

BANGKOK | SOCIAL AND ECOLOGICAL SYSTEMS

Regenerating Nature, Transforming Governance: Redeveloping Thailand's Government Complex

Thailand's Government Complex (TGC) is a 178-acre site serving 29 government agencies. Prior to redevelopment, it faced issues of poor connectivity arising from car-centricity and traffic congestion. In 2024, following further development of the Bangkok Mass Transit System (BTS Skytrain), TGC was transformed into a sustainable and people-centric hub, aligned with broader national decarbonisation targets.



BANGKOK 🔍



Kotchakorn Voraakhom is the founder of Landprocess, a Bangkok-based landscape architecture and urban design firm, and the Porous City Network, a social enterprise which co-designs water management solutions with vulnerable communities in Southeast Asia. Her works focus on tackling climate change in dense urban areas through landscape architecture and productive public spaces.

Every urban development project presents an opportunity to innovate and to redefine possibilities. This is especially true in climate-vulnerable cities like Bangkok. Addressing interconnected urban challenges—water stress, liveability, and climate adaptation—demands more than regenerative design principles, it requires regenerative governance and action. This shift goes beyond carbon metrics, recognising that the process—how we collaborate, adapt, and prioritise nature-positive outcomes—is critical to a regenerative future.

Every city may have to go through their own journey in addressing carbon sequestration and urban resilience, but the global transition will require collective action—a balance of top-down strategy and grassroots engagement. While regenerative principles provide a foundational framework, success depends on localised processes that combine top-down expertise with bottom-up community engagement. From Chulalongkorn Centenary Park (Bangkok's pioneering flood-mitigating green space) to Thammasat Urban

93



Built in 2017, Chulalongkorn University Centenary Park is a public park built to reduce urban flood risks.
Image: Andy Tan (top), Landprocess (bottom)



Repurposing 236,806 square feet of rooftop space, Thammasat University Rooftop is designed to mimic the structure of rice terraces for urban agriculture.
Image: Landprocess



Revitalised Chong Nonsi canal in the heart of Bangkok.
Image: Landprocess



Farm (Asia's largest rooftop farm), from the adaptive reuse of Chao Phraya Skypark to the revitalisation of Chong Nonsi Canal and Padung Krung Kasem canal, each project embodies a shared mission: reintegrating regenerative ecosystems into the urban fabric. These initiatives demonstrate that nature through landscape architecture is not just about aesthetics—it is a tool for building systemic resilience.

The Real Challenge: Shifting Systems, Not Just Solutions

For cities like Bangkok, already on the frontline of climate risk, the greatest barrier is not a lack of ideas, but whether we can move fast enough to meet all goals within our climate deadline. The question is about how to transform systems, processes, maintenance and operational structures to enable change at the speed and scale required.

The transformation of Thailand's largest government complex offers a pivotal opportunity. By embracing nature-based solutions, it serves as a model for how cities can merge liveability with ecological resilience—not through isolated benchmarks, but through integrated systems that bridge urban cores and surrounding natural ecosystems.

Making Thailand's Government Complex More Humane

Across the world, at eye level, buildings appear as giant concrete structures, densely packed in rigid symmetry. Specifically, the design of government buildings and complexes often lack fluidity, warmth, and human-centricity. Many tend to exude rigidity and hostility, evoking intimidation rather than creating a sense of arrival and welcoming to visitors. This begs the question—can civic architecture be designed at the human scale, creating spaces for human connection while embodying principles of sustainability and the preservation of tradition?

Thailand's Government Complex (TGC), the nation's largest administrative hub, provides a good case study. For over 20 years, this 178-acre campus has served nearly 40,000 users—government employees and civilians alike. Yet like many traditional civic centres, its design has struggled with inefficiency and poor connectivity: car-centric planning, traffic congestion, poor transit links, and siloed urban systems for water, waste, and food.

Bird's-eye view of Thailand's Government Complex. In the foreground, the Oval Lawn Plaza and the Urban Agriculture Rooftop atop the Semi-Outdoor Plaza is pictured.

Image: Landprocess



An Ecosystem Design that Encapsulates Connectivity, Breathability and Flow

By employing nature-based solutions into landscape architecture, however, TGC can be redefined as a model of ecological and social resilience. By softening rigid geometries with diverse greenery and biodiversity, improving walkability, and creating inclusive public spaces, a climate-responsive environment that meets the needs of both human and natural ecosystems can be fostered. This shift is not just about aesthetics—it reclaims democracy through design, enabling spaces to enhance human well-being, encourage engagement, and thrive with nature.

