SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

[RE]IMAGINE EDUCATION

A weekly Design·AI newsletter

GENERATIVE CONTINUITY: CARLOS BAÑÓN ON AI, SINGAPORE AND DESIGN EDUCATION AT SUTD

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In Conversation with Dr. Nachamma Sockalingam, OSP

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What should a university teach when AI can produce an apparently finished design in seconds?

At SUTD, Carlos Bañón argues that the answer is not simply better prompting. It is to make judgement, context and authorship more explicit.

Bañón is Hokkien Foundation Professor and Associate Professor of Architecture and Sustainable Design at SUTD, co-founder and Director of AIRLab, and co-founder of FORMAS.AI. Across teaching, research and practice, his work asks how new computational systems can expand architectural possibility without weakening the designer's agency. AIRLab connects computation with fabrication and physical testing. AirMesh translated a fully digital workflow into a built public structure at Gardens by the Bay. FORMAS.AI carries the same concern into a shared workspace for students, architects, designers and professional teams. Its ambition is not simply to generate more, but to create a more natural, human connection with AI while preserving continuity between sketches, models, evidence and decisions. In June 2026, that direction was recognised when FORMAS.AI won first prize at SuperAI Genesis in Singapore.

Bañón calls the principle connecting these efforts generative continuity: the capacity to preserve design intent, dependencies, evidence and responsibility as a project moves between representations. In this conversation, he explains what that means for students, for Singapore and for the future of design education at SUTD.

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Contact us at nachamma@sutd.edu.sg to share your Design·AI stories

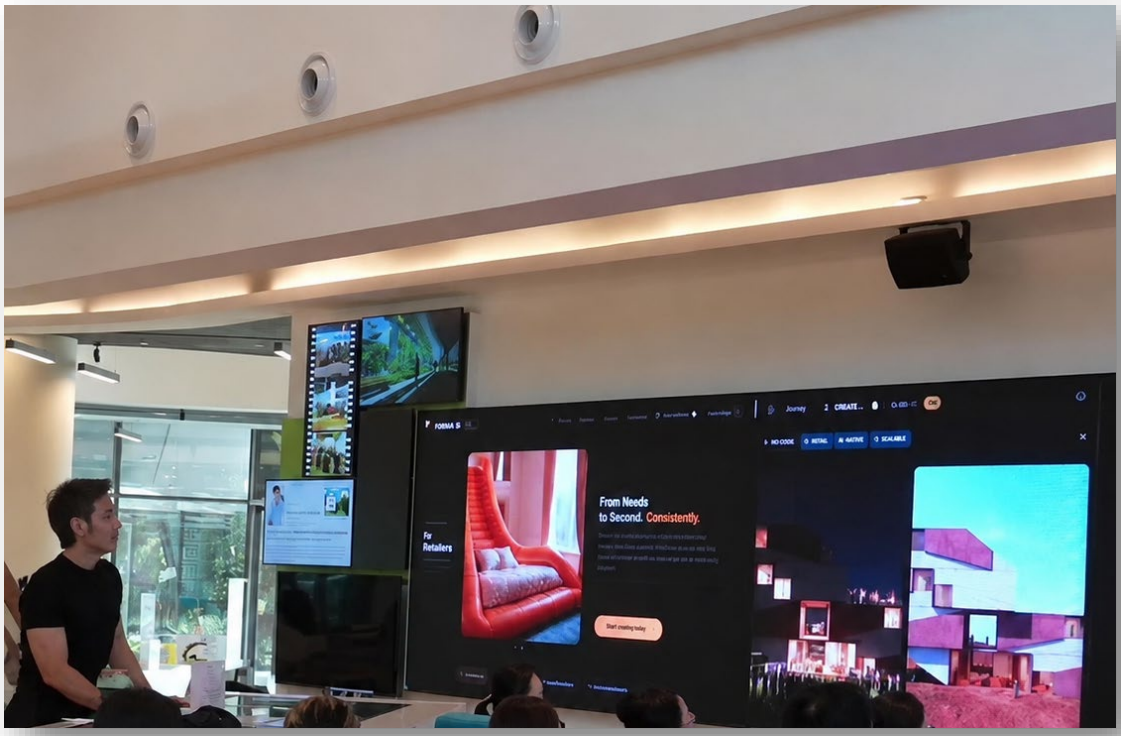


Figure 1. Carlos Bañón demonstrates FORMAS.AI to prospective students and visitors at SUTD Open House 2026, connecting live design decisions with immediate visual feedback.

