

ASD
CSD

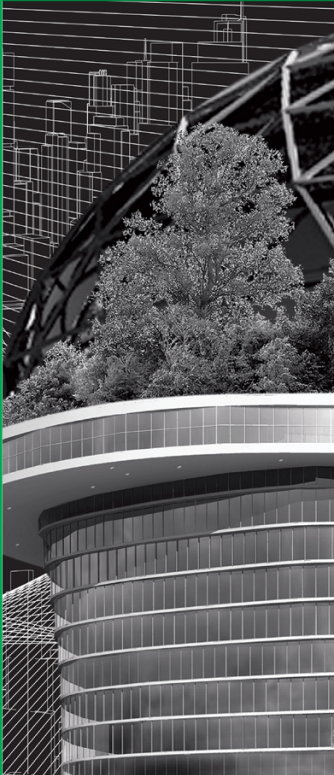
DAI
EPD

ESD

OVERVIEW

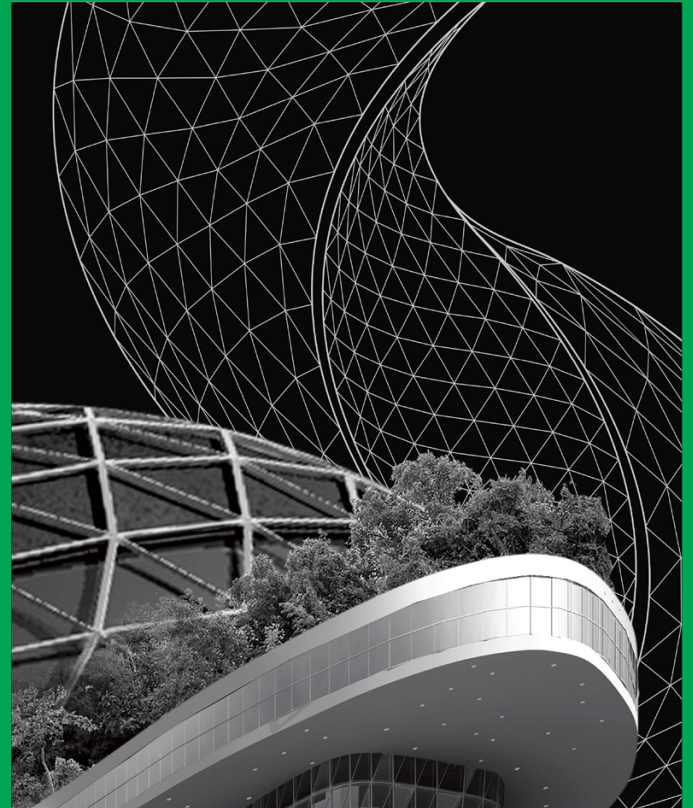
SUTD
SINGAPORE UNIVERSITY OF
TECHNOLOGY AND DESIGN

A **m**



S

**ARCHITECTURE
AND
SUSTAINABLE
DESIGN**



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REDESIGNING ARCHITECTURE – THE SUTD WAY

Architecture is traditionally about the physical form and space of buildings. With digitalisation, architecture will be redefined by new technologies, new structures and new materiality curated by advanced intelligence to create human-centric space.

- The use of artificial intelligence and deep machine learning must be ethically and structurally embedded in the design of architecture to enable the rapid development of wide-ranging options and solutions. By relegating the mundane to machines, architects can devote their energy to better architectural resolution.
- The future of built environment is likely to shift its focus to extreme circularity and human-centricity. The former deals with the ever-urgent challenge of climate change but with greater emphasis on the right blend of green innovations and change of paradigms. The latter deals with the challenges of an ageing population and need for greater care.
- ASD seeks to address the most challenging social, environmental, and economic sustainability challenges that exist in all cities. ASD aims to be a thought leader in a more balanced approach to sustainable design. The future architects are not just designers but strong advocates and leaders of the built space.

