

# **Design-led creative thinking to drive innovation for the future economy in Singapore**

## **Design Education Review Committee released report**

1 Following a two-year review, the Design Education Review Committee (DERC), chaired by Mr Tan Pheng Hock, retired CEO of ST Engineering, today released a report with recommendations to transform and strengthen design education in all Institutes of Higher Learning (IHLs) in Singapore. The Ministry of Trade and Industry has accepted the report's strategic directions and recommendations that are aimed at developing design talent with transdisciplinary skillsets and a workforce with design sensibilities. These recommendations support the vision of Singapore becoming an innovation-driven economy and a loveable city by 2025.

2 The report covers five key recommendations to enhance existing design programmes in the IHLs and increase the appreciation and use of design across different disciplines: first, strengthen industry links through a Design Education Advisory Committee (DEAC); second, impart design-led creative thinking skills to students across more disciplines; third, support Continuing Education and Training (CET) for design professionals and educators; fourth, create real-world design-learning platforms for professionals; and fifth, empower everyone to learn about design through modular courses and learning communities. Please refer to [Annex A](#) for an overview of the report and recommendations.

3 Amidst rapid industry transformation, a workforce that is skilled in design can play an instrumental role in enabling companies to remain competitive and innovative. The future economy requires more designers who can integrate knowledge and methods from different design disciplines and operate in non-design contexts. Likewise, non-designers must be equipped with design-related skills to enable innovation in the workplace. To build such a workforce with adaptive skillsets amidst

a fast-changing employment landscape, Singapore will need to update its design education and training system. The DERC has proposed strategies to support and strengthen existing efforts in Pre-Employment Training (PET) and CET in Singapore IHLs.

4 Elaborating on the impact of design on the workforce and economy, Mr Tan, said, "A robust design education system will enable everyone to appreciate the value of design and apply it in their work and everyday lives. The Design Education Review Committee hopes that the five recommendations will help create more effective ways for people to learn design, and nurture generations of citizens able to leverage design to improve the lives of fellow Singaporeans and contribute to society and the economy."

5 To enable implementation of these recommendations, the Dsg will form a DEAC, comprising design industry professionals, leaders from non-design sectors and IHLs, representatives from public service agencies and international thought leaders. The DEAC will facilitate stronger partnerships between the IHLs, employers and government, and offer advice on industry trends and emerging skills needed for our workers to thrive in the future economy.

6 Two pilot programmes will also be rolled out in line with the recommendations. The first is "Let's Design Together" – a transdisciplinary design-learning programme that will be piloted at the Singapore Polytechnic (SP) in the 2019 academic year. Students from five participating schools at SP will collaborate with industry partners to solve real-world issues using design-led creative thinking approaches. Another pilot programme is the "School of X" – a real-world platform for professionals to come together and tackle complex issues using design-led creative thinking beyond the formal curriculum. More details about these two pilot programmes can be found in [Annex B](#).

7 The Dsg will continue to work with the various public service agencies and industry leaders to study the recommendations, and spearhead the implementation of plans to drive innovation and growth in the future economy using design.

8 The DERC, which comprises two workgroups with more than 30 members from both the public and private sectors, made its recommendations informed by findings from the 2017 National Design Industry and Manpower Study, as well as over 40 interviews and focus group discussions with stakeholders from the design education system.

