



Joseph Lim (Dr.) PhD (Heriot-Watt), MSc (Strathclyde)  
Professor Emeritus

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Dr Joseph Lim has a special interest in prototypical structures addressing emergent spatial and environmental need. His architectural and engineering research investigations on repurposing oil rigs for habitable applications was published by Springer in 2020, titled *Oil Rig and Superbarge Floating Settlements*, and receiving interest in the Middle-East. It was also selected for exhibition at the UABBHK Bi-City Biennale of Urbanism\Architecture held in Hong Kong and Shenzhen from December 2019 to March 2020.

Joseph's focus in Industry and Infrastructure explores land intensification through architectural investigations, which have significant implications on the planning of future settlements, townships and infrastructure. In 2008, he pioneered corporation-funded design research studios, collaborating with JTC in 2008-10. MPA-funded research studio followed in 2014, which explored an urban design study for Tuas Port 2027 and was exhibited at the Singapore Maritime Week Exhibition and SG50 NUS Exhibition in 2015. The research studio was also featured in a Channel News Asia documentary - Futuropolis Episode 2: Keeping Afloat televised in 2017 - on the effects of rising sea levels and the viability of floating settlements. In 2016, he completed a Kinetic Sun Screen prototype capable of generating multiple programmed formations from a system with eight degrees of movement. It forms the basis for further research in the area of kinetic facades and other applications such as acoustic and wind diverting structure. Design research investigations in cellular facade geometries mediating light quality and intensity are published online at Form follows Light ([www.josephlimdesigns.com](http://www.josephlimdesigns.com)). Joseph is often invited to speak at international conferences and also served as Visiting Professor and external examiner internationally.

Joseph was appointed lead architect by Mercy Relief for the post-Tsunami rebuilding efforts in Aceh Indonesia, and his self-sufficient housing proposal won an Honorable Mention at the Institute of Advanced Architecture of Catalonia in 2005. His earlier design projects are published in various media and have won SIA Design Awards and international awards including an Honorable Mention for Lee Treehouse at the Kenneth F. Brown Asia Pacific Culture and Architecture Design Award in 2003; and a Merit Win for Dragon Bridge in URA Southern Ridges Bridge International Design Competition in 2004.

In 2024, Joseph was awarded College of Design and Engineering's Teaching Excellence Award. As educator, he has applied his design research work for studio learning. He is the author of *Bio-structural Analogues in Architecture* (2010) and *Eccentric Structures in Architecture* (2012); both publications are in their third reprint and have been translated in Korean and Chinese languages. His publication, *Skybridge I* investigates forms of air rights structures built over Ayer Rajah Crescent and the research conclusions were presented at the JTC i3C Symposium on Industrial Infrastructure Research in 2017. His latest publication, *Oil Rig and Superbarge Settlements Floating Settlements* researched into repurposing three types of vessels in the marine industry, viz the jack-up platforms, the semi-submersibles and the superbarges, into alternative settlements to existing floating cities. This Springer publication is reference for researchers, industry and engineering coursework.

Students' projects under Joseph's tutelage are distinguished in several regional and international competitions. These include Hannover Expo, International Association for Humane Habitat, International Tropical Architecture Design, Hunter Douglas Awards, Nippon Paint Designer Award, Best Project in 5 Universities Graduation Project Review and the Architecture Drawing Prize in the World Architecture Festival.

In administrative leadership, Joseph was awarded both National Day Award and Ministry of National Development Award for his dedicated and outstanding service in both the university (as former Vice Dean and Program Director for both undergraduate and graduate programs) and Board of Architects Singapore.

