Designing and Constructing for a Sustainable Future – Community Urban Housing in Timber. Projects by 4th Year Architecture Students at DIT.

Jim Roche
Dublin School of Architecture, Faculty of the Built Environment, Dublin Institute of Technology, Ireland
WHAT IS SUSTAINABLE HOUSING?
WHAT IS SUSTAINABLE HOUSING?

- location and public transport to higher densities
- stable family accommodation to third age flexibility
- building form and layout to universal access
- construction systems and embedded energy to energy usage over time with the related environmental assessment methods
- provision of communal amenities to management and maintenance
WHAT IS SUSTAINABLE HOUSING?
WHAT IS SUSTAINABLE HOUSING?
THE STUDENT’S CHALLENGE
THE FOUR URBAN SITES
MEETING COMMUNITIES
1. SITE, FORM and ORIENTATION – economic, social and environmental sustainability
1. SITE, FORM and ORIENTATION – economic, social and environmental sustainability

Sancho Madridejos, Lofts in San Sebastian de Los Reyes. Dosmasuno Aequitectos, Apartments in Carabanchel. Flexo Aquitecturo, Cuevas del Alamanzora, Spain. Lecture; Paul Kelly
York Street Housing, Dublin. Seán Harrington Architects: Lecture; Jim Roche
1. SITE, FORM and ORIENTATION – economic, social and environmental sustainability

Students: unknown and Hadrian Pouhaer
1. SITE, FORM and ORIENTATION – economic, social and environmental sustainability

Students: Christopher O’ Keeffe and David Graham
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

York Street Housing, Dublin. Seán Harrington Architects.
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

Housing, Helsinki. Arkkitehtitoimisto Gullichsen Vormala Kairamo
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

Housing Project, Durango, Spain. NO.MAD Arquitectos.
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

Quinta Monroy Housing, Chile. Elemental Elemental.
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

Student: Daire Kelly
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

Student: Christopher O’ Keeffe
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

Student: Sophie Kelleher
2. FLEXIBILITY and ADAPTABILITY –
social and economic sustainability

Student: Sophie Kelleher
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

Student: Sophie Kelleher
2. FLEXIBILITY and ADAPTABILITY – social and economic sustainability

Student: Sophie Kelleher
3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability
3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability

Figure 6.1: Embodied Carbon Footprint Comparison, Standard Materials

Figure 6.2: Embodied Carbon Footprint Comparison, Sustainable Material Options

3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability

3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability

3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability

Students: Julie Molloy and Ronan Keane
3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability

Students: Lecture: Brian O Brien and Student Task: Daire Kelly
3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability
3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability

Students: Brendan Speirin and Niall Fitzgerald
3. ENERGY, CONSTRUCTION and MATERIALS – environmental sustainability

Students: Fiona Muldowney, Christopher O’ Keeffe and unknown.
4. THRESHOLD MATTERS – social sustainability
4. THRESHOLD MATTERS – social sustainability
4. THRESHOLD MATTERS – social sustainability

4. THRESHOLD MATTERS – social sustainability

Threshold is ambiguous. That zone in architecture between the public and private worlds is hardly ever defined strictly but instead has many layers and associated treatments. The boundaries that legally define property for example do not define visual privacy. It has varied meanings and treatments across different cultures and climates. Threshold is an ambiguous zone often described in planning terms as ‘public/private’ or ‘private/public’, a zone that affords options for socializing and amenity, a place to meet neighbours and for children to play. In housing it is a transition between the very public realm of the street and the very private world of the dwelling. A consideration of its detail treatment is vital in defining an attitude to threshold. These concepts below give clues regarding threshold in the urban context and how it might contribute to the formulation of space:

- Soft / hard edges
- Homogeneity
- Heterogeneity
- Sense of belonging
- Formation of identity
- Liveliness
- Affordances
- Opportunities for socialising
- Privacy vs. territoriality
- Types of permanent migration
- Hierarchy of space - Private and Public
- Ambiguity of space: private/public vs. public/private

The task is for students to clarify their intentions for the detail treatment of a threshold space in their timber housing project. This could be an entrance from the street, a courtyard, an access gallery, a staircase or a hallway. Or part of any of these and other spaces.
4. THRESHOLD MATTERS – social sustainability

