10%			
	Retail (n=6)	3	3			
		10%	14%			
	Domestic (n=27)	16	11			
		53%	52%			
Age	Other (n=11)	6	5	2,868	3	0,412
		20%	24%			
	Under 25 (n=5)	3	2			
		10%	10%			
	25-34 (n=30)	16	14			
		53%	67%			
Education	35-44 (n=10)	7	3	0,635	1	0,426
		23%	14%			
	45 and over (n=6)	4	2			
		13%	10%			
	BA (n=33)	19	14			
		63%	70%			
Education	MA (n=17)	11	6	37%	30%	

* Percentages are within the levels of each demographic.

3.3.2 Clients

In the case of the clients, it was not possible to survey or use questionnaires or interviews with the whole population in which we were interested. This is the population from all the non-occupied districts of the island. Therefore, starting with a pilot questionnaire, a selected sample of the population participated. Using a stratified random sample, the population was first divided into sub-groups. The number sampled in each group was in proportion to its known size in the parent population. The target population and the sampling frame were the same in all respects, including the fact that clients were above eighteen years of age and had dealt with construction/renovation of a space after 2008. According to official data, as given from the Republic of Cyprus Statistical Service – Ministry Of Finance, the distribution of the population by district in 2011 was as follows: Nicosia 38, 8% of the total population, Limassol 28, 0%, Larnaca 17, 1%, Paphos 10, 5%, Famagusta (communities) 5, 5. For the delivery of the questionnaire, the Larnaca district was grouped together with Famagusta and cited as the no.1 group of clients, Limassol with Paphos was cited as the no 2 group of clients and the Nicosia district separated because of its population as the no 3 group of clients. The type of sample for this research was stratified in random sampling as in this case the total population was divided into groups according to the districts.

The first questionnaire was distributed to 150 clients who agreed to be involved. There were 134 at the beginning of the first phase and 75 at the end of it. For phase two, 55 designer participants and 28 client participants for the following phase three. The client participants were given the number of their district along with the number of their entry (answer to the first questionnaire) to the study. Therefore, for example in Nicosia, the client no 3.1 was the participant that entered the study first in the Nicosia district. This formed the basis of the sample items to be

tracked and enabled to follow the possible alteration of the behaviour of each participant. The questionnaires for the clients were distributed through SEMEK/CYIDA and the Youth Board Organisation. The Youth Board Organisation was collaborating as the provider of: the premises in all the districts of the island, the mailing lists so that every individual who had been involved in any interior design project after 2008 could voluntarily participate in the research and as the Youth Board Organisation hosts a number of seminars and interventions in its premises for all Cypriots during the interventions, various resources that were needed were provided by the organisation. Table 3.3 shows clients' demographics relevant to place of residence, type of tenure, type of home, age, gender and education.

During the second phase, clients drop out. We explored whether the dropout rate was associated with the clients' demographic characteristics using an X² test of association. If $p < 0.05$ then we have a statistical significant association of the demographic characteristic under investigation, with the dropout rate. The demographic characteristics of clients who continued to Phase II (Public 3) are as follow: The initial 134 persons who started the series of workshops were explored and recall 5 persons that participated in Questionnaire Public 1, missed Phase I (Public 2) and had shown up in Phase II (Public 3). Also all respondents from Paphos ($n=14$) continued the study. Lower proportions continued to Public 3 from other locations i.e. 37.2% of the respondents from Nicosia, 37.9% from Limassol and 32.6% from Larnaca. It is noted here that, the type of tenure has no statistical effect on the likelihood for continuation to Public 3 ($p=0.458$). Type of home also has no statistical effect on the likelihood for continuation ($p=0.455$). Moreover, Age has a statistically significant effect on the likelihood for Public 3 participation ($p=0.042$) as 68.8% (11 out of 16) of the younger respondents (Under 25) continued to Public 3, compared, for example, to the 22.5% of the 45-64 age group. Female and Male respondents are equally likely to

continue ($p=0.848$). Finally, education seems to have no statistically significant effect on the likelihood for Public 3 participation ($p=0.851$). Table 3.4 below indicates the Chi-Square analysis on the proportion of respondents who continued to PUBLIC 3 across demographic questions.

Table 3.3:

Clients' demographics relevant to Place of Residence, Type of Tenure, Type of home, Age, Gender and Education.

Clients demographics Information	PHASE I		
		Count	Column N %
Place of Residence	Nicosia	43	32,3%
	Limassol	29	21,8%
	Paphos	14	10,5%
	Larnaca	46	34,6%
	Famagusta area	1	0,8%
Type of Tenure	Government Housing Estate	6	4,7%
	Self-help housing on government land	21	16,5%
	Self-help housing on private land	8	6,3%
	Self-help housing for purchase	1	0,8%
	Purchase of a house	91	71,7%
Type of home	Other	0	0,0%
	Apartment	29	22,0%
	Detached	76	57,6%
	Semidetached	25	18,9%
Age	Other	2	1,5%
	Under 25	16	12,1%
	25-34	37	28,0%
	35-44	22	16,7%
	45-54	40	30,3%
	55-64	14	10,6%
Gender	65 and over	3	2,3%
	Male	22	17,6%
Education	Female	103	82,4%
	Primary	11	8,3%
	Secondary	32	24,1%
	Tertiary	90	67,7%

Table 3.4:

Chi-Square Analysis on the proportion of respondents who continued to PUBLIC 3 across demographic questions.

		Continued to Phase II		X ² Test		
		Did not continue	Continued	X ² value	df	p value
Place of Residence**	Nicosia (n=43)	27	16	21,533	3	<0,001
		62,8%	37,2%			
	Limassol (n=29)	18	11			
		62,1%	37,9%			
	Paphos (n=14)		14			
			100,0%			
	Larnaca (n=46)	31	15			
		67,4%	32,6%			
Type of Tenure**	Famagusta area (n=1)	1				
		100,0%				
	Government Housing Estate (n=6)	2	4	2,929	3	0,403
		33,3%	66,7%			
	Self-help housing on government land (n=21)	11	10			
		52,4%	47,6%			
	Self-help housing on private land (n=8)	6	2			
		75,0%	25,0%			
Type of home	Self-help housing for purchase (n=1)	1				
		100,0%				
	Purchase of a house (n=91)	55	36			
		60,4%	39,6%			
	Appartment (n=29)	16	13	0,455	2	0,797
		55,2%	44,8%			
	Detached (n=76)	44	32			
		57,9%	42,1%			
Age	Semidetached (n=25)	16	9			
		64,0%	36,0%			
	Under 25 (n=16)	5	11	12,563	4	0,014
		31,3%	68,8%			
	25-34 (n=37)	20	17			
	54,1%	45,9%				
	35-44 (n=22)	10	12			

		45,5%	54,5%			
	45-64 (n=40)	31	9			
		77,5%	22,5%			
	55 and over (n=17)	10	7			
		58,8%	41,2%			
Gender	Male (n=22)	13	9	0,037	1	0,848
		59,1%	40,9%			
	Female (n=102)	58	44			
		56,9%	43,1%			
Education	Primary (n=10)	5	5	0,322	2	0,851
		50,0%	50,0%			
	Secondary (n=32)	18	14			
		56,3%	43,8%			
	Tertiary (n=90)	53	37			
		58,9%	41,1%			
* Percentages are within the levels of each demographic.						
** <i>Famagusta</i> and <i>Self-help housing for purchase</i> are not included in their respective chi-square analysis						

The effect of clients' demographic characteristics towards the likelihood of continuation to Phase III (Public 4) is noted below. The demographics of the initial 134 persons who started the series of workshops are contrasted with the demographics of the 28 persons at the final phase. Twenty-six per-cent 26% (11/43) of the respondents from Nicosia continued to Public 4. Lower proportions continued from other locations i.e. 24.21% from Limassol, 21.4% from Paphos and 15.2% from Larnaca. Nearly 20% of the clients who purchased a house, continued to Phase III (Public 4). Moreover, fewer clients with an apartment (10.3%) continued compared to the owners of a detached house (23.7%) and Semidetached (20%). ($p=0.336$). Seven out of sixteen (43.8%) of the Under 25 clients continued to Phase III compared to the lower prevalence in other age groups ($p=0.119$). Female and Male respondents are equally likely to continue to Phase III ($p=0.814$). Finally, education seems to have no statistically significant effect on the likelihood for participation ($p=0.267$).

Table 3.5:

Chi-Square Analysis on the proportion of respondents who continued to PUBLIC 4 across demographic questions.

		Continued to Phase III		X ² Test		
		Did not continue	Continued	X ² value	df	p value
Place of Residence**	Nicosia (n=43)	32	11	1,629	3	0,653
		74%	26%			
	Limassol (n=29)	22	7			
		75,9%	24,1%			
	Paphos (n=14)	11	3			
		78,6%	21,4%			
	Larnaca (n=46)	39	7			
		84,8%	15,2%			
	Famagusta area (n=1)	1				
		100,0%				
Type of Tenure**	Government Housing Estate (n=6)	5	1	0,321	3	0,956
		83,3%	16,7%			
	Self-help housing on government land (n=21)	16	5			
		76,2%	23,8%			
	Self-help housing on private land (n=8)	6	2			
		75,0%	25,0%			
	Self-help housing for purchase (n=1)	1				
		100,0%				
	Purchase of a house (n=91)	73	18			
		80,2%	19,8%			
Type of home	Appartment (n=29)	26	3	3,385	3	0,336
		89,7%	10,3%			
	Detached (n=76)	58	18			
		76,3%	23,7%			
	Semidetached (n=25)	20	5			
		80,0%	20,0%			
Age	Under 25 (n=16)	9	7	7,342	4	0,119
		56,3%	43,8%			
	25-34 (n=37)	30	7			
		81,1%	18,9%			
	35-44 (n=22)	19	3			

		86,4%	13,6%			
	45-64 (n=40)	34	6			
		85,0%	15,0%			
	55 and over (n=17)	12	5			
		70,6%	29,4%			
Gender	Male (n=22)	13	9	0,055	1	0,814
		59,1%	40,9%			
	Female (n=102)	58	44			
		56,9%	43,1%			
Education	Primary (n=11)	9	2	2,637	2	0,267
		81,8%	18,2%			
	Secondary (n=32)	22	10			
		68,8%	31,3%			
	Tertiary (n=90)	74	16			
		82,2%	17,8%			
* Percentages are within the levels of each demographic.						
** <i>Famagusta</i> and <i>Self-help housing for purchase</i> are not included in their respective chi-square analysis						

3.4 Dependent Variables of the Research

The dependent variables of the research are the sustainability practices. The suggested guidelines from various design organisations have been classified to sustainable practices and promoted to interior designers and their clients. Also, as has been pointed, the interior design professionals in the built environment have a significant responsibility as other allied professionals for the delivery of sustainability. In this research sustainable interior design practice is promoted focusing on two issues.

The first issue is that of sustainable materials & resources and is promoted through a classification that indicates different practices to materials selection namely: a) Use of new materials, b) Use of recycled materials, and c) Use of reclaimed materials. These material practices as dependent variables were the focus for Phase I as materiality is the layer with the fastest rate of change in the lifespan of a building.

The second issue is that of space design and innovation and is promoted through a classification that indicates how sustainable interior spaces can be achieved if we choose to support some innovative design practices namely: a) Use of multipurpose furnishings and FF&E, b) Use of flexible space design, c) Use of the design for deconstruction principles. These three dependent variables were the focus for Phase II as space design is the layer with the second fastest rate of change in the lifespan of a building. During Phase III both issues were promoted. Figure 3.3 shows the dependent variables of the research.

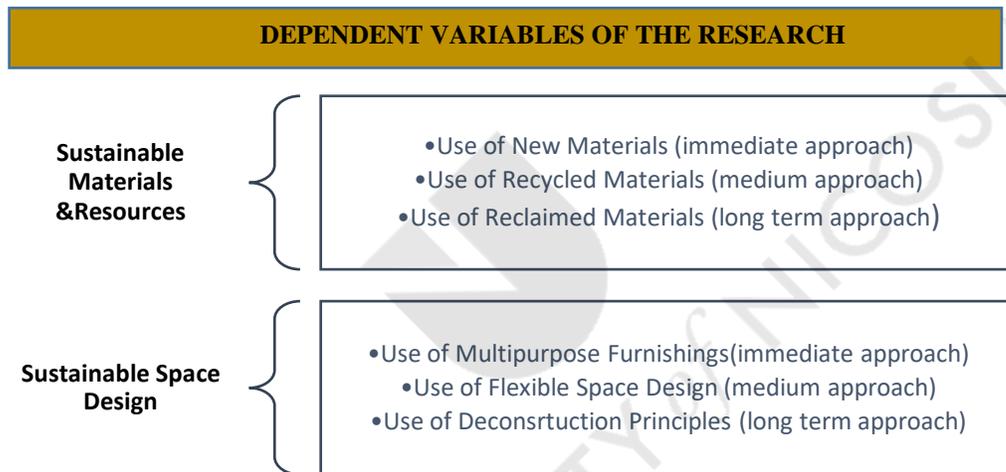


Figure 3.3: The dependent variables

3.5 Operational Definitions (Evidences to Be Measured)

The research generally considers the assumptions which govern attitudes and behaviours of stakeholders within the scope of an interior design project. Specifically, the changing behaviours of two groups of stakeholders, interior design professionals and clients. The proposed model is considered to be a methodological development articulating the potentials of action research in addressing challenges of sustainable interior design approaches. It builds on this experience to identify what would be important to address in further research that engages the

stakeholders of interior design practice. Fundamentally the model occurred through the combination of three foundations. These three basic foundations are: Foundation I: Kurt Lewin's Change Theory (Three-Step Model of Change). Foundation II: Krathwohl, Bloom, and Masia Taxonomy – The Affective Domain. Foundation III: Learning Approaches.

Commencing with the first cycle of the action research and Phase I, the first step of 'unfreezing' which is explained as creating a felt need for change, the main aim is to make participants receive and respond. Their behaviour description should indicate that they attend and react to a particular phenomenon and are open to experience, and willing to hear. The depended variable for this phase are all the sustainable practices relevant to sustainable materials.

The operational definitions (the evidences to be measured) of the variables of this phase according to the proposed model, are: 1) Participants' interest in the session, enthusiasm display, interest in learning, and 2) Participation and interest in the outcomes. The level of this interest is shown from all different data collection instruments and for the specific practices from questionnaire SEMEK 1 Part B2 for designers, PUBLIC 2 Part B2 for clients, question 5a from interviews and evidence 2 (Phase I) from observers' report. Continuing with the second cycle of the action research and Phase II, the second step of 'change', which is explained as changing values, approaches, and attitudes, participants' behaviour description should indicate that they attached values, expressed personal opinions and reported sustainable interior design practices as a dominant value. The depended variable for this phase are all the sustainable practices relevant to sustainable space design practices. The evidences to be measured (operational definitions) for Phase II are: 1) The participants' decision for worth and relevance of ideas and 2) Their experience and acceptance or commitment to particular a stance or action. The level of those is shown from all different data collection instruments and experience and acceptance from questionnaire

SEMEK 2 Part B3 for designers, PUBLIC 3 Part B3 for clients, question 5b from interviews and evidence 2 (Phase II) from the observers' report. Then, the third cycle of the action research and Phase III, the third step is to 'refreeze', which is explained as reinforcing outcomes of participants' attitudes towards sustainable design practices. Participants need to organise, internalise and characterise their values that mean to reconcile internal conflicts, develop a value system and adopt belief a system and philosophy. The depended variable for this phase are all the sustainable practices for both materials and design. For this, the evidence to be measured (operational definitions) are: 1) To state personal position and reasons, to state beliefs and 2) Behave consistently with personal value set. The level of this reinforcing is shown from all different data collection instruments and for the consistent behaviour with personal value set from questionnaire SEMEK 3 for designers, PUBLIC 4 Part B2 and B3 for clients, question 5a, b and c from interviews and evidence 2 (Phase III) from the observers' report. Figure 3.4 below demonstrates the operational definitions of all phases according to the proposed model.

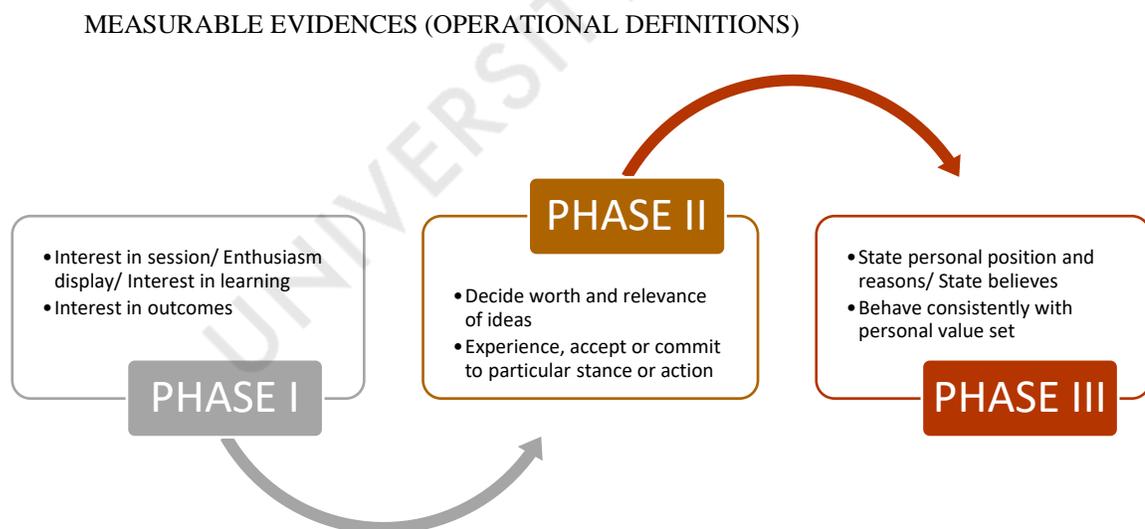


Figure 3.4: The operational definitions of Phase I, II, and III according to the proposed model

3.6 Research Instruments

Taking into consideration the literature on attitude measurement, a more detailed explanation about how questionnaires used in this research is presented below. The fact that these questionnaires has been tested through a pilot stage among the participants in order to take its final form is noted here. Further, this discussion will expand to consider the other data collection methods.

3.6.2 Questionnaires

For the collection of data and in order to study changes in attitudes and behaviour of participants, a questionnaire has been designed. The questionnaire was built by the researcher and has been tested during a pilot study before reaching its final form. Before the completion of the questionnaire, the researcher informs participants that the survey concerns interior design and will change practitioner's and client's understanding of sustainability, and identify barriers that will enable sustainability to be promoted among practitioners, clients, and public. Also, that this questionnaire is anonymous. Moreover, a consent form has been signed by all participants to ensure their agreement for participation in the research. The theoretical background for the construction of the questionnaire was based on the 'Position on Sustainable Design' by the American Society of Interior Designers (2005). Initially, during the pilot study, the questionnaire included nineteen questions and consisted of four parts. The first part included six questions on demographic data such as age, gender and studies. The second part included four statements on awareness of environmental and sustainable issues. The third part included six statements relevant to interior design practice. Seven of these statements where closed questions and participants needed to answer with yes, no or I do not know and three of them had more options. The fourth part included three open questions. This initial questionnaire was given to a team of 10 designers

and in its final form, to one-hundred-twenty clients. The team of participants had the same characteristics with the sample of the research in order to discover if there were any difficulties in understanding the questions and make amendments.

The final version of the questionnaire included three parts instead of four and had some differences between the two groups. The statements use the five-point Likert scale: strongly disagree, disagree, no opinion, agree and strongly agree.

3.6.2.1 Designers' Questionnaire (SEMEK1 and 2)

The designers' questionnaire included three parts as follow: Part A of the questionnaire provided demographic information. Part B, (the second and third part of the pilot questionnaire pulled together and form groups of questions (B1, B2, B3, B4) identified designers' behaviour on sustainable interior design practices and their suggestions on the issue.

Part B1 included statements that revealed designers' general behaviour and approaches to sustainable interior design practices, shows designers' acceptance or commitment to a particular stance or action and includes six statements:

Designers should create indoor environments that support occupant well-being and productivity.
Designers should advocate for sustainable use of natural resources
Interior design embraces protection of the natural environment
Sustainability should be an essential part of the interior designer's professional responsibilities
Interior design embraces social equity at local and global level
Designers should minimize the amounts of materials used

Part B2. This group included statements that are revealed designers' behaviour and approaches to sustainable interior design practices concerning the materials and products selection. These were the focus of Phase 1.

Designers should encourage the development and use of recycled products
Designers should specify renewable materials
Designers should encourage the development and use of reclaimed products

Part B 3. This part included three statements that revealed designers' behaviour and approaches regarding sustainable interior design practices during space design. These were the focus of Phase 2.

Designers should design multipurpose interior spaces (multipurpose furnishings)
Designers should design for maximum flexibility of spatial configurations
Designers should develop and implement a deconstruction plan

Part B4 included three more questions. The responses to these questions measured designers' decision on worth and relevance of ideas by indicating their willingness to continue and suggestions on how they want to engage themselves. Those questions are:

How important do you consider to be the provision of information on relevant issues from your association?
If workshops on the issue will take place in my area, I am interested in participating
Have you ever implemented sustainable design within your professional work?

Part C: Included questions on how the delivery of sustainable approaches could be promoted and encouraged, those questions are:

What is the biggest barrier to the delivery of sustainable interior design?
How can this barrier be overcome?
How do you think that designers can best be encouraged to implement sustainable design?
How do you think that the general public and clients, in particular, can be encouraged to select or seek out sustainable design solutions?

See Appendix B: Designers questionnaire/SEMEK 1 and 2.

3.6.2.2 Designers' Questionnaire (SEMEK 3)

This questionnaire included only the statements of the particular parts that question the behaviour of designers on sustainable practices. Part B2 and B3 of the initial questionnaire was presented to the participants on a hierarchy organisation chart in three illustrations in order to

select their favourite practices (See Appendix C: Designers questionnaire/SEMEK 3). First, designers were asked to consider which sustainable practices were more likely to apply during design choosing between space design, materials selection or both. Second, concerning sustainable space design, designers were asked to consider which level of practice were more likely to apply: immediate (multipurpose space design/ FF&E), medium (Flexible interior space), or long-term (Deconstructive space design). Third, designers were asked to consider which level of practice regarding sustainable materials were more likely to apply: immediate (Use of new materials), medium (Use of recycled materials), long-term (Use of reclaimed materials).

3.6.2.3 Clients' Questionnaire (PUBLIC 1,2,3,4)

For the collection of data and in order to study changes in attitudes and behaviour of client participants, a questionnaire has been designed and distributed among participant clients.

Questionnaire PUBLIC 1, collected clients' opinions before the action research began, PUBLIC 2 collected data after Phase I, PUBLIC 3 after Phase II, and PUBLIC 4 after Phase III. The clients' questionnaires have two parts. Part A of the questionnaire provided demographic information. Part B included statements that revealed clients' general behaviour and approaches to sustainable interior design practices,

The first, two statements revealed general behaviour and approaches to sustainable interior design practices as follow:

PART B
Sustainability should be an essential part of the design of interior spaces
I'm interested in living in a space that will protect health and environment

Then, six statements show participants' acceptance or commitment to a particular stance or action and included six statements. Three concerning the materials and products selection:

I'm interested in living in a space that makes efficient use of resources

I'm interested in living in a space that supports recycling of materials
I'm interested in living in a space that supports reuse of materials

and three on space design:

Interior spaces should be designed for multipurpose uses
The maximum flexibility of spatial configurations is important
Interior design should develop and implement a deconstruction plan

The other two statements of this part were on the clients' consideration on the role of the designer:

If I was to work with an interior designer, I am interested in an interior designer with knowledge and experience on the above issues.
How important do you consider to be the provision of information on relevant issues from interior designers?

See Appendix D: Clients questionnaire for PUBLIC 1,2,3, and 4.

The number of participant designers that answered the questionnaires were as follow: SEMEK 1. From the 54 questionnaires, 31 responses received (57%). SEMEK 2. From the 54 questionnaires, 21 responses received (39%). SEMEK 3. The questionnaire has been answered by all the 12 participants. The numbers of participant clients that answered the questionnaires were as follow: Public 1, from the 150 questionnaires, 125 responses received (83.3). Public 2. From the 125 questionnaires, 75 responses received (60%). Public 3. From the 75 questionnaires, 55 responses received (73%). Public 4. From the 55 questionnaires, 28 responses received (51%). The internal consistency Cronbach's Alpha for both the SEMEK and public questionnaires demonstrated very good as values >0.70 are considered acceptable (Cortina, 1993).

In conclusion, for this study, questionnaires were distributed to the participants before and/or after the interventions to gain data on the general trend for any change. It is believed that the use of questionnaires after each intervention is an appropriate method to measure the attitudes

of the designers and clients. This will support the diagnosis of one action research cycle before planning the next.

3.6.3 Observers' Reports

The qualities and the proposed role of observation as a method of data gathering in this research are considered. Robson (1993) writes that:

As the actions and behaviours of people are a central aspect in virtually any inquiry, a natural and obvious technique is to watch what they do, to record this in some way and then to describe, analyse and interpret that we have observed. (p.190)

During this research, the selection of observers was done among interior designers who were members of SEMEK who responded to a request for help as volunteers. They volunteered to report the actions through note taking in order to allow for issues to emerge from these observations. Nevertheless, guidelines were given to all observers. Henerson et al. (1987) point out the advantages provided by an outside observer's different viewpoint. They also refer to some limitations, such as the time needed to train observers and the inevitable discomfort that some people feel in having observers. Both of these disadvantages were minimalised in the case of this research. First, the observers were asked to come to a meeting in order to be informed about the research and they were given information to note their own views on the presentations. However, the context of the intervention was explained as well, to direct their attention to participants' behaviour, as these should be different in every phase.

Then, they also could briefly describe the context of the presentations. Additionally, they were asked to present the views of the participants as a group. The observers were also asked to write explanations about events occurring and questions asked during the specific time period of

the discussions. The observers were asked to necessarily report the specific behaviours according to evidence that should be measured in each phase.

During the actions/interventions, the observers came to the interventions earlier and were given the necessary explanations concerning the context of the intervention to direct their attention to participant behaviour that might otherwise be overlooked. All the observers were members of the association that was organising the interventions; therefore, the fact that one member was reporting the group was accepted by the participants as an expected fact. Table 3.6 presents the observer participation in the interventions and also presents the way the observation was reported, some cases only with note taking and some with note taking and recording.

3.6.4 Interviews

As far as the interviews are concerned, essentially two kinds of interviews took place as indicated by Oppenheim (1992):

- Exploratory interviews: their purpose is essentially heuristic – to develop ideas and research hypotheses rather than to gather facts and statistics. They are concerned with trying to understand how ordinary people think and feel about the topics of concern to the research.

- Standardised interviews: the purpose of the standardised interview in the typical large-scale survey is essentially that of data collection.

The interview as a method of collecting data has advantages and disadvantages. Interviews are a time-consuming method. In addition to that, the data that the interviewer selects may be affected by the characteristics of the interviewer themselves. For example, there may be an interviewer bias, where the interviewer, probably unwillingly, may influence the responses obtained. Papanastasiou (1994) believes that this can be avoided or at the very least minimised by choosing a more formalised interview. Robson (1993) points out that there is also a frequently

used middle ground, based on semi-structured interviews, where the interviewer has evidently defined the purposes but seeks to achieve them through some flexibility in phrasing and in the order of presentation of questions.

For this research, an exploratory interview during the pilot was conducted in order to assist the avoidance of any of the above problems. Further, all the interviewees, during the research, were prepared from before for the existence of the recorder, and they were also told that in case of any recording problems the interview might need to be repeated. In the case of this research, a formalised interview with some open questions was done face to face by participants of the interventions and that offered the possibility of modifying one's line of inquiry, following up interesting responses and investigating underlying motives in some cases.

The interview questions included the following levels: The first level deals with the participants' response. The second level deals with learning and to what extent the participants' experiences change attitudes, skills or motivation. The third level has to do with the behavioural change as a result of the intervention and a fourth level that deals with how the outcomes changed as a result of the intervention (Chang and Young, 1999).

Nevertheless, the interviewee was asked to comment on all the parts of each question in order to allow measurement of the impact of the interventions. The reason why interviews have been selected to be added as an instrument to gather information for this research is to allow a more in-depth understanding of the participants' changing attitudes.

Interviews of the stakeholders were conducted after each phase in order to report any trends among participants' behaviour, ensure the validity of the results and enable evaluation of the interventions and how these affect the stakeholders' attitudes towards interior design sustainable practices. Eight clients and eight designers have been interviewed after every phase of

the action research. The interviews gave the participants the chance to reflect on the issue of sustainable space design practices as have been presented, explained and discussed during the intervention. The interviewees were asked to comment on interventions that were based on the presented model, in order to allow the measuring of its impact to the participants' behaviour. (Appendix E: Interview questions).

All the data collected from these interviews have been recorded and then transferred on interview transcripts. Then the responses from interviews have been all considered and analysed in terms of the content of responses. Those have been considered and combined as initial coding categories according to the evidence that has been set to be measured during each phase. This last step lead to the final coding categories, according to behaviour description.

Moreover, a total of fourteen people who did not participate in the interventions have been interviewed. Participants were selected through purposeful sampling. The technique of purposeful sampling was chosen in order to ensure that participants would be able to inform the central research questions due to their direct, personal experience with the phenomenon being researched (Creswell, 2007). The phenomenon researched in this study is the application of sustainable interior design practices. Potential participants were identified based on the fact that they received the information on sustainable practices but did not join the interventions, were previously unacquainted with the researcher and located in Cyprus; those were identified as potential subjects. For all interviews each potential participant was initially contacted through an email which included an explanation of the intended research, an invitation to participate as a subject in the research, and the researcher contact information. Each potential participant was asked to respond to the invitation email, provided he or she was willing to participate in the study. Those who responded with a willingness to participate were selected as participants. Each participant

was then contacted with a second email. The second email included an informed consent form, and instructions regarding times, dates, and locations convenient to the participant for the purposes of scheduling an interview. In all cases each interview was conducted individually in order to prevent potential social desirability bias. The majority of the interviews were conducted in the afternoon and in public spaces such as a restaurant or coffee shop. All the interviews were conducted by the researcher. Moreover, the interviews were reported through the use of recorder. The interviews were recorded on audiotape in order to be transcribed at a later stage and in order to diminish the disadvantages of the method. Recording give the fullest possible data but involve considerable time for the transcription. The responses were recorded on a recording device and transcribed and coded at a later stage. All of the interviewees were in agreement with the proposed interview process and some even asked to hear their recording afterward.

3.6.5 Case Studies

The research presents case studies to show what has been done in the period of time available for the study. As Tellis (1997) writes: case studies are designed to bring out details from the viewpoint of the participants by using multiple sources of data. Case study research can be based on single – or multiple – case studies, while each case study can in itself also be exploratory, descriptive, or explanatory. A single case study focuses on a single case only, multiple case study based research, however, includes two or more cases within the same study. These multiple cases are selected so that they are replicating each other – either exact (direct) replications or predictably different (systematic) replications. Multiple case studies may be used when evidence from more case studies is more compelling; moreover, the replication corroborates, qualifies and/or extends the findings of the first case(s.)

This research will be based on multiple case studies (eight), as those derived during the interventions. To conclude, explanatory case studies can be employed to explain phenomena and have been employed here to explain occurrences among stakeholders. The research presents a number of case studies and explains how stakeholders used the new knowledge that was promoted during the action research. During the action research, a number of case studies focused on sustainable interior design projects which germinated after the promotion of the various sustainable practices among the stakeholders (designers and clients). Those case studies show in what ways, and how much, the interventions affected the promotion of the sustainable practices. According to Yin (1994), four stages exist for a case study, namely: design the case study, conduct the case study, analyse the evidence and develop conclusions, recommendations and implications. The involvement of the researcher in the case studies was to collect and receive data, to analyse the evidence of the cases and to develop conclusions. The case studies are based on documents and drawings given by the interior designer who undertook the specific case: the proposed solutions to these interior projects have been planned carefully by the participating designers. The findings from each of these case studies are summarised – a summary table links to the related space design and materials practices selected. As Patton & Appelbaum (2003) note: “the ultimate goal of the case study is to uncover patterns, determine meanings, construct conclusions and build theory” (p.67). This has been achieved by analysing the case study evidence and developing conclusions. The presentation of the case studies aims to prove objectivity to the results of the actions /interventions as they stand as real cases. Table 3.6 below presents questionnaires, observations and interviews completed at each phase of the research as well as the case studies presented from designers; and the number of participants that jointed the interventions as well as those that received the new information through their email but didn't join the interventions.

Table 3.6:

Data collected method & number of participants at each Phase

Phase of Research	DATA COLLECTED METHOD & NUMBER OF PARTICIPANTS		
	Participating Groups		
	Interior Designers	Clients	
PHASE I DATA COLLECTED METHOD	INTERVENTION 1		INTERVENTION 1
	Online Questionnaire for Cyprus Designers Association (SEMEK1) Participants 31	Questionnaire for Clients (PUBLIC 2) Participants 75	
	Observer Notes*	Observer Notes*	
	Interview Recording** Participants 8	Interview Recording** Participants 8	
PHASE II DATA COLLECTED METHOD	INTERVENTION 2		INTERVENTION 2
	Online Questionnaire for Cyprus Designers Association (SEMEK 2) Participants 21	Questionnaire for Clients (PUBLIC 3) Participants 55	
	INTERVENTION 3		Observer Notes*
	Questionnaire for Cyprus Designers Association (SEMEK3) Participants 12	Interview Recording ** Participants 8	
	Observer Notes*		
	Interview Recording** Participants 8		
PHASE III DATA COLLECTED METHOD	EXHIBITION: INTERVENTION 4 FOR DESIGNERS/ INTERVENTION 3 FOR CLIENTS		
	Observer Notes*		
	Interview Notes + Recording *** Participants 7	Interview Notes + Recording *** Participants 7	
		Questionnaire for Clients (PUBLIC 4) Participants 28	
	Case Studies Presented		
	Larnaca Pub/Restaurant Semi-detached House Small Detached Studio	Limassol Shop Detached House	Nicosia Home /Office Two-BDRM Detached House Apartment
	Interview [Recording]** From 7 Non Participants		Interview [Recording]** From 7 Non Participants

*: Hand notes have been produced. **: Voice recorder has been used. ***: Both hand notes and voice recorder have been used.

3.7 Pilot and Preliminary Study

In order to achieve the objectives of the research, an exploratory action research was applied at the beginning. This approach was selected as there are no earlier studies to fit exactly the requirements of this research and to which references can be made for information. The main purpose of the exploratory research is to look for patterns, ideas or hypotheses rather than to test or confirm a hypothesis. This view is supported by Singh (2007) when he notes that “exploratory research is the initial research, which forms the basis of more conclusive research. It can even help in determining the research design, sampling methodology and data collection method” (p.64).

Moreover, this pilot work includes both the investigation of the new knowledge that should be promoted and the way of involvement that should be applied. Besides, as Savvides (2012) notes: For effective citizen participation to take place possible development approaches may be outlined and analysed and the reasoning behind them clearly outlined to the affected communities so that a preferred strategy may be established for a clear framework to emerge. (p.714)

This is important as this research aims to promote high involvement and greater knowledge for stakeholders and therefore, according to the ‘Elaboration Likelihood Model’ (ELM) of Petty and Cacioppo (1986a) it will establish a central route of persuasive influence. During this study it is intended that participants, both designers and clients, will have the chance to process information through two routes: motivation/involvement and ability/knowledge. This intention is in agreement with Harris and Blackwell (1996) who supported the concept that interventions must be carefully designed to enable change and that merely acquiring the requisite information is not sufficient to effect change. Therefore, in our case, stakeholders – designers and clients – should consciously be engaged in the process and should be given help to perform as desired according to ELM, in order

to obtain lasting behavioural change towards sustainable design practice. The Figure below shows that both routes of the information process will be considered.

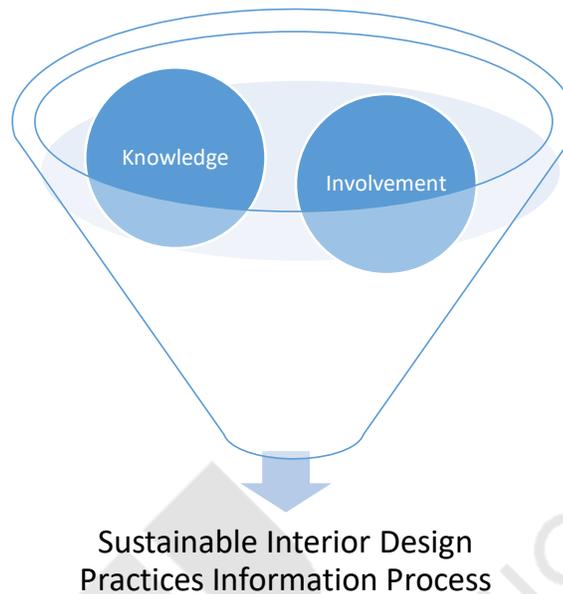


Figure 3.5: Sustainable Interior Design Practices Information Process

The following part describes the pilot study that includes two actions: A scoping discussion with designers and a preliminary intervention with clients. After every action the participants gave their feedback on the relevant issues. The feedback was given through observers' notes and through questionnaire responses. The observers were members of CYIDA who volunteered to observe and collect information via written notes.

3.7.1 Pilot Intervention: Diagnostic Work with Clients

This first diagnostic intervention with a number of potential clients refers to a presentation entitled “Innovative Interior Spaces”. During this presentation two themes were presented in order to facilitate the participants’ understanding of the importance of interior design projects semantics and potential contribution to sustainability. The first part explained the relationship of interior space

with environmental issues and sustainability through literature but also through many examples. The second part presented a methodical process of design that has been used for a specific project. This presentation also facilitated the understanding of the participants on the decisions that one should take at every step of the process and that sustainable practices can be applied at a lot of stages. Before and after the presentation and discussion, participants answered a single question concerning their acceptance of having pieces of furniture made from recycled materials in their homes. Further to the answers given this question, an observer reported his/her own remarks for the action taken. About using pieces of furniture made from recycling materials three participants had neutral positions, three said that they liked the idea a little and two did not like the idea of using pieces of furniture made from recycled materials in their homes. The rest said that they liked the idea. After the presentation the specific persons that did not like the idea shifted their opinion to like it a little, and the rest responded that either they liked it or they liked it a lot. The figure below shows that there was a positive shift towards clients' positive opinions (excellent idea, I like the idea a lot) after the presentation.

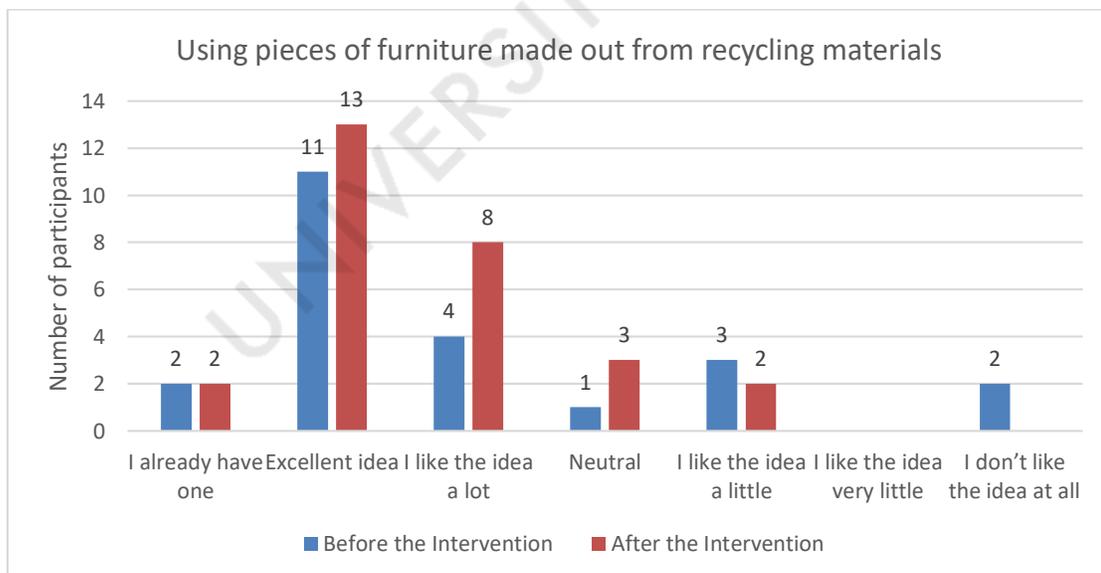


Figure 3.6: Clients' Pilot Question

Moreover, the observers noted that during the intervention the participants were introduced to the thematic of sustainable interior and the issue was discussed. According to the observer, the discussion revealed that almost all of the participants asked for more information on the issue of sustainability and they were looking for new approaches and new solutions on the issue. Furthermore, it is noted that, a lot of them supported the use of pieces of furniture and relevant practices from specific designers, retailers and builders. They would be more than willing to use and employ them in their projects. As is noted, a participant asked if he can find some shops that sell pieces of furniture from recycled and reclaimed materials. Also another participant asked if designers are ready to offer their clients the kind of services that will enable a sustainable design approach to the interior space. Observer notes show that potential clients are willing to use sustainable practices but they are not aware how and from whom they should be informed about them. This is in agreement with the comments made by designers during the scoping discussion, that clients are not aware of the existence of the association as an association that could provide them with the relevant information on the issue. This maximises the need for a well-thought-out and a well-organised way to promote sustainable practices through the association.

Moreover, concerning clients, a questionnaire (PUBLIC 1) was distributed among 125 participants. The questionnaire was planned to measure clients' attitudes on more specific sustainable practices in order to evaluate their opinions. This first questionnaire measured the opinions of the clients before the first intervention and were distributed among clients.

3.7.2 Pilot Intervention: A Scoping Discussion with Designers

The first meeting among interior design professionals was made to initiate an open dialogue among designers. The meeting presented the opportunity for a first scoping conversation between the designers themselves and the researcher to discuss the theme of this research. The presentation

of a paper 'Methods and Tools for Sustainable Design' (Ioannou Kazamia, 2008) to the designers initiated discussions among participants and prepared the ground for more in depth analysis of sustainability practices in interior design during the main research. The way that the designers were involved in this process is described below. The chair to this open discussion was the president of the council of the association. Holding this position, and in agreement with the researcher, the chair guided and structured the discussion as follows: First, she welcomed and asked for feedback/comments on the associations' policies and procedures and second, asked for designers' opinions/comments on the research thematic/sustainability practices in interior design. Therefore, designers that are working in different regions on the island and are active professionals gave feedback to the researcher through a discussion on the issue, during which notes were taken by an observer and a preliminary questionnaire was distributed.

The observer made notes on the association's policies and procedures, and as she attended discussion from the beginning, she noted that complaints were heard, as a small group of four designers claimed that the association was not as active as it should be. The observer also noted that during the discussion about the first issue on the lack of policies and procedures in general, it was revealed that designers were all looking for ways to improve their services and achieve success, as other allied professionals did and they felt that the association could do more to promote the profession. Further, is understood from the notes that some members of the association would like to see more action to be undertaken by the council and also that a lot of designers agree that the status of the association lacks prestige and designers should demand more from their association. The council members on the other hand, according to the observer, pointed out that actions are taken but there is not enough response on behalf of the members. This viewpoint was supported by other members. From the discussion we can realise that a lot is expected from the members and that they

should be given something efficient in order to uplift the association's status and make them feel that is worth working towards a common aim within the association.

About designers' opinions/comments on the research thematic, namely the sustainability practices in interior design during this meeting, the researcher explained that sustainability entails environmental, social and economic factors and interior design should take these factors into consideration in order to have a sustainable approach to interior projects. Further, the researcher briefly explained that the actions proposed will illuminate the different aspects of sustainable interior design and will promote specific practices and approaches. The observer noted that while attending the discussion from the beginning, there was clear indication of a positive climate during the discussion regarding the issue of promoting sustainable practices.

She notes that from the relevant comments and reactions it is indicated that future actions should be planned according to the needs of the members. An agreement on the specific themes that would be of benefit of all members, the possibility to secure at least some participation from members and to offer the opportunity to participants to communicate among them should be considered. For the professionals, their ability to work with clients and be able to satisfy clients' needs was clearly the area of their professional lives that was causing the most concern. In a way, the designers suggested that it is essential that they become informed about sustainable practices but they doubted if the association will manage to find the way to do that in a manner that will be advantageous and thoughtful as a guideline for professional designers to follow and make a distinction from people who are not professionals.

The observer also noted some complaints on behalf of the participants that could be the initial trigger for sustainable practices to be promoted by recording the following: first the importance of

the role of the association in delivering information and new knowledge to its members and second, the need to ensure the way and the degree of designers' involvement.

These conclusions helped to develop the main study. With regard to the first parameter during the next interventions for professionals it is important to stress the fact that as professionals we have to continually get informed on new trends and gain knowledge on new developments in the discipline. Through the next presentations/interventions the researcher should provide many points to explain sustainability and the meaning of sustainable practice in interior design with examples and well-presented projects so as to attract the attention and the interest of the participants. It is then wise to continue with specific interventions that will explain, give examples and then proceed and call for workshops to make more specific references to sustainable practices. With regard to the second parameter – the issue of participation in events which is always limited – it should be considered that different and assorted ways are needed to implement the interventions in order to attract as many participants as possible. This understanding supports the suggested theory of affective learning that gradually offers participant, the chance to receive values and adapt to a new system.

Therefore, as designers supported the view that designers should be able to offer design solutions towards sustainable living in a way that will facilitate today's needs and clients' expectations, the research should elaborate the ways in which good practices should be promoted through the association, among designers and other stakeholders, which should be planned and presented in a well-organised manner. As noted by the observer, participants supported strongly the promotion of sustainable practices. From the observers' notes it seems that they concluded to agree with the promotion of sustainability practices through the association (CYIDA). As Bennett (1983) writes, to change successfully, there has also to be a 'felt-need'. 'Felt need' is an individual's inner

realisation that change is necessary. If 'felt need' is low in the group or organisation, presenting change becomes problematic. Moreover, the theoretical foundations of action research lie in Gestalt psychology, which stresses that change can only successfully be achieved by helping individuals to reflect on and gain new insights into the totality of their situation. Therefore, persuading designers that they need to be involved and respond to today's challenges in the profession should be done in a step by step process that will be carefully planned. A felt need for change should be communicated to all members as an initial step, then change could be planned and designers should be engaged in the process, and finally action that could offer stability to the new situation can be obtained. The understanding from this first action supports the structure that is proposed. An action research based on Lewis's Three-Step Model and the theory behind it which is the Lewin's Change Theory for bringing about this particular change.

3.8 Data Analysis Approaches

Three phases were involved in the proposed methodology. In order to identify if and when any change occurred, a number of research instruments have been used to check the trends in the stakeholders' attitudes. This longitudinal research and data gathering of information facilitated the report of any possible trends. Using multiple measures, in reality, increased validity and pairing qualitative and quantitative methods obtained a complete picture of the phenomenon of interest. Moreover, using both qualitative and quantitative methods in sequence, and for each phase, facilitated the examination and categorisation of evidence obtained from each phase of the research. Quantitative methods of data analysis were of great value to this research that was attempting to draw meaningful results from a body of qualitative data. The main beneficial aspect was that quantitative methods provided the means to separate a large number of factors that obscured the main qualitative findings. Let us take, for example, the pilot study of the research

that should report and find out how much knowledge, awareness, and willingness the stakeholders had before their involvement in the research process. Scoping discussions with a number of focus groups gave rise to qualitative information. Yet the fact of the stakeholders' place of residence, education, behaviour on sustainable issues etc. required some degree of quantification of the data and a subsequent analysis by quantitative methods.

3.8.1 Way of Data Analysis

For the data analysis, both quantitative and qualitative methods were used. The statistical analysis of the data collected from the questionnaires analysed in SPSS v.21 and charts were constructed in MS Excel 2013. The statistical significance was set to 0.05. The qualitative data analysis was done according to the measurable evidence of categories of the affective domain (Krathwohl, Bloom, & Masia, 1964). Namely for Phase I: 1) Interest in Session, Participation and Interest in Learning; 2) Interest in Outcomes. For Phase II: 1) Decide Worth and Relevance of Ideas; 2) Experience, Accept or Commit to Particular Stance or Action. For Phase III: 1) State Personal Position, Reasons and Beliefs; 2) Behave Consistently with Personal Value Set. Additionally, the interviews were concluded using a deductive approach and the observations using a coding for the observation notes. This method is based on a predetermined framework-the formerly mentioned levels- therefore the pre-existing theories and foundations are tested through the measurable evidences, namely the operational definitions.

3.8.1 Step by Step Process of Data Analysis

In order to make sense of the large amount of data generated, the analysis of the data from this qualitative research study consisted of examining, categorising and combining evidence obtained from the research. All this is concerned with the organisation and the interpretation of information gathered, including the information generated from the quantitative research

(questionnaires) in order to discover any important underlying patterns and trends. Once such quantifiable components of the data were separated, attention focused primarily on group analysis of the qualitative data. As suggested by Ritchie and Lewis (2003), the first way in which group data can be analysed, and is most commonly practiced, is the whole group analysis which treats the data produced by a group as a whole without defining individual contributions. The group, therefore, becomes the unit of analysis and will be treated in the same way as a unit of individual data. The analysis then can include group interactions or the balance of individual contributions. In an open coding, the data collected, distributed into sections/groups adapting to the deductive approach and then examined for commonalities that could reflect categories or themes. As the data is categorised, they are observed for properties that describe each category. The researcher then examined and identified similarities and differences between the notes. In this way, similar comments are grouped together to form the categories. So basically, following an open coding as a process of reducing the data to a small set of themes that appear to describe the phenomenon that is under investigation. Further, attention to characteristics that are of a more individualistic qualitative nature come to focus as well as those derived from the interviews with designers and clients. The interviews are repeated after the end of every phase and the data is treated in a way in which can be constantly compared throughout the research study by means of interconnecting the categories. Then attention is focused on the case studies presentation where designers and clients worked together and produced results for this research by their own initiative. This data is the final step of the analysis.

3.8.2 Reliability and Validity

Dick (1997) notes that you can better assure that your data are valid if you use varied informants, several different methods, and different ways of asking the same question, and so on.

Comparison between them provides part of the check on their adequacy. Validity of measurement can also be checked by triangulation. As Thompson (1999) notes the triangulation refers to measuring an event using at least two dissimilar data gathering techniques. The greater the number of techniques used which propose the same conclusions, the greater the confidence which can be placed in the validity of those conclusions. Concerning this research, the assurance of validity occurred by using both qualitative and quantitative methods to gather the data by conducting interviews, questionnaires and observations with subjects from two different groups after every phase of the research. Further, by constant comparison throughout the research study by means of interconnecting the categories of the depended variable for each phase with the specific evidence in accordance to the proposed model.

Moreover, Ritchie and Lewis (2003) write that, “Reliability is generally understood to concern the replicability of research findings and whether or not they would be repeated if another study, using the same or similar methods, was undertaken” (p. 270). As these authors also explain, seeking reliability in qualitative research is often changed by terms that are felt to have more meaning with the aims and values of qualitative research. For example, Robson (2002) talks about ‘consistency’. Also, Bell (1993) writes that, “The check for reliability will come at the stage of question wording and piloting of the instrument” (p.103). The reliability of this research has been secured as a number of precautions were taken to ensure that the survey instruments were reliable. This has been achieved by testing the questionnaire with a sample group from both groups of stakeholders; by repeating the questionnaires, interviews and observations after every phase and also, by testing that both the SEMEK and public questionnaires demonstrated very good internal consistency. Table 10.1 shows internal consistency reliability for the questionnaires of all phases, as values >0.70 are considered acceptable (Cortina, 1993).

Table 3.7:

Internal Consistency Reliability for the Questionnaires of All Phases

Phase	Cronbach's Alpha	N of Items
P1	0,865	10
P2	0,884	7
P3	0,883	8
P4	0,915	10
Semek 1	0,801	13
Semek 2	0,846	13
Semek 3	0,701	6

Furthermore, Denzin (1984) identified four types of triangulation: data source triangulation, when the researcher looks for the data to remain the same in different contexts; investigator triangulation, when several investigators examine the same phenomenon; theory triangulation, when investigators with different viewpoints interpret the same results; and methodological triangulation, when one approach is followed by another, to increase confidence in the interpretation. For this research, different types of triangulation ensued: first the data source triangulation as the data examined within different contexts, for example, the different interventions (independent variables) among clients and designers; second investigator triangulation, with several investigators (interviewer and observers) examining the same phenomenon; and third methodological triangulation as both qualitative and quantitative methods used. Additionally, with regard to case studies, Yin (1994) listed six sources of evidence for data collection in the case study protocol: documentation, archival records, interviews, direct observation, participant observation, and physical artifacts and he writes that not all need be used in every case study. In this study,

documentation, and physical artifacts are relevant as sources for the case studies presented. By employing the above, it was possible to secure the reliability and validity of the research results and adapt a methodology that served the specific objectives of the research.

3.9 Process of Carrying Out the Research

In this part, the process of carrying out the research is described in a timely manner considering the three cycles of action research. Before this, a pilot work was completed in order to assess the existing position on sustainable issues among stakeholders. Results from the pilot provided a platform for the research that helped to plan further actions in order to promote the delivery of sustainable practices. After the pilot study, the research continued, with the three different phases. According to the elaboration likelihood model of Petty and Cacioppo (1986a), in order to achieve effective change, the sustainable interior design practice information process should include the delivery of new knowledge and the involvement of the stakeholders. Within this study framework and in order to enable behavioural change, a series of interventions were scheduled. Over a period of three years, sixteen interventions were organised to explore what sustainability can do for the interior design practice, and to enable the sharing of opinions on what it is like to use new approaches while practicing, and how these approaches and practices can be implemented. The interventions took place in a sequence and they were scheduled within three phases in order to accommodate the three basic steps of the adapted change model (Three-Step Change Model, Lewin, 1943). Therefore, during this period of time, the stakeholders received, responded, valued and organised ideas and therefore responded on the issue of sustainable interior design by using different learning methods and developing those attitudinal characteristics and values which are appropriate to the field of this study. The series of interventions are presented

below following the model and the three phases of action cycles. The interventions are explained in the form of an action research through planning, taking and evaluating action.

3.9.1 Phase One

This part explains the action research cycle of Phase I and begins with introducing the way that the three foundations were reflected upon in the proposed model. This includes:

- **Foundation I: The unfreezing step, as a first step towards change**
- **Foundation II: The receiving and responding as a first step towards affective learning**
- **Foundation III: The traditional delivery of learning using IT, as well as experiential learning, were applied as learning methods**

Starting from this first phase, the aim was to create a felt need for change, and when this is achieved, it challenges participants to ‘unfreeze’ their attitudes towards the achievement of the promotion of sustainable design practices. The above foundations were pooled together to facilitate the first step of unfreezing stakeholders’ attitudes towards change. In order for that to happen the participants were involved in activities that enabled them to acknowledge the benefits of sustainable practices.