## **Cross Disciplinary Design Thinking underpins Design by Enquiry**

### **Prototypical Structures**

- 2025-26 Asatte no Eki Studio
- 2023-24 Vertiports (Arup Collaboration)
- 2022-23 Conceptual Designs for Sultan Shoal Bridge Project (MPA sponsored - \$22,808)
- 2020-21 Filter City (Post-Covid model)
- 2020-21 Tissage Cellulaire (Baelf Collaboration)
- 2019-20 Hudsons Yards, New York City (SCDA collaboration)
- 2017-18 Oilrig Conversions (Keppel Offshore Marine collaboration)
- 2016-18 Megaframe Air Rights Building Project (NUS-JTC i3 Centre funded \$90,000)
- 2013 Sculptural Tessellations
- 2010-14 Kinetic Screen (MND funded \$747,274, collaborators ARUP, GM2000 and Hopetechnik)
- 2008-10 New industrial prototypes, Singapore (JTC funded \$320,000)
- 2004 Geometric Design as Spatial Forms (Arup Singapore collaboration)
- 2000 Building Expedition, Thailand (SIF-SIA sponsored)
- 2000 Aluminium Deployable Structure Research (BCA funded \$10,000). Research on a transportable 15m span structure, which can be configured in square, rectilinear, and circular plan forms with a patented joint system

### **Future Master Plans**

- 2016 Linear City Urban proposal for Jurong 2030 (URA collaboration)
- 2014-15 Mixed-use developments for 320-hectares Tuas Port 2030 (MPA sponsored \$70,000)
- 2000-03 Water infrastructure Master Plan for Public Housing Punggol neighborhood, in collaboration with Prof Ng Wun Jern, and Er. Appan Adhityan from the Engineering Department (ARF funded \$202,000)

### **Regenerative Settlements**

- 2007 Redevelopment of Shenzhen urban village (Archurban Architects collaboration)
- 2005 Autonomous post-tsunami settlement plan for 1000 inhabitants in Aceh Sumatra
- 2006 Industrial redevelopment of 5-hectares Kolkata town (Kolkata Planning Agency collaboration)