Students: clockwise from top left - Oksana Lastovetsky, David Graham, unknown, Christopher O’ Keeffe
4. THRESHOLD MATTERS – social sustainability

Student: Cormac Murray
4. THRESHOLD MATTERS – social sustainability

Source: world-bin.blogspot.com and en.wikipedia.org
4. THRESHOLD MATTERS – social sustainability

Dominic Street Flats, Dublin. Source: [https://www.youtube.com/watch?v=dm9XbVstSsA](https://www.youtube.com/watch?v=dm9XbVstSsA)
4. THRESHOLD MATTERS – social sustainability

Student: Brendan Speirin
4. THRESHOLD MATTERS – social sustainability

Student: Cormac Murray
4. THRESHOLD MATTERS – social sustainability

Student: Ronan Keane
4. THRESHOLD MATTERS – social sustainability

Students: Davina Moody, Hadrien Pouhaer and Thomas Philips
4. THRESHOLD MATTERS – social sustainability

THE IN-BETWEEN

“The threshold provides the key to the transition and connection between areas with divergent territorial claims…”

Detached from the ferment of epochal change, the groves of academe are failing to engage with current critical realities.
CONCLUSIONS

Students: clockwise from top left - Cormac Murray, Amandine Di Ciaccio (x 2) and Daire Kelly
CONCLUSIONS

Students: David Graham and Cormac Murray
CONCLUSIONS

Buchanan, Peter (2012). The Big Rethink – Architectural Education.

- Gives critique of British architectural education
- Claims it fails to engage with “current critical realities”
- Architectural education has a “lack of multidisciplinary projects” … and is not geared towards preparing “today’s collaborator”
- Proposes vision of how sustainability should be taught - a multidisciplinary foundation course for architects, urban designers and planners and landscape architects

BUT

- Teachers work within given structures that are often not ideal
- Not all aspects of sustainable housing could be addressed in this one project
- In general the students did grapple with many “current critical realities”
- Students designed convincing, universally accessible apartments, with timber structures that explored a whole range of issues
- More community engagement, more meaningful multi-disciplinary collaboration and more rigorous scientific analysis of the energy performance of the students’ designs would be an aspiration for a future project

ACKNOWLEDGMENTS

STAFF:
Module Coordinator: Paul Kelly
Studio Tutors:
Peter Crowley
Patrick Flynn
Emma Geoghegan
Brian O Brien
Lenzie O Sullivan
Jim Roche

STUDENTS:
Antonova, Ilze.
Bailey-Smith, Mark.
Bourke, Conor.
Brehonnet, Sarah
Carta, Marta
Canavan, Anne.
Carbajo Melón, Cora.
Cerpelloni, Edoardo.
Cunningham, Ailbhe, M.
Cunningham, Aoife.
Daly, Brendan.
Denetello, Vitor
Diaz, Jose Angel
Di Ciaccio, Amandine, D.
Fedorov, Max.
Fitzgerald, Niall.
Garnier, Hadrien
Graham, David, W.
Hemmingsson, Eva, L.
Hogan, Peter, M.
Holmes, Wayne.
Jamin, Celine.
Keane, Ronan.
Keegan, David.
Kelliher, Sophie.
Kelly, Daire.
Kelly, Rebecca
Laffan, Carl.

Lastovetsky, Oksana.
Lawless, David.
Leavy, Craig.
Leclercq, Nathan
Lennon, Niall
Mc Allen, Gillian.
McCarty, Ross
Mc Cormack, Mark.
Mc Dermott, Laura, J.
Mc Phillips, Thomas.
Molloy, Julie.
Moody, Davina.
Moore, Thomas, A.
Muldowney, Fiona.
Murphy, Eoin.
Murray, Cormac.
Newman, Susie.
Nic An Bheatha, Caisin
O Byrne, Vincent.
O Donnell, Eoin, D.
O Keeffe, Christopher.
Pouhaer, Hadrien
Ryan, Donal.
Rodriguez, Andrea
Sheridan, Ciaran.
Spierin, Ciaran.
Wischermann, Lisa
If you would like more information about the content of this presentation please contact:

jim.roche@dit.ie

or visit our web site

www.oikonet.org