**Annex A**

**DESIGN EDUCATION REVIEW COMMITTEE REPORT  
OVERVIEW**

**DESIGN 2025 VISION**

Singapore to be a thriving innovation-driven economy and a loveable city by design

**WE WANT**

A global, resilient workforce that will use design to help Singapore thrive in the future economy. We need a workforce that:



Consists of design talent with transdisciplinary skillsets



Possesses design sensibilities for the wider economy

**WE NEED**

A sustainable design education system to nurture a pipeline of talent. We need Institutes of Higher Learning and training providers that:



Provide more innovative and flexible ways of learning



Support the professional development of design educators

**5 RECOMMENDATIONS**

to achieve an enhanced design education system

Support Continuing Education and Training for design professionals and educators



Impart design-led creative thinking skills to students across more disciplines

Strengthen industry links through a Design Education Advisory Committee

Create real-world design learning platforms for professionals

Empower everyone to learn about design through modular courses and learning communities

1. The Design Education Review Committee (DERC) released a report with recommendations to strengthen design higher education in Singapore.
2. The Ministry of Communications and Information appointed the DERC in August 2017. The DERC, which is chaired by Mr. Tan Pheng Hock, comprises key industry players, Institutes of Higher Learning (IHLs) and public service agencies. Two sub-workgroups were established, comprising more than 30 members from the design industry, employers of designers, academics, as well as school leaders from the Autonomous Universities, polytechnics and the Arts Institutions.
3. The DERC envisions that by 2025, Singapore will have more innovative and flexible ways for people to learn about design, facilitated by design educators who are up-to-date in the latest industry needs and developments. Design talent will be equipped with transdisciplinary skillsets and the broader workforce, including non-designers, will possess design sensibilities.
4. The report identified five trends in the design sector that will impact manpower in the future economy:
  - (a) **Design as Catalysts:** As more companies integrate designers into their teams, designers will need to possess deep knowledge not only in their specific craft but also in business and technology;
  - (b) **Cultural and Organisational Transformation:** Designers play an important role in facilitating the development of human-centred problem-solving approaches to shape organisational culture based on empathy, communication and collaboration;
  - (c) **System Approach to Complexities:** As businesses continue to recognise the value of design in navigating complex systems, designers must better understand cultural nuances, relationships and the human psyche to deliver thoughtful and meaningful experiences;
  - (d) **Design for New Technological Platforms:** Designers are expected to be agile and versatile enough to design for omni-channels and must exercise empathy to create seamless solutions in a fast-evolving technological landscape; and
  - (e) **Sustainability and Ethics:** Designers must be proficient in regulations governing data privacy, intellectual property, sustainability, diversity, inclusivity and accessibility.
5. These five trends in the design sector and the growth in demand for emerging design roles suggest a rapidly changing employment landscape. All individuals need transdisciplinary skillsets to remain versatile in such an environment. The

key to embedding essential design skillsets across different areas in our society is to enhance Singapore’s education system across the PET and CET space.

6. With the aim of strengthening the design education system in Singapore, the DERC was tasked to propose strategies to:
  - (a) Strengthen Singapore’s design higher education by enhancing existing design programmes in IHLs; and
  - (b) Embed design in Singapore’s non-design higher education institutes, in order to increase the appreciation and use of design across different disciplines.
  
7. To drive innovation for Singapore in the future economy, the report provides the following five recommendations:

<b>Recommendations</b>	<b>Details</b>
<b>Strengthen industry links through a Design Education Advisory Committee (DEAC)</b>	The DERC recommends the formation of a DEAC, which will comprise key industry leaders from design and non-design sectors, IHL leaders, representatives from public service agencies, and international thought leaders. The DEAC will help ensure that the design curriculum remains agile and adaptable to capitalise on economic and industry shifts. More details on the DEAC are provided in Annex B.
<b>Impart design-led creative thinking skills to students across more disciplines</b>	Design-led creative thinking is best learnt in a transdisciplinary environment where people from different backgrounds work together to solve real-world problems. To widen the scope of design learning, the DERC recommends that IHLs consider establishing more platforms for students from different disciplines to come together to learn, practise and apply design-led creative thinking.  To test this recommendation, SP will be the first polytechnic to prototype a transdisciplinary design-learning programme in their curriculum with “Let’s Design Together”. More details on this pilot programme are provided in Annex B.
<b>Support CET for design educators and professionals</b>	The DERC recommends that CET programmes and incentives be enhanced to support the deepening of strategic, management, analytical and