## RESEARCH BY DESIGN AND SCHOLARLY CONTRIBUTIONS

### Design-Research Projects

- 2025-26 Asatte no Eki Studio, co-led with Dr. Shin Yokoo, this design-research studio explored and reimagined some of Japan's train stations along Odakyu and Keio lines, offering innovative and sensitive propositions that transform the potential of older stations into vibrant community spaces, culture corridors, and sustainable infrastructure. The studio forms part of a wider focus on infrastructure as architecture for an uncertain future in the light of climate change. Studio project models are currently exhibited at SDE 3, Level 3.
- 2023-24 Vertiports (**Arup Collaboration**). Research by Design studio investigated small footprint Vertiports for eVTOL and **Advanced Air Mobility** issues concerning urban infrastructure, with input from industry experts Skyports CAAS and SG Technologies. The studio outcome was feature in exhibitions representing CDE in NUS promotional events.
- 2022-23 Conceptual Designs for **Sultan Shoal Bridge Project (MPA sponsored - \$22,808)**. In collaboration with NUS Civil Engineering Department and MPA, the design was for a 180m bridge linking Tuas Megaport and Sultan Shoal Island. **The outcome of the work process was documented in a report submitted to MPA Senior Management, followed by a presentation to CEO Teo Eng Dih on 6 July 2023. MPA has commissioned me to lead a conceptual study for the implementation of the bridge involving CDE and SERIS.** Throughout the semester, both architecture and engineering students benefitted from the interdisciplinary learning brought by MPA Engineers, Civil Engineering colleagues Dr Kong Kian Hau, Prof Tan See Chee. Guest Critics Wong Mun Summ and Dr Hossein Joraibi complimented the rigour of the studio investigations at the final presentation.
- 2020-21 **Filter City**: New Planning perspective for a 40,000 person neighbourhood in the light of the coronavirus becoming an endemic condition. The investigations questioned the relevance of deep plan centralised building clusters and proposed more granulated program mixes in future masterplans enabling economic and environmental resilience. A **Forum discussing Pandemic Issues on Planning with Mr Kishore Mahbubani, Prof Tan Chorh Chuan and Ms Hwang Yu Ning**, benefitted research studios and was very well received.  
**Tissage Cellulaire**. This **cross-disciplinary studio was conducted with fashion design firm (Baelf) which specializes in 3D printed dresses**. The extrapolation of complex geometric patterns common to the 3D dress and the architecture wall screen was enabled by the LEAP MOTION software. This software translated finger and hand movements into geometric mutations of existing Rhino files (the geometric outcomes were special because they could not be pre-conceived). **The project was documented in a Channel News Asia Insider: How 3D Printing is Redefining Fashion and Jewellery Design | 3D Nation Episode 6 televised on 4 Aug 2022**
- 2016-18 Megafame Air Rights Building Project (**NUS-JTC i3 Centre funded \$90,000**). Above ground new space for knowledge industry at Ayer Rajah Industrial Estate. This obviated the need to demolish old building stock by building over it.
- 2017-18 Oilrig Conversions (**Keppel Offshore Marine collaboration**). Design research explored the possibility of floating settlements with offshore oil exploration vessels. They were showcased at **Singapore International Water Week**, and presented to Senior Minister of State, Masagos Zulkifli who officiated the event.
- 2016 Linear City Urban proposal for **Jurong 2030 (URA collaboration)**. The design investigation was premised on integrating mixed-use developments with transport infrastructure to explore minimum connected footprints for a city.
- 2014-15 Mixed-use developments for **320-hectares Tuas Port 2030 (MPA sponsored \$70,000)**. Resulting from a positive outcome of an earlier consultancy work with MPA, these sponsored studios research and provided urban design and architectural proposals for the air-rights structures to the Tuas Port. Research output of the NUS team was **exhibited at the MPA Singapore Maritime Week** in April 2015 launched by Minister Lui Tuck Yew. It was also **featured in SG50 exhibitions, Archifest 2015 Exhibition for Future Structures and Channel News Asia documentary - Futuropolis Episode 2: Keeping Afloat televised in 2017** - on the effects of rising sea levels and the viability of floating settlements.
- 2013 **Sculptural Tessellations**. The FYP studio empowered students to use their intuitive senses to create form in light. The aesthetic value of their creation was also subject to practical challenges in using material, support, and fabrication to overcome geometric limitations and constraints to form. The studio used Rhino and Grasshopper software. **These projects were also displayed at the Department's City Exhibition 2015, and the SG50 exhibition at URA 'From Urban Design to Envelopes'**. These experimental design projects were supported by my research on external envelopes which explored daylight, rain penetration simulation methods in form finding.
- 2010-14 **Kinetic Screen (MND funded \$747,274, collaborators ARUP, GM2000 and Hopetechnik)**. – Design an external screen that dynamically responds to glare, control, and ventilation. This screen can be used to retrofit existing buildings, or it can be used in new proposals. The structure is to be made of lightweight material, employing simple moving mechanisms which are robust and easily maintained.
- 2008-10 New industrial prototypes, Singapore (**JTC funded \$320,000**). A design enquiry on new production facilities co-located with neighbourhood precincts as early integrated hubs. A total of eight design research studios was coordinated under my Directorship of the JTC-NUSS I3 Center.

