

OIKONET A global multidisciplinary network on housing research and learning



Deliverable 4.3

International Workshops (Lisbon)

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Deliverable Administration and Summary					
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Work Programme Description	Three international workshops will take place: Lisbon (2013-14), Cottbus (2014-15) and Belgrade (2015-16). The workshops will address specific housing problems at community level. The themes of the workshops will be informed by the outcomes of the subnetworks’ Housing Studies and Community Participation. The workshops will be integrated into the coordinated learning activities carried out at the seminars and courses at the participating institutions. Preparatory activities will be carried out as part of the joint learning activities developed in OIKODOMOS Workspaces. Both the process and the outcomes of the workshop will be documented in the network.				
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1 EXECUTIVE SUMMARY

Three international workshops were planned within the OIKONET project to take place in Lisbon (2014), Cottbus (2015) and Belgrade (2016). The first of these workshops was carried out during the first year of the project activities in Lisbon, from July 14 to 19, 2014, organized by the University Institute of Lisbon (ISCTE-IUL). This report focuses on the work done around the first workshop in Lisbon. The work conducted in the next two workshops will be documented in subsequent separate reports.

The topic of the Lisbon workshop was “Contemporary living patterns in mass housing in Europe”. The objective was to develop a cross-disciplinary dialogue aimed at identifying the meanings and forms of contemporary living patterns in mass housing in Europe, by opposing “formal” and “informal” housing. These two patterns were exemplified by two neighbourhoods in the city of Lisbon: one which is representative of formal mass housing – “Portela de Sacavém” – and another – “Bairro da Liberdade” – which is the result of self-build housing.

48 students and 24 tutors from 15 European Schools of Architecture and Urban Planning, all partners in the OIKONET project, participated in the workshop. Preparatory activities were carried out by the participating students during the three months prior to meeting in Lisbon, on the [OIKODOMOS Workspaces¹](http://www.oikodomos.org/workspaces/) learning environment. The preparatory work done at each school was presented in a public session on the first day of the workshop.

The workshop activities included lectures by representatives of the municipality and professors from ISCTE-IUL specialized in the different subjects encompassed in the topic (participation, sustainability and digital fabrication), guided visits to the two neighbourhoods and design studio work. Students were faced with the challenge of developing an evolving housing design based on customized prefabricated wood panels that could be used in each of the neighbourhoods:

1. to adapt existing dwellings to contemporary living patterns and
2. to produce new incremental homes as a response to today’s needs.

By the end of the six-day workshop, each group of students was expected to have built a 1:1 scale module using the digital fabrication tools facilitated by the Vitruvius FABLAB-IUL.

The development of the proposed project required students to adopt design strategies that embraced the multiple dimensions involved: co-creation methods (community participation, participatory design theory and techniques, generative design research); contemporary living patterns (social housing; housing and quality of life; new ways of living; new family structures; changing of demographic trends and new housing needs; energy efficiency and construction materials); and digital fabrication using CAD / CAM technologies (parametric design, modular systems).

The multidisciplinary approach to housing design proposed in the Lisbon workshop required a learning model that enabled students to achieve the necessary skills to bring together the different approaches (methods and objectives) fostered by each discipline. Typically, this integration is achieved through a project-based approach, confronting students with a problem case at a specific location.

¹ <http://www.oikodomos.org/workspaces/index.php/workshops/preview/23>

Students worked in teams, each one composed of students from different schools to foster the exchange across countries, cultures and educational programs. Overall, there were 8 teams of 6-7 students, 4 working in Portela and 4 in Liberdade.

The workshop ended with a final presentation of the work produced by each group of students, including the completed 1:1 scale module. The work was presented from the images previously uploaded in the project blog. Tutors acted as critics in this final presentation. Students also summarised their work in an A1 size poster which was hung in the final exhibition at ISCTE-IUL, together with the built prototypes. In the days after the workshop tutors commented on the submitted projects in the workshop blog.

The work carried out in this workshop has been disseminated through publications in conference papers, journal articles, book chapters and exhibitions at some of the partner institutions. A special radio reportage was produced during the workshop by the UK-based magazine Monocle. The poster of the students' projects has been exhibited later in other exhibitions in Lisbon, Barcelona and Dublin.

An evaluation report summarizing the feedback obtained from students and tutors is presented in the Appendix. The outcomes of this evaluation were taken into account in the planning of the next workshop in Cottbus.

2 INTRODUCTION

2.1 Purpose and target group

This report summarizes the work done during the first international OIKONET workshop held in Lisbon in July 2014. It encompasses the preparatory activities done prior to the workshop in the [OIKODOMOS Workspaces](#) environment, the programme of activities and results produced in the workshop and the evaluation of the students' work by tutors. Altogether, this report provides a comprehensive view of the pedagogic work undertaken around this workshop which includes the design of learning activities and their implementation. The main target groups are the tutors who participated in the workshop as well as other faculty members from their organizations involved in pedagogic innovation and contemporary housing. The report is also useful to faculty members at other institutions (mostly in architecture and urban planning); to know about the work done in OIKONET, the aim of which is to create a cross-disciplinary, trans-institutional pedagogical space around the topic of contemporary dwelling.

2.2 Contribution of partners

ISCTE-IUL Lisbon was in charge of the organization of the workshop. 15 partners have participated in the workshop activities with tutors and students. The coordination of the preparatory activities prior to the workshop was undertaken by UGA. The evaluation of the workshop activities has been conducted by USI. LA SALLE has edited this report.

2.3 Relations to other activities in the project

The work carried out in the Lisbon workshop is very much related to the learning spaces being developed in the WP4 Pedagogical Activities. The learning space that was created to carry out these preparatory activities, under the title “Contemporary living patterns”, is documented in Deliverable 4.1 “Learning spaces”.

3 PROGRAM

The first OIKONET International Workshop on the theme “Contemporary living patterns in mass housing in Europe” ran from 14th to 19th July 2014 in Lisbon at the ISCTE-IUL with the collaboration of two associated research centres – ISTAR-IUL and DINÂMIA’CET-IUL – and of the digital fabrication laboratory Vitruvius FABLAB-IUL. The local development city councillor of Lisbon Municipality contributed to the organization of the program.

The objective of the six-day workshop was to develop a cross-disciplinary dialogue aimed at identifying the meanings and forms of contemporary living patterns in mass housing in Europe, by contrasting “formal” and “informal” housing. Two neighbourhoods in the city of Lisbon were selected as case studies: one which is representative of the formal mass housing – “Portela de Sacavém” – and a second one – “Bairro da Liberdade” – which is a typical neighbourhood of informal self-build mass housing.

The overall housing design process was addressed during the activities, starting from participation processes and ending with digital fabrication. The teaching methodology was based on a combination of multidisciplinary lectures, field studies and design studio work including construction of a full scale prototype. Pedagogical activities brought together different stakeholders, learning environments and disciplines. This workshop allowed participants to explore a new pedagogical framework specifically around new design strategies to approach social inclusion, digital technology, implement digital thinking, and foster collaborative interdisciplinary environments and digital processes. Prior to the meeting in Lisbon, preparatory activities were carried out by the participating students on the [OIKODOMOS Workspaces](#) learning environment. The preparatory work done at each school was presented in a public session on the first day of the workshop.

During the workshop, students were faced with the challenge of developing an evolving housing design based on customized prefabricated wood panels that could be used:

1. to adapt existing dwellings to contemporary living patterns and
2. to produce new incremental homes as a response to today’s needs.

By the end of the six-day workshop, each group of students was expected to have constructed a 1:1 scale module using the digital fabrication tools facilitated by the Vitruvius FABLAB-IUL.

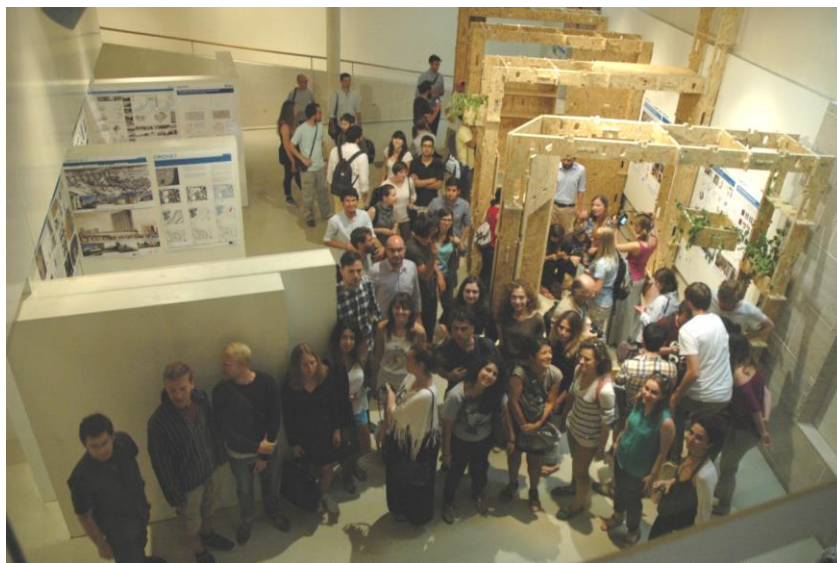


Figure 1. Lisbon Workshop participants

The development of the proposed project required from students the adoption of design strategies that embraced the multiple dimensions involved:

- Co-creation methods (community participation, participatory design theory and techniques and generative design research);
- Contemporary living patterns (social housing, housing and quality of life, new ways of living, new family structures, changing of demographic trends and new housing needs and energy efficiency and construction materials);
- Digital fabrication using CAD / CAM technologies (parametric design and modular systems).

3.1 Participants

48 students and 24 tutors from the 15 European Schools of Architecture and Urban Planning within the OIKONET network participated in the workshop. The participating partners were:

- P1 LA SALLE- School of Architecture La Salle, Barcelona, Spain (3 students, 2 tutors)
- P2 ETSA-UPV- School of Architecture, Polytechnic University of Valencia, Spain (3 students, 2 tutors)
- P3 FASTU- Faculty of Architecture, Slovak Technical University, Bratislava, Slovakia (3 students, 2 tutors)
- P4 KUL- Faculty of Architecture, KU Leuven, Gent/Brussels, Belgium (3 students, 1 tutor)
- P5 BTU- Faculty of Architecture, Brandenburg Technical University, Cottbus, Germany (3 students, 1 tutor)
- P9 UTH- Department of Architecture - University of Thessaly, Volos, Greece (3 students, 1 tutor)
- P13 AAU- Department of Architecture, Design and Media Technology, University of Aalborg, Denmark (3 students, 1 tutor)
- P15 UCY- Faculty of Architecture, University of Cyprus, Cyprus (2 students, 2 tutors)
- P18 UGA- Institut d'Urbanisme de Grenoble, Université Grenoble Alpes, France (3 students, 2 tutors)
- P20 GTU- Faculty of Architecture, Gebze Technical University, Turkey (5 students, 2 tutors)
- P25 ISCTE-IUL- Department of Architecture and Urbanism, University Institute of Lisbon, Portugal (7 students, 5 tutors)
- P26 AF BELGRADE- Faculty of Architecture, University of Belgrade, Serbia (2 students, 2 tutors)
- P27 BUT- Faculty of Architecture - Bialystok University of Technology, Poland (3 students, 1 tutor)
- P29 DIT- School of Architecture, Dublin Institute of Technology, Ireland (3 students, 1 tutor)
- P30 ITU- Faculty of Architecture, İstanbul Technical University, Turkey (2 students, 1 tutor).

Besides the schools of architecture and urban planning, the Università della Svizzera italiana (P6 USI) has participated by carrying out the evaluation of the workshop activities (see Appendix).



Figure 2. Lisbon workshop poster

3.2 Workshop theme: “Contemporary living patterns in mass housing in Europe”

The topic of the workshop was “Contemporary living patterns in mass housing in Europe“. Mass housing in Europe has been studied for a long period because it has been seen as a way to democratize access to dwellings for a large number of people. In its origins, mass housing represented an innovative solution to the housing needs of the growing population. In recent decades, however, mass housing programs fell into disrepute and began to decline as it became associated with uniformity, repetition, anonymity and uprooting. On the other hand, “informal” mass housing – self-build housing – brings about more diversity and a greater sense of appropriation and identification of the dwellers with their living place.

Self-build housing is driven by a “human” logic that can be revealed. With this purpose, contemporary housing discourses and practices have focused on studying its underlying rules. Incremental or evolving housing emerges as an alternative to self-contained towers and blocks. To reveal the logic of informal mass housing it is necessary not only to identify the needs but also the capacities of the inhabitants to intervene in the design and building processes of their future dwellings. This implies that dwellers should be involved right from the beginning of the design process. Since the 1960s there has been a considerable movement towards the direct involvement of the inhabitants in the process of shaping their physical environment. Today,

housing design needs to include users' experiences and be open to socio-cultural influences.



Figure 3. *Portela de Sacavém, Lisbon*



Figure 4. *Bairro da Liberdade, Lisbon*

The work carried out in the workshop focused on two neighbourhoods in Lisbon: one which is representative of the formal mass housing - “Portela de Sacavém” and another one - “Bairro da Liberdade” which is typical of informal mass housing (Figure 3, Figure 4). The “Portela de Sacavém” (1965-1978) mass housing plan from Fernando Silva (1914-1983) became a model of how to intervene in the urban periphery. The “Bairro da Liberdade” (1969-80) is an informal settlement where dwellings were built for the proletariat and where landowners sought to minimize construction costs and optimize land value. These two places offer the opportunity to rethink contemporary living patterns in mass housing design. Today, we must look at these forms of housing – formal and informal – in order to understand the way people live.

Participatory design plays a key role in today's democratic societies. Between 1974 and 1976 a Portuguese governmental decree created the SAAL (*Serviço Ambulatório de Apoio Local* / Local Mobile Support Service). It was an attempt to foster the direct involvement of the population in the housing design process as well as to seek an alternative to the neighbourhoods which resulted from the indiscriminate aggregations of blocks. The participation of social scientists in these processes can help us to understand people's aspirations. Moreover, the advances in digital design methods and production technologies are contributing to the emergence of new housing paradigms. We are witnessing a renewed interest in prefabrication generally within construction that is based on customization. This also applies to the production of housing. Digital innovation is also redefining the relation between design and production. The use of CAD/CAM technologies can help address the current concerns with social need and sustainability in our industrialized world.

3.3 Preparatory learning activities

The workshop was part of a comprehensive learning programme which included preparatory activities carried out within the learning workspace “Contemporary living patterns” (Figure 5)

during the three months previous to the workshop. Following the pedagogic model developed in the previous OIKODOMOS program, a [learning space](#) was created to carry out activities to make students familiar with the project sites, to start reflecting on the themes of the workshop and to start to collaborate online before coming together in the workshop.

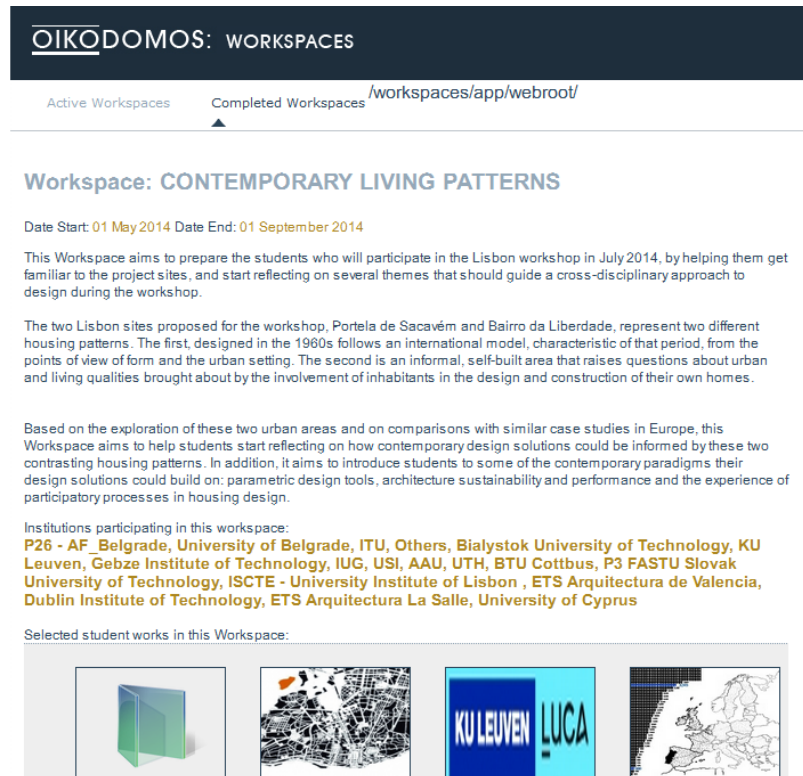


Figure 5. Contemporary living patterns learning space

The design of the learning activities to be carried out in the learning space took into account the various disciplinary approaches considered in the program of the workshop. The structure of the learning activities was as follows:

- Urban and architectural analysis of the project sites
- Thematic reflections:
 - Parametric design
 - Home and social change
 - Sustainable housing
 - Participatory processes in housing design

The learning activities (LAs) and tasks (TKs) are described in detail next.