3.9.1.1 Designers’ First Intervention

During the planning of the action, the first intervention for the designers planned to be held during a general assembly. A lot of designers would, for the first time, have the chance for an immediate communication with the presentation theme, namely sustainable design, to take part in research that was looking upon different aspects of their practice, and to make time for learning.

The first intervention was planned to present the intention of the study to the body of professional interior designers. During this first step, the unfreezing stage, it was programmed to communicate, the need for change and the benefits of change to the professionals. That was important in order to explain the plan of the action research and to give details for the planned interventions, identify professionals whose commitment is essential and assess the present level of commitment on the issue under study, and also to explain to the participants the expected outcomes. In order to achieve this, it was decided that during this intervention, we should introduce: a) sustainability and the importance of sustainability in the interior design practice b) the various ways that the interior design practitioner can participate in this process according to the International Federation of Interior Designers and c) examples from existing projects that incorporated sustainable approaches during design practice so as to be able, later, to discuss and critically compare with conventional design work.

Also, at this level of the first intervention, it was planned to ask participants to be aware of the fact that sustainability, when considered in an interior design project, has the potential to increase its value and indicate a more professional up to date standing of the practitioner. That specific point was also raised by designers during the pilot stage and it is a rewarding asset for designers. Therefore, the participants were about to receive the information with the traditional delivery of learning but also the information was about to reach the members of the association through email and moreover to be uploaded to the website of the association of designers. Further, designers were free to send their inquiries through email if they wished to do so. Following the planned presentation, there was to be an open discussion, questions and clarifications, the designers were given the chance to listen to others and also listen to and remember newly

introduced terms and practices. Likewise, through the discussion they had the chance to react and participate actively in the change process.

Therefore, taking the action included the first intervention for designers that happened during the general assembly of the Cyprus Interior Designers Association SEMEK/CYIDA and included a presentation and a discussion. This took place in Nicosia, Cyprus on the 28th of May 2011 with forty-eight participants. Those were the 89% of the total membership of the organisation. The intervention lasted two hours and all participants at the general assembly participated. The intervention started with a presentation, the researcher provided information about the research. This information was also distributed to designers' e-mail accounts, to all the members of the association and included: The goal, which is to promote and deliver sustainable interior design in Cyprus, the need to provide a base for the development of a strategy and the necessity to realise the place and importance of sustainable issues in the practice of interior design and to consider the way in which interior designers, through their work, can enhance sustainable development in general and sustainable interior design in particular. Moreover, it was important to explain and explore the meaning of sustainability and sustainable interior design as it is presented by international organisations such as the World Commission on Environment and Development (The Brundtland Commission) and the International Federation of Interior Designers (IFI) and as the latest state, interior designers “practice their profession with highest regard for engaging the world’s economic and natural resources in a sustainable manner (IFI, 2011).

The presentation moved on to discuss a series of issues that are related to sustainability and the interior design practice again according to findings from literature. Those are: Sustainability and materials, with examples of the three specific practices namely: New materials

(immediate term approach); Recycled materials (medium-term approach); Reclaimed materials (long-term approach). Further, during this first intervention, the close connection of some environmental issues and how they are connected with interior design was presented. Two of those issues were further explored and discussed: the tropical deforestation and the waste consumption. It was explained for example how the strong demand in Europe, North America, and Japan for tropical hard woods, is met by forestry practices which are not sustainable. Suggestions for sustainable design decisions have been made, for example, the simple design decision not to specify any tropical woods, unless it can be proved that it is produced in a sustainable way. Finally, a series of examples of sustainable practices and approaches were presented. At this first intervention, it was considered to be very important to present examples of different projects in order to attract the participants' attention to the various aspects and the broad spectrum of the different design applications of sustainability into interior design practice. Examples included: The employment of recycling materials, the rescuing of existing spaces and their reuse and the design processes and methods of an object that has been designed taking into consideration the undertaking of life-cycle assessment.

All of the above was presented to the designers in order to be given the chance to listen, to take notes, to participate actively in discussion, show their enthusiasm for action, question and probe ideas. After the presentation, that lasted 38 minutes, a discussion followed. The discussion lasted for twenty minutes and it was a discussion in which 14 of the designers participated. From those 14 some were more involved in the discussion and some just declared their agreement with what was said. After this intervention the following behaviour description was obvious: Participants indicated that they attended and reacted to a particular phenomenon and that they were open to experience, and were willing to hear.

Concerning the evaluation of the action, the instruments used included:

The SEMEK 1 Questionnaire that was the first questionnaire distributed to the designers online, through Kwiksurveys.com after the intervention, on the 30th May 2011 and professionals had access to respond within a period of two months, until the end of July 2011. Further, a reminder was sent through Kwiksurveys.com on the second of June. The questionnaire was sent to all 54 members of the designers' association and 30 responses were received. This number indicates a response rate that is up to 55% considering the numbers of valid responses and the invitations sent. The observer notes where the observer was asked to come to the intervention earlier and was given the necessary explanations. The notes of the observer have been submitted to the researcher in the form of diary notes for the analysis. The interviews with the designers that were conducted after each phase among eight participants.

3.9.1.2 Clients' First Intervention

The planning of the action for the first intervention for clients; a workshop, was planned and took place in four different districts of the island after the approval of the proposed workshops by the Youth Board Organisation. This was decided in order to make it easier for clients to attend; the participation would be facilitated as the meetings were separated between various districts in order to facilitate easy transportation. Arrangements were made as far as the dates and the places for the workshops were concerned and an announcement was sent through the website and through the mailing list of the Youth Board Organisation. A limited number of printed A4 announcements (Appendix H: Invitation for Clients Interventions) were pinned-up in the organisation's premises. We needed to arrange a good learning environment as the workshops incorporated presentations, group and individual discussions as well as hands on work to facilitate experimental learning.

During the action, the interventions were offered to clients' in different towns in Cyprus in order to assist individuals' participation. In Larnaca on the 31/03/2012 with 37 participants, in Nicosia with 14 participants, then Limassol on the 28/04/2012 with 12 participants and Paphos on the 12/05/2012 with 14 participants. In total, seventy-seven individuals participated in these workshops. The first intervention started with a small welcome address and advice on how to complete the questionnaire. Further, some explanations concerning the context of the workshop were given. That was followed by the introduction of all members of the group. Then a member of the interior designers' association collects the completed questionnaires and submitted them to the researcher for analysis. Then, a power point presentation has been presented in order to introduce the participants to some general terms and to the importance of the materials selection during the realisation of any interior space.

The context of the presentation followed this structure: 1. Interior designers working scope; 2. Sustainable interior space; 3. IFI (International Federation of Interior Designers); 4. Sustainability and materials with examples of the three specific approaches namely: New materials (immediate term approach); Recycled materials (medium-term approach); Reclaimed materials (long-term approach). After the presentation, a very interesting structured discussion started. The discussion was initiated with some questions posed by the researcher in order to see if the context of the presentation created any queries. Working in a cycle, the discussion offered the opportunity to all the participants to express their views on the subject, to refer to any experience relevant to interior space and materials. All the attendees were encouraged to participate in the main part of the intervention, the workshop, which was based on experiential learning and in which the participants were asked to make an object out of recycled materials. They did this with the help of the researcher and volunteers from the interior designers' association. All the

participants produced an object for their own use. Objects were produced from recycled materials such as aluminum cans, cork, paper etc. All the participants were glad to take it home with them. After this intervention, the following behaviour description were be obvious: Participants indicated that they attended and reacted to a particular phenomenon and that they are open to experience, and are willing to listen.

Concerning the evaluating of the action the instruments employed were: The PUBLIC 2 questionnaire which was distributed to the participants after the intervention. After some given guidelines for the completion of the questionnaire, all participants placed the completed questionnaire in a box at the front desk. The researcher received the questionnaires in the box to proceed with the statistical analysis. Seventy-seven clients /participants responded to the questionnaire and responses were received. This number indicates 100% response rate limited by some questions where invalid responses were received. The observer notes were taken by a member of the designers' association who, was asked to come to the intervention earlier and was given necessary explanations. The notes of the observer were submitted to the researcher in the form of diary notes for the analysis. The interviews with clients were conducted after the intervention with eight participants. During the interviews notes were taken and a tape recorder was also used. The interviewees were prepared from before, and told they would be recorded were also told that in case of any recording problems the interview might need to be repeated.

3.9.2 Phase Two

This part explains the action research cycle of Phase II. During this phase, individuals from both groups of stakeholders joined the interventions. Two interventions prepared for the interior designers, and one more for the second group of stakeholders, the clients. During this

phase both groups of stakeholders joined the interventions and the emphasis throughout the interventions reflected on the foundations of the research as follow:

- **Foundation I: Change as a second step towards change of attitudes and behaviours**
- **Foundation II: Value the new Behaviour as a second step towards affective learning**
- **Foundation III: Traditional delivery of learning using IT, as well as collaborative and problem based learning applied as learning methods during this phase.**

The planning of the research design cycles is described below, following the stages of the project through the four cycles of diagnosis, planning action, taking action and evaluating action. The interventions included activities that could allowed to criticising as well as share relevant issues in the context of the various different interior design projects. Also through collaboration with others and by being informed on how other professionals are acting. Participants had the chance to accept or commit to a specific stance or action, then participants could attach values and express personal opinions and therefore could ‘change’ their attitudes towards design practice.

3.9.2.1 Designers’ Second Intervention

The planning action for a second intervention was suggested to be a seminar on build environment and sustainability that should be addressed to all interior designers and should also be open to other allied professionals of the construction industry. The plan was that we should offer professionals the chance to change by having access to information on the issue of sustainable interior design practices, through a seminar. This seminar should include the various

aspects of sustainable design and indicate the different approaches that one can develop during practicing. The designers should be facilitated to accept the importance of sustainability issues and be able to recall and classify specific design problems according to sustainable design principles/guidelines. Therefore, it was planned to offer designers a holistic approach to the issue following a traditional delivery of learning and some use of information technology. This included presentations on relevant issues and also the promotion of relevant information through information technology, for example the association's webpage and/or social media and designers' e-mail accounts. In order to achieve the above, it has been decided that during this intervention the importance of sustainability in the interior design practice has to be stressed with the various presentations that will point different observations, practices and applications of sustainable design including allied professions. This was also done in order to encourage interior design practitioners to recall, label and interpret and therefore activate affective learning. More specifically the seminar with the general title 'Build Environment and Sustainability' planned to include four presentations: 'Green House -the Interior'; 'Zero Energy Building –a Case in Cyprus'; 'Interior Design and Sustainability'; and 'Buildings –the Use of Daylight'.

When taking the action, the second intervention for designers was organised on the 3rd of December 2011, at the Journalist House in Nicosia, Cyprus, for all interior designers. It was open to other allied professionals of the construction industry. A total number of eighty designers and other professionals of the construction industry attended the event. Some retailers were also present and supported the event. It is considered as a very successful event as usually, the participants of the designers' association seminars are not more than 35-40 persons. The participation in this presentation actually indicates the willingness of various stakeholders to receive more information and get more involved in the issue. There were four presentations during

this seminar, informing attendees on important aspects of sustainable design. The content of this second intervention followed a balanced connection between theoretical and practical solutions of sustainable design by relying upon the following:

1. 'Green House -the Interior' by Mr. Theopemptou (Environmental Counsellor of Cyprus). The presentation included: Technical issues, health issues, quality of design, recycling and social implications.

2. 'Zero Energy Building –a Case in Cyprus' by Mr. Vlahos (M.Eng-Cyprus Energy Agency). The presentation included: Parameters of building design with zero energy consumption. Examples of a dwelling with zero energy consumption. Analysing the cost of zero energy consumption buildings. The promotion and the restrictions in the application dealing with renewable energy consumption in the household sector; sources and tools.

3. 'Interior Design and Sustainability' by Ms Ioannou (MA-Interior Designer -SEMEK). The presentation included: The relation of interior design practice with sustainability; The usual interior design process and what designers have to consider; The presentations of immediate, short and long term sustainable practices for space design that can be applied during the design process. More specifically the three approaches, namely: Multipurpose space design (immediate approach), flexible space design (medium-term approach) and deconstructive space design (long-term approach) that promote sustainable interior design practice were presented to participants (See Appendix L: Presentation of the second intervention /Sustainable Interior Design –Space Design).

4. 'Buildings –the Use of Daylight' by Dr. Lapithis (Ph.D. –Architect -UNIC). The presentation included: The use of daylight-presentation of a case study, the benefits of window shading-examples, the benefits of vertical shading, natural- lighting and a number of examples.

With these intervention, designers had once again the chance to listen to others with respect, recall terms and properties of newly introduced sustainable practices as a receiving phenomenon and build on knowledge from the previous phase. They also had the chance to participate in a discussion, to criticise and share relevant issues in the context of the various design projects. The four presentations showed what other relevant disciplines promote with regards to the issue of sustainability. After this intervention, the following behaviour description should be obvious: attach values and express personal opinions, report sustainable interior design practices as of dominant value.

For the evaluation of the action the following instruments were used: Questionnaire SEMEK 2, that was sent to designers in order to measure possible changes in participants' responses. This questionnaire was distributed to the designers online; through Kwiksurveys.com after the second intervention. The professionals could have access and respond to this questionnaire until the end of February 2012. The participants did this by using the number that they hold through their association in order to keep anonymity and at the same time be able to be tracked. The total number of designers that responded to this questionnaire was 21. This number indicates a response rate that is up to 39% considering the numbers of valid responses and the invitations sent.

Observer notes that reported on the discussion concluded that 14 people were involved. The observer was a member of the designers' association, was asked to come to the intervention earlier and was given the necessary clarifications. The notes of the observer were submitted to the researcher in the form of notes for analysis.

3.9.2.2 Designers' Third Intervention

The planning of this action arose after the results of the previous were documented. Why the 3rd intervention for designers during this phase occurred? The need for more in depth discussions between designers derived as a result of designers' comments in the open questions and the notes of the observer. In order to make this 'change' happen, it was significant to create a sociable intervention that allowed designers to discuss and solve any queries. Designers seemed willing for more information and they had an insufficient opinion on the issue of sustainable interior design practice. They were more interested about other relevant and important issues such as energy consumption. To plan for this third intervention, was significant. Designers seemed to have acceptance or commitment to a particular stance or action but their acceptance was restricted to rather inactive responses and it was not always relevant to sustainable practices for interiors. With this intervention, they were to get more insightful information on the issue of sustainable interior design practice. The workshop and the discussion in small groups would enable designers to criticise and share relevant issues in the context of the various different interior design projects. Therefore, it was essential to repeat another action circle for the designers in order to enforce the attainment of the set objectives. The workshops were to allow the participants to introduce new knowledge into existing practices of interior design, to create the desire to evaluate sustainable interior design practices which are appreciated and therefore conceptualise them and also offer the opportunity to dare, to support and program projects of interior spaces that will be supported by the principles of sustainability. This was achieved by using problem based learning and collaboration learning activities. This learning method secured the involvement of all participants in the process, and supported the work done during the previous intervention. The third intervention planned had the format of a workshop based on problem based learning activities and

collaboration. The intention of this intervention was to guide and encourage designers to plan sustainable actions and discuss approaches of practice with other designers that will help the understanding of the meaning and the importance of sustainability in professional practice but more specifically to enable a justification of design approaches that lead to sustainable solutions. Through problem based learning and dealing with existing design problems, designers could criticise and share relevant issues in the context of the various different interior design projects and like that perceive and decide worth and relevance of ideas, experiences; accept or commit to a particular stance or action. The workshops were planned to take place in three different districts of the island. Like that, the participation would be facilitated as the meetings were separated between Nicosia, Limassol (for Limassol and Paphos district) and Larnaca (for Larnaca and Famagusta district). Arrangements were made as far as the dates and the places for the workshops as well as a good learning environment as the workshops were to incorporate presentations, group work, group and individual discussions. The workshop gave the chance to the participants to get involved in activities that are related with the issue of sustainability in interior design. The program of the workshops was as follows: Following a small presentation, the participants had the chance to refer to relevant issues on specific projects and discuss the issues that arose. Participants were asked to bring along projects from their own offices in order to be used during the workshop. The participants used their knowledge in order to discover new perspectives for the projects, working in pairs. Then the pairs of participants reported back to all participants on issues that arose from the various projects.

The taking of action included three different workshops that took place in three districts of the island in order to bring together professionals, deliver knowledge and evolve discussions on the issue. The first workshop took place in Larnaca on the 03/03/12, the second in Limassol on

the 10/03/12 and the third one in Nicosia on the 17/03/12. All of them started at 10:00 am and finished at 14:00 pm with a small break in the middle. The workshops started with a presentation of the context and the focus of the thematic of the workshop. During this presentation, sustainability practices for materials and space design were presented with examples identifying the fact of short, medium and long-term sustainable approaches. In this intervention, 13 professionals participated. Following the small presentation, the participants had the chance to refer to relevant issues on specific projects (Participants were asked to bring along projects from their own offices) and discussed the issues raised. To do that, they worked in pairs and used their knowledge in order to discover new perspectives for the projects and to discuss the two major issues: Sustainable materials and sustainable space design. Participants described existing projects for further discussion. Moreover, as in the previous intervention, the following behaviour description should be obvious: Attach values and express personal opinions, report sustainable interior design practices as of dominant value.

For the evaluation of the action and in order to collect data from the designers the following instruments were employed: A questionnaire SEMEK 3, that was provided as a feedback form, the observers' recorded notes, and the interviews. Questionnaire SEMEK 3, used before and after this intervention, for the interior design professionals. The participants answered on the focus questions regarding the use of specific sustainable practices for space design and materials. They were given three questions to answer in order to indicate their experience, acceptance or commitment to a particular stance or action. After some given guidelines for the completion of the questionnaire, all participants placed the completed questionnaire in a box at the front desk. After the completion of the workshop, the participants repeated the same process. The

researcher obtained the questionnaires from the box in order to proceed with the statistical analysis. The questionnaire was answered by all the thirteen professionals that participated.

The observer notes from the intervention were reported by an observer. The observer was a member of the designers' association and, was asked to come to the intervention earlier and was given the necessary explanations. The notes of the observer were submitted to the researcher in the form of diary notes for the analysis.

Interviews with the designers were conducted after the intervention among eight participants. During the interviews, notes were taken and a tape recorder was also used. The interviewees were prepared from before about the existence of the recorder, and they were also told that in case of any recording problems the interview might need to be repeated.

3.9.2.3 Clients' Second Intervention

The planning action of this intervention was scheduled as it was identified from the previous intervention that there was a need for information on the issue of sustainability and interior design practice. Therefore, the promotion of new practices and new knowledge is of great importance and it seemed to be welcomed by this group of stakeholders –the clients. The permission for the workshops was given during the first intervention, so at this stage we had to plan and send reminders to all participants of previous interventions but also use the mail list of the Youth Board Organisation and SEMEK member clients. The plan for this new workshop was based on problem based learning and collaborative learning activities and we asked all participants to have drawings of spaces (plans etc.) with them in order to resolve specific spatial problems when collaborating with designers that volunteered to work with clients during this intervention. It was based on problem based learning activities that have been planned in order to facilitate the intention of this intervention which was to guide and encourage individuals /clients

to plan sustainable actions and discuss approaches of practice with designers. In order to facilitate clients to participate, the workshops were planned to take place in four different districts of the island as during the previous intervention. By doing so, the participation would be facilitated as the meetings were separated between Larnaca, Limassol, Paphos and Agros (Nicosia area). We needed to arrange a good learning environment as the workshops were to incorporate presentations, grouped and individual discussions between clients and designers on specific space design problems.

Taking action for the intervention and in order to facilitate clients to participate, the workshops took place in four different districts of the island, as during the previous intervention. By doing so, the participation would be facilitated as the meetings were separated between Larnaca on the 21/04/2012, Limassol on the 05/05/2012 Paphos 19/05/2012 and Agros on the 26/05/2012. Fifty-six clients participated. The second clients' workshop started with some explanations concerning the context. That was followed by the introduction of all the members of the group. After that, some general information about sustainability and the built environment was given followed by a more specific analysis of the relationship of interior space design and sustainability. The three specific approaches were, namely: Multipurpose space design (immediate approach), flexible space design (medium-term approach) and deconstructive space design (long-term approach) that promote sustainable interior design practice and were presented to the participants.

After the presentation a very interesting discussion started as we were doing a round to offer the opportunity to all the participants to express their views on the subject, to describe any experience relevant to interior space and design issues and make any questions and comments. Then all the attendees were called to participate to the main part of the workshop which was based

on problem-based and collaborative learning, therefore they were asked to divide into small groups. They all attended and participated in the discussions that derived from the various presented drawings and plans. They did that with the help of the researcher and the volunteer designer and they all tried to propose ideas concerning the design of the interior.

Mainly, designers gave feedback to client –participants on different problems of their interior space. Those collaborative experiences help clients to evaluate sustainable interior design practices which are appreciated and therefore conceptualise them. Participants consider the relevance of the ideas that they experienced previously and considered the various sustainable approaches that were produced and derived during the presentation and the discussion. The following behaviour description should be obvious after this intervention: Attach values and express personal opinions, report sustainable interior design practices as of dominant value.

The evaluation of the action employed various instruments to collect data from clients. Those were: Questionnaires, observers' notes and interviews.

The questionnaire PUBLIC 3 had to be answered by client participants. After the completion of the questionnaire, all the participants placed the completed questionnaire in a box at the front desk. The researcher received the questionnaires in the box in order to proceed with the statistical analysis. Fifty-six clients that participated responded to the questionnaire and responses were received. This number indicates a 100% response rate considering the number of valid responses.

The observer notes taken by a member of the designers' association, was asked to come to the intervention earlier and was given the necessary explanations. The notes of the observer were submitted to the researcher in the form of diary notes for the analysis.

Interviews with the clients were conducted after the intervention among eight participants. During the interviews notes were taken and a tape recorder was also used. The interviewees were prepared from before for the existence of the recorder, and participants were told that in case of any recording problems the interview might need to be repeated.

3.9.3 Phase Three

This part explains the action research cycle of Phase III, and begins with introducing the way that the three foundations were reflected. During this phase both groups of stakeholders joined the same intervention and the emphasis of the intervention with the stakeholders reflected the foundations of the research as follow:

- Foundation I: Refreeze as the third step towards change of attitudes and behaviours**
- Foundation II: Organisation & Characterisation as the last step towards affective learning**
- Foundation III: Collaborative Learning was applied as the main learning method during this phase.**

Therefore, the main aim of this phase was to reinforce the outcomes of previous intervention and evaluate the results and therefore to refreeze participants' behaviour. In order for that to happen an atmosphere that enhances and promotes further sustainable issues in interior design practice should be created, and this happened through an action that enabled participants to organise and display work produced during action research through collaboration among the stakeholders.

3.9.3.1 Designers' and Clients' Final Common Intervention.

The planning of this action was scheduled when the results of the previous action derived. During the previous intervention, designers and clients were at the stage where they could prepare design work and they indicated that they would be happy to present the work they did. This was considered and therefore a common intervention to planned as the last action that the research prearranged. This intervention would give the chance, once again, to designers and clients to collaborate, and to evaluate the results of the work they have done. Moreover, this intervention could create an atmosphere to enhance and promote further sustainable issues in interior design practice. A meeting was arranged between the researcher and the chair of the association. During this meeting the date of the last intervention was approved and the distribution of invitations through the e-mail list of SEMEK/CYIDA to all designers was decided. The 26th of May is declared -by the International Federation of Interior Designers- as the World's Interiors Day and after the above initial meeting all the members of the association's council were informed, and the above date was suggested for approval. This suggestion was approved as a well-intentioned day to invite all designers and clients to an event. During this intervention, it was suggested that a presentation should take place that was related with sustainable materials so as to offer participants tangible elements that could be used and/or applied to interior projects. Additionally, during this intervention, objects and cases that derived from the previous phases of the action research were to be presented and designers could also present design projects that were proposed after the interventions and were utilised to promote sustainable design practices. The association's secretary asked all the designers, through an e-mail, to identify and suggest sustainable materials traders that can supply the market to do presentation during the last intervention. Furthermore, the objects made during workshops were collected from all participants of the previous phases and

were to find their place in an exhibition. A lot of people worked together and collaborated in order to prepare the exhibits. This event happened under the supervision of the researcher and with the valuable assistance of the president of SEMEK.

While taking the action, the intervention started with a presentation from a local company that provides designers and clients with sustainable materials. After the presentation participants had the opportunity for a short discussion. They asked questions but also made comments on issues they faced during the process of preparing any project. They exchanged views on their experience. Participants displayed their work produced so far. The work included objects, projects, and artifacts as seen and /or done during workshops and the actions taken. The presentation of the design outcomes was the major part of this last intervention. Eight designers and twenty-eight clients participated. Moreover, during the intervention catalogues with samples of materials were exhibited. The following behaviour description should be obvious after this intervention: the participants should reconcile internal conflicts; develop value systems/ adopt belief systems and philosophy.

For the evaluation of the action the instruments used among clients and designers were: the case studies presented, questionnaires among clients, observer's notes and interviews with clients and designers. As far as the case studies presented, they were multiple case studies as derived from the participated designers and clients. Eight cases were presented and evaluated. According to Yin (1994), four stages exist for a case study, namely: design the case study, conduct the case study, analyse the evidence and develop conclusions, recommendations, and implications. The involvement of the researcher in the case studies was to collect data and receive evidence of the case. The case studies were presented based on documents and drawings from the interior

designer who undertook the specific case. The proposed solutions to these interior projects are the result of the collaboration between clients and designers.

Another instrument used to collect data was the questionnaire Public 4. Client participants had to answer all the questions of the given questionnaire (Public 4). After the given guidelines and the completion, all participants placed the completed questionnaire in a box at the front desk. The researcher received the questionnaires in the box to proceed with the statistical analysis.

Moreover, interviews with the clients and the designers were conducted after the intervention among eight participants from each group. During the interviews notes were taken and a tape recorder was also used. The interviewees were prepared from before about the existence of the recorder, and they were also told that in case of any recording problems the interview might need to be repeated.

Moreover, observer notes were collected. A member of the designers' association was asked to come to the intervention earlier and was given the necessary explanations. The notes of the observer were submitted to the researcher in the form of diary notes for the analysis.

3.10 Conclusion

This chapter presents the methodology of the research that works on different levels. With regard to action, a methodology was chosen that can assist effective change. With regard to research, considered data and interpretations were considered which were adequately assured by the methodology. Additionally, the research instruments are examined, and explanation of how and when they are used in this research is noted.

The selected methodology suggests the scheduled action in three phases in order to accommodate the three basic steps of unfreezing, change and refreezing (Lewin, 1943). Additionally, during this longitudinal study, and according to the levels of affective learning

(Krathwohl et al. 1964), the intention is that the stakeholders receive, respond, value and organise ideas on the issue of sustainable interior design practices. In order to enable that, interventions took place utilising different learning approaches to facilitate the process and in a sequence in order to support a systematic data collection. Three action research cycles were completed through diagnosis, planning and taking action. As a result, interventions were designed to contribute to the development of those attitudinal characteristics and values among the participants, which were appropriate to each cycle of the action research and the field of this study.

Moreover, this chapter describes the population and the sample of the research, the depended variables and the operational definitions. Further, it presents the research instruments utilised and describes the pilot and preliminary study. Then, it proceeds to explain the data analysis approaches and the process of carrying out the action research.

Chapter 4: Results

4.1. Introduction: Structure of Results Presentation

The structure of the results presentation follows the research theoretical framework and the model that has been introduced. For that reason, the results are presented in three parts: Part One describes the results of Phase I and the 'Unfreezing' Step according to the model. During this phase, the aim is to create a felt need for change among the participants, who received and responded to new information. The new information, relevant to the sustainable interior material practices, was classified as: use of new, recycled and reclaimed materials and FF&E. According to the proposed model, participants should be open to experience, be willing to hear, attend and react to particular phenomena in order to be ready for the next step. Therefore, the results of this phase are separated into two parts according to the measurable evidence (operational definitions) of this phase, and includes: 1) the participants' interest in the session, enthusiasm display, interest in learning 2) participation and interest in outcomes, namely the sustainable practices.

Part Two describes the results of Phase II: The 'Change' Step. This phase focuses on how much participants value the new information. The new information is related to materials but also to sustainable interior space design practices, classified as: design for deconstruction, flexible space design and the use of multipurpose pieces of furniture. Participants should attach values, express personal opinions and report sustainable interior design practices as a dominant value. The measurable evidence for this phase is for participants 1) to decide on the worth and relevance of ideas and 2) experience and accept or commit to particular stances or actions.

Part Three describes the results of Phase III: The 'Refreezing' Step. During this phase, participants organise or conceptualise and internalise or characterise new values. They should reconcile internal conflicts, develop value systems and adopt new belief system and philosophy.

The measurable evidence for this phase is for participants to 1) state personal positions, reasons and beliefs and 2) behave consistently with their personal value sets. During this phase, apart from the questionnaire, observer notes and interviews, eight cases are examined. These show the designers' and clients' attitudes and behaviour to the promoted sustainable interior design practices, two to twelve months after the start of their participation in this research.

4.2 Results Phase I: Creating a Felt Need for Change

The first research question – ‘To what extent does the proposed model promote sustainable practices among stakeholders (designers and clients)?’ – is examined in all three phases. During this phase, ‘creating a felt need for change’ among participants is the aim. Participants received and responded to new information about sustainable interior design and practices and the use of materials and FF&E. They should be open to experience, be willing to hear, attend and react to particular phenomena. According to the model, this willingness is measured through the participants' 1) interest in the session, enthusiasm display, interest in learning, and 2) participation and interest in the outcomes, namely, the sustainable interior design practices.

4.2.1 Measurable Evidence 1: Interest in Session, Participation and Interest in Learning

4.2.1.1 Designers' Opinion for Measurable Evidence 1

Through the questionnaire, designer participants were asked to declare their interest in participation and interest in learning. Their interest was initially evolved from the importance that designers give to the provision of information on relevant issues from the association and also their willingness to participate in workshops. Results show that 66% of designers, value being provided information from their association (Fig.4.1), and 70% said they would attend workshops in their area (Fig. 4.2). Furthermore, designers were asked if they had implemented any relevant project applying sustainable design work. Regarding this question ‘Have you ever implemented

sustainable design within your professional work?', despite the fact that 73% of the professionals participated had done relevant courses during their studies 50% said no (Figure 4.3).

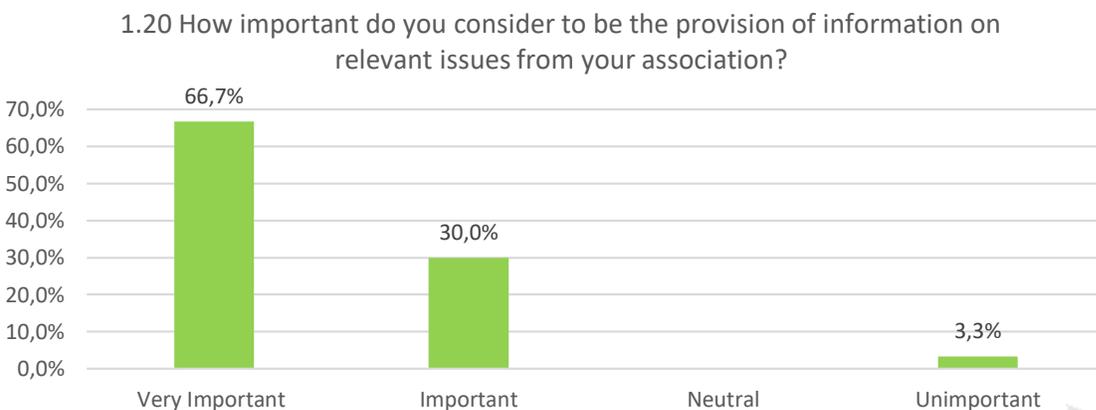


Figure 4.1: Designers' response to question relevant to their interest in learning.



Figure 4.2: Designers' response to question relevant to their interest in participation

1.22 Have you ever implemented sustainable design within your professional work?

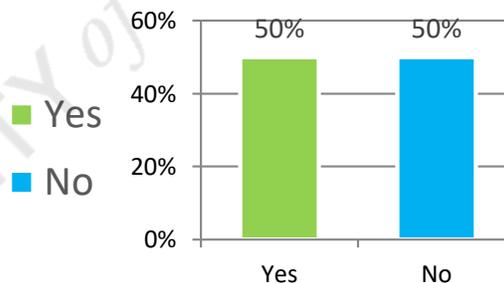


Figure 4.3: Designers' response to question relevant to implementation of sustainable design work

Additionally, the designer participants' enthusiasm and interest in learning are presented through the observer's notes below, as excerpts from the observer's field notes and reveal the need for learning. At the beginning of the discussion, the observer reported that the president of the

association stated that apart from the data available from the association that mostly concern lists of demographic information, nothing has been reported for professional designers as part of any research. The discussion was very interesting and enlightening. All the people around us, in one way or another, want to show their attention to the issue of sustainability. Therefore, it is positive that the association makes this opening towards this direction. They all started to be interested on the issue, and the association should not stay inactive.

By means of the president's statement, about this being the first research for interior design profession in Cyprus, she requested to participants to clearly see the overall benefits from the action and the initiative for future actions positively. Furthermore, the observer noted the need for professional knowledge progression on sustainable issues, and that this fact was accepted and understandable among the association members. According to the same observer, designers showed their interest in learning it is noted that: One designer said that it is sensible to have demands from the association, and that it needs to move forward, apply new practices collectively, while another designer said that we have to be open and find the way to introduce our ideas to the client as we always do when we need to make something different and innovative. The observer reported that the participants appear to accept that change is needed. Some expressed their willingness to join the team of professionals attending various interventions, and three designers expressed their willingness to volunteer, participate and assist during clients' interventions. According to the observer a designer said, 'Those are things [sustainable practices] we are pleased to do and learn more about, but sometimes our clients do not want us to do them.'

Moreover, interview results showed that most participants found that the intervention was very useful, they enjoyed their involvement, and the presentation was very clear and with practical use. For example, one designer said that it was very useful and as the presentation comments

various issues of sustainability, it is up to the participant to look further into each of the issues presented. Another designer said that it was very useful and its thematic makes you feel like you have updated your professional understanding and broadened your knowledge. It was also added that 'It [the new information] will contribute to answer clients' questions on the issue'.

Nevertheless, a designer said that it was something new for him in relation to his profession. As soon as one finishes university, one not always learns about sustainability. He added that many designers do not have any background on the issue. To allow the participants to express their interest in what they learnt, they were also asked to answer the following questions: Did you receive general information about the meaning of sustainability in interior design? Did you then receive information about the use of materials in interior spaces? Most of the designers said that from this intervention, they got much information. For example, one said, 'It was an informative action on the issue of sustainability, and parallel with the examples, I realise how I can apply it to my practice.' Another designer said, 'I've got a lot of information on how to apply sustainability to consider in the future, and I can say that I already used some of the solutions presented.' The main point from the participants' responses is described by one designer who stated that 'I've got a lot of information from the research presented, first on the views of the various design bodies and second from the pictures and examples presented. So yes, from both examples and the theory part of the presentation, I received general information about sustainability and, in particular, on the use of materials.' Table 4.1 below shows typical responses from designers' demonstrating their interest in the session, enthusiasm display and interest in learning.

Table 4. 1:

Typical responses from designers' shows interest in the session, learning and enthusiasm display.

PHASE I	Typical Designers' Responses		
Measurable Evidence 1: Interest in Session Enthusiasm Display Interest in Learning	1.1 Interest in Session	1.2 Enthusiasm Display	1.3 Interest in Learning
	Glad to attend	Inspired	Gained detailed knowledge
	Gained information	Willingness to learn more	New knowledge
	Practical tool (new information on sustainability practices)	Motivated	Practical solutions
	Found examples useful	Source for information	Informative action
	Helpful for practice	Very updated	Gained information
	Useful intervention	Attracted attention	Interesting examples
	Ask for more available materials	Informative	Transfer of knowledge
		Fascinating for designers	

4.2.1.2 Clients' Opinions for Measurable Evidence 1

During Phase 1, the second group of stakeholders, the clients, answered questions relevant to their interest in the session, learning and enthusiasm display as this is the first measurable evidence for this phase. Seventy-seven participants responded to the questionnaire, indicating a response rate of up to 100%, limited for some questions where invalid responses were received. Among client participants 98.7% strongly agreed (84.4%) or agreed (14.3%) to the statement 'If I was to work with an interior designer, I am interested in an interior designer with knowledge and experience on the above issues (sustainable practices)', With the statement 'I consider the provision of information on relevant issues from interior designers important', 98.7% strongly agreed (80.5%) or agreed (18.2%). Also, more than 95% of the individuals expected designers to

provide relevant information (Figure 4.4). Besides, 96.1% strongly agreed (76.6%) or agreed (19.5%) that they are interested in participating in the next workshop and 3.9% had no opinion on that (Figure 4.5). These results indicate the participants' direct willingness to learn more about the issue of sustainability and interior design.

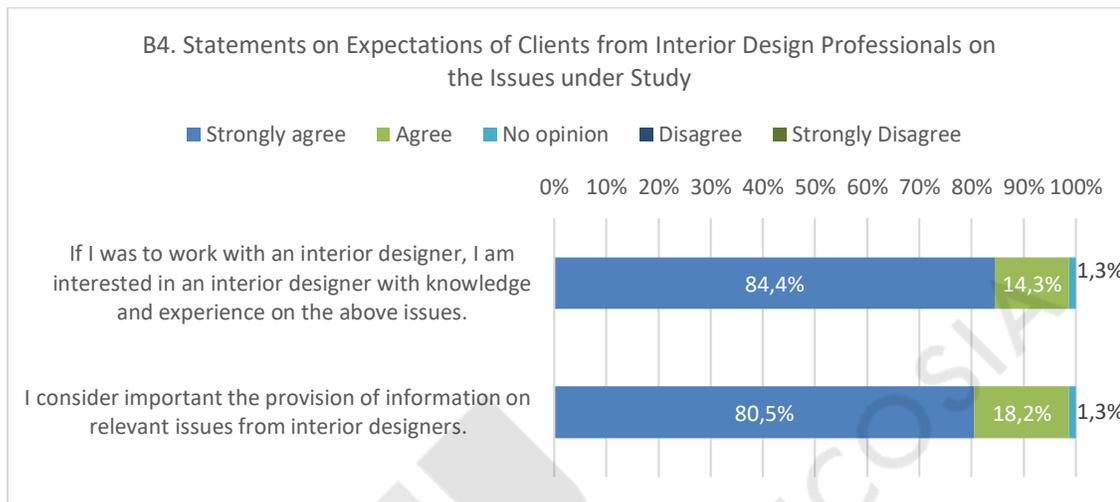


Figure 4.4: Clients' responses relevant to expectations from interior design professionals.

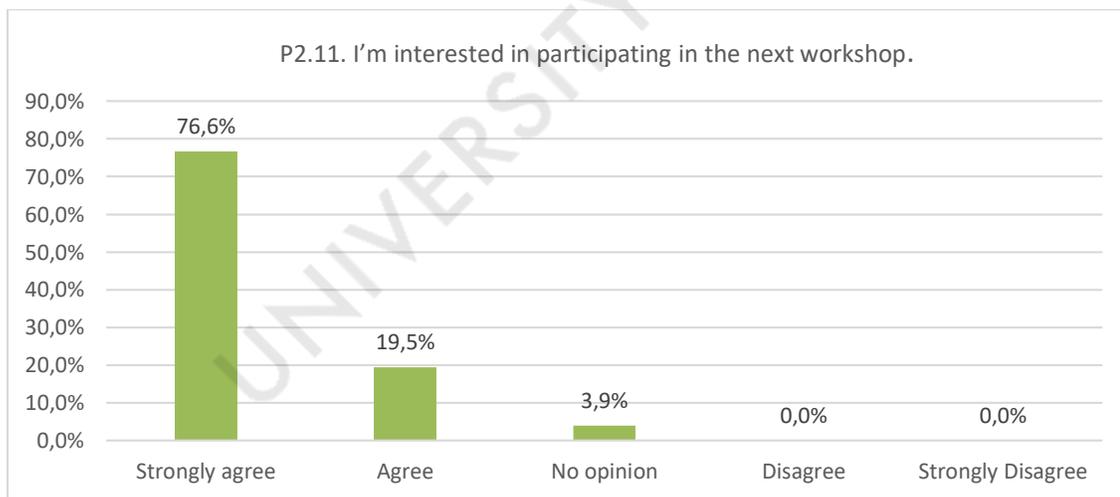


Figure 4.5: Clients' responses to questions relevant to their interest in participation.

Moreover, as noted by the observer, client participants were really willing to be open to new experiences and be involved and participate in the action. As it is presented below in the form of excerpts from the field notes, the clients displayed enthusiasm.

Participants really looked happy with the hands-on work and the opportunity they had to do something tangible. They were also pleased to take recycled materials home with them. This enthusiasm was noted from the beginning and immediately after the presentation. The examples presented helped develop some awareness on the use of recycled and reclaimed materials and willingness to hear and do more. Besides, some participants asked where they could find recyclable materials and products, and they noted that they would like to see and use them more.

A client reported that she is a real fan of the approach now, and she also has pieces of furniture made out of recycled materials at home. Another client said that she finds that the information given about recycling and reclaimed materials was very interesting, and that she loves using some of those materials. Another participant added that she had already made her space some years ago, but if she had the chance to do it again, she would consider all the presented approaches. After the presentation, it is apparent that the clients were willing to use the presented material approaches and became familiar with the use of recycled and reclaimed materials. They can positively affect their own environment using different approaches when making their own spaces.

During interviews the client participants had the chance to note their interest and enthusiasm in the session, they were asked, 'How useful, enjoyable or difficult did you find the intervention?' Most clients said that they enjoyed their participation. They found the presentation very useful and understandable. Table 4. 2 shows typical responses from clients' indicating their interest in session, enthusiasm display and interest in learning.

Table 4.2:

Typical responses from clients' interest in session, learning and enthusiasm display.

PHASE I	Typical Clients' Responses		
Measurable Evidence 1:	1.1 Interest in Session	1.2 Enthusiasm Display	1.3 Interest in Learning
Interest in Session	Glad to participate	Motivation to think more about the issue of sustainability	Interested in new knowledge
Enthusiasm Display	Proper presentation on sustainability and use of materials	Motivation exists after the intervention	Useful approaches
Interest in Learning	A new tool	New way of thinking	Useful examples that can be applied
	Very well explained	Feel better about doing the right thing	Gain new knowledge
	Informative action	Useful for contemporary thinking	Easiness of application
	New knowledge helps to feel more confident		Method for new materials
			Combination of theory and practice

One client said, 'It was very enjoyable, very useful and with a creative approach that is useful these days.' Another client added that we know now that we can use recycled materials and objects to do things without spending a lot of money and protect the environment'. Further, to allow participants to state their interest on what they learned, they answered the following questions: 'Did you receive general information about the meaning of sustainability in interior design?' 'Did you then receive information about the use of materials in interior spaces?' Most of the clients said that from this intervention, they got a lot of information for sustainability in

general and for sustainable material approaches in particular. The main point from the participants' responses is described by one client as she noted that: 'It is a way of thinking. The intervention made me understand that sustainability is tangible and we can achieve it. There are ways that we can approach and manage it and feel better about doing the right thing for the environment.'

4.2.2 Measurable Evidence 2: Interest in Outcomes (Sustainability Practices)

4.2.2.1 Designers' Opinion for Measurable Evidence 2

Through the questionnaire, designer participants were asked to declare their interest in the outcomes, namely the sustainability practices. Part B of the questionnaire collected the designers' responses to various statements that indicate and communicate designers' interest. The statements were separated into three groups. The first group of questions (B1), included statements that revealed designers' general behaviour and approaches to sustainable interior design practices. The second group (B2) included statements that concerned the materials and products selection and is of major importance as the intervention emphasised on these issues. The third group (B3) included statements concerning behaviour and approaches to sustainable interior design practices during space design.

The first group (B1), included seven statements that revealed designers' general behaviour and approaches to sustainable interior design practices. All participants either strongly agreed (63%) or agreed (37%) with the statement 'Designers should advocate for the sustainable use of natural resources'. Though, 13% of the respondents did not have an opinion, for the statement 'Sustainability should be an essential part of the interior designer's professional responsibilities'. The same proportion (13%) of 'no opinion' was noted with the statement 'Interior design embraces social equity at a local and global level'. Also, even though 93% strongly agreed (60%)

or agreed (33%) that ‘interior design embraces the protection of the natural environment’, 7% of the respondents did not have opinions. Moreover, to the statement ‘Designers should minimise the amounts of materials used’, 80% agreed or strongly agreed, but 16% disagreed (Fig.4.6).

The second group (B2) of the questionnaire intended to collect information about the behaviour and approaches concerning materials and products selection. In the statement ‘Designers should specify renewable materials’, 93% agreed or strongly agreed, but 7% disagreed (Fig.4.7).

The third group (B3) included statements on behaviour and approaches to sustainable interior design practices during space design and when it comes to the statement ‘Designers should design multipurpose interior spaces’, 77% agree or strongly agree but there is a high proportion, compared to other statements, (23%) who disagreed (Fig.4.8).

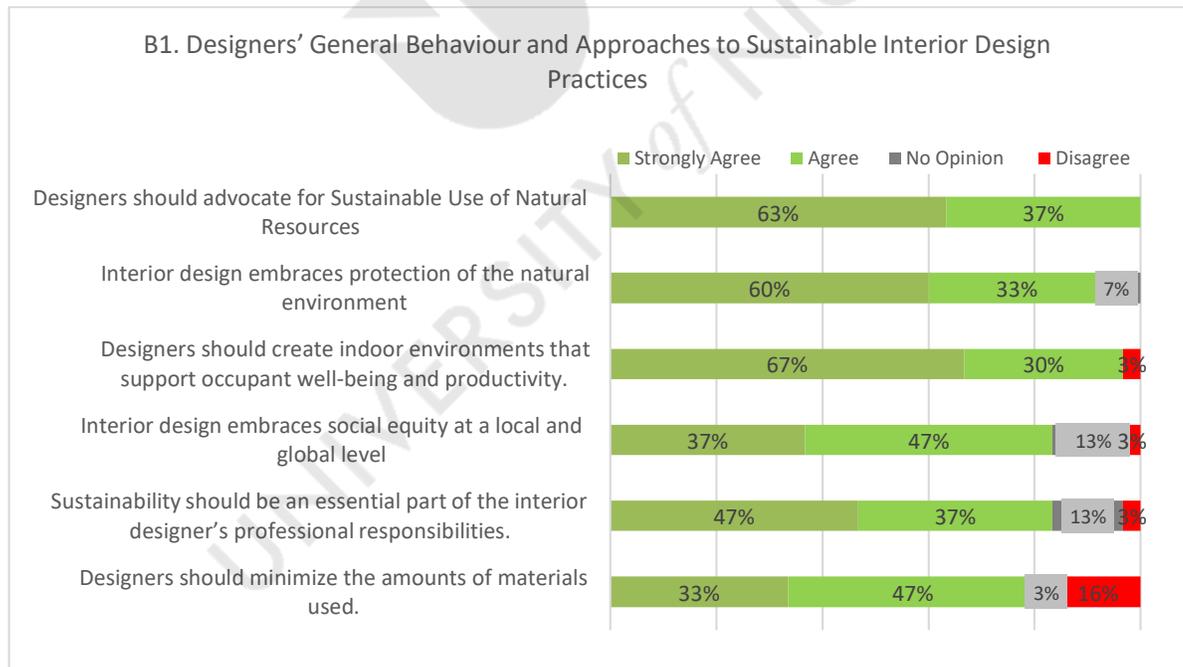


Figure 4.6: Results on designers’ general behaviour to sustainable interior design.

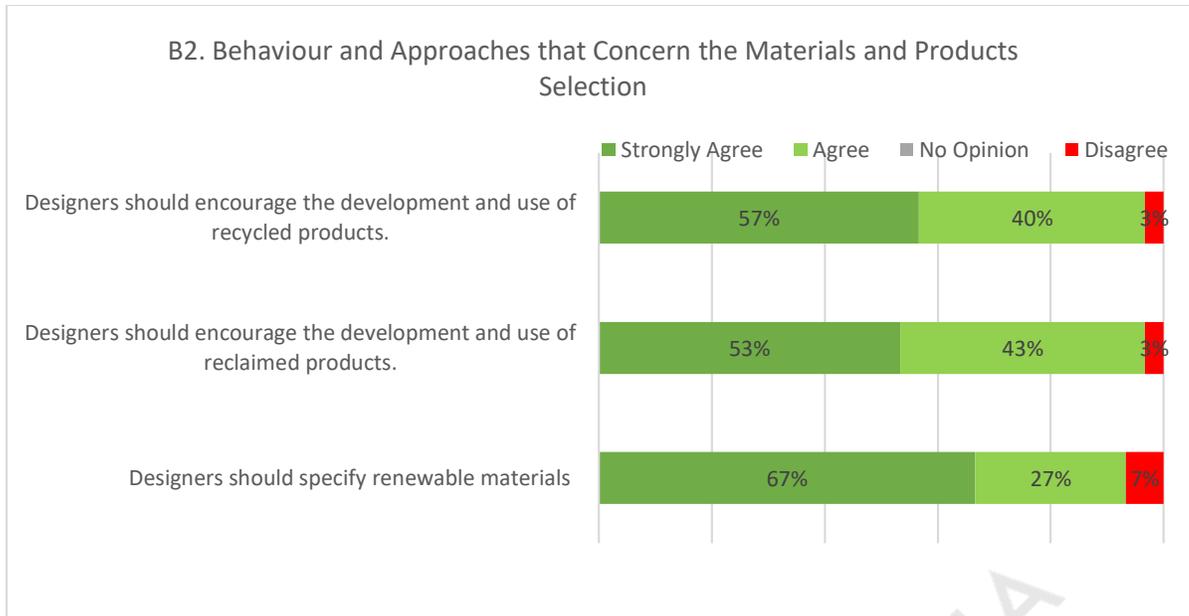


Figure 4.7: Results on designers' behaviour that concern material selection

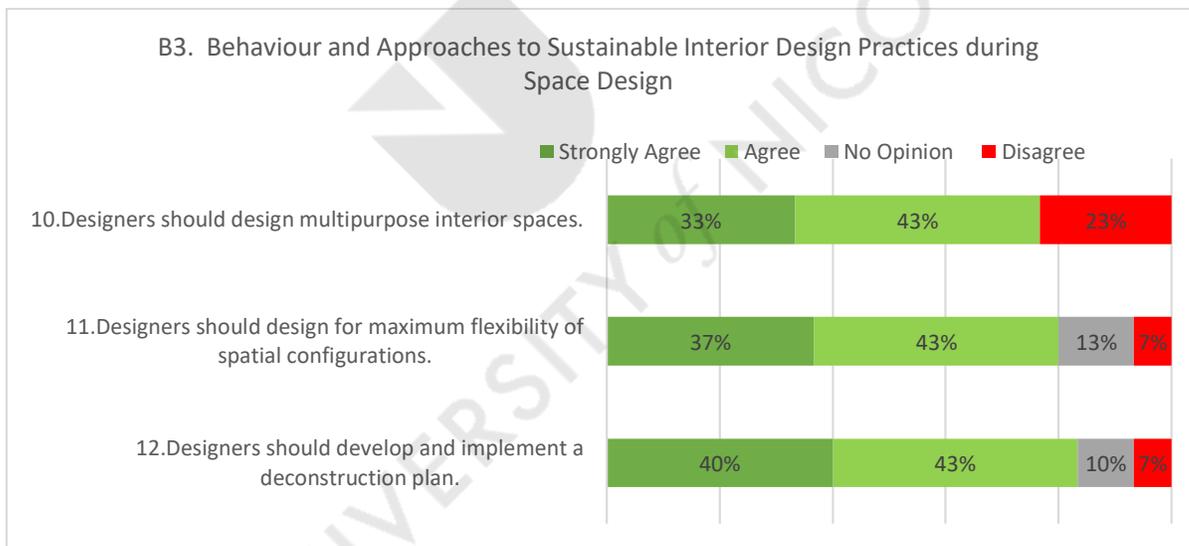


Figure 4.8: Results on designers' behaviour that concern sustainable space design

Moreover, concerning sustainable approaches for materials, the observer noted that one designer supported the immediate solution of choosing new materials and proposed them to clients. 'It is time consuming' she said. As explained by the same designer, and reported by the observer, this is the usual procedure for designers when selecting materials and testing their

aesthetic qualities. The same designer and two more of the participants agreed that more knowledge and research on the issue of materials is beneficial for the designer, saying that this will eventually give the designer the deep knowledge to choose sustainable materials. All designers agreed that this gaining of knowledge will allow them to support their chosen approach in front of clients.

Likewise, concerning recycled materials and products, designers supported the approach to evaluate and conceptualise the way forward. One designer strongly supported that we have available recycled materials and products from different firms that we can import and use in our projects, but what we really need to do is to develop our local workshops and small industrial units that will really support designers' ideas. Another designer added that when clients realise what you have as a concept and designers are able to make their design ideas real, this will boost the profession and reveal all the qualities of sustainable approaches. Moreover, one designer added the concern that the aesthetics of design products need to be developed through small industrial units in order to be easily and widely accepted by clients.

Regarding reclaimed materials and products, according to the observer, designers generally agreed that only a limited number of customers are open to this approach. One designer describes how and how long it took her to persuade a customer that those old pieces of furniture are not things to throw away but things you have to purchase and use in the new interior, and another designer supported that only a limited number of clients want reclaimed materials in their homes.

Furthermore, the observer wrote about the designers' interest in the outcome, namely the sustainable design practices, that on the top of their list are energy issues but now they realise that there is more that they can do. It is noted that: Two designers said that they need to be informed

on the new regulation for energy efficiency of buildings. They were asking the members of the council to arrange a seminar presentation on that. A lot of members agreed with them, and the president promised that this will be included in the association's plan. Also, many of the examples presented during the presentation were a real surprise and indicative of pure innovative practices. One designer said, 'As I understand from the presentation, there are really many things that we can do.' Additionally, a designer said that this is a truly interesting subject to deal with during this period. It has a lot of potential to be promoted now among the small number of clients. A member of the council said that she thinks that this will be of interest for a lot of clients if we manage to explain the benefits. A designer explained that generally, the market now is not very busy with interior design projects. Also, another designer observed that some clients started judging the context of the existing interior design projects and questioning the outcomes. 'We as professionals are doing the same, and we need to be innovative and highly professional to keep up with all the developments in our sector'. Excerpts from the observer's original field notes from the designers' intervention are presented in APPENDIX Fi: Phase I- Designers Observation Notes 1.

During interviews, in order to allow the designers to note their interest in the outcomes and state their participation, designers answered specific questions. All designers agreed that, indeed, 'the intervention had encouraged them think and consider interior design differently'. A designer said, 'It gave me the opportunity to work with the interior space differently, considering some materials. Now after this intervention, I can also propose some recycled materials – for example, recycled wall coverings.' Moreover, many designers said that they could help a client with the application of both space design and materials, but most of them gave examples of what materials they could use and how. A characteristic opinion that was supported by few, is the response of one designer who said that: 'We have to admit that the materials presented are only used by a few

designers, and if we want to differentiate ourselves, some more options on materials selection would be very helpful. A booklet with a list of new materials from companies can help.’ Table 4.3 below show typical responses from designers’ participation and interest in sustainable practices. Interviews from designers and the data collected from these interviews are presented in APPENDIX I i: Phase I – Designers’ Interviews Transcripts & Coding.

