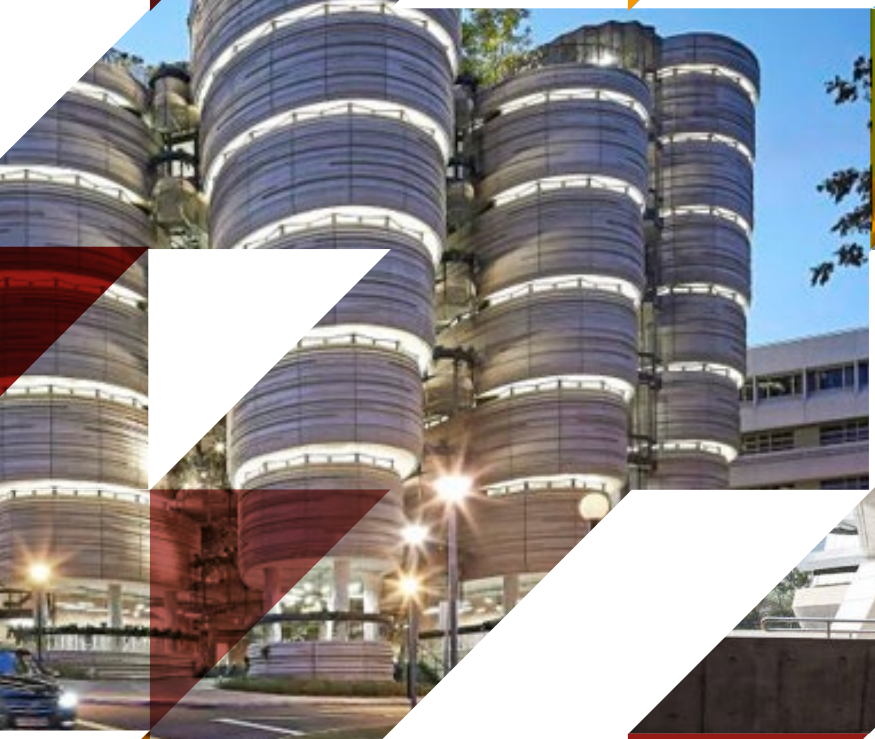

THREE CASE STUDIES OF ASIAN LEADING LEARNING SPACES:

Find out how Nanyang Technology University (NTU), Tanglin Trust School (TTS), and Hong Kong Polytechnic University innovate their learning spaces

The education market in Asia continues to expand at break-neck pace as demand is rising for access to both public and private education institutes at the primary, secondary and tertiary levels. This is due in large part to a combination of the region's growing population, expanding middle class wealth and, in many South East Asian countries, growing expatriate communities. The education market in China alone is predicted to double to US$450 billion by 2020 compared to its estimated value in 2015.

This soaring demand is representative of the region's evident need to supply its respective populations with sufficient schooling spaces and all the necessary elements to support the delivery of an adequate education. However, many parts of Asia are not only looking for a greater quantity of educational institutions, they are also aiming to develop more efficient, versatile, flexible, inspiring and ultimately, more effective learning spaces which are capable of fully unlocking the potential of both students and their educators. In short, they are working towards a complete rethinking of the traditional classroom.

The following examples are designed to showcase some of Asia's leading innovators in creating such spaces – **their methods, achievements and their impact on the end user: the teacher and their class. From open plan, smart tech enabled collaboration spaces and smart classrooms, to wholly functional medical practice wards, Asia is on the cutting edge of designing and delivering the next generation of learning spaces.**

LEADING EXAMPLES OF NEXT GENERATION LEARNING SPACES IN ASIA

1 Nanyang Technology University (NTU) – Singapore

For decades, Singapore has been pursuing a national education vision which emphasises innovation and creativity in order to promote lifelong learning. This goal doesn't end with secondary education, as NTU clearly demonstrates, with its cutting-edge approach to designing learning spaces which utilise the latest educational technologies and approaches.

The university's largest and most impressive monument to the delivery of next generation learning spaces is The Hive, a $38 million learning hub composed of 12 towers – each eight storeys high – complete with 56 smart classrooms equipped with flexible clustered seating, electronic whiteboards and multiple LCD screens. The Hive supports a "flipped" educational model where students can access all relevant educational materials before their lessons so that they can spend that time more productively engaged in discussions, tutorials and more engaging and active learning formats.

