Course PM, ARK641, Master´s thesis preparation course 3p
Autumn semester, 2020
Building Design for Sustainability

Collage of selected recent Master thesis in ´Building Design for Sustainability´. Students focused on a large variety of themes and chose very different scales, from urban regeneration to building detail. Some of the thesis had a theoretical focus and were generic, others very practical and site specific.

This course will be a digital course.

Course description and aim

The purpose of the course is for the students to develop and finalize their project plan.

The course prepares the students for their master's thesis under the guidance of assigned examiner(s) and supervisor(s). It explores specific theories and/or design methods associated with a particular niche of architecture and urban design.

It trains the students' ability to use design studies, precedent studies, context studies, material studies and/or theoretical texts as a basis for formulating a design problem and/or research query.

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Description of direction

Keywords: resources, climate change, circular design, environment, Anthropocene, resilience, building for adaptability, global-local, renewables, low-impact design, systems thinking, transformation, biophilic design, opposing greenwash, learning from the vernacular, empowerment, paradigm change, role of aesthetics for transition, self-initiated architecture

Humanity stands in front of its largest challenge, to mitigate and stabilise the on-going climate change and environmental pollution and simultaneously prepare for its already visible consequences. Radical changes are needed in the way we envision, plan, design and use the built environment. The challenges for architects are exponential, we need to be prepared to become meaningful drivers for change by using of design thinking to create visions, structures and strategies as well as finding new narratives – a new story for human species.

We welcome and strongly support master thesis which wish to contribute to the urgent transitions towards a sustainable future. In this direction, you can explore the design of new buildings or interventions as well as transformation of existing built environments as a means to support sustainable development and with the ambition to create values for humans and nature. A specific aim is to contribute with knowledge about how architectural design, form, aesthetics and materiality as well as cultural identity can support long-term sustainable development.

Areas we encourage are circular design, low-impact design, resilience, sustainable and local materials, building transformation, and socio-material relationships of the built environment. Knowledge building tradition includes theories related to sustainability of the built environment such as regenerative design, resilience, cradle-to-cradle, circularity, sharing economy based on life cycle thinking, systems thinking, co-creation of knowledge, visualisation and dialogue, (spatial) narratives, questionnaires and interviews.

The direction emphasises the exchange between scientific and design research and collaboration with stakeholders in industry, the public sector and the civil society. Master thesis can range from theoretical explorations to design and co-creation and they can take advantage of on-going research projects and partner networks from all over the world.

Method & Process

Content and structure

- 7 October, 09.00-17.00, lecture and presentation
    - The teacher gives a short lecture
    - The students present and get feedback
        - Ideas, background and relevance to direction and get feedback
- 14th of October 09.00-16.00, Individual work

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- 21st of October, 09.00-16.00, Individual work
- 11th of November , deadline 09.00. hand-in for mid-critic on Canvas
- 11th of November , mid-critic
    - The students present their project plan and receives feedback based on the presentation
- 18th of November, 09.00-16.00, Individual work
- 18th of November, deadline 17.00, Hand in project plan
- 25th of November 09.00-16.00, Final presentation and feedback
    - The examiners have read the project plan and gives feedback
- 9th of December, deadline 12.00, final hand-in for the course on Canvas
- 9th of December, deadline 12.00, final hand-in for initiating the MT term
    - Deliver final project plan and registration form
    - There will be a folder in the reception on the 3rd floor
- 13th of January, deadline 12.00, Deliver a final project plan for the exhibition
    - Starting the master's thesis term
    - There will be a folder in the reception on the 3rd floor

Submission requirements

We use Canvas course page for all our deliverances. As the course only has one Canvas page, please make sure you are uploading to the right thesis direction.

Specific requirements to be included in Project Plan at Urban Challenges:

<u>formal requirements for the project plan:</u>

- on the cover: date, name of student, course name, tutors
- max 8 pages of A4 (excluding cover)

<u>content requirements for the project plan:</u>

1. abstract (max 300 words)
2. problem statement, motivation
3. background, aim, goals
4. delimitations
5. research questions,
6. methods and approaches
7. theoretical framework, background, connecting research done in the field, reference projects
8. expected outcome and expected impact
9. audience, who is the thesis for?
10. short "CV" - works and projects done previously, courses taken on master level, relevant skills needed to carry out the project and compared to the ones that the student already possesses (max. 1 page)

Evaluation criteria's

Grading: Approved/not approved

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The evaluation foremost considers the level of comprehension of the project plan. Furthermore, the participation in the feedback sessions (both within the student groups and with the teachers) will be included.

Literature

Brand, S. (1994). *How Buildings Learn: What Happens After They're Built*. London, UK: Viking.

Ellen MacArthur Foundation (2015). *Delivering the Circular Economy: A Toolkit for Policymakers*. Cowes, UK. https://www.ellenmacarthurfoundation.org/assets/downloads/publications/EllenMacArthurFoundation_PolicymakerToolkit.pdf

Gorgolewski, M. (2018). *Resource Salvation: the Architecture of Reuse*. Hoboken, NJ : John Wiley & Sons, Inc., 2018.

Francart, N., Malmqvist, T., & Hagbert, P. (2018). 'Climate target fulfilment in scenarios for a sustainable Swedish built environment beyond growth', *Futures*, 98: 1–18. Elsevier.

Du Plessis, C., & Brandon, P. (2015). 'An ecological worldview as basis for a regenerative sustainability paradigm for the built environment', *Journal of Cleaner Production*, 109: 53–61.

Raworth, K. (2012). 'A safe and just space for humanity: can we live within the doughnut', *Oxfam Policy and Practice: Climate Change and Resilience*, 8/1: 1–26.

Robinson, J. (2004). 'Squaring the circle? Some thoughts on the idea of sustainable development', *Ecological Economics*, 48/4: 369–84. DOI: http://dx.doi.org/10.1016/j.ecolecon.2003.10.017

Thorpe, A. (2010). 'Design's role in sustainable consumption', *Design Issues*, 26/2: 3–16. MIT Press.

Revisit also literature recommended in course ARK650 "Sustainable Development and Design Professions", ARK466 "Sustainable Architectural Design", ARK590 "Building Climatology for Sustainable Design".

Faculty

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