	<p>communication skills for design professionals. Potential initiatives include:</p> <ul style="list-style-type: none"> <li>• Providing more DesignSingapore Scholarships and SkillsFuture Study Awards for individuals who have an interest in acquiring non-design skills; and</li> <li>• Encouraging CET training providers to take reference from the Skills Framework for Design to develop CET programmes that can meet the skills gap and needs of the design and non-design sectors.</li> </ul> <p>To ensure that design educators maintain industry relevance, the DERC also recommends:</p> <ul style="list-style-type: none"> <li>• Developing a common skills framework to guide the professional development of design educators; and</li> <li>• Including design educators in the SkillsFuture Study Award for the design sector.</li> </ul>
<p><b>Create real-world design learning platforms for professionals</b></p>	<p>The DERC recommends the creation of more learning platforms where professionals can learn and hone design-led creative thinking skills by devising solutions to real-world social and economic challenges. The proposed experiential learning spaces will be sustained learning platforms beyond formal CET settings.</p> <p>To pilot this recommendation, the DERC proposes starting the “School of X” programme – a real-world learning platform that will offer opportunities for professionals to learn and practise design-led creative thinking, and to co-create solutions for the community. More details on this pilot programme are provided in Annex B.</p>
<p><b>Empower everyone to learn about design through modular courses and learning communities.</b></p>	<p>In line with the Design 2025’s vision of developing design as a national skillset, the general public can take ownership of their personal development, and embrace the spirit of lifelong learning by learning and applying design-led creative thinking. To this end, the DERC recommends:</p>

	<ul style="list-style-type: none"> <li>• Creating more modular courses in emerging design domains to impart critical skills in design concepts and design literacy to individuals at all stages of learning. Suitable design courses can be implemented under the existing eight emerging skills areas covered by the SkillsFuture Series, across three proficiency levels (basic, intermediate and advanced). This will allow individuals to identify relevant courses based on their skills level and career needs.</li> <li>• Ramping up efforts to promote lifelong learning in design skillsets through ground-up learning communities throughout Singapore.</li> <li>• Leveraging existing national movements such as the SkillsFuture Festival to organise learning platforms that will ignite public interest in wielding design as a novel and effective tool for problem-solving and innovation.</li> </ul>
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8. The Ministry of Trade and Industry (MTI) has accepted the report and the recommendations set within. MTI and the Dsg will work closely with the industry, sector champions and other stakeholders to implement them at the appropriate juncture.
9. Members of the DERC include:

***Main Committee Members***

<b>Name</b>	<b>Designation</b>	<b>Organisation</b>
Mr. Tan Pheng Hock (Chairman)	Retired CEO	ST Engineering
Mr. Simon Ong (Workgroup 1 Chairman)	Deputy Chairman	Kingsmen Creatives
Mr. Low Cheaw Hwei (Workgroup 2 Chairman)	Head of Design APAC	Philips ASEAN Pacific
Ms. Agnes Kwek	Executive Director (till 13 May 2018)	DesignSingapore Council

<b>Name</b>	<b>Designation</b>	<b>Organisation</b>
Mr. Mark Wee	Executive Director (from 14 May 2018)	DesignSingapore Council
Prof. Kristin Wood	Head of Pillar, Engineering Product Development	Singapore University of Technology and Design
Prof. Thomas Menkhoff	Academic Director	Singapore Management University
Prof. Lam Khee Poh	Dean, School of Design & Environment	National University of Singapore
Prof. Vibeke Sorensen	Chair, School of Art, Design and Media	Nanyang Technological University
Mr. Albert Lim	Director, School of Design	Nanyang Polytechnic
Mr. Tim Kobe	CEO & Founder	Eight Inc.
Mr. Benjamin Mah	Director, Digital Transformation and Innovation	Oracle Asia Pacific
Mr. Scott Maguire	Global Engineering Director	Dyson
Mr. Zahidi bin Abdul Rahman	Principal Architect	Zahidi A R Arkitek

