Contemporary living patterns in mass housing in Europe: From collaborative design to digital fabrication

Alexandra Paio
ISCTE- Lisbon University Institute, Portugal
• Oikonet Lisbon workshop
• Oikonet Lisbon workshop final results
Oikonet Lisbon workshop, 14 - 19th July 2014
Contemporary living patterns in mass housing in Europe: From collaborative design to digital fabrication
The ARCHITECT should be equipped with knowledge of many branches of study and varied kinds of learning for it is by his judgment that all work done by the other arts is put to test. This knowledge is the child of practice and theory. (...) there are three departments of architecture: the art of building, the making of time-pieces, and the construction of machinery. (...) All these must be built with due reference to durability, convenience, and beauty.

Vitruvius (Roman Architect). Ten books on Architecture
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Participatory Design
Home and Living Conditions
Energy Efficiency and Materials
Digital Fabrication

http://participateindesign.org/about/participatory-design/
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Participatory Design
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Digital Fabrication

http://www.wikihouse.cc/
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Keynote speakers, introductory thematic lectures
Field work
Thematic studios
Design studio
Participatory design plays a key role in today’s democratic societies. Over the past decades a wide variety of techniques and tools have been employed in participatory design. From the side of the social sciences, the paradigm has been growing. The lecture presented contemporary participatory design processes to approach complex problems and identify future opportunities.

Learning objectives:
Acquire basic knowledge about participatory design.
Incorporate contribution from local citizens in design strategies and practice.

António Brito Guterres (Dinâmia’CET –IUL/ ISCTE-IUL) and Sergio Oliveira (Aga Khan Foundation)
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Sandra Marques Pereira (Dinâmia’CET –IUL/ ISCTE-IUL)
The lecture introduced general concepts addressed at the pre-workshop lecture.

Learning objectives:
Introduction to the historical/societal turning-points in recent Portuguese history: dictatorship; revolution; adhesion to UE; crisis. Characterization of the Lisbon Metropolitan Area (the context of Portela’s Estate) and its evolution: demographic; morphological; sociological. Evolution of housing in Lisbon Metropolitan Area and its sociological implications.

Introductory thematic lectures
HOME AND SOCIAL CHANGE
The lecture was an introduction to life cycle principles which will be presented together with a brief overview of methodologies for life cycle assessment. Embodied energy and carbon emission reduction will be explained as environmental impact indicators. A calculation method for these parameters will be detailed.

Learning objectives:
Acquire basic knowledge on sustainability, life cycle and architecture
Calculate embodied energy and carbon of a construction element

Vasco Moreira Rato (Dinâmia’CET –IUL/ ISCTE-IUL)
The twenty-first century digital revolution brings new challenges to the design process. The digital tools are part of the everyday life of creators in all fields. More and more, innovation in creative processes is the result of computational logics. The advent of new software and tools has boosted new approaches to the process of thinking and doing.

**Learning objectives:**
Introduction to digital manufacturing processes and the available fabrication technologies
Advantages and disadvantages of the CAD/CAM technologies in order to build a customized solution economically and socially sustainable.
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**Tuesday, July 15**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location/Participants</th>
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<tbody>
<tr>
<td>13:00</td>
<td>Lunch</td>
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<tr>
<td>15:00 – 16:45</td>
<td>Studio: Sandra Marques Pereira, Dinâmia’CET–IUL/ ISCTE-IUL</td>
<td>Home and social Change in Portela</td>
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<tr>
<td></td>
<td>Lunch</td>
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<td>16:45 Coffee break</td>
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<td>17:00 – 18:00</td>
<td>Studio: Students presentation and Discussion</td>
<td>Lab: António Brito Guterres, Dinâmia’CET–IUL/ ISCTE-IUL and Sérgio Oliveira, Aga Khan foundation Home and Participative process in Liberdade</td>
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**Wednesday, July 16**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location/Participants</th>
</tr>
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<tbody>
<tr>
<td>9:00-11:00</td>
<td>Studio: Vasco Moreira Rato, Dinâmia’CET–IUL/ ISCTE-IUL</td>
<td>Energy and Construction</td>
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<td></td>
<td>Discussion</td>
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<td>11:00</td>
<td>Coffee break</td>
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<tr>
<td>11:30-13:00</td>
<td>Studio: Alexandra Paio, Adetti-IUL/ISCTE-IUL and Sancho Oliveira, IT-IUL/ISCTE-IUL</td>
<td>Computacional design</td>
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<td></td>
<td>Discussion</td>
<td>CAD and CAM tools: Scripting and parametric design</td>
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**Thematic studios**
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Design Studio
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Oikonet Lisbon workshop final results
Design Studio: PORTELA: Adaptable Living
Ana Sofia Simões; Clàudia Carreras; Frederik Peter Kæmsgaard; Ilze Antonova; Nele Santy; Yasemin Kilic
Design Studio: PORTELA: S.I. Box – a package for social interaction
Andronikos Kalli; Dede Guclu; Izabela Grotowicz; Jan Wyszkowski; Leonie Hagen; Monica Cardoso
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Design Studio: PORTELA: A contemporary solution for a modern design
Carlos Ochando Seva, Lukas Kolb, Bruno Trabut, Afonso Patinhas, Evi Stavraki, Milos Jelisavcic
Design Studio: PORTELA: One Floor, One Family
Karol Görner, Inger Kirstin Rahbek, Rémi Avril, Francisco Alves, Chrysa Pierrakou, Shilan Gharanfoli, Héctor Ruiz
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Design Studio: LIBERDADE: Creating patterns of improvement
Marina Clusella, Caroline Melders, Georgia Papasozomenou, Orhan Kemik, Aleksander Cosic, Marek Sipko
Design Studio: LIBERDADE: Creating patterns of improvement
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Design Studio: LIBERDADE: The Garden of Eden

Pavol Dobšinský; Anton Kunau; Serdar Aktan; Diana Gabão; Alina Dimitroulopoulou; Andrew Cleary; Ana Lopes
Design Studio: LIBERDADE: HOUSE 1
EVA ANDRASOVA_TROELS BROCH_GORKEM VARLIK_CATARINA ALVARES_MALGORZATA BUDLEWSKA_TUGBA CAVUSOLGLU
• The results presented in this paper showed how a multidisciplinary approach towards a significant implications for the field of architecture and design education.

• The results have demonstrated the growing impact of digital design media as a mediator between content and skill. The main goal has been to explore the new digital technologies and their contribution to solve some of the challenges presented to society and architecture. Social responsibility requires greater sensitivity to innovation and this must encompass the school culture. Architecture schools around the world are creating digital fabrication laboratories to provide their students with the skills to support new learning processes, scientific innovation and development linked to architectural practice. The digital fabrication laboratory supports innovation through the materialization of ideas. Digital technologies have released a multiplicity of new career opportunities for graduates and advanced architectural education.
• The adopted methodology allowed the students in 6 days to use informed and conditioned design strategies based on theoretical concepts of design thinking and digital processes of design making.

• The students explored the benefits and inconvenient of building with social, economical and time constrainers. In addition, the workshop 4 main topics allowed the students to work with a global perspective of integration, inclusion and diversity.

• The collaborative design promoted a reflexive awareness about design-by-doing methods.
If you would like more information about the content of this presentation please contact:

alexandra.paio@iscte.pt

http://oikonet-lisbonworkshop.blogspot.pt/

www.oikonet.org