- LA61: URBAN AND ARCHITECTURAL ANALYSIS OF THE PROJECT SITES. The goal was to understand the historical and morphological characteristics of the two urban sites in Lisbon. The materials provided for this purpose were recorded video lectures about the two sites, maps, plans and photographs.

- TK1: Historic context analysis: Portela de Sacavém (coordinator: Ana Vaz Milheiro, Dinamia CET, ISCTE-IUL). This online lecture presented one of the project sites, Portela

de Sacavém, a housing district built from 1965 to 1979, ordered by a private promoter, Manuel da Mota and designed by Fernando Silva (1914-1983). Following an urban model used in new settlement areas in the outskirts of Lisbon, the plan occupied an area of about 50 acres, including 4503 dwellings distributed by 196 plots, between towers and slab blocks.

The district was partly occupied by a wave of inhabitants arriving from the former colonies in the 1970s. It is thus an extremely rich blend of cultures, ethnicities and religions, with a strong presence of an Indian population (Mozambique Muslims) that is responsible for significant changes in the spatial organization.

Report based on the lecture and a similar case study. Students produced a short report in which they had to compare the Portela de Sacavém example to other similar housing programs that students identified in the cities where they live: densely populated housing designed for the middle class, built by private promoters in the same period as Portela de Sacavém. Those housing programs included public or private facilities and the students were also asked to analyse the articulation between the plan and its surroundings. The report could be illustrated by a series of photographs or a short film.

- TK2: Urban context analysis, (coordinator: Adriana Diaconu, UGA) Using a series of maps of Lisbon and of the two sites from several periods, as well as online maps and *street view*, the students had to reflect on the development of the two districts in time, in relation to the structure of the city of Lisbon. They also had to analyse the present morphology of the two sites (urban and architectural form) and identify some characteristics of urban living in the two neighbourhoods. They had to produce a report consisting of a series of sketches, synthetic maps, photographs and hypothesis/explanations.

A collaborative activity was finally proposed: students had to respond to the submitted paper of another team, either by supporting or by contradicting the hypothesis formulated by the other team. Each group of students had to submit an A4 sheet containing arguments and proof supporting their position.

- TK13: Figure Ground Mapping. For this task students had to study the existing materials of TK1 and TK2 in this Learning Activity and perform three tasks:

- 1- Formulate a constructive comment on the works done. This was done using the 'Comment' tool in the workspace.
- 2- From this, identify in the uploaded analysis, any missing pieces of information which might have been useful to understand the analysed built environment.
- 3- Produce three figure/ground maps to compare the two sites chosen for the workshop with the centre of city of Lisbon.

- LA62: THEMATIC REFLECTIONS: PARAMETRIC DESIGN. The intention of this activity was to introduce students to some basic principles of parametric modelling which were to be then applied in the workshop. The task consisted in creating variations of a facade design.

- TK3: Form principle analysis and schema creation, (coordinator: Nicolai Steinø, AAU). Based on the lecture, reading and assignment, students had to define from principles, site designs, building envelopes or facade schemes, based on analyses and design work. Based on an examination of the submitted works of others, one other design

had to be combined with the student's own design.

- **LA63: THEMATIC REFLECTIONS: HOME AND SOCIAL CHANGE.** This learning activity focused on social characteristics and specificities of living in mass housing areas in Lisbon, and particularly in the two districts chosen for the Lisbon workshop.

- **TK4: Socio-demographical analysis of the two project sites in Lisbon** (coordinator: Paulette Duarte, UGA). The objective of this activity was to explore the social, demographic and economic changes in the Portuguese society. In order to understand the characteristics of the inhabitants of the two Lisbon districts proposed for the workshop, Portela de Sacavém and Bairro da Liberdade, students had to realize a demographic profile of the population using statistical data.

- **TK7: Lecture “Home and Social Change”**, Sandra Marques Pereira (Dinamia'CET, ISCTE-IUL). The main purpose of the lecture was an introductory discussion to the conceptual framework of the mass housing issue. The lecture begins with a 7 minutes film based on the New York Times Archives called “A Short History of the High-rise”. This was the starting point to explore the central aspects that characterize this housing model and in particular the evolution of its social perceptions from the 50's until today. To conclude, the lecture explores the international diversity of this housing model in order to understand how this modern model was differently implemented, inhabited and perceived in several countries.

- **TK8: Summary of the lecture** (coordinator: Sandra Marques Pereira, ISCTE-IUL). Students had to write a summary of the lecture “Home and Social Change”. Collaborative activity: Read the summary of the UCY team and the reports realized in TK1. Then formulate a response or a hypothesis (in the form of a short text) answering the reflections proposed by the UCY team.

- **LA64: THEMATIC REFLECTIONS: SUSTAINABLE HOUSING.** The aim was to introduce students to the topic of sustainable housing based on energy efficiency. The students were asked to write a short report on a chapter of a book on the subject and to make comments on a video lecture introducing the subject.

- **TK9: Lecture “Sustainable housing design and performance”**, Vasco Moreira Rato, ISCTE-IUL. This lecture aimed to introduce students to the basic concepts of sustainability, life cycle and architecture. It followed a progressively detailed approach to the subjects within a holistic context. After attending the lecture and completing the assigned work, students could deepen their competences during the Lisbon workshop by learning how to calculate the embodied energy and the carbon footprint of construction elements. After an introduction to sustainability and life-cycle assessment (why and what?), this introductory online lecture focused on topics like: housing architecture and sustainability, impact of materials, embodied energy and carbon.

- **TK10: Reading report** (coordinator: Vasco Moreira Rato, ISCTE-IUL). Students were asked to read the chapters "Introduction" and "Conclusion" of reference Mulder, K., Didac, F., van Lente, H. (2011). What is Sustainable Technology? Perceptions, Paradoxes and Possibilities, Greenleaf Publishing Limited (available at: <http://www.greenleaf-publishing.com/productdetail.kmod?productid=3348>). Although this book mainly targets industrial designers and engineering designers, the considerations and propositions

presented by the authors are extremely useful for every area of expertise and thus also for architecture. Students had to write a short paper (max. 1000 words) relating the issues addressed in these chapters to architectural design.

LA 65: THEMATIC REFLECTIONS: PARTICIPATORY PROCESSES IN HOUSING DESIGN. A video lecture presented cases of participatory design carried out in Portugal in the 1970s. Students had to find a similar example of participation and describe it in a short text.

- **TK11: Documentary “OPERATIONS SAAL”**, João Dias, 2007. Participatory design plays a key role in today’s democratic societies. Between 1974 and 1976 a Portuguese governmental decree created the SAAL (Local Mobile Support Service). It was an attempt to foster the direct involvement of the population in the housing design process, as well as to seek an alternative to the neighbourhoods that resulted from the indiscriminate aggregations of blocks. This operation was launched especially in the very poor neighbourhoods of the urban areas of Lisbon, Porto, Setubal and the Algarve by the State and involved architects, engineers, lawyers and students.

The video introduced students to the SAAL process. Thirty years later, the filmed memories of the actors of these processes help to understand the social and cultural impact of Operations SAAL, while an extensive collection of documents allows a reflection on the paths that architecture and urbanism took since then. Over several decades, there has been a considerable movement towards the direct involvement of the future inhabitants in the definition of their physical environment. This approach is based on the democratic concept of involving people in the decision-making process by allowing them to take design decisions.

TK12: Report based on the video and a similar case study (coordinator: Alexandra Paio, ISCTE-IUL. Students had to write a short manuscript (max. 1000 words). The results of the work done during preparatory activities on the workspace was integrated in the Lisbon workshop.

At the beginning of the workshop the work done by the students from each institution was set out in an exhibition and presented to the audience (Figure 6, Figure 7).



Figure 6. Lisbon exhibition



Figure 7. Presentation of the outcomes of the preparatory activities

3.4 Organization

The teaching methodology was based on a combination of lectures, field studies, excursions and practical work (design studio).

Students were organized in teams, each team composed of students from different schools to foster the exchange across countries, cultures and educational programs. Each team studied a specific site.

TEAMS

Group A Site: Portela de Sacavém	Clàudia Carreras (LA SALLE) Nele Santy (KUL) Frederik Peter Kæmsgaard (AAU) Yasemin Kilic (GTU) Sofia Simões (ISCTE-IUL) Ilze Antonova (DIT)
Vitruvius FABLAB - IUL Rúben Ferreira	
Group B Site: Portela de Sacavém	Izabela Grotowicz (LA SALLE) Leonie Hagen (BTU) Andronikos Kalli (UCY) Dede Guclu (GTU) Mónica Cardoso (ISCTE-IUL) Jan Wyszowski (BUT)
Vitruvius FABLAB - IUL Rúben Viegas	
Group C Site: Portela de Sacavém	Carlos Ochando Seva (ETSA-UPV) Lukas Kolb (BTU) Bruno Trabut (UGA) Afonso Patinhas (ISCTE-IUL) Evi Stavraki (UTH) Miloš Jelisavčić (AF_BELGRADE)
Vitruvius FABLAB - IUL Maria João Oliveira	
Group D Site: Portela de Sacavém	Pavol Dobšínský (FASTU) Inger Kirstin Rahbek (AAU) Rémi Avril (UGA) Francisco Alves (ISCTE-IUL) Chrysa Pierrakou (UTH) Shilan Ghouforuli (ITU) Héctor Ruiz (ETSA-UPV)
Vitruvius FABLAB - IUL João Ventura	
Group A Site: Liberdade	Marina Clusella (LA SALLE) Caroline Melders (KUL) Georgia Papasozomenou (UCY) Orhan Kemik (GTU) Aleksandar Cosic (AF BELGRADE) Marek Sipko (BUT)
Vitruvius FABLAB - IUL	

João Pedro Sousa

Group B Site: Liberdade	Jose Luis Leon Lora (ETSA-UPV) Emmily Delbare (KUL) Léa Garcia (UGA)
Vitruvius FABLAB - IUL Raquel Martins	Vasco Reis (ISCTE-IUL) Christopher O Keeffe (DIT)

Group C Site: Liberdade	Karol Görner (FASTU) Anton Kunau (BTU) Serdar Aktan (GTU) Diana Gabão (ISCTE-IUL) Alina Dimitroulopoulou (UTH)
Vitruvius FABLAB - IUL Ana Lopes	Andrew Cleary (DIT)

Group D Site: Liberdade	Eva Andrášová (FASTU) Troels Broch (AAU) Gorkem Varlik (GTU) Catarina Álvares (ISCTE-IUL)
Vitruvius FABLAB - IUL Bárbara Varela	Malgorzata Budlewska (BUT) Tugba Cavusoglu (ITU)

The teaching methodology was based on a combination of lectures, field studies, and practical work (design studio) including construction of a full scale prototype of part of the evolving housing design based on prefabricated wood panels.

3.4.1 Learning outcomes

At the end of the workshop students were expected to:

- Explain the interlinking between sustainability, technology and society underlying contemporary living patterns
- Identify concepts and examples concerning these topics: participatory design methods (community participation, participatory design theory and techniques, generative design research); contemporary living patterns (social housing, housing and quality of life, domestic scenario, new ways of life and new family structures); changes of demographic trends and new housing needs; energy efficiency and construction materials and digital tools CAD / CAM (parametric design, modular systems, and digital fabrication)
- Apply methods and design strategies to build a prototype of economically and socially sustainable housing and
- Incorporate contributions from citizens in the customization of digitally fabricated houses.

3.4.2 Materials

At the beginning of the workshop each participant received a pack with all the information about the workshop: (1) Group list; (2) Liberdade Guide (How to arrive by public transportation) (Figure 8); (3) Portela Guide (How to arrive by public transportation); (4) Structure wood panels Guide; (5) Time table and Venue; (6) Welcome and Program; (7) Workshop learning activities.

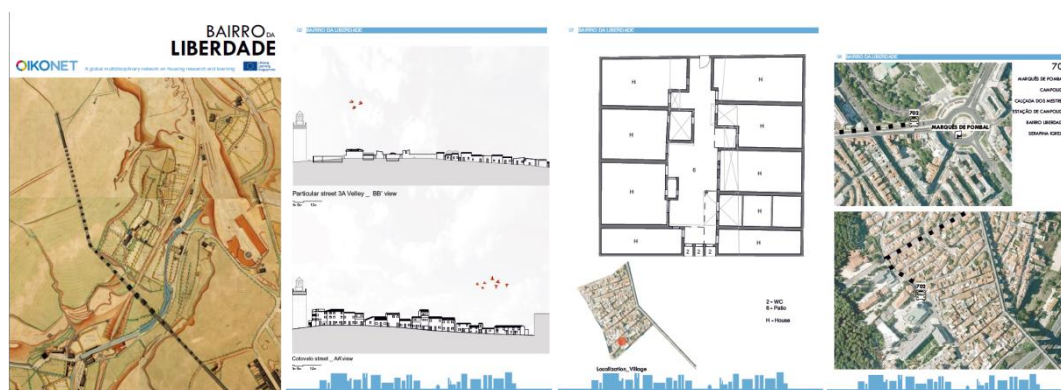


Figure 8. Liberdade Guide (How to arrive by public transportation)

3.5 Activities program

The workshop started on July 14th with three keynote speakers (30 min presentation + 15 min final round table discussion) followed by the workshop presentation and presentation of the work produced in the preparatory activities (pre-workshop) by each group of students (10min presentation).

3.5.1 MONDAY, 14 July 2014



9:15- 9:45 B203 auditorium	Paula Marques, Housing / Local Development city councillor of Lisbon City Hall <i>Together, we make Lisbon/ Juntos, fazemos Lisboa</i>
9:45 – 10:15 B203 auditorium	Pedro Campos Costa, Homeland commissioner, Venice Biennale 2014 <i>Homeland- portuguese representation at 14 Venice bienal of Architecture</i>
10:15 – 10:45	Miguel Brito, BIPZIP (<i>Bairros e Zonas de Intervenção Prioritária</i>)

B203	Neighbourhoods and areas of priority intervention)
auditorium	<i>Practice in citizen participation</i>
11:00 - 13:00	Alexandra Paio, ISTAR-IUL/ISCTE-IUL
B203	<i>Introduction to Lisbon workshop</i>
Auditorium	Adriana Diaconu, UGA
	<i>Short Poster Pre-workshop Students presentations (10 min each group).</i>
Exhibition room	<i>Pre workshop Exhibition (A0 Posters)</i>

Lectures included the following topics: participatory design, home and living conditions, digital fabrication and energy efficiency. The lectures covered general concepts addressed by the pre-workshop online lectures. The four introductory lectures to the themes supported by study cases and other examples (45 min presentation + 15 min for questions). This allowed the students to acquire basic knowledge about various subjects that was used and incorporated in the final group solution developed in the design studio.

Lecture 1: Participative Processes (Dinâmia'CET –IUL/ ISCTE-IUL) Sérgio Oliveira (Aga Khan Foundation). The lecture focused on the key role that participatory design plays in today's democratic societies. The lecture focused on contemporary participatory design processes to approach complex problems and identifies future opportunities. This approach is based on the democratic concept of involving people in the decision-making process by allowing them to take design decisions.

The topics addressed in this lecture were the following:

1. Hackable Cities: A toolkit for re-imagining your neighbourhood. Creating a strong identity + Strong Community;
2. Tactical Urbanism: Ciudad Emergente; Catalytic Communities; Detroit collective, a joint venture between community leader, architects, designers and a university
3. Planning as if people matter: American communities are changing fast: ethnic minority populations are growing, home ownership is falling, the number of people per household is going up and salaries are going down. According to Marc Brenman and Thomas W. Sanchez, planners are largely unprepared for these fundamental shifts. If planners are going to adequately serve residents of diverse ages, races, and income levels, they need to address basic issues of equity. Planning as if People Matter offers practical solutions to make our communities more liveable and more equitable for all residents.

Learning objectives:

Acquire basic knowledge about participatory design.

Incorporate contribution from local citizens in design strategies and practice

Bibliography:

Sanoff, H (1990). Participatory Design. Theory & Techniques. North Carolina: Henry Sanoff

Links:

<http://issuu.com/pgildner/docs/hackable-cities-pages>

http://issuu.com/streetplanscollaborative/docs/tactical_urbanism_vol_2_final/13

<http://www.ciudademergente.org/>

<http://catcomm.org/toolbox/>

<http://comitepopulario.files.wordpress.com/2012/08/planopopularvilaaudromo.pdf>

<http://www.dcdc-udm.org/>

Lecture 2: Home and Social Change (Sandra Marques Pereira, Dinâmia'CET –IUL/ ISCTE-IUL). This was an overview of the historical/societal turning-points in recent Portuguese history (dictatorship; revolution; adhesion to UE; economic crisis etc.), a characterization of the Lisbon Metropolitan Area (the context of Portela's estate) and its evolution (demographic, morphological and sociological) and a brief resume of the evolution of housing in Lisbon Metropolitan Area and its sociological implications.