The Architecture and Sustainable Design's (ASD) innovative curriculum is designed to focus on this changing reality and is characterised by:

Hands-on approach

Holistic understanding of the way technology is changing our design and building processes

Inclusive approach to the cultural and historical aspects of designing buildings and cities

OUR ASD GRADUATES WILL BE ARCHITECTS WHO CURATE URBAN SPACES OF DIVERSE SCALES. ARMED WITH STRONG DIGITAL COMPETENCES, ASD GRADUATES WILL BE THE MEDIATOR OF THE PHYSICAL AND DIGITAL WORLD OF ARCHITECTURE. IN THIS MOST UNIQUE SPACE, THEY WILL ALSO BE IN THE PRIME POSITION OF INFLUENCING FUTURE COMMUNITIES.

Graduate with a Bachelor of Science in Architecture and Sustainable Design

TRAILBLAZING A BETTER WORLD BY DESIGN.



A FORWARD-LOOKING CURRICULUM

Over the course of the first three common Freshmore terms, you will have built a solid foundation in Science, Mathematics and Technology (SMT), Humanities, Arts and Social Sciences (HASS) and Design. You will also be introduced to architecture tools and concepts, beginning a “virtual studio” right from the start with the advantage of an interdisciplinary perspective, which will prepare you for your ASD major.

In the ASD programme, you will be equipped with cutting-edge digital tools, applying computational thinking, design computation, parametric design, AI and more to architecture in order to solve increasingly complex

design challenges. In addition to your ASD subjects, the exposure to engineering disciplines and the courses you will continue to take in HASS lead to a unique technological imagination and prepare you to be a new kind of architect who embraces the cultural and social context of technology in the modern world.

Every undergraduate will have worked on at least 20 design projects throughout their years of study at SUTD. In Terms 6, 7 and 8, you will be able to choose from a number of Option Studios and Capstone Studios. They represent culminating projects for the Bachelor of Science in ASD programme, offering you the opportunity to work on real-world problems individually and in interdisciplinary teams with students from other majors. Upon graduation, you'll possess an extensive portfolio of industry-inspired projects, well-prepared for your career journey.

ASD CORE SUBJECTS

The Design Studio sequence is at the heart of the programme and distinct to architectural education. Subjects fall into four areas of focus:

- Building Technology
- Design Computation
- History, Theory & Culture
- Studio

LEARNING OUTCOMES OF ASD CORE



Master of Architecture Thesis Award (Representation & Computation) by Ashley Chen

- Think critically
- Design through enquiry, reflection and invention
- Directly experience construction
- Understand the technical demands of building
- Think digitally and physically through drawing, making, writing and speaking
- Be socially, sustainably and ethically responsible

ASD CURRICULUM

JAN-APR		MAY-AUG		SEP-DEC	
● Freshmore Subject	▲ Y1	TERM 1			
● Core Subject	▲ Y2	Modelling & Analysis			
● Elective	▲ Y3	Physical World			
● Capstone	▲ Y4	Computational Thinking for Design			
	▲ M.Arch	Social Science: Understanding Behaviour, Culture & Society (HASS)			
TERM 2		TERM 3		VACATION	
Modelling Space & Systems	Modelling Uncertainty				
Technological World	Global Humanities: Literature, Philosophy, and Ethics (HASS)				
Science for a Sustainable World	Any Two Electives*				
Design Thinking & Innovation					
TERM 4		TERM 5		VACATION/ INTERNSHIP/ EXCHANGE	
Architecture Core Studio 1	Architecture Core Studio 2				
Architectural Structure & Enclosure Design	Architecture Science & Technology				
Digital Design & Fabrication	Building Information Modelling				
Traditions (History, Theory & Culture)	Modernisms (History, Theory & Culture)				
TERM 6		VACATION/ INTERNSHIP/ SUMMER PROGRAMME		TERM 7	
Architecture Core Studio 3	Sustainable Design Option Studio 1				
Architectural Energy Systems	Capstone				
Creative Machine Learning	Elective				
Architectural Theory & Design	Elective				
TERM 8		TERM 9			
Sustainable Design Option Studio 2	GRADUATION BACHELOR OF SCIENCE (ARCHITECTURE AND SUSTAINABLE DESIGN)	Graduate Design Studio			
Capstone		Thesis Preparation			
Elective	STRUCTURED INTERNSHIP	Professional Practice 1			
Elective		Elective			
TERM 10					
THESIS	GRADUATION MASTER OF ARCHITECTURE				
Professional Practice 2					
Elective					