### ***Workgroup Members***

The DERC also comprises representatives from the following organisations:

- LUNAR, McKinsey & Company
- IDEO
- Public Services Division
- Workforce Singapore
- Tan Tock Seng Hospital
- IBM Design Studio
- UBS Wealth Management APAC
- Ministry of Education

## ***Participating IHLs***

- Institute of Technical Education (ITE)
- Polytechnics
  - Nanyang Polytechnic (NYP)
  - Ngee Ann Polytechnic (NP)
  - Republic Polytechnic (RP)
  - Singapore Polytechnic (SP)
  - Temasek Polytechnic (TP)
- Autonomous Universities
  - Nanyang Technological University (NTU)
  - National University of Singapore (NUS)
  - Singapore Institute of Technology (SIT)
  - Singapore Institute of Management (SIM)
  - Singapore Management University (SMU)
  - Singapore University of Social Sciences (SUSS)
  - Singapore University of Technology and Design (SUTD)
- Arts Institutions
  - LASALLE College of the Arts (LASALLE)
  - Nanyang Academy of Fine Arts (NAFA)

## **Annex B**

### **DESIGN EDUCATION ADVISORY COMMITTEE AND PILOT PROGRAMMES**

#### **Design Education Advisory Committee (DEAC)**

The first recommendation of the DERC is to establish a DEAC to strengthen links between IHLs and industry.

The DEAC will comprise key industry leaders from design and non-design sectors, IHL leaders, representatives from public agencies and international thought leaders. It will be another industry touchpoint for IHLs to regularly obtain information about the latest industry trends and emerging skills needed by the industry.

The committee will work with IHLs to provide, among other things:

- Advice on how to better align design education initiatives with industry needs;
- Global perspectives for the benchmarking of IHL's programmes;
- Overseas networks and resources for curriculum development;
- Additional resources and opportunities for collaboration with industry; and
- Advice on the application of the Skills Framework for Design to sharpen curriculum development.

#### **Pilot Programme: "Let's Design Together"**

Tied to recommendation 2 is "Let's Design Together" – a transdisciplinary design-learning platform that will be piloted by SP as a semester-long credit-bearing module called the "Transdisciplinary Innovation Project". The module will bring students from participating schools at SP to solve real-world issues through design-led creative thinking approaches in collaboration with industry partners. With the launch of this programme in the academic year of 2019 in October, SP will be the first polytechnic in Singapore to prototype a transdisciplinary design-learning programme as part of its curriculum.

The first stage of planning will involve getting industry partners to provide design briefs for the students to solve. These partners will also offer industry perspectives, technical expertise, and mentorship for students throughout the course of the project. Students will first learn the theoretical principles of design-led creative thinking. They will then apply these principles to the brief in the process of carrying out field work, research, defining problem statements, ideating, prototyping and presenting their ideas. Students are trained to employ design-led creative thinking to arrive in the form of an engineering or business solution. This process nurtures a creative and growth mindset in students and helps them make a difference to their

communities. It also sharpens their design sensibilities and help them gain a better appreciation of how design can impact their daily lives.

The value of the programme in effectively imparting students with design-led creative thinking skills and other non-design skills can be assessed by gathering feedback from students, facilitators, industry partners and mentors. Findings from the “Let’s Design Together” pilot will be shared with other IHLs to consider incorporating into their core curriculum.