The topics addressed in this lecture were the following:

1. Introduction to the historical/societal turning-points in recent Portuguese history: dictatorship, revolution, adhesion to UE, economic crisis;
2. Characterization of the Lisbon Metropolitan Area (the context of Portela's Estate) and its evolution: demographic, morphological, sociological;
3. Evolution of housing in Lisbon Metropolitan Area and its sociological implications;
 - 3.1 Starting point: polarization between the bourgeois home and the popular home (slums, overcrowding, shared houses, illegal housing);
 - 3.2 Modern Housing: architectural design and social intentions;
 - 3.3 Evolution of private housing sector after the revolution (dwelling program);
4. The mainstream: modern matrix + progressive investment in domestic private space;
5. The exception: towards the claim for difference through the investment in the permeability of domestic areas.

Learning objectives:

1. Acquire basic knowledge about Home and Social Change in Lisbon Metropolitan Area

Bibliography:

Pereira, SM (2013). *Casa e Mudança Social. Uma leitura da transformações da sociedade portuguesa a partir da casa*. Lisboa: Caleidoscópio.

Lecture 3: Energy and construction Materials – Embodied Energy & Carbon (Vasco Moreira Rato, Dinâmia'CET –IUL/ ISCTE-IUL). This lecture was an introduction to life cycle principles which were presented together with a brief overview of methodologies for life cycle assessment (Figure 9). Embodied energy and carbon emission reduction were explained as environmental impact indicators.

The topics addressed in this lecture were the following:

1. Introduction to sustainability, life cycle and architecture;

2. Calculate embodied energy and carbon of a construction element.

Learning objectives:

Acquire basic knowledge about sustainability, life cycle and architecture;

Bibliography:

Hegger, M Et al (2008). Energy Manual. Sustainable Architecture. Edition Detail, Birkhäuser.



Figure 9. Energy and construction Materials – Embodied Energy & Carbon Lecture

Lecture 4: Computational design (CAD/CAM tools) (Alexandra Paio, ISTAR-IUL/ISCTE-IUL and Sancho Oliveira, IT-IUL /ISCTE-IUL). The lecture provided an overview of the new challenges of the twenty-first century digital revolution by means of an introduction to digital manufacturing processes and available fabrication technologies. The advantages and disadvantages of the CAD/CAM technologies were exposed in order to build a customized solution economically and socially sustainable. The lecture was complemented with a visit to the ISCTE-IUL digital fabrication laboratory – Vitruvius Fablab.

The topics addressed in this lecture were the following:

1. Introduction to digital manufacturing processes and available fabrication technologies;
2. Advantages and disadvantages of the CAD/CAM technologies in order to build a customized solution that would be economically and socially sustainable.

Learning objectives:

Acquire basic knowledge about digital manufacturing processes and the available fabrication technologies;

Bibliography:

Kolarevic, Branko (2003). Architecture in the Digital Age. Design and Manufacturing. Taylor & Francis.

Dunn, Nick (2012). Digital Fabrication in Architecture. Laurance King Publishing Limited

The second day was dedicated to field work. The students had the opportunity to make contact with the citizens and visit the neighbourhoods where the prototypes were planned to be built (Figures 10 and 11).

3.5.2 TUESDAY, 15 July 2014

	4 Groups	4 Groups
	Bairro da Portela de Sacavém, Lisbon Neighbourhood	Bairro da Liberdade, Lisbon Neighborhood
9:00 -13:00	Visit to the site: Sandra Marques Pereira, Dinâmia'CET –IUL/ ISCTE-IUL and Ana Vaz Milheiro, Dinâmia'CET – IUL/ ISCTE-IUL Contextual Inquiry	Visit to the site: António Brito Guterres, Dinâmia'CET –IUL/ ISCTE-IUL and Sérgio Oliveira, Aga Khan foundation Contextual Inquiry



Figure 10. Field work: Bairro da Liberdade

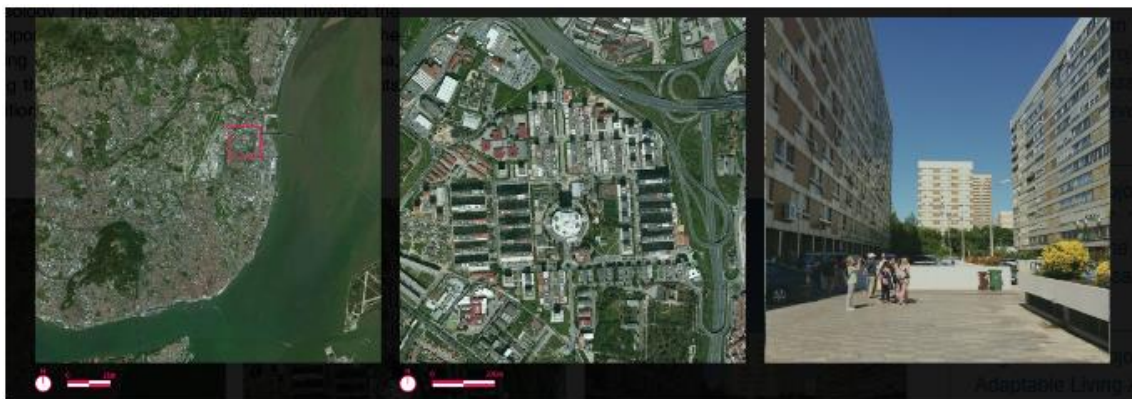


Figure 11. Field work: Bairro da Portela de Sacavém

The four topics addressed in the lectures were then explored in four specific theoretical-practical studios:

- Participative process and generative research in Liberdade;
- Home and Social Change in Portela;
- Energy and construction Materials;
- Computational design (CAD/CAM tools).

The structure and sequence allowed the students to work in groups to solve specific practical assignments to support the activities of the design studio. This allowed a gradual approach to subtopics that were to be addressed in the last part of the workshop. Initially, the students groups carried out specific assignments about the two neighbourhoods. After the field work the students discussed and sketched basic solutions to Bairro da Liberdade and Bairro da Portela. Secondly, the students groups had to think how the issues of energy and construction materials could be considered in the design studio solutions. And finally, students needed to understand how the new digital tools CAD/CAM could be applied in this specific design process. Teachers from the OIKONET organizations participated in the final discussion of the results of each studio.

Studio 1: Participative process and generative research in Liberdade, António Brito Guterres (Dinâmia'CET –IUL/ ISCTE-IUL) and Sérgio Oliveira (Aga Khan Foundation).

The purpose of the studio was for the students to discuss solutions to “Bairro da Liberdade” based on the field work (Figure 12).



Figure 12. Studio 1: Participative process and generative research in Liberdade

Studio 2: Home and Social Change in Portela, Sandra Marques Pereira (Dinâmia'CET – IUL/ ISCTE-IUL)

The purpose of the studio was for the students to develop a proposal to renew an original apartment of Portela while addressing the actual sociological context of the neighbourhood and the general (social and housing) changes of Portuguese society as presented in the lecture.

- Presentation of some sociological characteristics of Portela's population: demographic evolution; type of household; social class; age structure; post-occupancy evaluation; future intentions (leaving or staying) (Figure 13).

PORTELA DE SACAVÉM | social analysis

- Aging population - most of Portela's population returned from Portugal's African Colonies in the 70's, mainly between 1974 and 1979.
- Main reasons it's inhabitants chose Portela to live in: new houses; big houses; location.
- Young people tend to leave Portela.
- Endogamic neighbourhood.



Figure 13. Studio 2: Bairro da Portela de Sacavém Analysis

- Practical exercise:

- Distribution to each group of an original layout of a flat of Portela. Critical analysis of the layout and identification of the strengths and weaknesses of it. Here, students also had to make a comparative reflection with their own national contexts based in their perceptions of the high-rise estates they know.
- Definition of a new functional program of the apartment, a new layout that had to be justified in terms of target-population, purposes and strategies.
- Students' presentation of the practical exercise results. Tutors from OIKONET organizations participated in the discussion of the results (Figure 14).



Figure 14. Studio 2: Home and Social Change in Portela Studio

3.5.3 WEDNESDAY, 16 July 2014

Studio 3: Energy and construction Materials – Embodied Energy & Carbon, Vasco Moreira Rato (Dinâmia’CET –IUL/ ISCTE-IUL)

In this studio the students estimated the environmental impact of the proposed building solutions by performing a detailed calculation of embodied energy and carbon emission with the support of a simple calculation tool developed at ISCTE-IUL. Additionally, an energy-related functional assessment needed to be performed and integrated with the environmental impact.

Studio 4: Computational design (CAD/CAM tools), Alexandra Paio (ISTAR-IUL/ISCTE-IUL), Sancho Oliveira (IT-IUL/ISCTE-IUL) and Vfablab team

The Vfablab team made a brief introduction to digital fabrication. Using an example, the application of CAD/CAM and physical computing processes was introduced, from the idea (sketch and 3D modelling with generative and parametric parameters) to digital fabrication, implementation and product assembly. CAD technologies (Rhino and Grasshopper software) were used to generate design iterations. Then the prototype fabrication was demonstrated through subtractive procedures in a CNC milling machine. Small practical exercises were prepared in the laboratory in order to acquire knowledge about all the steps of the digital process that would be employed during the design studio.

3.5.4 WEDNESDAY, THURSDAY & FRIDAY, 16-18 July 2014

The last part of the Lisbon workshop was the **Design Studio**. The design studio challenged the students in the same groups to develop an evolving housing design using customized prefabricated wood panels, to re-adapt pre-existing dwellings to contemporary living patterns and to produce new incrementally built homes as a response to today’s living conditions. From the eight groups of students, four groups designed a solution to re-adapt the typologies of Bairro da Portela and the other four worked on the re-adaptation of one house and a patio in Bairro da Liberdade. The ultimate goal was to fabricate and assemble some components of the housing designs at full scale.

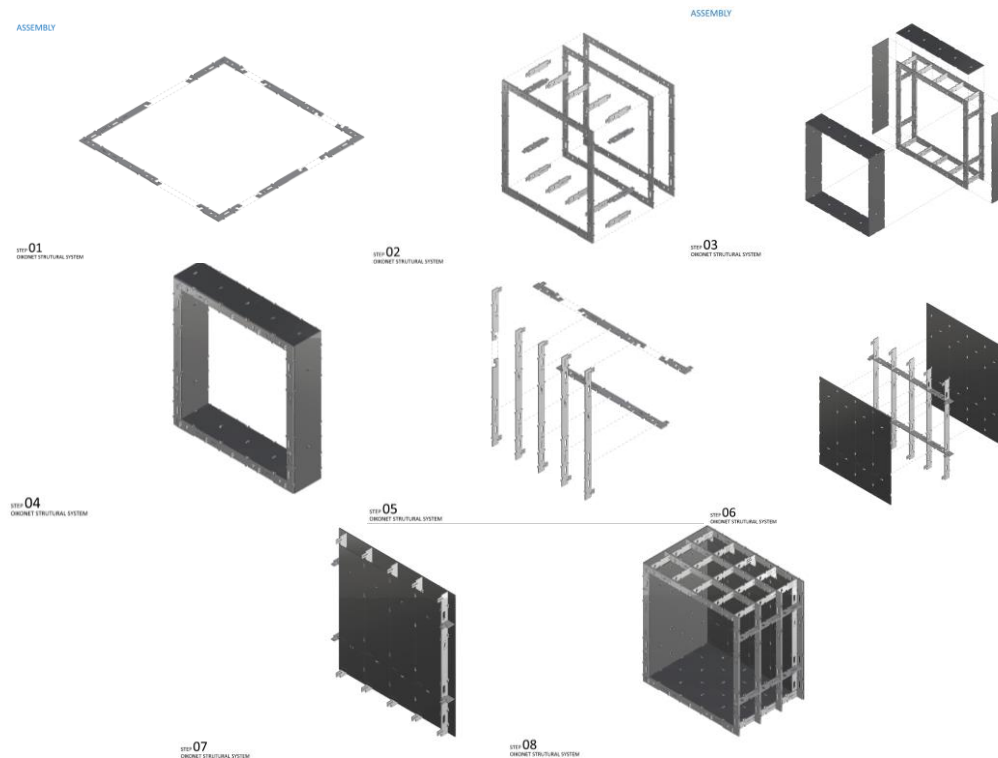


Figure 15. Design Studio: prefabricated wood panels structure assembling guide

All the participants received a guide to the prefabricated wood panel structure assembling process (Figure 15). The material used was OSB 3 - Oriented Strand Board for structural applications in humid conditions.

The teaching methodologies enable students to accomplish the learning outcomes associated with the participatory design processes and fabrication of a full-scale prototype based on sustainable and collaborative housing design (Figure 16). The students were asked to design their dwellings types in relation to a group of future users or present users and determine whether they could adapt their proposal to suit several specific situations. The studio was a place for students to apply a diversity of methods and design strategies to design economically and socially sustainable solutions. Students used CAD/CAM technologies to design and fabricate a customized final solution (Figure 18). The teachers from the OIKONET partners tutored the students groups (Figure 17).

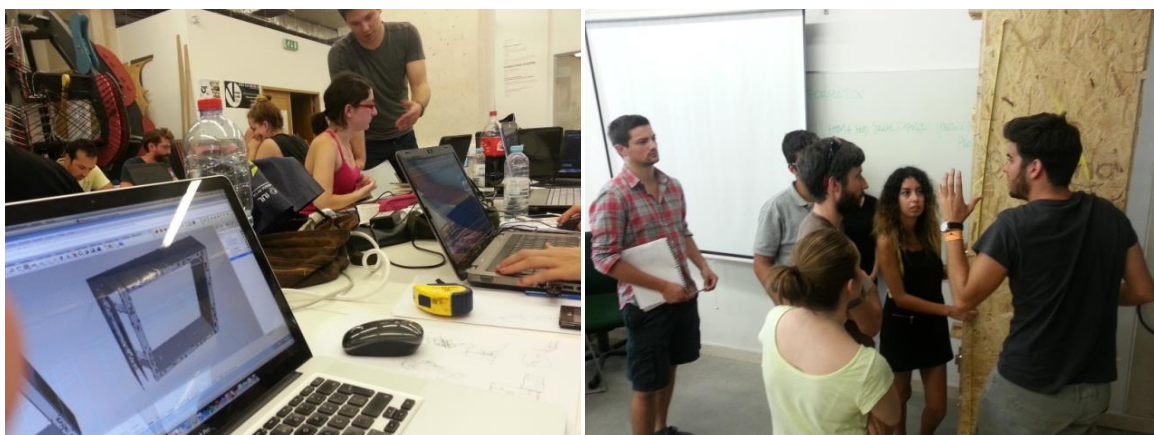


Figure 16. Design Studio: Developing an evolving housing design using customized prefabricated wood panels



Figure 17. Design Studio: Tutors from OIKONET organizations follow work of the students groups

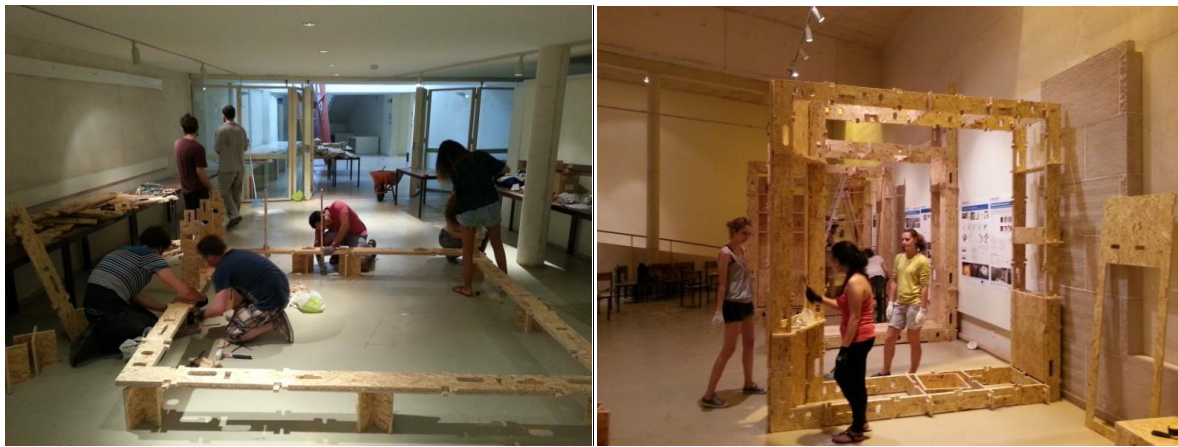


Figure 18. Design Studio: Students assembling full scale prototypes

3.5.5 SATURDAY, 19 July 2014

The workshop finished with an exhibition and final presentation of the work produced by the student groups which addressed the adaptation of pre-existing dwellings to contemporary living patterns to produce new incrementally built homes as a response to today's living conditions in both "Bairros" (Figure 19). Each student group produced an A1 poster summary of the work done, uploaded and presented a power point presentation, answered any queries / comments from the wider group and completed a full-scale prototype using customized prefabricated wood panels.

Tomas Ooms (KUL), as moderator of the final presentation, made some overall observations and distilled some emerging topics and concerns.