Professor Carlos, many consider Generative AI to be a tool for speed and efficiency. From your perspective as an architect and educator, what do you see the role of AI in design process?

AI changes the feedback loop between an intention and a decision. It can propose alternatives, translate between representations and make consequences visible much earlier. But speed alone is not Design progress. Ten images produced in a minute are not necessarily ten iterations.

An output becomes an iteration only when it retains enough of the previous intention to test a meaningful difference. If each image silently resets the geometry, programme, climate response or spatial relationships, the designer is browsing possibilities rather than developing a project.

This is what I call Generative Continuity: the capacity to carry intent, constraints, evidence and responsibility across changes of medium and scale. AI is valuable when it sharpens a student's hunch and shortens the distance to an informed decision, while keeping the student oriented, critical and accountable.

Singapore University of Technology and Design, official Instagram reel demonstrating FORMAS.AI for SUTD Open House 2026: https://www.instagram.com/reel/DUMuiTRkoIy/

AIRLab works with computation, fabrication and material experimentation. What does AIRLab teach us about using AI beyond the computer screen?

AIRLab teaches us that computational intelligence becomes meaningful when it enters a chain of material consequences.

At SUTD, drawing, coding, structural analysis, environmental simulation, robotic or additive fabrication, assembly and critique can inform one another. AI should join that ecology rather than replace it.

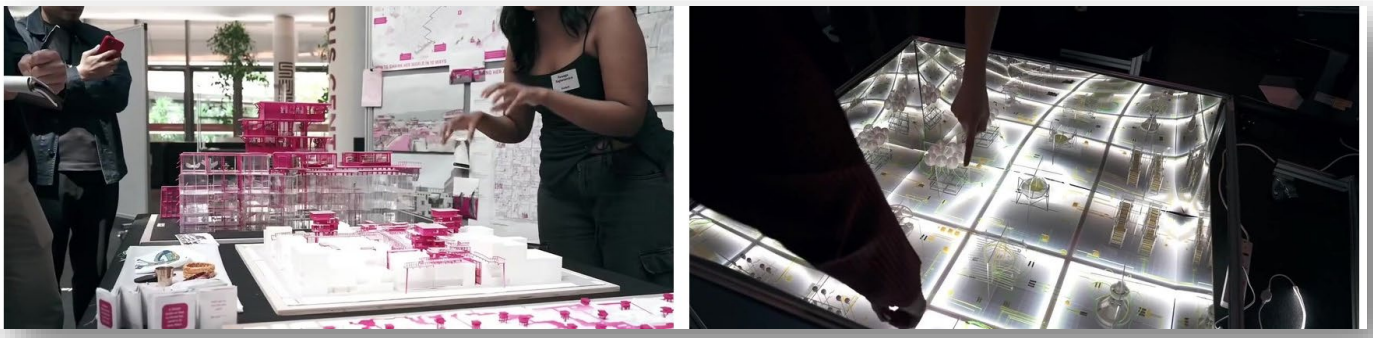


Figure 2. SUTD's 2026 Master of Architecture Public Review grounds AI-supported education in explanation, physical models, collective critique and student authorship.

The digital screen can deliver theoretical solutions albeit with concealed assumptions. But a physical prototype cannot. Material stiffness, tolerances, gravity, joints, weather and the sequence of assembly immediately test whether a proposal is coherent. Making is therefore not the final illustration of a digital idea. It is a form of thinking and verification.

For students, this changes the role of AI. An image can open a possibility, but the plan, section, simulation, model and prototype must interrogate it. The strongest work moves repeatedly between these representations, allowing each one to correct the others.