Table 4.3:

Typical responses from designers’ participation and interest in outcomes (sustainable practices).

PHASE I	Typical Designers’ Responses	
Measurable Evidence 2:	2.1 Participate (Discussion and Activity)	2.2 Interest in Outcomes (Sustainable Practices)
	Participate (Discussion and Activity)	Interest in Outcomes (Sustainable Practices)
	Use of sustainable materials and methods	Use of long-lasting interiors
	Consider materials differently	Different construction methods
	Natural materials	Prevention of water pollution
	Sustainable materials	Energy conservation
	Recycled materials	Production issues
	Use reclaimed pieces of furniture	Water conservation
	Consider recyclable materials	Different design approach
	Asking for more available materials	Long-lasting constructions

4.2.2.2 Clients’ Opinion for Measurable Evidence 2

Concerning this second measurable evidence, for Phase I, of showing interest in the outcomes, Part B of the questionnaire reveal clients’ interest and their behaviour on sustainable practices at their place of residence or workplace.

Part B1 includes two statements that measure the clients' general awareness on sustainability. From the respondents 79.2% strongly agreed that 'sustainability should be an essential part of the design of interior spaces'. Another 19.5% agreed to the above statement, making it a 98.7% positive-response rate (Figure 4.9). Moreover, 87% of the respondents strongly agreed that 'they are interested in living in a space that will protect the environment'. Another 11.7% agreed to the above statement, making it a 98.7% positive-response rate (Figure 4.10).

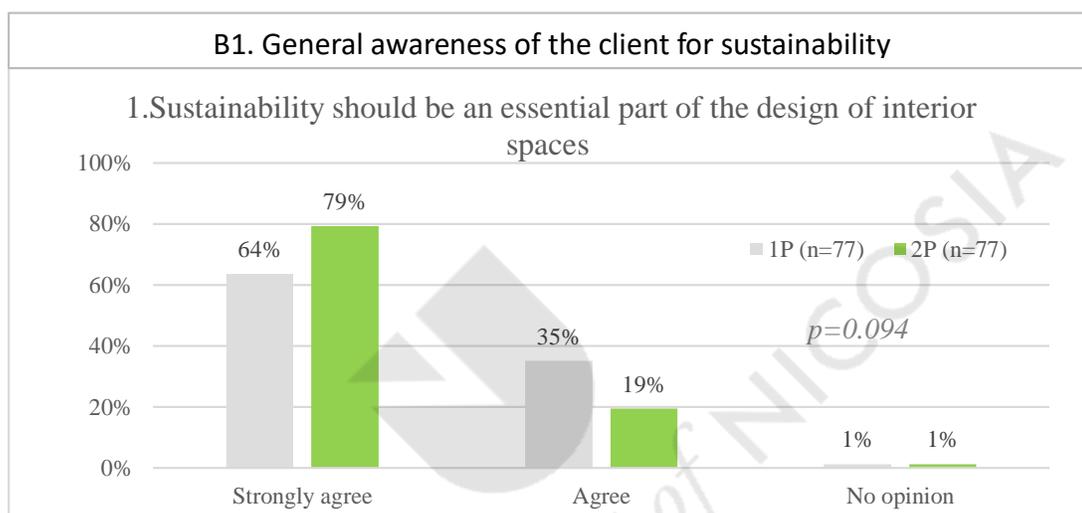


Figure 4.9: Clients' responses before and after Phase I on sustainability being essential

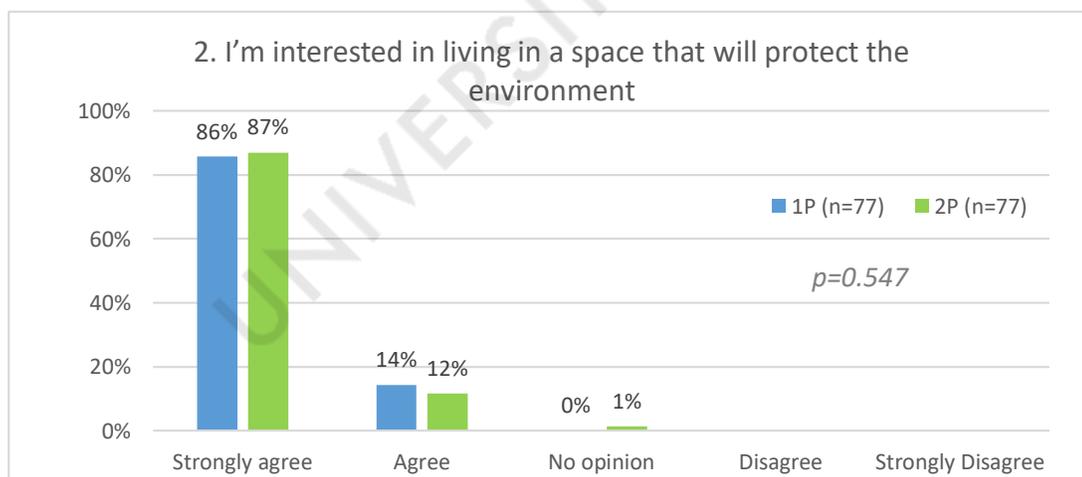


Figure 4.10: Clients' responses before and after Phase I on living in a space that support the environment.

Part B2, the focus of this questionnaire, contains three statements on natural resources, recycling and reclaimed materials. All respondents strongly agreed (79.2%) or agreed (20.8%) to ‘living in a space that makes efficient use of resources’ (Figure 4.11). They also strongly agreed (75.3%) or agreed (24.7%) in ‘living in a space that supports the recycling of materials’ (Figure 4.12). Also, 97.4% respondents strongly agreed (70.1%) or agreed (27.3%) to ‘living in a space that supports the reuse of materials’ (Figure 4.13). The strongest shift towards strongly agree is observed in Q1. ‘Sustainability should be an essential part of the design of interior spaces’, where for Public 1 (before the intervention) we observed a 64% of the participants strongly agreeing to the statement while in Public 2 (after the intervention) the proportion increased to 79% ($p=0.094$). The same trend, although not statistically significant, is observed for all questions.

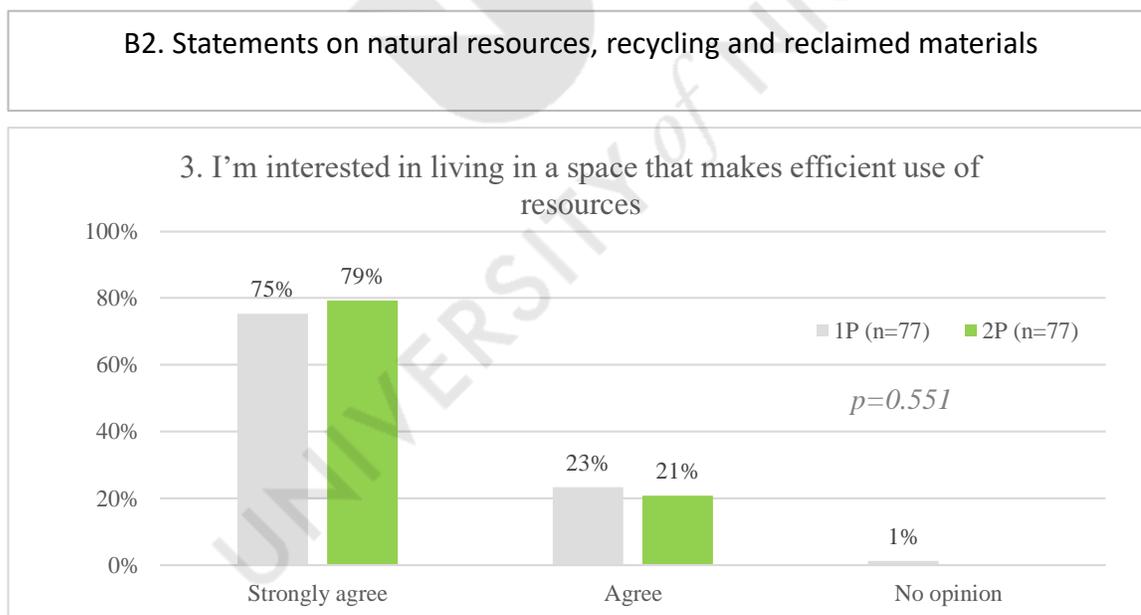


Figure 4.11: Clients' responses before and after Phase I on resources use

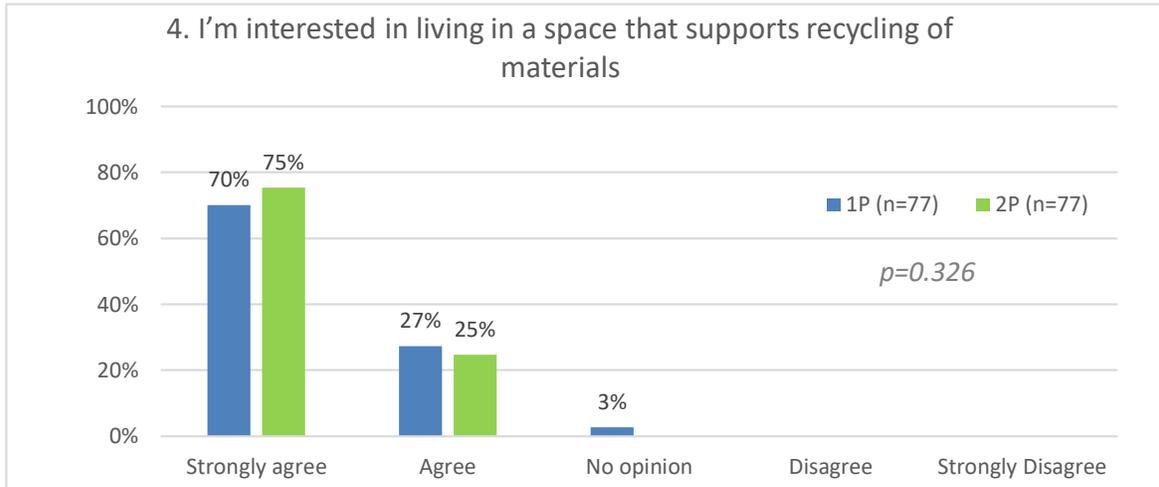


Figure 4.12: Clients' responses before and after Phase I on recycling

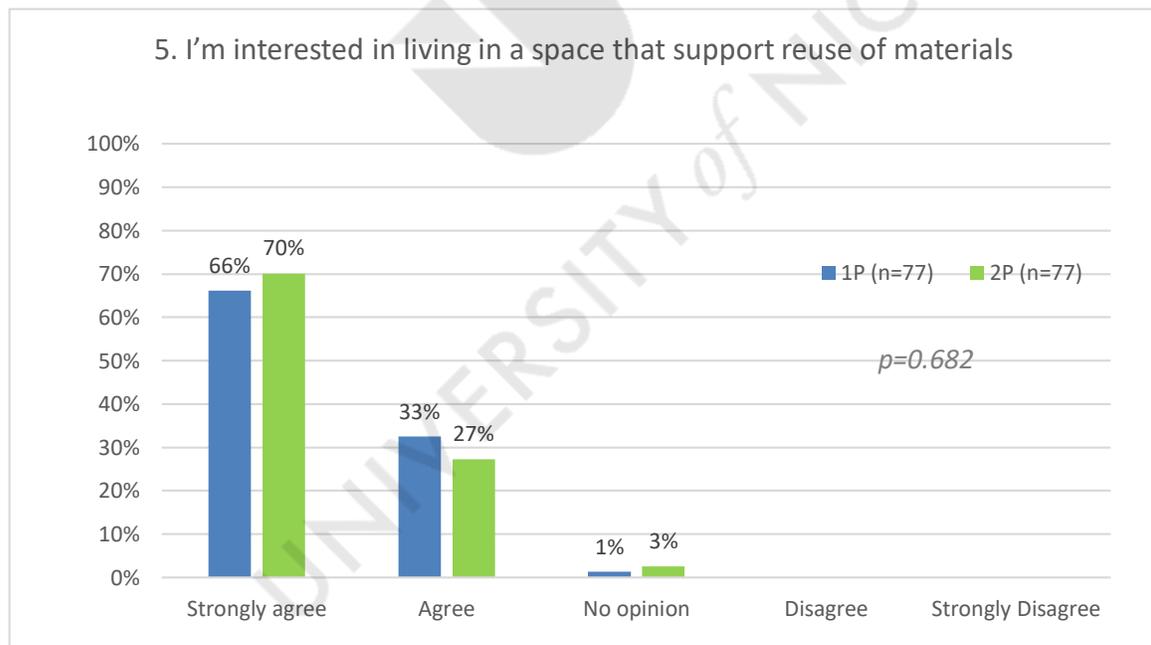


Figure 4.13: Clients' responses before and after Phase I on reclaimed materials.

Moreover, on the participants' interest in the outcomes and reflection on sustainable interior design practice, the participants' understanding is restricted, according to the observer, on

the fact that they can recycle at home or at their workplace. As he notes: After the presentation of this intervention, a discussion followed. Some participants admit that they recycle at home and have some knowledge on the subject from the internet or from their work environment. Also, others admit that they recycle at home but have never thought that there are so many things that they can do from recycled materials. Additionally, the participants were interested in the use of recycled and reclaimed materials. The observer noted that: Some participants said that they will use ideas from the workshop for their homes and their workplaces. After the presentation and the discussion, all the attendees were called to join the main part of the intervention, the workshop, which was based on experiential learning, and they were requested to make an item out of recycled materials. They did that with the assistance of the researcher and volunteer designers, and all participants created items for their own use with great pleasure, inspired by the provided materials (corks, recycled paper rolls, bottle covers, etc.) to make something different and unique. Excerpts from the observer's original field notes from clients' intervention are presented in APPENDIX F ii: Phase I- Clients Observation Notes 1.

Furthermore, eight clients were interviewed after this first intervention. The interviews gave the clients the opportunity to reflect on the sustainable material practices presented, explained and experienced during the intervention. The main themes and findings derived from the interview transcripts are presented below. All clients admitted that, indeed, the intervention made them think and consider interior design differently. One client said that the issue is food for thought and admitted that always, the status quo, is to think of new materials and products. 'With the presentation, we understood that we can use old and recycled/reclaimed [materials], and by using them, we consider the environment.' Another client added that 'Indeed, I believe that women have to do this [utilise the sustainable practices] and think twice when they refurbish their

homes; as they have to consider saving money by finding new ways to use old things and the longer lives of objects.’ Many clients also said that they could suggest to their friends the combination of sustainable materials approaches promoted during the workshop, and many suggested the use of recycled and reclaimed materials and products. One client, strongly supported that she will suggest to friends the use of recycled and reclaimed materials and products. Another stated that: ‘For sure, I would use new materials the way we have seen in the presentation, but also, I would suggest a combination of the approaches.’ Table 4.4 shows more typical responses from clients’ indicating interest in sustainable materials. Interviews from clients and the data collected from these interviews are presented in APPENDIX I ii: Phase I Clients’ Interview Transcripts & Coding.

Table 4.4:

Typical responses from clients’ interest in outcomes (sustainable materials).

PHASE I	Typical Clients’ Responses	
Measurable Evidence 2:	2.1 Participate (Discussion and Activity)	2.2 Interest in Outcomes (Sustainable Practices)
Interest in Outcomes	Interest in using recycled and reclaimed materials and products	Interest in approaches for material selection
	Motivation to use reclaimed materials and products.	Motivation to use reclaimed materials and products.
Participate (Discussion and Activity)	Use of recycled materials	Use of new and recycled materials
	Reclaimed materials -Save money.	Use of reclaimed materials and pieces of furniture
Interest in Outcomes (Sustainable Practices)	Interesting in using recycled and reclaimed materials and products.	New interest in using the materials
		Thinking about the materials differently
		Sustainability approaches to material selection
		Interesting in resource consumption

4.3 Results Phase II: Changing Values, Approaches and Attitudes

The first research question – ‘To what extent does the proposed model promote sustainable practices among stakeholders (designers and clients)?’ – is examined in all three phases. During this phase, ‘changing values, approaches and attitudes among participants’ is the aim. Participants value new information on sustainable design practices relevant to the use of multipurpose pieces of furniture, flexible space design and design for deconstruction, Participants should attach values, express personal opinions and report sustainable interior design practices to secure the ‘change’ step. The measurable evidence /operational definitions, for this phase are for participants to (1) decide the worth and relevance of ideas and (2) experience, accept or commit to particular stances or actions.

4.3.1 Measurable Evidence 3: Decide Worth and Relevance of Ideas

4.3.1.1 Designers’ Opinion for Measurable Evidence 3

In order to view if designers decide worth and relevance of new ideas, namely the sustainability practices, which is the first measurable evidence for Phase II, the answers on the general behaviour and approaches to sustainable interior design practices between Phase I and Phase II have been compared in the statement ‘Sustainability should be an essential part of the interior designer’s professional responsibilities’, we observe a shift towards ‘strongly agree’ and ‘agree’ in SEMEK 2 (Phase II). In SEMEK 1 (Phase I), 13% had no opinion, and 3% disagreed with the statement, while in SEMEK 2, all respondents agreed or strongly agreed to the statement (Fig. 4.14). A similar shift is observed in the statements ‘Designers should create indoor environments that support the occupant’s well-being and productivity’ (Fig. 4.15) and ‘Interior design embraces the protection of the natural environment’ (Fig. 4.16).

B1. Designers' General Behaviour and Approaches to Sustainable Interior Design Practices SEMEK1 vs SEMEK 2

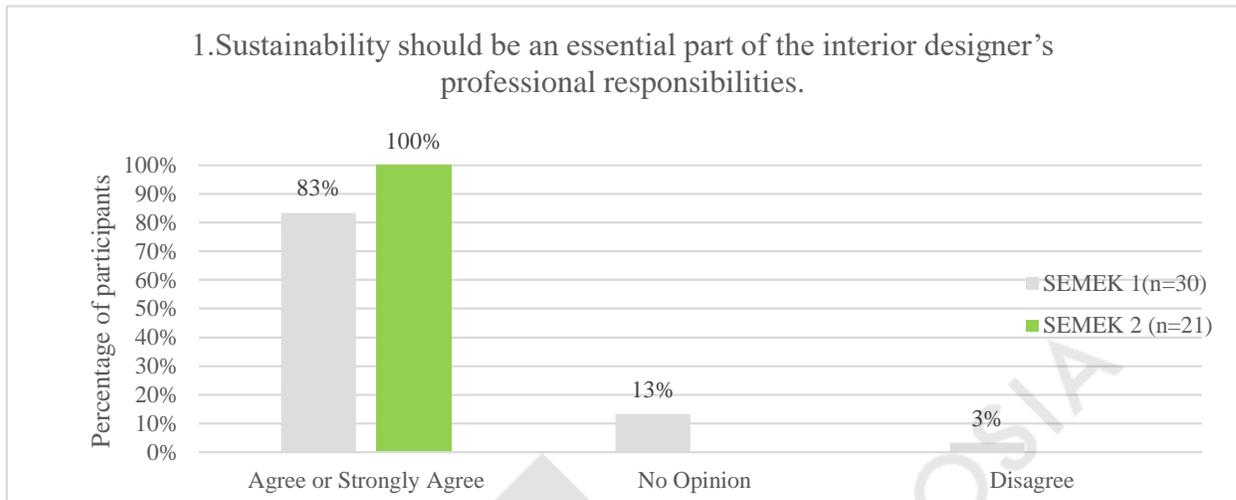


Figure 4.14. Designers' general behaviour on sustainability of their professional responsibility a comparison between SEMEK I and SEMEK 2.

Differing to that, in the statement 'Interior design embraces social equity at a local and global level', we observed a drop in the respondents who agreed or strongly agreed, and more people had no opinion (Fig. 4.17). Same with the statement 'Designers should minimize the amounts of materials used', the number of people who disagreed with the statement increased in SEMEK 2 (Fig. 4.18).

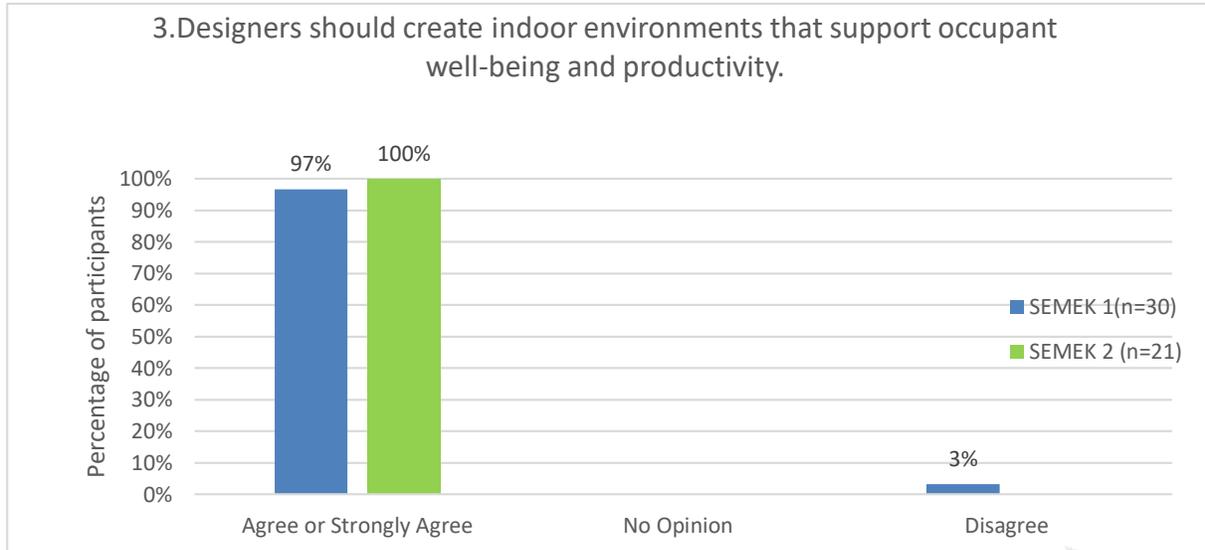


Figure 4.15. Designers' general behaviour on indoor environments that support occupant well-being and productivity a comparison between SEMEK I and SEMEK 2.

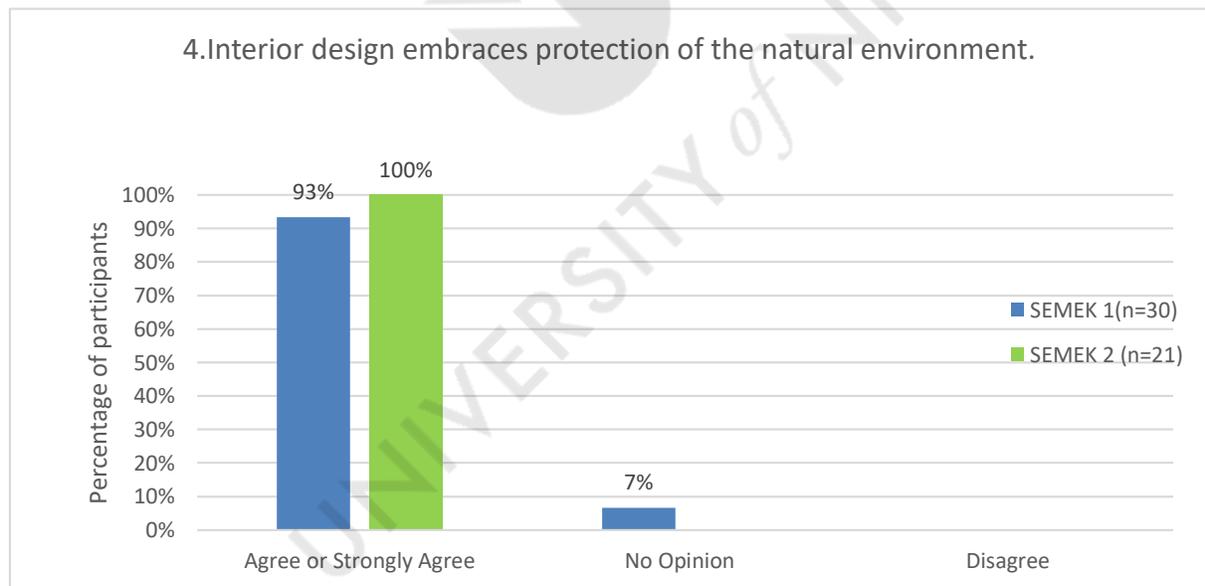


Figure 4.16. Designers' general behaviour on the protection of the natural environment a comparison between SEMEK I and SEMEK 2.

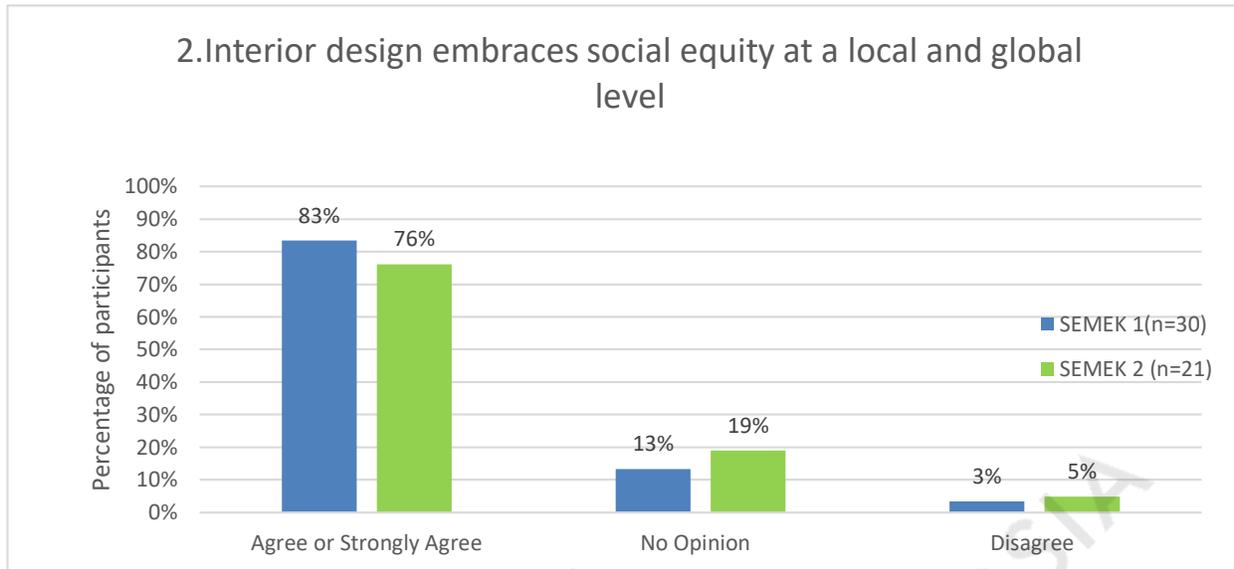


Figure 4.17. Designers' general behaviour on equity at a local and global level a comparison between SEMEK I and SEMEK 2.

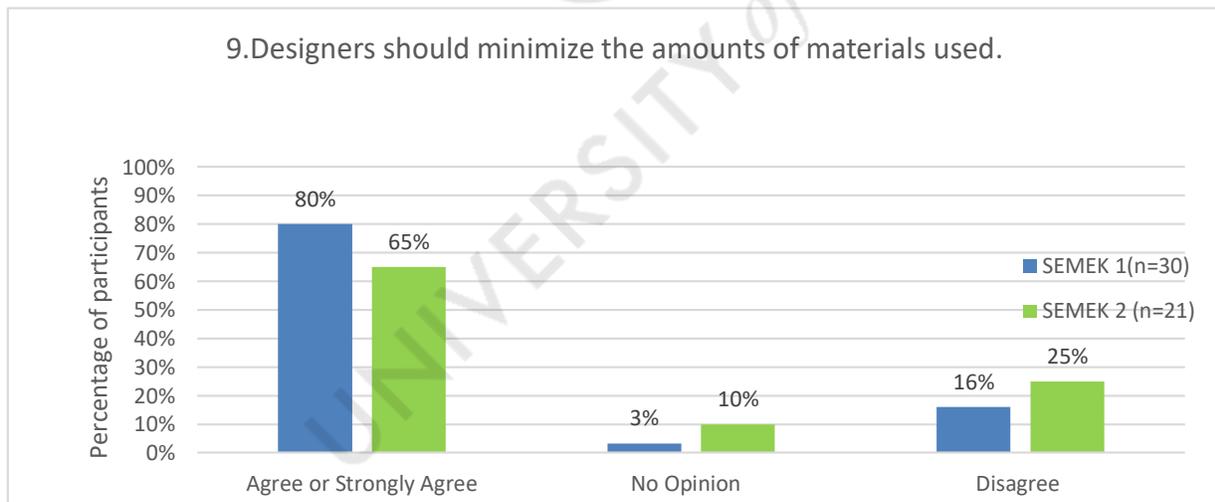


Figure 4.18. Designers' general behaviour on minimising the amount of materials used a comparison between SEMEK I and SEMEK 2.

Moreover, concerning designers' decisions of worth and relevance of ideas, the observer's notes below are excerpts from the observer's field notes that reveal that sustainable approaches

during space design were identified, and that the immediate solution (use of multipurpose pieces of furniture) considered the easiest solution to applied as discussed among the participants. The observer noted that: A designer said that it is easier to apply the immediate solution when they have to decide on a sustainable design approach as the clients can immediately see the financial benefit. Another designer strongly supported that when designers have a strong concept, they can actually promote it and persuade their clients. Additional, a designer supported that it is more difficult to persuade, for example, the developers to change the stereotype and continue with innovative designs. The designers pointed during this phase that flexible spaces and deconstructive spaces are recognised by the designers as medium- and long-term approaches, thus friendly to owners and investors, respectively.

One designer had a very strong opinion that we have to organise more presentations among specific groups of clients – for example, developers and hotel owners. She supported strongly this opinion, and another designer agreed. The designer supported the second and third approaches as they can persuade hotel owners for refurbishments of their estates. It is a very sustainable way, and as they invest a lot of money, they are interested in longer-lasting solutions that will allow them also to transform their hotel business or combine it with other business activities she supported. Other participants agreed that this could happen. Furthermore, during interviews designers responded positively and said that the interventions were very useful. One designer commented, ‘Hearing from allied professionals was what we needed.’ Another agreed and commented that ‘We need sometimes to see what others are doing to seriously enforce a direction’ additional a designer noticed, ‘This is the way that we should work.’ All participants noted that they found the workshop very useful. Moreover, one designer said that: ‘It was very useful to hear other designers’ experiences, as one can learn from others as well. Supplementary to

that, one said, ‘Now after the workshop, I seriously think that my work affects the environment and the way I practice it matters.’ Also, all designers answered that they found the interventions very enjoyable, and they said that the workshops were very pleasant and appreciated the gatherings with colleagues. Table 4.5 shows more designers’ statements on worth and relevance of ideas from indicative designers’ interview responses.

Table 4.5:

Indicative designers’ interview responses on deciding worth and relevance of ideas

PHASE II	Typical Designers’ Responses
Measurable Evidence 3: Decide worth and relevance of ideas	Decide worth and relevance of ideas
	More specific information on sustainable interiors
	Important information and examples for sustainable practice
	Information on how to handle materials and design methods
	Specific spaces
	The intervention of practical tools
	Use of some flexibility approaches
	Use of sustainable approaches
	In-depth discussion on the practices

4.3.1.2 Clients’ Opinion for Measurable Evidence 3

To measure if the client participants will decide on the worth and relevance of sustainability practices, their answers on the general behaviour and approaches to sustainable interior design practices and their expectations from interior design professionals are presented. From Phase I, 66.2% continued to Phase II. An additional five people who did not participate in Phase I showed up. So for Phase II, there were 56 participants. Answers of only the fifty-one [51] people who continued to Phase II are compared to their answers in Phase I. The participants’

answers are still in the range of ‘strongly agree’ and ‘agree’, and no significant notable differences are observed. For example, to the statement ‘If I was to work with an interior designer I am interested in an interior designer with knowledge on the issue’ the trend was towards strongly agree (Fig. 4.19) and to the statement ‘Sustainability should be an essential part of the design of interior spaces’ the trend was towards agree. (Fig. 4.20) Both figures show worth and relevance of ideas of clients, before and after Phase II.

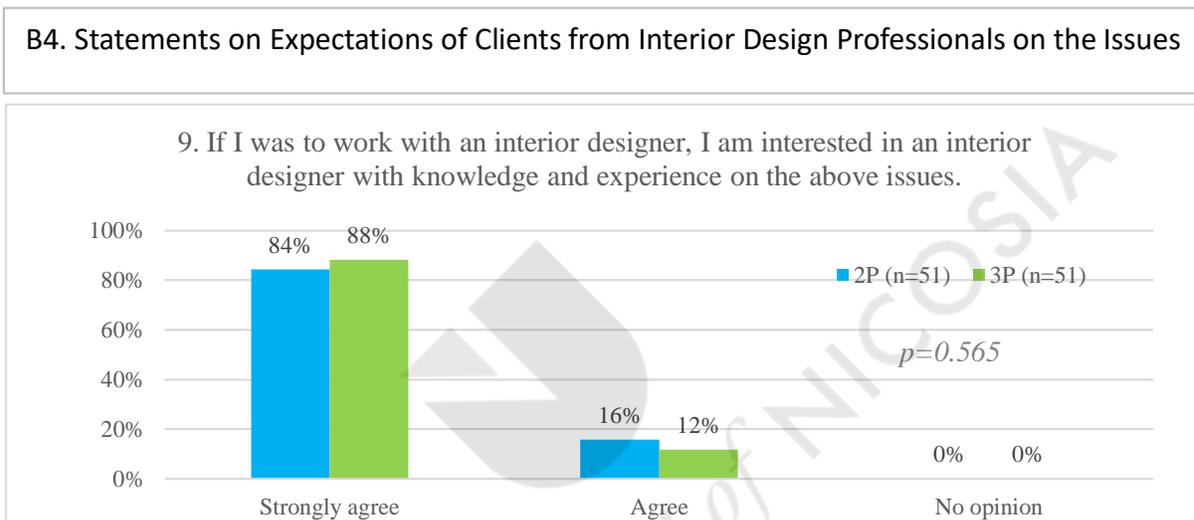


Figure 4.19: Clients interest for designers with knowledge on the issues before and after Phase II.

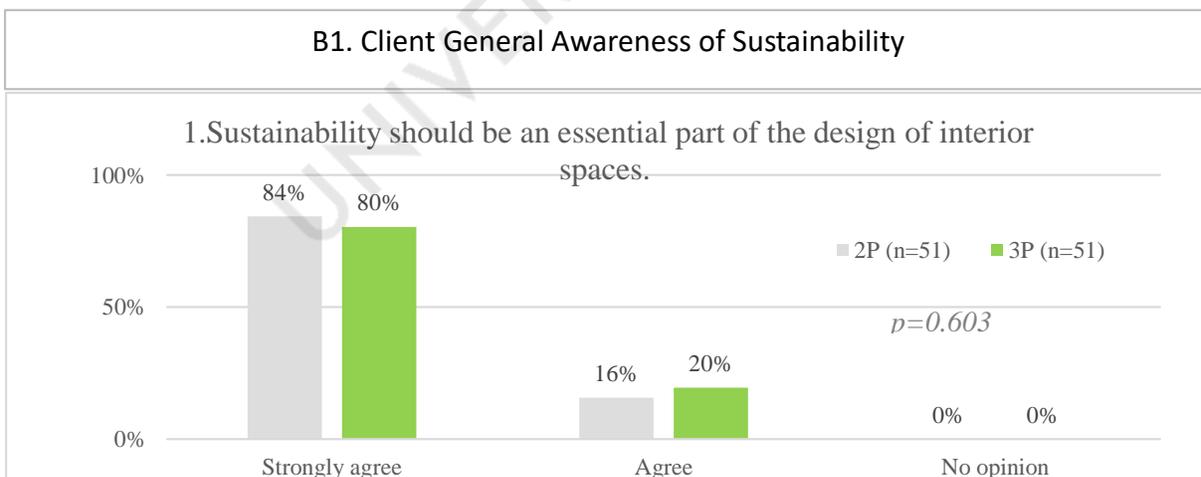


Figure 4.20: Worth and relevance of ideas for clients of sustainability before and after Phase II.

Additionally, the observer's field notes on how a change in client participants' attitudes was implemented independently of their perceptions is presented below with excerpts of the original notes in Greek. Concerning the participants' decision on the worth and relevance of ideas, the observer noted the following: During the discussion, many participants admitted that they can now – after the presentation and the examples showed – understand better how the issue of sustainability is related with interior space design. They also suggested that they would like to have more multipurpose furniture in their houses, but in Cyprus, as they said, there are not many in the market. Clients also said that there is always a need for more spaces in their houses, even if they admit that in Cyprus, we don't have a lot of problems with small spaces because most of the houses are big. They also mention that when designing public schools, designers and architects use moveable partitions as walls to utilise space in a better way. This is something that they can also use in their houses.

The observer's notes show that clients manage to classify and compare different design approaches that derive from the cases studied during the workshop. Some of the clients admitted that in most of the cases, they can't make a lot of changes in their home even if they wanted to because the constructions they had inherited were made years ago, and they cannot afford changes in the structure and the services. More specifically, one client reported that she would like to have more multipurpose furniture in her house, but there are [not] many available in the market. Another client reported that there is always a need for changes in any house, and the approaches that we have seen in the examples are really clever.

Moreover, during the interviews, the clients expressed their decision on the worth and relevance of ideas presented and discussed during the second intervention. All clients found the

intervention very interesting. One of them said, 'The workshop had a lot of prospects' and another participant added that: 'I learned about unknown things and heard about new ideas'. Two clients further added on the issue that: 'It was very useful, and we learned how to use our space to the maximum.' Additionally, one said, 'It was very enjoyable with many creative ideas that I loved.'

To the question: 'Did you learn and become more motivated with specific information and examples about sustainable interior design practice?' all the interviewees had positive responses. One client said, 'I learned new things and also how to apply them.' Opposing to the above, one client admitted that, 'I usually live in small spaces, and all those approaches are very useful.'

Supporting this opposing view, two more clients admitted that they liked the action, they learned a lot, and they wanted us to know that the first approach about multipurpose furniture is something that they will definitely use as they also live in rather small spaces. A client also said that she felt really, very inspired and if she could change her space, she would do it. As she pointed, 'It put me into the mood for a change'. Finally, to the question 'How did the intervention help you think and consider interior design differently?' all clients responded positively. One client said, 'It changed me completely and is a new life philosophy for me.' Another said, 'Of course, those approaches are good, not only for the environment but also for our quality of life.' Alternatively, a client said that the ideas presented helped her a lot, and already applied two of the space design approaches after the intervention'. Additionally, one said, 'Yes, it helped and actually I employed the approach of using multipurpose pieces of furniture in a more professional level.' Table 4.6 shows more clients' views on worth and relevance of ideas appropriate to sustainable interior design practices, through indicative clients' interview responses.

Table 4.6:

Indicative clients' interview responses on deciding worth and relevance of ideas.

PHASE II	Typical Client' Responses
Measurable Evidence 3: Decide worth and relevance of ideas	Decide worth and relevance of ideas
	Value the potentials of sustainable practices
	Happy to use the approaches
	Utilisation of the approaches
	Suggest immediate and long-term approaches
	Use of the medium-term approach
	Suggest a combination of the approaches
	Wise to use the approaches
	New life philosophy
	'It changed me totally'
	Use of professionals to have expected results
	Value professionals who use the approaches
	Think differently

4.3.2 Measurable Evidence 4: Experience, Accept or Commit to a Particular Stance or Action

4.3.2.1 Designers' Opinion for Measurable Evidence 4

The designers' acceptance or commitment to the promoted sustainable practices are indicated in Part B3 of the questionnaire. To the statement 'Designers should design multipurpose interior spaces', 81% of the participants agreed and strongly agreed, 9.5% had no opinion, and 9.5% disagreed. The percentage of disagreement during the first questionnaire was 23% (Fig. 4.21). Moreover, to the statement 'Designers should design for the maximum flexibility of spatial configurations', 6% more than before supported this statement, and there were no disagreeing responses, where in SEMEK 1, the rate of disagreement was 7% (Fig. 4.22). For the statement

‘Designers should develop and implement a deconstruction plan’, 81% strongly agreed or agreed, 14% had no opinion, and 5% disagreed. The percentage of disagreeing designers is slightly smaller than that of the first questionnaire. Also, for the design for deconstruction practice, more people had no opinion in SEMEK 2 than when asked in SEMEK 1 (Fig. 4.23). Overall, for Part B3 of the questionnaire, the results are as follows: Firstly, for space design issues, we observed that the long-term approach (design for deconstruction) was the one with less positive results. Secondly, we still had disagreements after the second intervention for immediate (use of multipurpose pieces of furniture) and long-term approach (design for deconstruction) concerning sustainable space design practices.

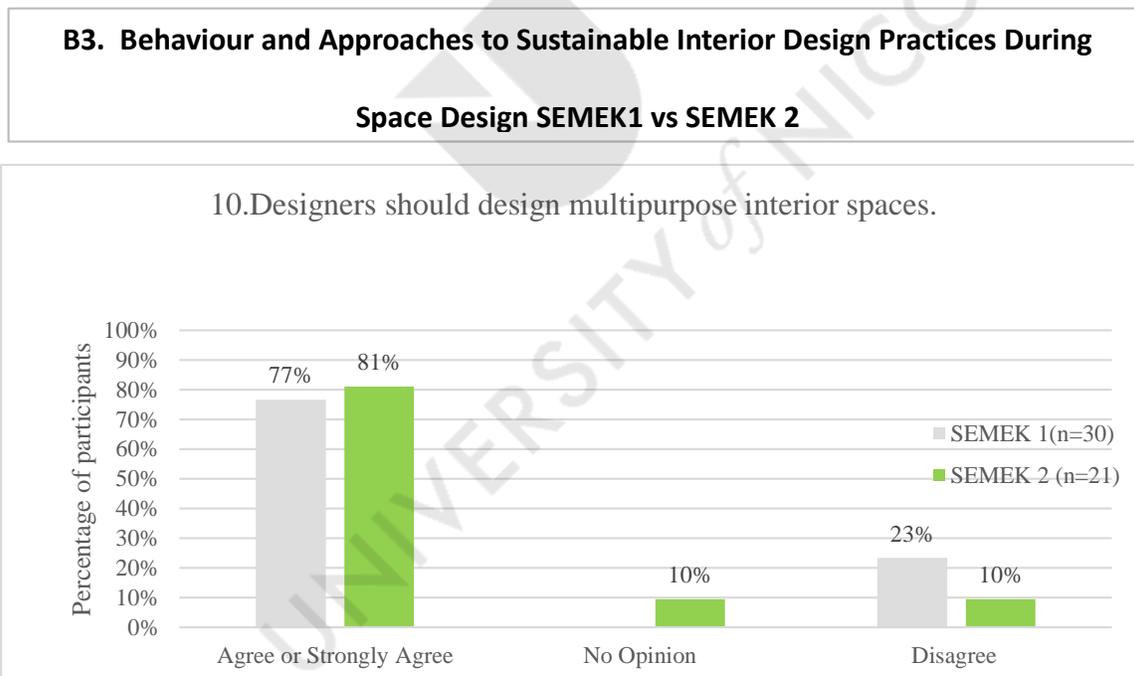


Figure 4.21. Designers' behaviour and approaches for multipurpose interior design practice during space design before and after intervention 2, (Phase II).

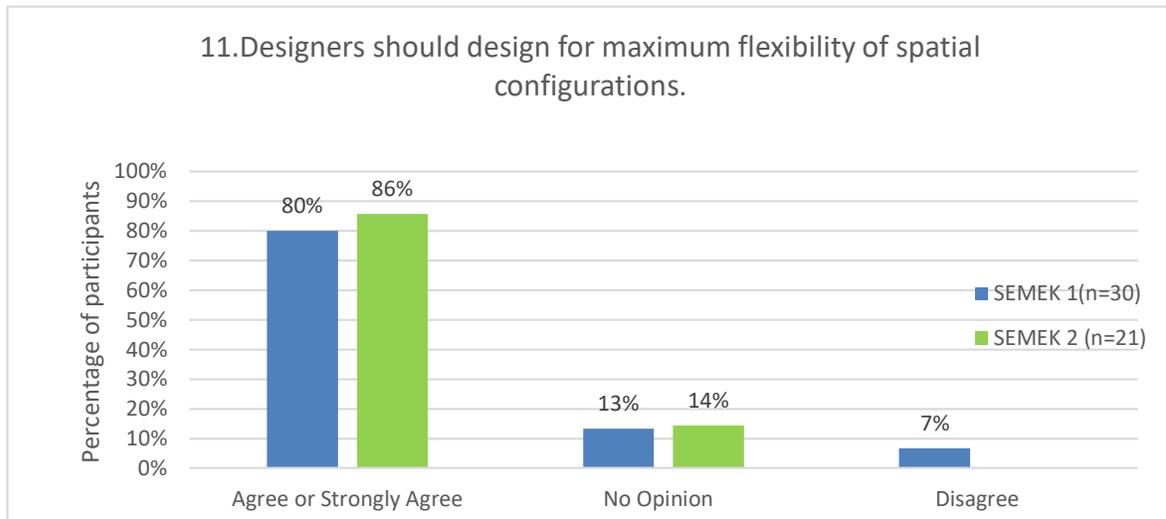


Figure 4.22. Designers' behaviour and approaches for maximum flexibility during space design before and after Intervention 2, (Phase II).

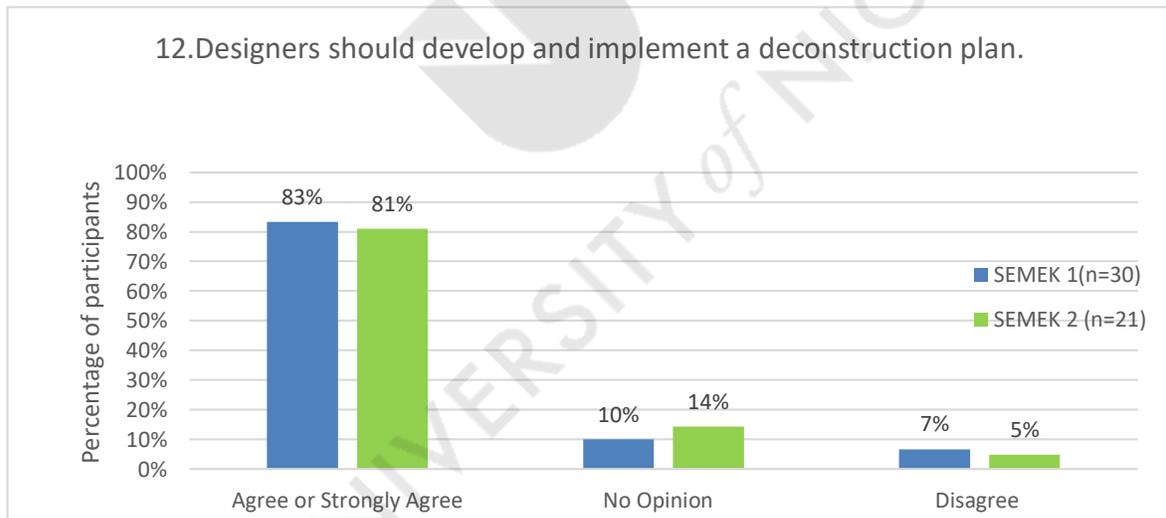


Figure 4.23. Designers' behaviour and approaches for developing and implementing a deconstruction plan during space design before and after Intervention 2, (Phase II).

Further, through the observer's field notes designer participants' experience, acceptance or commitment to particular stances or actions is indicative. As the observer noted: The presentations

of the second intervention started with more general information and focused on more specific sustainable practices. Some participants had the chance to complete previous knowledge and understanding of sustainable issues in interior design. Further, as it was expected, it was more specific and didactic on using specific sustainable approaches. The intervention was accepted among all professionals as it was approaching sustainability from different perspectives but also indicated that the major relevant issue of understanding among participants was the issue of energy conservation. The action was commendable. A multidisciplinary group appeared at the seminar, and that enabled for different opinions to be heard. The promotion of energy efficiency was mainly their understanding as the most relevant issue between sustainability and interior design.

Also, the observer noted: The fact that the designer professionals are willing to experience particular stances or actions initiated by their association is indicative that the intervention had a positive influence on all the professionals. It was a great success, and the participation of many colleagues not only from our association but also from other allied professional associations (architects, engineers) is of great importance. The participants' acceptance of sustainable interior design practices that were achieved from Phase I, is essential now as through questions and answers, the designers made efforts to understand, classify [and use] different approaches. Excerpts from the observer's original field notes from designers' interventions are presented in APPENDIX G i: Phase II- Designers Observation Notes 2.

Moreover, during Phase II, designers had another intervention. More specifically thirteen professionals participated in this phase of the study and were asked to make a (select all that apply) choice between space and materials practices. Figure 4.24 shows that space practices were chosen by 46.2%, materials practices by 23.1% and 30, 8% of the persons selected both options.

When the question was repeated after the intervention, only 23.1% selected space, 0% selected materials and 76.9% selected both ($p=0.103$).

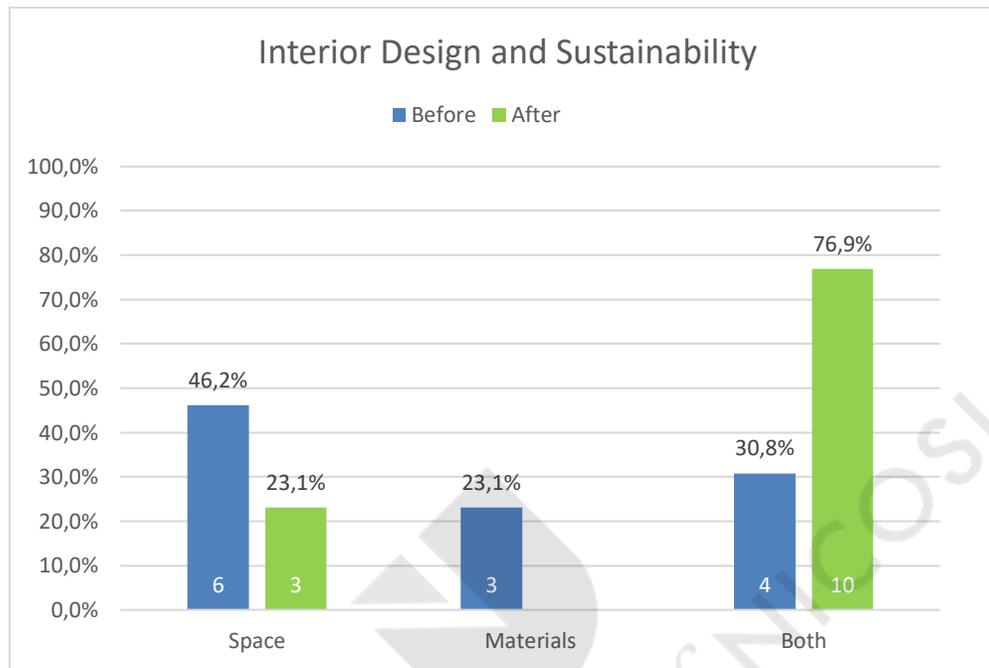


Figure 4.24. Experience, acceptance or commitments to particular stances or actions for designers shown through their behaviour and approaches for sustainable interior design practices during space design before and after Intervention 3, (Phase II).

The results of the comparison of designers' answers before and after this third intervention (SEMEK 3 before and after) show that the third intervention produced a large effect. Table 4.8 shows Chi-Square Analysis on the distribution of responses of SEMEK 3.A and SEMEK 3.B and present that the result, although not statistically significant (due to the small sample size - $n=13$) there is a large effect size of our intervention (Cramer's $V=0.592$).

Table 4.7:

Chi-Square Analysis on the distribution of responses of SEMEK 3.A and SEMEK 3.B

Interior Design and Sustainability					X^2 value	df	p value	
	Space	Materials	Both		4,5	2	0,103	
SEMEK 3.A	6	3	4		Cramer's V=0,592			
SEMEK 3.B	3	0	10					
Sustainable Space design					X^2 value	df	p value	
	Immediate Term	Medium Term	Immediate & Medium Term	Medium & Long Term	All			
SEMEK 3.A	6	3	4	0	0	6,283	6	0,392
SEMEK 3.B	2	0	5	1	5	Cramer's V=0,492		
Sustainable materials					X^2 value	df	p value	
	Immediate Term	Medium Term	Immediate & Medium Term	Medium & Long Term	All			
SEMEK 3.A	7	1	4	1	0	11,839	6	0,066
SEMEK 3.B	4	0	3	0	6	Cramer's V=0,675		

During the interviews, the experience, acceptance or commitment to particular stances or actions is indicated as the designers stressed that the different presentations of Phase II were all very informative on diverse aspects of sustainable design practices. One of them said, 'Examples make me understand how many more things we can do.' Additionally, a designer admitted that it makes her realise that she actually thought of similar approaches. Designers are finding common ground with what has been presented and discussed during this intervention.

After the third intervention, they really committed to particular practices. This is indicated in their answers to the question 'Did you value new approaches to design problems more after analysing, applying and sharing them during workshops?' They said that they really value the new approaches after the workshops. Two designers agreed that now they value all the approaches more and see that other colleagues are using them as well. Specifically, one designer said, 'I

always valued this way of thinking, but now I feel like I updated reasons of valuing them.’ An additional participant said, ‘I already consider some of those approaches after the previous intervention, but now I really understand and value their importance in my practice.’ To the question ‘Did you become more motivated with the specific examples about sustainable interior design practice?’ all designers answered favourably. Two of them said, ‘I now feel more confident to inform my clients.’ To the question ‘How did the intervention help you think and consider design practice differently?’, all designers answered that the intervention made them feel like considering more sustainable practices as they now knew that others were involved as well.

The intervention motivated the designers to unfold their imagination and knowledge after seeing similar examples and applications. All designers agreed that in one way or another, the workshops helped them clarify things. Specifically, one designer said ‘With the discussion and description of examples from other participants, I can understand and consider my practice differently through their experience’. To the question ‘Has the way that you approach interior design practice changed? Could you describe how it has changed?’, the designers admitted that they have changed and some gave the following answers: One designer commented that: ‘After the intervention, I had a case where I used a number of old pieces of furniture and objects for a new interior.’ Another one went further and admitted that: ‘The approaches became my usual practice.’ Additionally, a designer noted that, ‘Of course, [have changed]. Now I will never forget, for example, that not all kinds of wood grow quick enough to sustain the demand, and we, as designers, can propose other alternative solutions.’