The future of civic architecture lies in balance: where design meets accessibility, where concrete gives way to canopy, and where people—not just institutions—take centre stage.

The Oval Lawn Plaza is a multipurpose plaza that is surrounded by multiple pocket parks and entrances that connect people to the underground parking garage.

Image: Landprocess

The city of Bangkok does not have many public open spaces due to its high population density. This government complex project therefore sets out to not only benefit the environment but also the people within it. With the opening of the new skytrain station in 2024, the government complex aims to be a resilient, people-centric hub that prioritises connectivity, low-carbon design, walkability, and nature-based infrastructure, in alignment with Thailand's net-zero goals.

In the original masterplan, ample parking spaces were provided to meet the needs of a car dependent

city. However, recognising that this would diminish connectivity and lead to the deprioritisation of sustainable mobility within the complex, Landprocess decided to reimagine Thailand's Government Complex, as a people-first hub. Their design sought to integrate low carbon solutions with walkability, as well as combine nature-based solutions with values of accessibility for all visitors.

The transformation of the complex begins with a 200-m elevated skywalk linking the skytrain station to TGC's open plaza. Public mass transit promises to not only achieve





Solar-urban farm.
Image: Landprocess

II
On the rooftop, a solar-urban farm meets 53.4% of the building's energy needs while providing a green space for employees to engage in urban agriculture.

II

the goals for net zero, but also improve liveability for the 37,500 workers working within the complex.

An unused parking garage rooftop has also been revamped into an open space plaza that breaks away from traditional, sterile government aesthetics. This versatile space hosts a wide range of events, from casual gatherings to formal occasions while also fostering connectivity, welcoming the community and public. The plaza blends green rooftops and runoff management systems with an organic design that mimics the fluidity and natural forms of nature, such as cascading rain chains and lush greenery. These features not only enhance aesthetics but also mitigate flooding, improve

air quality, and reduce the urban heat island effect.

Connected to the open plaza is a green park that seamlessly connects pedestrians to an EV bus station. The floors above this plaza not only provide parking for 1,500 cars, but also incorporate features of rainwater harvesting, urban farms, and vertical planters within the architectural facade. On the rooftop, a solar-urban farm meets 53.4% of the building's energy needs while providing a green space for employees to engage in urban agriculture. Rainwater is harvested and stored in tanks and a retention pond, achieving zero-runoff discharge and enhancing resilience during extreme weather events.

Covered walkways with rain chains and comprehensive drainage systems channel rainwater to rain tanks and a retention pond, achieving zero-runoff discharge.
Image: Landprocess





The Thailand Government Complex at dusk.
Image: Landprocess

To minimise waste and embodied carbon throughout the construction process, a third of construction materials are recycled while the other two-thirds are locally sourced. Solar panels meet more than half of the building's energy needs, while energy-efficient systems and passive design cut operational power usage by almost 90%. All these technical features incorporate traditional Thai motifs of water, blending innovative functionality with cultural ancestry.

The redesigned nature-based structures are built around a central axis that connects visitors to the rest of the complex. The low-carbon project promotes walkability by turning concrete roads into cooling corridors, ensuring thermal comfort. Furthermore, all road networks are

equipped with pedestrian-friendly pathways, an EV shuttle system that reduces emissions while also providing reliable transport, and multi-layered landscapes that maximise carbon sequestration and ecosystem services. By planting 3,500 trees and adding 30 acres of green space, scorching roads and pavements within the complex have been transformed into cooling corridors that mitigate urban heat, flooding, and pollution, supporting the urban climate resilience of the complex.

By harmonising nature-based solutions with cultural and functional design, TGC demonstrates stewardship of natural resources and sets a benchmark for sustainable governance. It fosters a stronger

connection between government, people, and nature while also ensuring long-term environmental, social, and economic resilience. TGC's holistic approach offers a model for government officials to integrate more nature-based solutions and green infrastructure to not just cities within Thailand, but around the globe.

The need to shift is urgent: from rigid buildings to adaptive architecture, from siloed projects to integrated urban systems. When government becomes an active participant, cities like Bangkok can move faster than the rising tides. The future belongs to those who do not just declare change but act on it. 🌱