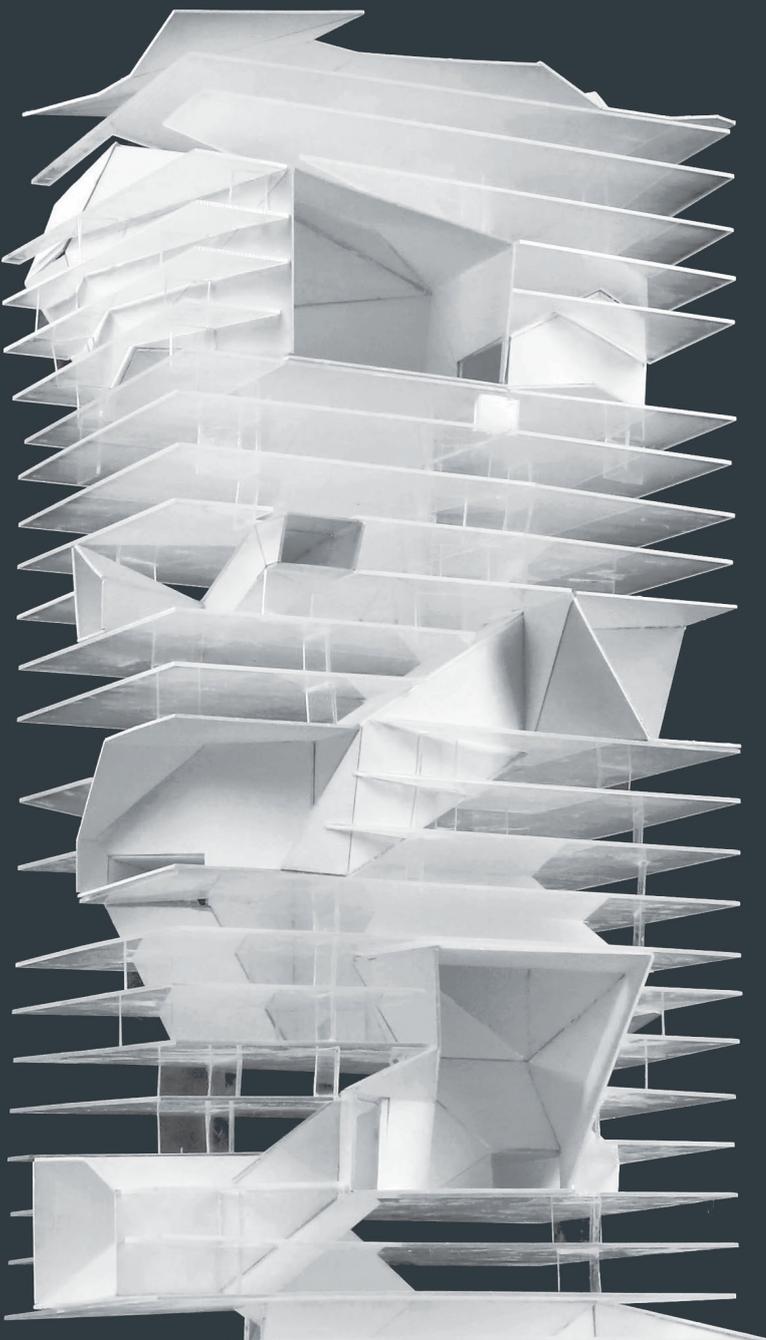


ASD

ARCHITECTURE AND SUSTAINABLE DESIGN



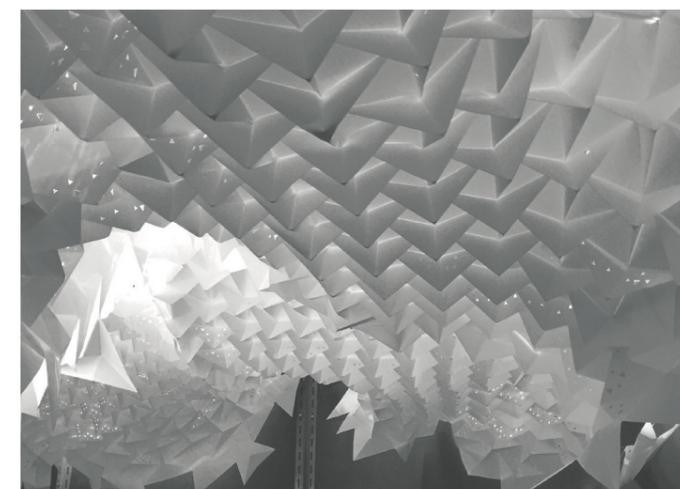
PILLAR OVERVIEW

Architecture is currently undergoing fundamental changes as it transitions from the industrial age into the digital era.