### **Pilot Programme: “School of X”**

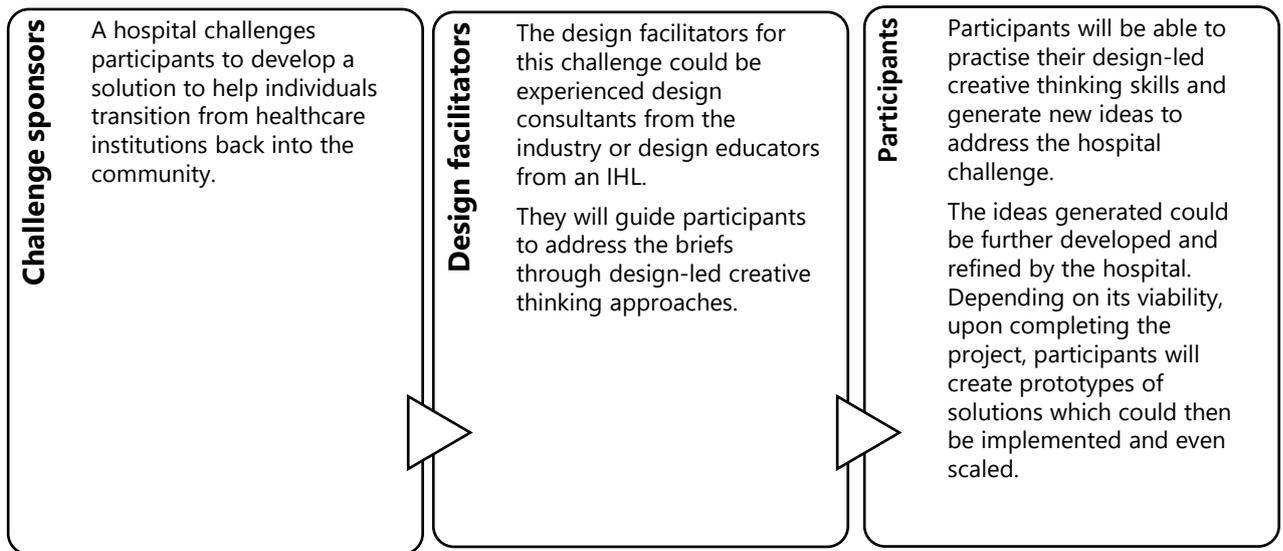
Supporting recommendation 4, the “School of X” is a real-world open learning platform that will offer opportunities for professionals to learn and practise design-led creative thinking beyond the formal curriculum. Professionals from both private and public sectors will come together through physical and virtual platforms to tackle complex social and economic issues using design-led approaches. Participants will not be formally assessed on how they approach the challenges, but instead will learn from feedback from fellow collaborators and facilitators.

The three main groups of stakeholders involved in this programme are:

- i. Challenge sponsors:** They identify and own the briefs to be worked on, provide background knowledge and subject matter expertise and support the subsequent implementation of outcomes. They will also play an active role in guiding and mentoring participants.
- ii. Design facilitators:** These are typically design practitioners or experts in design thinking. They will guide participants to address the briefs through design-led creative thinking approaches.
- iii. Participants:** These are professionals who are interested in learning about design-led creative thinking approaches or have varying degrees of knowledge in the area pertaining to the design challenge. They can come from different professional backgrounds and contribute to the team’s learning by sharing their unique skillsets with one another.

A curator will also oversee the design challenges from a content and engagement level while coordinating with the stakeholders to form diverse teams with participants from different backgrounds.

*Sample iteration of the programme:*



This transdisciplinary and experiential approach will not only deepen the acquisition and application of the design-led creative thinking skills but facilitate the transfer of learning to the participating stakeholders' workplaces. Dsg will develop the framework for the "School of X", which can be adopted by other organisations to offer their own real-world design learning platforms.

### **About the Design Education Review Committee**

The Design Education Review Committee (DERC) was appointed in 2017 by the Ministry of Communications and Information and was tasked to propose strategies that Institutes of Higher Learning (IHLs) could adopt to strengthen their design education programmes, and to embed design in their non-design education programmes. It comprises two sub-workgroups with more than 30 members from diverse backgrounds, including representatives from the private sector from both design and non-design firms, public sector agencies, and Institutes of Higher Learning.

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