## **AWARDS/ HONOURS AND PROFESSIONAL RECOGNITION**

- 2024 College of Design and Engineering, Teaching Excellence Award
- 2023 Best Mentor Award, Nippon Paint Designer Award
- 2021 Meritorious Award by Minister of Home Affairs (for my contribution to the nation)
- 2014 National Day Awards, the Long Service Medal, PMO Singapore
- 2012 Ministry of National Development Award for Dedicated Service to the Singapore Board of Architect
- 2005 Honourable Mention for Post-Tsunami Housing in Institute for Advanced Architecture of Catalonia, Spain, (published in a research publication entitled Self-Sufficient Housing by ACTAR, Loft Publications in 2006)
- 2004 Merit Win for Dragon Bridge in Urban and Redevelopment Authority (URA) Southern Ridges Bridge International Design Competition. This international competition was organised by Urban Redevelopment Authority (URA), National Parks Board (NPB), and Land Transport Authority (LTA). 65 entries were received including 11 overseas entries from USA, UK, Japan, South Korea and China.
- 2003 Honourable Mention for Lee Treehouse Singapore in Kenneth Brown Asia Pacific Culture & Architecture Design Award 2002 (For 2002, I am the only individual awarded for a project built in Singapore, *The Lee Treehouse*, together with three internationally renowned practitioners for the honourable mentions, notably, Mr Glenn Murcutt, Australia (who is also Pritzker Prize winner 2002), Mr Kerry Hill, Singapore (who is also Aga Khan Award winner 2002) and Mr Shuhei Endo, Japan (who is also winner of 8<sup>th</sup> Japan Public Architecture Award 2001 and Francesco Borromini Award 2001). Article on the treehouse was featured in The Straits Times Life on 12 April and the win highlighted on 3 May 2003)
- 2002 University Quality Service Award
- 2001 Two Honourable Mentions for NUS Core Curriculum Office & Ban Patai Village School in Singapore Institute of Architects (SIA) Architectural Design Awards

## **SERVICE TO NUS, PROFESSION AND NATION**

### **Administrative Leadership**

- 2020-26 Member (2024) and Chair (2025), Research by Design Search Committee  
Member, SDE MTAR committees  
Chair, Department Workshop Committee overseeing SDE 3 renovation, budget, and procurement  
M.Arch Admissions Committee, Architecture Aptitude Test Panel, AIP Academic Advisor
- 2019-23 Undergraduate Unit Leader
- 2017-21 M.Arch Program Director
- 2000-03 M.Arch Course Director and BA.Arch Year 2 Coordinator
- 2010-14 Vice Dean, Academic (Undergraduate) – chairs FTEC and ATEA, oversee BUS, UCEP, UGR portfolios including CDP proposals and curriculum changes, led the development of the Masters in Urban Planning program
- 2011 Taskforce Member and co-Chair, SDE Workshop on Sustainable Cities
- 2007-09 Deputy Head, Research – oversee various portfolios including chairing PhD Oral Defense Exam
- 2001-06 Deputy Head, Academic – oversee various portfolios (FTEC, DEC, etc.) including developing the 4+1 architecture curriculum, and refinement of MArch specialisations and defining their course pedagogies.

### **Representation in Professional Organizations**

- 2023 Taskforce for the EW1 and SDE2 redevelopment
- 2022 Speaker at Archifest 2002 themed The Order of Love. Invited by Ar. Tan Sze Hann, Hon. Secretary, SIA 62<sup>nd</sup> Council. This was a closed-door conversation on prevailing issues impacting the Built Environment and the profession, held at the URA Centre. The event was attended by leading practitioners and various key stakeholders in the industry.
- 2017 Invited by the Police Commissioner to provide the strategy to preserve the Senior Police Officers Mess building as part of local Heritage. Consequently, the Police Force retained its 'Istana' when its leasehold expired, and the land plot was to be surrendered to URA for redevelopment.
- 2015 Invited Speaker to share the MPA research design project, and the implications on Pathways and Challenges to design in the Profession at SIA's newly renovated premises for Archifest 2015. In the same exhibition, I curated the works of DoA colleagues. Research-driven studios which explored emergent future need were articulated in design propositions on land, air, and sea space. This exhibition is vital for public and professional education and outreach to potential students
- 2014-21 Appointed by MHA (in my capacity as Architect) to advise HomeTeamNS Development Committee and PMO on HTNS infrastructure. After advising the construction of HTNS clubhouses (Khatib, Bedok, Balestier and Sembawang). Khatib Clubhouse was conferred the Second Award at the Rethinking the Future Awards, under Sports and Recreation (Built) category.
- 2011-17 Appointed Co-Director, NUS JTC i3 Centre. Together with A/P Qian Xudong, workflow processes were streamlined to shorten response time, conceive research framework and strategized and implemented plans to utilize research funding effectively. A series of working forums were conducted during the 2nd Call for Research Proposal and this was followed by faculty presentations to shortlist research proposals. Collaborations between JTC personnel, Engineering and Architecture faculty were enabled. As a result, review of research proposals could be fast tracked and awarded in six months after CFRP. The i3 Centre targets were attained within the decision-making processes of JTC management.
- 2011 Leader, JTC-NUS Research Unit Thrust