- The constraints on resources necessitate a radical rethinking of the traditional skills and trade-based production of the built environment. Advances in digital design and fabrication, such as 3D and 4D printing, numerically controlled milling, nano-materials, composite materials and additive fabrication, combined with digital mass-customisation techniques are simultaneously providing resource-efficient opportunities to the designer, while at the same time lowering production costs.
- Environmental changes are demanding a more ecological approach to the design of architecture and cities: digital data harvested from local sensor networks, satellites, and crowd-sourced information will feed the simulation of environmental forces and conditions (such as wind flows, water flows, sun orientations, topographies, human traffic, etc.), for the sustainable design of future buildings and cities as appropriate ecological responses.
- The urbanisation of the world in the coming decades will add three billion people to urban populations, an amount equal to all city dwellers today. This process of rapid urbanisation, especially in Asia, calls for sustainable architectural and urban solutions at an unprecedented speed and scale, demanding the use of digital tools in architectural and urban design.

The Architecture and Sustainable Design (ASD) pillar focuses on this changing reality, and prepares you for the immediate present and future needs of architecture in a digital era, through an innovative curriculum.

Our particular geographic position in Asia and intimate collaboration with the other SUTD pillars provide ASD with a unique platform for addressing some of the most pressing design problems in architecture and urbanism today. We offer a competitive edge in tackling emerging design challenges such as those related to the rapid urbanisation in Asia, the digitalisation of design practice, or the transformation of fabrication by algorithms and robots.



Capstone project by Lau Xue Yi, Lee Zi Qing, Tan Xiao Lei, Bai Xueni and Chloe Tan



"Amplification". Thesis project by Yeo Song Pei

The ASD pedagogy is characterised by a hands-on approach to architecture and sustainable design, a holistic understanding of the ways in which technology is changing our design and building processes, and an inclusive approach to the cultural and historical aspects of designing buildings and cities. At ASD, we believe that only direct explorations with digital tools, machines and robots will provide the necessary experience for learning and innovating in a digitally fabricated world.

In Singapore and Asia, the number of building construction and real estate development projects has exploded in the recent decade. Still, only very few projects of true intensity and visionary power have seen the light that leverage the technologies of today for the design of a sustainable future.

The ASD pillar is educating the next generation of architects to go beyond the busy pre-occupation with ever faster deadlines, instilling the desire for unique voices of true foresight to emerge and stand up. SUTD seeks to develop architectural leaders for a better tomorrow.



The following chart illustrates the ASD curriculum structure. It depicts the typical sequence of subjects.

Each major row indicates a calendar year with columns representing the Jan-Apr, May-Aug, and Sep-Dec terms ordered from left to right.





Architecture Core Studio 1. Final Review

CORE SUBJECTS

The ASD Core is structured to develop your ability to think critically; to design through enquiry, reflection and invention; to directly experience construction; to understand the technical demands of building; to think digitally and physically through drawing, making, and writing and speaking - and to be socially, sustainably and ethically responsible.

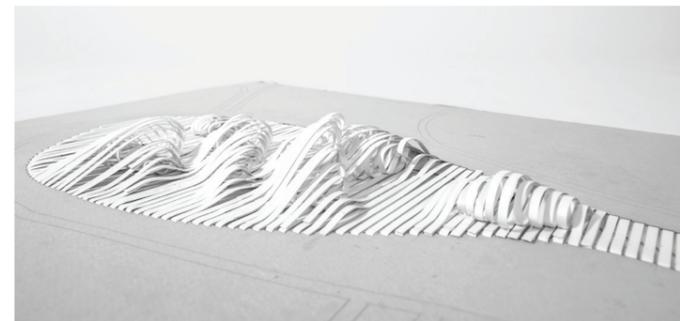
The ASD Pillar Core encompasses Terms 4, 5 and 6. The Design Studio sequence is at the heart of the programme and is unique to architectural education. Subjects revolve around the Design Studio sequence and fall into four areas of focus: Design Computation; Building Technology; and History, Theory and Culture.