Figure 19. Design Studio: Final presentation session

4 FINAL PROJECTS

4.1 Portela Group 1: Adaptable Living

Students: Ana Sofia Simões (ISCTE-IUL); Clàudia Carreras (LA SALLE); Frederik Peter Kæmsgaard (AAU); Ilze Antonova (DIT); Nele Santy (KUL); Yasemin Kilic (GTU)

The goal of the “PORTELA: Adaptable Living” project was to adapt the apartments of Bairro da Portela according to the needs of present-day contemporary families based on the development of flexible apartments and a common semi-public space on each floor and in this way attract young people and new families (Figure 20). The flexible housing allowed for different mixed age users to expand or to reduce the living space according to their needs. The flexibility is achieved by altering the physical composition of the building. This applies to both internal and external changes on the building. The need of flexible housing is a recurrent topic in architecture. The group adopted a design strategy that shows some interlinking between sustainability, technology and society.

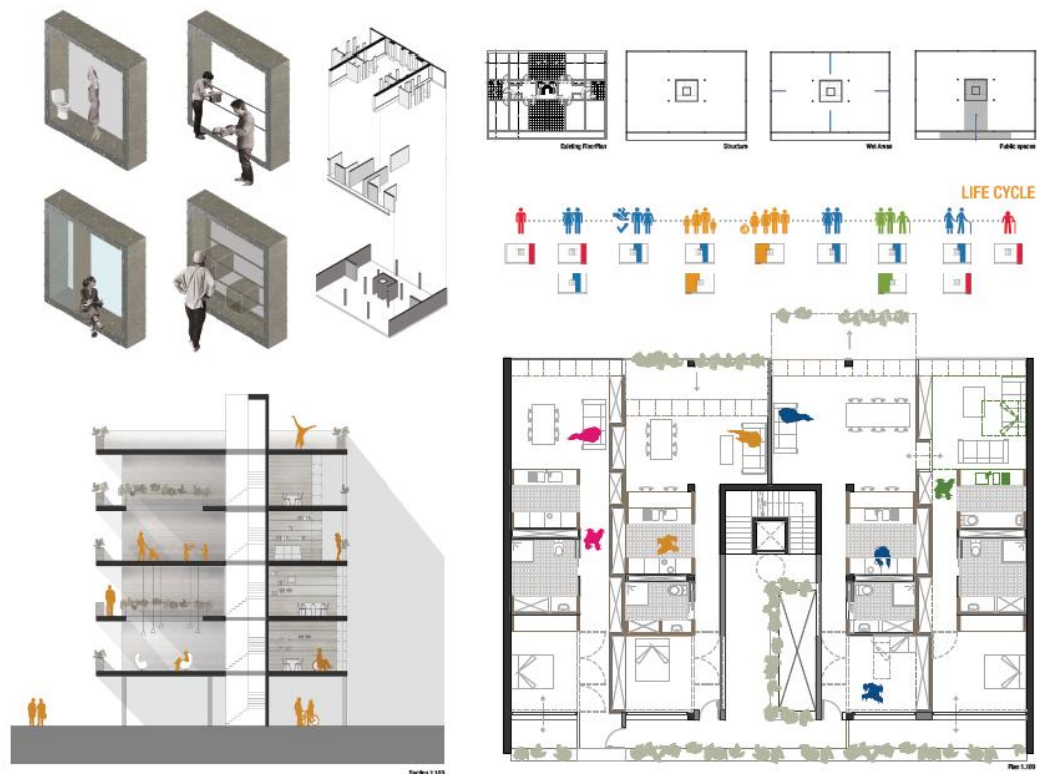


Figure 20. PORTELA: Adaptable Living design solution

4.2 Portela Group 2: S.I. Box – A Package for Social Interaction

Students: Izabela Grotowicz (LA SALLE); Leonie Hagen (BTU); Andronikos Kalli (UCY); Dede Guclu (GTU); Monica Cardoso (ISCTE-IUL); Jan Wyszowski (BUT)

“The PORTELA: S.I. Box” intended to adapt the apartments of Bairro da Portela to current needs of contemporary families based on the concept of co-housing (Figure 21). The proposal is based on the development of a common public space that will improve the inhabitants’ social life. The concept of common public space and common multifunctional areas (community gardens, community kitchens) highlight the necessity to rethink collective public and semi-public space. The design strategy explores social sustainability by giving the dwellers some

control of the major decisions in the different stages of community social life.



Figure 21. S.I. Box – a package for social interaction design solution

4.3 Portela Group 3: A Contemporary Solution for a Modern Design

Students: Carlos Ochando (ETSA-UPV); Lukas Kolb (BTU); Bruno Trabut (UGA); Afonso Patinhas (ISCTE-IUL); Evi Stavradi (UTH); Milos Jelisavcic (AF BELGRADE)

This design proposal was to adapt the apartments of Bairro Portela to the current needs of contemporary families based on demographic problems of the neighbourhood. The group decided to remove all the non-structural walls and introduce an intervention of dwellings according to the proposed typologies. The solution is based on the open building principle that was explored in the 1970s by Habraken and the SAR research group in the Netherlands. The group designed a variety of housing typologies founded on the clear analysis of socio-demographic statistic presented in the Sandra Marques Pereira Lecture and Studio that would also be consistent with the modularity of the prefabricated system (Figure 22).

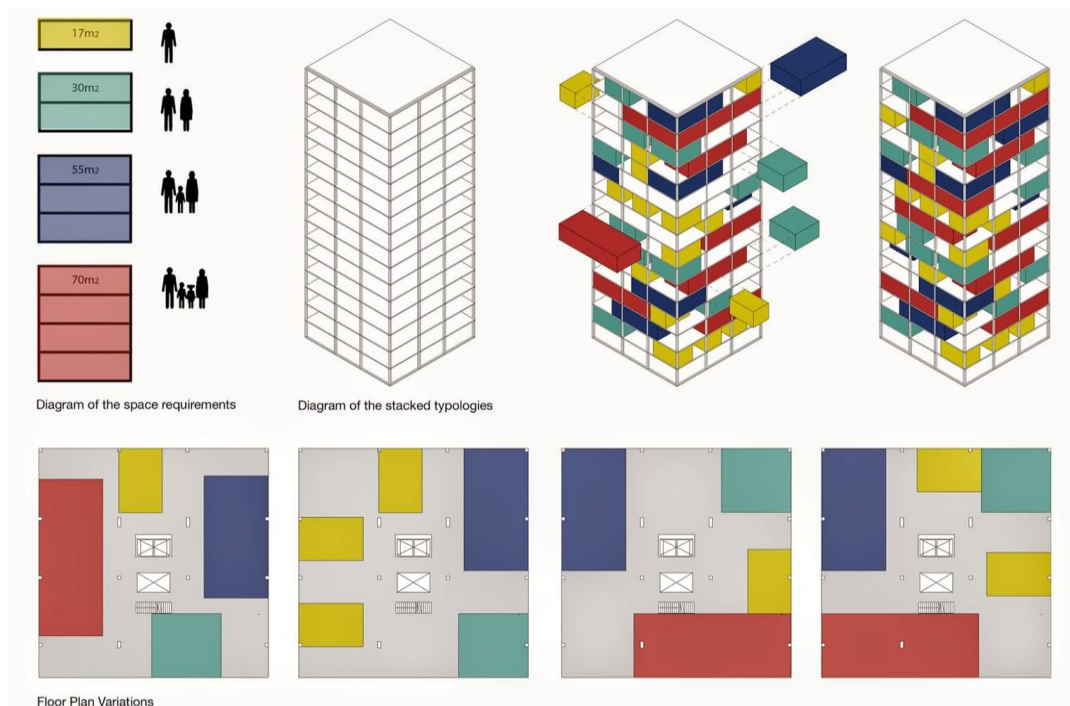


Figure 22. PORTELA: A contemporary solution for a modern design. Concept Diagrams

4.4 Portela Group 4: One Floor, One Family

Students: Inger Kirstin Rahbek (AAU); Remi Avril (UGA) ; Francisco Alves (ISCTE-IUL) ; Chrysa Pierrakou (UTH); Shilan Ghouforuli (ITU); Héctor Ruiz (ETSA-UPV); Karol Gorner (FA STU)

The objective of the project “One Floor, One Family” was to adapt the apartments of Portela to the current needs of contemporary families based on two concepts: (1) One Floor, One Family; and (2) Build yourself (Figure 24). The group designed a flexible design system that generates several solutions to re-adapt the present typologies to the needs of present or future inhabitants (Figure 23). This group explored the capacity of CAD/CAM technologies to allow the users to customize the housing solutions over time based on the family composition. The full scale prototype was a very good example of the application of the prefabricated system to the proposal for the re-adaptation of the present housing typologies.

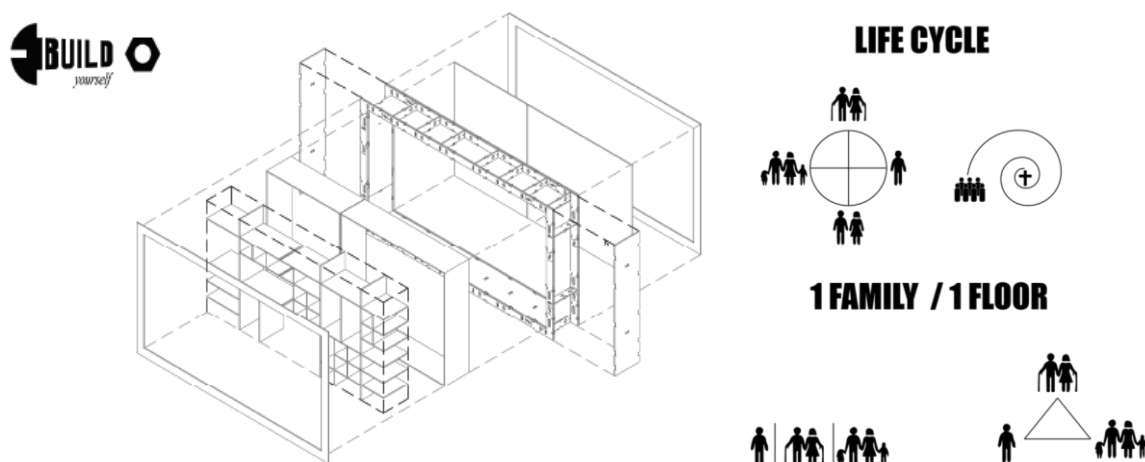




Figure 23. PORTELA: A contemporary solution for a modern design

4.5 Liberdade Group 1: Creating Patterns of Improvement

Students: Marina Clusella (LA SALLE); Caroline Melders (KUL); Georgia Papasozomenou (UCY); Orhan Kemik (GTU); Aleksandar Cosic (AF Belgrade); Marek Sipko (BUT)

The goal of this project was to re-adapt the Liberdade Patio to the needs of local users based on three case studies: (1) house for family, (2) house for old lady and (3) social common space. The proposal design solutions are a consequent of the dialogue with all the local users of the patio and the morphological analysis of the current space. Despite the complexity of the problem the group was focused and suggested a multifunctional common space to respond to the needs of the local users. The full scale prototype is a very good example of the application of the prefabricated system to the design proposal (Figure 24).



Figure 24. LIBERDADE: Creating patterns of improvement. Virtual and physical solutions

4.6 Liberdade Group 2: The Roofbox

Students: José Luis León (ETSA-UPV); Christopher O'Keefe (DIT); Raquel Martins (ISCTE-IUL); Vasco Reis (ISCTE-IUL); Emmily Delbare (KUL); Léa Garcia (UGA)

The “ROOFBOX” project was to re-adapt the Liberdade house to improve basic living conditions. The students proposed a solution to solve a real problem: the lack of an extra bedroom. But they also carried out some other transformations: the bathroom was moved backwards in the actual unemployed space of the terrace to allow replacing the entrance door. The staircase was reversed to access the new external terrace. Then a wood structure was fixed on the current terrace that supports the upright room. The structure that supports the room can be used to hang up clothes to dry inside the house. Part of the kitchen wall will be removed to open the space. Despite the complexity of the problem the group proposed an interesting solution that made it necessary to redesign of the prefabricated wood panels to adapt the modular system to a real scenario (Figure 25).



Figure 25. The Roofbox housing design solution

4.7 Liberdade Group 3: The Garden of Eden

Students: Pavol Dobšínský (FA STU); Anton Kunau (BTU); Serdar Aktan (GTU); Diana Gabão (ISCTE-IUL); Alina Dimitroulopoulou (UTH); Ana Lopes (ISCTE-IUL)

“The Garden of Eden” project was to re-adapt the Liberdade Patio to the needs of local users based on: (1) improving the houses basic living conditions; and (2) creating a rest area / garden area. The design solutions were a consequence of the dialogue with all the local users of the patio and the morphological analysis of the current patio space (Figure 26). The group proposal focused more on the exterior rest area / garden area for the patio local users. The usage of the modular system as an exterior rest area / garden area is very interesting because it takes into concern the profiles and needs of the local users.



Figure 26. LIBERDADE: The Garden of Eden- from analysis to local users

4.8 Liberdade Group 4: House 1

Students: Troels Broch (AAU); Gorkem Varlik (GTU); Catarila Alvares (ISCTE-IUL); Malgorzata Budlewska (BUT); Tugba Cavusoglu (ITU)

In the “House 1” project the students proposed a solution to solve a real problem: design an extra room for children, retaining the terrace, and finding a low-cost solution that could be viable for the family living in the house (Figure 27). The design solution was a consequence of the dialogue with the family living in the house.

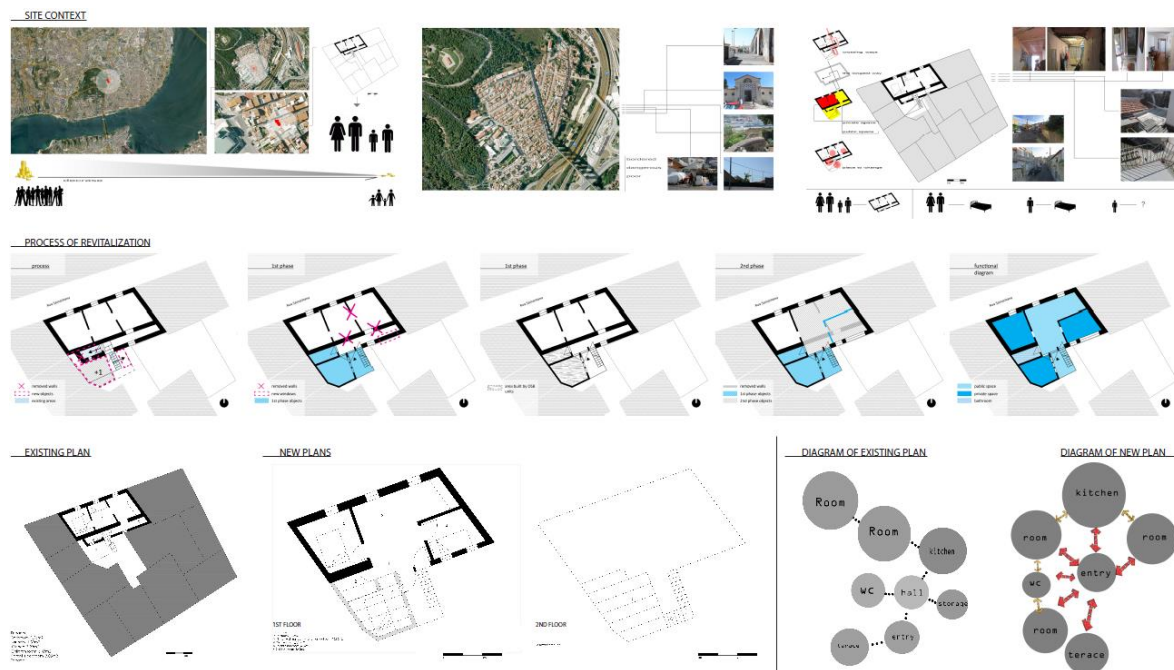


Figure 27. LIBERDADE: House 1 design process

4.9 Comments from tutors

The tutors of the Lisbon Workshop made general comments in situ about the final design solutions presented by each group that were afterwards sent to the students in the final evaluation.

Tomas Ooms(KUL) – Session Moderator - First of all it was great to see that with respect to the first review all the teams widened their perspective on the assignment and thus on the possible impact of their proposal on the local space (transcending the single apartment). The proposals managed to look at the topic of mass housing at different scales; from a reflection on the urban realm to the production of a scale 1/1 prototype. Out of the presentations and the discussions corresponding to the projects developed in Portela three topics and issues emerged:

- The first topic is 'common space'. All teams integrated or mentioned the creation of common space(s). But mostly these spaces were left 'empty' or 'open'. In design it is important to be specific and descriptive of what the purpose of a certain 'space' is. There will always be some uncertainty about what we need to take into account but at the outset of a design we should be able to identify or define the envisaged use, atmosphere and quality of the spaces. The topic of the 'common space' is definitely crucial to investigate. This could be the theme of the next workshop(s).

- A second theme that seemed to be a common denominator is the identification and determination of the demographic housing need as a design parameter. In the context of the Portela site this could be made more specific by investigating demographic changes and affordable housing needs.

