Executive Summary of the master plan

In 2008 Nanyang Technological University (NTU) embarked on an ambitious process of planning for its future development. Through analysis of its assets and assessment of its potential, NTU, with its expertise in science and technology, aims to establish itself among the world’s premier academic institutions. This Master Plan provides guidance for the University’s planning and growth. Its recommendations envisage a measured expansion of facilities within Yunnan Garden Campus over the next 15 years, with a planning legacy extending long beyond 2025. As well as addressing the needs of the campus’ natural and built environment, the Master Plan is in accordance with the University’s broader educational mission of encouraging a diversity of social and cultural experiences and fostering intellectual endeavour.

The Master Plan approaches the University’s needs on several levels. Firstly, it assesses NTU’s relationship with the wider international and regional community. It acknowledges the University’s need to adapt to changing pedagogical requirements, and to develop facilities that can sustain future teaching and research. Secondly, the Master Plan focuses on the campus itself. It analyses its physical links to adjacent properties, its social links to the Singapore community and its environmental connections to the local ecosystem. Finally, planning proposals specific to discrete areas within the campus itself will ensure the University sustains a number of highly localised, intimate places able to collectively enrich the academic, as well as the broader community’s, experience of Yunnan Garden Campus.

Nanyang Technological University is fortunate to occupy a campus with a generous provision of natural and designed landscapes. With its distinctive parkland setting, Yunnan Garden Campus is itself among the University’s premier assets, and is a memorable environment for work and study. The Master Plan’s recommendations understand and appreciate the significance of the natural environment to the University as a whole. At the heart of the Master Plan is the aim of enhancing the already substantial interactions occurring between buildings, people and gardens.
on campus. This includes consideration of the natural systems underpinning the local ecology and an assessment of how these processes contribute to the campus' biodiversity, plant species and surface water movement. The natural systems will help structure the physical environment of the campus in terms of prevalent ecological conditions. For example, they will become the foundation for a number of outdoor landscape and water corridors accessible by pedestrian walkways and cycle paths. These spaces will be enhanced by vistas taking advantage of the campus’s distinct and diverse topography.

To complement the open parkland characteristic of Yunnan Garden Campus, a new campus centre will help establish the University’s identity through a physical structure emblematic of its goals and aspirations. The campus centre will become the heart of Nanyang Technological University; a place for congregating, interacting, learning and living. The new campus centre will also generate a sense of arrival for visitors, faculty and students, and serve as a node for transport connections between academic, residential and recreational facilities. With its sinuous form governed by local topography, the campus centre will support a variety of uses such as classrooms, accommodation, dining and social spaces, both in and out of academic hours. This vibrant gathering place will be complemented by the integration of mixed use spaces amid the residential halls on campus, encouraging student social interaction. These initiatives are priority recommendations in the University’s NTU 2015 Strategic Plan.

While the campus centre will generate a new focus for the University as a whole, the identity of other areas on campus, established by the existing configurations of buildings and spaces, will also be enhanced. The Master Plan identifies a network of twelve precincts in order to give structure to the distinct identities of specific places within the greater campus. The precincts are primarily defined by existing topographic elements, and the proposed water and landscape corridors. Although precincts have been previously characterized by a predominant building type, the Master Plan varies this approach by introducing a diversity of building types into each precinct in order to help the University develop a more flexible spatial definition for its various activities. Precincts will include places for ceremony, such as a new forecourt to the Chinese Heritage Centre, the most significant building on campus. And they will include places for informality, such as the many landscaped spaces woven throughout the campus’ disparate buildings.

This Master Plan was preceded by two milestones in the evolution of Yunnan Garden Campus. A 1981-1985 plan by Kenzo Tange & Associates culminated in the building of the North and South Academic Complexes, each of approximately 95,000sqm. At this time, academic, residential and recreational zones were also demarcated. A 1992-95 plan by Kallmann McKinnell & Wood Architects focused on expanding Yunnan Garden Campus to accommodate the National Institute of Education. Developments proposed under the 2010 Yunnan Garden Campus Master Plan has required careful integration with both of the previous major planning phases. For example, the geometry of dominant academic buildings such as the North and South Spines has determined a number of new detail planning recommendations. Similarly, the configuration and organisation of established housing clusters has influenced a number of new design proposals.

Innovative responses to the campus’ built environment can be catalysts for the University’s broader educational agenda. For example, by renovating the upper floor of the North Spine complex in order to provide accommodation for post-doctorate students, the University’s academic facilities and new forms of residential living attractive to outstanding young researchers, can be brought together. This meets a key aspiration of the NTU 2015 Strategic Plan.
The Master Plan recognises the need for the University to strengthen its connection with the Singapore community. CleanTech Park, a multi-disciplinary institution promoting the development of clean technology, will be developed on a property adjacent to the University by JTC Corporation. The proximity of this eco business park to Yunnan Garden Campus offers great potential for sharing research and development initiatives, technical expertise and physical infrastructure. At a more symbolic level, the broader Singapore community will find their welcome to Campus enriched by the establishment of two new, clearly demarcated University entry points.

The Master Plan recommends covered walkways, separated from the road system and vehicular traffic, be enhanced to provide a campus wide network of pedestrian and cyclist infrastructure. A program to encourage the use of bicycles on campus will complement the University’s other public transportation systems, such as the shuttle busses operating within and beyond the campus. At a number of key locations, existing roadways will be resurfaced so as to privilege pedestrian movement.

Nanyang Technological University has become a large, international, multi-disciplinary research intensive institution. The Master Plan supports this research capacity through new interdisciplinary buildings and proposals for increasing flexible use spaces. By emphasizing collaboration between different spheres of academic endeavour, close relationships between the centres of industry at CleanTech Park and the University’s research institutes, such as the Nanyang Environment & Water Research Institute and the Energy Research Institute, can be facilitated.

The Master Plan further responds to the University’s desire for increased interdisciplinary collaboration by reviewing the design of existing lecture theatres and proposing new teaching spaces more adaptable to flexible educational uses. These spaces will increase the integration of new media and technologies with teaching environments on campus. They will transform the delivery of higher education, as proposed by the pedagogical directions of the University’s Blue Ribbon Commission.

New technology can further the interconnectivity between students and faculty, and help achieve a campus defined less by an adherence to single use buildings, and more by a sequence of spaces adaptable to the varied needs of multiple academic functions.

The Master Plan establishes a number of key architectural and planning controls, inclusive of landscaping, lighting and infrastructure requirements. Predominant among these are the foregrounding of sustainability initiatives in all proposed development. While the Master Plan aims to achieve a degree of uniformity in the architectural expressions that will establish the qualities of each identified precinct, it nevertheless encourages creative design responses to the diverse character of discrete development parcels. Underground buildings, especially sporting facilities able to support green roofs, will be given particular consideration.

This Master Plan aims for immediate relevance and application. Its recommendations address the University’s pressing need for a guiding framework able to give structure to the on-going development of the campus’s physical and natural elements. This is a task central to the realisation of Nanyang Technological University’s educational goals, and to ensuring the institution flourishes as a leading global University, not only for the fifteen year duration of the Master Plan, but well into the future beyond.