ASD Core courses provide the framework to reimagine how Architecture should be learnt nowadays, by integrating parametric design and computation in the design process from the very fundamental level, in combination with the most advanced techniques in digital fabrication.

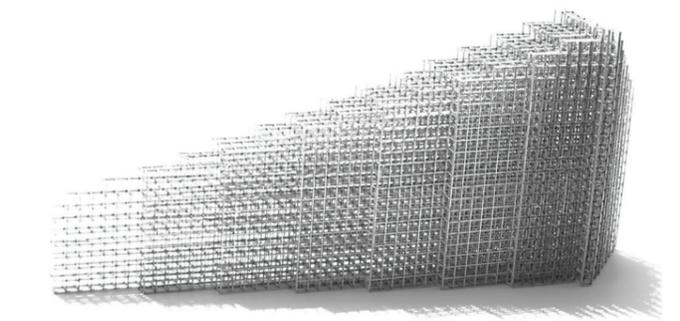
ASD students develop solid skills in the most cutting-edge digital tools applied to Architecture, in order to solve the increasingly more complex design challenges.



Core Studio 2 design by Gabrielle Quek Wan



Option Studio design by Ao Chin Wen



Introduction to Design Computation design by Sia Chin Kiat, Grace Hong Hui Xia, Seah Jia Neng, Chua Li Kiat Joel

CAPSTONE AND STUDIO OPTION

In the fourth year (Terms 7 and 8), you will be able to choose from a number of option studios, capstone studios and electives. The Option Studio and the Capstone Studio represent culminating projects for the Bachelor of Science in Architecture and Sustainable Design programme, offering you the opportunity to work on real world problems individually and in interdisciplinary and cross-pillar teams.

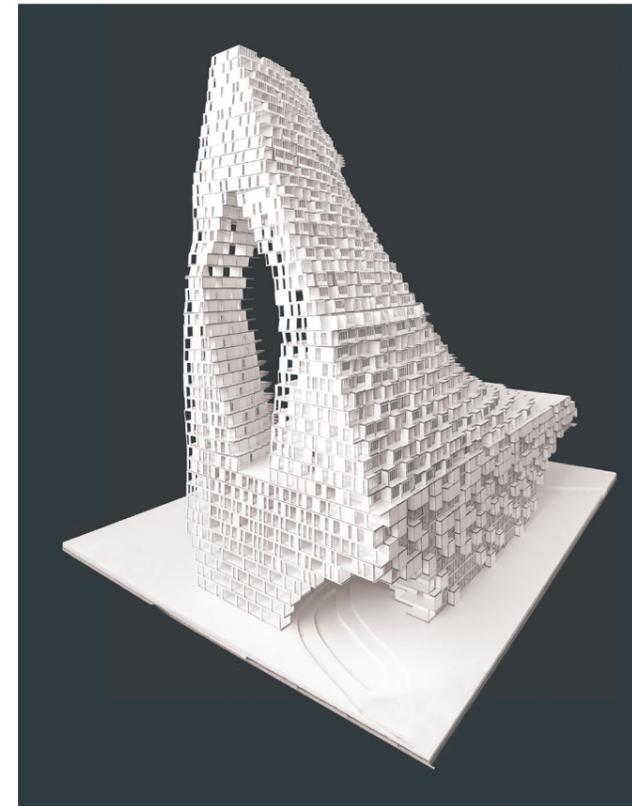
ELECTIVES

Several electives will be offered to address emerging challenges such as critical resource constraints, the need for energy-efficient and liveable housing, rapid urbanisation, transportation planning, historical conservation and land use transformations.

The electives will draw from ASD's distinct geographical situation in Asia, the partnership with Zhejiang University, and the particular intellectual position among the engineering pillars and the humanities, arts and social sciences at SUTD which give ASD a unique edge for anticipating and contributing to the fundamental shifts happening in contemporary architecture and urbanism.