The Hive is just the start of NTU's drive towards new ways of building better learning spaces. In early 2017, the university opened a brand new medical school building that houses smart classrooms and learning facilities designed to literally integrate a hospital setting within the classroom. **It features a fully functioning practice ward where students can perform basic diagnostics, 10 paired consultation rooms where students can hone their doctor-patient communication skills, and an anatomy learning centre equipped with more than 170 bottled specimens donated by NTU's medical school partner, Imperial College London.**

The facility is also equipped with a human-sized virtual operating table where students can carry out virtual operations on remarkably realistic 3D anatomies. This is an essential element of NTU's goal of familiarising its students with the latest technology in order to solve existing and future problems.

"The approach for designing The Hive was to redefine the university building. Within this new context the purpose of a university is to foster togetherness and sociability, so that students can meet their fellow entrepreneurs, scientists or colleagues in a space that encourages collaboration."

– **Heatherwick Studios,** designers of The Hive at NTU

2 Tanglin Trust School (TTS) – Singapore

Another of Singapore's most advanced, progressive and forward-thinking educational institutions, TTS became the first school in Asia to implement a highly advanced and flexible 3D classroom solution throughout its junior and senior schools, which have a combined population of over 2000 students.

The 3D Classroom, delivered by Swedish company Sensavis, allows teachers to bring any subject material to life, even abstract concepts, through the use of its interactive 3D modelling which teachers and students can observe and control through virtual reality glasses and motion sensing controls. From exploring the function and structure of human organs in biology lessons, to investigating how volcanoes erupt in geography, students can easily visualise the subject material and use the 3D glasses and interactive tools to rotate, zoom in or out and generally view their display from any angle they choose. **TTS has said that since enabling this advanced learning space they have seen an instant improvement in engagement and a higher quality of questioning from the students utilising it.**

"Today, the dominant form of literacy is multi-modal – we read images, sounds, text and emotions. Supplementing teaching with visual elements enables all students to absorb new knowledge, not just those who are good at reading and who are already interested. The 3D Classroom now reaches beyond the classroom by allowing the educator to create their own presentations of the content, which students can watch where ever they want, as often as they want."

– Fredrik Olofsson, CEO, Sensavis

3 The Jockey Club Innovation Tower – Hong Kong Polytechnic University

Since its completion in October 2013, The Jockey Club Innovation Tower (JCIT) has been a byword for next generation learning space design.

The Zaha Hadid designed innovation tower brings together 1800 people and multiple design disciplines which were originally scattered across several different buildings throughout the campus. It houses the Hong Kong Polytechnic University's School of Design (SD) and supports the development of its specialisations, namely Environmental Design, Industrial and Product Design, Visual Communication, Advertising as well as Digital Design. Naturally, bringing all of these departments under one roof requires a creative learning space which is versatile enough to support the various working and studying styles of such a diverse range of students and their teachers.

To that end, the JCIT has been continually upgraded with the latest in collaborative technologies, tools and design features, the tower is a cutting-edge space for students and educators to come together and work in the manner which suits them best. **The tower features a range of flexible spaces; designed studios and open classrooms which help both students and teachers transition between different learning modes. To connect people and ideas, JCIT continues to utilise integrated smart technology to establish a more innovative and collaborative culture, and ultimately symbolises the design school of the future.**

Enabling better quality education and collaboration through evolved learning space design

Even as immense pressure is brought to bear on educational institutions across Asia to expand their facilities and offer more places, it becomes increasingly clear that technology will become an even more crucial tool in enabling classrooms, lecture halls and study areas to reach their full potential as learning spaces.

By improving their practicality, while also giving educators the means to inspire all of their students, smart classrooms and innovative learning spaces will enable schools and universities across Asia to improve the quality of their educational offering, even as they expand in size and scale.

Leaders from the three education institutions mentioned above will be speaking at:

Dr Peter Looker
Head, Teaching, Learning and Pedagogy Division,
Nanyang Technological University

Chetwyn Chan
Associate Vice President, Learning and Teaching,
Hong Kong Polytechnic University

John Ridley
Director of Learning,
Tanglin Trust School, Singapore

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