To the question ‘After this process, if some other stakeholders [for example clients] are interested in sustainable approaches to interior design, how do you think that you can help?’, designers responded that they can help by applying both materials and sustainable practices. One

designer said, ‘I can support the practices as my clients are asking more for them.’ All designers replied that they can now feel that they can help with both approaches. One of them commented, ‘Materials always need to be explored, and we need to do our research to find the proper ones anyway.’ Another designer said, ‘Yes, I can help with both space design and materials practices. However, we have to say that recycled materials are only whatever we can find in the market as readymade products. We actually do not recycle anything on the island. Indeed, we gather our recycled materials – for example, glass, paper, aluminium, etc. – but we export them all to be used as raw materials in other neighbouring countries.’ Table 4.8 shows designers’ indicative interview responses for experience, acceptance or commitment to the promoted sustainable practices. Designers’ interviews that include all interview transcripts and coding for Phase II are presented in APPENDIX Ji: Phase II Designers Interview Transcripts and Coding.

Table 4.8:

Designers’ indicative interview responses for experience, acceptance or commitment to particular sustainable practices.

PHASE II	Typical Designers’ Responses
Measurable Evidence 4: Experience, acceptance or commitment to particular stances or actions (sustainable practices)	Experience, acceptance or commitment to particular stances or actions
	Think of design and practice in a different way
	Sustainability as the way to work
	Being motivated on sustainable practices
	Value more all the approaches
	Always have these approaches in my mind
	Considering new practices
	Get into the spirit of thinking more about the environment
	Update the reason of valuing
	Change way of thinking and working

4.3.2.2 Clients' Opinion for Measurable Evidence 4

The client participants' acceptance or commitment to the promoted sustainable practices is indicated with the results of Part B3 of the questionnaire. The three statements concerning sustainable space design in interiors are the following: 'The maximum flexibility of spatial elements is important', 'Interior spaces should be designed for multipurpose uses', and 'Interior design should develop and implement a deconstruction plan.' A comparison of B3 for Space Design between PUBLIC1 (the first questionnaire given) and PUBLIC3 (the questionnaire given after Phase II) among the 56 persons who participated in both questionnaires took place. As we compared and contrasted the answers of only the 56 persons who continued to PUBLIC3 with their answers in PUBLIC1 although the participants' answers are still in the range of Strongly Agree and Agree (none of the participants has No opinion on the 3 questions) in Part B3 a shift towards Strongly Agree option is observed. The same trend, although not statistically significant, is observed for all three questions that presents client participants' acceptance statements for flexibility of elements, (Fig.4.25) flexibility of space (Fig.4.26) and design for deconstruction. (Fig.4.27). The strongest shift towards Strongly Agree is observed in 'Interior design should develop and implement a deconstruction plan', where for PUBLIC1 we observed a 53.6% of the participants strongly agreeing to the statement while in PUBLIC 3 the proportion increased to 67.9% ($p=0.046$).

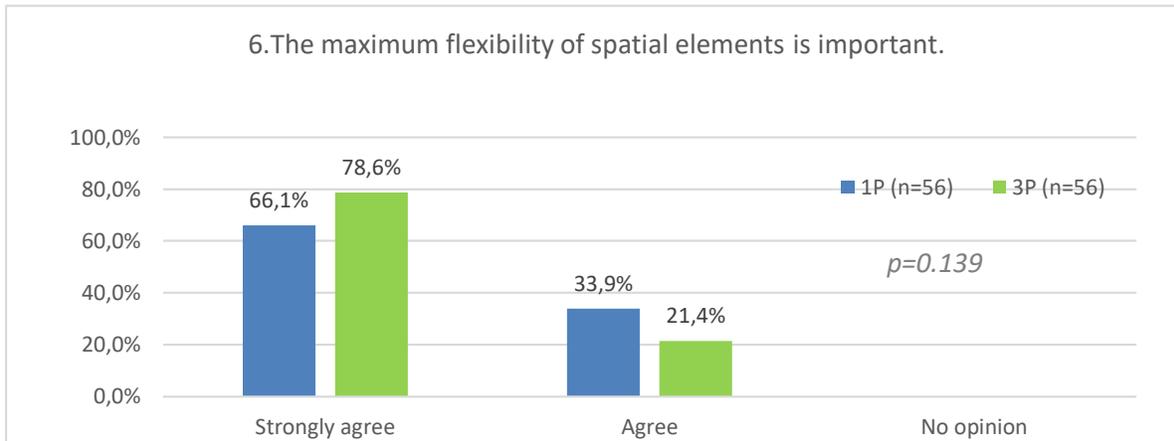


Figure 4. 25: Presents Clients Statements for Flexibility of Spatial Elements (Furniture)

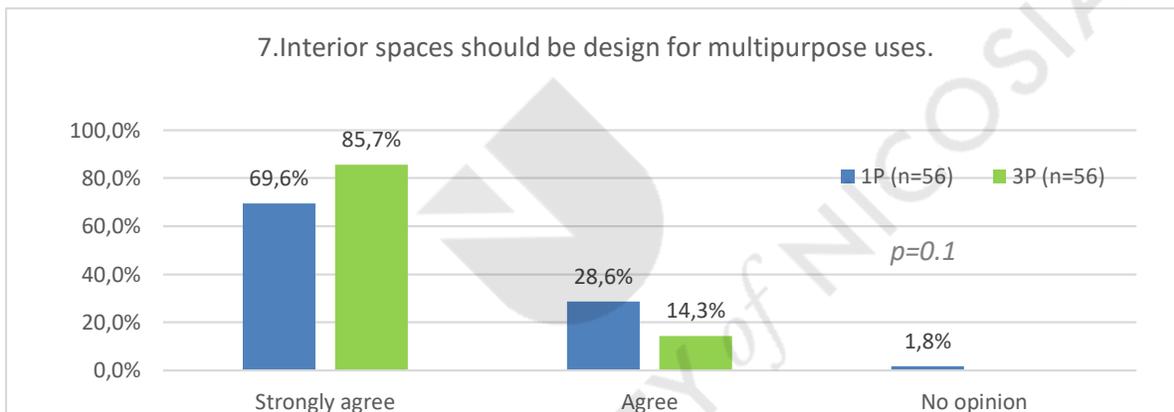


Figure 4. 26: Presents Clients Statements for Design for Flexibility of Space

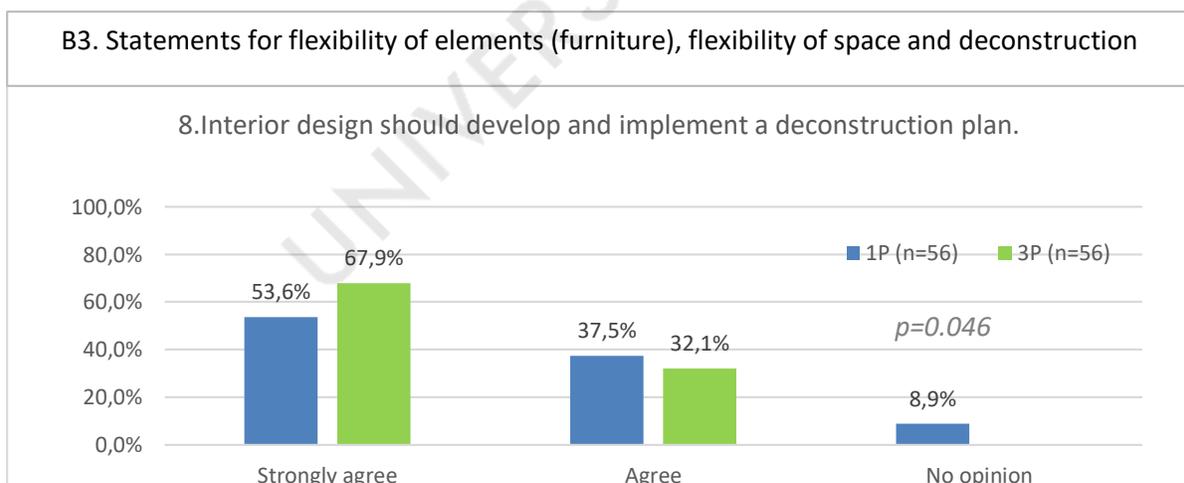


Figure 4. 27: Presents Clients Statements for Deconstruction

Moreover, according to the excerpts from the observer's field notes on the client participants' experience, acceptance or commitment to particular stances or actions, participants were asking for solutions to different problems on the interior spaces in their houses. They had the architectural plans of their houses, and they discussed the design problems with volunteer designers and the researcher. Some clients admitted that they used some of these approaches, mostly the immediate approach, meaning that they had an experience with multipurpose pieces of furniture. They used them in their houses, such as a sofa that becomes a bed or a table which can become bigger when there is a need. According to the same observer the participants had different concerns for space design issues in their houses. Designers answered different questions and considered cases separately, as each family needs are different.

One of the participants showed the plan of her house, and she wanted to move the central exterior staircase of her two-floor house. She was talking with one of the designers to find solutions and move the staircase as it was blocking the view. They had to see the boundaries restriction, which usually is three meters. She liked the idea to use the medium-term approach with moveable partitions to some of the spaces to maximise the rest of the view from different sides of the house.

Another participant wanted to create her area to be more operating. She recognised that it was better to have an open plan for more freedom in the circulation of the house, and she also wanted to use moveable partitions. Another problem she had was that the dining area was far away from the living room and the kitchen, and it was not so convenient for her, so a suggestion to use the immediate approach with some multipurpose and moveable pieces was proposed, and she accepted that as a perfect solution.

One more participant presenting her plan said that the problem was that her spaces in the winter were too cold. She was asking if she can do something to fix it. She was wondering if she needed to close some areas as she had an open plan house. The designer suggested that some lightweight partitions could be added and, during installation, will not create any mess (the participant said that she does not want any messy builders in the house). The partitions could eliminate the space, and by choosing a transparent material, the client could keep the sense of the open space. The clients' discussion with designers, to solve various design problems managed to label and identify the issues in the context of various interior design projects. Excerpts from the observer's original field notes from clients' intervention 2 are presented in APPENDIX G ii: Phase II Clients Observation Notes 2.

Additionally, during interviews, the participants stated their experiences, acceptance or commitments to particular stances or actions by answering the following questions. The first relevant question was 'Has the way that you approach interior design changed? Could you describe how it has changed?' All clients said that the intervention really helped them change their approach to interior design. One said, 'After the intervention, [I selected] pieces of furniture to use in my house that are multifunction pieces, so I can use them for at least two different needs.' A different one said, 'Yes, after this intervention in a new small space of my house, I used the idea of [a] sofa-bed and a new cabinet that I can [also] use as a divider for the new space.' The answers show that clients utilise specific design approaches that lead to more sustainable solutions for design problems. Moreover, clients were asked, 'After this process, if some friends or family members are interested in sustainable approaches to interior design, are you going to suggest any, and which?' All clients responded positively to this question, saying that they will suggest sustainable practices. Most of them said that they would suggest a combination of the practices.

Two participants said, ‘I would suggest the first approach (use of multipurpose pieces of furniture) and also the third (design for deconstruction) as I believe that they are very convenient for all kinds of storage spaces.’ Additionally, a client said, ‘I, for sure, suggest the first approach for the use of multipurpose pieces of furniture as I already use it, and I am very pleased and happy with that.’ This client additionally supported that the third space design approach (design for deconstruction) is very much suited for exhibition design, but she is sure that ‘with the help of the designer, it has potentials for houses as well’. Table 4.9 shows clients’ indicative interview responses for experience, acceptance or commitment to particular sustainable practices. Clients’ interviews that include all interview transcripts and coding for Phase II are presented in APPENDIX J ii: Phase II Clients Interview Transcripts and Coding.

Table 4.9:

Clients’ indicative interview responses for experience, acceptance or commitment to particular sustainable practices.

PHASE II	Typical Clients’ Responses
Measurable Evidence 4: Experience, acceptance or commitment to particular stances or actions (sustainable practices)	Experience, acceptance or commitment to particular stances or actions
	The approaches are good not only for the environment but also for our life
	Have a combination of the sustainable approaches.
	Suggesting the approaches to others
	Learning new ideas that I loved
	Use of the approaches
	Like the idea of the immediate term approach
	Value the idea of using the approaches and suggest them to others.
	Suggest immediate and medium term approaches
	Acting now differently.

4.4 Results Phase III: Reinforcing Outcomes

According to the proposed model, Phase III should reveal the refreezing step. During this phase, participants organise/conceptualise and internalise/characterise new values, reconciled internal conflicts, developed value systems and adopted new belief systems and philosophies. The measurable evidence for this phase are (1) to state personal positions, reasons and beliefs and (2) to behave consistently with personal value sets. During this phase, results derive from the observer's notes, the interviews, the questionnaire for clients and eight design proposals from designers. The participants involved in this phase were twenty-eight clients and thirteen designers.

4.4.1 Measurable Evidence 5: State Personal Positions, Reasons and Beliefs

4.4.1.1 Designers' Opinion for Measurable Evidence 5

All designers who were interviewed after the third phase stated their personal positions, reasons and beliefs and said that they found the intervention very helpful, and as all of them commented, the process of organising the exhibition was of great importance. One designer said that: 'During the exhibition, we saw some designs that helped us realise how things can be developed'. Other designers supported this opinion by commenting that: 'It was very helpful, as [the organising of the exhibition] assisted to put things in order' and other designers remarked that: 'We should repeat this event every year.' During the interviews, all designers also said that the intervention was very enjoyable. Some of them added that it was a nice intervention that gave them the chance to listen to and see other designers' experiences, and some others said that 'It was very enjoyable as designers got together and saw one another's work and valued what they did.' During interviews designers also answered the question 'Did you organise and produce designs and plans as suggested during interventions?' Five of the designers who participated in the interviews answered positively. Three more said that they would have like to do it [present their

work] but could not manage to finish and present at the event because of other obligations. Table 4.9 shows designers' responses on personal positions, reasons and beliefs after Phase III intervention, namely the exhibition.

Table 4.10:

Designers' indicative interview responses on personal positions, reasons and beliefs

PHASE III	Typical Designers' Responses
Measurable Evidence 5: State personal positions, reasons and beliefs	State personal positions, reasons and beliefs
	Strongly believe that the new knowledge is dominant
	Sustainable practices bring professionals together
	Welcome and value being part of the event
	Willingness to do more relevant actions with colleagues
	Strong feeling to adopt the new approaches
	Exhibition helped understanding on sustainability
	'I made from recycled and reclaimed materials lighting fixtures'
	Value new approaches
	Adopt new approaches to practice
	Be open to innovative ideas and materials

4.4.1.2 Clients' Opinion for Measurable Evidence 5

The clients' responses on their personal positions, reasons and beliefs are presented through a comparison between the initial answers of questionnaire PUBLIC 1 (Before Phase I) and PUBLIC 4 (After Phase III), particularly of part B1 (general awareness of the client on sustainability).

Although the participants' answers are still in the range of 'strongly agree' and 'agree', a shift towards 'strongly agree' is observed compared to PUBLIC 1. This is true for both questions in B1 (Figure 4.28 and 4.29).

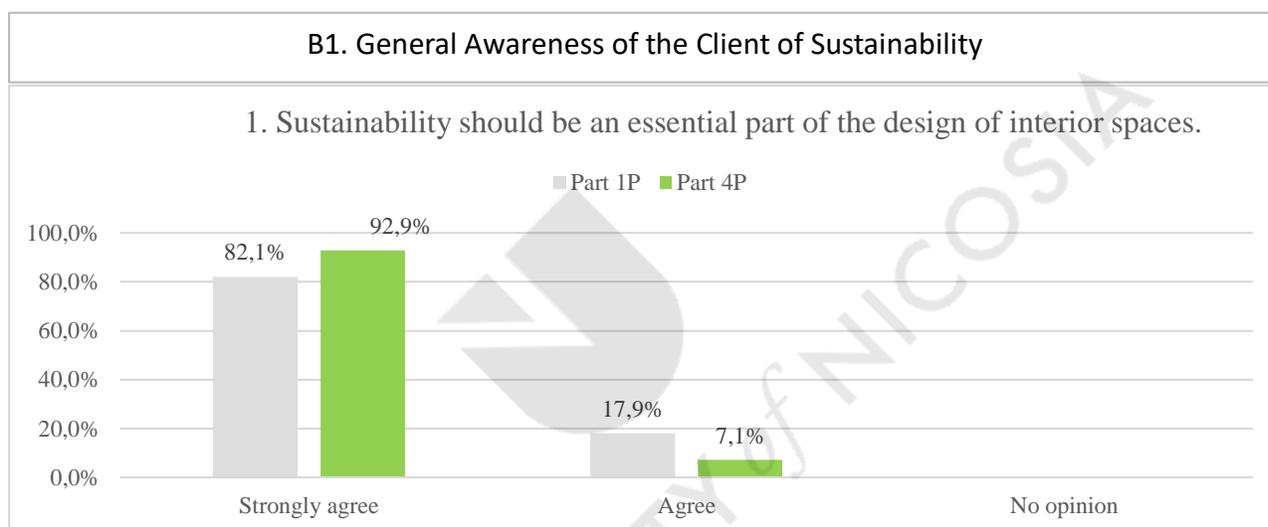


Figure 4.28: Clients' responses on sustainability and design of interior spaces

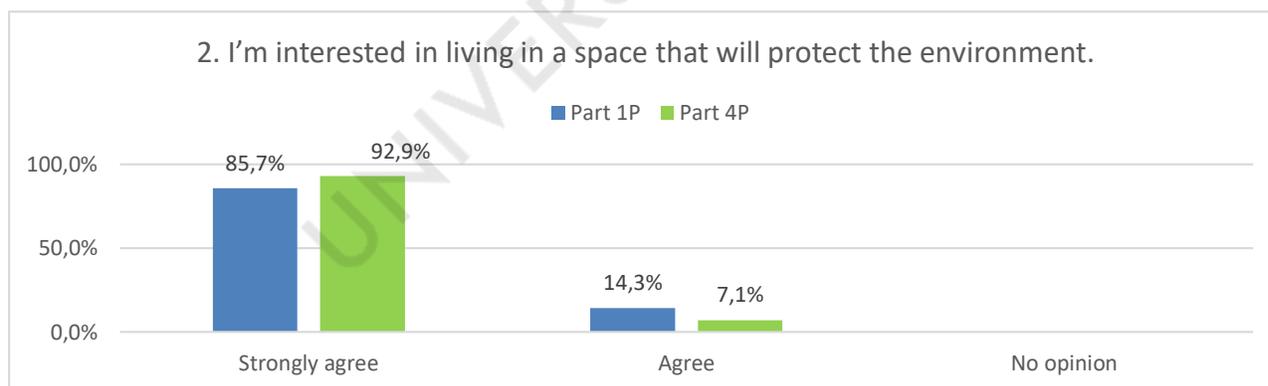


Figure 4.29: Clients' responses on positions for living in a space that protect the environment.

Additionally, during interviews, all the clients found the intervention very useful and interesting, as well as both the materials presented and exhibited projects. All the participants found the exhibition very enjoyable. One client said, ‘I was very impressed with the items that were presented.’ Another client embraced this by noting that, ‘I would definitely buy something made out of recycled materials.’ Furthermore, all clients said that during this intervention, they realised that sustainable approaches can really be implemented. One participant said, ‘I actually changed with this event as now I see that not only we can apply all the sustainable practices to our interiors, but also, there are designers and suppliers that are capable to support these actions.’ Table 4.11 shows clients’ interview responses on personal position, reasons and beliefs.

Table 4.11:

Clients’ responses on personal position, reasons and beliefs.

PHASE III	Typical Clients Responses
Measurable Evidence 5: State personal positions, reasons and beliefs	State personal positions, reasons and beliefs
	I was impressed with the exhibited items
	It was both useful and enjoyable
	I found the furniture made out of cork very interesting because I think it would be very relaxing
	To make items that we use every day out of recycled materials is very interesting
	I learned about unknown things and also about new ideas that I loved
	It was enjoyable and with great creative ideas
	It was a very valuable and important exhibition
	I was really captivated with the exhibits
	I feel that it is very helpful to present these objects and promote this type of work
	I was impressed with the use of multipurpose furniture and recycled materials
	It changed me completely as now I learn new things and how to apply them
	I got into the mood, and my attitude changed

4.4.2 Measurable Evidence 6: Behave Consistently with Personal Value Set

4.4.2.1 Designers' Opinions for Measurable Evidence 6

In order to measure the second evidence of Phase III, during interviews designers answered to the question 'How did the intervention help you think and consider design practice differently?' All interviewees said that they started using the sustainable practices however, three of them said that they did not present any design proposal, during the exhibition, as the projects they had in their hands were unfinished, but they were suggesting the practices to their clients. Also, designers answered the question 'Has the way that you approach interior design practice changed? Could you describe how it has changed?' All interviewees agreed and admitted that the intervention changed their way of approaching design problems. One designer said, 'My approach changed for sure, and now apart from interior projects, I also use those [practices] to produce my own lighting fixtures that I make from found materials'. Some other designers said that they are using this new knowledge for the projects that they are doing now, and another designer admitted that she has more knowledge now but no project, and as she stated, she will use the new knowledge for sure during practice.

Designers additionally responded to the question 'After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice, how do you think you can help?' All designers replied that they can now help with both issues of practices space design and materials and are pleased that the materials presentation was on specific sustainable materials. One of them commented: 'In our work, research and investigation are always done at any step of the design process, so doing research to find the proper materials is something that we do anyway.' Another designer said that she is sure that now, as soon as retailers start to find these sustainable materials and import them, we will have easier access to them.

Another designer supported that: ‘now that I can apply all the different sustainable practices for space design, I will, for sure, use sustainable materials and this will enhance my design proposals.’ Table 4.12 shows indicative designers’ statements on behaving consistently with personal value sets. Designers’ interviews that include all interview transcripts and coding for Phase III presented in APPENDIX Ki: Phase III Designers Interviews Transcripts and Coding.

Table 4.12:

Designers’ responses on behaving consistently with personal value sets.

PHASE III	Typical Designers’ Responses
Measurable Evidence 6: Behave consistently with personal value set	Behave consistently with personal value set
	Enjoy and adopt new approaches
	Realise that approaches can be applied
	New approaches became the new practice
	Realise the usefulness of the effort needed
	Consider and value the new approaches
	Value and admit readiness to work more on the issue
	Critique the results
	Understand the consequences of using the new approaches
	Comment on the outcome

4.4.2.2 Clients' Opinion for Measurable Evidence 6

Clients' responses on behaving consistently with personal value sets are compared between the initial answers of questionnaire PUBLIC 1 and those of PUBLIC 4, particularly the part B2 statements on natural resources (Figure 4.30) recycling (Figure 4.31) and reclaimed materials (Figure 4.32) and part B3 statements on multipurpose furniture, flexible spaces and design for deconstruction (Figure 4.33). In B2 the participants' answers are still in the range of 'strongly agree' and 'agree', with a shift towards 'strongly agree' observed compared to PUBLIC 1. This is true for all three questions in the B2 questions asked in PUBLIC 4.

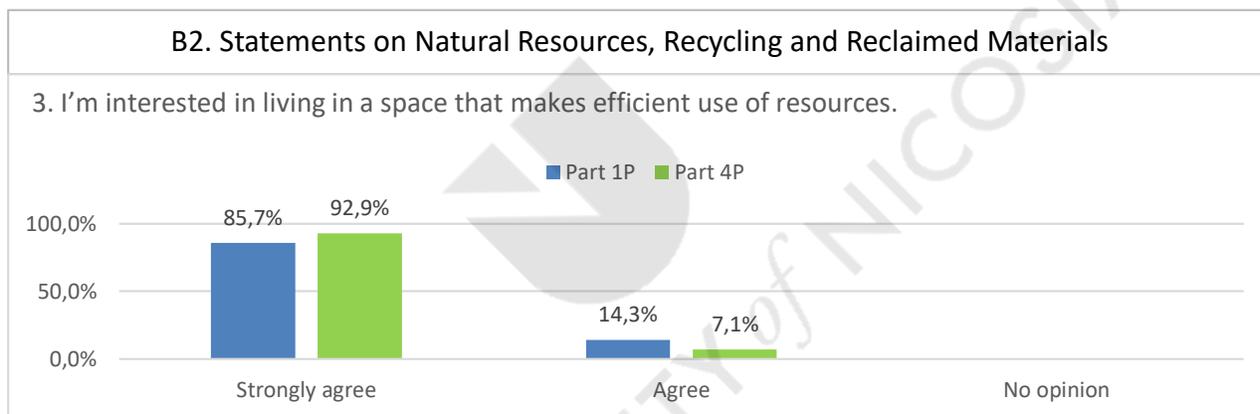


Figure 4.30: Clients responses on Efficient Use of Resources the comparison of Phases I and III.

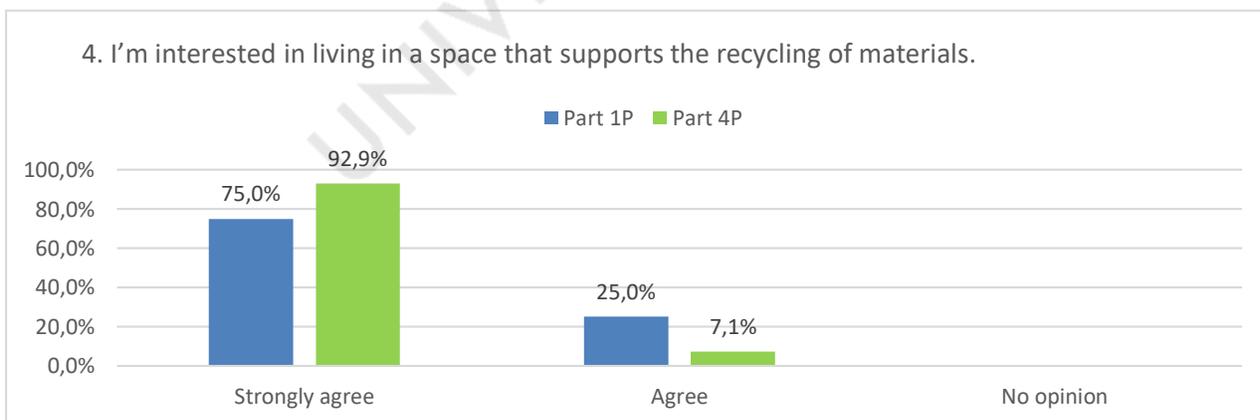


Figure 4.31: Clients responses on Recycling of Materials the comparison of Phases I and III.

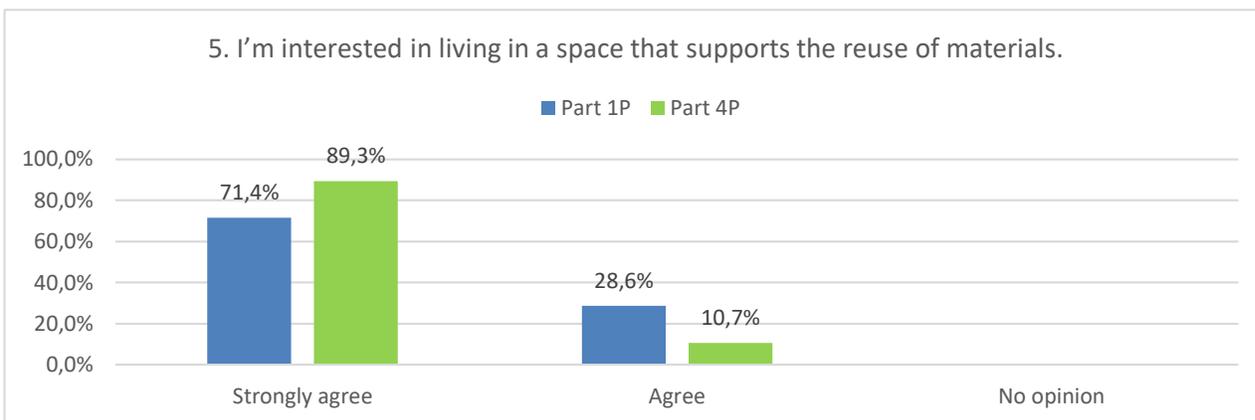


Figure 4.32: Clients responses on the Reuse of Materials the comparison of Phases I and III.

The participants' answers in part B3 are still in the range of 'strongly agree' and 'agree', with a shift towards 'strongly agree' observed compared to P1. This is true for all three questions in B3 that are asked in PUBLIC 4. The strongest shift towards 'strongly agree' is observed in the question 'Interior design should develop and implement a deconstruction plan' (Figure 4.33), where, for PUBLIC 1, we observed 64.3% of the participants strongly agreeing to the statement, while in PUBLIC 4, the proportion increased to 78.6% ($p=0.579$).

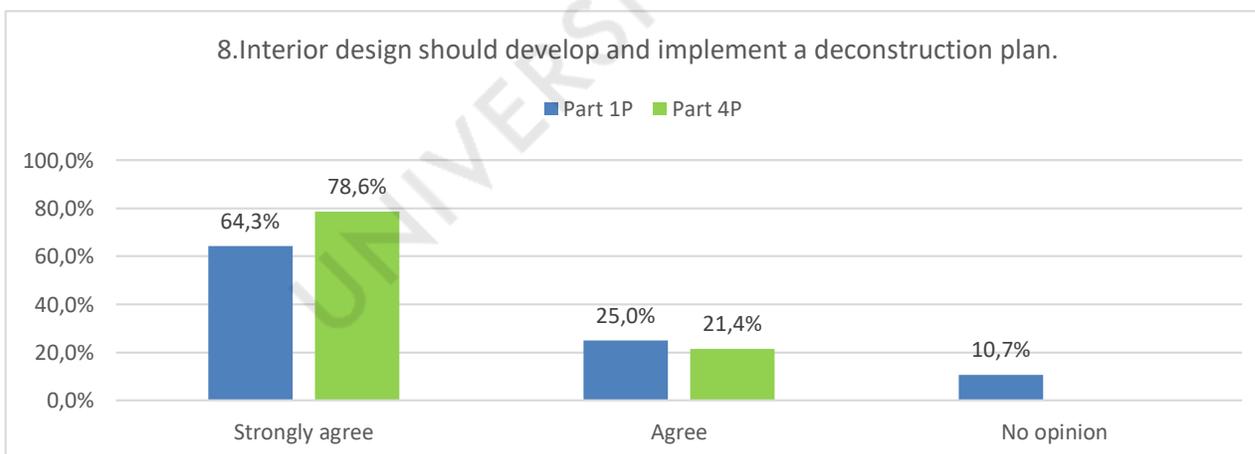


Figure 4.33: Clients responses on Implementation of Deconstruction plan the comparison of Phases I and III.

Moreover, three people who had no opinions in P1 now have strong positive opinions.

Table 4.13 shows the comparison of Phases I and III, on clients' responses and indication of consistent behaviour with personal value set relevant to the promoted sustainable practices.

Table 4.13:

Chi-Square analysis on the distribution of responses of all questions across P1 and P4.

Chi-Square analysis of all questions across P1 and P4.						
Sustainability should be an essential part of the design of interior spaces						
	Strongly agree	Agree	No opinion	χ^2 value	df	p value
PUBLIC 1	23	5	0,00%	1,469	1	0,225
PUBLIC 4	26	2	0			
I'm interested in living in a space that will protect the environment						
	Strongly agree	Agree	No opinion	0,747	1	0,388
PUBLIC 1	24	4	0			
PUBLIC 4	26	2	0			
I'm interested in living in a space that makes efficient use of resources.						
	Strongly agree	Agree	No opinion	0,747	1	0,388
PUBLIC 1	24	4	0			
PUBLIC 4	26	2	0			
I'm interested in living in a space that support recycling of materials						
	Strongly agree	Agree	No opinion	3,31	1	0,069
PUBLIC 1	21	7	0			
PUBLIC 4	26	2	0			
I'm interested in living in a space that support reuse of materials						
	Strongly agree	Agree	No opinion	2,828	1	0,093
PUBLIC 1	20	8	0			
PUBLIC 4	25	3	0			
The maximum flexibility of spatial elements is important.						
	Strongly agree	Agree	No opinion	1,524	1	0,217
PUBLIC 1	19	9	0			
PUBLIC 4	23	5	0			
Interior spaces should be design for multipurpose uses.						

	Strongly agree	Agree	No opinion	1,948	1	0,163
PUBLIC 1	21	7	0			
PUBLIC 4	25	3	0			
Interior design should develop and implement a deconstruction plan.						
	Strongly agree	Agree	No opinion	0,308	1	0,579
PUBLIC 1	18	7	3			
PUBLIC 4	22	6	0			
If I was to work with an interior designer, I am interested in an interior designer with knowledge and experience on the above issues.						
	Strongly agree	Agree	No opinion	1,191	1	0,275
PUBLIC 1	22	6	0			
PUBLIC 4	25	3	0			
I consider important the provision of information on relevant issues from interior designers.						
	Strongly agree	Agree	No opinion	2,828	1	0,093
PUBLIC 1	20	8	0			
PUBLIC 4	25	3	0			

Additionally, during the interviews, clients answered the question ‘How did the intervention help you think and consider interior design differently?’ All participants responded positively. Two of them commented, ‘If I had the chance to build a new space now, certainly, I would have chosen sustainable space design, materials and approaches.’ Another participant reinforced this opinion and commented that, ‘I now consider a combination of sustainable space design approaches to my new space.’ Further participants answered the question ‘Has the way that you approach interior design changed? Could you describe how it has changed?’ One client said, ‘I would prefer now to work with a professional designer who could make use of all the sustainable practices.’ Additionally, one said, ‘Yes, of course, I have changed. Now I know that I can find the materials that I am looking for and also the professionals who can help me on my project.’ Finally, clients answered the question ‘After this process, if some friends or family

members are interested in sustainable approaches for an interior space, are you going to suggest sustainable practices, and if yes, which?’ One client said that she will suggest both materials and space-sustainable practices as the practices have their rationality and also offer long life to the interior space. One more said, ‘They are also a long-term financial investment.’ Additionally, one noted that these choices of practices have a positive effect on the use of space and now she knows that some materials or substances in various products are harmful, and by using the proposed practices, one can ensure that these substances are avoided. Table 4.14 shows clients’ responses that demonstrate consistent behaviour with personal value sets relevant to sustainable practices. Clients’ interviews that include all interview transcripts and coding for Phase III are presented in APPENDIX K ii: Phase III Clients Interviews Transcripts and Coding.

Table 4.14:

Clients’ responses showing consistent behaviour with personal value sets relevant to sustainable practices.

PHASE III	Typical Clients’ Responses
Measurable Evidence 6: Behave consistently with personal value set	Behave consistently with personal value set
	My attitude has changed to the extent that I would definitely buy something made of recycled items now
	I would recommend these products to my friends
	I would recommend these products to other people I know, and we could go shopping together
	If I had the need to buy something for my house, I would definitely buy some of those exhibited
	I will think and act differently now
	These all look very contemporary and thoughtful at the same time
	Now I can apply some of the approaches practically
	I used the idea of a flexible wall
	I would suggest to everybody to reuse their old pieces of furniture

4.4.3 Observer's Report for Designers and Clients

On the 26th of May, during the intervention, an observer was making notes during the event, which started with the materials presentation and then a short discussion between the presenter and the participants. Excerpts from the observer's field notes were collected and presented below to inform about the extent to which an alteration in the participants' attitudes was achieved, independent of their perceptions that have been presented above, through the interviews. The observers' notes, which describe and reflect the participants' personal positions, reasons and beliefs on the issue of sustainability are as follow:

The designers admitted that they now, after seeing examples and after the collaboration with their clients, have a better understanding of how they can perform and act using the information given during previous interventions. Some of the clients acknowledged that the issue of sustainability is now clearly related with interior design, and some other designers comment that the process of preparing and presenting the proposals was the most enlightening experience. This suggests that being part of the action was important for the stakeholders, and according to the observer the participants' behaviour is now consistent with personal value set and as is noted:

Both designers and clients said publicly that after the previous interventions, this exhibition was the expected intervention to take place. All designers and clients wanted their work to be in the front line, and they were all very proud of how they managed their participation in the event. Excerpts from the observer's original field notes from designers' and clients' intervention are found in APPENDIX H: Phase III- Observation Notes 3.

4.4.4 Case Studies Presented

4.4.4.1 Case Studies Evidences

The case studies show designers' and clients' performance to the promoted sustainable interior design practices. The cases took place 2 to 12 months after the initial interventions of the research. The evidences from the case studies attempt to explore further one of the research questions - 'Which sustainable practices are the more widespread among designers and their clients?' by identifying a): Which are the most prevalent for sustainable space design practice? and b): Which are the most prevalent for sustainable materials practice? and draw conclusions on the success of the proposed model. The table below, Table 4.13 shows the type of projects that have been carried out by designers according to region. Designers that participated in the action research propose sustainable solutions to eight client participants. Eight interior design proposals are examined to provide data on case studies of designers' and clients' approaches after the interventions. Evidence used to form these case studies and quotes from designers originated from submitted proposals to the researcher as PDF files including space design solutions and material selection for each project. Through analysis of these case studies, this part presents the impact that the research interventions had on the participating stakeholders by drawing conclusions from the kind of approaches that have been applied.

Table 4.15:

Case Studies among Designers & Clients

Case Number	Town	Number of Project in Town	Type of Project
1	Larnaca	1	Pub/Restaurant
2	Larnaca	2	Semi-detached House
3	Larnaca	3	Small Detached Studio
4	Limassol	1	Shop
5	Limassol	2	Detached House
6	Nicosia	1	Home /Office
7	Nicosia	2	2BRM.Detached House
8	Nicosia	3	Apartment

The intention of this part is not to compare these projects but rather to note the variety of solutions that are possible to procure when one decides to practice under the umbrella of the specific approaches of sustainability. Also, this description will enable the evaluation of the case study evidences concerning the choice of approach by the participants.

For example, case study 1 (Larnaca 1 — Pub) belongs to the same family for many years. The master plan of the area, prepared some years ago, included the restoration of the seafront road and included new pedestrian walkways, a new road and, for some shops, a bigger pavement to be used by their customers. At the beginning of 2012, the road works started, and the family wanted to take advantage of this period to renew the old pub. One family member attended all the interventions for the clients and worked with a participant designer towards the presented proposal. The low budget drove the owners, from the very beginning, to the choice of reclaimed materials. One by one, the decisions made, involved the needs of the client and some of the proposed sustainable practices. The use of existing furnishings and materials led to research on the use of further reclaimed materials that could be used. The environmental output of new materials and products led to the life-cycle analysis of the new materials, promoted during the action

research, and that process was integrated into the project proposal. The designer agreed with the client to use a combination of approaches that use sustainable materials and resources and existing materials and pieces of furniture, as well as evaluate any new materials to ensure that they are sourced from renewable resources. The designer pointed that ‘the economic situation is a driving force towards the different sustainable approaches that we proposed. I hope that this will continue after the economic crisis and also that these practices will be spread more [among] the professionals’. The client commented that ‘some of the examples that we have seen during the workshops were really interesting, useful and very creative, and those examples were our inspiration’.

Another case study (Limassol 1 — Shop) shows the different choices that the designer and client took when they worked together to produce a sustainable design proposal. This project in Limassol is very interesting as it was operated as a shop, but later, the owner asked to split it into two different areas as working and living spaces. The shop owner requested from the designer to design the space using flexible methods and practices for the space design and use recycled materials. The designer said that ‘I understood that the space had various problems as far as the circulation [was concerned], and I changed the design of the space, having in mind what the owner said but also all the innovative ideas that the practices could lead to, as discussed and presented during the interventions. I tried to reach the client’s requests by proposing various changes to the space’.

Moreover, in another case study (Nicosia 1 — Home-Office) that was developed during this period; the client asked to design his space in a way that it can be used as an office studio and a living space with the use of recycled materials and flexible pieces of furniture. The project was actually a new studio/ office in the same plot and next to the existing house of the family. One of

the designer participants responded early to the client by proposing some of the promoted practices. Additionally, as the designer said, one of her early decisions was to divide the space into two parts, the larger of which was to be the studio (living area) and the smaller the office (working area), using a flexible wall. With a flexible wall, the space can be separated or remain open according to present or future needs. Another decision the designer made was a kitchen unit in the living area as the absence of a kitchen in the living area was a disadvantage. The kitchen that was within the office zone suggested, remaining or, if possible, restricted as the project was still under construction. All eight cases are presented as proposed by the designers to the clients, and as presented during the exhibition in Appendix L.

Table 4.16, shows the spread of sustainable practices among designers and their clients, reflecting the participants' preference and reinforcing the outcomes and results of the last phase. The most preferable sustainable practices among designers and their clients are the multipurpose furniture and the new materials (immediate approach), while flexible space design and recycled materials (medium approach) are the second preferable and deconstructive space designs, with reclaimed materials (the long term approach) the least preferable.

Table 4.16:

Sustainable practices spread among designers and their clients

	Immediate Term Approach		Medium Term Approach		Long Term Approach	
	Multipurpose Furniture	New Materials	Flexible Space Design	Recycled Materials	Deconstructive Space Design	Reclaimed Materials
Project						
Larnaca-1 Pub	×	×				×
Larnaca-2 House	×	×				
Larnaca-3 Small House		×	×			
Limasol-1 Shop	×		×	×	×	
Limasol-2 House	×	×				
Nicosia-1 Home-Office			×	×		
Nicosia-2 Small House	×	×				×
Nicosia-3 Apartment	×	×				

4.5 Non Participants

It is noted here again that all designers have received all the information about sustainable practices- given during the interventions of all three Phases- through their email accounts. Seven designers that did not attend the interventions but have received and seen the information, were interviewed after the action research.

From those interviews it was revealed that all interviewees were positive on receiving the information and willing to participate to the actions but all responded that, time was the leveraging of not attending the actions/interventions. It is worth to state that from interviews it was revealed that non participants' understanding on the interior design sustainability practices is restricted to the use of natural materials and energy efficient design.

During the interview, four designers said that 'sustainable practices are about using energy efficient techniques and natural materials'. One designer pointed that clients are not willing to utilize the practices and two more said that some clients are sometimes willing to use old pieces of furniture. Table 4.17 shows non participant designers' responses on personal positions, reasons and beliefs and responses on personal value sets relevant to sustainable practices.

Table 4.17:

Non Participants Designers' responses on personal positions, reasons and beliefs and Responses on personal value sets relevant to sustainable practices

PHASE III	Typical Non Participant Designers' Responses	
Measurable Evidences	5.State personal positions, reasons and beliefs	6.Behave consistently with personal value set
5.State personal positions, reasons and beliefs	We need more sustainable materials in the market	Use of energy efficient techniques
6.Behave consistently with personal value set	It is not always possible to apply the practices	Use of old pieces of furniture
	Clients are not informed on the issue	Use of natural materials

Additionally, interviews among seven clients, that did not participate in the interventions and received the information through their email accounts, were conducted after Phase III. From those interviews it was revealed that client participants are not prepared to implement the promoted sustainable practices. Non Participant clients were open to the new information that they received but most of them were hesitant and some were not willing to apply them. Table 4.18 shows non participant clients' responses on personal positions, reasons and beliefs and personal value sets relevant to sustainable practices.

Table 4.18:

Non participants' clients' responses on personal positions, reasons and beliefs and personal value sets relevant to sustainable practices

PHASE III	Typical Non Participant Clients Responses	
Measurable Evidences	1.State personal positions, reasons and beliefs	2.Behave consistently with personal value set
5.State personal positions, reasons and beliefs	I was impressed with the exhibited items but I am not sure if I want them in my house	I am not sure if I can buy something that is made from recycled materials that other people used before.
6.Behave consistently with personal value set	I feel that it is very helpful to present these objects and promote this type of work	If I had the need to buy something for my house, I would have preferred something new.
	I was impressed with the use of multipurpose furniture and recycled materials I didn't know that we can find them in Cyprus	Some examples are interesting
	Now I learn new things but I am not sure how to apply them	

4.6 Conclusion

The purpose of this research is to explore and discuss the effect of the interventions/actions, as a result of the proposed model, to promote sustainable practices among designers and clients at the level of interior design practice. Following the three phases of the research the conclusions below have been extracted.

For Phase I, the results from the data indicate that, among designer and client participants the unfreezing step is obtained and a felt need for change was created. According to the proposed

model, in order to achieve that, two evidences were measured, namely, 1) interest in session, and in learning and 2) participation and interest in outcomes (Sustainability Practices). The results show that more than sixty-five percent of designers, value being provided information from their association, and seventy percent said they would attend workshops in their area. Also, at this stage, it was acknowledged among the interior designers' association members that there was a need for professional advancement and progression on sustainable issues.

Concerning clients, more than ninety-eight percent 'strongly agreed' or 'agreed' that they are interested in an interior designer with knowledge and experience on sustainable practices. Clients were also willing to open up to new experiences, get involved and participate in the schedule interventions. The strongest shift towards 'strongly agree' among clients is observed in the statement 'Sustainability should be an essential part of the design of interior spaces', where before and after this phase the proportion of strongly agreeing to the statement increased from 64% to 79% ($p=0.094$). Additionally, participants are also aware of the need for more information and moreover they show interest in supporting change and following interventions and phases of the study. Furthermore, participants' reflection on the issue of sustainable interior design practices and more specifically on the issue of sustainable materials & resources had resulting statements such as: 'I think I can suggest a combination of the practices. I can make use of reused (reclaimed) pieces of furniture and recycled materials.' Moreover, there was a level of consensus between the two groups. This conclusion develops the understanding that among participants, during this phase, a felt need for change was created. This indicates a successful first phase concerning both groups of stakeholders.

For Phase II, the results from the data indicate that, changing values, approaches and attitudes was achieved. According to the proposed model, two evidences were measured, namely

1) decide the worth and relevance of ideas and 2) experience, accept or commit to particular stances or actions. After the second intervention the analysis identified that the measurable evidences could be enforced more and promoted further among designers. No statistically significant differences were detected between SEMEK 1(Phase I) and SEMEK 2 (Phase II) but it is interesting to note the slight differences across the ratings between them.

After intervention 3, still in Phase II, designers were asked again to select among the promoted material practices (New materials, recycled materials and reclaimed materials). The result, favourable to all solutions, although not statistically significant (due to the small sample size - $n=13$) there is a large effect size of our intervention (Cramer's $V=0.675$). Concerning clients, a comparison of the B3 part of the questionnaire for space design between questionnaire Public 1 (Phase I) and Public 3 (Phase II) we compared and contrasted to the answers of only 56 persons who participated in both. A clear shift towards the 'strongly agree' option is observed. This is true for all questions in B3 part of the questionnaire. The strongest shift towards 'strongly agree' is observed in statement 8, 'Interior design should develop and implement a deconstruction plan'.

For Phase III participants should refreeze their attitude reinforce the outcomes and evaluate the results. According to the proposed model, in order to identify that, two evidences were measured, namely, 1) state their personal position reasons and believes and 2) behave according to new personal value sets. Concerning designers, these are stated through their design work as presented through their own words from the interviews and from the observer's notes. During the interviews, all participants in Phase III found the exhibition a very useful action and they all admitted that they did not have any difficulty and that they enjoy it. All of them also said that the intervention made them understand that a change occurred and now they are considering and practice interior design in a different way. Besides, the observer notes reveal that both groups

of participants admitted that they can now, after their collaboration with other stakeholders, can all understand better how they can perform.

Concerning clients, the participants' answers in the last questionnaire, Public 4 (After Phase III), are still in the range of 'strongly agree' and 'agree', and a shift towards the 'strongly agree' option is observed compared to Public 3 (After Phase II). This is true for all three questions in part B3 (Statements on sustainable practices for space design- flexibility of elements, flexibility of space and design for deconstruction) of the questionnaire. A comparison of all parts of the questionnaire Public 4 (Phase III) to Public 1 (Before Phase I) shows that part B1 on the General awareness of clients on sustainability (where clients are stating their personal position reasons and beliefs), although the answers are still in the range of 'strongly agree' and 'agree', still a shift towards 'strongly agree' option is observed ($p=0.225$). In Part B2 statements on natural resources, recycling and reclaimed materials and part B3 for space design the participants' answers are still in the range of 'strongly agree' and 'agree', with a shift towards the 'strongly agree' option observed compared to Public 1. This is true of all questions in the questionnaire that are asked in Public 4 (After Phase III). The strongest shift towards 'strongly agree' is observed in the question: 'Interior design should develop and implement a deconstruction plan,' where for Public 1 we observed a 64.3 % of the participants strongly agreeing to the statement while in Public 4 the proportion increased to 78.6%. Additionally, three persons who had no opinion in Public 1, now in Public 4, have a strong positive opinion.

From the analysis of the case study evidences derived that participants behave consistently with personal value sets as they practiced and employed the promoted sustainable practices. However, even if the statement 'Interior design should develop and implement a deconstruction plan', has the strongest shift towards 'strongly agree' in both designers' and clients' answers in

their questionnaire, the case studies shows that most of the designers' proposals use the immediate approaches for both space design and materials. Then, they prefer the medium term approach and finally only in one case the long term approaches selected. In this one case the selection concerning design practices is shared also with other practices. Concerning materials approaches, in two cases the long term practice (reclaimed materials) is shared with parallel use of immediate approach (new materials).

Further, it is accepted that drop out in a longitudinal study is inevitable. As revealed from the data collected and the analysis of the demographics who dropped out, the dropouts were people who believed in sustainability and not unbelievers. The later would help to strengthen conclusions drawn. This has been detected during the interviews as most of the participants accepted that they did not take part in the actions/interventions because of time and other obligation issues and not because they did not want to work on sustainability as a matter. Subsequently, from the above it is revealed that concerning participating designers and clients a shift in their behaviour has achieved and a number of them have utilised the practices.

Opposing to the participants in the interventions, the non-participants did not proceed with any presentation or design proposal during the exhibition. Also, statements made by the non-participants during interviews neglect the practices as a dominant value. As data reveal this is a consequence to the fact that these people did not attend or participate in the interventions but were only conventionally informed (read the new information on the sustainable practices through an email). Subsequently, the reinforcing of outcomes towards a more sustainable practice was less possible. The longitudinal assessment between the questionnaires, the observer notes, the interviews and the case studies allows us to draw some primary conclusions. (1) The classification of sustainable practices provides a valuable base for making decisions during interior design

practice that conventional associations' guidance failed to provide. (2) The process of engaging people through different levels of affective learning secure the development of particular behaviour descriptions. (3) The steps towards change should engage multi-stakeholders' processes and in the future must formally feed into relevant national decision making.

The following chapter will discuss the presented results with the main aim to consider the transformation in sustainably minded thinking throughout the three phases of the research in relation to the theory and the foundations that the model utilised.



Chapter 5: Discussion

5.1 Introduction

The impact of interior design and design practice on humans and their environment is apparent; in this regard, there is an emerging requirement for interior design stakeholders to adapt new approaches in order to comply with the emergent requirements concerning sustainability. Whilst the different design associations (IFI, ECIA, etc.) have introduced considerable guidance and guidelines to encourage the uptake of sustainability, this does not indicate status quo for the field of interior design. This fact requires the investigation of finding new ways to promote new approaches in a way that will be clear and applicable. The primary endeavour of this research is to investigate the extent to which a range of interventions can raise participants' awareness and understanding about the role of interior design in delivering sustainability within the built environment. Additionally, the research aims to promote the uptake of sustainability practices in the discipline of interior design, particularly among two groups of stakeholders: interior designers, and their clients on the island of Cyprus. The research questions that the thesis is concerned with are to report the extent to which proposed model promotes sustainable practices and to communicate the sustainable practices that are more widespread among designers and their clients. This longitudinal research has filled the gap in existing research by suggesting a model that will assist in the adaptation of new practices. The model merges a) the three-step model by Lewin (1943), b) the affective learning domain (Bloom et.al., 1964), and c) designated teaching methods. Notably, this is utilised as a practical tool for promoting sustainable design practice amongst interior design practitioners and clients. As mentioned by the Promoting Practical Sustainability report (2000), the role of stakeholders is the critical factor in promoting sustainability and that sustainability cannot be achieved without their involvement. Against this backdrop, the model was applied in three cycles of action research, the three phases of the research, in order to test its utility and observed that its implementation accomplishes the predetermined clearly stated aims and objectives. There are further discussed following the three step model levels. The table below (Table 5.1) indicates the reflection of the model to designers' and clients' attitudes. The first level is 'unfreeze' and 'creating a felt need for change', the second is 'change' and 'changing values, approaches and attitudes' and the third is 'refreeze' and 'reinforcing outcomes and evaluating results'.

Table 5.1: Reflection of the model to designers' and clients' resulting responses.

SUSTAINABLE INTERIOR DESIGN: A MODEL TO PROMOTE SUSTAINABLE PRACTICES				RESULTS DESIGNERS	RESULTS CLIENTS
THREE-STEP MODEL LEVEL	AFFECTIVE LEARNING CATEGORY	BEHAVIOUR DESCRIPTIONS	EVIDENCE MEASURED	DESIGNERS RESPONSES	CLIENTS RESPONSES
PHASE I UNFREEZE Creating a Felt Need for Change	Receive Respond	Open to Experience, Willing to Hear React and Participate Actively	Measurable Evidence 1: Interest in Session Enthusiasm Display Interest in Learning Measurable Evidence 2: Participate (Discussion and Activity) Interest in Outcomes (Sustainable Practices)	Glad to attend Helpful for practice Useful intervention Inspired Fascinating for Designers Very updated Gained detailed knowledge Practical solutions Transfer of knowledge Use of sustainable materials and methods Clarify Sustainable materials Asking for more available materials Different construction methods Production issues Different design approach	Glad to participate Informative action Motivation to think more about the issue of sustainability New way of thinking Interested in new knowledge Useful approaches Useful examples that can be applied Interest in using recycled and reclaimed materials and products Concentrate and motivate to use reclaimed materials and products Interest in approaches for material selection Interest in resource consumption
PHASE II CHANGE Changing Values, Approaches, and Attitudes	Value	Attach Values and Express Personal Opinions	Measurable Evidence 3: Decide worth and relevance of ideas Measurable Evidence 4: Experience; accept or commit to particular stance or action	More specific information on sustainable interiors Important cases and examples for sustainable practice Use of sustainable approaches Think of design and practice in a different way Value more all the approaches Change way of thinking and working	Value the potentials of sustainable practices Utilization of the approaches New life philosophy The approaches are good not only for the environment but also for our life Suggesting the approaches to others Acting now differently.
PHASE III REFREEZE Reinforcing Outcomes and Evaluating Results	Organise or Conceptualize Values Internalize or Characterize Values	Reconcile Internal Conflicts; Develop Value System Adopt Belief System and Philosophy	Measurable Evidence 5: State personal positions, reasons and beliefs Measurable Evidence 6: Behave consistently with personal value set	Strongly believe that the new knowledge is dominant Willingness to do more relevant actions Adopt new approaches to practice Enjoy and adopt new approaches New approaches became the new practice Consider and value the new approaches	I was impressed with the exhibited items It was a very valuable and important exhibition It changed me completely as now I learn new things and how to apply them My attitude has changed to the extent that I would definitely buy recycled products now I think and act differently now I would suggest to everybody to reuse their old pieces of furniture

5.2 Creating a Felt Need for Change

The measurable pieces of evidence for creating a felt need for change included: a) the interest of participants in the session, the enthusiasm they exhibited, and their interest in learning; and b) their participation and interest in the outcomes, namely the sustainable interior design practices.

