

/ WORDS DAVEN WU

TICKING THE BOXES

A keen interest in the role of mechanical systems informs a number of intriguing innovations in Craft House by Genome Architects.



The most memorable architectural projects rarely comprise just one feature.

Instead, several gestures – each, a thoughtful expression of purpose and aesthetics – are gathered and stitched together to create a coherent built environment.

Exhibit A is Craft House by Genome Architects.

Built for a young family, the two-and-a-half-storey residence in Serangoon is part of an on-going exploration by the 10-year-old, Singapore-based studio in smart functionality, especially from the perspective of mechanised systems.

As with so many landed residences in

Singapore, Craft House's design is firmly dictated by the setting.

The site is claustrophobic, shoehorned as it is into a tight plot with almost no room between the neighbours on two sides and telephone poles at the rear.

As there are no views to frame, the natural solution was to turn the design inwards and upwards.

The street façade is a nondescript double volume wall, but step around it, and its functionality becomes evident.

"It's a west-facing double-brick wall whose high elevation shades all the interior living areas from the sun," says lead architect and Genome's founder, Yen Yen Wu.

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The street façade is a west-facing double-brick wall that is also a part of a light-well. Behind it, white walls delineate a cube that contains all the living spaces.

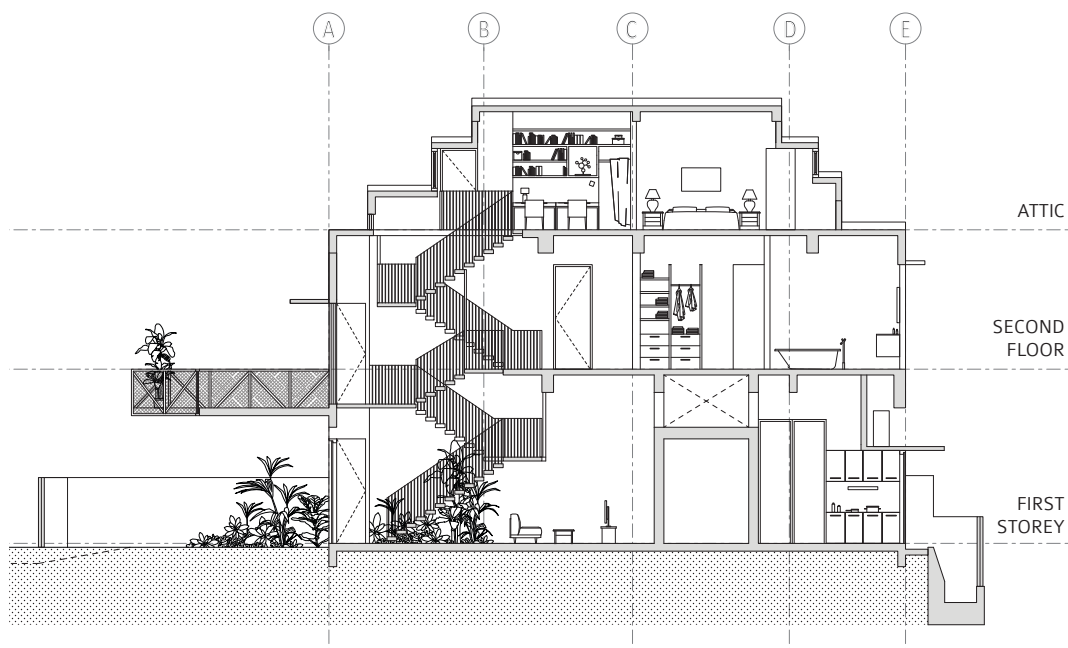






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CROSS-SECTIONAL
PERSPECTIVE



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The light-well permits the cultivation of an indoor garden, framed by a seamless epoxy terrazzo floor system and a row of motorised horizontal concertina doors by Smartech Door System.

In turn, the wall is part of a two-and-a-half-storey-high light-well, at the foot of which is a bijou garden – both passive cooling features that are very effective in dissipating heat.

To the side of the light-well is a row of motorised horizontal concertina doors by Smartech Door System.

“They’re so common in Australia, but there is little expertise on them in Singapore,” Wu says.

When fully folded up, the doors act like brise-soleils that provide ventilation and shade from the elements.