ELECTIVES

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

BACHELOR OF SCIENCE

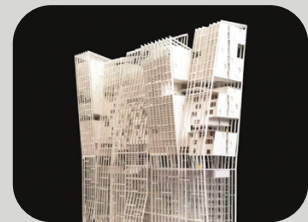
Upon completing eight terms, you will graduate with a Bachelor of Science (Architecture and Sustainable Design). Our distinctive programme structure, combined with a hands-on approach to architecture, equips you with a powerful blend of technical expertise and creative innovation to confront the future challenges of both society and architecture. You will be poised to design integrated, effective evidence-informed solutions, harnessing the power of data-driven design and advanced fabrication techniques.

With sustainability woven right from the start of your education, you will be delivering designs for the future extending beyond economic considerations to encompass the social and cultural dimensions through the use of technology, design computation methodologies and sustainable design principles.

GRADUATE SCHOOL

ASD's rigorous technical training prepares you for various post-graduate programmes. Other than the SUTD Master of Architecture programme, our ASD graduates are also enrolled at top universities such as:

- ✦ École Polytechnique Fédérale de Lausanne
- ✦ Harvard Graduate School of Design
- ✦ Massachusetts Institute of Technology
- ✦ Yale University



Master of Architecture thesis. New attitude towards transformation in HDB by Ong Li Yen.

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Chia Sheng Wei
Computational and Architectural Designer,
TypeO Architecture
Class of 2020,
ASD Master of Architecture Alumnus

ASD was truly an eye-opening and exciting programme for me. With the guidance of a diverse and technically versatile faculty, and an environment where one is not afraid to fail, students are given the opportunity to develop a keen sense of design that incorporates various fields of knowledge, especially in the use of the latest technologies.

ASD is a course for the brave, and risk-takers, and through the various studios and electives over the trimesters, **students quickly learn to develop ideas that challenge the norm, in a clear, logical manner.** As long as one is eager to learn, and with the right attitude, there really is no limit to what is possible with regards to pursuing one's interests in the field, particularly in the Master of Architecture programme. I have high hopes that my peers and I have the potential to continue to push boundaries even after graduation.

***Term 3 Electives:** Science and Technology for Healthcare
 Data Driven World
 Designing Energy Systems
 Spatial Design World

- In addition to all subjects in Term 1 being grade-free (Pass/No Record), students can choose up to four more subjects from Terms 2 and 3 to be grade-free.
- Students will declare their choice of major in Term 3.

Information is subject to change. Visit asd.sutd.edu.sg for latest updates.

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Seah Chee Huang
Chief Executive Officer,
DP Architects

SUTD's integrated learning pedagogy is highly relevant to the practice of architecture which demands a **holistic, highly collaborative and outcome-driven approach**; and the ASD curriculum that drives impact through technological innovation, plays a critical role in bridging skills gap in the built environment sector.

DP's partnership with SUTD began in 2010 and has continued to strengthen over the years. The ASD graduates who join DP stand apart because of their **solid grounding in a sustainability and technology-focused design education**. Their versatility to adapt to new ideas and the changing landscape is noteworthy. The high quality of ASD graduates entering the profession is the result of the programme's continued focus in pushing design innovation in sustainable architecture and nurturing future tech-enabled leadership.