According to the findings, participants altered their behaviours and achieved both behavioural descriptions during the first phase. Participants attended and reacted to a particular phenomenon - not only receiving information about sustainability in general - but also about sustainability and the usage of sustainable materials and resources in particular. The majority of designers value the provided information by their association and admitted that they would attend workshops in their area. Designers also clearly expressed their willingness to engage in a more active association. This finding is congruent with the viewpoint of Pandura (1977) who observed that we learn most efficiently from models that are attractive or persuasive for us, or from persons who are simply 'like us.' The fact that participants of both groups were involved in the process of learning among groups of peers during this first step assumes significance. In addition, it was pointed out during first phase that there is a need for professional knowledge progression on sustainability issues and that this fact was accepted as reasonable by the association members. This fact has been well accepted during this early stage of the research. In this regard, McKenzie and Mohr (2000) suggest that the idea of successful behaviour change depends on the understanding of barriers to the new behaviour.

Participants responded to the promoted sustainable practices by actively participating in the intervention and the discussions; they were also engaged in the use of reclaimed and recycled materials. Concerning sustainability and materials, Guerin and Kang (2009) write on behalf of the International Interior Design Association (IIDA) that the Leadership in Energy and Environmental Design green building rating system encompasses six topics. Of these, the topic on materials and resources is closely related to interior design practice. The findings of this phase show that even if a high percentage of designers concur that they (designers) should specify renewable materials, a higher number of designers disagree on 'minimising the amount of materials they use'. In turn,

this shows a stymied understanding of the consequences of their work on the natural environment. Nevertheless, the participants either agreed or strongly agreed on other similar issues, such as use of reclaimed or recycled products. This result is congruent with ASID, which acknowledges that interior designers should utilise renewable natural resources, including the protection of flora and fauna. However, it is evident from the questionnaire results and the part focusing on designers' behaviour and approaches towards materials and product selection that a number of participants disagreed with all three statements in SEMEK 1. However, there were no disagreements in SEMEK 2.

Further on the same issue of sustainable materials, the results of the Public questionnaire, which includes the three statements on natural resources, recycling and reclaimed materials, revealed that clients did alter their behaviour and that all participants gave positive responses to the aforementioned statements. A shift towards 'strongly agree' was observed in all three questions. The above finding assumes significance, as the ASID Energy Policy Act (2005) acknowledges that sustainable interior design embraces the sustainable usage of natural resources. The Act also observes that interior designers should utilise renewable natural resources, which includes the protection of vegetation, wildlife habitats, open spaces, and wilderness.

Moreover, participants were very willing to explore new experiences and participate in performing the action. This is important, as Petty and Cacioppo (1986a) suggest that lasting behavioural change is predicated based on people's willingness to consciously engage with and elaborate on the subject matter of the persuasive message. Participants' reflection upon the issue of sustainable interior design practices, and more specifically on sustainable materials and resources, is evident. A fine example of this reflection is the artefacts and the objects that were created during the workshops and presented during the exhibition. A list of these works can be seen, for example, in Catalogue Biennale Internationale Design and Interieur and /or websites as well as retail shops of various firms (Rododesign, Alessi etc.). However, the work of these designers is not yet available in the market of Cyprus.

Finally, results show that both groups of participants felt a need for change, which was evidenced in their willingness to hear and experience. The consent between the designers and the clients supports the appropriateness of this methodology. However, it must be noted that the clients were more positive than designers in selecting renewable materials and making efficient use of resources; nevertheless, designers produced a number of associated products. This is

fundamental because, as noted by Whitemyer (2008) whilst writing for the International Interior Designers Association (IIDA), most people want to perform in environmentally-friendly ways but lack the requisite information to take those first simple steps. Therefore, it is acknowledged that the interior designers' association promotes the issue among its members and will continue to do so through phases two and three.

5.3 Changing Values, Approaches and Attitudes

The measurable pieces of evidence for Phase II were: 1) participants should determine the value and relevance of ideas; and 2) experience, accept, or commit to a particular stance or action.

During this phase, the focus was on the promotion of sustainability and space design practices; nevertheless, the areas of discussion also included general sustainability issues and sustainability and materials. According to the results, participants altered their behaviours, adopted new values and reported sustainable interior design practices as being of dominant value during the second phase. Designers meanwhile engaged with them in problem-based learning activities during the workshops for clients. From an educational standpoint, this is an imperative part of problem solving, and it is consistent with the observations of Stevenson and Gwilliam (2014), according to which literature involving approaches to education and preparation for adults advise that adult learning, particularly in relation to professions, is typically intensive on problem-solving for work-based concerns.

Designers managed to alter their general behaviour and approaches to sustainable interior design practices. Correspondingly, a shift towards agree/strongly agree was indeed observed. The initial seminar of this phase, with presentations from professionals in the field, allowed designers to understand, among other issues, the changes occurring within various aligned sectors. As pointed by Reynolds et al. (2014), social standards are a key component of many behaviour change interventions, especially when the goal entails a sustained behaviour change. Moreover, the trends underpinned by the results are encouraging; according to Arbuthnott (2008), it is entirely probable that education can influence the various factors that are capable of delivering behavioural change. She suggests that education concerning sustainable development programmes should help people translate their intention into action. This actually took place during this phase when clients had the opportunity to cooperate with designers and discuss real life design problems. During the workshops, clients had drawings and plans from their own houses, and the designer participants cooperated with them in order to propose solutions to their space-related

design problems. Participants also challenged the prevailing practices in order to realise new information on the issue of sustainability and were able to implement the new knowledge during their interior design practice. Furthermore, designers expressed their apprehension of how to essentially uphold the appropriate process towards the particular direction of sustainability.

Nevertheless, with regard to designers' behaviour and approaches to sustainable design practices during space design, the immediate-term (the utilisation of multipurpose pieces of furniture in the interior space) and medium-term approach (the preparation of space for maximum flexibility) were found to be more established, while the long-term approach (design for deconstruction) did not have the same kind of acceptance. As referenced, in the Design for Deconstruction Guide funded by the United States Environmental Protection Agency (under assistance agreement X1-96912701) the ultimate objective of the Design for Deconstruction (DfD) movement is to sensibly accomplish end-of-life building materials to reduce the consumption of raw materials. According to the results of this research, there is a need for more work on the issue, with a group of designer participants.

Therefore, these results led to another action for designers where relevant issues were discussed among smaller groups of designers. The need for more in-depth discussions seems to assume significance during this stage, as designers seemed to possess the willingness to gain more information but probably lacked sufficient information and/or experience to offer their viewpoint on certain practices. As noted by Dahlstrand and Biel (1997) a group environment must witness a change of behavioural patterns. Moreover, the social marketing approach to behaviour change (McKenzie-Mohr, 2000) underscores the importance of strategically delivering programmes in order to target specific segments of the public and overcome the barriers that stymie the engagement of this segment in the behaviour. Consequently, the third intervention for the designers was of great importance to achieve the change step and making designers feel at ease using design for deconstruction. Consequently, the discussions among groups of designers evidenced their understanding that the design for deconstruction practice can be used for bigger investments and prolong the life of the interior space for longer periods of time; some of them pointed out that this is a good practice for hoteliers and other investors. Similarly, the Scottish Ecological Design Association (2005) observes that this practice helps 'close the loop' for resource use and the designing of details for deconstruction at the commencement of a project enables one building at the end of its useful lifespan to become the resource for the subsequent

one. The results of SEMEK 3 demonstrate that this third intervention did actually produce a strong effect among designers.

Additionally, alterations in clients' behaviour were achieved. At the conclusion of their workshop, participants were found to internalise new values, placing a dominant value on sustainable interior design practices that was the expected behaviour to be achieved. More specifically, at the end of this phase, answers from participating clients were still found to be in the range of 'strongly agree' and 'agree' in the questionnaire Public 3, although a shift towards 'strongly agree' was particularly observed in the portion which focuses on statements reflecting clients' behaviour and approaches to sustainable space design practices. These included: the use of multipurpose pieces of furniture within the interior space; space design for maximum flexibility; and design for deconstruction.

The changes that occurred during this phase were established between clients and designers when participants were allowed to practice interior design projects after the commencement of collaborative projects took place. To that end, Jackson (2005) observes that the change of behavioural patterns must occur in a group environment, necessitating open and supportive communication amongst those involved in negotiating the change.

Designers and clients collaborated with each other in order to manage complete design proposals that were finalised and eventually presented during the final phase. Pertinent illustrations for the achievement of the changing values, approaches and attitudes of participants were presented during the exhibition and included all three practices. Similar outcomes relating to the use of multipurpose pieces of furniture have been produced in various cases abroad, for example, the 'Tona Chair' by Diego Gonzalez King (<http://topofdesigns.com/tag/multipurpose-furniture/>) and the new murphy-bed by Resource Furniture (<http://www.resourcefurniture.com/space-saving-video>).

5.4 Reinforcing Outcomes and Evaluating Results

The measurable pieces of evidence for Phase III were: (1) to state personal positions, reasons and beliefs; and (2) behave consistently with personal value sets.

Results from the questionnaires Public 1 (before Phase I) and Public 4 (after Phase III) revealed a change in clients' general awareness of sustainability; this was particularly evident for both the promoted sustainability issues: sustainability and materials and sustainability and space design. It may be important to note here and, as confirmed by the results, that this is not the case

for non-participant clients whose attitude have not changed and do not seem to be ready to implement the promoted sustainable practices.

Meanwhile, thirteen designers participated in the actions through to the end. Moreover, general demographic characteristics show that all participating designers belonged to the districts of the island, with the exception of Paphos. This implies that the study managed to promote sustainability practices in the districts where registered designers resided. It could be viewed as a limitation of the study, since as mentioned in Chapter 1, the regions of Paphos, Kyrenia and Famagusta were excluded from the study owing to the fact that the designers' association (SEMEK/CYIDA) does not have any members in the Paphos district whereas the other two are in the occupied area of the island. Given that this study was conducted in cooperation with SEMEK/CYIDA, even design practitioners from these regions were excluded if they were found to be non-members. Nevertheless, this study was carried out among the members of the association, as was done by other agencies and authorities in other sectors in order to promote sustainability in Cyprus. Interviews with non-participating designers revealed that all of them were positive about receiving the information; equally, all the designers responded that time constraint was the reason for not attending the actions. Notably, non-participants' understanding of interior design sustainability practices was found to be restricted to the use of natural materials and energy-efficient design.

Additionally, the results show that the designers and clients who participated in these interventions valued the promoted practices and adopted a new belief system pertaining to sustainability approaches. Equally crucial, the SEMEK and Public questionnaires demonstrated very good internal consistency.

Moreover, positive results were maintained during the course of interviews. For example, one of the participants said: 'I adapt new approaches to practice.' Another designer observed: 'Now I make lighting fixtures from recycled and reclaimed materials and trade online.' Furthermore, as the field notes of the observer revealed, the designers admitted that after collaborating with client participants, they can now, better understand how they can perform and act using the information given during previous interventions. Apparently, the notion of social norms is being increasingly documented as an inextricable element of motivation and behaviour and thus, remains paramount to behavioural stimulus and change (Reynolds et al., 2014). It is in

that spirit that the initiatives of this research worked towards targeting the specific practices amongst the two groups of stakeholders.

The focus of this last phase of study is on collaborative projects and identifying how the designers' collaborative work with clients all over the island produced different design proposals and delivered the promoted sustainable practices. Through the evaluation of case study results, it can be seen that the stakeholders were able to attain the organisation and characterisation step of the adapted model, reconcile internal conflicts, develop a value system and adopt a new belief system/philosophy (Kratwohl, et al., 1964).

Although no single case study is claimed as an example of excellence, each of them makes a different and relevant contribution towards the application of sustainable practices in interior design. Equally, all case studies serve as credible examples for the future development of the profession in this direction. All the projects have indications of innovative design to enable a wide range of functions and sustainable use of materials. In particular, innovation in design is a factor, among others, that the Leadership in Energy and Environmental Design (LEED) considers whilst promulgating its green building certification programme. It is also evident that the issue of sustainable materials assumes great significance for the design community, as "50% of material resources taken from nature are for buildings" (Pullen, 2008).

Some of the case study projects suggest the reuse and repurposing of existing furniture. For example, the client agreed in presented study 1 that the designer's intention should be to use a combination of approaches that promote the use of sustainable materials and resources whilst maximising the use of existing materials and furniture. All designers proposed sustainable wall and floor finishes. For example, the choice for the floor was linoleum in study 5. The material is a fully natural product produced from oxidised oil to which natural pine resin is added as a hardener before being mixed with cork, wood flour and powdered limestone. The sheer ease of cleaning and maintenance, durability and biodegradability makes it a sustainable choice for a new material. Moreover, the interior designer working on presented study 2 decided to utilise multi-purposed pieces of furniture in order to maximise flexibility and obtain more area for playing. In study 3, the designer and client agreed to use new materials and suggested, among other materials, the use of fibre particleboard as a preferred choice for cabinetry and panels for furniture. Notably, this material is a product of farming operations wherein residual fibres are renewed on an annual basis to supply composite panel production. Meanwhile in study 6, the client asked for the space to be

designed in such a manner that it could be utilised both as an office studio and a living space. One of the designer's early decisions was to divide the space into two parts, the larger of which was to be the studio (living area), with the office (working area) comprising of the smaller portion. She suggested the use of a flexible wall in order to divide the space or have it remain open according to evolving needs.

From the case studies, the details of the evidence demonstrate that the actions for promoting relevant issues were achieved in order to ensure the adoption of promoted practices among a number of stakeholders. Therefore, it can be seen how the involvement of two distinct groups of stakeholders pushed the initiative of these interventions into actual design proposals. Its significance can be observed since, as mentioned by Green Alliance (2008) as quoted in Doyle (2011) our actions are intensely embedded in the wider environment, as well as in the customs, culture and social standards of those around us. Those are determined by various factors and point out that any impending change will occur collectively. The influence among the groups of participants was strong and enhanced further with the collaboration of stakeholders. As an umbrella term for a variety of educational approaches, collaborative learning involves joint intellectual effort by students, or by students and teachers collectively (Smith & MacGregor, 1992). Consequently, collaboration among designers and clients who were required to take decisions for space and materials made participants aware of the needs and the degree of organisation necessitated by a project in order to implement sustainable practices.

5.5 Conclusion

The action research encouraged sustainable practices among groups of participants and non-participants alike in a series of interventions in the sense that has been conceptualised in this thesis. The entire process is premised on the literature review along with the application of the model that considers the understanding of knowledge creation, the change process, the acquisition of new values, and the involvement of stakeholders in promulgating sustainable interior design approaches. In the researcher's viewpoint, this implies the consideration of two factors, at least initially: first, what is meant by the notion of sustainability in interior design practice and what this implies in terms of thematic knowledge practice; and second, the methodological approach that involved an action research in this case. As these two factors clearly underpin the need for practical experimentation, which is what occurred as part of this research, a great deal of

consideration was accorded to the end results of the actions where both groups of stakeholders operated collectively to select and incorporate the promoted sustainable practices.

The promoted practices were utilised by the participants; six out of eight cases presented adopted the immediate approach for space design: namely, the use of multipurpose pieces of furniture and new sustainable materials. This result assumes importance given that a brief review of relevant extant literature concerning sustainable interior design practice reveals a number of themes; the critical issue of materials and their application are always included among them (Guerin & Kang, 2009).

The second preferred approach among participants involves a medium-term approach as well as the use of flexible interior design practices and recycled materials. These are also essential, considering the fact that projects seeking certification under the U.S. Green Building Council's LEED for new construction (LEED-NC) rating system often aim to adhere to the two points for using recycled-content materials in Materials & Resources credit four. An additional point of innovation that can be earned for significantly exceeding the credit requirements demonstrates that specialists value the use of recycled products and materials.

For the third preferred (long-term) approach, which is inclusive of design for deconstruction practice and the use of reclaimed materials, a limited utility was found even if the specific practice had broad acceptance among participants after the second phase. However, using reclaimed materials can significantly lower environmental impact and save up to 95% of the embodied costs by preventing the unnecessary production of new materials and reducing the amount of waste dispatched to landfill (Sustainable Built website).

The analysis of the evidence of the case studies suggests that the classification of sustainable practices into immediate, medium and long-term have proven to be applicable, given that designers and clients used them accordingly. The set of specific objectives and the presentation made to participants on the classification of sustainable practices seems to indicate that the problem is being addressed in an appropriate manner so as to find a viable solution. The problem has been defined as the impact of interior architecture/design practice on humans and their environment in addition to the fact that there is an emergent requirement for interior design stakeholders to adapt the way they prepare, practice, and repeat this practice to a new reality. Whilst there are specific guidelines from the IFI and other associations, the practice of sustainable interior design is indeed limited. According to the International Interior Design Association

(2000), although designers do opine that it is their social responsibility to safeguard the environment and conserve resources, the urgency to complete the project on time and on budget tends to overshadow their personal opinions.

The results of this research indicate that the model developed by this research manages to involve two groups (designers and clients) of stakeholders to an extent that alters their behaviour. Meanwhile the low involvement of another two groups of designers and clients (non-participants) did not permit the alteration of any behaviour. Moreover, research results indicate that client participants' age has a statistically significant effect on the possibility for continuation through the actions as more of the younger respondents continued, compared for example to the 45-64 age group.

Consequently, the adaptation of the proposed model to promote sustainable practices that incorporate specific objectives, along with the classification of sustainable practices, can mark the transition towards sustainable interior design schemes.

Chapter 6: Conclusions

6.1 Introduction

This research analysed the literature on behavioural change; change and design; change and behaviour; learning theories and change through learning, in order to provide the educational and theoretical underpinnings and identify appropriate intervention methods for the promulgation of sustainability learning. As a result, the qualities of behavioural change models, affective learning processes, deliberate interventions, specific teaching and learning approaches facilitating affective learning were taken into consideration in order to propose a model that accelerates the delivery of sustainability minded thinking among participants. Through an action research, the generated model promoted sustainable practices among both designers and clients. In particular, an action research methodology was chosen as both action and research are intended outcomes of intervention that could impart the flexibility and openness necessary for effective change. Concurring with this viewpoint, Jackson (2005) notes that research underpins the efficacy of learning by experimentation, by detecting how others behave and modelling our behaviour based on what we see around us as this approach provides more effective and encouraging avenues for changing behaviours.

The following three foundations were utilised and collated to suggest the structure of the proposed model. These included 'The Three-Step Change Model' (Lewin, 1943); the Domain of Affective Learning (Krathwohl et al., 1964); and selected teaching approach. Such an adaptation of the so-called "three-step approach to change" that has been merged in the proposed model facilitated the ordering of both the intentions under each phase in addition to the specific interventions. Indeed, the application of affective learning objectives enhanced the degree of impact that the interventions had on participants' acquisition of specific knowledge and understanding, leading them to the adaptation of a new belief system and philosophy. Besides, as observed by Krathwohl et al. (1964), examples of characterisation in the last stage of affective learning are: a) cooperation in group activities (displays teamwork); b) utilisation of an objective approach in problem solving; c) displaying a professional commitment to ethical practice; and d) revising judgments and change behaviours in the light of new evidence. Furthermore, the adaptation of different learning approaches during the interventions allowed the involvement of

participating stakeholders and safeguarded the delivery of sustainability awareness. The interventions were made sequentially in order to support systematic data collection and concomitant interpretation of the data. The data were examined for commonalities in accordance with specific evidence to be measured at the end of every phase. In turn, this facilitated the examination and identification of data according to the behaviour description specific for each phase.

This chapter presents the main conclusions of the research relating to the research questions. These questions were established in order to evaluate the extent to which a range of interventions can increase participants' awareness and understanding of the role of interior design in the delivery of sustainability within the built environment and promote the uptake of sustainability during the implementation of interior design. The island of Cyprus was selected as a case study for this research. According to the research findings, the participants, designers and clients altered their behaviour towards sustainable design. Jackson (2005) posits that behaviours change repeatedly and even radically during certain occasions over quite short periods of time. The adaptation of affective learning domain strategies that led participants to 'behave consistently with personal value set' in this study is congruent with the observations made by Arbuthnott (2008) that ecological sustainability must be appreciated so as to ensure the acceptance of essential effort-intensive changes.

In the below section, each research question is considered and the evidence extracted via additional sub-questions are reflected. Subsequently, the limitations of this research are discussed followed by suggestions for possible applications of its findings as well as aspects where further research work could be undertaken.

6.2 The Extent to Which the Proposed Model Promoted Sustainable Practices among Designers and Clients

The proposed model has been applied employing an action research methodology in three distinct cycles. The first cycle aims to "unfreeze" stakeholders' attitudes and establish the feeling that contrary to various assumptions, sustainable design can indeed be elegant and explore important sustainability issues/their relationship with interior design practice. This has been achieved through interventions with presentations and hands-on work that took place among

interior designers and clients alike in order to allow the transmission of information to the concerned stakeholders. As noted in the 'Promoting Practical Sustainability Report' (Australian Agency for International Development, 2000), the involvement and support of stakeholders is a critical factor in promoting sustainability. The desired behaviour of participants was (i) to be open to experience; and (ii) to exhibit the willingness to listen. Stakeholders were encouraged to accept the need for change; to join teams that would attend the interventions; and to acknowledge the benefits of sustainable practices. The behaviour of stakeholders in attending and reacting to particular phenomena (Krathwohl et al., 1964) was established by encouraging them to participate in the discussions and respond via the utilisation of reclaimed and recycled materials. According to the findings, there was an alteration of participants' attitudes with regard to materials. This is reassuring in view of Hayles's comment that "the frequency with which interior designers make sustainable choices in real practice is still limited, particularly where materials selection is concerned" (p.100).

The second cycle of the action research aimed to 'change' stakeholders' attitudes, encourage them to share personal experiences and encourage discussions on sustainable practices that they can potentially benefit from in their everyday professional lives. This was achieved through discussions, collaboration with other stakeholders and presentations/workshops undertaken to present and communicate the range of sustainable practices to the concerned stakeholders. The need for more detailed discussions between designers assumes significance at this stage, as designers seemed to possess the intention to receive more information and act accordingly; yet they probably did not have adequate knowledge/experience to share their opinion on the issue of sustainable interior design practices and their application. This is exempted because, as postulated by Arbuthnott (2008) the more precise our intentions are, the greater their probability to affect our behaviour. Consequently, within more in-depth discussion on specific design problems during this second phase, participating designers were accorded the opportunity to classify, compare, and accept different design approaches. This is recognised by Arbuthnott (2008) who states that the handling of associated factors that influence the relative ease of both sustainable and unsustainable behaviours has a great potential to enable the adoption of sustainable practices. This was achieved during this phase through presentations and interventions amongst interior designers that enabled the dissemination of new information to the stakeholders. As a contributory result, there was a close cooperation between designers and clients.

Concurrently, Jackson (2005) observes that the change in behavioural patterns needs to occur within a group environment and necessitate open/supportive communication amongst those involved in negotiating the change.

Meanwhile the third cycle of the action research aims to “refreeze” the attitudes of stakeholders. This was accomplished by setting up an exhibition wherein the participants presented different projects derived from the previous phases. The design and monitoring of both individual and team presentations allowed participants to translate their goals into actions. In particular, the collaboration of participants made them aware about the needs and degree of organisation required in a project in order to bring about the application of sustainable practice. According to Gollwitzer (2012) implementation intentions are moulded for the purpose of improving the translation of goal intentions into action. The idea is that intent realisation can be encouraged by forming if-then plans. Additionally, an atmosphere was composed and created during this phase that endorsed additional sustainable issues among visitors to the exhibition as an immediate consequent of the exhibition that had been organised with the participation of stakeholders. As acknowledged by Triandis (1977) quoted in Darnton (2008) the existence or absence of enabling conditions does curtail behavioural choices. The results portrayed how this action helped characterise participants’ behaviours and attitudes towards sustainable interior design practice achievements, and demonstrated that the cooperation of clients and designers on specific projects was successful. While non-participants did not manage any tangible results, the presentation of proposals for interior design projects that utilised sustainable interior design practices as a result of this action research was achieved through continual interventions that constituted some part of the action research. Arbutnott (2008) contends that continual behaviours require constant monitoring to align the action with our goal. According to the reported results, all the practices that had been promoted were used, indicating that the participants had reconciled internal conflicts, developed a new value system, and adopted a new belief system/philosophy (Krathwohl et al., 1964).

6.3 Sustainable Practices That Are More Widespread Among Designers and Their Clients within the Cyprus Environment

In order to answer this question, the scope of sustainability within professional interior design practice was initially examined; subsequently, the examination identified common directions for interior design professionals arising from the guidelines of professional bodies. Among other things, these guidelines advocated that interior design practitioners should be innovative during the design process and use appropriate materials. Nevertheless, as pointed out by Kang and Guerin (2009), even though some interior designers are complying with environmentally sustainable design standards in their design solutions, there is paucity of research that explores how they implement it as a component for design problems. Consequently, the results of this research attain specific answers on what practices designers can use and how this has been accomplished.

The two issues of materiality and space design that have been selected, classified and promoted to the participants in particular practices are reflected below:

Sustainable practices with material issues entails undertaking life-circle assessments, supporting reduction, recycling and reuse of materials and ensuring efficient utilisation of resources. Therefore, the following three practices were promoted to the participants: immediate term approach, namely the use of new (renewable) materials; medium term approach, namely the use of recycled materials, and long term approach involving the usage of reclaimed materials.

With regard to the use of new materials, after Phase II of the action research, many designers claimed that they were willing to use all the aforementioned approaches. However, when case studies were presented during the exhibition, most of the presented projects utilised new/renewable materials. Contrary to designers' initial understanding about new materials, they did not support the sustainable use of natural resources. This is justified by the fact that both designers and clients participants had been informed about the specific practice which enables them to consume responsibly. In this regard, Charter and Tischner (2001) observe that if the entire population of the world were to consume as many resources as we currently do in the West, we would need ten worlds, as opposed to one, to meet all our needs.

Furthermore, all participants recognised the fact that recycled and reclaimed products are not easily available in the Cyprus market. This is unlike elsewhere as, for example, many of these

materials and products could be sourced from retail outlets (Hayles, 2015). It has been made clear to the participants that designers should encourage the development and use of recycled/reclaimed materials. As noted in the Shanghai Manual (2012) “information campaigns need to encourage urban populations to help reduce the waste stream and to turn what used to be considered as waste into resources” (p.9).

The fact that both recycled and reclaimed materials were not extensively used by participants at the exhibition does not demonstrate their unwillingness to use them; this merely points towards the limited availability, whereas this is not the case in other regions. The Architecture and Design Scotland in Glasgow is a fine example of showcasing sustainable, traditional, innovative recycled and low carbon building materials.

Practices for sustainable space design involve the work done by interior designers concerning space adjacency; they work with the room layout. The classification for innovative design approaches were developed and promoted to participants in the following manner: Immediate term approach, namely the use of multipurpose pieces of furniture; medium term approaches, namely flexible space design, and long term approach that entails the design for deconstruction practice. Following Phase II of this action research, clients stated that they were in favour of all three approaches with no disagreements about their use in their interior space. Simultaneously, designers indicated that they equally accepted the use of practices in interior projects. During the exhibition, the projects that designers presented primarily initially utilised the immediate term approach (use of multipurpose pieces for space design) and then the medium term approach (practice of flexible space design). Notably, the long term design approach (practice of design for deconstruction) was used in just one instance.

The immediate approach is an at-ease practice to use that involves a plethora of relevant pieces of furniture and equipment in the market. Moreover, as pointed out by Astonkar and Kherde (2015) people’s typical living area is becoming progressively smaller in most metropolises globally, and space saving furniture is one of the preferred choices used to solve this problem. However, this is not necessarily true in the case of Cyprus. For Cyprus, the case is more likely to be in agreement with the views of Kilmer and Kilmer (1992) who suggest that this space saving notion has been around for many years; however, it was not until recently that the significance and suitability of multifunctional furniture was recognised, particularly due to the growth of urban lifestyle associated with limited living surface space.

In relation to the flexible space design, Manum (2009) observes that there has been a tendency towards the utilisation of flexible interior design practice. This is also true in the case of this research as is the second preference approach among participants. After the second intervention, the majority of designers concurred that they should design for the maximum flexibility of design configuration. Further, both theory and many case studies demonstrate creating and flexible design as 'preparing' for future possibilities so as to add great value to a project by employing it (Neufville & Scholtes, 2009).

The long term approach has limited application among the presented proposals, since its effective application necessitates the involvement of more stakeholders, for example the contractors. As argued by Beck (2006), deconstruction crews work for landowners, contractors, local governments, and other property owners to provide environmentally friendly and cost-effective removal of building components as well as complete structures. As evidenced during the discussions among designers, this practice can find good application in the form of an investment for hotel owners. The fact is that the early development of a comprehensive deconstruction plan is needed, otherwise re-usable building elements could potentially be destroyed unnecessarily (Scottish Ecological Design Association, 2005).

The results from all the three cycles/phases suggest that awareness and understanding of the delivery of sustainability within the built environment can increase when it is promoted within an organised and well-structured method. In conclusion, the overall findings of this research suggest that the guidelines recommended by IFI and other professional bodies are welcomed by the stakeholders; however, these guidelines need to be translated into specific practices in order to translate into tangible results. In this research, the classification of sustainable practices for interior designers and their clients facilitated a tangible application of the promoted approaches. Additionally, the classification enabled the understanding of the significance of interior design in delivering sustainability within the built environment. As pointed out by Charter and Tischner (2001) sustainable solutions involve multi-stakeholder engagement; therefore, the involvement of the designers along with other allied professionals is a glaring necessity.

6.4 Suggestions for Applications

The results of this research reveal that it is necessary to consider the establishment of a strategy that will involve professional designers in a legislative framework pertaining to buildings and permit application processes. In conjunction with the energy performance of buildings laws that have been applied, this could draw a bigger respect for change towards a holistic approach to sustainability. As noted by Arbuthnott (2008), the physical and social environment that will generate sustainable and more socially valued behaviours in an easier manner will enable those with weaker attitude changes to behave more sustainably. The profession of an interior designer is not legally regulated; correspondingly, professionals in this domain are not obligated to follow any of the harmonisation of national or EU legislation. This suffers from major drawbacks in the implementation of promoted sustainable practices, as the professional bodies cannot impel designers to apply any expertise. As commented upon by Lee et al. (2014), even though sustainable design has become one of the major concerns in the interior design industry, the frequency of making such sustainable adoptions in real practice largely remains inadequate. However, it is encouraging to know that interior designers are not committed to any legislative obligation and are willing to work towards a more sustainable environment. They seek a continuous motivation that is provided by their association and it must be conceded that the association cannot exert any pressure in this matter. Analogously, the American Society of Interior Designers (ASID) believes that interior designers should endeavour to practice sustainable design whenever it is feasible to do so. It is recommended that this understanding must become the forerunner of a more strategic way of attaining the application of sustainable practices.

Moreover, the method and model utilised by this research can be provided as tools that the coordinating body concerning the implementation of actions related to education for sustainable development (ESD) in the Cyprus educational system could utilise. The view of Arbuthnott (2008) is consistent with the findings of this research, which is evidenced when he points out that the aspects that influence behavioural change are also expected to be affected by education focused on attitudes and values. The draft of the National Strategy for ESD (UNECE Steering Committee on Education for Sustainable Development, 2005) encompasses eight fundamental action areas, one of which entails the establishment of a network of environmental education centres - the Green Schools. The main aim of these centres is to connect both formal and non-formal education, in accordance with the needs of society. This connection is unlikely in the case of interior design and

its practitioners in Cyprus. Consequently, the actions of the Cyprus Pedagogical Institute can be expanded among interior design professionals by establishing ways of communicating with the design community, firstly through formal education, and secondly through non-formal education, namely the continuous education of design professionals through their association. However, in order to achieve that objective, there is a need to open up the avenues of communication between the ESD and the relevant association. According to Kang and Guerin (2009), an awareness of the state of practice will provide a foundation to produce education strategies for sustainable interior design. Moreover, the existing designers' association can certainly benefit from the continuation of similar actions.

6.5 Limitations of Research

This research recognises the dynamic role of clients and interior design professionals in interior projects. The designers who participated in this study are members of the Cyprus Interior Designers Association SEMEK/CYIDA. Some districts were excluded as the Association does not have members in all the districts of the island. There are two ways in which future studies can work further. First, there is a need for the existing association to expand/diversify and find ways of attracting future members among all the designers who live and work on the island. Second, a solution to the Cyprus problem will facilitate the communication among all designers. Research could then be expanded to what is now an occupied area wherein access and communication are extremely difficult. However, in order to support sustainability, it must be considered that the key to sustainable interior design is the emergence of innovative ideas and the development of an appropriate culture among designers as well as the public at large.

Another limitation is the involvement of stakeholders. This research embraces the involvement of interior designers and clients in the action, even as a wider range of stakeholders, such as developers, contractors and retailers could be potentially involved. This in turn could ensure widespread participation and promotion of sustainability practices. As a case in point, for contractors, it can promote issues of sustainable practices related to the construction of the furniture, fixtures and equipment (FF&E) in interior space. Directions can be given to use materials produced in a socially responsible manner. The utilisation of materials and products from sources that promote safe manufacturing processes and socially-just business practices can be grasped, in accordance to the participating group. Also, the resulting decrease of waste upon the usage of reclaimed or recycled material that is fortunately related to antique and vintage décor,

and which features as another current trend in interior design could be promulgated among other groups of stakeholders. Furniture and decorative items can be now repurposed, refinished or otherwise refurbished in order to give them a new lease of life. Moreover, an increasing variety of safe and chemical-free materials are available, ranging from organic, hypoallergenic paint to fibres and timbers that have not been exposed to pesticides. All these approaches can formulate further completeness of the thematic and production techniques whilst guiding different groups of stakeholders towards a greater understanding of the role of interior design practice in the delivery of sustainability within the built environment. Therefore, the potential utilisation of the proposed model for the promulgation of more specific practices is prospective.

6.6 Future Research

This research has provided a methodological approach to promote sustainability practices amongst interior designers and clients across Cyprus. The following outlines a number of further research considerations that have resulted from this study. The proposed model merges theories and approaches in order to facilitate change and is considered to be a methodological development that articulates the potentials of action research in addressing the challenges of sustainable interior design approaches. It builds on this experience to identify factors that would assume great significance to address in further research and engage more stakeholders of interior design practice.

A future research could involve an application of the model presented and suggest how a direction could be established that could assist in the development of an education strategy pertaining to interior architects/designers. This can be applied locally as well as across Europe through the European Charter of Interior Architecture Education. In addition, this development could pave the way for the creation of a further connection between the design associations in Europe and result in the promotion of sustainable practices among a vast number of stakeholders. It is not sufficient for the associations to merely send in information to members; it is imperative to provide a relevant learning environment.

Furthermore, this study looks at two different layers of the building (Brand, 1994). Phase I connects its thematic concern with the “stuff” and the issue of promoting sustainability and materials. Similarly, Phase II connects its thematic involvement with “space” and the promotion of innovative space design practice. Further research could include the next layer, which, according to Brand (1994) is the “services.” In a future study, this could additionally encourage

the uptake of sustainability in the discipline as well as practicing of interior design. Nevertheless, this layer, even if it is merely a part of the remit of interior designers/architects, finds inclusion in the scope of work of other related professionals that deal with the services in building construction, which could be predicated on all allied professionals working harmoniously. In any case, stakeholders are driving forces that can be expected to eventually catalyse a broader change towards a more sustainable interior design practice.

In summation, numerous directions for future research can indeed be identified, since this research study is the first of its kind undertaken with regard to the interior design profession in Cyprus. On a final note, pursuing research that is relevant to interior design issues will enhance design methods so that the benefits of a holistic sustainable approach towards the building environment can be enjoyed by all.



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APPENDICES



APPENDIX A

Συναινετικό Έντυπο/ Consensus Form

Υπογράφοντας το παρόν έντυπο δηλώνω τη συναίνεση μου στην καταγραφή και παρουσίαση των πεπραγμένων του εργαστηρίου για σκοπούς έρευνας. Συμφωνώ με τη συλλογή των δεδομένων από τον παρατηρητή, από την συνεντευξη και τα ερωτηματολόγια. Είμαι ενήλικη/κος και έχω ασχοληθεί με κατασκευή ή ανακαίνιση χώρου μετά το 2008. Γνωρίζω ότι η έρευνα διεξάγεται από τη Κα.Κίκα Ιωάννου Καζαμία και με τη συνεργασία του Συνδέσμου Μελετητών Εσωτερικού Χώρου (ΣΕΜΕΚ) και του Πανεπιστημίου Λευκωσίας (UNic). / By signing this form I declare my consent to the recording and presentation of the workshop's activities for research purposes. I agree with the data collection by the observer, the interview and the questionnaires. I am an adult and have been involved in the construction or refurbishment of premises after 2008. I know that the research is being carried out by Mrs. Kika Ioannou Kazamias with the collaboration of the Association of Interior Designers (SEMEK) and the University of Nicosia (UNic).

Παρακαλώ σημειώστε ότι τα δεδομένα της έρευνας καθώς και του ερωτηματολόγιο θα παραμείνουν ανώνυμα και οι πληροφορίες που δίνετε είναι εμπιστευτικές. Αν υπάρχουν απορίες σχετικά με την έρευνα μη διστάσετε να επικοινωνήσετε μαζί μου. Ευχαριστώ εκ των προτέρων για τη βοήθειά σας. / Please indicate that the survey data as well as the questionnaire will remain anonymous and the information you provide is confidential. If there are any queries about the research do not hesitate to contact me. Thanks in advance for your help.

Κίκα Ιωάννου Καζαμία, Interior Designer ,kikakazamia@yahoo.gr, τηλ.99439047

Υπογραφή

APPENDIX B

Designers questionnaire/SEMEK 1and 2

Μελέτη Εσωτερικών Χώρων και Αειφορία / Interior Design and Sustainability

Αυτή είναι μια έρευνα σχετική με το σχεδιασμό εσωτερικών χώρων και τη αειφορία. Η έρευνα θα αναδείξει τη εμπλοκή των μελετητών και του κοινού στο θέμα αυτό. Θα εντοπίσει τα εμπόδια που η υπερπήδησή τους θα επιτρέψει την προώθηση του αειφόρου σχεδιασμού. Ελπίζουμε ότι θα μας βοηθήσετε με αυτή τη έρευνα./ This is a survey concerning interior design. Through this work we aim to explore practitioners', clients' and public' understanding of sustainability, as well as help to identify barriers to the promotion of sustainability to practitioners, clients and the public. We hope that you will be willing to help us with this study.

A.Αυτό το μέρος έχει σκοπό να μαζέψει γενικές πληροφορίες για σας και το επάγγελμά σας / This section is intended to collect General Information about you and your practice.

1. Τόπος Διαμονής (Επιλέξτε ένα) / Place of residence / (tick one)	2. Τόπος εξάσκησης επαγγέλματος/ (Επιλέξτε ένα) Place of professional practice/ (tick one)
<input type="checkbox"/> Λευκωσία/ Nicosia	<input type="checkbox"/> Λευκωσία/ Nicosia
<input type="checkbox"/> Λεμεσός/ Limasol	<input type="checkbox"/> Λεμεσός/ Limasol
<input type="checkbox"/> Λάρνακα/ Larnaca	<input type="checkbox"/> Λάρνακα/ Larnaca
<input type="checkbox"/> Πάφος/ Paphos	<input type="checkbox"/> Πάφος/ Paphos
<input type="checkbox"/> Ελεύθερη Αμμόχωστος/ Famagusta region	<input type="checkbox"/> Ελεύθερη Αμμόχωστος/ Famagusta region
<input type="checkbox"/> Κοινότητα/ Community 	<input type="checkbox"/> Κοινότητα/ Community

3.Τομέας εργασίας. Παρακαλώ επιλέξτε κατά προσέγγιση σε ποιο πεδίο παρέχετε το μεγαλύτερο ποσοστό εργασίας σας/Area.Please indicate approximately in which of the following area you work more?

<input type="checkbox"/> Ιδιωτικός /Private	<input type="checkbox"/> Δημόσιος /Public	<input type="checkbox"/> Άλλο /Other
--	--	---

4.Πεδίο εργασίας Παρακαλώ επιλέξτε κατά προσέγγιση σε ποιο πεδίο παρέχετε το μεγαλύτερο ποσοστό εργασίας σας / Sector (Please indicate approximately in which of the following area you work more)

Γραφεία /Commercial	Καταστήματα /Retail	Κατοικίες /Domestic	Άλλο / Other
----------------------------	----------------------------	----------------------------	---------------------

5. Μόρφωση/Education:

Τίτλος Πτυχίου:/ Title of Undergraduate Qualification:	Τίτλος Μεταπτυχιακού:/ Title of Post-Graduate qualification:
Ημερομηνία λήψεως/Date received	Ημερομηνία λήψεως/Date received

6. Έχεις κάνει κατά τη διάρκεια των σπουδών σου κάποιο από τα παρακάτω μαθήματα; (μπορείς να σημειώσεις πάνω από μία επιλογή) / During your university studies, did you attend courses on any of the following subjects? (Please check all that apply).

Περιβαλλοντικός σχεδιασμός / Environmental design	Αειφόρος σχεδιασμός /Sustainable design	Πράσινα θέματα στο σχεδιασμό /Green issues in interior design
Άλλο(Παρακαλώ ονόμασε)/Other (Please describe below)	Κανένα /None	

7. Ηλικία (Επιλέξτε ένα):/Age (tick one)

25-34	35-44	45-54	55-64	Πάνω από/above 64
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B. Αυτό το μέρος εξερευνά την αντίληψη, συμπεριφορά σας για θέματα που αφορούν στο θέμα αυτό και στη εξάσκηση του επαγγέλματός σας/ The following section explores your awareness, behavior on relevant issues at your practice as an interior designer. Αειφόρος σχεδίαση (που επίσης αναφέρεται ως "Πράσινη σχεδίαση", "οικολογικός σχεδιασμός" ή "σχεδιασμός για το περιβάλλον") είναι η τέχνη του σχεδιασμού αντικειμένων και του δομημένου περιβάλλοντος σε συμμόρφωση με τις αρχές της οικονομικής, κοινωνικής και οικολογικής αειφορίας./ Sustainable design (also referred to as "green design", "eco-design", or "design for environment") is defined here as the art of designing physical objects and the built environment to comply with the principles of economic, social and environmental sustainability

Πόσο συμφωνείτε με τις παρακάτω δηλώσεις (Επιλέξτε από το 1 έως το 5) /How much do you agree with the following statements (rate the following from 1 to 5)

Δηλώσεις / Statements	Διαφωνώ πολύ/ Strongly Disagree	Διαφωνώ /Disagree	Δεν έχω γνώμη/ No Opinion	Συμφωνώ / Agree	Συμφωνώ πολύ / Strongly Agree
B1 Η αειφορία θα πρέπει να είναι ουσιώδες μέρος των επαγγελματικών ευθυνών του μελετητή εσωτερικών χώρων / Sustainability should be an essential part of the interior designer's professional responsibilities.					
B1 Η μελέτη εσωτερικών χώρων συμπεριλαμβάνει την κοινωνική ισότητα σε τοπικό και παγκόσμιο επίπεδο / Interior design embraces social equity at a local and global level.					
B1 Ο μελετητής πρέπει να δημιουργεί περιβάλλοντα που υποστηρίζουν την ευημερία και την παραγωγικότητα /Designers should create indoor environments that support occupant well-being and productivity.					
B1 Η μελέτη εσωτερικών χώρων συμπεριλαμβάνει την προστασία του φυσικού περιβάλλοντος/ Interior design embraces protection of the natural environment					
B1 Ο μελετητής πρέπει να ευαισθητοποιήσει για τη βιώσιμη χρήση των φυσικών πόρων /Designers should advocate for Sustainable Use of Natural Resources					
B2 Ο μελετητής πρέπει να υποδεικνύει υλικά από ανανεώσιμες πηγές / Designers should specify renewable materials					
B2 Ο μελετητής πρέπει να ενθαρρύνει την ανάπτυξη και τη χρήση, διασωθέντων προϊόντων. / Designers should encourage the development and use of reclaimed products.					
B2 Ο μελετητής πρέπει να ενθαρρύνει την ανάπτυξη και τη χρήση, ανακυκλωμένων προϊόντων. / Designers should encourage the development and use of recycled products.					
B1 Ο μελετητής πρέπει να ελαχιστοποιεί τα υλικά που χρησιμοποιεί/ Designers should minimise the amounts of materials used.					
B3 Ο μελετητής πρέπει να σχεδιάζει χώρους για πολλαπλές χρήσεις/ Designers should design multipurpose interior spaces.					
B3 Ο μελετητής πρέπει να σχεδιάζει για μέγιστη ελαστικότητα στη διαμόρφωση του χώρου. / Designers should design for maximum flexibility of spatial configurations.					
B3 Ο μελετητής εσωτερικών χώρων πρέπει να αναπτύξει και να υλοποιήσει σχέδιο αποδόμησης του χώρου στα πλαίσια μιας μελέτης./ Designers should develop and implement a deconstruction plan					

B4. Πόσο συμφωνείτε ή διαφωνείτε με τις παρακάτω δηλώσεις (Επιλέξτε από το 1 έως το 5)
To what extent do you agree or disagree with the following statements (rate the following from 1 to 5)

Πόσο σημαντική θεωρείς τη ροή πληροφοριών σε ανάλογα θέματα μέσω των επαγγελματικών συνδέσμων; (Κυκλώστε ένα από το 1 έως το 5) / How important do you consider to be the provision of information on relevant issues from your association ? (Please tick one of the following)

Καθόλου/Not at all important	1	2	3	4	5	Πολύ/ Very Important
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Αν δημιουργηθούν ομάδες προς ενημέρωση σε κάθε επαρχία , σε ενδιαφέρει να συμμετέχεις;/If workshops on the issue will take place in your area, are you interested in for participation?

Καθόλου/Not at all interested	1	2	3	4	5	Πολύ/ Very Interested
-------------------------------	---	---	---	---	---	-----------------------

Έχετε ποτέ εφαρμόσει τον αειφόρο σχεδιασμό σε κάποια επαγγελματική σας μελέτη; (Κύκλωσε ένα)/ Have you ever implemented sustainable design within your professional work? (Please tick one)

Καθόλου/Never implement	1	2	3	4	5	Πολύ/Always implement
-------------------------	---	---	---	---	---	-----------------------

C.Ανοικτού τύπου ερωτήσεις /Open type questions

**1. Ποιο νομίζετε ότι είναι το μεγαλύτερο εμπόδιο στην προώθηση του αειφόρου σχεδιασμού; /What is the biggest barrier to the delivery of sustainable interior design?
 Πώς μπορεί να ξεπεραστεί;How can this barrier be overcome?**

2.Πώς πιστεύετε ότι μπορούμε να ενθαρρύνουμε τους μελετητές εσωτερικών χώρων να εφαρμόσουν τον αειφόρο σχεδιασμό; /How do you think that designers can best be encouraged to implement sustainable design?

3.Πώς πιστεύετε ότι μπορούμε να ενθαρρύνουμε το κοινό και ειδικά τους πελάτες να γνωρίσουν και να επιλέγουν λύσεις αειφόρου σχεδιασμού; /How do you think that the general public and clients in particular can be encouraged to select or seek out sustainable design solutions?

APPENDIX C

Designers' questionnaire/SEMEK 3

ΜΕΛΕΤΗ ΕΣΩΤΕΡΙΚΩΝ ΧΩΡΩΝ ΚΑΙ ΑΕΙΦΟΡΙΑ / INTERIOR DESIGN AND SUSTAINABILITY

Αυτή είναι μια έρευνα σχετική με το σχεδιασμό εσωτερικών χώρων και τη βιωσιμότητα. Η έρευνα θα αναδείξει τη εμπλοκή των μελετητών και του κοινού στο θέμα αυτό. Θα εντοπίσει τα εμπόδια που η υπερπήδησή τους θα επιτρέψει την προώθηση του βιώσιμου σχεδιασμού. Ελπίζουμε ότι θα μας βοηθήσετε με αυτή τη έρευνα./ This is a survey concerning interior design. Through this work we aim to explore practitioners', clients' and public' understanding of sustainability, as well as help to identify barriers to the promotion of sustainability to practitioners, clients and the public. We hope that you will be willing to help us with this study.

A.Αυτό το μέρος έχει σκοπό να μαζέψει γενικές πληροφορίες για σας και το επάγγελμά σας / This section is intended to collect General Information about you and your practice.

2. Τόπος Διαμονής (Επιλέξτε ένα) / Place of residence / (tick one)	2. Τόπος εξάσκησης επαγγέλματος/ (Επιλέξτε ένα) Place of professional practice/ (tick one)
Λευκωσία/ Nicosia	Λευκωσία/ Nicosia
Λεμεσός/ Limasol	Λεμεσός/ Limasol
Λάρνακα/ Larnaca	Λάρνακα/ Larnaca
Πάφος/ Paphos	Πάφος/ Paphos
Ελεύθερη Αμμόχωστος/ Famagusta region	Ελεύθερη Αμμόχωστος/ Famagusta region
Κοινότητα/ Community 	Κοινότητα/ Community

3.Τομέας εργασίας. Παρακαλώ επιλέξτε κατά προσέγγιση σε ποιο πεδίο παρέχετε το μεγαλύτερο ποσοστό εργασίας σας/Area.Please indicate approximately in which of the following area you work more?

Ιδιωτικός /Private	Δημόσιος /Public	Άλλο/Other
--------------------	------------------	------------

4.Πεδίο εργασίας Παρακαλώ επιλέξτε κατά προσέγγιση σε ποιο πεδίο παρέχετε το μεγαλύτερο ποσοστό εργασίας σας / Sector (Please indicate approximately in which of the following area you work more)

Γραφεία /Commercial	Καταστήματα /Retail	Κατοικίες/Domestic	Άλλο/ Other
----------------------------	----------------------------	---------------------------	--------------------

5. Μόρφωση/Education:

Τίτλος Πτυχίου:/ Title of Undergraduate Qualification :	Τίτλος Μεταπτυχιακού:/ Title of Post-Graduate qualification:
Ημερομηνία λήψεως/Date received	Ημερομηνία λήψεως/Date received

6. Έχεις κάνει κατά τη διάρκεια των σπουδών σου κάποιο από τα παρακάτω μαθήματα; (μπορείς να σημειώσεις πάνω από μία επιλογή) / During your university studies, did you attend courses on any of the following subjects? (Please check all that apply).

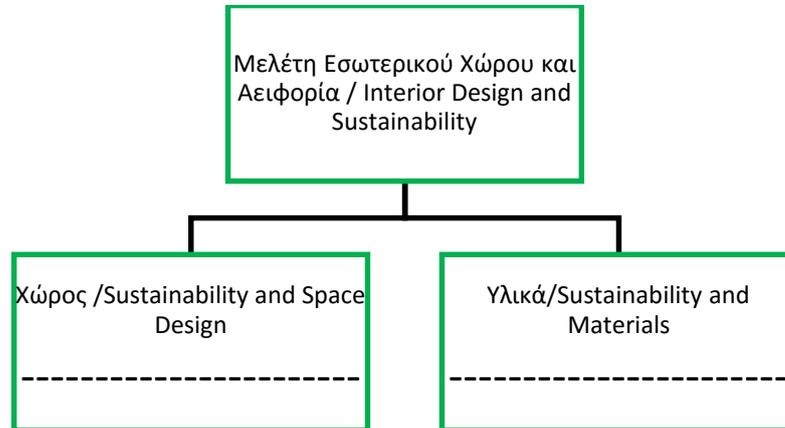
Περιβαλλοντικός σχεδιασμός / Environmental design	Αειφόρος σχεδιασμός /Sustainable design	Πράσινα θέματα στο σχεδιασμό /Green issues in interior design
Άλλο(Παρακαλώ ονόμασε)/Other (Please describe below)		Κανένα /None

7. Ηλικία (Επιλέξτε ένα):/Age (tick one)

25-34	35-44	45-54	55-64	Πάνω από/above 64
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Παρακαλώ συμπληρώστε πριν την έναρξη του εργαστηρίου.

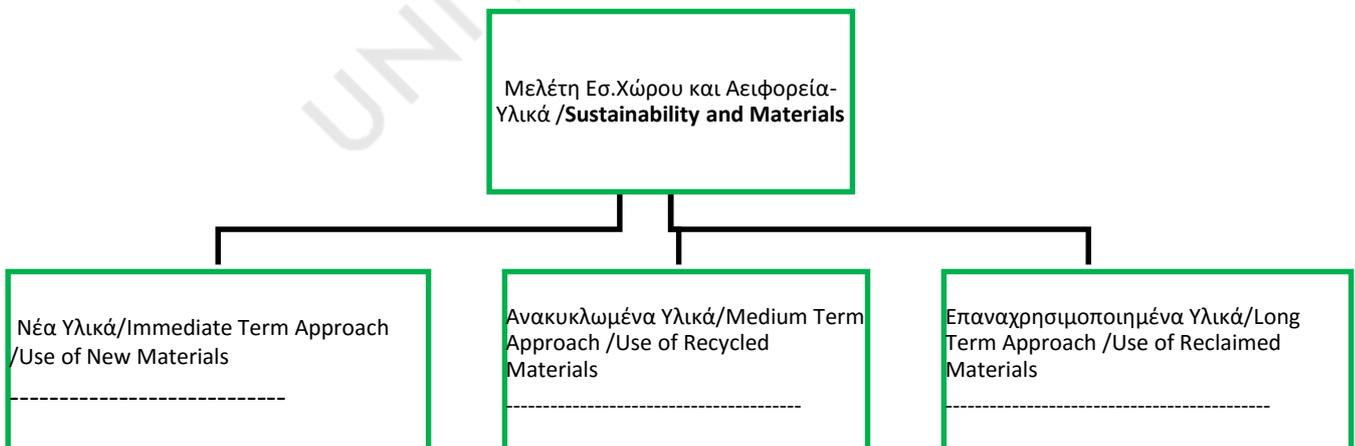
1.Θεωρώ πιο προσιτό να προσεγγίσω την αειφόρο μελέτη αξιοποιώντας πρακτικές : Παρακαλώ επιλέξτε ένα, δύο η κανένα. (I consider easier to approach sustainable design through: Please choose one, two or none from the following)



2.Θεωρώ πιο προσιτό να προσεγγίσω την αειφόρο μελέτη αξιοποιώντας πρακτικές: (I consider easier to approach sustainable design through :)

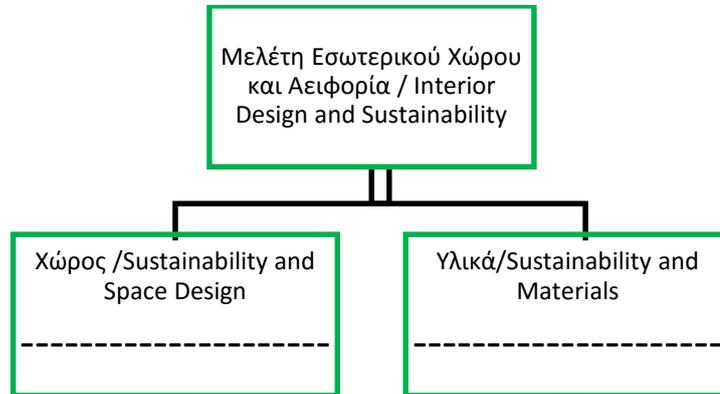


3.Θεωρώ πιο προσιτό να προσεγγίσω την αειφόρο μελέτη αξιοποιώντας πρακτικές: (I consider easier to approach sustainable design through :)



Παρακαλώ συμπληρώστε μετά τη λήξη του εργαστηρίου

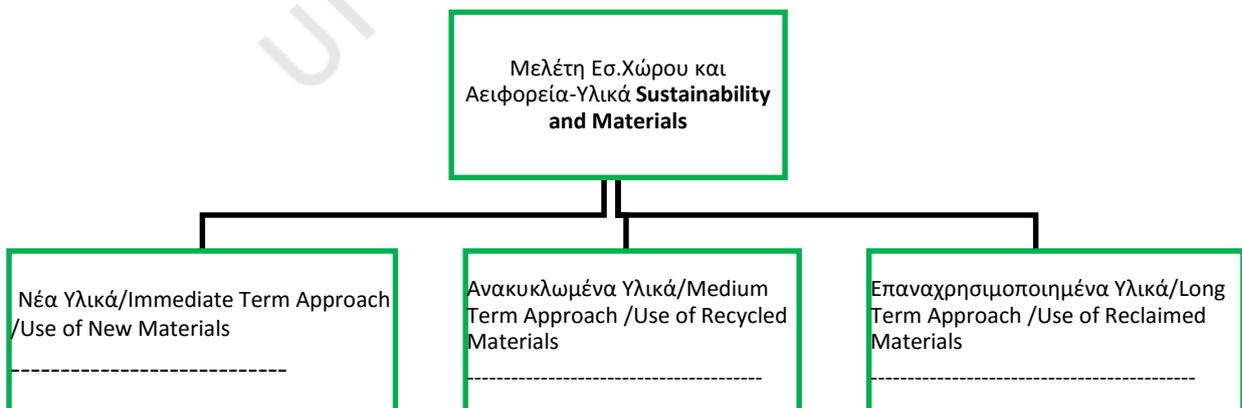
1.Θεωρώ πιο προσιτό να προσεγγίσω την αιεφόρο μελέτη αξιοποιώντας πρακτικές: Παρακαλώ επιλέξτε ένα, δύο η κανένα. /I consider easier to approach sustainable design through: Please choose one, two or none from the following.