- 2005-09, 2022-current Board Member, Board of Architects (BOA) Singapore – holding various positions including Chair, Sect 15(1)c Examination Panel, Review Committee on Architectural Qualification, Recognized Universities and represented the BOA at a Focus Group Meeting with NParks on the Gardens by the Bay Design Competition
- 2003-08 Member, Committee for Design Review of Infrastructure Projects, NUS
- 2002-04 Member, NUS Campus Green Committee
- 2002 Member, inaugural Conference Advisory Council of Civil Works Technologies Congress
- 2001 Chair, International Conference on Transportable Environments
- 1998-03 Council Member, Singapore Institute of Architects, responsible for developing joint research programmes of benefit to both the profession and the School of Architecture

### Consulting Activities

- 2025- Head of Academy, Singapore Institute of Architects
- 2023-25 Chair, Techno Edge 2 Renovation
- 2019-21 Advisor to Minimum Viable Product (MVP) Studio in NUS Liaison Office
- 2017-18 Research output from Megaframe Air Rights Buildings projects was presented to CEO, JTC and senior management and contributed to Greater One North Master Plan for JTC's pre-policy planning
- 2008-10 Appointed by CEO BCA as Expert Panel, Sino-Singapore Tianjin Eco-City Project
- 2005 Architect for Mercy Relief Singapore in Post-Tsunami Permanent Housing Project for 1000 inhabitant in Aceh, North Sumatra, Indonesia
- 2003 Advisor to CAAS on interior landscape in Terminal 2 at the finger piers.
- 1998-2007 Architect for NUS Interior architecture/ building projects:
- Kent Vale Residential Apartments, 2006-07
  - McDonald's Restaurant beside Engineering Canteen, 2001-02
  - Statistics Consulting Centre, 2000-03
  - American Studies Centre, 1999-00
  - English Language and Literature Department, 1998-00
  - Career Office Faculty of Science, 1998-99
  - Dean's Office Layout and Reception Counter, 1999
  - Theatre Pavilion (Extension to UCC Courtyard), 2001 – invited by CFA Director Prof Edwin Thumboo to propose an architectural design which was presented to President Shih C.F. and Dr. Liu Thai Ker)