- A third and final theme is the use of the term 'Flexibility'. As we noticed during other events and workshop the idea of flexibility is used in an undefined way as a 'passe-partout'. As with 'common space' the concept needs 'identification'. Do you mean multiplicity, agility, elasticity,

versatility, adaptability? My intuition is that in the present context of the proposals the most appropriate concept would be adaptability. In that case you need to define the content of what is to be adapted or has the potential to be adapted. At the same time you need to identify what is going to generate this change and how your proposal enables this.

The projects corresponding to Barrio da Liberdade question the role of the architect. What can we do in such conditions? We have to take into account that this favela is a materialisation of a socio-economical system in which the house owner refuses to invest and charges astronomical rent which the tenant refuses to pay or simply does not have the means to do so. So how do we move as architects through such a system? When the Arts and Architecture Journal issued its Case Study House Program in 1945 they did this with the following stance: "Agreeing that the whole matter is surrounded by conditions over which few of us have any control, certainly we can develop a point of view and do some organised thinking which might come to a practical end."

In this context again I would like to highlight three topics that emerged through the proposals. They are the following.

- First there is the notion of Symptoms and Causes. In medicine a disease manifests itself through symptoms. The symptoms are caused by the disease. You can therefore treat the symptoms and/or the causes. But just treating the symptoms may bring some relief but will not cure you from the disease. Working in a context where a lot of symptoms are 'visual' and 'observational' one is often tempted to only treat the symptoms. In certain cases this will work fine but in others we need to consider the causes as well. We need to be vigilant.
- The workshop asked students to work with a prototype open-source module. Many great proposals were brought forward. They all did a great deal of pain-relieving; treating acute symptoms and proposing manifestations of a socio-economical system. This could have been taken a step further by integrating in the design a place to manufacture the prototypes. By bringing the fabrication space of the modules to the Liberdade area a new dynamic emerged; a local production site of prototype elements that can be deployed throughout the neighbourhood in an attempt to enhance local empowerment.
- And this is the third concept, in conditions as the Liberdade, negotiation will be a crucial (design) tool. There will be a lot to negotiate between various stakeholders: inhabitants, municipality, home and landowners, NGO's, and designers. Training designers to acquire negotiation techniques will prove to be vital. Our ability to generate coherent alternatives and presenting them and communicating them in an understandable way form a solid base to start from.

4.9.1 PORTELA GROUP 1: Adaptable Living

Students: Ana Sofia Simões(ISCTE-IUL); Clàudia Carreras(LA SALLE); Frederik Peter Kæmgaard(AAU); Ilze Antonova(DIT); Nele Santy(KUL); Yasemin Kilic(GTU)

- **Leandro Madrazo (LA SALLE).** The proposal takes into consideration the profiles of the possible inhabitants, but we do not see how the proposed spaces - which aimed at fostering community living within a block - would satisfy their demands and expectations. The link between actual needs - identified through interviews, sociological studies - and the architectural proposal is missing in the information provided. The architectural proposal is based on the

creation of reinforcing the communal character of the circulation spaces, extending them from the staircase to the external corridor that gives access to the housing. These communal spaces are also connected vertically, giving rise to a space which would become the "centre" of the refurbished building. This is a very powerful concept which would require some drastic transformation in the structural skeleton but is nevertheless feasible from a constructive point of view.

- **Angel Martin (LA SALLE)**. The proposal seems to test how flexible the existing building is, in order to accommodate new ways of occupation and layouts. This test is implemented in an appropriate way, by making clear distinctions between the fixed elements and two different grades of flexibility on the internal walls, following the distinction between infill and support postulated by John Habraken. At the same time, the proposal suggests new possibilities of interactions between the inhabitants of the building by providing generous communal spaces. All things considered, it is a good set of intentions. Nevertheless the implementation of those ideas seems to be too forced in some aspects - the external circulation, the connection between different units, etc.

- **Viera Joklova (FASTU)**. The concept brings daylight and space enhancement to communication spaces and properly adjusts four equal dwelling layouts to three variable dwelling units, more appropriate to various living situations. However, the new dispositions are a bit questionable - e.g. the entrances to flats could be in the living area, not in the bedroom part, better access to separate housing unit within the apartment, etc. This could be due to the shortage of time for the elaboration of the design concept.

- **Marian Malovany (FASTU)**. The A-group proposal solves a typical current housing problem – the need for change. They create in an already created space. The new layout of the typical flat expresses the possibility of making changes according to the actual needs of inhabitants - to modify the original floor plan of the building according to the new requirements. They took into account all aspects connected with the m2 standard of the total flat area, social changes and introduction of a semi-public areas for mutual interconnections between inhabitants. On the other hand the proposal underestimates the structural aspects which could increase costs. In general the proposal addresses the essential problems of our times.

- **Mathias Klöpfel (BTU)**. The proposals managed to look at the theme of mass housing in different scales from a reflection on the urban realm to the production of a scale 1/1 prototype.

- **Elena Pattichi (UCY)**. The site analysis in relation to sociological studies and statistics regarding characteristics of inhabitants shows a general understanding of socio-demographic tendencies by the students and has led to a realistic approach of design methodology. The categorization of residents is generic and more involvement with the proposal would reinforce the team's position. The Portela blocks analysis holistically investigates various parameters. Some of the interventions (like on the edge of the balconies) might not be structurally feasible but the space condition they create generates differentiation and interaction between the various families. Nevertheless such interaction might not be desirable in all cases of the private exterior space of each flat (balcony), thus privacy could be controlled with other means. This is a rich presentation using clear plans and sections as tools of representation.

- **Adriana Diaconu (UGA)**. A second theme that seemed to be a common denominator is the identification and determination of the demographic housing need as a design parameter. In the

context of the Portela site this could be made more specific by investigating demographic changes and affordable housing needs.

- Sedef Ozcelik-Guney (GTU). Fixed spaces and flexible spaces are distinguished in the design process and tend to inform the new spaces. The sense of flexibility could be studied in a more thorough way in the future. Densities of users are studied in reference to usage proposals that are important data in order to make sense of the target-group. Light in interiors and cross-ventilation are considered taking into account the ecological formulations; there may be more effort on the issue in the future. Sections are great tools to be explicit in the presentation, which is mostly enhanced. The notion of “semi-flexible” is introduced. Even if the definition is not fully clarified, the attempt may have distinguished effects.

- Alexandra Paio (ISCTE-IUL). The goal of this project was to adapt the apartments of Portela to the needs of current contemporary families based on the developing of flexible apartments and a common semi-public space on each floor and in this way attract young people and new families. The flexible housing will allow different mixed age users to expand or to reduce the living space according to their changing needs. The flexibility is achieved by altering the physical composition of the building. This applies to both internal and external changes of the building. The need for flexible housing is a recurrent topic in architecture. Architecture history has several wonderful examples of flexible housing. Nevertheless, the introduction of CAD/CAM technologies into the everyday life of people has further transformed flexibility as an important topic. In architecture, the digital revolution has transformed not only the process of architectural thinking but also the making. Thus, choosing this topic for the project is very applicable and contemporary. The group adopted a design strategy that shows some interlinking between sustainability, technology and society. The work illustrates a good solution to re-adapt the Portela typologies to new living patterns. However, it is not clear how the customized solution is socially and economically sustainable. The topic and concepts of the energy efficiency and construction material could be more explored. The concept of common public space on each floor demonstrates the necessity to rethink collective space. What is the role of the citizen in that common space? The final poster is very well organized and the information is very clear. The full scale prototype is not totally built because of some problems in the final fabrication process. The intermediate and final oral presentations were very well presented by the group. The group was very hardworking throughout and coherent in the discussion of the solutions. Overall a very good response to the goal of the workshop.

- Tatjana Mrdenović (AF-BELGRADE). Integrative approach as a reflection of a local context living pattern. Students considered social issues as a change in social structure for innovating new solutions using wikihouse as a spatial tool. Here we can see three spatial levels in design: individual - apartments; common spaces within condominium, open public spaces at the level of micro scale urban design. Solutions at all three levels represent strategies to overcome the problem of a decline of young people in the community. Therefore, they make, in an integrative manner, qualitative improvements in place making thus rethinking the "Unite" as a contemporary living pattern, as well as place making theory.

- Jim Roche (DIT). A desire to provide alternative apartments for a mixed age group leads to a realistic design intervention with ideas well represented with 3-d sketches and digital drawings. The attempt to achieve a degree of flexibility, thus allowing for alternative apartment sizes, within the existing framework of structure, enclosure, vertical service risers and circulation core, by using the FABLAB modular system both internally and for the external fabric, is convincing. Some questions arise though. It is not clear how a 1-bed apartment can

easily convert to a 3-bed apartment. Does the living space remain the same size for example? It would need to be bigger. Showing optional layouts, over 3 floors say, would have helped our understanding. Bathrooms appear to be oversized? Smaller ones may have helped the arrangements. More time would have allowed for detailed study of the possible options for the modular system also since this is such a key aspect of the proposal. The use of the roof as communal garden and the opening up of the space adjacent the circulation core create good communal spaces that provide a link to the public realm. The section study and 3-d sketches effectively explore how the carved-out space adjacent the circulation core would allow good daylight into the dark centre and encourage social interaction both horizontally and vertically. Could such vertical interaction occur within apartments too, thus enriching the flexibility aspiration? Overall a very good response within the set constraints and excellently represented.

4.9.2 PORTELA GROUP 2: S.I. Box – A Package for Social Interaction

Students: Izabela Grotowicz (LA SALLE); Leonie Hagen (BTU); Andronikos Kalli (UCY); Dede Guclu (GTU); Monica Cardoso (ISCTE-IUL); Jan Wyszowski (BUT)

- **Leandro Madrazo (LA SALLE)**. A powerful idea in this proposal is to connect the different spatial dimensions, from private to semi-private and public, to make a spatial continuum. Accordingly, the purpose of the extensions is to project the inner spaces onto the outside. The idea was very well expressed in a drawing shown in the final presentation which unfortunately is not posted.

- **Angel Martin (LA SALLE)**. In this proposal the intention of developing the same idea over the different scales of the intervention - public, semi public and private spaces - is remarkable. It proposes a scenario for a new set of social relations in the neighbourhood. Taking into account past experiences – such as Robin Hood Gardens by A&P Smithson, for instance - it would be useful to remember that only through the observation of the real uses of the different spaces, once they are occupied, would it be possible to confirm or reject the hypothesis on which the proposal is based on.

- **Viera Joklova (FASTU)**. The most valuable proposal in the urban scheme added by this group is the proposed spatial organization of social interactions in Portela. Further development of this scheme could be very useful for the district. Its proposed overall social interaction would be appealing also for younger dwellers.

- **Marian Malovany (FASTU)**. Members of the B-group represented their proposal based on their analysis of the lack of space for social activities. They created some social space on typical floors by new adjustment of functional zoning. They divided the floor area of a typical apartment house into three zones. They considered using the central zone of the typical floor in each section /area adjacent to the vertical core / as a semi-public space. This space can be extended as a transversal extension of the building. This architectural interaction with the existing structure could create multifunctional spaces on each floor and thus enrich social contacts. Such spaces can provide a wide range of uses in the future.

- **Mathias Klöpfel (BTU)**. Pro: precise presentation both visual and vocal; presentation with a model; added spatial quality not only as an extra space but as a "room with a view". Con: adding a detail is nice, but I would rather love to see the detail of the connection roof / wall of the added room showing your skills in implementing the prototype structure. If you make an

invention in an existing structure, don't just focus on your addition. Changing connections of existing rooms could "heal" the building for daily use, in addition to the creating an extension.

- **Elena Pattichi (UCY).** The site analysis shows a preference towards the integration of common areas as a tool to generate interaction on the floors. This bold intervention can address diversity and problems of special residential conditions where sharing of space is beneficial. The design methodology is kept clear from the beginning through the whole process of analysis and design. The rigorous design methodology has helped in the development of multiple scales of interaction between the floors, between the apartments and in the micro organization of common areas with multipurpose surfaces. The relationship of exterior and interior creates interesting space conditions. This has been done thorough investigation of scale and material in sketching which could be applied more clearly on the 3ds and sections

- **Sedef Ozcelik-Guney (GTU).** The findings regarding the aging community are interesting. As mentioned in the presentations, the demand for an attractive area could be the key for the project. Lack of common space and solutions for the case can bring about new perspectives. In the proposal, private vs. public spaces are identified by means of a very good graphical representation. Green spaces in the sliding cube are innovative ideas where implementations of cubes are described in a clear way. On the other hand; externally, smart solutions with certain impacts on the facades could be a next phase of the project with a good consideration on the ratios on the facades. Interesting internal usages in the sliding box scenarios could be presented in order to clarify the concept.

- **Alexandra Paio (ISCTE-IUL).** The goal of this project was to adapt the apartments of Portela according to the current needs of contemporary families based on the concept of co-housing. The proposal is based on the development of a common public space that will improve the inhabitants' social life. The concept of common public space and common multifunctional areas (community gardens, community kitchens) underline the need to rethink current attitudes to collective, public and semi-public space. The design strategy explores social sustainability, by giving the dwellers some control of the major decisions in the different stages of the community social life. But, it is not clear how the customized solution is economically sustainable. The energy efficiency and construction materials are not much explored. The final poster is well organized and the information is clear. In the full scale prototype the main goal of the proposal is not so clear. The intermediate and final oral presentations were well presented by the group. The group worked very well. Overall a good response to the goal of the workshop.

- **Tatjana Mrdenović (AF-BELGRADE).** Excellent idea. Public spaces become carriers of social capital development, taking into account its opportunities to be shared among different needs, bounding community towards change in behaviour, structure, values, communication. The idea should be developed further in order to use wiki housing in an open space.

- **Aleksander Asanowicz (BUT).** Interesting proposition of expansion and creation of common space. But the question arises - would this proposition be accepted by residents?

- **Jim Roche (DIT).** This is a very strong, clear proposal to address the issue of an aging and changing population and the boredom of static slab block architecture. It proposes social, flexible, communal spaces in pods adjacent the vertical circulation that can project outwards beyond the building line hence animating the public realm but that can also can be eroded over floors to provide vertical sectional connections including urban gardens. This basic premise is well developed with a good mix of different types of drawings and digital models with lots of

ideas shown in the sketches for how the communal spaces might be used. The central image of one overall block with a variety of projecting pods shows convincingly how the block could be transformed. The plan diagrams show the options for apartment sizes and types and the way the communal spaces could be appropriated within larger apartments. More time would have allowed for these plans to be developed which would have been useful. The main section also could have shown the possibility of vertical connections in more detail. If the Fab Lab system could be developed to structurally cantilever in such a fashion as shown then this could prove to be a very feasible approach for a dynamic transformation of the Portela blocks.

4.9.3 PORTELA GROUP 3: A Contemporary Solution for a Modern Design

Students: Carlos Ochando (ETSA-UPV); Lukas Kolb (BTU); Bruno Trabut (UGA); Afonso Patinhas (ISCTE-IUL); Evi Stavradi (UTH); Milos Jelisavcic (AF Belgrade)

- **Leandro Madrazo (LA SALLE).** The proposal is based on the open building principle of support/infill first postulated by Habraken and the SAR research group back in the 1970s. The infill is the apartments built with the wooden prototype system. The main motivation to separate the units is to create open spaces between them. There are some practical consequences which have been overlooked: the amount of surfaces to be isolated; the spatial quality of the in-between spaces: will they be used as expected, as spaces that foster social interaction?

- **Angel Martin (LA SALLE).** This project addresses the idea of a progressive dwelling as a solution for an evolving family. The proposed plans are convincing from a typological view point. Nevertheless, their implementation on several stories shows unresolved constructive issues and also creates some doubts on the use of the outdoor spaces.

- **Viera Joklova (FASTU).** Work started with a clear analysis of the dwelling block and its surrounding neighbourhood, as well as with useful socio-demographic analyses of Portela. The differential factor is the prevalent size of apartments in Portela (100-200m²) which is much bigger than the Bratislava apartments (50 - 80m²). The majority of flats are in ownership. Concept proposes smaller dwelling units, exchangeable between users accordingly to their living situation, which result in the interesting but utopian design concept, with a lot of semi-public spaces between the flats. Did the authors think about the real utilization and requirement of such spaces? Another alternative could be the partition of 4 coincident flats to smaller, variable units, which could flexibly reflect the living conditions - e.g. young family with children, older parents with young couples (two housing units in one apartment), rentable housing unit with separate entrance, etc.

- **Marian Malovany (FASTU).** This group made very good socio-demographic analysis and subsequently effectively demonstrated the concept diagram of the tower building integrating the new layout of the dwelling units by way of graphs. They considered removing all non-load bearing vertical elements which separate the individual spaces in the building. This radical idea enables them to utilize empty spaces for new adjustments of dwelling units. Their proposal combines two kinds of spaces on each floor – residential units and public spaces. The idea is spectacular but practical implementation could be very complicated. This proposal is wasteful of spaces and would be very costly to implement.