2.Θεωρώ πιο προσιτό να προσεγγίσω την αιεφόρο μελέτη αξιοποιώντας πρακτικές:/ I consider easier to approach sustainable design through:



3.Θεωρώ πιο προσιτό να προσεγγίσω την αιεφόρο μελέτη αξιοποιώντας πρακτικές:/ I consider easier to approach sustainable design through:



APPENDIX D

Clients' questionnaire for PUBLIC 1, 2, 3, and 4

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ /QUESTIONNAIRE

ΕΣΩΤΕΡΙΚΟΣ ΧΩΡΟΣ ΚΑΙ ΑΕΙΦΟΡΙΑ /INTERIOR SPACE AND SUSTAINABILITY

Αυτή είναι μια έρευνα σχετική με το σχεδιασμό εσωτερικών χώρων και τη αειφορία. Η έρευνα θα αναδείξει τη γνώση των μελετητών και του κοινού στο θέμα αυτό και θα εντοπίσει τα εμπόδια που η υπερπήδησή τους θα επιτρέψει την προώθηση του αειφόρου σχεδιασμού. Ελπίζουμε ότι θα μας βοηθήσετε με αυτή τη έρευνα./This is a survey concerning interior design. Survey will evolve practitioners' and clients'-public understanding of sustainability, and identify barriers that will enable sustainability to be promoted to practitioners, clients and public. We hope that you will be willing to help us with this study.

Συναινετικό Έντυπο

Υπογράφοντας το παρόν έντυπο δηλώνω τη συναίνεση μου στην καταγραφή και παρουσίαση των πεπραγμένων του εργαστηρίου για σκοπούς έρευνας, είμαι ενήλικη/κος και έχω ασχοληθεί με κατασκευή ή ανακαίνιση χώρου μετά το 2008. Η έρευνα διεξάγεται από τη Κα.Κίκα Ιωάννου Καζαμία με επίβλεψη των :Dr. Julie Gwilliam, Dr Christian Suau και Dr Andrew Roberts στο πανεπιστήμιο του Cardiff και με τη συνεργασία των: ΣΕΜΕΚ, UNic /I accept that the actions of the workshop will be reported and documented as part of an ongoing research, that I am an adult and I have been dealing with construction /renovation of spaces after 2008. The research is pursued by Ms Kika Ioannou Kazamia under the supervision of Dr. Julie Gwilliam, Dr. Christian Suau and Dr. Andrew Roberts at University of Cardiff and with cooperation of SEMEK and UNic.

Υπογραφή/Signature.....

Το ερωτηματολόγιο είναι ανώνυμο και οι πληροφορίες που δίνετε είναι εμπιστευτικές. Αν υπάρχουν απορίες σχετικά με την έρευνα μη διστάσετε να επικοινωνήσετε μαζί μου. Ευχαριστώ εκ των προτέρων για τη βοήθειά σας. Κίκα Ιωάννου Καζαμία, Interior Designer, kikakazamia@yahoo.gr, τηλ.99439047/ Please note that the questionnaire is anonymous and that the information you provide will be treated with confidentiality. If you have any questions about the survey please do not hesitate to contact me. I am happy to respond to any queries you may have.

Thank you very much in advance for your help. Kika Ioannou Kazamia.InteriorDesigner, kikakazamia@yahoo.gr,mob.99439047.

A. Αυτό το μέρος έχει σκοπό να μαζέψει γενικές πληροφορίες για το τόπο διαμονής σας/ This section is intended to collect general information about your place of residence.

1. Τόπος Διαμονής / Place of residence - Παρακαλώ επιλέξτε ένα /please tick one

- Nicosia/Λευκωσία
- Limasol/Λεμεσός
- Paphos /Πάφος
- Larnaca /Λάρνακα Famagusta region/ Ελεύθερη Αμμόχωστος
- Community / Κοινότητα

2. Τρόπος απόκτησης κατοικίας/Type of Tenure-Παρακαλώ επιλέξτε ένα /please tick one

- Συνοικισμός/ Government housing estate
- Αυτοστέγαση / Self help housing program on government land
- Επιχορήγηση κατασκευής / Self help housing program on private land
- Επιχορήγηση αγοράς / Self help housing program for purchase house/apartment
- Προσωπική αγορά / Purchase of a house/apartment scheme

3. Τύπος κατοικίας /Type of home-Παρακαλώ επιλέξτε ένα /please tick one

- Διαμέρισμα / Apartment or terrace house
- Μονοκατοικία / Detached house
- Διπλοκατοικία / Semi-detached house

4. Ηλικία-Επιλέξτε ένα /Age- Please tick one

- Κάτω των/Under 25
- 25-34
- 35-44
- 45-54
- 55-64
- Πάνω από/Above 64

5. Φύλο /Gender

- αρρεν /male
- θηλυ/female

6. Μόρφωση /Education -Παρακαλώ επιλέξτε ένα /please tick one

- Πρωτοβάθμια /Primary
- Δευτεροβάθμια/Secondary
- Τριτοβάθμια/ Tertiary

**B. Αυτό το μέρος είναι σχετικό με τη συμπεριφορά για θέματα που αφορούν στη
αιεφορία/βιωσιμότητα και το χώρο διαμονής/εργασίας σου/ This part is relevant with your
behaviour on sustainable issues at your place of residence or work space.**

**Πόσο συμφωνείτε ή διαφωνείτε με τις παρακάτω δηλώσεις/How much do you agree with the following
statements.Παρακαλώ επιλέξτε ένα σε κάθε μία από τις παρακάτω 10 δηλώσεις. /Please tick one for
each of the 10 statements.**

	Συμφωνώ πολύ / Strongly Agree	Συμφωνώ / Agree	Δεν έχω γνώμη/ No Opinion	Διαφωνώ /Disagree	Διαφωνώ πολύ/Strongly Disagree
1.1.Η αιεφορία θα πρέπει να είναι ουσιώδες μέρος στη μελέτη εσωτερικών χώρων/Sustainability should be an essential part of the design of interior spaces					
1.2. Με ενδιαφέρει να κατοικώ σε ένα χώρο που θα είναι φιλικός προς το περιβάλλον / I'm interested in living in a space that will protect the environment					
1.3. Με ενδιαφέρει ένας εσωτερικός χώρος που θα κάνει σωστή χρήση των φυσικών πόρων /I'm interested in living in a space that makes efficient use of resources					
1.4. Με ενδιαφέρει ένας εσωτερικός χώρος που θα υποστηρίζει την ανακύκλωση των υλικών /I'm interested in living in a space that support recycling of materials					
1.5.Με ενδιαφέρει ένας εσωτερικός χώρος που θα προωθεί την επαναχρησιμοποίηση των υλικών/I'm interested in living in a space that support reuse of materials					
1.6. Η μέγιστη ευελιξία στα αντικείμενα του χώρου είναι σημαντική/The maximum flexibility of spatial elements is important.					
1.7.Οι εσωτερικοί χώροι πρέπει να σχεδιάζονται για πολλαπλές χρήσεις/ Interior spaces should be designed for multipurpose uses					
1.8.Η μελέτη εσωτερικών χώρων πρέπει να περιλαμβάνει σχέδιο αποδόμησης του χώρου./Interior design should develop and implement a deconstruction plan					
1. 9. Με ενδιαφέρει ο μελετητής εσωτερικού χώρου που θα έχει γνώση και εμπειρία σε όλα τα παραπάνω θέματα../If I was to work with an interior designer, I am interested in an interior designer with knowledge and experience on the above issues					
1.10. Θεωρώ σημαντική τη ροή πληροφοριών σε ανάλογα θέματα μέσω των μελετητών εσωτερικών χώρων / I consider important the provision of information on relevant issues from interior designers					

APPENDIX E

Interview questions

Please see below the questions that will be used to provide a structure to a semi structured interview, 'in which the interviewer is free to modify the sequence of questions, change the wording, explain them or add to them' (Cohen L. & Manion L. 1996).

The interviewee is asked to comment on each question in order to enable evaluation of the impact of each of the interventions on the interviewee.

Question

- 1.a) How useful did you find the intervention?**
- 1.b) How enjoyable did you find the intervention?**
- 1.c) How difficult did you find the intervention?**

Question

- 2. Did you value new approaches to design problems more after analysing, applying and sharing during workshop?**

Question

- 3. How did the intervention help you to think and consider design practice differently?**

Question

- 4. Has the way that you approach interior design practice changed? Could you describe how it has changed?**

Question

- 5. After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice, how do you think that you can help?**

Possible supplementary questions:

- a) Using Sustainable Materials Approaches
- b) Using Sustainable Space Design Approaches
- c) Both
- d) None

Question

- 6. Did you attend other interventions?**

APPENDIX F i

Phase I- Designers' Intervention 1 Observer's Field Notes

Phase I- Designers' Intervention 1 Observer's Notes excerpts from original field notes in Greek

The presentation was very useful and it's obvious that many colleagues are unaware and have not dealt with the issue.

They realised what they could do through this presentation and discussion.

The chairman was first appointed and said that this is the first time that we have been doing research into our profession.

Besides some information we have as a council, nothing else is registered.

By saying this, the president gave the importance that he had in the presentation but also in the rest that would follow.

The colleagues then said that they perceived the need for change.

Antonia said, "It is natural to have demands from the association and that is what will push us to move forward all together."

Maria, Antonia and Ellis said they were very interested in the subject and would certainly watch the rest of the presentations.

Phase I- Designers' Intervention 1 Observer's Notes excerpts from original field notes in Greek

The examples presented were a surprise and sample of new practice practices in the profession. Understanding colleagues about sustainability was basically about saving energy.

- Christodoulos: 'There is so much we can do'.
- Maria said that we sometimes want [to practice sustainability] but not our customers.
- Polina said we need to be open to passing our ideas to the client something we always do when we propose a new idea about design.
- Lemesians said they wanted to be informed about energy issues and new regulations.

It was agreed that this would be among the topics for programming.

Everyone is delighted with the initiative. They are happy about the event:

- Elis 'This is a very interesting issue and we can promote it to a small number of customers'.
- Maria 'Why in a small number?'
- Elis 'I mean that now we do not have many customers, the market is down.'

These actions are taken because the association took the initiative to promote the issue of sustainability. Members see that this is something that we should pay attention to, so we are happy to take part in it.

Another reason to support the actions taken is because many customers have become more critical as far as various design issues and –we- as professionals need to be inform on these issues. The colleagues- Interior designers- realise that the issues presented are of further relevance.

APPENDIX F ii

Phase I- Clients' Intervention 1 Observer's Field Notes

Phase I- Clients' Intervention 1 Observer's Notes excerpts from original field notes in Greek

In this first workshop, after Kika welcomed the participants, an introduction was made for the purpose of the workshop.

The presentation was completed, and then everyone took turns and said their opinion and gave their comments on the subject presented.

- Andri. Is not interested aesthetically in objects made out of recycled materials.
- Marina. If she were to make a home now, she would think differently. Economic needs are of great importance for her as well.
- George. Recycling at home. Information from Internet. Paper recycling printer. Larnaca headquarters.
- Elena -Client 1. Active member in recycling. Purchase of furniture and constructions.
- Elena -Client 2. Interesting acquaintance with the issue of recycling.
- I am interested in soundproofing newspapers with the example presented.
- Chrystalla. First acquaintance with recycling, but from my friend I started to be interested in the subject.
- Alex. I would use recycled materials in my project.
- Christina. Interesting theme, however I do not use it at home.

Phase I- Clients' Intervention 1 Observer's Notes excerpts from original field notes in Greek

Andri. Works with children with special needs. She liked a lot of ideas presented for using them at home. Also creations for children in school.

I appreciate some very good examples of items made from recycled and reclaimed materials that I can make for or with my students.

- Maria. Now I will be more environmentally sensitive. From the examples I saw things I never thought to use or make.
- Kyriakos. Interested in recycling. There are really so many things we can do if we decide to recycle, its amazing.
- Christos. Student of Architecture. Nice topic with recycling. Interesting examples that we can actually consider when we decide to do 'new' things for our house or office.
- Frosso - Andri - Dimitra. Recycling with cans, and Circle of Life - presented is very interesting. Stores that sell old objects or that we can recycle our own are few and difficult to be found.
- Frosso said: I would like to fix an old piece of furniture now by using old pieces of wood left over from another part.
- Demetra said: Also have an old lamp shade that I will fix by using other parts from different objects that I discarded throughout the years.

APPENDIX G i**Phase II- Observer's Notes – Designers' Intervention 2 and 3****Phase II Designers' Intervention 2 Observer's Note excerpts from original field notes in Greek**

After the presentations the discussion was very interesting and different. Even during the break there was a little discussion about the subject in the corridor and the booth.

At the beginning of the debate some people were strongly placed and said that we need to move on with another way of practicing the profession. We then provided explanations for the various practices that were presented.

Placements were on specific topics and the participants had the opportunity to complete their knowledge on topics.

There are also a number of practitioners and so many different views were heard. Most are referring to and interested in energy saving and asked Mr. Vlachos for relevant information.

It was expected that the participants would receive information on the use of practical sustainability methods.

Through questions and answers colleagues can understand and classify different approaches in order to use them further.

The presentation was enjoyable and regarded as more exciting than usual. The presence of many professionals was very interesting and different views were heard.

Presentations started from more general themes and ended up more specific. For example, specific approaches that we can use in design.

This intervention had a positive impact on all professionals. It was a great success and the participation of many colleagues from the association and other professionals shows their availability to learn through their association and by combining knowledge from different disciplines.

Through the questions of the participants and the discussion we appreciate that designers need to understand and classify different approaches so that they can use them.

Phase II Designers' Intervention 3 Observer's Note excerpts from original field notes in Greek

Observer Notes for Intervention 3 Designers

Interior Design and Sustainability

There is a need to use particular methods, products and procedures.

Creative process can be indicative to low impact on the environment.

Brand (1994) 5-15 years

Space Sustainability-

- Immediate solution=User-friendly/Multipurpose / customizable/ multipurpose furniture
- Medium-term solution=Friendly to owner/ flexible space/increasing spaces
- Long-term solution=Investor-friendly /Design for disassembly / break down in individual assets

Materials Sustainability

- New materials-source-processing-use-disposal or reuse
- Recycled materials derive from circular models of design
- Reused materials -> (Zumthor Swiss pavilion at Expo 2000 in Hahauer)

Examples

Thermofloc insulation is a good example of a sustainable material to suggest.

Tech-bamboo is a processed material that maybe more expensive but its hard and massif and its more durable

Participants admitted that the easiest approach to follow is the immediate approach.

Cost issue (we will get profit in the long run). This should be explained to clients.

Design by a technician for lights will add to the project. Usually clients ask only for necessary lighting for low cost (energy). Many consider lighting a luxury.

Designer tips to include everything. We need to speak to the users to understand how a space works.

Difficult to break the stereotype (referring to developers and their understanding of what the client needs).

Relationship to concept and conceptual development and the need to explain this concept to client is considered important by some participants.

APPENDIX G ii

Phase II- Observer's Notes Clients Intervention 2

Phase II Clients' Intervention 2 Observer's Notes excerpts from original field notes in Greek

Most of the participants were people that also came to the first workshop. This time they brought with them plans of their spaces to discuss with us. Most have shown that they appreciate the first approach (use of multipurpose furniture) and asked whether they can find in Cyprus furniture of comparable quality to what they saw in the examples. As for the second approach, several admitted that they are available to use a similar approach. They mentioned the use of dividers between the seating area and the living room.

- One participant mentioned that he had a sofa-bed in the sitting room to provide accommodation to his guests in his home in the village. But he thinks it is not convenient – its more for a casual solution.
- Two participants said that this approach is good for children's rooms that are changing needs as they grow older.

In Cyprus we still have no space problem - we do not use so much the immediate solution. Generally, pieces of furniture for many uses we may use them in country houses.

- None of the participants utilised the medium-term solution - did not use it either in their house or office.
- One lady said that the long-term solution - she wants assurance to use it. She would do it if she was guaranteed that there would be no problem [Meaning with the mantle and dismantle of the pieces of furniture made using the design for deconstruction approach]

Audience queries:

- Are there such designers in Cyprus? -Yes, there are, but clients have not yet asked for similar practices to be applied and seems that designers hesitate to apply it.
- Can those practices actually successfully applied; - Of course, this depends on the needs of each user and his/her understanding on how one can support a sustainable development for all. Designers always see the needs of their clients and of course they want to make them happy. So they will not suggest any practice that the client is not familiar with or is not willing to explore.
- How we can preserve the wooden pieces of furniture so to sustain in good condition?

Designers have the knowledge to advise on the appropriate timber where needed. Regarding materials, you always want a lot of searching and it is they [designers] who will look to find what is needed depending on the use and quality you require.

APPENDIX H

Phase III- Observer's Notes - Designers and Clients Intervention.

Phase III Observer's Notes from Clients' and Designers' Intervention excerpts from original field notes in Greek

The event began with the presentation of materials. All attendees showed great interest because new environmentally friendly materials were presented.

After the presentation, they discussed a little, and colleagues admitted that by working with some clients they were better able to understand how to apply the approaches presented.

They almost all mentioned that their process of implementing their own presentation helped them to understand the examples they had seen in the previous workshops. So now they know how to be more efficient.

Some of the client attendees stated that the exhibition and the collaboration with the designers made them aware and now they will only cooperate with SEMEK members who know more about sustainability.

Two clients that did not work for a project said that after watching the exhibition and what can be done at the site, they will definitely apply it when the time comes.

The climate that prevailed was very good and everyone seemed to have been waiting for the exhibition. They were very proud that their work was presented.

APPENDIX I i:

Phase I – Designers' Interviews Transcripts & Coding

Transcript 1
PHASE I Interview Transcript Designer1.001. (Att. Pilot & ALL Inter.)
<p>Interviewer: Question 1</p> <p style="padding-left: 20px;">How useful did you find the intervention?</p> <p style="padding-left: 20px;">How enjoyable did you find the intervention?</p> <p style="padding-left: 20px;">How difficult did you find the intervention?</p>
<p>Designer M:</p> <p style="padding-left: 20px;">Something new for me in relation to our profession / as soon as one finishes university they do not always learn about sustainability/ and I think that many designers do not have any background on the issue.</p> <p style="padding-left: 20px;">Personally I enjoyed this first presentation and the intervention generally. It was very enjoyable. I have an enthusiastic feeling, as I was informed on a very interesting issue. I noticed that all the members had the same feeling.</p> <p style="padding-left: 20px;">Not difficult.</p>
<p>Interviewer: Question 2</p> <p>Did you receive general information about the meaning of sustainability in interior design?</p> <p>Did you then receive information about the use of materials in interior spaces?</p>
<p>Designer M:</p> <p>It was an informative action on the issue of sustainability and parallel through the examples I realised how I can apply it to my practice.</p>
<p>Interviewer: Question 3</p> <p>How did the intervention help you to think and consider interior design differently?</p>
<p>Designer M:</p> <p>It gave me the opportunity to get excited again about my practice.</p>
<p>Interviewer: Question 4</p> <p>Has the way that you approach interior design changed? Could you describe how it has changed?</p>
<p>Designer M:</p> <p>The intervention made me think of how I am doing my work. Through the examples I am already thinking of ways to apply it.</p>
<p>Interviewer: Question 5</p> <p>After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?</p> <p>Possible supplementary questions:</p> <p>a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None</p>
<p>Designer M:</p> <p>I think I can suggest a combination of the above.</p>

Transcript 2

Interview Transcript-Designer 2.001 (Att. Pilot &1st Inter.)

Interviewer: Question 1

- How useful did you find the intervention?
- How enjoyable did you find the intervention?
- How difficult did you find the intervention?

Designer E:

Very useful it's a thematic that makes you feel like you have updated your professional understanding and broadened your knowledge. It will assist to may be answer clients' questions on the issue. It was very enjoyable. Glad to attend. Not difficult.

Interviewer: Question 2

- Did you receive general information about the meaning of sustainability in interior design?
- Did you then receive information about the use of materials in interior spaces?

Designer E:

It was an informative action on the issue of sustainability as I did not have the opportunity before to study the issue of sustainable design. The intervention gave a good scope for the thematic and I think I kept things that will also assist me in my practice.

Interviewer: Question 3

- How did the intervention help you to think and consider interior design differently?

Designer E:

It gave me the opportunity to work with the interior space differently considering some materials, now after this intervention I can also propose some recycled materials for example recycled wall coverings.

Interviewer: Question 4

- Has the way that you approach interior design changed? Could you describe how it has changed?

Designer E:

The intervention surely makes me think of how I am using materials now. This is how my approach has changed. I consciously select now the materials.

Interviewer: Question 5

- After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer E:

I think I can suggest a combination of the above. Use of energy conserving methods, reused (reclaimed) pieces of furniture and recycled materials.

Transcript 3

Interview Transcript-Designer 2.10. (Att. 1st Inter.)

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Designer A:

Very useful with good examples that we can use today.
 It was very enjoyable. It was a very pleasant event.
 Not difficult, the transmitted knowledge was clearly presented.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?
 Did you then receive information about the use of materials in interior spaces?

Designer A:

Yes, I received information about sustainability, and also some examples of energy and water consumption saving.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer A:

Basically I liked the example of the objects made from recycled paper and I think its an idea that I can use.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer A:

Yes, now I think that I can make my designs better and try to save energy and water and also try to prevent water pollution.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer A:

I think I can suggest, correct orientation of openings.

Wood, I suggest is a good example if we can secure that it comes from a sustainable source. Also metal as we can recycle it.

Interviewer: Question 6.

Why you did not attend following interventions?

Transcript 4

Interview Transcript-Designer 3.010. (Att. Pilot & ALL Inter.)

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer C:

Very useful as I was not aware of all the terms and solutions presented and it was a good source to learn more things on the issue.

Very enjoyable.

Not difficult, all terms and ideas presented were very clear

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?

Did you then receive information about the use of materials in interior spaces?

Designer C:

Yes, I've got a lot of information on how to apply sustainability to consider in the future and I can say that I already used some of the solutions presented.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer C:

As I said I knew things about sustainability and now after the intervention I know more things and with more details.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer C:

Yes, now I think that I can make my designs better and try to apply them in my practice.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer C:

I think I can suggest both. I also think that I could suggest proposals considering sustainable materials and methods.

Transcript 5

Interview Transcript-Designer 2.13. (Att. 1ST Inter.)

Interviewer: Question 1

- How useful, did you found the intervention?
- How enjoyable, did you found the intervention?
- How difficult, did you found the intervention?

Designer G

Very important, as a lot of –sustainable –products have been presented and as long as designers know about them–through their association- they will manage to find them and this reflects on quality of projects and the market. It was informative on material and product suppliers as well.

Very enjoyable and reminded me of contemporary design solutions and I am glad that its out there and presented to the community.

Not difficult.

Interviewer: Question 2

- Did you receive general information about the meaning of sustainability in interior design?
- Did you then receive information about the use of materials in interior spaces?

Designer G:

Yes, I've got a lot of information from the research that has been presented on the views of the various design bodies but also from the pictures and examples presented. So yes from examples and theory of presentation.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer G:

Yes, and it has been a starting point to make me think twice about the materials that we use today. Also I would like to see more of them (sustainable materials choices) in the market and I am referring more to sustainable new materials than recycled materials.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer G:

Yes, now I have changed the approach and the way I design and construct at least for the projects that I do for myself and family members. I really have been helped by seeing the specific presentation during the intervention. So yes I started using this information and the presentation was very helpful on that.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer G:

Both, as our profession requires both I am looking forward for more choices on sustainable materials.

We have to admit that the materials presented are only used by a few designers and if we want to differentiate ourselves design wise some more options on the materials selection would be very helpful.

Booklet for new materials for companies that have a lot of these materials to start with.

Transcript 6

Interview Transcript-Designer 1.010. (Att. 1ST Inter.)

Interviewer: Question 1

- How useful did you find the intervention?
- How enjoyable did you find the intervention?
- How difficult, did you find the intervention?

Designer K

- It was okay, no problem.
- Useful examples of small production units like the one presented. It was going to be more useful if we could achieve that in Cyprus.
- The other solution is to work with long lasting constructions. That again means that you are successful towards the goal of sustainability.
- Not difficult.

Interviewer: Question 2

- Did you receive general information about the meaning of sustainability in interior design?
- Did you then receive information about the use of materials in interior spaces?

Designer K:

Clear meaning of the terms during the presentation and general information were given clearly

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer K:

Ok I did not start the next day to design and practice differently. These issues were always in my mind and it is a pity that we cannot take more advantage of the existing products to produce other new ones for example the practices presented can facilitate this kind of design process.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer K:

Yes, an example is the exhibition that presents products that used for a short period of time and now they have a second life. Unfortunately in the sector of design we do not have people that are dealing with the issue of reusing in the sense of taking old materials from the interior space –systematically – and being able to ‘fix’ them or change them in order to be used again.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer K:

Not a lot of materials available/ some new okay and they are coming from abroad of course with the credentials that they are sustainable or friendly to the environment. Although most of them are more expensive than ‘conventional’ materials and this is a barrier for using them as the client pays a lot of attention on the initial cost. The client has to have a lot of money and even with that need to be persuaded that the appearance and the prestige of using such materials deriving for example from recycling, it’s worth using it. Reclaimed materials are mostly wooden products, but cost is always a barrier and another barrier is the appearance of some recycled materials.

Flexible spaces are suitable for spaces that change use often.

On the other hand, timeless built in furniture for example, I consider that they are suitable for spaces that will not change their use. For example, I used in built in sofa country house courtyard. If you need to change something this is the pillows or the fabric not the structure of the furniture. This is also a cheaper solution.

Transcript 7

Interview transcript-Designer V 1.011 (Att. 1ST Inter.)

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer V

Very useful, I think that the presentation covered all the issues of sustainability and is up to the participant to look further into each of those issues presented.

Very positive, we should develop new ideas and in Cyprus we are still behind on those issues therefore I consider this –intervention- a very interesting way to attract the attention of designers in order to fascinate him/her to start looking more on that.

Not difficult.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?

Did you then receive information about the use of materials in interior spaces?

Designer V:

General information was giving clearly.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer V:

I am not using it a lot even if had a relevant course during my studies. It's a good thought to be offered in universities as a course-module.

It's good-to have similar presentations - because it's a reminder of what you have learnt and what you can do, practically, when the circumstances allowed it.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer V:

I am using the practice when it's allowed by the client

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer V:

I think that I can work more now with materials, I feel more confident with some materials that I know are sustainable.

Transcript 8

Interview Transcript-Designer 1.005 [NIC]. (Att. 1ST Inter.)

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer C[NIC]

The intervention was really very useful and I enjoyed it. The important thing is that it was enjoyable for all participants no matter their previous knowledge on green design.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?

Did you then receive information about the use of materials in interior spaces?

Designer C[NIC]:

General information was giving clearly.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer C [NIC]:

Changed the way I think.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer C[NIC]:

Yes.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer C[NIC] :

Interviewer: Question 6.

Why you did not attend following interventions? OK, is not that I didn't want to, the truth is that I had some familial issues so it was impossible.

PHASE I- DESIGNERS' INTERVIEWS CODED RESPONSES WITH INITIAL AND FINAL CODING MEASURABLE EVIDENCE /OPERATIONAL DEFINITION 1and 2		
<p>Designers coded responses according to interviews</p>	<p>Initial coding categories according to evidence to be measured</p> <p>(Based on the model and according to Krathwohl, et.al. 1964).</p>	<p>Final coding categories according to behaviour description (Based on the model and according to Krathwohl, et.al. 1964).</p>
<ul style="list-style-type: none"> • Glad to attend • Positive notions • Usefulness • Asking for more available materials. • Find examples useful • Gain information • Practical tool • Helpful for practice <ul style="list-style-type: none"> • Motivating • Attracted my attention • Fascinating for designers • Inspiring • New way of thinking • Source of information • Practical solutions • Willingness for more • Very updated and contemporary. • Informative action • Good presentation <ul style="list-style-type: none"> • New knowledge • Acquiring of new Knowledge • Interesting examples • Transfer of knowledge • Gaining detailed knowledge • Gain information • Gain information on specific theme • Practical solutions • Gain new knowledge • Informative action • Source of information for designers and suppliers 	<p style="text-align: center;">OPERATIONAL DEFINITION 1</p> <ul style="list-style-type: none"> • Interest in session • Enthusiasm display • Interest in learning 	<p>Open to experience</p> <p>Willingness of the participant to hear</p>

PHASE I- DESIGNERS' INTERVIEWS CODED RESPONSES WITH INITIAL AND FINAL CODING MEASURABLE EVIDENCE /OPERATIONAL DEFINITION 1and 2		
<p>Designers coded responses according to interviews</p>	<p>Initial coding categories according to evidence to be measured</p> <p>(Based on the model and according to Krathwohl, et.al. 1964).</p>	<p>Final coding categories according to behaviour description (Based on the model and according to Krathwohl, et.al. 1964).</p>
<ul style="list-style-type: none"> • Use of sustainable materials and methods • Use of new sustainable materials • Reclaimed pieces of furniture • Consider materials differently • Consider using reclaimed materials • Asking for more available materials • Use long lasting interiors • Systematic use of reclaimed interior materials • Consider different construction methods to use old materials • Energy conservation • Water conservation • Natural materials • Consider materials that we can recycle • Prevention of water pollution • Correct orientation of openings • Materials from sustainable sources. • Production issues • Long lasting constructions • Materials • Recycled Materials • Consider different design approach • Consider different construction methods 	<p>OPERATIONAL DEFINITION 2</p> <ul style="list-style-type: none"> • Participate • Interest in outcomes 	<p>Participants' reflection and reaction on the Issue of Sustainable Interior Design Practices.</p>

APPENDIX I ii:

Phase I- Clients' Interview Transcripts & Coding

Transcript 1	PHASE I Interview Transcript Client E. (Att. All Int.)
	<p>Interviewer: Question 1 How useful did you find the intervention? How enjoyable did you find the intervention? How difficult did you find the intervention?</p> <p>Client E: Very useful, full understanding of the thematic and motivation to think and apply and created an enthusiasm on the subject. Very enjoyable, very useful and with a creative approach that is useful these days. No difficult, everything clear, some practices you can apply yourself, some others with the need of the specialists (designers).</p>
	<p>Interviewer: Question 2 Did you receive general information about the meaning of sustainability in interior design? Did you then receive information about the use of materials in interior spaces?</p> <p>Client E: Yes, I had both info about sustainability ... and about materials and how the 3 approaches work in the presented slides (examples) were very informative.</p>
	<p>Interviewer: Question 3 How did the intervention help you to think and consider interior design differently?</p> <p>Client E: Way of thinking. The intervention made me understand that sustainability is tangible: and we can have it. There are ways that we can approach and manage to have it. There are ways that we can approach and manage to feel better about doing the right thing for the environment.</p>
	<p>Interviewer: Question 4 Has the way that you approach interior design changed? Could you describe how it has changed?</p> <p>Client E: After the intervention I feel more confident to use specific approaches that are important and I feel more sensitive and more conscious for my place of living but also for other spaces of people around me.</p>
	<p>Question 5 After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which? a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above</p> <p>Client E: We discussed with friends that participated in the workshop that a combination of the above is more feasible.</p> <p>Participated to the 2nd intervention</p>

Transcript 2

Interview transcript Client F. (Att.1st INT.)

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client F:

I had seen similar presentations it added to my knowledge, very useful.

Very enjoyable, good examples.

What I would like to have more into about is sustainability and design of interior spaces

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?

Did you then receive information about the use of materials in interior spaces?

Client F:

It was very clear on what sustainability is and about materials in how the three approaches work presented slides were very informative

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client F:

Yes, the presentation was very enhancing and helpful. It will take me some more time to accept reclaimed materials but I will do it.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client F:

Not ready yet to use reclaimed and recycled objects but I can use a specific old piece of furniture as antique.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above

Client F:

I will try to suggest to use recycled and reclaimed materials and products.

Did not attend next intervention.

Transcript 3

Interview transcript Client R (Att.1st INT.)

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client R:

Very useful especially today.
 Pleasant within a friendly environment.
 Clear and understandable.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?
 Did you then receive information about the use of materials in interior spaces?

Client R:

For sure I understand the meaning of sustainability and how it is connected with interiors. Things that I did not know and I realise how those can work in an interior space.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client R:

For sure everything was very interesting info and for sure in future refurbishment of my interior space, I will promote these materials.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client R:

Something changed for sure and really, I would now prefer the materials that you presented.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above

Client R:

For sure, use new materials with the approach we have seen in the presentation but also I would suggest a combination of the approaches.
 We applied recently the approach of recycling materials to my school throughout different projects.

Attend intervention 1

Transcript 4

Interview transcript Client A-MENEOU (Att.1st INT.)

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client A:

Very useful.

Very pleasant.

No difficulty, just to say that usually we select the 'easy way' of doing things and we do not spend time on dealing in depth with the issue of the materials.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?

Did you then receive information about the use of materials in interior spaces?

Client A:

Yes received the info about sustainability approaches to material selection.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client A:

Yes generally whatever I can easily apply.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client A:

I will try to change the way I see the new materials selection.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above

Client A:

I would suggest the first approach.

Attend intervention 1

Transcript 5

Interview transcript Client B (Att.1st INT.)

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client B:

Very interesting, shows that we can use recycled materials and objects to do things without spending a lot of money and protect the environment.

Very pleased, I had a good time.

Everything clear and understandable.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?

Did you then receive information about the use of materials in interior spaces?

Client B:

Yes to both sustainability and material approaches.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client B:

Think different; That we have to protect the environment and make sure that we know the resources for wood products we buy.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client B:

After that I thought about some of our old pieces of furniture and to use them in my space and modify them.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above

Client B:

Combination of the three will protect the environment and save money.

Attend intervention 1

Transcript 6

Interview transcript Client L (Att.1st INT.)

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client L:

- a) Very useful as we have to protect the environment, to recycle and do what has been said in the presentation.
- b) Very good we had a specialist to teach us and she explained everything.
- c) No difficulty.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?

Did you then receive information about the use of materials in interior spaces?

Client L:

Yes to both sustainability and materials.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client L:

Think different, very interesting in the facts and the explanations about wooden products and how we can protect our forests with our choices. Use alternative choices.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client L:

I will consider it but I did not have any project to apply

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

- a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above

Client L:

A combination would be okay, but I would suggest and I like a lot the use of reclaimed objects for example ,an old table painted or coded with a new finish.

Attend intervention 1

Transcript 7

Interview transcript Client A-LARNACA (Att.1st INT.)

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client A:

Very useful, gave info that I was not aware of with my background.
 Pleasant.
 Not difficulty we could understand very well all the given examples.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?
 Did you then receive information about the use of materials in interior spaces?

Client A:

Yes, I got information about both sustainability and materials. Good, well selected and well presented.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client A:

Food for thought / always when we have a case we are thinking about new materials and products. With the presentation we understood that we can use old and recycled- reclaimed materials and by using them we consider the environment

Interviewer:

Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client A:

I already after the intervention used some old lighting features in my new space. Also Exeter furniture with a modification of colour.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above

Client A:

For sure all the above as we have to be more sensitive to our environment.

Attend intervention 1

Transcript 8

Interview transcript Client G (Att.1st INT.)

Interviewer:

Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client G:

Very interesting, I did not know what sustainability was before that and I use it as a term in my classes and the students show interest on the subject.

Very pleasant and interesting.

No difficulty.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?

Did you then receive information about the use of materials in interior spaces?

Client G:

Yes, for both. Before I didn't have information about recycling in the kitchen, now I do recycle whatever I can. I am also thinking about using old pieces of furniture and even to use and recycle clothes that I am not wearing anymore.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client G:

Really I am now considering materials that I can use in my house.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client G:

I already after the intervention make use of reclaimed products.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above

Client G:

I would suggest a combination of the three.

Attend intervention 1

Transcript 9

Interview transcript Client E.P. (Att. All)

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client E.P.:

Very interesting, I enjoyed the intervention and I found it very useful and I like the fact that I had the chance to practice what I heard.

Very pleasant and interesting.

No difficulty, it was surely something new for me and very interesting. Its suitable for everybody to attend.

Interviewer: Question 2

Did you receive general information about the meaning of sustainability in interior design?
 Did you then receive information about the use of materials in interior spaces?

Client: E.P.

Yes, for both. Especially for the materials on which I was not at all informed.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client E.P.:

Yes, I think and consider interior design differently now and I believe that women have to do this thinking when they refurbish their homes as they have to consider saving money, by finding new ways to use old things and consider longer life for the objects.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client E.P.:

I already after the intervention made use of reclaimed products; –pieces of furniture from my parents' in-law's house.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

a) Using New Materials ,b) Using Recycled Materials ,c) Using Reclaimed Materials, d) Combination of the above , e) None of the above

Client E.P.:

I would suggest a combination of reclaimed and recycled materials and pieces of furniture.

Attend all interventions

PHASE I – CLIENTS’ INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING-MEASURABLE EVIDENCE /OPERATIONAL DEFINITION 1and 2		
Clients coded responses according to interviews	Initial coding categories according to evidence to be measured (Based on the model and according to Krathwohl, et.al. 1964).	Final coding categories according to behaviour description (Based on the model and according to Krathwohl, et.al. 1964).
<ul style="list-style-type: none"> • Glad to participate • Proper presentation on sustainability and use of materials information. • It is a new tool. • Very well explained. • Informative action • New knowledge helps to feel more confident. <ul style="list-style-type: none"> • Motivation to think more on the issue of sustainability. • Motivation exists after the intervention. • New way of thinking. • Feel better about doing the right thing. • Useful for contemporary thinking. <ul style="list-style-type: none"> • Hesitating but understand the need. <ul style="list-style-type: none"> • Interested for the new knowledge. • Useful examples. • Useful approaches. • Useful examples that can be applied. • Gain new knowledge. • Gain on how to apply. • Easiness of application. • Method for new materials. • New knowledge. • Combination of theory and practice. 	OPERATIONAL DEFINITION 1 <ul style="list-style-type: none"> • Interest in session • Enthusiasm display • Interest in learning 	Open to experience Willingness of the participant to hear

PHASE I – CLIENTS' INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING- MEASURABLE EVIDENCE /OPERATIONAL DEFINITION 1and 2		
Clients coded responses according to interviews	Initial coding categories according to evidence to be measured (Based on the model and according to Krathwohl, et.al. 1964).	Final coding categories according to behaviour description (Based on the model and according to Krathwohl, et.al. 1964).
<ul style="list-style-type: none"> • Approaches that can be applied help to feel more conscious. • Sustainable practices. • Interested in protecting the environment. • Interesting approaches for material selection. • Interesting in resource consumption. • Motivation to use reclaimed materials and products. • Use of recycled materials. • New materials. • Reclaimed materials -Save money. • Interested in protecting the environment. • Use of reclaimed pieces of furniture. • Reclaimed materials. • New interest on using the materials. • Thinking about the materials differently. • Sustainability approaches to material selection. • Interesting in using recycled and reclaimed materials and products. 	OPERATIONAL DEFINITION 2 <ul style="list-style-type: none"> • Participate • Interest in outcomes 	Participants' Reflection On the Issue of Sustainable Interior Design Practices.

APPENDIX Ji:

Phase II- Designers Interviews & Coding.

Transcript 1	PHASE II Interview transcript Designer 1.001
	<p>Interviewer: Question 1 How useful did you find the intervention? How enjoyable did you find the intervention? How difficult did you find the intervention?</p>
	<p>Designer: Pleasant, a lot of people and opinions from allied professions were presented and we had the chance to discuss it with them. It was complementary to the 1st intervention as after the 1st contact we needed more specific info that we received through the different presentations. Enjoyable. Became more specific in different aspects of sustainable practices and it was very interesting.</p>
	<p>Interviewer: Question 2 Did you learn from specific information and examples about sustainable interior design practice? Did you become more motivated with the specific information and examples about sustainable interior design practice? Did you value new approaches to design problems more after analyzing, applying and sharing during workshop?</p>
	<p>Designer: Specific and very important information and examples for sustainable practices were presented from various viewpoints. This second intervention was complimentary to the first. The presentations, Theopemptou-about environmental general issues, Blaxos - Energy issues. we have been informed about new decisions and laws on the issue. We have been also informed about financial aspects of the issue. Lapithis - natural light, Ioannou-Information on how to handle materials and design methods. Having taken all this new information, we can now inform our clients. Personally I updated my knowledge on the issue and these kinds of presentations should be given more often.</p>
	<p>Interviewer: Question 3 How did the intervention help you to think and consider interior design differently?</p>
	<p>Designer: Again the 2nd intervention help us to think design and practice in a different way through examples of specific projects. I consider that the workshop was the expected continuation of the 2nd intervention as there was a need to talk about specific spaces. The way we worked there it was needed in order to clarify and make our views on the practices more specific.</p>
	<p>Interviewer: Question 4 Has the way that you approach interior design changed? Could you describe how it has changed?</p>
	<p>Designer: I think that we should continue with more events of this kind. The intervention gave practical tools that you cannot get from books.</p>
	<p>Question 5 After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help? Possible supplementary questions: a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None</p>
	<p>Designer M: Both</p>
	<p>Interviewer: Question 6. Did you attend other interventions? /Attended all interventions</p>

Transcript 2

Interview transcript-Designer 1-012

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Designer EIR:

Useful, all designers said so / I personally use some flexibility approaches and we should do it soon in our career. This is the way that we should work.

Enjoyable.

Eazy and pleasant to follow.

Interviewer: Question 2

Did you learn from specific information and examples about sustainable interior design practice?
 Did you become more motivated with the specific information and examples about sustainable interior design practice?
 Did you value new approaches to design problems more after analyzing, applying and sharing during workshop?

Designer:

I already used these approaches, also I did my master's on sustainability, so I saw some similar examples. Yes, I became more motivated and we should all care about our world and environment. She recalled 'one world is not enough' from the presentation (Tichnrer).

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer:

For sure I gained more information; it was a very good engagement and support to existing knowledge. With clients, we forget about being motivated and interventions like that are good reminders.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer:

Some approaches have changed, a designer should follow those approaches, we should not limit ourselves.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer:

Both for example in

Project 1. Wooden blanks used

- Doors reused

- Friendly materials

- Natural materials

Project 2. Small space so I used 1st approach to design the dining area

- Office table

Transcript 2

Interview transcript-Designer 1-012

Sitting area

Project 3. Ergates. Project from scratch.

Project 4. Non correct orientation, I tried to fix things.

People are afraid because they need to spent more money to benefit the long term. Now we can find cheaper lightings LED.

Some people see the existing example of the multipurpose short term design approach and they say 'how perfect it is', but they are afraid to do it in their own house because maybe we have enough spaces. When it comes to clients that are looking for professional help, they usually have big spaces so sometimes they don't dare.

Construction: For example, the price is higher for custom made while ready-made objects are cheaper.

Some constructors prefer to work only with new materials. They think they look prettier.

In a shop I used old of pieces of wood and furniture to make something new out of it.

I used old beams from a reclaimed shop and used wooden pallets as decorative finish for walls.

Interviewer: Question 6.

Did you attend other interventions?

Designer EIR:

I just had my baby, I didn't manage.

Transcript 3

Interview transcript-Designer 2-005

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer:

Useful, not only for designers but for clients as well.

Very enjoyable.

Not difficult, I understood everything very well, actually I wonder how I can use them.

Interviewer: Question 2

Did you learn from specific information and examples about sustainable interior design practice?

Did you become more motivated with the specific information and examples about sustainable interior design practice?

Did you value new approaches to design problems more after analyzing, applying and sharing during workshop?

Designer:

For sure, some examples were very interesting as ideas but where to you apply them?

Yes, but no proper acceptance from clients.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer:

Motivated to modify pieces of furniture and try to promote them.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer:

I try to push people to do (use old pieces) sometimes in villages.

After the intervention I had a case where we used an old object in the new house, with my client but it was a decorative piece.

Refurbishment/ we can use pieces of furniture again and again. After the workshop an old drawer chest used as piece of furniture for the entrance.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer:

Mostly with materials but again you have to have clients ready to accept it as an approach. I can say that I am working for many years in Cyprus and I rarely have the chance to do it. In the USA and other European countries antique shops for example are flourishing.

For the materials research you need to do a lot of work and spent a lot of time.

The best building material we can use is the mud-brick.

We can learn a lot from the way that our ancestors used to build.

It is also a money issue.

Interviewer: Question 6.

Why you did not attend following interventions?

Designer S:

Because I was really busy.

Transcript 4

Interview transcript-Designer 3-010

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer:

Very useful, full of new ideas.

Enjoyable and pleasing.

No difficulty, good explanations from specialist.

Very useful as I hear experiences from other designers and you can learn from that as well.

Very enjoyable, pleasant meeting with colleagues.

Pleasant discussion, no difficulty.

Interviewer: Question 2

Did you learn from specific information and examples about sustainable interior design practice?

Did you become more motivated with the specific information and examples about sustainable interior design practice?

Did you value new approaches to design problems more after analyzing, applying and sharing during workshop?

Designer:

Good examples from the approaches make me understand how many more things we can do.

Yes, I became more motivated for sure towards using sustainable practices.

Yes, now I value more all the approaches as after a discussion during a workshop you can understand more things and you give them the right value they deserve.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer:

With the discussions and descriptions of other participants I saw some and I understood more things that personally I did not have such a big experience on.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer:

Yes, these approaches have become my usual practice.

Yes, both. The way I think, and the way I approach my projects through my practice have changed. Even before a project began I start to think with this in specific innovative way.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer:

Both ways, I can help now.

Both ways I can help a client. Always, materials need to be investigated and one needs to do his/hers research to find the proper ones. Also, for space design issues through the idea and the project development, I feel that following the process I can apply all the three approaches.

Attended all interventions

Interviewer: Question 5

I was there

Transcript 5

Interview transcript-Designer :2-014

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer P:

Useful, as the timing now (with the economic crisis) more people should be informed.

Enjoyable

Not difficult but I would like to see some of the examples through a workshop and I am looking forward to that.

Interviewer: Question 2

Did you learn from specific information and examples about sustainable interior design practice?

Did you become more motivated with the specific information and examples about sustainable interior design practice?

Did you value new approaches to design problems more after analyzing, applying and sharing during workshop?

Designer P:

Yes, but a workshop on the issue would be helpful

Yes, I value more, of course, all of the approaches and now after the workshop when I design, I always have these approaches in my mind. It is always there not only as a solid approach but as an alternative solution.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer P:

Following the intervention, I made a piece of furniture out of recycled materials and used something similar (old pieces of furniture) in the interior space.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer P:

Of course, now I cannot start working on a project without considering the new practices. Actually I did a small project based on that with a relative of mine.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer P:

Both.

I think I could help with the sustainable design approaches but also with materials after doing some research. Also, I will ask for some help from a specialist if needed (like engineers.)

Designer P attended 1st, 2nd and 3rd AND 4th intervention.

Transcript 6

Interview transcript-Designer 2-002

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer LOU

Very useful, we learnt a lot of things, some of them completely new and made us think about recycled materials and proper use of materials, but also get into the spirit of thinking more about the environment, something that I was not considering a lot before.

Very pleasant, a nice meeting, a thematic that I personally have a lot to learn about as I was not involved with that before.

No, there was nothing difficult.

Interviewer: Question 2

Did you learn from specific information and examples about sustainable interior design practice?

Did you become more motivated with the specific information and examples about sustainable interior design practice?

Did you value new approaches to design problems more after analyzing, applying and sharing during workshop?

Designer LOU:

Yes, of course I value more all the approaches and after the workshop and when I design now I have these approaches in my mind. Also the engineer that I work with is always there to discuss with me the different options.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer LOU:

Yes, from the moment you know how to do it, why not do it?

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer:

Yes something changed on a personal level, for example, I'm acting differently at home, I recycle everything that I can, and also I approach my designs having sustainability in mind.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer:

I think I could help more with the sustainable materials approaches. Of course always after some research. Also, I could assist and propose some sustainable design approaches to a developer.

Interviewer: Question 6.

Why you did not attend following interventions?

Designer LOU:

Attended All Interventions.

Transcript 7

Interview transcript-Designer :1-011

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer

It was very useful and on a very contemporary thematic.

It was pleasant and I really enjoy the meeting with other designers.

No, all points were understandable.

Interviewer: Question 2

Did you learn from specific information and examples about sustainable interior design practice?

Did you become more motivated with the specific information and examples about sustainable interior design practice?

Did you value new approaches to design problems more after analyzing, applying and sharing during workshop?

Designer

I always valued this way of thinking, so I feel like I updated the reason of valuing it.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer:

I think and consider design differently but I do not think it's profitable.

I could do it but I don't think it will be not profitable at the moment.

What I seriously consider is the reuse of objects in new spaces

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer:

My approach to design is in the middle of everything meaning that I try to balance between available materials and client's willingness to cooperate and accept new and innovative approaches.

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d)

None

Designer:

Yes, I can help with both design and material approaches. I can adapt more easily to the reusable and new materials.

Though considering recycled materials, yes if they are there, as we do not have the opportunity to recycle anything here on the island. -No because I do not like the approach, but the market is not ready yet.

We do not have small factories or workshops to do that.

Interviewer: Question 6.

Why you did not attend following interventions?

Designer V:

Designer attended intervention 1st and 3rd. For the last intervention: It was far from me, and I had other business.

Transcript 8

Interview transcript-Designer 2-010

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Designer:

What I am saying here is that other designers and of course myself have very positive comments about the workshops, as a lot of things were clarified through the examples.

About the space and how we use to design it and how we design it now, it's much better. Through the sustainable approaches for interior spaces we apply very important and useful issues for all.

It was very interesting to hear from others how they use the approaches for example the reusing of objects. Also the new examples presented were very interesting.

Another important point for the workshop was the fact that we were less people and therefore the opinions of all the participants were discussed in depth.

So I consider that in general we went through to the more specific things and that was a helpful stage to go through in order to focus on the issue and realise better what is going on. Now the next step is the application.

Interviewer: Question 2

Did you learn from specific information and examples about sustainable interior design practice?

Did you become more motivated with the specific information and examples about sustainable interior design practice?

Did you value new approaches to design problems more after analyzing, applying and sharing during workshop?

Designer A:

Of course I do and I understand that others value those approaches as well as some of them said that they were using some of them but they did not recognise their importance in their practice.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer A:

We now know how to research and apply sustainable design after this workshop.

I have to say that I was always thinking about this issue (sustainability) but I have to admit that I did not have the knowledge or rather I can say that I did not know how to apply it.

Someone who finished his/her studies some years ago doesn't have the chance to learn a lot about this specific issue. If you open a book it's not the same with having the specialist in front of you with these seminars and presentations (the specialist) will explain and you can solve problems and get answers.

Listening to all the presentations is like I had feedback to my thoughts and the design decisions I took before. In parallel I had thought the workshops presented approaches that I could now apply. Before were only thoughts.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Designer:

Already, after the workshops I used LED lighting in one of my projects and I knew better why I was doing this and I could support it in front of my client. Before that my knowledge on the issue was limited.

Yes, the way that I practice now has changed in many ways and I believe there are still other things to do.

You work for years in a specific way and you actually change the way you think; without the knowledge you cannot support completely your new way of thinking. More knowledge is always welcome.

Transcript 8

Interview transcript-Designer 2-010

Interviewer: Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches to interior design practice how do you think that you can help?

Possible supplementary questions:

- a) Using Sustainable Materials Approaches, b) Using Sustainable Space Design Approaches, c) Both, d) None

Designer:

I consider that the selection of the approach is much more relevant to the client, to the project and the user. Unfortunately, in Cyprus we do not have the opportunities we could have as interior designers but at least I personally feel now that I am able to work forward these kind of approaches and try to persuade my clients towards them.

About space design: flexibility is important in our everyday life and for sure we want it to be applicable to our facts and uses.

With that you can persuade the client and then you can proceed with analogues use of materials

Interviewer: Question 6.

Why you did not attend following interventions?

Designer:

Designer A attended ALL interventions.