The strength of the design process is that it does not stop at ideation but iterative creation, and this can be further enhanced with AI through Generative Continuity.

Still frames from SUTD's official Instagram reel documenting the 2026 Master of Architecture Public Review, held on 29 April 2026: https://www.instagram.com/reel/DYeVPFABSTS/

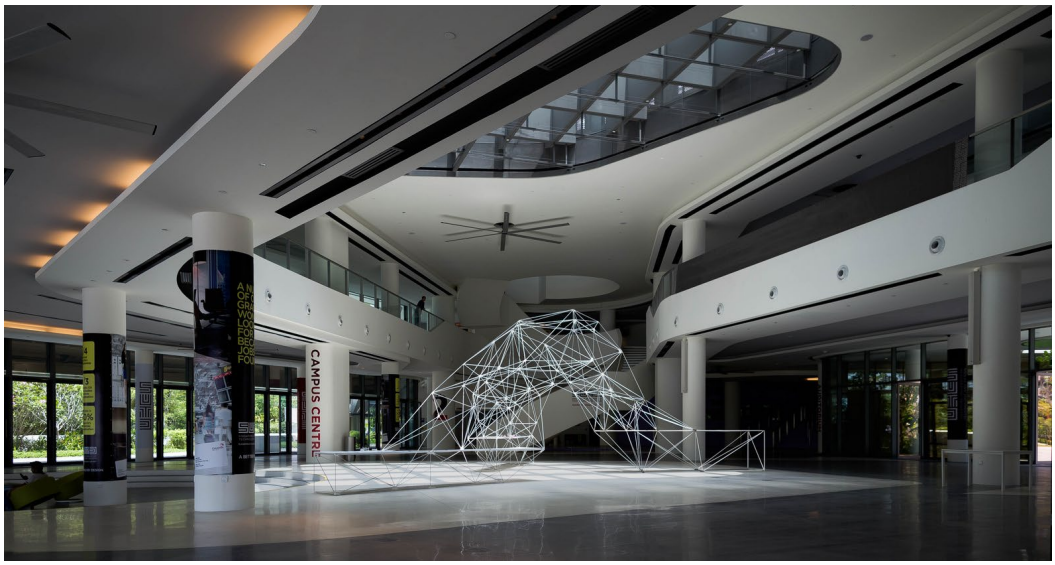


Figure 3. The 3D-printed vMESH pavilion in SUTD's Campus Centre used an experimental structural system as a framework for exhibiting student work, linking computation, fabrication and public encounter.

AirMesh is often cited as a key project from AIRLab. What does it show about innovation in architecture using AI?

AirMesh is the world's first architectural structure made of 3D-printed components in stainless steel, demonstrating innovative digital design and manufacturing technologies developed by AirLab .

AirMesh is not a Generative-AI project, and that is precisely why it is relevant. It is a precedent for continuity. Site views, geometric organisation, structural forces, component design, fabrication files and assembly logic were not separate exercises; they were different representations of the same developing system.

The pavilion uses 54 bespoke stainless-steel nodes and 216 bars coordinated through a fully digital workflow. Each connection was calculated for its exact position, additively manufactured and prepared for rapid assembly. Six graduate students assembled the structure in two days. The precision was not added at the end; it was embedded from the beginning.

The lesson is that innovation is not the unusual form alone. It is the quality of the chain connecting intent to consequence. A mature AI-supported workflow must let an idea survive contact with gravity, Singapore's climate, material tolerance, assembly, public use and maintenance.

SUTD Architecture and Sustainable Design, "3D-Printed Mesh Pavilion": https://www.sutd.edu.sg/asd/faculty-project-listing/3d-printed-mesh-pavillion/

FORMAS.AI brings AI into the design workflow. How is that different from simply asking an AI tool to generate a picture?

FORMAS.AI, the AI-native creative and design workspace for architecture, engineering, and construction (AEC).

The prompt box in an LLM is a powerful gateway to generative AI capabilities, but it is a poor final interface for architecture. It asks a designer to compress a multidimensional project into a sentence and then reconstruct the project after every response. Designers do not think only in words. They think through plans, sections, sketches, references, measurements, models, materials and contradictions.