FUTURE POSSIBILITIES



Master of Architecture Thesis Award (Social Innovation) by Nurul Nazeera Binte Yazid

MASTER OF ARCHITECTURE

The Master of Architecture consists of a structured internship and two additional terms comprising an advanced design and research studio, an elective, thesis preparation and thesis.

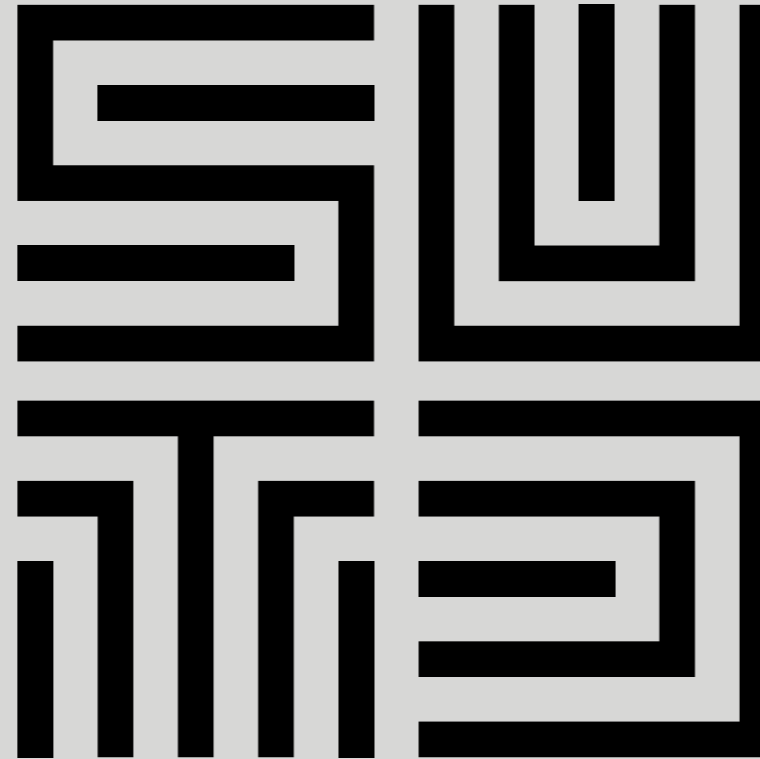
ASD is accredited for the Master of Architecture as a professional degree programme by the Singapore Board of Architects. The intent is to equip ASD graduates and qualified students from other architecture schools with the best foundation for practising architecture nationally and internationally, providing 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.

CAREERS

ASD GRADUATES WILL BE PREPARED FOR POSITIONS IN:

- Architecture
- Architecture research and design
- City planning
- Computational architecture and design
- Digital fabrication and design
- Environmental design
- Future cities research and design
- Game design
- Placemaking
- Programme management
- Real estate development
- Urban design

TRAILBLAZING A BETTER WORLD BY DESIGN.



MASTER OF SCIENCE IN URBAN SCIENCE, POLICY AND PLANNING (MUSSP)

Offered by the Lee Kuan Yew Centre for Innovative Cities (LKY CIC), the Master of Science in Urban Science, Policy and Planning (MUSPP) is a 12-month intensive programme featuring an integrated and multi-disciplinary curriculum aimed at training the next generation of urban researchers and practitioners grounded in urban theory, skilled in urban analytics, and trained in urban planning and policy thinking. Through the programme, you will learn to apply appropriate research methods to understand urban phenomena, critically analyse and evaluate issues, and create robust planning and policy interventions.



CAREERS

GRADUATES HAVE SECURED POSITIONS IN:

- Business and finance
- Civic technology
- Community development
- Education and research
- Economic development
- Public administration and policy-making
- Urban analytics and data science
- Urban planning and development

You will have a chance to be personally mentored by top practicing architects from architectural firms such as DP Architects, FARM Architects, Ling Hao Architects, MKPL Architects and RSP Architects during your course of studies.