A considerably less obvious sleight of hand is that Wu has gathered all the living spaces in the upper stories – the bedrooms, sitting room and the family study – and contained them within a cube, the outlines of which are created by literal internal walls and windows.

On the exterior, the form of the cube is obviously delineated by its white walls.

And yes, the cube does have a functional

purpose beyond aesthetics or whimsy.

“Everyone wants a high atrium,” Wu explains, “but with air-conditioning, this creates a huge air leak.”

The effect of containing all the living spaces that typically need to be cooled within a controlled space effectively leaves the rest – such as corridors, passageways and internal courtyard – to be passively cooled.

“Metaphorically and physically, this allows the cube to float quite freely when read alongside the 10m column-free motorised glass door façade below the cube.”

If it’s not already evident, Craft House is a quiet ensemble of parts, much of their discrete purpose hidden until a need arises.

The light-well, for instance, features a timber-clad ceiling that descends on a motorised pulley to allow the household to easily and safely hang or change the ceiling decorations, not least fairy lights and Chinese New Year lanterns.

The floor, meanwhile, was literally cast in place with a seamless epoxy terrazzo floor system.



Yen Yen Wu,
Founder and Lead
Architect of Genome
Architects

"It's one continuous surface," Wu says, her voice a mix of pride and wonder at how far technology has come. "There are no joints. It's almost like the floor of an art gallery."

And when it rains, windows can still be left open without any splash-back, thanks to their indented triangular shape – Wu's quiet take on the traditional monsoon window.

As gestures go, it's a welcome one, especially in a country with a tropical climate that makes such features a

necessity, rather than an architectural nicety.

The result is a house that thoughtfully resolves many issues of site orientation, climate and spatial flow.

It has, as Wu puts it, a rational compact plan that incorporates spaciousness especially in the common areas.

But beyond that, it smartly incorporates mechanical systems – including automated lighting, automated doors and voice-activated windows – not for their sake, for their contributions in the resolution of site-specific problems while "maintaining the natural

/ ABOVE

The cube, as viewed from the inside, that helps minimise air leak, while allowing for the courtyard and passageways to be passively cooled.



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Window indents -
Genome's intriguing
take on monsoon
windows - allow
them to be open
when it rains.

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Framed by windows
and strategically-
placed mirrors, the
bathrooms are awash
with natural light.

tactility and warmth of the domestic home".

That these systems are rarely used in Singapore makes Wu even more determined that they receive more attention.

It certainly helped the cause that Wu had, in the owners of Craft House, an ally towards a common cause.

"They lived in Australia for a while. They were surprised why some of the effective building systems prevalent there were not more commonplace in Singapore."

In Genome's portfolio of residential and public projects, questions prefaced by "why" and "how" loom large.

For Wu, who has a Masters in Architecture from Columbia University, the overarching question of how things work needs to be framed within the context of integrating mechanised systems into architecture.

Her interest lies in how design can be smart and functional, and not so much "what form it should take".

For now, these large questions form a quiet backdrop for her and her small studio as they work their way through a log of commissions for a mixed-use apartment

CRAFT HOUSE

LOCATION / SINGAPORE
COMPLETION / 2019
SITE AREA / 245M²
BUILDING AREA / 120M²
GROSS FLOOR AREA / 292M²
ARCHITECT / GENOME ARCHITECTS
LEAD ARCHITECT / YEN YEN WU, TRACY TAN, KOH HERN LIT
CONTRACTOR / V-TECH BUILDER LLP
C&S CONSULTANT / PTS CONSULTANTS
QUANTITY SURVEYOR / CST CONSULTANTS
LANDSCAPE / NYEE PHOE FLOWER GARDEN PTE LTD
MOTORISED UPWARD
BI-FOLD DOORS / SMARTECH DOOR SYSTEMS
AUTOMATED CEILING FRAME / INTELLIGENT WINDOW SYSTEMS



development, retail and private residences in Singapore, and a retail concept space in Tokyo's Shibuya quarter in collaboration with graphic design studio WORK – all of which provide a real-time evolution of an architect's thought process.

Because if Craft House – in many ways, an intriguing case study of just what can happen when you, well, think outside the box – is any indication, the best of Genome is yet to come.