### STUDENT EXCELLENCE

#### Awards/ Achievements by students under my tutelage

- 2024 Winner, Lee Kuan Yew Medal for Graduating M.Arch Thesis and elected Valedictorian (Ryan Quah, Masters)  
Winner, Design Excellence Awards in Best Public Design Category (Terence Tan Jia Ren, for his Design 6 BA.Arch project)
- 2023 Winner, Lee Kip Lin Medal for Undergraduate B.Arch (Ryan Quah, FYP)  
NUS Achievement Award with distinction (Ryan Quah, FYP)
- 2022-23 Nippon Paint Asia Young Designer Award (Ryan Quah, for his Design 6 BA.Arch project)  
Yen Tzu Hao and Zhang Jiasheng FYP (under my tutelage) were selected for exhibition on CDE coursework during Deputy Prime Minister Heng Swee Keat's visit to the SDE3 Opening Ceremony.  
Master student Goh Yi Fan (under my tutelage) was invited to share his thesis conclusions with NParks and URA
- 2018 Winner, NUS-JTC i3 Centre Innovation Medal and Prize. (Lim Zhihan's FYP addressed the theme of innovation in the design of industrial facilities and infrastructure)
- 2017 Winner, The Architecture Drawing Prize, World Architecture Festival (Christopher Wijatno, Masters)  
Winners, Lim Chong Keat Award for pioneering thesis (Christopher Wijatno, Chen Qisen, Wang Yigeng, Bek Tai Keng, Sakinah Halim, Roy Tay, Davis Wong - Masters)
- 2015 MPA Project Thesis team was nominated by the Department for the RIBA Competition for Visualising the Future of the City (Kew Xun Long, Clifford Au Yong Wen Li, Verna Ho Jing Yu, Jessica Tan Su-Ann, Joanne Gay Hui Yan)
- 2014 Top Thesis Project (selected by External Examiners) was nominated for the Archiprix International Entry hosted in Barcelona
- 2013-14 Award for Most Experimental Thesis (Teo Zitong, Masters)  
Winner, Best Project in 5 top Asian Universities Graduation Project Review (Teo Zitong, FYP).  
Teo Zitong's Year 4 studio project - Kinetic Pavilion under my tutelage won Best Diploma Project in the '5 Universities Graduation Projects Review' held at the University of Tokyo on 28 February 2013.
- 2012 First prize, 2nd International Tropical Architecture Design Competition (Teo Weiling, Masters) for IHLs organized by BCA, SIA, and the Singapore Green Building Council
- 2008 Third prize, 6th International Association for Humane Habitat Student Design Competition (Chen Yuxun, Tan Ruixiang, Eugene Aw, Grace Chen, Heng Yinghui - FYP)  
Winner, Hunter Douglas Award (Liew Kok Fong, FYP)  
Honorable Mention, Present Architecture's Challenge Ion Minchu Bucharest (Liew Kok Fong, FYP)
- 2007 Winner, Hunter Douglas Award - Innovative Use of Technology (Foo Yuet Yee, FYP)
- 2000 Special Appreciation Prize, Hannover EXPO 2000 Student Competition (Julian Song Ming Siang, Masters)

1999 Honorable Mention FABSTRUCT International Membrane Structure Student Competition (Leong Wey-Hsien and Foo Tze-Yang, FYP)

#### **SELECTED PUBLICATIONS**

- 2020 Lim, J, Oil Rig and Superbarge Floating Settlements (Lecture Notes in Civil Engineering), Springer  
Lim, J, Designing a Kinetic Screen from an Origami Fold, chapter in Automating Cities, Wang, C.M. and Wang, B. T. (eds.), Springer  
Lim, J, Bio-structural Analogues in Architecture, Analogic: Studio Architecture and Urbanism Magazine, Issue 18, Italy
- 2018 Lim, J, Skybridge 1: Air Rights Structure, Singapore
- 2014 Lim J E M, Sheikh Hakim, Scarcity, control and negotiations: an interpretation of form in urban informal settlements, Planum Journal of Urbanism  
n.29 Volume 2
- 2013 Lim J E M, et al., Planning for an Open Pit Underground Habitat, Asian Pacific Conference on Structural Engineering 2011  
Lim J E M, Eccentric Structures in Architecture, BIS Publisher, Amsterdam
- 2009 Lim J E M, Bio-structural Analogues in Architecture, BIS Publisher, Amsterdam
- 2008 Lim J E M, Sung-woo Shin and Byum-seok Han, "Symbol and Structure in the Architecture of the Korean World Cup Stadiums, Basheer Graphics Publications (2008)
- 2005 Lim J E M, Design Generation of High-Density Forms in Asia-Pacific Network for Housing Research Conference – Housing and Globalization, Kobe University, Osaka, Japan, September 2005
- 2004 Lim J E M and A K H Lee, CFD Simulation in the Architectural Strategy for the Ventilation of Public Podium Spaces in a Local Hospital Building, in CIB2004 World Building Congress, Toronto, Canada, May 2004
- 2001 Lim J E M, W J Ng, L C Koh and V Kallianpur, A Model for Decentralised Grey Waste Water Treatment System in Singapore Public Housing, The International Water Association Conference on WasteWater Management for Developing Countries, Vol.1, pp.489-497, University Teknologi Malaysia, Malaysia, 29-31 Oct 2001