- **Mathias Klöpfel (BTU).** Pro: I quite like the idea of redesigning the layout of the tower, and offering a pattern to do so; you are showing skills in optimizing/ rationalizing the unit sizes to a minimum. Cons: you should use this potential: the proposed optimized units need to interact

strongly with the common and open spaces available; achieve a balance between common/open spaces and private spaces.

- **Elina Pattichi (UCY).** The sociological and statistic studies regarding the inhabitants has led to the observation that the shift of residential needs can be addressed with a bold intervention of prototypical design of the whole set of apartment typologies keeping only the structural system of Portela blocks. This design methodology has influenced the decision to clear all floors of the non-structural walls and introduce a "transmitting" intervention of dwellings according to the proposed typologies. This approach applies the 4th principle of modernism according to which the separation walls are independent from the structural system, giving higher adaptability to the prototypical system's application. The public space around the dwellings needed more development and diversification to achieve privacy in certain areas. The presentation is very good and the organisation of dwelling into section modules is very well connected to the essence of prefabricated residential architecture.

- **Sedef Ozelik-Guney (GTU).** Different origins and profiles are put forward. Self-owned housing and large scales are considered regarding the design process. The short-term residents such as exchange student and young users are addressed in the work. It is an interesting proposal due to the new demographic demands of Lisbon - different modules for different functions including vertical usages have provided professional attitudes towards the intervention. Attempts for sun protection and climate are also a part of the vertical/horizontal design formulations. The solutions are well presented graphically. For the future fragmented spaces within the floor plans could be integrated with respect to the other input in the in-situ.

- **Alexandra Paio (ISCTE-IUL).** The goal of this project was to adapt the apartments of Portela to the current needs of contemporary families based on the concept of co-housing. Thus, the group designed a variety of housing typologies based on the clear analysis of socio-demographic statistic presented in Sandra Marques Pereira's Lecture and Studio, and on the modularity of the prefabricated system. The final poster is well organized and the information about the workshop design process is very clear. The full scale prototype is an excellent example of the application of the prefabricated system to a housing design solution. The intermediate and final oral presentations were very well presented by the group. The group worked very well in the design Studio. Overall it is a very good response to the goal of the workshop.

- **Tatjana Mrdenović (AF-BELGRADE).** Rebirth of the plug in city/housing as a modular system for life change. Excellent, visionary, response to the tower structure, its meaning and social change. The solutions are adaptable to unpredictable social structures in future giving an open framework for various options that can occur in housing needs. The tower becomes an active, live organism that interacts with the surroundings, therefore becoming more sustainable for real living needs and patterns.

- **Jim Roche (DIT).** This is a dynamic remodelling of a static tower block that allows for flexible living pods to be developed by future residents using the modular FABLAB system within a remaining skeletal concrete structure. Ideas very clearly presented and plans showing a variety of apartment types are well developed. One concern is the nature of the spaces left over. The central space would be very dark. They would also all be windswept. Lisbon is windy, even in summer as we discovered at dinner one night! Also there is ambiguity about what is private, communal and public space. Another concern is the aspect of the apartments, particularly the one that faces north, but all of them are single aspect at least in terms of daylight.

Perhaps the small studio apartment should always face north but also the introduction of voids at the edges of the shared spaces, possibly going over two or more floors, would allow for daylight to reach the residential pods. They could also help to define public/communal/private outdoor spaces, create interesting spatial links between floors and overall make the proposal even more dynamic than proposed. Could some of the pods also cantilever out between floors as is hinted at with the larger pods? The semi-public staircase will likely need to be enclosed for means of escape in case of fire. The planning of the 1-bed apartment is odd as the entrance leads in to the bedroom, or does this bed also fold out from the wall? This is not clear. Overall this is a very interesting and challenging proposal and very well presented.

4.9.4 PORTELA GROUP 4: One Floor, One Family

Students: Inger Kirstin Rahbek (AAU); Remi Avril (UGA) ; Francisco Alves (ISCTE-IUL) ; Chrysa Pierrakou (UTH); Shilan Ghouforuli (ITU); Héctor Ruiz (ETSA-UPV); Karol Gorner (FA STU)

- **Angel Martin (LA SALLE).** Regardless of the analysis of the specific solution presented here, the remarkable thing about this proposal is that it is focused on the smallest scale of the dwelling: the furniture. In this proposal the furniture, the domestic objects or any customized detail on the construction, reinforce the sense of belonging and the process of appropriation of the domestic space.

- **Carla Sentieri (ETSA-UPV).** The analysis of the current situation is suitable. The proposal centres on one of the types of local users: person of the neighbourhood who wants to continue living in the neighbourhood. The proposal incorporates the participation of the inhabitant into an “Ikea” system. The graphical expression is very good.

- **Viera Joklova (FASTU).** Quite interesting idea of variable connection and division, closing the living space between two housing units.

- **Marian Malovany (FASTU).** This group indicated mainly the possibility of interior changes in the environment of the selected area fragment on the floor plan. They focus on application of modular elements and emphasize the importance of changes over time in any flat. They introduce a wide range of options to use these elements. An interesting aspect of this proposal is that the interior changes or adjustments may be made by anyone.

- **Mathias Klöpfel (BTU).** Pro: most realistic implantation of OSB/prototype to Portela site; identification of the most crucial point for prototype intervention, with relatively little effort but big impact on social and spatial quality for residents. Cons: none.

- **Elina Pattichi (UCY).** The site investigation has addressed the problem of residents' aging and the Portela homogeneous distribution of residences in terms of blood affinity by a design methodology of life cycle. The parameter of time was investigated in micro and macro span through the day and through the life cycle of the family which shows an understanding of residents' needs. Such an approach has led to the conclusion that common spaces between the families are needed and can work with the use of adaptable surfaces in the area of the kitchen while keeping the privacy of the rest of space. More investigation could be made on the effect of the common area on adjacent private spaces to show more specificity and diversity according to the 3 types of houses for grandparents, single relative and family with kids. Rich presentation,

parameterization of diagrams with rules in the scale of space organisation that contributed in further research of details and surfaces

- Sedef Ozcelik-Guney (GTU). The potentials and demands of the neighbourhood are studied thoroughly such as infrastructures, transportation, and health/education availabilities in this particular work. Innovations for the usages of the units are handled with interesting tendencies. “Vertical/horizontal usage of doors” solutions provide new perspectives in design. “Build yourself” philosophy can itself be the guidebook of the whole design in the social senses.

- Alexandra Paio (ISCTE-IUL). The goal of this project was to adapt the apartments of Portela to the needs of present-day contemporary families based on two concepts: (1) One Floor, One Family; and (2) build yourself. Thus, the group designed a flexible design system that generates several solutions to re-adapt the present typologies to the needs of the present or future inhabitants. This group explored the capacity of CAD/CAM technologies to allow the users to customize the housing solutions over time based on the family composition. The final poster is well organized and the information is clear, going from the historical context to the flexible system design. The full scale prototype is a very good example of the prefabricated system application to the proposal re-adaptation of the present housing typologies. The intermediate and final oral presentations were very clear and focused. The group discussed all the ideas in the design studio and achieved a very good response to the goal of the workshop.

- Mirjana Devetaković (AF-BELGRADE). The site visit documents, in this case photographs, should support the main statements. As for aging population statement, we might need to see the people of this group... The remarks grouped as the "likes" and "dislikes" need to be determined "by whom". If this is related to inhabitants of Portela, this should be indicated.

- Tatjana Mrdenović (AF-BELGRADE). Inspiring “build yourself concept” – easy steps for inhabitants to create their own space according to specific needs using wikihouse. The concept is the most appropriate response to the task, however other groups were thinking in a wider sense. Modular construction and elements enables people to use them dynamically following the family life cycle. Also, the presentation of the idea has marketing elements which is very important for achieving change.

- Jim Roche (DIT). Responding to the demographic problems of Portela (aging population and endogenous neighbourhoods) this scheme addresses the possibility of an extended family inhabiting one whole floor of part of a block, reconfiguring the kitchen and maid’s rooms to create a flexible space for family use and opening up the enclosed balconies. Interesting use of the FABLAB system as a movable, dividing screen and good options also explored for its modular division and usage in this shared family space. A minimal intervention (as in no other rooms are reconfigured) but one that makes a significant change to the possibilities of different age groups living here. Questions that arise are:

- Why is it only for families?
- Is the extended family model popular in Portugal?
- Could the common space be used by shared by non-family neighbours (maybe as an external amenity space) and if so how does this affect the internal layouts?

- Could the new communal space relate better to the living spaces of the apartments? This would mean moving the kitchen though. There is a very odd transition space between the new communal space and the left hand side living space.
- Could the two rooms on the other side of the circulation space also be adaptable? This would allow for one apartment to diminish in size and for the other one to grow?

4.9.5 LIBERDADE GROUP 1: Creating Patterns of Improvement

Students: Marina Clusella (LA SALLE); Caroline Melders (KUL); Georgia Papasozomenou (UCY); Orhan Kemik (GTU); Aleksandar Cosic (AF Belgrade); Marek Sipko (BUT)

- **Leandro Madrazo (LA SALLE).** The solutions proposed derive from an analysis of the existing problems expressed by the inhabitants, and try to solve them within the existing conditions. The existing buildings are self-constructions, and the solutions proposed are designed by professionals. How could the dwellers make these proposals their own? By selecting from the different options presented by the architects? By participating in their construction? This could be the next step in the process of transforming the existing conditions.

- **Angel Martin (LA SALLE).** Remarkable efforts have been made by the different groups working on Liberdade's site to create proposals that improve the inhuman conditions of the existing dwellings, by designing new 'objects' to place on the units or courtyards. But some questions arise: How much can “design” do in this kind of situation? What is the sphere of influence of architecture? Would the collaboration of architects with other social and economic agents be the solution?

- **Carla Sentieri (ETSA-UPV).** This proposal is very good. You use a module for a bathroom, you need a new space and with the structure resolve the space and the use.

- **Viera Joklova (FASTU).** Very complex and distinctive work of this group started with the consistent analyses of the small neighbourhood in Bairro, with the questioning the needs and wants of inhabitants. Results are very effective and positively influence living standards and social interactions of this small habitat.

- **Marian Malovany (FASTU).** The work of this group represents a very good solution considering the complicated conditions of this site. They made a detailed analysis of selected site that has very complicated urban planning conditions. A wide range of designs are proposed which contribute to the improvement of the living environment. The positive feature of this work is applying of psychological aspects in their design by creating spaces for the privacy. Many examples enrich their work and prove ability to make an interesting design in relatively short time.

- **Mathias Klöpfel (BTU).** We have to take into account that this favela is a materialisation of a socio-economical system in which the house owner refuses to invest and charges astronomical rent and in which the tenant refuses to pay or simply does not have the means to do so. Pro: a nice approach which works fine as the old ladies house and the open air garden: adding open space to the density of this compound with the possibility of continuing of further reductions at neighbour compounds. Cons: usage of the prototype for the new home for the family who moves. The prototype is not necessary here; don't copy bad condition: the bedrooms need contact to the outside and daylight.

- **Elina Pattichi (UCY).** The team structures its proposal on the relationship of each neighbourhood with its shared open space in proximity to the street an approach that creates questions on the effects of this open space in relation to the dwellings. It is a holistic approach; they take advantage of environmental issues using their intervention for cross ventilation in section. Interesting exploration of the intervention unit for space organization. Very good presentation with explanatory sections and plans.

- **Sedef Ozcelik-Guney (GTU).** In this context again I would like to highlight three topic that emerged through the proposals. They are the following.

- **Sebnem Cakalliogullari (GTU).** First there is the notion of Symptoms and Causes. In medicine a disease manifests itself through symptoms. The symptoms are caused by the disease. You can therefore treat the symptoms and/or the causes. But just treating the symptoms may bring some relieve but will not cure you from the disease. Working in a context where a lot of symptoms are 'visual' and 'observational' one is often tempted to only treat the symptoms. In certain cases this will work fine but in others we need to consider the causes as well. We need to be vigilant.

- **Alexandra Paio (ISCTE-IUL).** The goal of this project was to re-adapt the Liberdade Patio to the needs of local users based on three case studies: (1) housing for family; (2) housing for old lady; (3) social common space. The proposal design solutions are a consequent of the dialogue with all the local users of the patio and the morphology analysis of the current space. Despite the complexity of the problem the group was focused and suggested a multifunctional common space regarding the needs of the local users. The final poster is well organized and the 2d-3d sketches effectively illustrate the possible uses of the multifunctional common space by the local users. The full scale prototype is a very good example of the prefabricated system application to the proposal. The first (António Brito Guterres – Participatory Studio), intermediate and final oral presentations were very clear and focused. The group discussed all the ideas in the design studio and responded very well to the goal of the workshop.

- **Tatjana Mrdenović (AF-BELGRADE).** Creative solutions covering real individual and common needs for quality improvement of life condition. The strategies are focused on the tradition “people build for themselves“ with additional value of professional architectural design inputs using wiki house as a tool. Another value of the concept is its possibility of implementation in phases, regarding Maslov's hierarchy when basic needs are fulfilled (like kitchen, toilets, bedrooms), higher level will be acquired through widening common space, here using wikihouse to create space.

- **Aleksander Asanowicz (BUT).** Interesting proposition transformation of the common space into the "street" plus variety of implementation of the prefabricated units.

- **Jim Roche (DIT).** It is good the way this group worked from the very public realm down to the detail of the private spaces. A very thorough analysis and set of interventions. A few simple strategic moves have enhanced the public or semi-public patio space. The FABLAB modular system is used in a very systematic way in both the external patio and to create and/or modify existing living spaces within existing enclosures. Some queries - How is weathering of the OSB dealt with where it is exposed? Also how is the step in the module dealt with, although to be fair this is a query for all the groups?

4.9.6 LIBERDADE GROUP 2: The Roofbox

Students: José Luis León (ETSA-UPV); Christopher O'Keefe (DIT); Raquel Martins (ISCTE-IUL); Vasco Reis (ISCTE-IUL); Emmily Delbare (KUL); Léa Garcia (UGA)

- **Leandro Madrazo (LA SALLE)**. Formally, this project reminds the extension that Le Corbusier did in the house he built for his parents' [house in Vevey](#), facing the lake of Geneva. In the upper level, he built a room for him and his wife which is accessed from the outside through a step-ladder. It also reminds the [Venice Beach House](#) by Frank Gehry.

- **Angel Martin (LA SALLE)**. It is remarkable the effort of the different groups working in Liberdade's site to create proposals that improve the inhuman conditions of the existing dwellings, by designing new 'objects' to place on the units or courtyards. But some questions arise: How much can “design” do in this kind of situation? What is the area of influence of architecture? Would the collaboration of architects with other social and economic agents be the solution?

- **Viera Joklova (FASTU)**. The Roofbox concept represents great design in a small space...

- **Marian Malovany (FASTU)**. This group has proposed an interesting extension solution of the chosen house. Due to the density of the built-up area the house cannot extend horizontally but must do so vertically. This may be a prototype for the site as to make an extension of any house along the vertical axis. In a broader scope, this prototype could be an example for the creation of a new residential structure above the existing.

- **Elina Pattichi (UCY)**. The students have investigated spatial relationships in section and not only in plan by extending the dwelling space on a second level which is attached on the existing settlements in a hybrid manner which follows in an interesting way the scale and character of this residential informal development. Very good presentation. The fact that the students produced a small physical prototype shows the thorough investigation of design in different scales.

- **Sedef Ozcelik-Guney (GTU)**. Notion of “roofbox” idea is put forward providing a concept and guideline; a pretty good beginning to make a model besides presentations. Reversal of the staircase proposal is studied in a very tight space. The interventions are presented in a graphical order that provided an in-depth understanding of the cases. Even though the impacts of shades could not be studied in such a short period of the workshop; in the future further interventions could be done in order to enhance the light inside the spaces.

- **Alexandra Paio (ISCTE-IUL)**. The goal of this project was to re-adapt the Liberdade house to basic living conditions. The students had to propose a solution to solve a real problem: the lack of an extra bedroom. Despite the complexity of the problem the group proposed an interesting solution that made it necessary to redesign the prefabricated wood panels to adapt the modular system to real scenario. The final poster is well organized and illustrated. The full scale prototype is a very good example of the prefabricated system application to the proposal. The first (António Brito Gutierrez – Participatory Studio), intermediate and final oral presentations were very clear and focused. The group discussed all the ideas in the design studio and clearly achieved the goal of the workshop.

- **Tatjana Mrdenović (AF-BELGRADE)**. The approach falls into the philosophy of "Modern project is still alive" in the manner architecture can be used for social capital development in close cooperation with social institutions. The problems in the family as Colemsn's negative externalities of closed group are become an opportunity for overcoming them using modern architecture through wiki house. Therefore a bottom-up approach is integrated into top-down creating solution that is added value in different a areas, visual, aesthetic, spatial, social, cultural. Excellent work.