BACHELOR OF SCIENCE IN ARCHITECTURE

Students completing eight terms will graduate with a Bachelor of Science (Architecture and Sustainable Design). Our unique programme structure and hands-on approach to Architecture confers on our students the necessary mix of hard skills and creative thinking to face future challenges in society and Architecture.



"Pixels". Design by Mak Yiing Huey + Tong Li Shi

INTERNSHIP

Throughout the ASD curriculum, you will have the opportunity to intern in architecture, urban design and real estate firms and apply your knowledge in real situations. SUTD provides you with the connection to a vast network of local and international architectural firms. There is also an Architecture Practice in Residence programme at SUTD.

THESIS RESEARCH

Every student's journey leads to an end with an independent Master's Thesis, where the student examines a specific thesis and envisions its architectural specificity.

The Master's Thesis represents an opportunity for students to pursue design research within a project of their passion throughout concentrated work over one year. It will have as its ultimate goal to challenge and make an intellectual contribution to the future of the architectural and urban discipline, with all the tools, technologies, arts and sciences acquired during their entire studies at SUTD.

The Thesis starts during the Structured Internship with the identification of a thesis topic and continues in Term 9 with the Thesis Preparation module, where students research and formulate their individual proposal under the guidance of advisors, related faculty members and/or industrial partners.

Thesis continues in Term 10, and evolves from the refinement of the thesis proposal to its translation into an architectural project within a specific site and programme.

Each final thesis project is publicly reviewed in a final jury consisting of ASD and visiting faculty, eminent practitioners and industry representatives.

MASTER OF ARCHITECTURE

The Master of Architecture, our professional degree, consists of a structured internship and two additional terms comprising an advanced design and research studio, thesis preparation, an elective, and the actual thesis work.

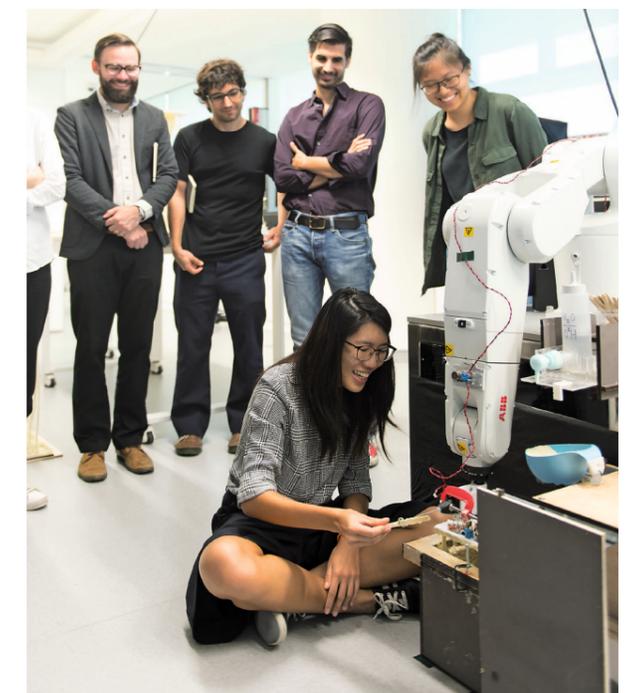
The ASD pillar is accredited for the Master of Architecture as a professional degree programme by the Singapore Board of Architects. The intent is to equip ASD pillar graduates with the best foundation for practicing architecture nationally and internationally, providing a high level of technical competency and scientific knowledge while being attuned to the business opportunities and cultural contexts that will make their design projects meaningful and sustainable.

ASD graduates will be prepared for positions in:

- Architecture
- Urban Design
- City Planning
- Environmental Design
- Construction Management
- Real-estate Development
- Post-professional Masters
- PhD Programmes

EXCHANGE

Students are welcome to spend an academic term in our partner international universities, and be immersed in a design-focused environment from an insightful perspective. Students will have opportunities to take selected courses in architecture, design and the humanities, arts and social sciences.



Thesis Research. Student working with a robot arm.



 sutd.edu.sg

 asd.sutd.edu.sg

 admissions@sutd.edu.sg

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