EXAMPLES OF ASD GRADUATES' EMPLOYERS:

- architects61
- AWP
- CPG Consultants
- DP Architects
- Formwerkz Architects
- Gensler
- K2LD Architects
- Kaizen Architecture
- MKPL Architects
- ONG&ONG
- RSP Architects
- S A Chua Architects
- Sembcorp Architects & Engineers
- Tierra Design Studio
- W Architects
- WOHA Architects

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Hsinming Fung
Principal at
Hodgetts + Fung
Director of International
Programs at SCI-Arc

I have seen an incredible range of projects from the SUTD master's programme and I am very impressed with its students.

Their **in-depth research of design and its applications** was capable and disciplined as they **dealt with issues that not only included local constraints, but also the global environment**. I saw a variety of thesis projects discussing cities such as Detroit and continents such as Antarctica.

Their understanding and problem-solving skills regarding architecture specific to a location proved most promising. For me that is a real thesis project. I am thankful to have participated in a lively and dynamic dialogue with the SUTD students.



Global exchange programme in Finland



Paris field trip



i Light Singapore 2022 installation developed by SUTD graduates

GLOBAL EXPOSURE

In January each year, students are free to pursue their personal interests. During this Independent Activity Period (IAP), some ASD students choose to use their skills to contribute to the world or to gain more exposure through overseas workshops. In Terms 6 and 8, certain Option Studios provide you with international opportunities to broaden your horizons.

SWISS IAP: SWISS INNOVATIONS

- Studied Swiss innovations in Basel's distinctive spaces.
- Explored potential sites for a hospitality space through the use of data.
- Met and shared ideas with Jacques Herzog and Pierre de Meuron, recipients of the Pritzker Prize in 2001.

JAPAN STUDIO: INUJIMA LIFE BOTANIC GARDEN

- Collaborated with Sejima and Nishizawa Architecture Atelier (SANAA) and Japanese architect Kazumi Kudo.
- Conducted research on Pritzker Laureate Kazuyo Sejima's "Inujima Life Botanic Garden", a project that focused on new ways of living in the small island community of Inujima.

JAPAN IAP: MEASURING THE UNMEASURABLE

- Examined and analysed different types of data to better understand the utility of spaces in the Kansai region.
- Explored various sites including an observatory building, restored machiya guesthouses and art house projects on Inujima guided by the architect herself, Kazuyo Sejima.

VENICE STUDIO: ANDREA PALLADIO

- Learned about the great Renaissance architect Andrea Palladio (1508-1580) and experienced his architecture in Venice.
- Studied the relevance of Palladian architecture in our modern context, and how to apply the values of scale, proportion and hierarchy to meet the needs and challenges of architecture.

VIETNAM IAP: COMMUNITY DESIGN AT HANOI

- Building on an earlier community design project in Ho Chi Minh City (2014-2015), SUTD OLab embarked on a new community design project in Hanoi, in partnership with World Vision and CapitalLand.
- Designed a safe learning and playing compound for a new kindergarten in Le Xa, encouraging local children to go to pre-school and receive proper nutrition and education.
- Conducted research and a co-design workshop with teachers and residents.
- CapitalLand constructed the final design in May 2018.

STUDENTS' EXCELLENCE ON THE GLOBAL STAGE: AWARD-WINNING WORKS



**Jacques Rougerie
Foundation International
Architecture Competition
2019, Coup de Coeur Award**

A Living Organism: Design for the End of the World
by Nabila Larasati Pranoto,
Master of Architecture,
Class of 2019



**ARCASIA Thesis
Of the Year 2021,
Gold Award**

The Makers
Museum by Chia
Sheng Wei, Master
of Architecture,
Class of 2021



**Fentress Global
Challenge 2021,
Third Place**

Aviation 2050:
Imagining Future
Adaptive Antifragile
Airport Terminals by
Tan Gee Yang, Master
of Architecture,
Class of 2021



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