- **Jim Roche (DIT)**. This is a very thorough analysis and quite a professional response to solving a real accommodation problem of the tenants. A very well-presented scheme both graphically and verbally. These students clearly worked very well together. The idea of building upwards is inspired and, along with the other simple moves internally, improves the accommodation while affording good views of the surroundings from the new room and terrace. The thoroughness of the project from the clear analysis of the sociological and accommodation problem, through the design solution, to the calculations of embodied energy, to the detail for the terrace - all expertly graphically presented is convincing.

There are a few queries:

Are there any implications of reversing the staircase? Maybe not, but more context is needed on the drawings to explain this better?

The inner bedroom is not ideal. Could removing part of the thick wall (structure permitting) and reconfiguring the bathroom have allowed for a door from this bedroom on to the hall?

It is unclear how the new protruding timber box is to be finished - some kind of timber rain screen maybe? A sketch detail would have been helpful here?

The residents' reactions would be welcome. Of course they would in all the proposals but particularly this one as it seems so focused on the residents' immediate needs and it is very well developed. It is a credit to the students that at their review we were asking what would it cost? Only one other question remains – when do we start building?

4.9.7 LIBERDADE GROUP 3: The Garden of Eden

Students: Pavol Dobšinský (FA STU); Anton Kunau (BTU); Serdar Aktan (GTU); Diana Gabão (ISCTE-IUL); Alina Dimitroulopoulou (UTH); Andrew Cleary (DIT)

- **Angel Martin (LA SALLE)**. Remarkable efforts on behalf of the different groups working in Liberdade's site to create proposals that improve the inhuman conditions of the existing dwellings, by designing new 'objects' to place on the units or courtyards. But some questions arise: How much can "design" do in this kind of situation? What is the area of influence of architecture? Would the collaboration of architects with other social and economic agents be the solution?

- **Carla Sentieri (ETSA-UPV)**. Congratulations for your post. Is really easy to understand the idea but I cannot see here the final result. Why is the prototype in the middle of the space? I believe that it would be better to leave it aside to promote another second space out of the structure. At this moment two spaces are created to both sides, equal and small, symmetrical, but the conditions (sun, wind..) are different. Have you thought about it? Could it be improved?

- **Viera Joklova (FASTU).** Effective concept design submitted in structured methodical manner with the specification of problem and the proposal for solution. Interventions improve private and semi-private living space in the habitat.

- **Marian Malovany (FASTU).** The proposal deals with the environment extensions both vertical and horizontally. Poetic name of their proposal “Garden of Eden“ reflects their efforts to create a new quality in home environment. The presented work in logical sequence shows examples of how improving housing conditions covers both the requirements to increase the housing area but also shows the possibility of implantation of greenery in the dense built-up area.

Mathias Klöpfel (BUT). Pro: activation/ transformation of unused space; presentation graphics. Con: project size is slightly too huge, reduction to the necessary would be helpful; the usage of the empty space with "Garden of Eden": your proposal should be more context-based, modules should be adapted to site to disclose spatial qualities.

- **Elina Pattichi (UCY).** This proposal addresses various problems trying to solve drainage and infrastructural problems with environmental strategies while investigating functionality and the relationships of open and closed spaces in multiple levels of investigation. The articulation of open space at the centre of this residential organization is successful as such an open space is more private in relation to the central street and can accommodate the sense of a public space that belongs to the neighbourhood. Minor problems in plan. Excellent presentation with explanatory material

- **Sedef Ozcelik-Guney (GTU).** Very good usage of presentation techniques! Roof problems are tackled with some roof water solutions, even some solutions are tackled. The frames are studied regarding the commune living versus private concerns. Freehand sketches are displayed in an explicit way. Green space concerns and storage possibilities are studied in a compact manner. Material and structure potentials are considered thoroughly which brought in effective proposals for the sustainability of the neighbourhood.

- **Alexandra Paio (ISCTE-IUL).** The goal of this project was to re-adapt the Liberdade Patio to the needs of local users: (1) improve the houses basic living conditions; and (2) create a rest area / garden area. The design solutions are a consequent of the dialogue with all the local users of the patio and the morphology analysis of the current patio space. The group proposal focused more on the exterior rest area / garden area for the patio local users. The usage of the modular system as an exterior rest area / garden area is very interesting because it takes into account the profiles and needs of the local users. The final poster is well organized and the 3d sketches illustrate very well the possible uses of the exterior rest area / garden area by the local users. The full scale prototype is a very good example of the prefabricated system application to the design proposal. The first (António Brito Guterres – Participatory Studio), intermediate and final oral presentations were very well organized. The group discussed all the ideas in the design studio and responded well to the goal of the workshop.

- **Tatjana Mrdenović (AF-BELGRADE).** “Wiki house open public space incubator“ as an instrument for Wolckloc's process of social capital development: bounding, linking building partnerships in habitat regeneration based on local values, identities, living patterns towards Castells' project identity of community. The incubator can be meeting place, place for additional education, creative workshop or local community centre. Excellent seed for future integrative regeneration of the settlement.

- **Jim Roche (DIT).** Very interesting use of the FABLAB modular system. But how does it survive the Lisbon winter? Is some protection envisaged? A different material for the roof might be more appropriate.

4.9.8 LIBERDADE GROUP 4: House 1

Students: Troels Broch (AAU); Gorkem Varlik (GTU); Catarila Alvares (ISCTE-IUL); Malgorzata Budlewska (BUT); Tugba Cavusoglu (ITU)

- **Viera Joklova (FASTU).** Design can be compared with the proposal of the group Liberdade B "Roofbox". In comparison with them, this work solved better the old disposition of dwelling.

- **Marian Malovany (FASTU).** This proposal represents the most effective example to improve existing housing in terms of living area extension. The biggest problem in this case is to find a suitable or the most appropriate position for vertical communication link between levels. They found it. The group made a very good analysis of both the site and the chosen house. The presentation promoted their interesting design.

- **Mathias Klöpfel (BTU).** Pro: professional and understandable drawings; not just an added structure but with affects to the existing structure (redesign of layout of rooms); application of the given prototype to the design. Con: stair and railings seem to be expensive and should be developed out of prototype or OSB as well (client's budget).

- **Elina Pattichi (UCY).** The existing dwelling is transformed into a clearer space organization according to contemporary residential needs with realistic strategies. An effort was made to approach the proposal's open space in section with potential for further exploration. Clear presentation of intervention in plan showing the steps of demolition and addition.

- **Sedef Ozcelik-Guney (GTU).** Intervention phases are displayed with good-quality architectural drawings. A totally different separation of rooms is provided by newly proposed walls. It is not only the system implemented to the project; but also intervention for the interiors. It is a very interesting design proposal with changes in the space. Analysis of the prototype was also studied regarding the application phase of the project. Well-studied ideas!

- **Alexandra Paio (ISCTE-IUL).** The goal of this project was to design an extension of a house. The students proposed a solution to solve a real problem: design an extra room for a children while keeping the terrace, and finding a low cost solution, that could be achievable for the family living in the house. The design solution was a consequence of the dialogue with family living in the house. The propose is very interesting because is based on a systematic analysis of the place and explore well sketches/diagrams to communicate. The final poster is well organized and 2d-3d drawings illustrate very well the solution. The full scale prototype was redesign to adapt the modular system to no orthogonal solutions. The first (António Brito Guterrez – Participatory Studio), intermediate and final oral presentations were very well organized. The group discussed all the ideas in the design studio. Overall this is a very good response to the real challenge proposed by the workshop.

- **Tatjana Mrdenović (AF-BELGRADE).** Concept addresses low cost changes that have huge impacts on living conditions using wiki housing for the transition from building towards architecture. Architectural space becomes a field for possibility to change in living, cultural patterns and become an example that neighbours should follow ("I will build the better house

approach”). Students showed that architectural profession has building capacity role, and architects are still educators in “Enlighten project/process”.

- Alexander Asanowicz (BUT). Very complex project! Good analysis of the existing situation and interesting process of revitalization. Visualizations confirm the validity of the design decisions

5 DISSEMINATION

The aim was to spread the Lisbon workshop results to a number of actors who would be potentially interested: professors, master students, policy makers and the general public. The implemented dissemination activities intended to offer a large number of supports: exhibitions, conferences, journals and seminars about pedagogic innovation.

5.1.1 Lisbon workshop exhibition, Lisbon

July 19 to September 22, 2014, at ISCTE-IUL, Lisbon (Figure 28).



Figure 28. Lisbon Workshop: Lisbon Exhibition

5.1.2 Contemporary Living Patterns, Dublin

Exhibition of posters of the work completed by an international gathering of students at the OIKONET Lisbon Workshop in the ground floor gallery of Linen Hall in DIT Bolton Street in Dublin (Figure 29).

update@dit

Update for week of Monday 19 November 2014

Poster Exhibition Contemporary living patterns in mass housing in Europe

An exhibition of posters of the work completed by an international gathering of students at the OIKONET Lisbon Workshop entitled "Contemporary living patterns in mass housing in Europe" is on display in the ground floor gallery of Linen Hall in Bolton Street. The international workshop on sustainable and collaborative housing design was organized by the project "OIKONET: a global multidisciplinary network on housing research and learning", co-financed by the European Union, in which DIT is one of 34 partners. The objective of the workshop was to develop a cross-disciplinary dialogue aimed at finding answers to the meanings, ways and forms of contemporary living patterns of mass housing in Europe. The DIT participants from the Dublin School of Architecture were students Andrew Cleary, Ilze Antonova and Christopher O Keeffe and teacher Jim Roche.

terça-feira, 10 de março
Week 8
quarta-feira, 11 de março
Week 8
19:00 THEATRE - The Car
quinta-feira, 12 de março
Week 8
19:00 THEATRE - The Car
sexta-feira, 13 de março
Week 8
19:00 THEATRE - The Car
sábado, 14 de março
Week 8
19:00 THEATRE - The Car
domingo, 15 de março
Week 8
segunda-feira, 16 de março
Week 9

Figure 29. Lisbon Workshop: Dublin Exhibition

5.1.3 Exhibition during the Barcelona Conference

Exhibition during the first OIKONET annual conference “Global Dwelling” (25-26 September 2014), organized by the School of Architecture La Salle, in Barcelona (Figure 30).



Figure 30. Lisbon Workshop: Barcelona Exhibition

5.2 Papers

The results of the Lisbon workshop were published in 2 conference papers, 1 journal article, and 1 book (Figure 31).



Figure 31. Lisbon Workshop: Contemporary living patterns in mass housing in Europe

Paio, A. (2014) Contemporary living patterns in mass housing in Europe: From collaborative design to digital fabrication. In L. Madrazo (ed.), OIKONET “Global Dwelling” conference, Barcelona, September 25-26, 2014

Madrazo, L. (2014) OIKONET: Pedagogic Innovation in Housing Studies. In ICERI2014, Seville, November 17-19, 2014.

Paio, A. (2014) Contemporary living patterns in mass housing in Europe. In Homeland News from Portugal. Available at: <http://homeland.pt/contemporary-living-patterns-in-mass-housing-in-europe/> (accessed on March 10, 2015).

Paio, A. (2015) Contemporary living patterns in mass housing in Europe. In Campos Costa, P., Allegri, A. (eds.), Homeland News from Portugal (p. 522). Lisboa: Note.

Besides, a special radio report dedicated to report the activities of the workshop was produced by Aled John in the UK-based [Monocle's](#) weekly design program Section D was broadcasted on July 29, 2014 (Figure 32).

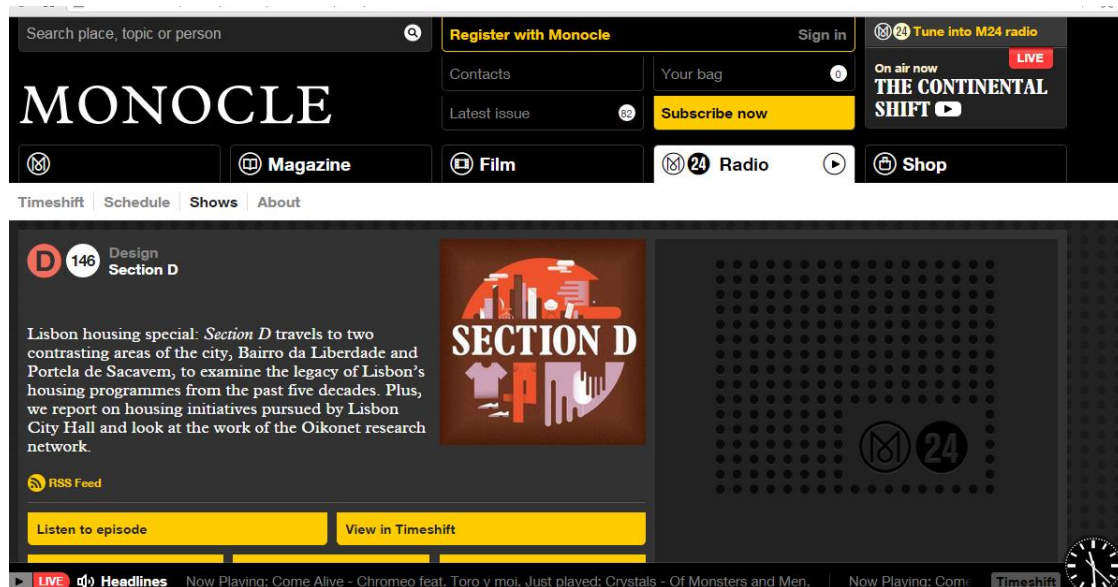


Figure 32. Radio report in Monocle

5.3 Conferences

The Lisbon workshop prototypes were chosen by ISCTE-IUL to represent the pedagogic innovation, sustainability and social responsibility to which the institution is committed at the GREENFEST'2014 – Green Stand Award (Figure 33). Available at: <http://www.greenfest.pt/> (accessed on October 11, 2014).



Figure 33. Lisbon Workshop prototypes: ISCTE-IUL stand at GREENFEST'2014 – Green Stand Award

The Lisbon workshop prototypes were chosen to represent the ISCTE-IUL at the conference “For a more inclusive society”, on December 1 to 5, 2014.

ISCTE-IUL Stand at Erasmus Mobility, February 15, 2015 (Figure 34).



Figure 34. Lisbon Workshop prototypes: Stand at Erasmus Mobility

Seminar about “Pedagogical Innovation in Higher Education e-Learning and Digital Technologies”/ Seminário de Inovação Pedagógica no Ensino Superior e-Learning e Tecnologias Digitais. Available at: <http://iptel-el.ie.ulisboa.pt/> (accessed on March 10, 2015).

Oral presentation. Paio, A., Pereira, S. M., Rato, V.M., Oliveira, S., Guterres, A.B., Pinto, T.C., Oikonet: Plataforma pedagógica colaborativa inovadora para estudar habitação contemporânea na Europa, In Seminário de Inovação Pedagógica no Ensino Superior e-Learning e Tecnologias Digitais, Lisboa, February 25-26, 2015 (Figure 35).



Figure 35. Lisbon Workshop: Oral presentation, Seminar Pedagogical Innovation in Higher Education e-Learning and Digital Technologies

5.4 Blog

The [Lisbon Workshop blog²](http://oikonet-lisbonworkshop.blogspot.es/) was created to communicate, collaborate and disseminate the results (Figure 36).



Figure 36. Blog of the Lisbon Workshop

² <http://oikonet-lisbonworkshop.blogspot.es/>

6 CONCLUSIONS

The work carried out in the Lisbon workshop helps to understand the significance that a multidisciplinary approach towards contemporary housing problems has for the field of architecture and design education. The methodology adopted reveals the value of adopting design strategies which focus on the design process rather than on the final product. This methodology made it possible for students to develop valuable architectural solutions in six working days informed and conditioned by design strategies based on theoretical concepts of design thinking and digital fabrication processes. The students examined the benefits and shortcomings of building with social, economic and time constraints. They were able to build up global perspective about housing design which included integration, inclusion and diversity. The multidimensional design approach favoured a collective reflection about design-by-doing methods.

The experience gained in the workshop was a starting point for the Massive Open On-line Course (see Deliverable 4.2). The structure proposed for the MOOC encompasses the multiple components involved in the design strategy adopted in the workshop (participation, digital fabrication, parametric modelling, and energy efficiency). As in the workshop, the learning process in the MOOC will be based on integrating these components into a design process in a meaningful way.

7 APPENDIX A: EVALUATION

The workshop was evaluated by students and tutors. A quality evaluation was carried out by Stefano Tardini and Anna Picco-Schwendener, from USI. At the end of the workshop the students in situ had the opportunity to respond a questionnaire. The tutors answered an online questionnaire. The results of the evaluation have been reported in Deliverable 6.3 – Evaluation of learning activities (see D6.3, Section 3).

7.1 Questionnaire

The students participating at the Lisbon workshop were asked to fill in a paper questionnaire at the end of the workshop. The main goal of the questionnaire was to evaluate their learning experience and to understand whether there are issues that could be improved in future workshops. The questionnaire was distributed to 45 out of 48 participating students. All of them answered the questions, which resulted in a response rate of 95.7%.

