

Ngee Ann Polytechnic launches SEED initiative to create springboard for green careers and partnerships in next wave of green efforts

Polytechnic forges alliances with industry leaders to form the NP Built Environment Ecosystem with plans to upskill industry professionals to meet sustainability goals

NP partners Keppel to transform brown buildings into green assets and grow capabilities in this emerging area

Highlights of NP's Green Impact

Met SG Green Plan Energy Goal 6 Years Ahead of 2030 Target +

Achieved 34%* Reduction in Carbon Footprint through:



Reduction of energy use by 30% –

Ranked #1 among polys & ITE for lowest energy usage



Installation of solar panels on 15 buildings –

1st poly to install solar panels to harness renewable energy



Greening up the campus –

Biodiverse campus with over 1,000 tree species, absorbing over 25 tonnes of CO² annually

*From 2013 to 2023

28 March 2024 – Building on key advancements made over the last decade (2013-2023), Ngee Ann Polytechnic (NP) today announced plans to integrate sustainability across its curriculum, operations, and partnerships at the launch of its Sustainability Education & Ecosystem Development (SEED) initiative. Graced by the Minister for National Development, Mr Desmond Lee, the event marked NP's concerted pursuit to accelerate its sustainability efforts.

Under the SEED initiative, NP will drive environmental sustainability in these three focus areas to contribute towards Singapore's green goals:

1. Developing sustainability-intelligent graduates to meet emerging needs of the green economy;
2. Spearheading sustainability-focused industry partnerships through the Centre for Environmental Sustainability; and
3. Greening a brown campus for learning.

Developing Sustainability-Intelligent Graduates

As organisations all over the world review their business processes to align with environmental, social and governance (ESG) goals, there is growing demand for talents with the knowledge and skills to navigate sustainability-related business challenges across industries. A 2023 report¹ noted that there could be as many as 30 million sustainability-related jobs in South-east Asia by 2030, offering up to US\$1 trillion in annual economic opportunities. Locally, the Ministry of Sustainability and the Environment estimated that 55,000 new jobs would be created in the sustainability sector by 2031².

¹ Report published in May 2023 by non-profit organisation Bridgespan: Promoting Equitable and Inclusive Green Job Growth in Southeast Asia: <https://www.bridgespan.org/getmedia/9ab68ac6-6baa-47d6-a2c3-9f0dd3e786f5/promoting-equitable-inclusive-green-job-growth-in-southeast-asia-2023.pdf>

² Published in The Straits Times in Feb 2021: <https://www.straitstimes.com/politics/addendum-to-presidents-address-55000-new-jobs-to-be-created-in-sustainability-sector-in>

Recognising that sustainability has emerged as a critical driver of competitive advantage, NP will equip its students with sustainability literacy and competencies to enable them to add value to businesses and communities through sustainability-focused solutioning.

From April 2024, every first-year NP student will undergo sustainability education as part of an interdisciplinary programme and develop a set of sustainability lens as they engage in community-based solutioning. By cultivating the sustainability perspective in them, it will give them a firm foundation and the confidence to tackle sustainability-centred industry projects in their final-year.

NP will also progressively incorporate industry-specific ESG skills and knowledge into the curricula of its 36 diploma courses, where relevant. For example, every year, about 350 students from NP's School of Design & Environment will build their competency in Built Environment sustainability that leads to the Green Mark Associate accreditation. The industry certification will open doors to a growing pool of green career opportunities in the sector.

NP has also curated a Minor in Sustainability programme for NP students with an interest in deepening their sustainability knowledge and skills, allowing them to hone transferable green skills that are applicable across sectors and job functions. Additionally, through a longstanding partnership with Lien Foundation, NP will introduce the new Environmental Impact Scholarship to nurture green talents who are passionate about championing sustainability. The scholarship will provide opportunities for students to embark on exclusive internships at organisations that are leading the way in sustainable development.

Ecosystems for Sustainability Innovation & Talent Development

On the industry front, NP is forging strategic alliances and creating new ecosystems to drive sustainability innovation and talent development. The Polytechnic's Environmental & Water Technology Centre of Innovation, with close to 20 years of applied research & development and consultancy experience, will be renamed the Centre for Environmental Sustainability. The Centre will serve as a platform for spearheading collaborations between industry partners and its academic schools to develop solutions that address sustainability challenges. The platform will also provide valuable opportunities for students to gain sustainability skills as they work on industry projects.

Having inked partnerships with 15 organisations including Johnson Controls, Meinhardt, Sodexo and Surbana Jurong (refer to Annex A for full list of partners) to establish the NP Built Environment Ecosystem (BEE), the polytechnic will offer leading-edge smart facilities management training. Bolstered by a partnership with JTC Corporation, the BEE combines tech know-how from infrastructure solutions providers and NP's expertise to offer training that is set to transform the local built environment industry.