PHASE II – DESIGNERS' INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING		
Designers coded responses according to interviews	Initial coding categories according to evidence to be measured	Final coding categories according to behaviour description
<ul style="list-style-type: none"> • Receive more specific information on sustainable interiors. • Important information and examples for sustainable practice. • Information on how to handle materials and design methods. • Talk about specific spaces. • The intervention gave practical tools. • Use of some flexibility approaches. • Use of sustainable approaches. • Doors reused. • Use old pieces of furniture. • I used 1st approach. • Construction methods. • Use of wooden pallets. • Experiences from other designers. • Old of pieces of wood. • Modify pieces of furniture. • Use of old pieces of furniture modified or not. • So many more things we can do. • More motivated towards using sustainable practices. • Use of sustainable design approaches. • Reuse of objects in new spaces. • Approaching design with sustainability in mind. • I saw and I understood more things about sustainable practices. • Sustainable approaches became usual practice. • More research on materials. • Feel at easy to apply the sustainable approaches. • Adapt the reusable and new materials. • In depth discussion on the practices. • Accepting the use of the sustainable approaches. 	Decide Worth And Relevance Of Ideas	Report Sustainable Interior Design Practices as of Dominant Value

PHASE II – DESIGNERS' INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING		
Designers coded responses according to interviews	Initial coding categories according to evidence to be measured	Final coding categories according to behaviour description
<ul style="list-style-type: none"> • Think design and practice in a different way. • Sustainability is the way that we should work. • Being motivated on sustainable practices is important. • Value more all the approaches. • Now always have these approaches in my mind. • Considering the new practices. • Get into the spirit of thinking more about the environment. • Willingness to apply sustainable design approaches • Useful and contemporary thematic. • Updated the reason of valuing. • Value sustainable approaches. • Awareness of applying sustainable design. • Change way of thinking and working. • Ready to apply the approaches. • Update knowledge on the issue. • We can now inform our clients. • Clarify views on sustainable practices. • Designers should follow those approaches. • Changed approaches. • The right value they deserve. • My practice had change. • Good timing to do this. • I value more all the approaches. • Solid approach to design. • Accepting the practices. • Better design through the sustainable approaches. • Focus on the issue. • Feel ready and able to apply the sustainable practices. 	<p>Experience, Accept or Commit to Particular Stance or Action</p>	<p>Attach Values and Express Personal Opinions</p>

APPENDIX J ii:

Phase II- Clients' Interviews & Coding.

Transcript 1
PHASE II Client Interview transcript : <u>1.9</u>
<p>Interviewer: Question 1 How useful did you find the intervention? How enjoyable did you find the intervention? How difficult did you find the intervention?</p>
<p><i>Client Elena H</i> Very interesting. Very enjoyable, it showed the prospects that sustainability has. It was very interesting and I was happy to attend. No, everything was very understandable.</p>
<p>Interviewer: Question 2 Did you learn and become more motivated with specific information and examples about sustainable interior design practice? I felt really motivated; if I could change my space immediately, I would do it. It put me in the mood for a change.</p>
<p>Interviewer: Question 3 How did the intervention help you to think and consider interior design differently? It made me think about using different (sustainable) materials. It changed me completely. I can say that it's a new life philosophy for me. They are (the approaches) good not only for the environment but also for our life.</p>
<p>Interviewer: Question 4 Has the way that you approach interior design changed? Could you describe how it has changed? Yes, after the intervention, for pieces of furniture that I need to use in my house I selected smaller and multifunction pieces so that I can use them in other spaces of the house.</p>
<p>Question 5 After this process, if some friends or family members are interested in sustainable approaches to interior design are you going to suggest any of the following and which? a) Using Flexible Interior Elements (Multipurpose furniture) b) Using Flexible Interior Spaces (Spaces serve different uses and users) c) Using Deconstruction Methods (Dismantled furniture and space dividers) d) Combination of the above e) None of the above</p>
<p>I surveyed the suggested approaches/ I believe it's better to have a combination / I would suggest a professional to plan correctly and give the space the perspective it deserves. An interior designer who knows about sustainable practices is the best suggestion. Attended all interventions.</p>

Transcript 2

Client Interview transcript: 2.30

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client

Very interesting.
 Very enjoyable, it showed the many potentials one has.
 No, everything was very understandable.

Interviewer: Question 2

Did you learn and become more motivated with specific information and examples about sustainable interior design practice?

Yes, if I could change my house, I would do it. There are a lot of things (furniture and stuff) that I want to change, I will be happy to use approaches similar to the examples.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?
 It changed me for sure. This is something new for me and I like it. It is different and inspiring

Interviewer:

Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?
 Yes, after the intervention, I already used pieces of furniture that are multifunction pieces, in order to use them inside and outside the house.

Question 5

After this process, if some friends or family members are interested in sustainable approaches to interior design are you going to suggest any of the following and which?

- a) Using Flexible Interior Elements (Multipurpose furniture)
- b) Using Flexible Interior Spaces (Spaces serve different uses and users)
- c) Using Deconstruction Methods (Dismantled furniture and space dividers)
- d) Combination of the above
- e) None of the above

I believe it's better to have a combination and I would suggest a professional to plan properly from the beginning. Especially when the house is old, it needs a lot of work to fix it the way you want.

Attended 2nd and 3rd intervention.

Transcript 3

Client Interview transcript: 1.11

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client

Very interesting.

Of course very useful, I already applied some of the solutions/ we learnt how to place and use our old pieces of furniture, we learn about a lot of new ideas / very interesting use of space, to the maximum.

No, it was understandable.

Interviewer: Question 2

Did you learn and become more motivated with specific information and examples about sustainable interior design practice?

Of course, I learnt new things and how to apply them.

Yes, of course is motivated when you know is good for all.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Yes, and I apply some of the approaches, I considered them a lot while doing building a new small space in my house, attached to my kitchen. I am trying to use this space in two different ways.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Yes, in the new space in my house after this intervention, I used the idea of the sofa/bed and also a cabinet which I used in a way that serves as a closet but also as a divider of the space.

Question 5

After this process, if some friends or family members are interested in sustainable approaches to interior design are you going to suggest any of the following and which?

Using Flexible Interior Elements (Multipurpose furniture)

Using Flexible Interior Spaces (Spaces serve different uses and users)

Using Deconstruction Methods (Dismantled furniture and space dividers)

Combination of the above

None of the above

I would suggest the first approach concerning space design and also some deconstruction methods and I would suggest to everybody the approaches they are really clever for space saving. Everybody needs more storage spaces.

Attended all interventions.

Transcript 4

Client Interview transcript: 3.2

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client

Very interesting.
 Very useful/ I learn how to use my old pieces of furniture and how to take more advantage of spaces.
 No, it was understandable.

Interviewer: Question 2

Did you learn and become more motivated with specific information and examples about sustainable interior design practice?

Yes, and I learnt new things and how to apply them.
 Yes, sure. A lot of examples are really clever.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

It was helpful as I now can apply some of the approaches practically and I consider them while working on a new space in my house, I am making now a new working studio for myself.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?
 In the new space off my house, after this intervention, I used the idea of a flexible divider of the space which is very convenient.

Question 5

After this process, if some friends or family members are interested in sustainable approaches to interior design are you going to suggest any of the following and which?

Using Flexible Interior Elements (Multipurpose furniture)
 Using Flexible Interior Spaces (Spaces serve different uses and users)
 Using Deconstruction Methods (Dismantled furniture and space dividers)
 Combination of the above
 None of the above

I would suggest the second approach for space design and I would suggest to everybody to reuse their old pieces of furniture.

Attended 2nd INT and 3rd intervention.

Transcript 5

Client Interview transcript 1.22

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client

Very interesting, I learned about unknown things and also about new ideas that I loved.
 Yes, it was enjoyable and with creative ideas.
 No, everything simple and understandable.

Interviewer: Question 2

Did you learn and become more motivated with specific information and examples about sustainable interior design practice?

Yes, use the proper people above all in order to proceed on doing a space design and to do the correct job you also need to use the right materials and methods.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

I got into the mood and my attitude changed. I am doing new things with the new approaches and I always think of how to apply them.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

For sure I will think and act differently now and I will also use the right people to help me as for example an interior designer with knowledge on the approaches so we could make together constructions friendlier to the environment.

Question 5

After this process, if some friends or family members are interested in sustainable approaches to interior design are you going to suggest any of the following and which?

Using Flexible Interior Elements (Multipurpose furniture)
 Using Flexible Interior Spaces (Spaces serve different uses and users)
 Using Deconstruction Methods (Dismantled furniture and space dividers)
 Combination of the above
 None of the above

I would most probably suggest a combination of the approaches.

Attended all interventions

Transcript 6

Interview transcript 1.20

Interviewer: Question 1
 How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client

Useful
 Pleasant, when something is useful it's always pleasant.
 Not difficult and it's actually very stupid that we do not use these approaches in practice

Interviewer: Question 2
Did you learn and become more motivated with specific information and examples about sustainable interior design practice?

Yes, as we usually live in small spaces, we need to learn how to use multipurpose pieces of furniture that will be very useful.

Interviewer: Question 3
 How did the intervention help you to think and consider interior design differently?

Even though I always had problems with living in small spaces, now I had the chance to see good examples of how one can apply some innovative ideas. Now, I think it is placed – the approach of multipurpose furniture- on a more professional level and I can see clearer how I can apply it.

Interviewer: Question 4
 Has the way that you approach interior design changed? Could you describe how it has changed?

Yes, I think that interior design is more complicated than what we think. Also, designers that do not get into the realm of the use of alternate approaches do the wrong thing and use their knowledge for wrong practices. After the intervention I already bought a table that I needed that changes and serves 2 or 3 different functions.

Question 5
 After this process, if some friends or family members are interested in sustainable approaches to interior design are you going to suggest any of the following and which?
 Using Flexible Interior Elements (Multipurpose furniture)
 Using Flexible Interior Spaces (Spaces serve different uses and users)
 Using Deconstruction Methods (Dismantled furniture and space dividers)
 Combination of the above
 None of the above

For sure, the multipurpose furniture, I already use it myself. Also the third approach for the deconstruction method, I can see that it can mostly be applied for exhibition design for example. I am sure that it can work in a home environment as well, but of course is a prospect method.

Attended all interventions

Transcript 7

Client Interview transcript 1.24

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client

Very interesting, especially nowadays when the planet suffers. It's very useful and important to reuse objects.

Very pleasant.

Nothing difficult.

Interviewer: Question 2

Did you learn and become more motivated with specific information and examples about sustainable interior design practice?

Yes, I liked it, I learnt and always take different objects and use them for varied uses. Use of multipurpose furniture is something that I will do for sure.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Yes, it helped me to think differently about the interior space.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Yes, I surely try to use materials and objects that I already have when it comes to making something new so that I will not throw things away.

Question 5

After this process, if some friends or family members are interested in sustainable approaches to interior design are you going to suggest any of the following and which?

Using Flexible Interior Elements (Multipurpose furniture)

Using Flexible Interior Spaces (Spaces serve different uses and users)

Using Deconstruction Methods (Dismantled furniture and space dividers)

Combination of the above

None of the above

I would suggest the first and second approaches more, I think a beautiful old object should have more than one different use. Also it is nice for the space to be flexible, especially for young people (students).

Attended 2nd intervention.

Transcript 8

Client Interview transcript 3.5

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client

Very interesting, especially nowadays when the planet started to lack in its resources it's very useful to reuse objects.

I enjoyed a lot.

Nothing was difficult.

Interviewer: Question 2

Did you learn and become more motivated with specific information and examples about sustainable interior design practice?

Yes, I learnt and now I always take different objects and use them for varied of uses.
 Also, the use of multipurpose furniture is something that I will do for sure as it's very convenient.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Yes, it helped me to think differently and now I always use more of what I have around me.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Yes, for sure have changed, now I consider differently the changes I want to make at home.

Question 5

After this process, if some friends or family members are interested in sustainable approaches to interior design are you going to suggest any of the following and which?

Using Flexible Interior Elements (Multipurpose furniture)

Using Flexible Interior Spaces (Spaces serve different uses and users)

Using Deconstruction Methods (Dismantled furniture and space dividers)

Combination of the above

None of the above

I would suggest the flexible interior elements approach more. There is always a way to do it and benefit from a flexible space.

Attended 2nd and 3rd INT

PHASE II CLIENTS' INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING-PHASE II		
Client's coded responses	Initial coding categories according to evidence to be measured	Final coding categories according to behaviour description
<ul style="list-style-type: none"> • Talk about the prospects of sustainability. • Voluntarily use sustainable materials. • Value the potentials of sustainable practices. • Happy to use the approaches. • Use pieces of furniture that are multifunctioned. • Utilisation of the approaches. • Suggest immediate and long term approaches. • Use of the long term approach(materials). • Use of the medium term approach. • Suggest a combination of the approaches. • It's wise to use the approaches. • Accept the idea of the immediate term approach. • Importance of reused objects. • Use reclaimed materials and objects. 	Decide Worth and Relevance of Ideas	Report Sustainable Interior Design Practices as of Dominant Value
<ul style="list-style-type: none"> • The approaches are good not only for the environment but also for our life. • Have a combination of the sustainable approaches. • Suggest the approaches to others. • Learning new ideas that they loved. • Use of professionals to have the required results • Value the idea of the immediate term approach. • Value the idea of using the approaches and suggest them to others. • Suggest immediate and medium term approaches. • Suggest the flexible interior elements approach. • In a mood for change. • New life philosophy. • An interior designer who knows about sustainable practices is the best suggestion • It changed me totally. • Use of professionals so to have expected results. • Attitude change. 	Experience, Accept or Commit to Particular Stance or Action	Attach Values and Express Personal Opinions

PHASE II CLIENTS' INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING-PHASE II		
Client's coded responses	Initial coding categories according to evidence to be measured	Final coding categories according to behaviour description
<ul style="list-style-type: none"> • Value the idea of professionals that are using the approaches. • Use of the approaches. • Think differently. • Acting now differently. 		

APPENDIX K i:**Phase III- Designers Interviews Transcripts & Coding.**

<p>Transcript 1</p> <p>Phase III</p> <p>Designer Interview transcript :3-010</p>
<p>Interviewer: Question 1</p> <p>How useful did you find the intervention?</p> <p>How enjoyable did you find the intervention?</p> <p>How difficult did you find the intervention?</p>
<p>Designer :3-010</p> <p>Very useful, we had the chance to see things –artifacts and design solutions-that help one’s understanding. In parallel it was very enjoyable and not difficult; it was a very pleasant event.</p>
<p>Interviewer: Question 2</p> <p>Did you organize and produce designs and plans as suggested during interventions in order to be presented?</p>
<p>Designer :3-010</p> <p>My projects were not ready for presentation, but they are ready now. I have prepared among others lighting fixtures that I enjoyed making a lot. Those are made from recycled and reclaimed materials.</p>
<p>Interviewer: Question 3</p> <p>How did the intervention help you to think and consider interior design differently?</p>
<p>Designer :3-010</p> <p>The intervention helped me think and consider interior design practice differently because as soon as you see artifacts and design solutions that have been presented, even if you hesitated before, you realise that it’s something that you can do for sure.</p>
<p>Interviewer: Question 4</p> <p>Has the way that you approach interior design changed? Could you describe how it has changed?</p>
<p>Designer :3-010</p> <p>As I said before, now I made lighting fixtures from recycled and reclaimed materials and other items and yes it change my approach now as I also look to those items with found materials and try to promote them through the internet.</p>
<p>Question 5</p> <p>After this process, if some other stakeholders (clients) are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?</p>
<p>a) Using Sustainable Materials Approaches</p> <p>b) Using Sustainable Space Design Approaches</p> <p>c) Both</p> <p>d) None</p>
<p>Designer :3-010</p> <p>I think that now I can help with both materials and space design approaches, always by doing the proper research on each case.</p> <p>Attended all interventions.</p>

Transcript 2

Designer Interview transcript :1-011

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Very useful, the artifacts presented showed the spectrum of work that can be done with reclaimed materials and of course using sustainable space design approaches to the limit you can reach the maximum potential that a space has.

Interviewer: Question 2

Did you organize and produce designs and plans as suggested during interventions in order to be presented?

Initial pictures of a project have been presented and now I have prepared, among others, a list of materials and space design options for a client.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

The intervention helped me to rethink and re-consider interior design practice. Some of them I used before, and now I am using them again and I add new practices as well.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?
 I have already presented part of my work and how I did proceed with the selection of materials. I did that for clients but also for one of my own projects-additional space on top of my house-.

Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches
 Using Sustainable Space Design Approaches
 Both
 None

Both approaches and I believe that it's interesting to see for example that the materials used to the presented studies were sustainable but also some of them lightweight as well.

Designer attended intervention 1st and 3rd For the last intervention: It was far from me, and I had other business but I submitted some work that has been presented.

Transcript 3

Designer Interview transcript :1.001

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

It was really very useful. We put things together in our minds. It was very enjoyable and we had again the opportunity to talk with others about our experiences. It was not difficult; one has to organise his/her work in order to manage presentations like this.

Interviewer: Question 2

Did you organize and produce designs and plans as suggested during interventions in order to be presented?

Yes, I presented 3 projects that I did after the intervention started.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

It helps a lot as I have added to my mind some new materials that exist in the market and as they are available I will consider them during my practice.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Yes, it has changed me, I am already using my new knowledge and understanding in the projects that I have now.

Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

- a) Using Sustainable Materials Approaches
- b) Using Sustainable Space Design Approaches
- c) Both
- d) None

I know that I can help with both. Always with a lot of research and the needs of the client in mind.

Attended all interventions.

Transcript 4

Designer Interview transcript :2-002

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

It was very useful. It was very enjoyable and we had again the chance to talk with others and exchange opinions, something that we do not have the opportunity to do every day.

Interviewer: Question 2

Did you organize and produce designs and plans as suggested during interventions in order to be presented?

Yes, I presented 1 project that I did after the 2nd intervention.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Designer:

It helped a lot, as I now learn more about new materials and I know where to find them.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Yes, I already use the new approaches in the projects that I have now.

Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

Designer:

Both sustainable materials and sustainable space approaches, also I believe that always we need to do proper research and collaborate with the engineers of the project.

Attended All Interventions.

Transcript 5

Designer Interview transcript :2-015

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

It was very useful. I was glad to be among other designers that have so much experience. I really enjoyed the event, the presentation and the exhibits.

Interviewer: Question 2

Did you organize and produce designs and plans as suggested during interventions in order to be presented?

Yes, I presented 1 project that I did after the 3rd intervention. It is an object –a chair- that is made out of reclaimed materials.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Now, I learn more about new materials and I also saw big projects made by other designers and I am looking forward to do more in my practice.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Yes, I already use the new approaches in different small projects the and my clients seems to like them.

Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

Both, but always considering the available budget and the available time.

Attended 3rd and 4th intervention.

Transcript 6

Designer Interview transcript :3-018

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Very useful, we have to do every year. Very enjoyable, designers got together and had the chance to see each other's work.

Interviewer: Question 2

Did you organise and produce designs and plans as suggested during interventions in order to be presented?

No I did not.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

I was mostly impressed with the multipurpose furniture use within a space. It is extremely useful.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

For sure I now have more knowledge and I will use it for my projects.

Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

I could say both, but I really want to apply the space design approaches as they are really innovative.

Transcript 7

Designer Interview transcript :2-014

Interviewer: Question 1

How useful, did you found the intervention?

How enjoyable, did you found the intervention?

How difficult, did you found the intervention?

Very useful, we have to do this more often. It's good for designers are good to be together as they have to collaborate and with determination move towards new needs of the profession.

Interviewer: Question 2

Did you organise and produce designs and plans as suggested during interventions in order to be presented?

Yes, I presented one project even though it is not finished yet.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

I care a lot more now about the different available materials and for sure sustainable space design approaches will be part of my future proposals.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

As I said above I already started applying the sustainable approaches during the interventions and I will continue using these approaches.

Question 5

After this process, if some other stakeholders (clients) are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

Both. I am ready to do designs that will serve the needs of sustainable approaches.

Designer P attended 1st, 2nd and 3rd AND 4TH intervention.

PHASE 3- DESIGNERS INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING		
Open coding categories Designers coded responses according to interviews	Initial coding categories according to evidence to be measured	Final coding categories according to behaviour description
<ul style="list-style-type: none"> • I am excited about what is happening. • Strongly believe that the new knowledge is dominant • Sustainable practices are a dominant issue to bring professionals together. • Welcome and value the fact being part of the event. • All members showed their enthusiasm. • Willingness to do more relevant actions with colleagues. • Strong feeling to adapt the new approaches. • Exhibition helped my understanding on the issue of sustainability. • Now I made lighting fixtures from recycled and reclaimed materials. 	State Personal Position and Reasons, State Believes	Create an Atmosphere that Enhances and Promotes Further Sustainable Issues in Interior Design Practice
<ul style="list-style-type: none"> • Enjoyed and adaptation of working with new approaches. • Realise that approaches can be applied • Value the new approaches. • Adapt new approaches to practice. • New approaches became the new practice • Realise the usefulness of the effort needed. • Adapt new approaches to practice. • Consider and value the new approaches. • Adapt new approaches to practice • Value and admit readiness to work more on the issue. • Value approaches.. • Adapt new approaches to practice. • Value the new approaches and consider them important. • Adapt new approaches and be open to innovative ideas and materials. • Value the new approaches and critique on the results. • Understanding of the consequences of using the new approaches. • Adaptation of the new approaches and comment on the outcome. 	Behave Consistently with Personal Value Set	Reconcile Internal Conflicts; Develop Value System/ Adopt Belief System and Philosophy Reinforcing Outcomes and Evaluating Results

APPENDIX K ii:**Phase III –Clients’ Interviews Transcripts & Coding.**

<p>Transcript 1</p> <p>PHASE III</p> <p>Client Interview transcript :<u>1.9</u></p>
<p>Interviewer: Question 1</p> <p>How useful did you find the intervention?</p> <p>How enjoyable did you find the intervention?</p> <p>How difficult did you find the intervention?</p> <p><u>Client</u></p> <p>it was very enjoyable and I was impressed with the exhibited items.</p>
<p>Interviewer: Question 2</p> <p>To what extent your experience during exhibition and presentation change your attitude, your skills or motivation.</p> <p>My attitude changed to the extent that I would definitely buy something made out of recycled items now. I found very interesting the furniture that are made out of cork because I think they are very comfortable. Also from the exhibition I liked like the shopping bags which are modern and useful.</p>
<p>Interviewer: Question 3</p> <p>How did the intervention help you to think and consider interior design differently?</p> <p>I found that nowadays, to make items that we use every day, out of recycle materials for example is very interesting. It was very useful. It's a nice tendency.</p>
<p>Interviewer: Question 4</p> <p>Has the way that you approach interior design changed? Could you describe how it has changed?</p> <p>Now, if I was about to do a new space, I would prefer to work with a professional designer so that she or he could make use of all these approaches that we saw.</p>
<p>Question 5</p> <p>After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?</p> <p>a) Using Sustainable Materials Approaches</p> <p>b) Using Sustainable Space Design Approaches</p> <p>c) Both</p> <p>d) None</p> <p>Yes, I would recommend these products to my friends and other people that I know. We could go shopping together.</p> <p>Attended all interventions.</p>

Transcript 2

Client Interview transcript : 1.11

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client

it was very valuable and important exhibition and I was really fascinated by the exhibits. The chairs, the shopping bags all of them were great.

Interviewer: Question 2

To what extent your experience during exhibition and presentation change your attitude, your skills or motivation.

I feel that it is very helpful to present these objects and promote this type of work. I also believe that this is a trend today; to make and buy objects with reclaimed and recycled materials. It is a trend that is good for us and for our environment. It is really very interesting.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

If I had the need to buy something for my house I would definitely buy some of those exhibited. I was really impressed. Especially from the objects made out of corks. From these humble material, the cork, one makes restful things such as beds, chairs etc. Also, one can make a number of other decorative and artistic new pieces. These all look very contemporary and thoughtful at the same time.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Now if I was about to do a new space I would prefer to work with a professional designer that she or he could make use of all these approaches that we saw. This is a new trend.

A designer should be able to advice on how to make your space accordingly. She/he also could advise on how to take advantage of all the spaces you have.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

Both, and I could start all over again to do my own space as now I would definitely make different choices.

Attended all interventions.

Transcript 3

Client Interview transcript: 3.2

Interviewer: Question 1

How useful did you find the intervention?
How enjoyable did you find the intervention?
How difficult did you find the intervention?

Client

The intervention was very interesting and useful as we saw many interesting items and projects. For me it was a pleasure to participate.

Interviewer: Question 2

To what extent your experience during exhibition and presentation change your attitude, your skills or motivation.

Client:

Changed completely as now I learn new things and how to apply them.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client:

It was really good as I now can apply some of the approaches practically in my own space.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client:

Yes, in a new space in my house –an addition I build after this intervention I used the idea of flexible wall in the space and it's really helpful.

Interviewer: Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches
Using Sustainable Space Design Approaches
Both

None

Client:

I would suggest the second approach for space design and I would suggest to everybody to reuse their old pieces of furniture.

Attended 2nd INT and 3rd intervention.

Transcript 4

Client Interview transcript: 3.5

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client

It was both useful and enjoyable and of course it was not difficult, on the contrary, it was easier for me to understand how things really are made.

Interviewer: Question 2

To what extent your experience during exhibition and presentation change your attitude, your skills or motivation.

Client:

Changed completely as now I learn and I saw new things, how to apply them and how to ask for them when it comes to a new project.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Client:

It was really good as I now can apply some of the approaches practically

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

Client:

Just this, all the presenting items were very different, if I was to make my house now I would make it completely different using the new approaches.

Interviewer: Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

Client:

I would suggest both. One can have a very interesting and different environment to live in when using the approaches.

Attended 2nd INT and 3rd interventions.

Transcript 5

Client Interview transcript 1.22

Interviewer: Question 1

How useful did you find the intervention?

How enjoyable did you find the intervention?

How difficult did you find the intervention?

Client

Very interesting, I learnt about unknown things and also about new ideas that I loved.

Yes, it was enjoyable and with many creative ideas.

No, everything simple and understandable.

Interviewer: Question 2

To what extent your experience during exhibition and presentation change your attitude, your skills or motivation.

Changed a lot, as I realise that there is a practical application to what we discussed and we can contact the proper people to proceed in doing a space design and do the correct job. Also, we can use the right materials and methods. It seems now that we can find some materials in the market.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

I got into the mood and my attitude change. If I had the chance for a refurbishment I would definitely use the new approaches.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

For sure, I will think and act differently now and I will also use the right people to help me, for example an Interior designer with knowledge on the approaches, so we could make constructions friendlier to the environment.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

I would most probably suggest a combination of the approaches to be used as both are useful, viable and in the long run beneficial for humans as well.

Attended all interventions.

Transcript 6

Client Interview transcript 1.20

Interviewer: Question 1

How useful did you find the intervention?
 How enjoyable did you find the intervention?
 How difficult did you find the intervention?

Client

Useful.

Pleasant, when something is useful it's a pleasure to have it in your home and you enjoy using it as is beautiful and do not harm the environment.

No difficult and is actually very stupid that we do not use those approaches in practice.

Interviewer: Question 2

To what extent your experience during exhibition and presentation change your attitude, your skills or motivation.

I think that my skills are now enriched as I have seen and done a lot of things during this period, for example I was impressed with the use of multipurpose furniture and recycled materials.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

I am now thinking a lot about utilising the approaches that are dealing with innovative space design, I believe they are really great.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

As I said before, after the intervention I already bought a table that I needed that changes and serves 2 or 3 different functions.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

I think I would suggest both but I am impressed with what one can do in space design by using these approaches.

Attended all interventions.

Transcript 7

Client Interview transcript 2.30

Interviewer: Question 1

How useful, did you found the intervention?

How enjoyable, did you found the intervention?

How difficult, did you found the intervention?

Client

Very interesting, especially nowadays when the planet suffers. It's very useful and important to see and learn about these issues.

Very pleasant.

Nothing difficult.

Interviewer: Question 2

To what extent your experience during exhibition and presentation change your attitude, your skills or motivation.

I liked it a lot, I learnt a lot more and now I always take different used objects and use them for something else. The new TV set in the everyday-room at my house, found its place on a shelf that we made from a piece of furniture that we used to have in my daughter's bedroom.

Interviewer: Question 3

How did the intervention help you to think and consider interior design differently?

Yes, it helped me to think differently about the interior space and about the work that the professionals can do. I am now thinking a lot about utilising the approaches that are dealing with innovative space design.

Interviewer: Question 4

Has the way that you approach interior design changed? Could you describe how it has changed?

My thoughts have developed therefore my approach has changed, as soon as you learn something new you cannot just forget about it.

Question 5

After this process, if some friends or members of the family are interested in sustainable approaches for an interior space are you going to suggest any of the following and if yes which?

Using Sustainable Materials Approaches

Using Sustainable Space Design Approaches

Both

None

I think I would suggest both but I am impressed with what one can do in space design and what one succeed using these approaches.

Attended 2nd and 3rd intervention.

PHASE 3- CLIENTS' INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING-PHASE III		
Initial coding categories Designers coded responses according to interviews	Initial coding categories according to evidence to be measured	Final coding categories according to behaviour description
<ul style="list-style-type: none"> • I am impressed from the exhibition. • It is really enjoyable. • It was both useful and enjoyable. • I found very interesting the furniture that are made out of cork because I think they are relaxing. • I found that nowadays, to make items that we use every day out of recycle materials, it's very interesting. • It is really worthwhile. • It's a nice tendency.. • Very interesting, I learnt about unknown things and also about new ideas that I loved. • it was enjoyable and with creative ideas. • It was a very valuable and important exhibition. • I was really captivated with the exhibits. • I feel that is very helpful to present these objects and promote this type of work. • I was impressed with the use of multipurpose furniture and recycled materials. • Changed completely as now I learn new things and how to apply them. • It is a trend that is good for us and for our environment. • It is really very interesting. • I got into the mood and my attitude changed. • I was really impressed. • Changed a lot, as I realise that there is practical application. • Think now differently about the interior space and about the work that the professionals can do. • For me it was a pleasure to participate. • Change completely as now I learn and I saw new things. • My thoughts have developed therefore my approach has changed. 	State Personal Position and Reasons, State Believes	Create an Atmosphere That Enhances and Promotes Further Sustainable Issues in Interior Design Practice

PHASE 3- CLIENTS' INTERVIEW CODED RESPONSES WITH INITIAL AND FINAL CODING-PHASE III		
Initial coding categories Designers coded responses according to interviews	Initial coding categories according to evidence to be measured	Final coding categories according to behaviour description
<ul style="list-style-type: none"> • I would prefer to work with a professional designer so that she or he can make use of all these approaches that we saw. • My attitude changes to the extent that I would definitely buy something made out of recycled items now. • I would recommend these products to my friends. • I would recommend these products to other people that I know and we could go shopping together. • If I had the need to buy something for my house I would definitely buy some of exhibited items. • I will thing and act differently now. • These all look very contemporary and thoughtful at the same time. • Now I can apply some of the approaches practically. • I used the idea of the flexible wall. • I would suggest to everybody to reuse their old pieces of furniture. • Now I can apply them, and ask for them when it comes to a new project. • I will also use the right people to help me as for example an interior designer with knowledge on the approaches so that we could make constructions friendlier to the environment • A combination of the approaches to be used as both are useful, viable and in the long run beneficial for humans. • I always take different used objects and use them for something else. • After the intervention I already bought a table that I needed that changes and serves 2 or 3 different functions. 	Behave Consistently with Personal Value Set	Reconcile Internal Conflicts; Develop Value System/ Adopt Belief System and Philosophy Reinforcing Outcomes and Evaluating Results

APPENDIX L:

Case Studies Presentation.

In this appendix all eight cases are presented as proposed by the designers to the clients, starting from cases in Larnaca, then Limassol and finally, Nicosia. Each case study is presented in four parts in order to maintain uniformity in presentation as follow:

- The first part is an introduction that presents the elements on which the existing design of the case study was based (existing plan).
- The second part includes the description of the proposal as given by the designer (proposed plan).
- The third part presents the design approach used as a solution to the space design problem and briefly explains what has been done.
- The fourth part presents the utilised approach for materials practice chosen and their life-cycle analysis as they have been analysed by the designers to support their choice.

CASE STUDY 1- LARNACA1-PUB

PART 1:Existing Plan

The small pub on the sea front road in Larnaca belongs to the same family for many years. The master plan of the area, prepared some years ago, included the restoration of the sea front road and included new pedestrian walkways, a new road and to some extent a bigger pavement to be used by the shops along the road. Since the beginning of 2012 the road works started and the family wanted to take advantage of this period to renew the old pub. The existing space consists of two different levels. As you enter you have the bar on the right hand side and three tables on the left. You go up two steps to find two more tables. Excluding the bar area, 20 visitors can sit and as the tables and chairs are fixed the owner cannot do other sitting arrangements. Then through a corridor you reach toilets and kitchen

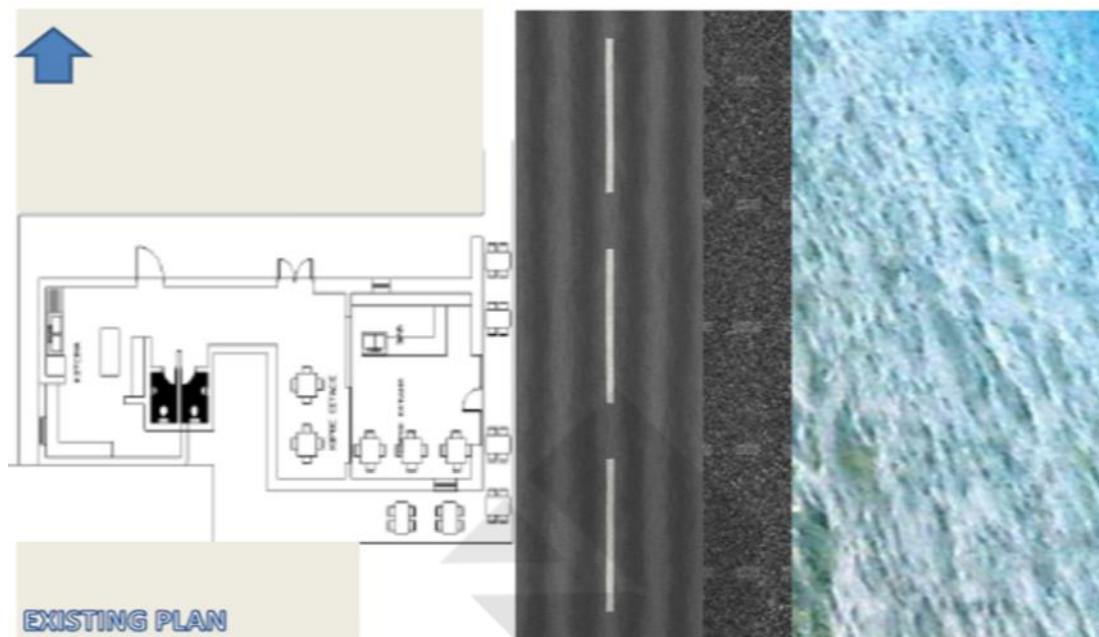


Figure1.1 :Existing Plan

PART 2:Proposed Plan

The bar has been moved to the second level, up the stairs; in order to allow more space for the area that will accommodate the tables nearer to the entrance. The table area will be easier to transform and service different functions and needs. For instance Proposal 1 (Figure 2) tables are extendable and accommodate minimum 32 visitors and Proposal 2 (Figure 3) a folding table in the middle can be added and can accommodate minimum 26 visitors. In both solutions, folding chairs are suspended from the side walls similar to the Pick Chair- that has been designed by Dror Benshetrit (Figure 5).

As it was agreed from the beginning, all existing furniture were kept in a carpenter's store so to setup the initial materials for all new needed pieces. From those, it was planned to make all the tables for the exterior space and also the new bar. The shape and size of reclaimed wood pieces is cut according to the designer's idea and to the available pieces.

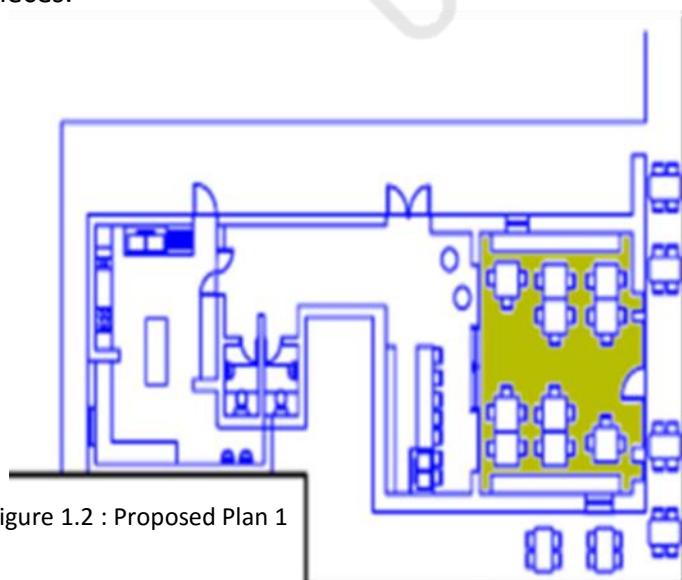


Figure 1.2 : Proposed Plan 1

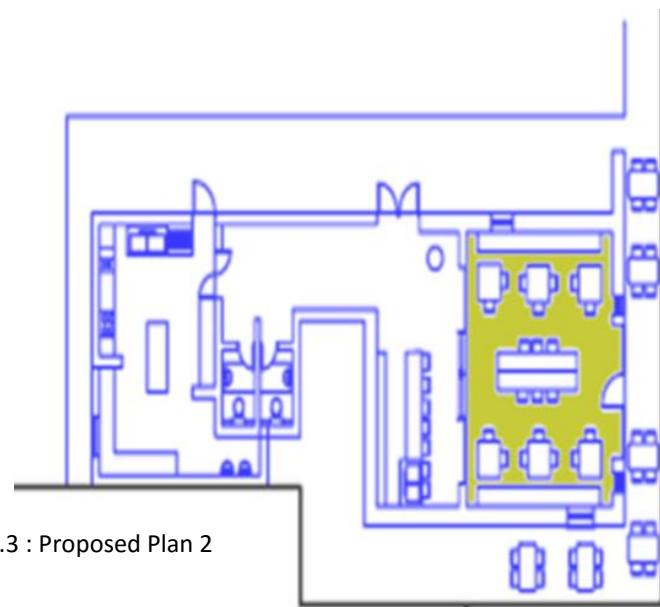


Figure 1.3 : Proposed Plan 2

PART 3:Space Design Approach

A series of selected pieces of furniture and equipment is suggested as a practice to this project. The use of multipurpose pieces of furniture becomes a must as this could give the chance to the pub’s main area to adjust according to needs and visitors.



Figure 1.4 :The Hexa Coffee Table – Versatile and Flexible Furniture.
<https://fouinterior.com/the-hexa-coffee-table-versatile-and-flexible-furniture/>

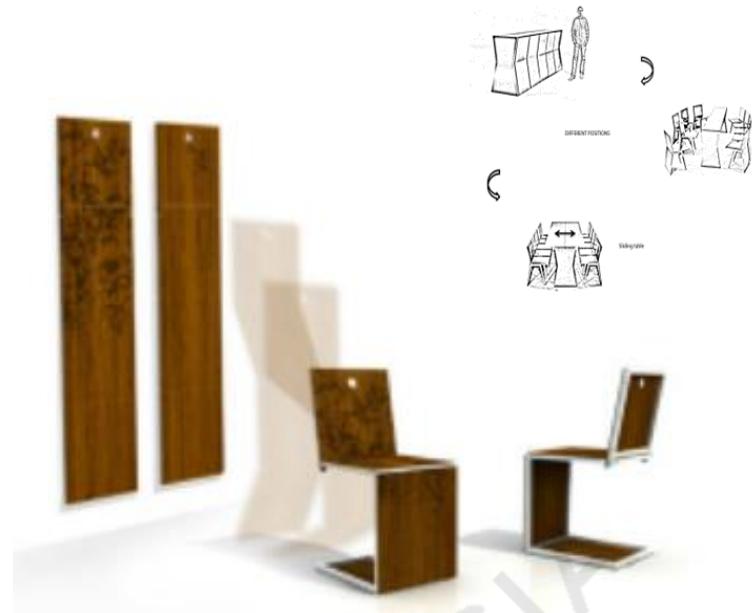


Figure 1.5:Folding-chairs
<https://www.homedit.com/space-saving-folding-chairs-practical-solutions-for-small-spaces/>

PART 4:Materials Approach

A simple life cycle analysis for the new materials was carried out. The fact that the owner wanted the life circle assessment was another interesting and valuable side to this project. In the market, various kinds of wooden materials are available and suitable for chairs and tables making. What is proposed here is a certified wooden material (Maple from Pefkodec) available from Cyprus Forest Industries (<http://www.cfi.com.cy/>) that operates under ISO14001 (<http://www.iso14000-iso14001-environmental-management.com/>). Figure 1.6 shows the life cycle analysis of reclaimed wood suggested for bar top surface and part of the floor finish and Figure 1.7 life cycle analysis of ceramic tiles suggested for part of the floor finish. The tile that is suggested here is due to its durability and ease of maintenance that make Argelith clinker tiles the preferred floor covering for industry, public areas and catering. (<http://www.argelith.de/en/products/index.html>)

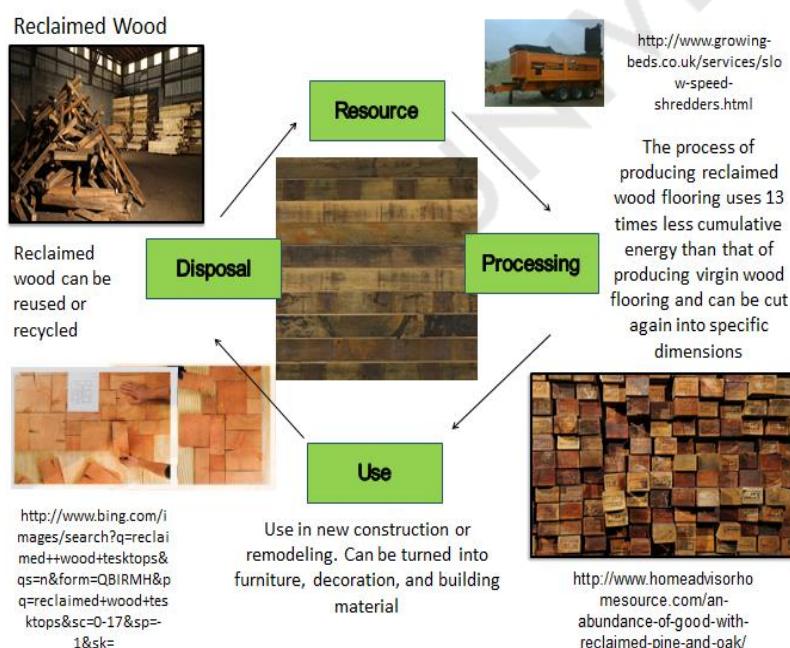


Figure 1.6 :Life Cycle Analysis of Reclaimed Wood

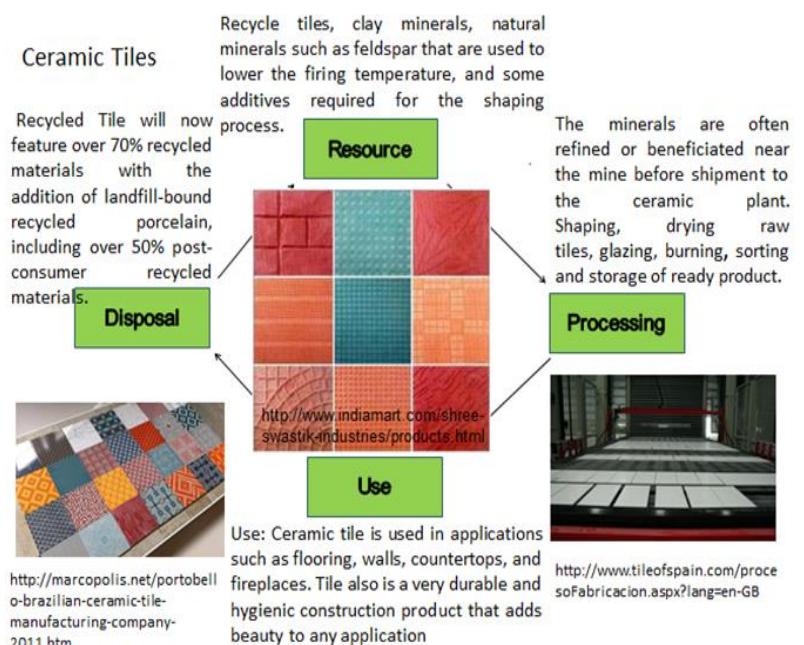


Figure 1.7: Life Cycle Analysis of Ceramic Tiles

PART 1: Existing Plan

The project is located in Larnaca-Cyprus. This house is in a relatively new neighbourhood, belongs to the 'Purchase of a House /Apartment Scheme' and it is a conventional example of a house within a complex of semidetached houses. It is a small house with lots of things to store in the kitchen and living room area which needed to be re-organised in an interesting and justifiable way. At the same time, the design has to be easy to move, create a special space for storing sofa and chairs in order to leave empty space for playing as that was the need of the clients.

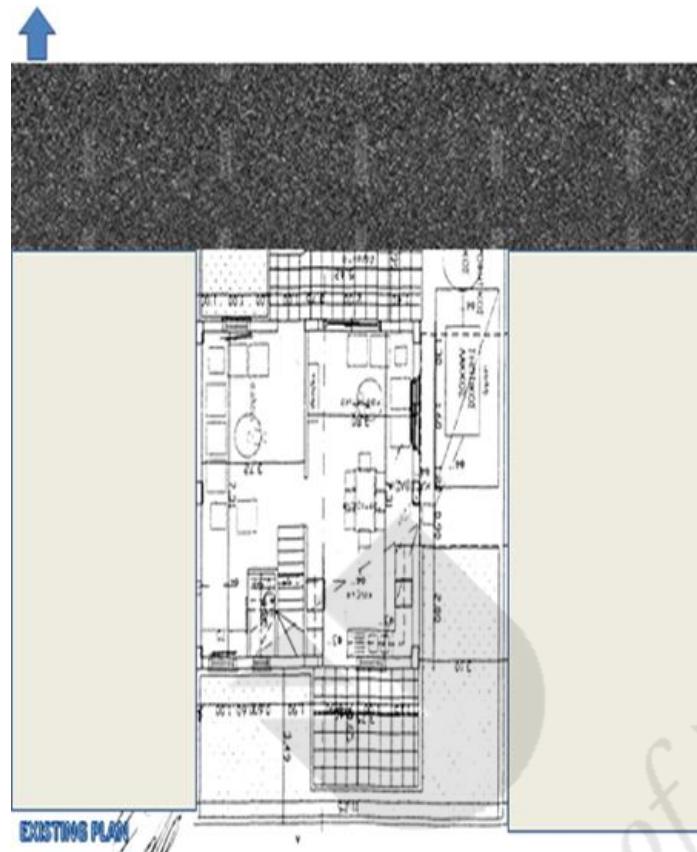


Figure 2.1: Existing Plan

PART 2: Proposed Plan

The design proposal was inspired from the "jenga game" which could be used in real size object design. After making experimentations with wooden cubes in order to make a unique design project, I came up with a multipurpose shelves system which is easy to move, and accommodate different sizes depending on the client's request. In order to offer the client the opportunity of using the space in different ways the design approach was proposed to enable the creation of empty space for children to play when all parts are grouped together and at the same time to accommodate social needs of the family when split apart.

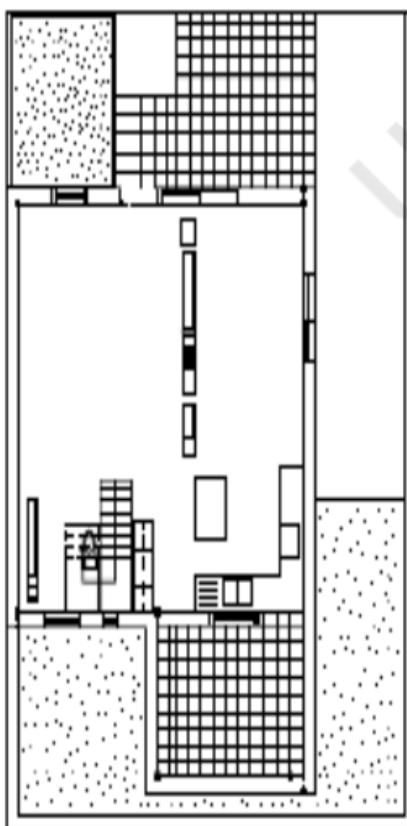


Figure 2.2: Proposed Plan A

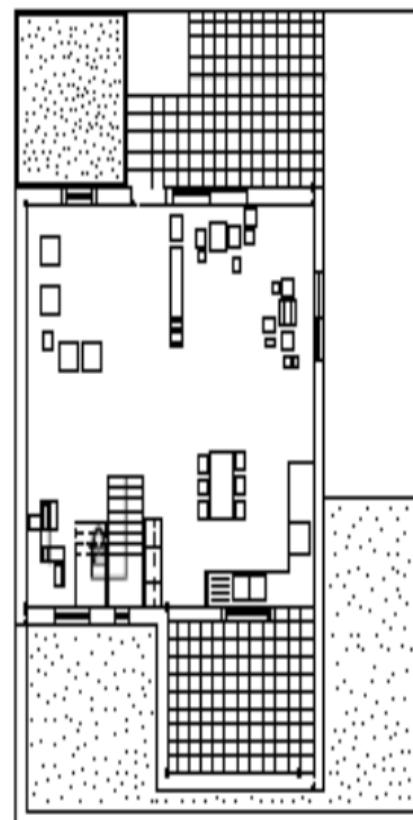


Figure 2.3: Proposed Plan B

PART 3:Space Design Approach

A series of multi-function pieces of furniture proposed to serve different purposes.

Equipping the house with a unit to accommodate kitchen equipment and tools similar to the example from Targa Italia lets you pack up and transport your entire kitchen: fixtures, storage and all(Figure 2.4). The use of multi purposed pieces of furniture with a modular slot sofa is perfect for small spaces and is suggested in order to allow maximum flexibility and more area for playing(Figure2.5).



Figure 2.4: Targa Italia Design 2007 by Piero Esposito
<http://www.targaitalia.it/pd/opening.html>



Figure 2.5: Slot Sofa
<https://www.designrulz.com/product-design/2012/09/modular-slot-sofa-a-dynamic-piece-of-furniture-perfect-for-small-spaces/>

PART 4:Materials Approach

The basic material that the designer chose for the furniture is Plywood. Plywood is a manufactured wood panel from the family of manufactured boards made from thin sheets of wood veneer. Plywood layers (called veneers or plies) are glued together, with adjacent plies having their wood grain rotated relative to adjacent layers up to 90 degrees(Figure 2.6). Further recycled textile has been suggested for use for the sofa and the stools(Figure 2.7).

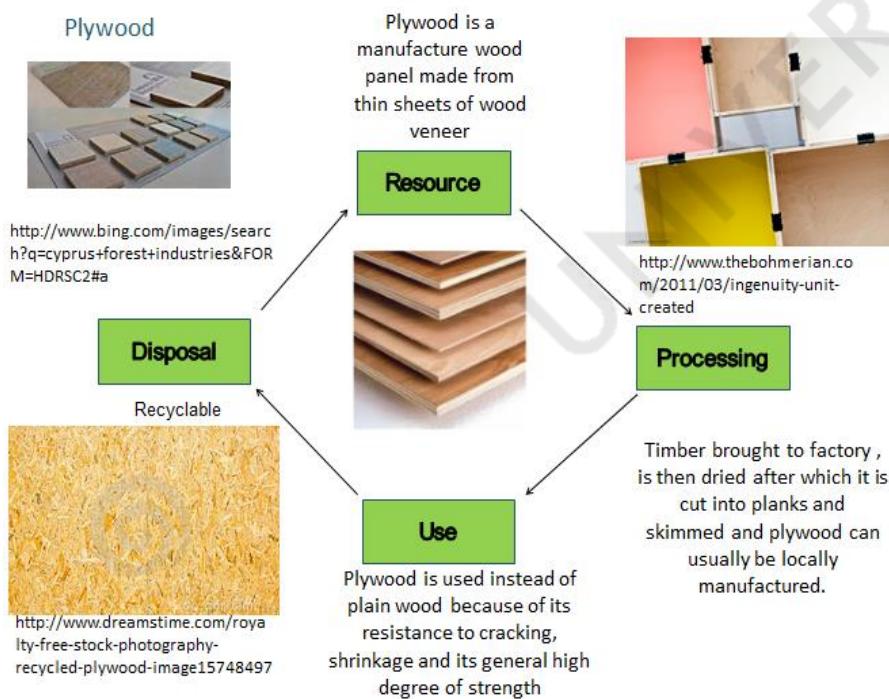


Figure 2.6: Life Cycle Analysis of Ply-Wood



Figure 2.7 :Life Cycle Analysis of Textile

PART 1:Existing Plan

This case study is for a small house which is located in Larnaca, Cyprus and the clients are an elderly couple. The clients want a new design of their house which will be convenient and practical, even if the house is very small they want to be able to enjoy a lot of facilities. The existing lay-out of the house seems to be one main space with the bathroom being the only private space. The kitchen is embedded on the wall and covers a lot of space and on the other hand there is no private space for the bedroom (Figure 3.1).

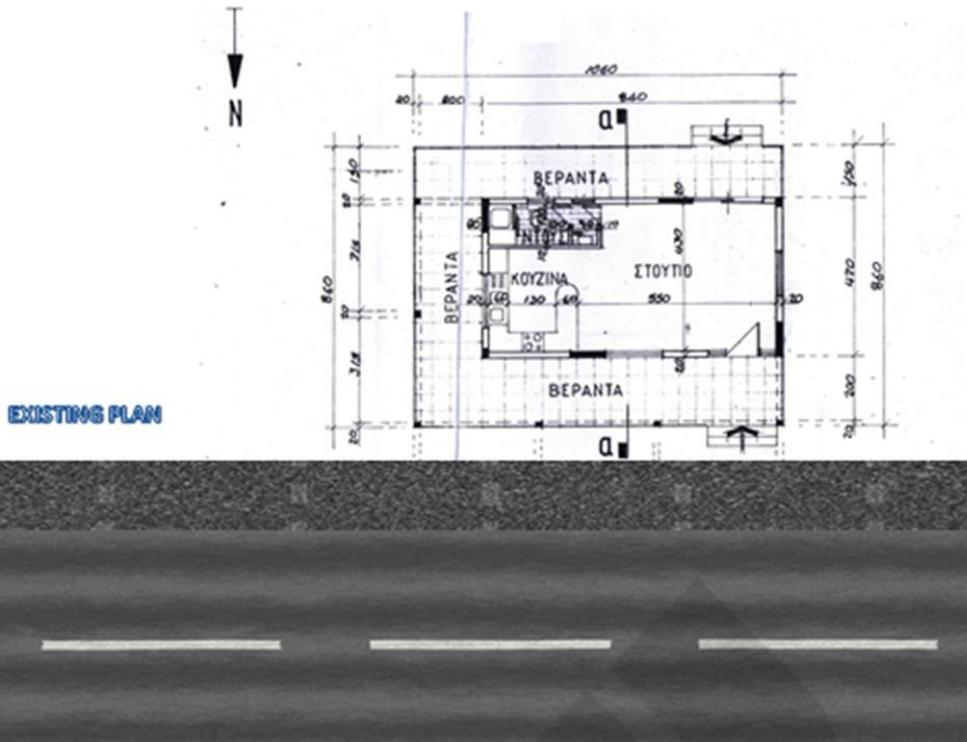


Figure 3.1: Existing Plan

PART 2:Proposed Plan

In the solution given, the bathroom remains in the same position and a space for the bedroom has been separated through a sliding wall system in order to offer the flexibility that the clients need. They could have their own private space (Figure 3.2) and at the same time open the space up when needed (Figure 3.3).



