The global need for more housing requires a smart and integrated approach. For example, the Netherlands will need 1 million homes by 2030. With which systems do we deal with; how can we compose with components; how do architecture, technology and flexible use go together? How do we use robots and CNC manufacturing techniques for this purpose? How do we integrate the influence of users; can we make better adaptable, smart and energy efficient housing systems? Are we able to make an affordable circular house?

We are working on a catalogue of Mass Customized Building Systems (MaCuB).

Collaborations are sought with the research program of TU Delft for the 1 Million Homes issue; the Circle House of GXN/3XN; The New Makers, Bouwlab R&Do, Open Building and various manufacturers of industrialized building systems. The design assignment focuses on both the Dutch context and international contexts, such as Indonesia and the Caribbean.

See also:
https://www.openbuilding.co
https://www.3dmakerszone.com/bouwlab-index.html
https://www.thenewmakers.com

Tutors:
Thijs Asselbergs
Mauro Parravicini
Roel van de Pas
Mo Smit
Anne Snijders

Code AR3AE015
Credits 55 ECTS
Location Amsterdam
Excursion Yes
Costs -

Collaborators:
MaCuB
3XN
GXN
The New Makers

Fall semester 2020
The buildings stock of the Central Government Real Estate Agency is facing a major renovation challenge. Climate targets set for 2050 require new insights, considerations and possibilities for improvement. How to deal with circularity and how do energy needs, indoor climate and renewal influence each other? What are the thoughts politically about energy and material use now this has been put on the agenda definitively? Which variants are possible and how is this balanced with the large investments aimed at achieving energy neutrality? How to deal with a lifetime / depreciation period of, for example, thirty years?

At the same time, these buildings also have an architectural value and a use value. How to deal with that? How can these be improved and strengthened so that 1 + 1 becomes 3?

The renewal issue is broad, it is not just about providing a design solution but it brings together many aspects such as: the history of the building, the place in the city, architecture, the life cycle of buildings, management for planning, investing and organizing, and so on. A challenging and topical subject that requires creativity, inventiveness and visionary thinking from a broad spectrum of generalists and specialists. It is an interdisciplinary project with an integral assignment as the basis.

Central research questions here are:
- Architectural consequences of appearance, anticipation of new material and production opportunities and what could it look like?
- Effects of applicable energy systems or combinations with public space / environment
- Working on a healthy living environment

Tutors:
Anne Snijders

Code AR3AE015
Credits 5 ECTS
Location Amsterdam
Excursion Yes
Costs -

Collaborators:

Architectural Engineering MSc3/4 Second Life
The question how circular design strategies and principles can contribute to valuable landscapes, villages or urban neighbourhoods is central to the Harvest assignment. Students work on nature-inclusive architectural design solutions, using the energy transition as a leverage for a renewed and healthy living environment. In combination with the spatial potential of the intervention area itself, we work on design solutions that strengthen the social activity, economy and its spatial identity.

Within the Harvest assignment there is a strong focus on the development process as part of the design strategy. What does it mean for the process when the community, entrepreneurs and other stakeholders are involved in the development? How to deal with the specific culture and history of an existing area? Which forms of synergy are possible between different people, animals, cycles (water, energy, waste, food and materials) and spatial ingredients? Which value(s) does an holistic circular design approach ultimately yield for the built environment?

The Harvest assignment can be done in various aE intervention contexts, such as Parkstad and Amsterdam in the Netherlands and in the international context of Indonesia and the Caribbean. It has an overlap with other aE assignments such as 1 Million Homes and Second Life. Within the Harvest assignment Architectural Engineering works together with Urbanism and Landscape Architecture to work through all scales on integral designs.
The transformation of landscapes, cities and neighbourhoods towards healthy environments that nurture resilient social systems is an important theme in contemporary (landscape) architecture and urban development.

Finding an appropriate contemporary response to existing built fabric is of fundamental interest in order to contribute to a richer and more sustainable outcome. The Shared Heritage Lab aims to do just this, by exploring, designing and testing future case studies which constitute the main backbones of environments with a shared Dutch past. It takes on crucial built heritage issues as investigations and attempts to discover how and if heritage can be a driver for sustainable development, which could in turn lead to healthier and more resilient cities and landscapes. This presents challenges from an academic point of view while addressing current societal developments.

As a result of long time colonization by the Dutch, there are many shared heritage sites and buildings around the world. Former colonial countries still struggle with a diverse range of challenges within the built environment. What’s more is that many of these countries are prone to natural disasters, such as hurricanes, flooding and earthquakes. A large need for affordable housing for a rapidly growing lower-middle class is putting environmental pressure on the stock of building materials and other resources. The question for (landscape) architects and urban planners is how to give new meaning and use to these culturally significant environments, taking history, present and future into account?

The Shared Heritage Lab has large experience within the Indonesian context and has started last year to work within the Caribbean context of Sint Maarten. The Shared Heritage Lab collaborates a.o. with the School of Architecture, Planning & Policy Development of Institut Teknologi Bandung (ITB, Indonesia) and is supported by the Cultural Heritage Agency of the Netherlands (RCE).