the Singapore WAY

USE CASE

Climate by Design: Teaching Green Urbanism

Climate by Design: Teaching Green Urbanism with The Singapore Way at University of Ghana

1. Context Snapshot – A Captivating Story

- City Name: Accra
- Country: Ghana
- Population: 2.6 million (urban core)
- Year of Launch: 2023

Across Accra, climate change was no longer theory—it was traffic stuck in floodwaters, heatwaves that shut down classrooms, and rising seas biting into the coastline. Yet, in most architecture and planning programs across West Africa, "green design" remained a niche elective, often taught with imported case studies that ignored the African context.

At the University of Ghana, Professor Kwame Nyarko, an urbanist with a passion for design justice, had grown frustrated. His students were creative, grounded, and ready—but the tools they were given were built for temperate cities, not tropical realities. They knew how to mimic Dubai and Paris, but not how to redesign East Legon or Madina under climate stress.

Then Prof. Nyarko discovered The Singapore Way and saw something different: a small, vulnerable country that turned green space into urban resilience and climate fear into design courage.

So he made a radical shift: climate design would no longer be a concept—it would become a curriculum.

2. LOCAL LEADER'S Vision Statement

"Our students don't just learn about climate—they shape it. We're not designing buildings. We're designing Ghana's future ecosystem."
— Prof. Kwame Nyarko

3. 10 Lessons from The Singapore Way Adapted to the City

Singapore Strategy	Local Adaptation
Green Urbanism	Mandatory "climate-positive" studio projects for final-year students
Long-Term Visioning	Students design for Accra 2050, with sea level and population change modeled
Sustainability in Infrastructure	Reuse-focused materials course taught in collaboration with informal recyclers
Community-Centric Planning	Design charrettes held with residents in Jamestown, Nima, and Teshie
Digital Twins	Student projects simulate runoff and airflow using low-cost digital modeling
Nature Integration	Courses model how to weave wetlands and mangroves into urban grids
Policy Literacy	Urban design students taught to read and critique Ghana's building codes
Equity as Climate Strategy	Projects graded partly on how they benefit low-income or climate-vulnerable groups
Adaptive Innovation	Tropical heat-mitigation techniques studied from both Singapore and Ashaiman
Data-Driven Design	Rainfall and flood data integrated into urban mapping coursework

4. The Local Plan

- Name of Initiative: Green Futures Studio Ghana

- Objectives:
  - Redefine urbanism education through a climate resilience lens
  - Bridge local knowledge with global best practices (like Singapore)
  - Empower students to lead Ghana's green transition through design

- Key Design & Policy Tools:
  - Integrated climate-urban curriculum (architecture, planning, geography)
  - Partner MOUs with Accra Metropolitan Assembly and Environmental Protection Agency
  - Faculty-led Design for Climate conference (held annually since 2024)

5. Implementation Framework

Phase	Activities	Duration	Stakeholders
Phase 1	Curriculum redesign across three departments	4 months	Faculty board, Ministry of Education
Phase 2	Community-based studio launch in Nima and Osu	6 months	Students, community leaders, NGOs
Phase 3	Publish Ghana-specific Green Design Toolkit	5 months	Design faculty, Ghana Institute of Architects
Phase 4	Annual Student Showcase + Policy Roundtable	Ongoing	Ministries, donors, student unions

6. Outcomes & Impact (18–24 Months)

- Quantitative:
  - 186 students graduated with green-design certification
  - 12 student proposals incorporated into Accra's updated Local Climate Action Plan
  - 4 low-cost, climate-adapted structures built on campus as learning hubs
- Qualitative:
  - A team of three female architecture students co-designed a market shade canopy that cools 7°C below ambient
  - A former construction labourer's son created a flood-adaptive house now being piloted by AMA
  - Local chiefs invited design students to consult on shoreline resilience

7. Challenges Faced & How They Were Overcome

Challenge	Solution or Mitigation
Faculty discomfort with interdisciplinary teaching	Co-taught courses and joint faculty design retreat
Student overload with climate modeling tools	Created peer-led "tech-for-climate" support circles
Perception of climate design as elitist	Required engagement with informal settlements in every studio
Limited access to site data	Partnered with UN Habitat and EPA for open data sharing

8. LOCAL LEADER'S Reflections

"Singapore didn't just build a garden in a city—it became a city in a garden. That's what we're trying to teach here. In Accra, in Kumasi, in every street that needs to breathe again."
— Prof. Kwame Nyarko