Specifically, NP seeks to upskill up to 1,000 professionals in this industry over three years, providing solutions pioneered by its Integrated Operations Centre (IOC). Set up in 2019 as an operational nerve centre, the IOC has contributed to propelling NP ahead of its pack in tech-enabled energy and water management. In 2022, NP made the notable achievement of lowering its energy use by 30%. Based on BCA's Benchmarking Report released in July 2023, NP's energy use intensity is the lowest among institutions such as polytechnics and ITE colleges.

Leveraging the IOC's capabilities, which includes the latest cloud-based technologies powered by artificial intelligence (AI) and Internet of Things (IoT) applications, as well as digital twin models, NP will customise training programmes to meet organisational needs. Specifically, businesses ranging from real

estate management, facilities management, to environmental services can look forward to leveling up skills in deploying these leading-edge technologies to meet sustainability goals.

JTC is a pioneer member of the BEE. Mr Derrick Ong, JTC's Director of Facilities and Estates Management (Public) Division said, "This collaboration with Ngee Ann Polytechnic is an extension of JTC's role as a Centre of Excellence for infrastructure and building facilities management. Leveraging JTC's experience in managing industrial estates in Singapore, we are supporting industry-wide learning to develop the capabilities in facilities management. By embracing digitalisation, green building technologies and new innovations, we aim to drive efficiencies and enable smart facilities management practices that elevate standards across the industry."

Greening a Brown Campus for Learning

NP is also turning the campus grounds into a sandbox for piloting sustainability innovations with industry players and will begin with brownfield development. A term used to describe developments on existing older building sites, brownfield development is widely recognised as more challenging.

To this end, NP will partner Keppel to retrofit NP's Smart34 building located at Blk 34 to become more sustainable, with a view to extend this initiative to other buildings on the campus. For a start, the Smart34 building, which was built in 1987 and refurbished in 2013, will serve as a testbed for NP to work with Keppel's Sustainable Urban Renewal (SUR) team to explore ways to enhance and green the built environment. Through this platform, students and staff will develop in-demand skills in this area as they experiment with sustainability solutions. Supported by Keppel's engineering and operating capabilities, these include the harnessing of renewable energy, upcycling of rainwater, as well as refurbishment and retrofitting works to use more energy-efficient lighting, increase ventilation, or adopt smart energy control systems. By utilising active spaces for learning, students will benefit from access to real-time data and learn about managing such projects.

Mr Samuel Ng, President (Singapore), Real Estate Division, Keppel Ltd., said, "With Keppel's innovative SUR solutions approach, we bring people, AI-driven technology and processes to bolster the sustainability performance of buildings, including rejuvenating older buildings to achieve greener outcomes. We look forward to building on our ongoing collaboration with Ngee Ann Polytechnic as we leverage our strong capabilities and experience to develop the next generation of sustainability leaders who are passionate about creating a cleaner and greener built environment."

"Climate change is the single biggest challenge of our lifetime. Yet it presents the greatest opportunity for us to make a lasting impact on our world for generations to come. Collectively, we have made strides through adoption of technology; but it will take more than existing technology to achieve the quantum leap in climate action. The answer lies in people – people who are skilled in navigating the intersection between profits and the planet, connecting the dots to dream up and deliver new sustainable solutions. We want NP to be a key driver in this space," said Mr Lim Kok Kiang, Principal and CEO of Ngee Ann Polytechnic.

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About Ngee Ann Polytechnic

Ngee Ann Polytechnic started in 1963 and is today one of Singapore's leading institutions of higher learning with over 13,000 enrolled students in close to 40 disciplines. It seeks to develop students with a passion for learning, values for life, and competencies to thrive in a global workplace. The polytechnic also supports Continuing Education and Training (CET) through its CET Academy, which offers a wide range of part-time programmes and short courses. It works closely with industry partners to curate programmes for emerging skills, develop talent pipeline for the industries and help adult learners stay agile in today's rapidly changing global economy.

For more information, please visit www.np.edu.sg

List of NP Built Environment Ecosystem (BEE) MOU Partners

1.	CPG Facilities Management Pte Ltd
2.	DCD Academy
3.	Deepsphere.AI
4.	EM Services Pte Ltd
5.	EMS Wiring Systems Pte Ltd
6.	Environsens
7.	Global Green Economic Foundation
8.	Johnson Controls Singapore
9.	Keppel Limited
10.	Mapletree Investments
11.	Meinhardt Singapore Pte Ltd
12.	Shanaya Environmental Services Pte Ltd
13.	Sodexo Singapore Pte Ltd
14.	Surbana Jurong
15.	REC-N-COMP (Based in Europe)