

COMPLEX PROJECTS

MSc2 INTERACTIVE ARCHITECTURE



Source: MSc 2 D2RP&O studio and workshop @RB lab

Tutors

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Code	AR2AA016
Credits	15 ECTS
Location	TBD
Excursion	-
Costs	-

Project type Other

Approved Yes
Master 2
Architecture
design project

Focus of the studio Interactive Architecture (IA) is on the impact of robotics and Artificial Intelligence (AI) on architecture. The studio operates at the scale of architectural inserts situated within the urban context with the aim to address challenges such as rapid urban densification, migration, and climate change.

The studio employs AI-supported and data-driven Design-to-Robotic-Production and -Operation (D2RP&O) processes that link computational design to robotic materialization and operation by integrating all functionalities (from aesthetic to functional, structural, and interactive) in the design of building components and buildings. Main goal is the development of knowledge through research by design and integration of skills by prototyping in the Robotic Building (RB) and AiDAPT labs while taking Design of Construction as well as Structural Design and Mechanics into account.

The studio is introducing students to AI-supported D2RP&O of interactive urban

inserts, which are autarchic or parasitic/symbiotic mixed-mode hubs that merge online/ virtual and physical environments in order to accommodate rapid changes in the urban eco-system due to rapid urban densification, migration, and/or climate change.

In this context, AI-supported D2RP&O establishes the framework allowing successful implementation of robotic production and operation at building scale. The focus is on processes that incorporate material properties in design, control all aspects of the processes numerically, and utilize parametric design principles, which are linked to the robotic production and operation of building components and buildings. These are supported by Computer Vision (CV) and AI methods to facilitate sensorial and spatial interaction.