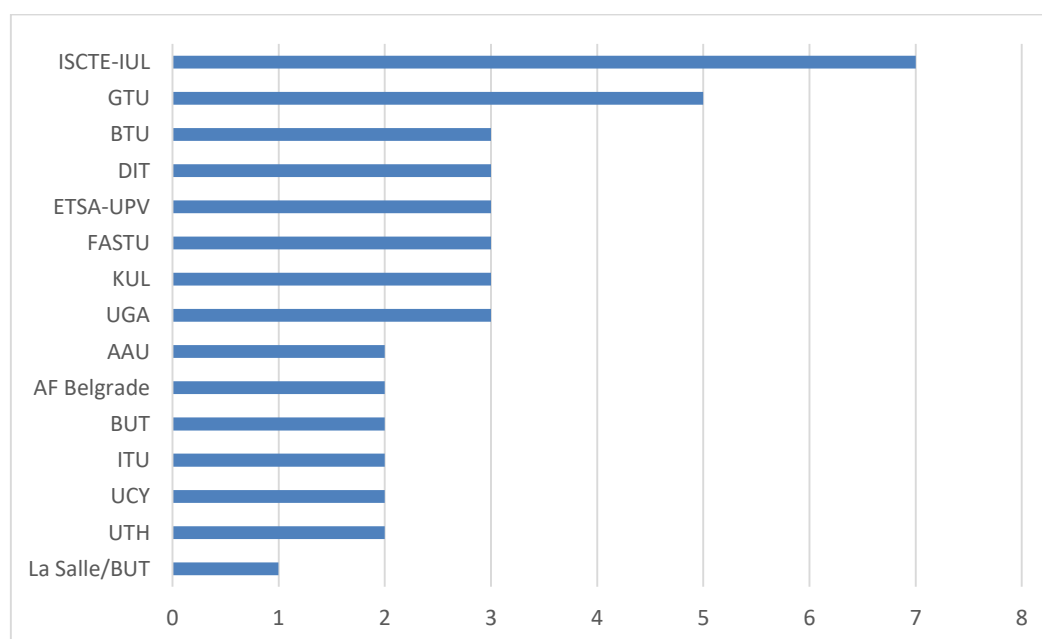
In the first part of the survey students were asked to assign a rating to specific statements and to add a comment if they wanted (Table 1). In the second part four open questions allowed students to express their most important learning areas, what they particularly liked and what could have been done better. At the end other comments could be added.

7.2 Participant information

As for the participating students, there was a similar proportion in terms of gender: 48.9% males and 51.1% females. The student's age was between 20 and 25 years old. Only 2.2 % were from the 26-30 age group. Most of the students were in the Bachelor (47.6%) or Master (40.5%) programs. There were also 2 PhD students (4.8%), 2 diploma students (4.8%) and 1 student with another level (2.4%).

Most of the students were from in their 3rd (37.8%) or 4th (28.9%) year of study. A small percentage were from the 1st (6.7%) and 2nd (13.3%) year of study.

Table 1. Number of students by institution



7.3 Questions with rating of statements

In order to calculate the average rating for each question, the following values have been assigned: Fully agree: 4; Agree: 3; Disagree: 2; Fully disagree: 1. The students who answered N/A have not been counted as respondents nor considered in the calculation of the average.

Table 2. Lisbon Workshop: Evaluation

QUESTION	RESPONDENTS	AVERAGE
1. I was clear about the purpose/objective of the Annual Workshop when I arrived.	44	2.48
2. The introduction / briefing sessions made all aspects of the Annual Workshop clear.	45	2.76
3. I was clear about the competences or learning outcomes to be gained from completing the workshop before arriving.	44	2.39
4. I was clear about the way in which my work during the workshop will be assessed.	44	2.52
5. The taught sessions were relevant and appropriate.	44	2.82
6. The taught sessions were clearly presented.	44	2.98
7. The taught sessions were well integrated with the workshop theme.	45	2.80
8. The taught sessions fitted well with the work in groups.	42	3.10
9. There was adequate access to computing resources.	42	2.57
10. I had enough time to do the work.	39	2.28
11. I had enough free time.	36	1.97
12. I understand what work I have to do in my institution which follows on from this Annual Workshop.	38	2.42
13. I was able to communicate effectively with the other members of my group.	41	3.27

7.3.1 Comments left by student regarding the questions

- **The purpose of the workshop was generally clear and well understood.** However 3 students mentioned that the assignments were not clear from the beginning as they were not well explained. One suggested that information on the model should have been available beforehand. For one student, the whole picture of the workshop was not clear at the beginning.

- **Regarding the introduction session**, one student commented that its content was interesting and useful but some information should have been clarified better. Another student considered that studios and lessons had no real connection with the final task but that they only took precious time.

- Only one student stated that he/she expected to achieve different **learning outcomes** and competences.

- **Regarding the assessment**, one student thought that the **blog was an interesting** tool but that it took a lot of time that could have been better invested in the project.

- **Regarding the lectures**, one student wrote that some were relevant but others not. S/he particularly liked the lecture about parametric design but also remarked that during the workshop they were actually not designing anything parametric but just editing existing ones.

- When asked whether the **sessions** were well integrated with the workshop topic, one student noted that Mr. Rato's session had nothing to do with anything else. Two students suggested to better distribute the sessions over the days and not to concentrate all them on the first day. They would have liked to start with the group work earlier.

- As far as **access to computing resources concerns**, one student highlighted that students did not have access to printers and to other university IT resources. Another one noted that the internet connection was slow.

- Students would have preferred to have **more time to work on their projects**. They suggested to either make the workshop longer or to better schedule the activities, as the first days were quite easy and the following ones very busy. At the end they managed to do what they needed but some did not have time to visit the city: one student suggested including a creative break one afternoon to visit Lisbon; another student remarked that there was not enough time to visit and see another culture and city as it was promised.

- **Students managed to communicate** with each other even though the different language levels made communication more difficult. Some used drawings to support their communication. Two students mentioned a major difficulty in communicating with students from Turkey because of their lack of English skills.

7.4 Open questions

7.4.1 Most important / interesting learnings (39 respondents)

Important and Interesting aspects	Nr. Of Students
Collaborating with students coming from other countries, exchanging ideas and communicating with them and working towards a common architectural solution (group works). In this way, they got confronted with different architectural interpretations and different approaches to design and architecture	19
Visiting the two sites (Portela & Liberdade), learning about their people's housing and living conditions, learning about the history of each sites and trying to work out solutions for the highlighted problems in a collaborative way.	8
Understanding the importance of social context for architecture (Social Housing) and learning about participative process. Students appreciated the sociological lecture of Antonio (on social aspects, participation and interactive activities) and the subsequent discussions.	8
Building of the OSB model house (by using the CNC machine and 3D printing programming)	3
Learning about parametric design	2
Learning about mass housing	1
Learning about sustainable architecture	1

Learning how to present a project so that everyone can understand it	1
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7.4.2 What students liked most (36 respondents)

What did you like?	Nr. of Students
Collaborating, communicating, learning from and exchanging opinions with students from other countries. They enjoyed discussions and open conversations and really liked the group works, where they could work in small groups with people from other universities.	12
Social aspects of the conference: students enjoyed the social dinners, as they allowed them to get to know each other; they liked the fact that the conference allowed them to make new friends; in general they liked the people who participated at the conference.	7
Lectures	
<ul style="list-style-type: none"> Students mentioned that they liked the lectures, especially the introductory ones held on day 1 and those on the topic of “sustainable housing 	6 students
<ul style="list-style-type: none"> Student thought that there were too many 	1 students
Site visits (Portela & Liberdade)	
<ul style="list-style-type: none"> Students liked this part of the workshop very much as it allowed them to see how the people in those areas live 	6 students
<ul style="list-style-type: none"> Students would have liked to visit both sites 	6 students
Projects & Topic	
<ul style="list-style-type: none"> Students liked the projects and their topics, especially as this allowed them to see the whole process of a project from the study over the design to the prototype. Within the project they particularly liked the studio work and how it was integrated into the design process. 	7 students
Location	
<ul style="list-style-type: none"> The choice of Lisbon as a location of study was appreciated. Students liked the city and considered the university a nice place where to work. 	5 students
Other positive aspects	
<ul style="list-style-type: none"> Students considered the outcome of the presentations very impressive and well made for the time they had 	2 students
<ul style="list-style-type: none"> Students liked the papers received on the 1st day 	2 students
<ul style="list-style-type: none"> Appreciated tutor interaction, as it was not too disruptive and gave students their own time 	1 student
<ul style="list-style-type: none"> Liked the organization of the event 	1 student

7.4.3 What could have been done differently (39 respondents)

What could have be done differently?	Nr. of Students
The major complaint is about time allocation : many students complained that there were too many lessons and not enough time for the practical work (studio time, working on prototype, ...).	26 students

Students suggested to improve the time allocation problem in the following ways:

- having less and shorter lessons and/or spreading them over the whole week instead of having them all on one day.
- having a lesson during the sites' visits. Students also felt that the whole week was too crowded, as they did not have enough free time to socialize and visit the city.
- adding two or three days to the workshop to make it less intensive- starting off with a social event or move the organized dinner to an earlier moment so that students could get to know each other right away and feel more comfortable.

What could have be done differently?	Nr. of Students
The workshop goals were not clear from the beginning	7
There was not enough space to work and work stations were always crowded	

In order to make the workshop goals more clear from the beginning students suggested to do a presentation on the first day explaining the goals, the topic and the work/tasks the students are expected to do and possibly provide a timeline of when has to be done what.

- The students think that Workspaces should be more user friendly and should include some communication tools like chats. One student suggested that the learning activities should better Other suggestions for improvements:

Two students did not like the choice of the site Bairro da Portela, as they think that this neighbourhood does not really need to be improved. They would have chosen another site like Liberdade, where housing should be improved. One student suggested visiting both sites.

One student suggested focusing on the construction of one prototype and not on 4 identical ones

Two students suggested a better organization

One student was expecting some participation at designing parametric modules and not just at editing them.

7.4.4 Other comments & suggestions (16 respondents)

Other comments	Nr. of students
Lack of Time	
Students felt that they did not have enough time to dedicate to the design and the fabrication process of their projects. Students would have also liked to have more free time in order to visit the city and to socialize with other participants. To overcome these issues, some suggested having the workshop over more than six days	5
Assistance / Tutors	
In general students appreciated the assistance of tutors, however they thought that tutors should have been better informed on the constraints of making the prototype, that they should have been more interactive and encouraged students to ask questions as some are very shy because of language difficulties.	3
Positive / Negative feelings	
Really enjoyed the workshop and that they liked the idea to find a solution for Bairro da Liberdade.	2
The workshop did not work well.	1
Incoherent goal: According to one student it felt like that some wanted to help the case-study-people and others wanted to focus on wood-panel-frames.	
One student liked the pre-workshop activities but complained that they did not have a lot in common with the workshop.	1
One student did not understand why he/she was invited to participate in the workshop as he/she studies urban planning and not architecture. He/she had the impression not to know much in this field and that his/her studies were not useful for the workshop.	1
The lectures were not really useful as they did not even speak or think about Mass Housing	1

The questionnaire results indicate that overall the students appreciated the fact of going through the whole design process in 6 days. For some students, the collaborative learning in a cultural diverse group was highlighted as being valuable. Many of the comments point out some important suggestions which can be used to improve future learning experiences.

7.5 Evaluation results of tutors' feedback

The online questionnaire was answered by 11 out of 23 tutors, resulting in a response rate of 47%.

Tutors were asked to express about the following aspects:

- 1) How well the preparatory activities in each institution were aligned with the Lisbon workshop
- 2) The outputs of the Lisbon Workshop
- 3) What they liked and disliked

7.5.1 Alignment of preparatory learning activities with Lisbon Workshop

45.5% of respondents agreed that the preparatory learning activities in their institution were well aligned with the activities of the Lisbon Workshop. 36.4% thought they were partially aligned and 18.2% that they were not well aligned.

7.5.2 Quality of students' outputs

Tutors were asked about the **quality of student's outputs**. Nearly all respondents (90.9%; 1 N/A) agreed on the fact that the overall quality of the students' works was very good / excellent, especially given the short time frame, the variety of tasks they had to complete (design, detail, poster, blog, presentation,...), the cramped working conditions and the fact that they were working with people they did not know.

They highlighted the following positive aspect regarding students' outputs:

- They presented in a relatively short time very broad scope of ideas.
- The students exceeded their own abilities to think, design, cooperate, debate, summarize and present.
- The students' outputs were rich with various approaches with potentials for further investigation.
- The preparatory learning activities helped the students to understand the complexity of such interventions and the importance of participatory design and socio-demographic data analysis.

More critical considerations highlighted the fact that even though the outputs were very good from an architectural point of view, they were not truly interdisciplinary and did not really bring out novel approaches to housing issues and that students should have considered more design options.

Furthermore teachers were asked whether they have changed anything in their teaching as a result of the Lisbon Workshop.

A majority answered yes (54.5%), 27.3% did not change anything and 9% did not know yet. Those having changed something in their teaching did it by:

- using some of the materials related to Parametric design in our future courses
- trying more intense problem solving workshops with small groups on a given focused design issue as they can produce great results and are great for bonding and freeing students' inhibitions
- using the outputs of the workshop to show the students the importance of the revitalization of living environments (as opposed to new house designing processes)
- promoting collaborative activities to support students' autonomy in classroom
- integrating social and housing issues in environmental and sustainability issues of my lectures

Teachers were also asked whether they talked about OIKONET with their colleagues.

Six teachers (60%) have already talked about OIKONET and the Workshop to their colleagues of Faculty / Institution and to colleagues from other universities. Three teachers (30%) have only talked about it briefly or not yet but they plan to do so at the beginning of the new semester

when all staff is back to university. One teacher will prepare a lecture to present the workshop outputs, whereas another one plans to do so-called lunchtime talks to the whole school together with her/his three students. A third teacher even tried to introduce his/her colleagues to the platform.

7.5.3 What teachers liked particularly and what they suggested to improve

The on-line questionnaire allowed to capture information about teachers' overall experience at the Lisbon Workshop by asking them what they particularly liked and what they would suggest to improve in future workshops.

Aspects teachers liked most in the Lisbon Workshop:	Nr. of respondents
The Site Visits: two well-chosen contrasting housing typologies set up a series of immediate, interesting questions about the design and production of housing. Significant was the transition from the first test of relating social parameters with the design (Portela) and participatory strategy (Liberdade) to its further development.	5
The opportunity to use FabLab facilities and to produce a real prototype with Wiki house parts. The students had the opportunity to learn by doing (from participatory to fabrication).	3
Excellent working conditions provided by ISCTE (school building and facilities were very good)	2
Organization of all activities was excellent	2
Interdisciplinary / Multidisciplinary of the workshop	2
Collaboration (between students / between students & teachers); the informal way of working showed great potential	2
Good topic .	1
All the lectures were very interesting; from Sandra's sociological analysis of plan types to Vasco's clear explanation of embodied energy and carbon in design.	1

Aspects teachers would have done differently:	Nr. of respondents
Respondents considered that having a full day of continuous lectures was too heavy and suggested to spread them and to have fewer and shorter lectures .	3 (27.3%)
Respondents felt that there was not enough time especially for the group works, for students' pre-workshop presentations on the first day and for exploring parametric aspects design by integrating functional and environmental parameters with algorithmic optimization processes. They suggested having fewer activities.	3 (27.3%)
Respondents would like a better integration of preparatory & workshop activities . They suggest achieving this by involving the teachers from the different institutions more in the planning and coordination of the workshop and by integrating preparatory learning activities sooner into regular institutional activities. In this way, more extensive collaborations would be created before the workshop.	2 (18.2%)
Respondents suggested adding a social event to kick-off the workshop so that students and teachers get to know each other.	2(18.2%)

Respondents would like to have better room infrastructures. There was not enough space and space was really tight, making it difficult to talk, tutor and concentrate.	2(18.2%)
Respondents would have preferred more focus on sophisticated architectural design options instead of spending a lot of time with FabLab parametric design and with creating the wooden modules.	2 (18.2%)
The role of the teachers and tutors should be more clearly defined. It was not clear what they were supposed to do and which groups they were supposed to tutor.	1 (9.1%)
Use a conceptual map to give an overview of the whole process of the workshop.	1 (9.1%)
Reducing the scope of the workshop would allow for more detailed works and results but considered that this would probably also lead to less rich outputs.	1 (9.1%)
Blog is not the best medium to use for communication, sharing and presenting. This remains one of the big challenges of OIKONET.	

The last question was about suggestions on how to improve the next year's Workshop in Cottbus:

What teachers suggest changing for the next workshop in Cottbus	respondents
Lectures: Do not have a full day of continuous lectures; shorter lectures; shorter program to allow deeper development of collaborative work.	3
Topics: Having more time especially for parametric investigation and for the group works	3
Organization: Clearer instructions / tasks for teachers present at the workshop. Assign specific tasks to each tutor by balancing their interests and skills.	2
Collaboration: More collaboration between students and teachers before and after the workshop. Better coordination between preparatory and workshop activities.	2
Social: Social event to kick-off the workshop the day before it starts to break the ice.	1
Facilities: Having good infrastructure (enough space).	1
Period of time: Period of workshop was not ideal as it was during holidays.	1