FORMAS.AI was not conceived only as a reaction to design studio. It is for students, architects, designers and professional teams—anyone who develops ideas spatially, visually and iteratively. Our goal is to make the connection with AI technologies feel more natural: less like operating an artificial layer and more like extending how people already design.

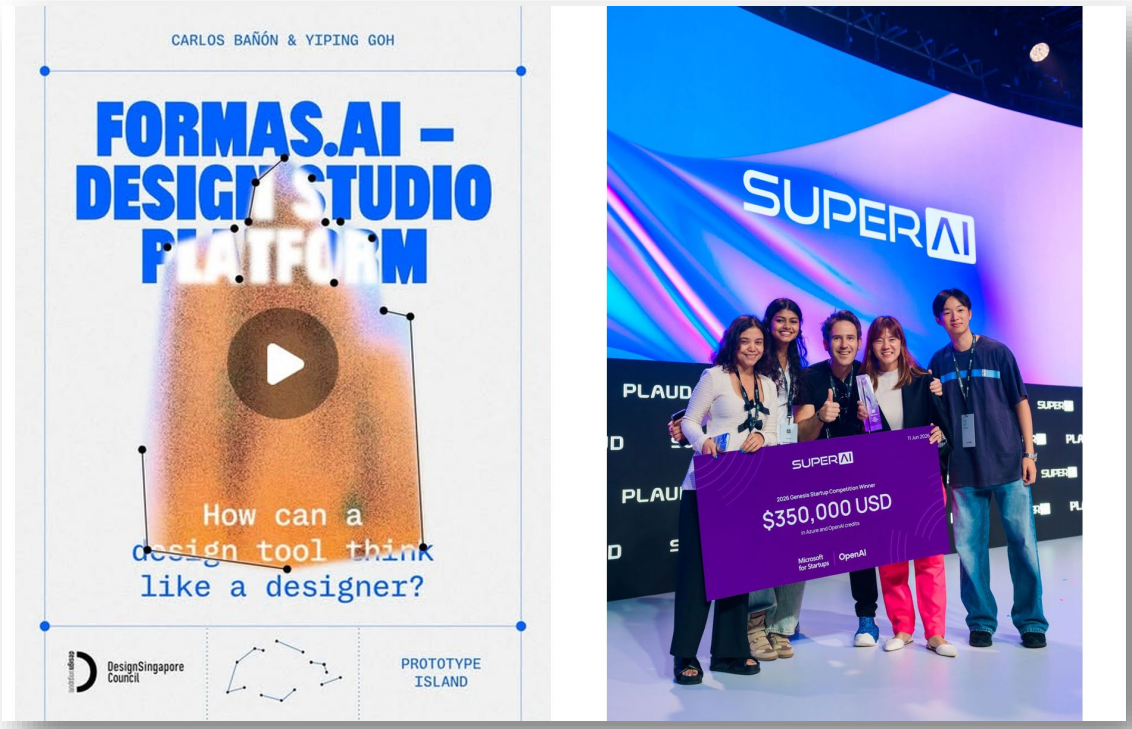
That is why FORMAS.AI is organised around a canvas rather than an isolated prompt. People can sketch, point, compare, annotate and revise while moving among images, plans, references, text, video and 3D. A more human interface does not hide complexity; it makes the system's contribution visible, editable and reversible. The designer should not have to think like the software. The software should meet the designer where design happens.

Figure 5. A FORMAS.AI sequence moves from an initial sketch to a generated image, axonometric drawing and floor plan—a visual example of working across formats without abandoning the design thread.

Sequence of stills from Carlos Bañón's Instagram reel demonstrating a FORMAS.AI workflow from sketch through image, axonometric drawing and floor plan: https://www.instagram.com/reel/DTu0qKQj8al/

The deeper ambition is a shared design state that distinguishes what the designer specified from what AI inferred, what is fixed from what remains open, and what has been verified from what is still a hypothesis. That is how an interface can support generative continuity rather than repeated visual resets.