Figure 3.2 :Proposed Plan A



Figure 3.3 :Proposed Plan B

PART 3:Space Design Approach

The new kitchen system, a rotating-folding construction, fits successfully in the space and it is also very practical and easy in use for the elderly couple(Figure 3.4). Some folding units that are suggested are useful, for example the armchair below (Figure 3. 5). With the use of these pieces of furniture clients have more seats for guests in their house.



Figure 3.4: Portable Kitchen Counter
<http://dadka.net/kitchen-tables-for-small-spaces/>



Figure 3.5:Italian Chair-Bed Ginger by Vitarela MODEL: VR-Ginger Chair-Bed
<http://www.modern1furniture.com/italian-chairbed-ginger-by-vitarela-p-14986.html>

PART 4:Materials Approach

The materials are presented with their life circle analysis in order to illustrate their sustainable qualities. As a main material for the project’s furniture is plywood. An alternative choice that is suggested for the pieces of furniture is the Fiber Particleboard that produces high quality interior materials for many applications; they are high quality materials and aesthetically good and re-composed materials which are very strong and resistant. As an example Purekori Ag-Fiber particleboard is a premium grade panel that contains no Urea Formaldehyde and is manufactured from rapidly renewable Ag-Fiber is suggested for cabinetry & panels for furniture. Further Syndecrete which is a cementitious composite using natural minerals and recycled materials and can be used for a variety of interior and exterior applications and for residential and commercial projects. One can use it when making tiles, tables, fireplace hearths and surrounds, flooring and a variety of custom accessories. In this case it can be safely used for the top counter of the kitchen cabinets (Figure3.7).

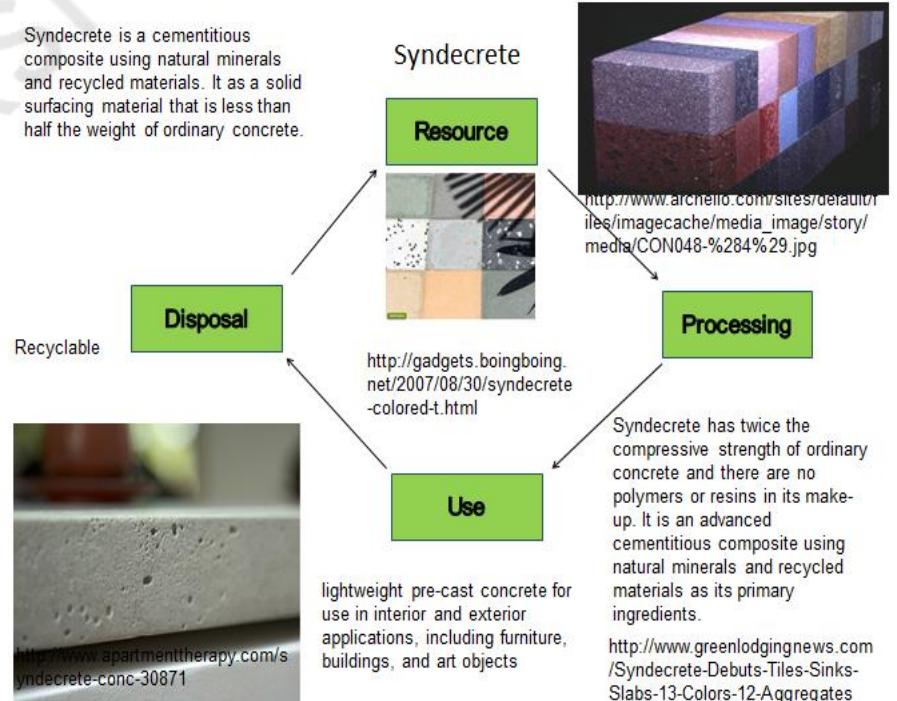
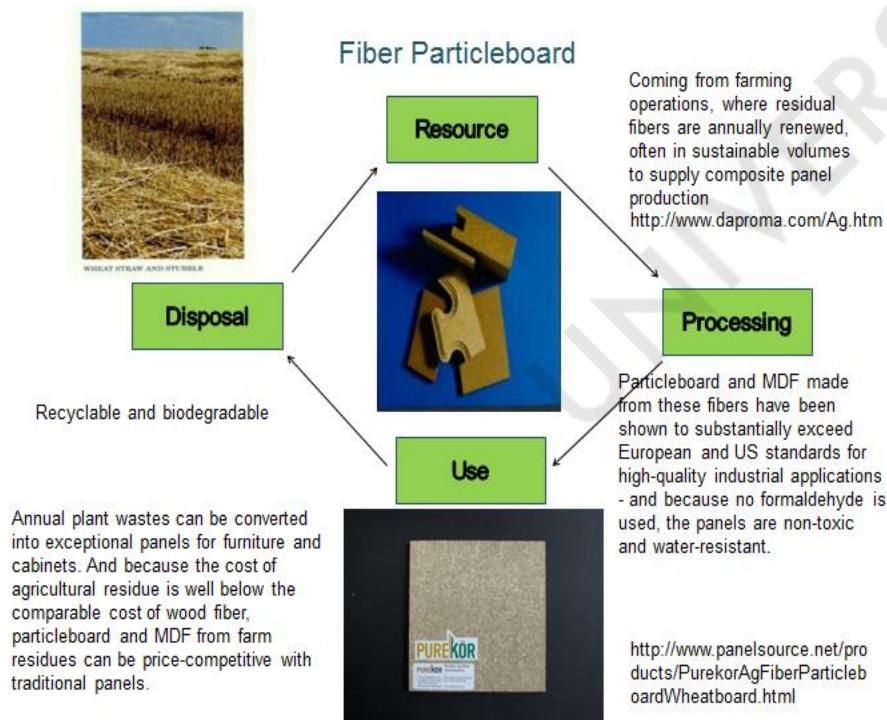


Figure 3.6: Life Cycle Analysis of Fiber Particleboard

Figure 3.7: Life Cycle Analysis of Syndecrete

CASE STUDY 4-LIMASOL 1 -SHOP

PART 1:Existing Plan

This project in Limassol, is found to be very interesting as it was functioning as shop but later, the owner asked to split it in to two different areas, as a working and living space. The shop owner requested from designer to design the space using flexible methods and approaches for the space design and use recycle materials. The designer understood that the space had various problems as far as the circulation concerns and has changed the design of the space having in mind all of the above. He tried to reach the client's requests by proposing various changes to the space.

From the approaches that promote innovation during space design that has been promoted during the action research this proposal uses elements of all three approaches namely

- Immediate term solution Multipurpose Space Design/Use of multipurpose furnishings
- Medium term solution /Flexible Space Design. /Use of versatile space design
- Long term solution /Deconstructive Space Design. /Use of deconstruction principles to interior elements.

The Immediate term solutions which make use of multipurpose furnishings appear through the use of elements that can be used as dividers but also as a shelving system.

The medium term solution which reflects flexible space design and the use of versatile space design is represented by the fact that the designer uses a division between the two spaces that can be open or closed and the owner can have different options.

The Long term solution which requires a Deconstructive Space Design and make use of deconstruction principles to interior elements appear through the use of elements that can be dismantled and packaged easily for easy transportation.

Further from the approaches that promote the use of sustainable materials & resources this proposal uses the medium term solution which is the use of recycled materials.

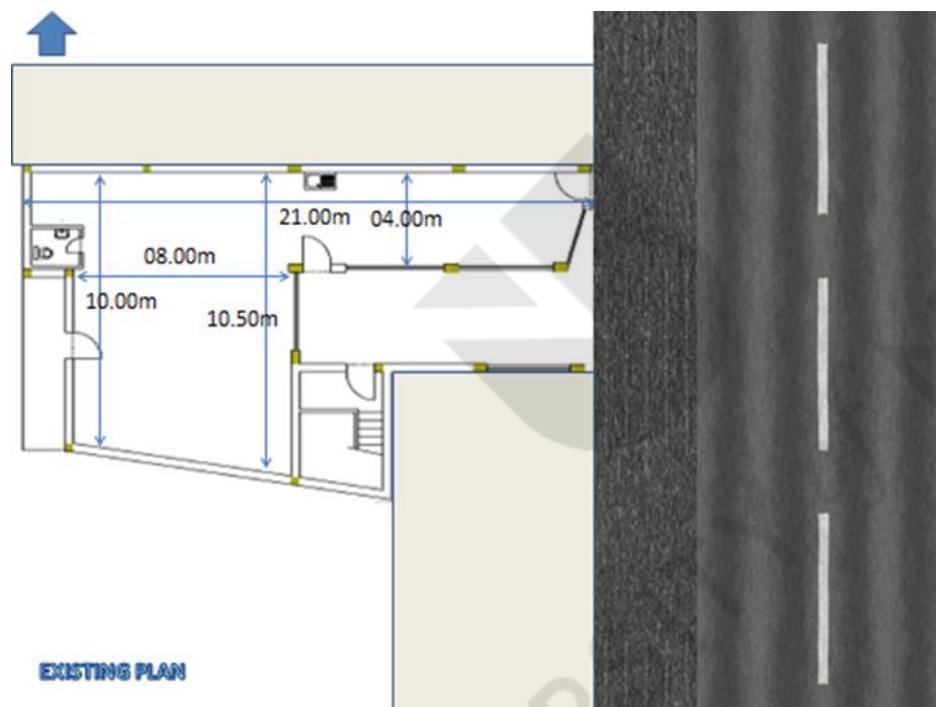


Figure 4.1: Existing Plan

PART 2:Proposed Plan

First, a new entrance is added to the proposed living area. As there are now two different areas and they both need their own entrances. This offers the advantage of direct access to each of the spaces (Figure 4.2).

The target is to make this space flexible, so it is necessary that the developed approach and the employed system can have different uses, can easily be moved around and it can change forms. Changing form means that it can be expand, add or subtract, open or close and that it can be broken down for easy storage. This will help the client to arrange the space differently relatively easy (Figure 4.3).

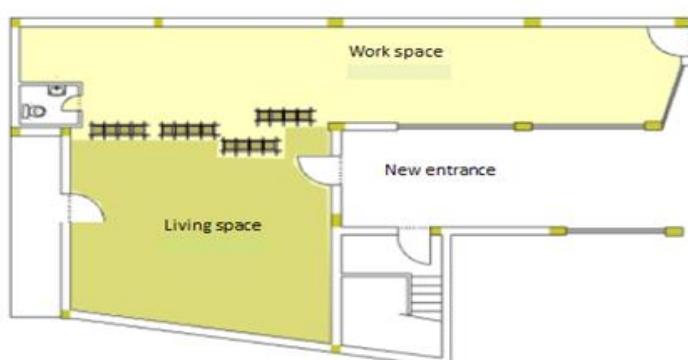


Figure 4.2: Proposed Plan A

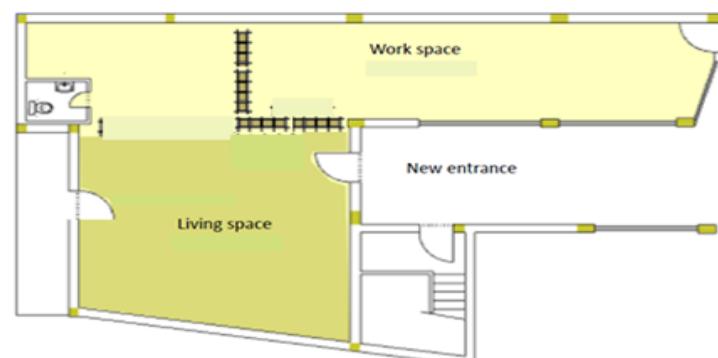


Figure 4.3 :Proposed Plan B

PART 3:Space Design Approach

To facilitate a flexible as well as a deconstruction approach to design the interior, a singular large system was used as a divider and storage unit or to create a lot of smaller units. See Figure 4.6: Proposed plan C in order to have multipurpose furnishing that will serve various needs. More specifically there are 12 small, long and thin pieces of wood with different shaped parts, the reason the parts are different is so they can interlock with one another and expand as they are joined together. When the 12 pieces are joined together they create a square shape, then a square platform is placed creating a shelf. Each square can be joined with another square, creating a modular system that can expand as much as wanted in height and width (See Figure 4. 4 and 4. 5). Finally because of the light weight and the easy interlocking system the module can be easily broken down and stored in very small boxes. The chosen system for the specific space is effective and it is exactly what is needed to complete all the requirements for longevity as it enables different options .



Figure 4. 4:Interlocking square shape by Kengo Kuma
<https://www.dezeen.com/2011/11/07/chidori-furniture-by-kengo-kuma-and-associates/>



Figure 4. 5: Multiple interlocking square shapes
<https://www.dezeen.com/2011/11/07/chidori-furniture-by-kengo-kuma-and-associates/>



Figure 4. 6:Proposed Plan C

We can have different scenarios: An empty open space, division of the two spaces, living and working, the whole space as a working space, the whole space as a living area. This makes it easy for the client to create as many squares as one wants, and then play with different shapes depending on the use.

PART 4:Materials Approach

The client asked for recycled material to be used, the designer suggested as a first option recyclable plywood and as another option Fiber Particle board that derive from renewable source and goes back to the factories after used. It is melted down and it can be manufactured into something else and reused again. This material can securely used for the shelving system and the different surfaces.



Figure 4.7: Life Cycle Analysis of Plywood

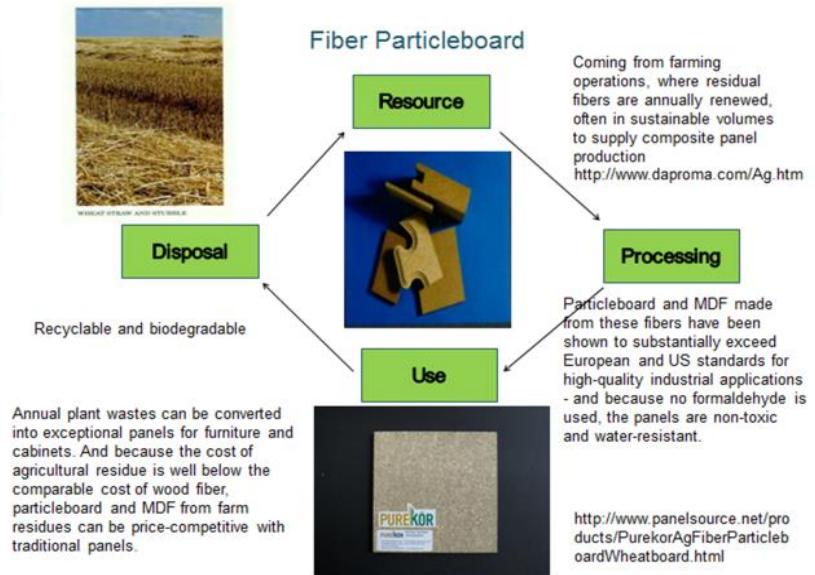


Figure 4.8: Life Cycle Analysis of Fiber Particleboard

PART 1:Existing Plan

This case study is a detached house in Limassol, Cyprus. The clients are young professionals who need working space within the rooms that can also be used for rest, without taking up too much space. Each bedroom belongs to one of the family children that they want the room to alter as the children change habits and become young individuals. The designer worked with the second floor of the house that consists of four bedrooms, three of which have been re-designed. The four bedrooms accommodate the couple and their three boys. It is a busy house visited by friends often as well as other family members .

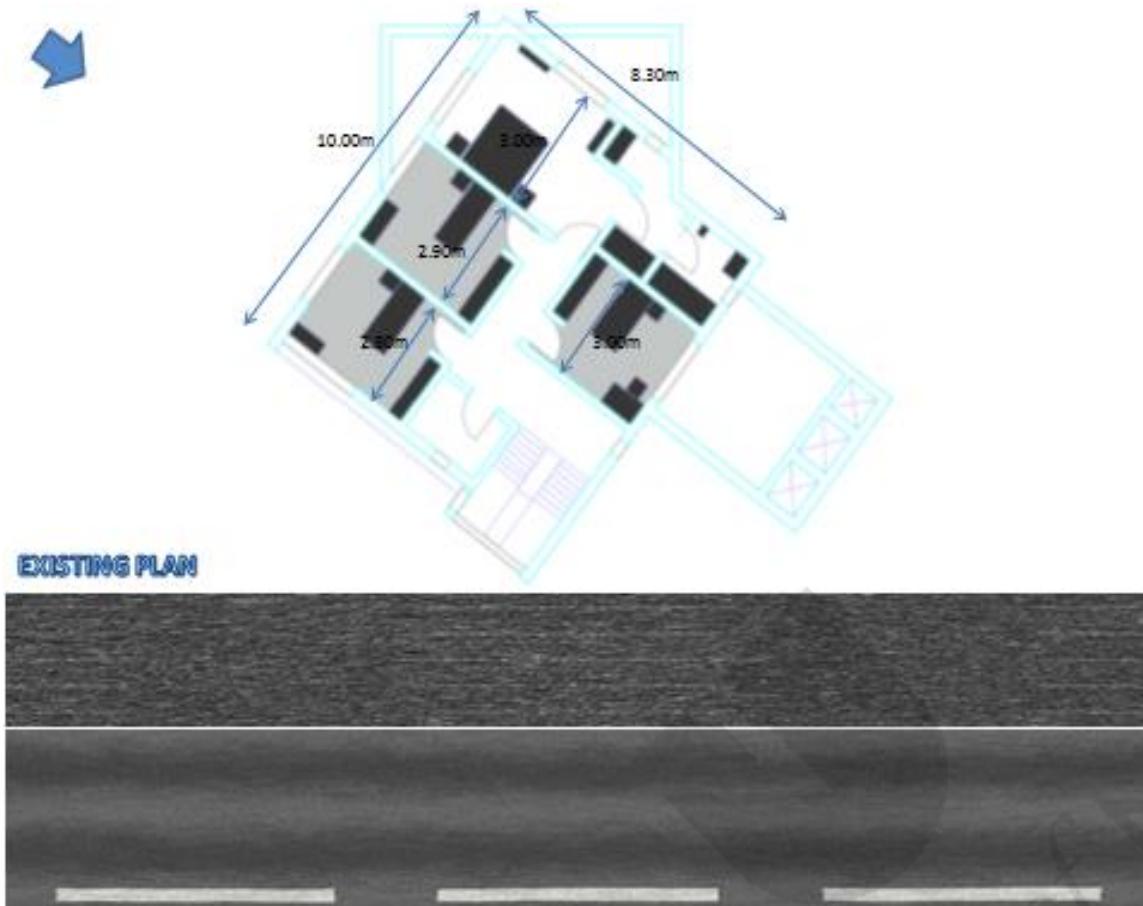


Figure 5. 1:Existing Plan

PART 2:Proposed Plan

The proposal includes the elimination of pieces of furniture, and their replacement with multipurpose and flexible pieces.As the clients of this project are young professionals; the strength of the scheme is on the office space where they will be working for most of the time, and also on hiding this space to create a more relaxed environment once they are finished with their work.



Figure 5.2: Proposed Plan Unit Open

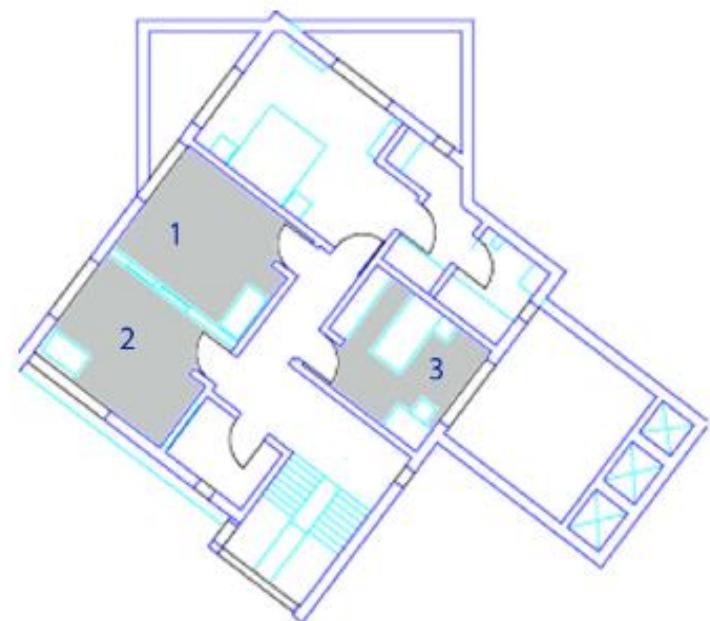


Figure 5.3: Proposed Plan Unit Closed

PART 3:Space Design Approach

For the bedrooms it has been decided to place a multipurpose wall unit which will also act as a cover up for the fold out bed (Figure 5.4) . This will provide the bedroom with a bed for a comfortable rest. This will also offer enough space throughout the day when the bed is put away for other activities and it is combined with a modular piece of furniture for office space (Figure 5.5).



Figure 5.4: Proposed Bed Unit
<http://www.boxetti.com/>



Figure 5.5: Proposed Wall Unit
<http://www.boxetti.com/>

PART 4:Materials Approach

For the floor the choice is linoleum as a new and sustainable material. Linoleum is a wholly natural product from oxidized oil and natural pine resin added as hardeners and then mixed with cork, wood flour and powdered lime stone. A material that is easy to clean, maintenance durable and biodegradable makes it a sustainable choice of new material to use(Figure 5.6). The modular pieces of furniture but also the moveable walls are made out of Medium Density Fibreboard -MDF which is potentially a very sustainable material(Figure 5.6).

Linoleum Flooring

Linoleum flooring is made from natural materials like linseed oil, recycled wood flour, cork dust and limestone.

Linoleum is naturally anti-bacterial and biodegradable.



<http://www.armstrong.com/flooring/products/linoleum>

Resource

All natural materials: linseed oil, resins, recycled wood flour, cork dust, limestone and mineral pigments, are mounted on jute backing.



Processing



Use

If you are looking for a "green" floor for your home, linoleum is one of the best choices!

Over time, linoleum has a natural tendency to grow in width and shrink in length. This is just one more reason to work with professionals who understand how to anticipate this movement and compensate for it in their installation work.

Medium-density fiberboard (MDF)

Many companies are now committed to sustainable recycling across the non-metallic material streams including paper ,plastic and wood.



<http://www.bing.com/images/search?q=Medium-density+fiberboard+disposal+process&>

MDF is denser than plywood. It is made up of separated fibers, but can be used as a building material similar in application to plywood. It is stronger and much denser than particle board. The name derives from the distinction in densities of fiberboard. Large-scale production of MDF began in the 1980s, in both North America and Europe.

Resource



Disposal

Processing

Use

It may be used to make display cabinets, wall-panels and storage units.

MDF is a type of hardboard, which is made from wood fibers glued under heat and pressure.
<http://www.design-technology.org/mdf.htm>



<http://www.fs.fed.us/research/patents/utilization/medium-density-fiberboard.php>



<http://www.recyclingconsult.com/medium-density-fiberboard-mdf.php>

Figure 5.6: Life Cycle Analysis of: (New) Linoleum

Figure 5.7: Life Cycle Analysis of: (New): Medium –density fiberboard

PART 1:ExistingPlan

This case study discusses the design proposal of a small detached house in Nicosia. See Figure 6 .1: Existing Plan below. The client asked to design his space in a way that it can be used as an office studio as well as a living space. He would like to combine both living and working spaces and achieve that with the use of recycled materials and flexible pieces of furniture. The project is actually a new studio/office in the same plot and next to existing house of the family.

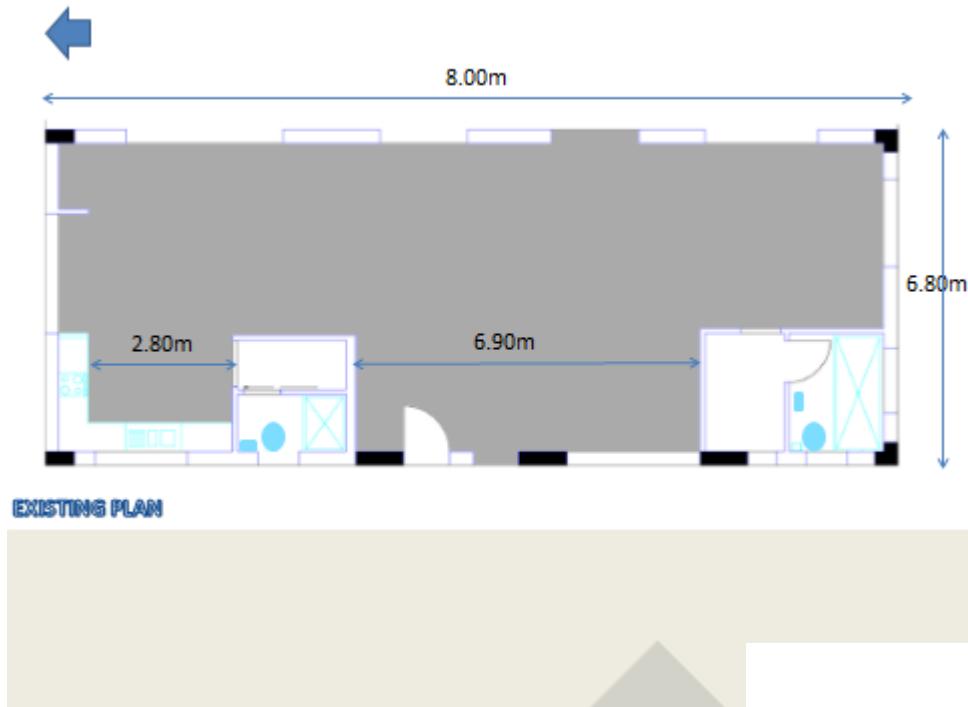


Figure 6 .1: Existing Plan

PART 2:ProposedPlan

An early decision was to divide the space into two parts, the larger of which was to be the studio (living area), and the smaller the office (working area). See Figure 6 .2: Proposed Plan. With the suggestion made for the use of a flexible wall the space can be separated or remain open according to needs.



Figure 6 .2: Proposed Plan

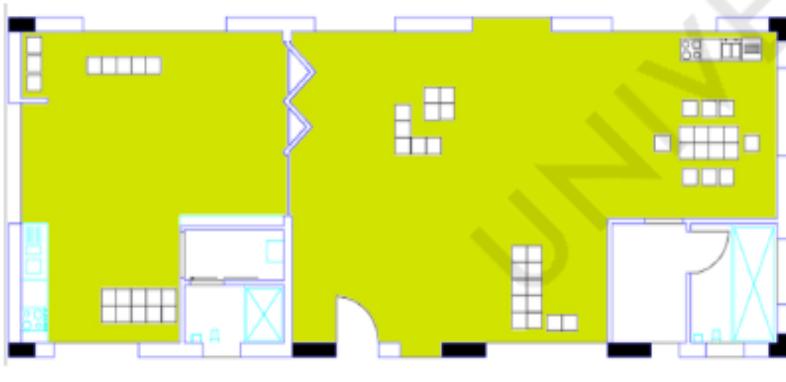


Figure 6.3:Proposed Plan A

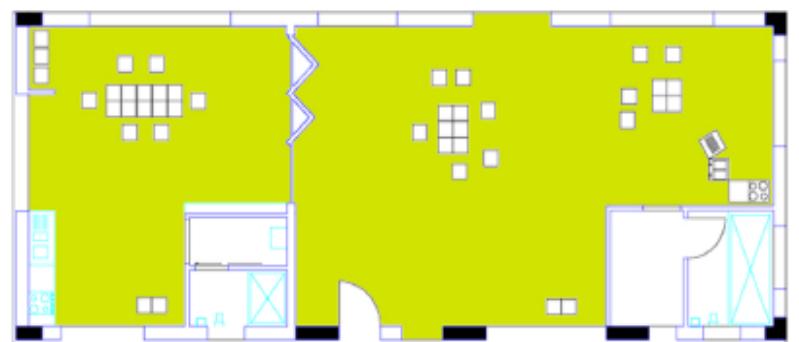


Figure 6.4: Proposed Plan B

The selected design approach allows different combinations of activities to take place. Figure 6.3:Proposed Plan A shows the living space with a small kitchen, dining area and two arrangements for sitting. Also in the office space is a small kitchen along with two working areas. Figure 6.4: Proposed Plan B shows the living space with the small kitchen in a different placement with two different sitting arrangements and the working area with a conference table.

PART 3:Space Design Approach

The choice of furniture for the home office is the first task. The desk's size could correspond to the area and the needs. It is designed to cover a small area or become larger when needed. (Figure 6.5). The system use for shelves that are necessary for keeping documents in the office space in order and also take various shapes to accommodate books or ornaments in the living area is a modular flexible system (Figure 6.6).



Figure 6.5:Kkanapètko Desk
<https://www.trendhunter.com/trends/krassi-dimitrov>



Figure 6.6:Modular BUILD Blocks
<https://inhabitat.com/modular-build-blocks-can-be-stacked-up-to-create-flexible-shelving/>

PART 4:Materials Approach

The shelving system showed above can be developed with various materials. The great thing about creating the system for example with cardboard or paper (Figure 6.8) is that you can customise your shelving unit to meet your needs. The versatile blocks can be arranged to suit a wide range of functions – from shelves to partitions. For the floor, the tables and other pieces of furniture in rubber wood (Figure 6.7) can be employed.

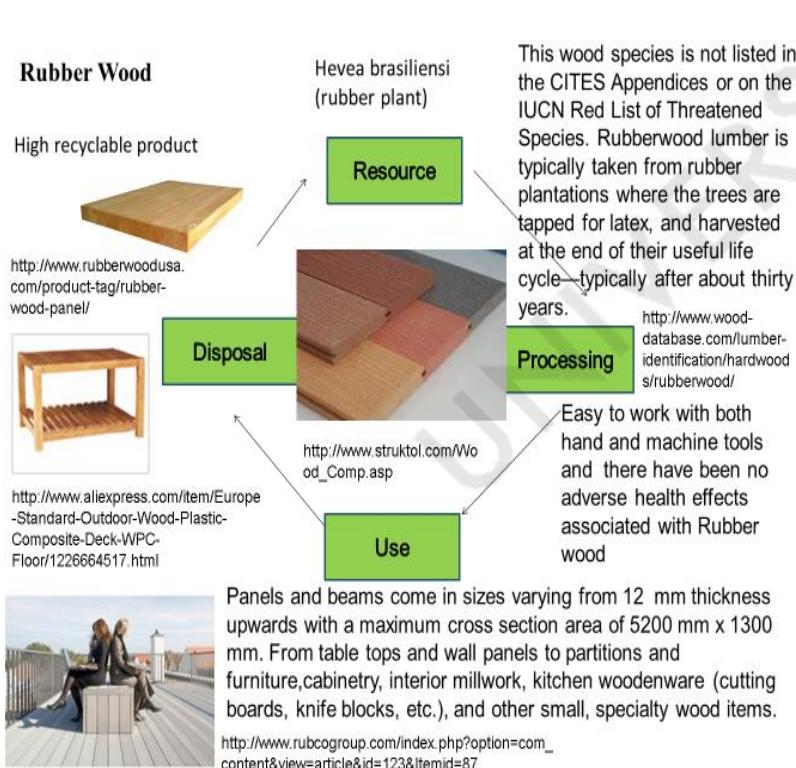


Figure 6.7: Life Cycle Analysis of (Recycled) Rubber Wood

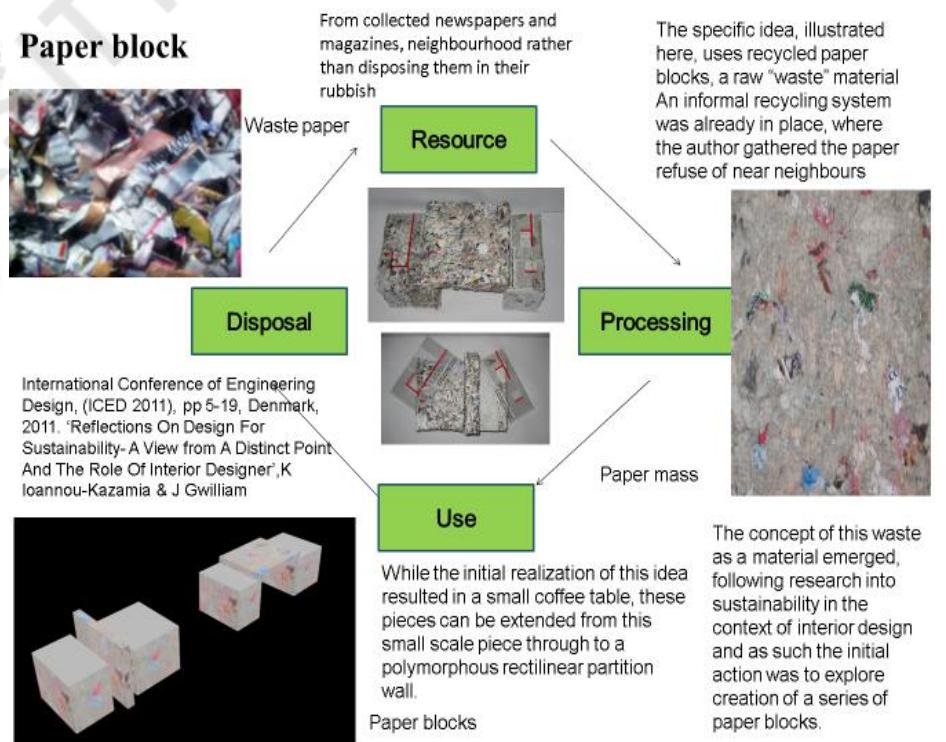


Figure 6.8: Life Cycle Analysis of Recycled Paper

PART 1:Existing Plan

This case study, Nicosia 2, is a project in a small detached house in Nicosia, in Cyprus where the clients which are grandparents asked for a multipurpose space design and an approach to materials that combines both new and reclaimed materials. By doing so, they can have their family coming over whenever they want to visit and be able to accommodate them. The space has a rectangular shape and is subdivided in 4 rooms: A living area, two bedrooms and a bathroom. See Plan 7.1 Existing Plan below.

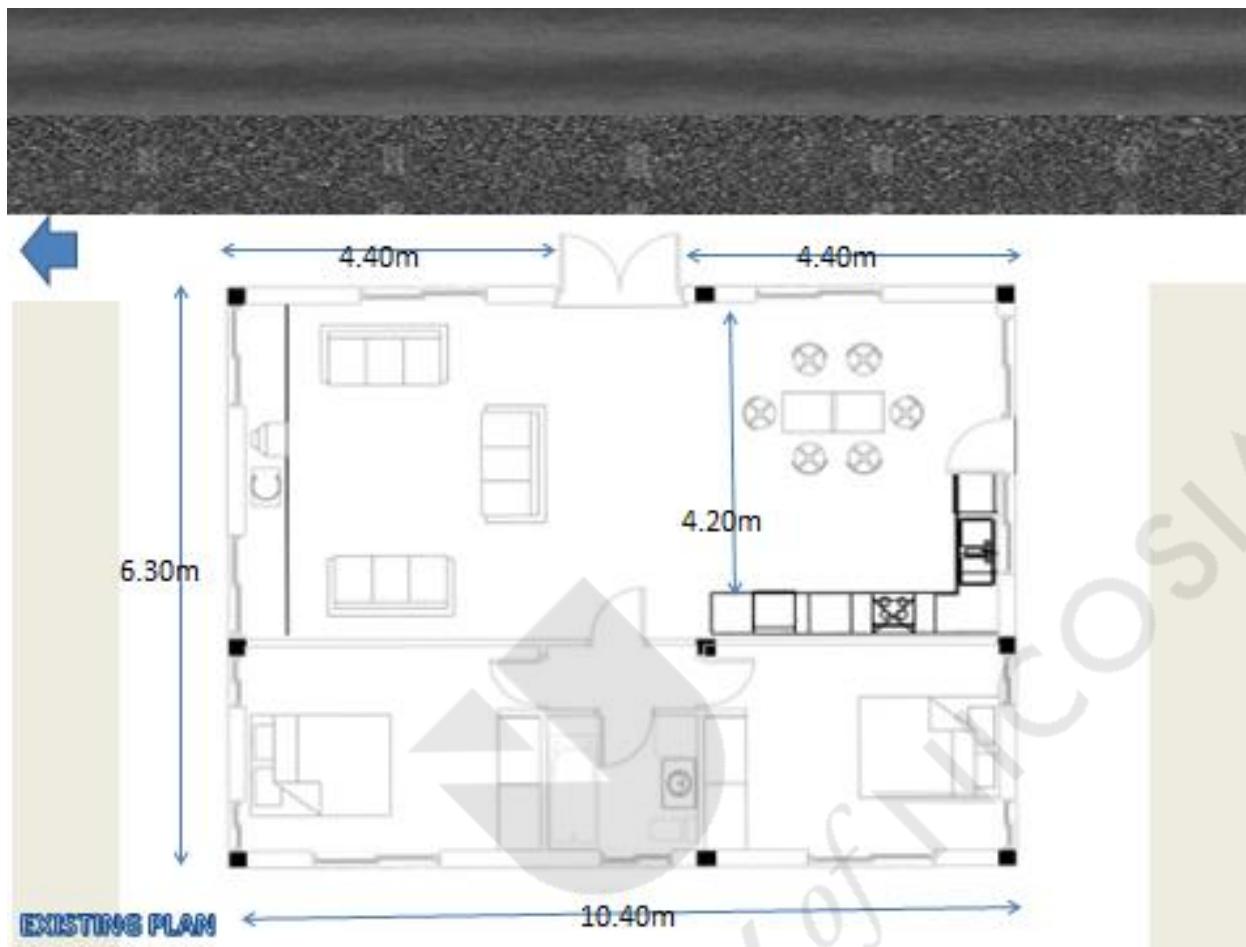


Figure 7.1:Existing Plan

PART 2:Proposed Plan

A set of wall units and multipurpose pieces of furniture have been suggested and most of them are unfolding and folding units in order to save space and allow them to be used only when the specific piece of furniture is necessary to be used. Also the use of a flexible wall system is proposed, providing different facilities, mostly for dividing the space into smaller rooms. See Figure 7.2 Proposed Plan.

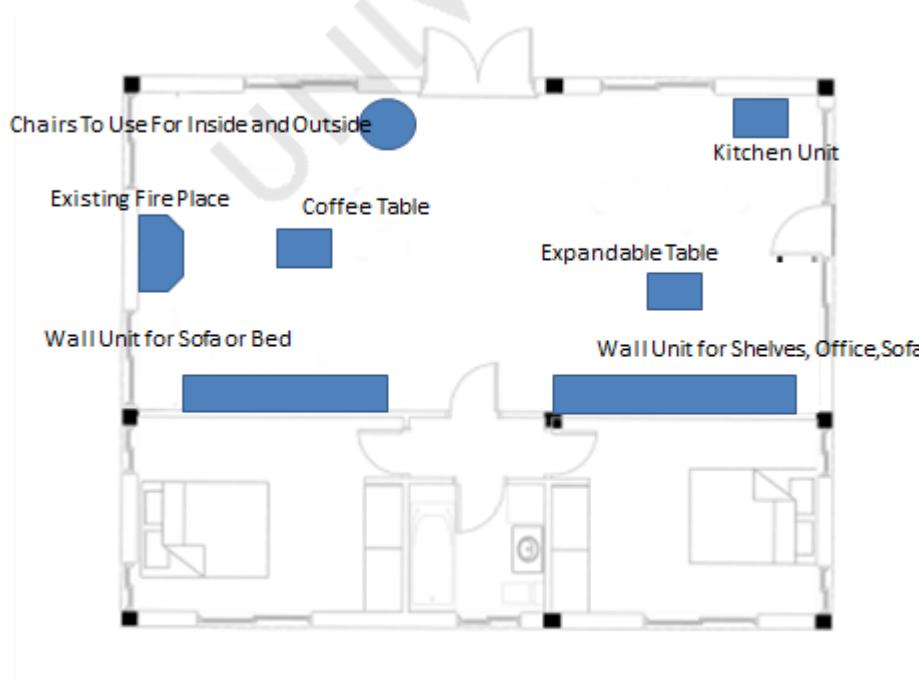


Figure 7.2:Proposed Plan

PART 3: Space Design Approach

A number of wall units which can be used not only for sitting and socialising (Figure 7.3) but also for sleeping (Figure 7.4) are proposed. Also working, and have space for saving thinks is available (Figure 7.5). For the living area one more piece of furniture is suggested that meets the idea of multipurpose furnishing. This is actually a simple sculpture in the space that is made up from four chairs and a small coffee table that one can use inside or outside (Figure 7.6).



Figure 7.3 :Sofa Bed closed by Resource Furniture
<http://resourcefurniture.com/>



Figure 7.4: Sofa Bed open by Resource Furniture
<http://resourcefurniture.com/>



Figure 7.5: Office Unit by Resource Furniture
<http://resourcefurniture.com/>



Figure 7.6: Sitting Unit by Dedon
<http://www.dedon.de/en/>

PART 4: Materials Approach

The materials proposed for this project are rubber wood and fiber particleboard which are new materials and their life cycle has been confirmed. Rubber wood can replace the choice of other hard wood, is the product of the rubber tree (Hevea brasiliensis), which is grown as a source for natural rubber. When the trunks of rubber trees are cut, they exude a milky liquid – latex – that is collected and processed to make rubber. After the trees reach about 30 year of age, latex production declines. At that point the trees are harvested and the plantations are replanted. (Figure 7.7)The fiber particleboard (Figure 7.8) could be an alternative for the pieces of interior furnishings as the wall units and the multipurpose furniture.

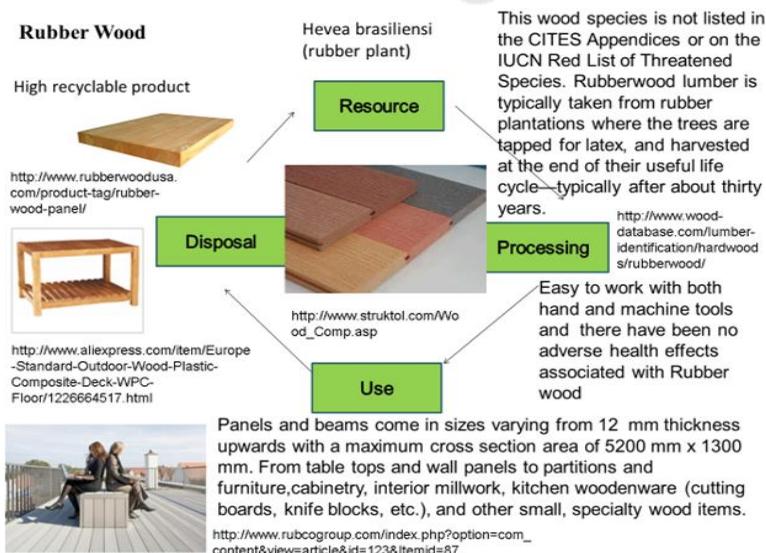


Figure 7.7: Life Cycle Analysis of (Recycled) Rubber Wood

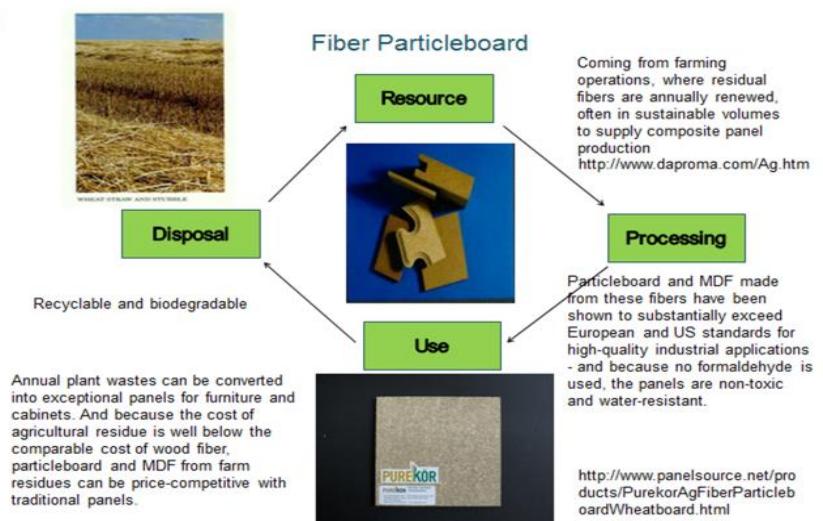


Figure 7.8: Life cycle analysis for Fiber Particleboard

PART 1: Existing Plan

This case study entails designing the interior space of a three-bedroom apartment, where one of three bedrooms is intended to be an office. The task was to propose a sustainable approach that promotes innovation during space design for the shared space of the apartment, where the kitchen, the dining and the living room should coexist in the same area and the designer should find a way to do that in order to satisfy the needs of the client. The client agrees for the use of multipurpose furniture and the use of new materials.

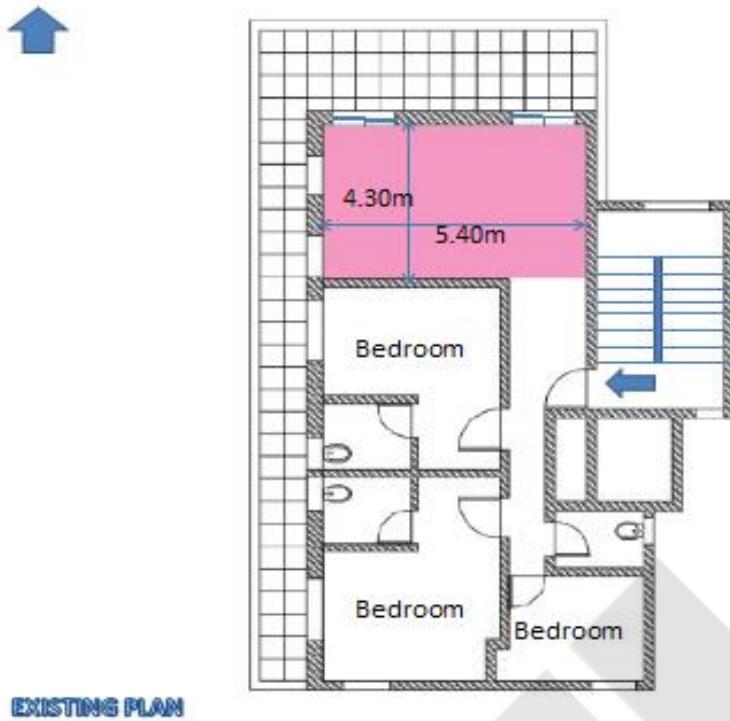


Figure 8.1: Existing Plan

PART 2: Proposed Plan

The use of two multipurpose pieces of furniture have been proposed to serve all the needs of the client. The first is a kitchen unit and the second is an adaptable sitting unit. The kitchen units that can serve keeping, preparation and cooking of meals and at the same time can accommodate when unfolded: sitting for breakfast, lunch or dinner (Figure 8.2). When not in use, the kitchen unit can fold to one part and offer more space for other activities (Figure 8.3).

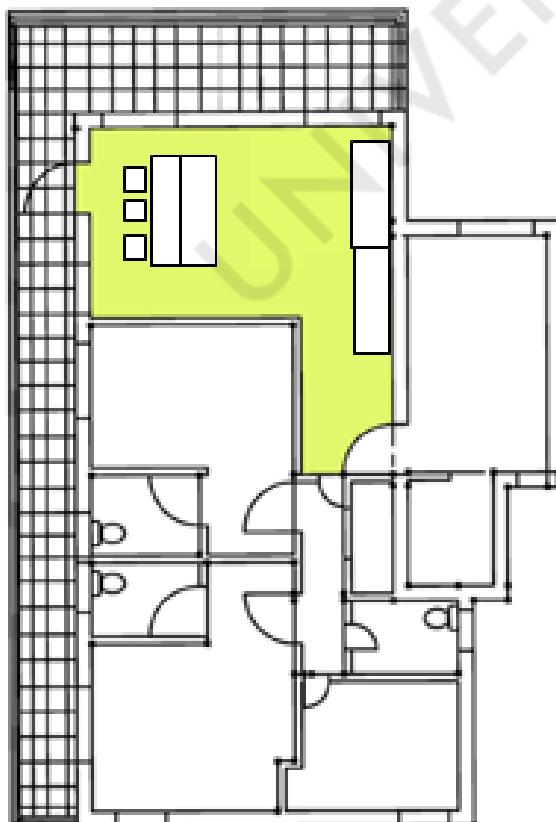
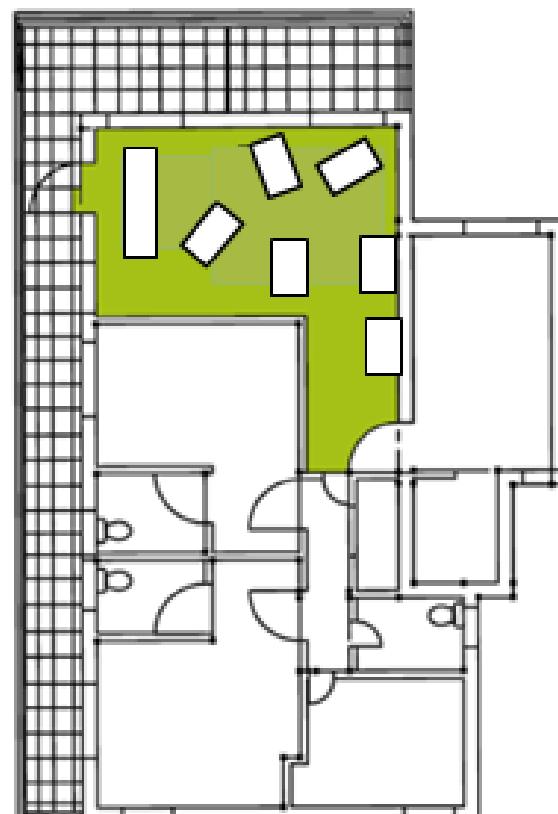


Figure 8.2: Proposal 8.1 A



Plan 8.2: Proposal 8.1 A

PART 3: Space Design Approach

The Modular Kitchen Concept by Fevzi Karaman that is suggested is a very compact kitchen unit. It can be put away easily. It is ideal for a small apartment. This type of modular kitchen includes stove, sink, recycling bin, dish storage, serving table, bottle rack, fridge and dishwasher. Everything is contained within a single unit (Figure 8.4). The other device that is suggested is for use in the sitting area. It is a multipurpose piece of furniture for sitting, relaxing and playing. The Melted CUBE is an original seating unit designed by Björn Verch (Figure 8.4).



Figure 8.4 Kitchen Unit. Closed
<http://www.treehugger.com/sustainable-product-design/less-is-more-modular-kitchen-concept-by-fevzi-karaman.html>

Figure 8.5 Kitchen Unit Open
[.http://www.treehugger.com/sustainable-product-design/less-is-more-modular-kitchen-concept-by-fevzi-karaman.html](http://www.treehugger.com/sustainable-product-design/less-is-more-modular-kitchen-concept-by-fevzi-karaman.html)



Figure 8.6: Sitting Area Unit Closed
<http://freshome.com/2011/11/15/versatile-and-playful-seating-unit-cube-by-melted-architecture-video/#ixzz3cyG6BW9S>

Figure 8.7: Sitting Area Unit Open
<http://freshome.com/2011/11/15/versatile-and-playful-seating-unit-cube-by-melted-architecture-video/#ixzz3cyG6BW9S>

PART 4: Materials Approach

The materials chosen were the Medium Density Fiber Board (MDF), to be used in case any custom made pieces of furniture were required the ceramic tiles for the floor and choice of low VOC paint for the wall finish.

Medium-density fiberboard (MDF)

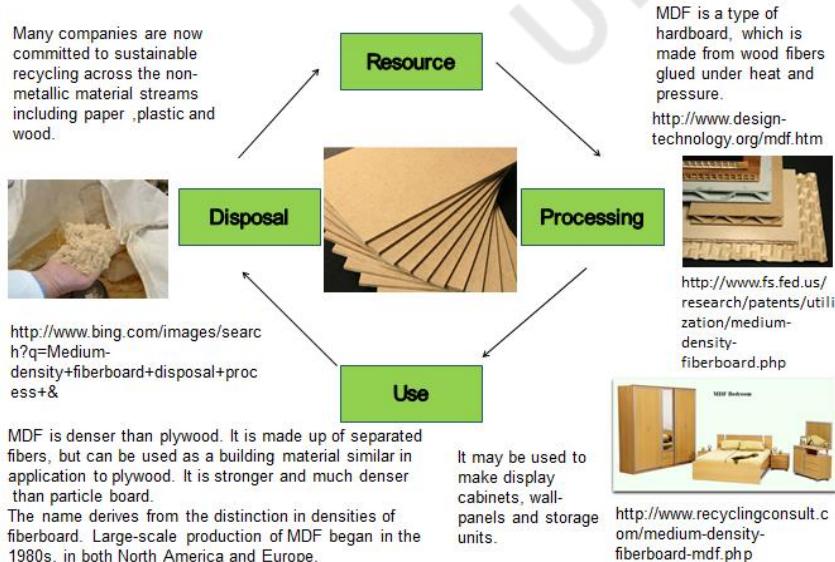


Figure 8.8: Life Cycle Analysis of New Medium-density Fiber board s

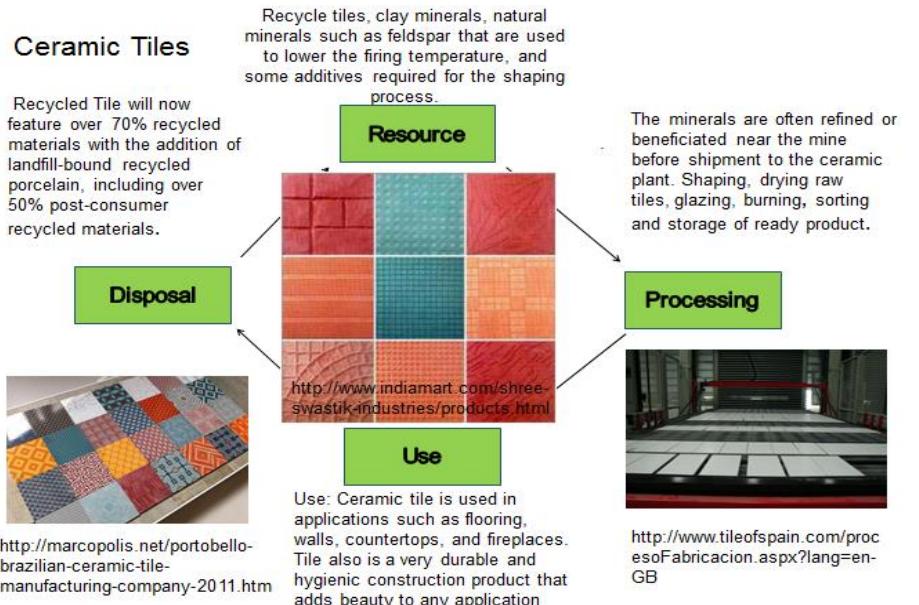


Figure 8.9: Life Cycle Analysis of New: Ceramic Tiles suggested for Floor