FORMAS.AI's first-prize win at SuperAI Genesis 2026 in Singapore was important because it showed that this need extends beyond the classroom. A broad AI audience recognised the value of a human-centred workspace for students, architects, designers and the built world. Our thesis remains simple: Form Follows You. AI should amplify a designer's trained vision and preserve it through change, not flatten it into a generic answer.



Figures 6–7. Left: DesignSingapore Council's FORMAS.AI—Design Studio Platform post for Prototype Island at Milan Design Week 2026.

Right: Carlos Bañón, Yiping Goh and the FORMAS.AI team after winning first prize at SuperAI Genesis 2026 in Singapore. Photo shared by Carlos Bañón / FORMAS.AI.

DesignSingapore Council, Instagram post introducing FORMAS.AI—Design Studio Platform for Prototype Island, Milan Design Week 2026: https://www.instagram.com/p/DXGeVDOEZgZ/

Carlos Bañón / FORMAS.AI, announcement and team photograph for the first-prize win at SuperAI Genesis 2026 in Singapore: https://www.linkedin.com/posts/carlosbannon_formasai-won-1st-prize-at-superai-genesis-activity-7470854561470107649-c7qV

What are the risks or drawbacks architects and students should be aware of when using generative AI?

The first risk is detachment from intention. A student begins with a sketch, a spatial hunch or a precise question, passes it to a model, receives a convincing image and then says, 'AI did this.' That phrase matters. It signals that the student no longer feels fully connected to the project or understands how it arrived there.

When students cannot explain why a wall moved, a relationship changed or a material appeared, their agency weakens. They become selectors of outputs rather than designers developing consequences. The same risk applies in practice when professionals accept plausible results whose assumptions they cannot inspect.

I repeatedly saw students generate impressive images that drifted away from the idea they had drawn. The atmosphere might survive, but dimensions, spatial relationships, programme or climate response could disappear. The image became more convincing while the project became less coherent.

There are other risks: visual polish can arrive before architectural resolution; global models can flatten authorship and local intelligence; and opaque transformations make errors difficult to locate. In Singapore, a vaguely tropical image is not evidence that a proposal understands heat, humidity, rainfall, shade, drainage, density, regulation or collective life.

The answer is not to reject AI, but to design for agency. Students and professionals need traceable iterations, editable geometry, visible sources, reversible decisions and clear boundaries around what the system may change. AI can propose, translate and compare. Responsibility for the architectural decision remains human.

What should students, faculty and staff at SUTD take away from this shift toward AI-supported design?

The takeaway is not that everyone should become a prompt specialist. SUTD should develop hybrid designers who can move between intuition, computation, evidence and making; who can use global models without losing Singapore's local intelligence; and who remain authors of the decisions they advance.

For students, every output should be treated as a proposal to test. They should retain sketches, prompts, intermediate models, rejected options and verification evidence, and be able to explain what they specified, what AI inferred and why a decision changed. These records do not diminish creativity; they make agency visible.

For faculty, assessment should focus more carefully on the quality and continuity of decisions, not only the surface of the final image. Can the student move from image to plan, section, model, simulation and prototype? Can they return to an earlier state when a new direction fails? Can they show where evidence altered the project?

For staff and the wider institution, AI should be connected to SUTD's existing culture of design, engineering, fabrication and public responsibility. Shared standards for attribution, access, data, verification and ethical use can make experimentation safer and more ambitious. Models will change quickly. The lasting capability is to connect possibility to place, material, evidence and human consequence without surrendering judgement.

The core lesson

“The measure of AI in education is not what it can generate, but how much design intelligence students can carry forward without losing authorship.”

- **Treat every output as a proposal.** Visual confidence is not evidence that a design is spatially, environmentally or materially resolved.
- **Keep Singapore active.** Climate, density, regulation, construction and patterns of living must remain part of the project after every change.
- **Move between representations.** Sketches, plans, models, simulations, prototypes and AI outputs should address one developing design state.
- **Make authorship traceable and bounded.** Students should distinguish what they specified, what AI inferred, what they rejected and what they verified. Delegation should remain inspectable, interruptible and reversible.