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INTERIORS ARCHITECTURE DESIGN

IPLI ARCHITECTS HUMANISE INDUSTRY

MILAN DESIGN WEEK | CSYA | JAIME HAYON | AESOP STORES BY RUSSELL & GEORGE
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THE SPIRIT OF INDUSTRY

EMBRACING CONCRETE, LIGHT AND SHADOW, IPLI ARCHITECTS FORGE A RENAISSANCE OF INDUSTRIAL ARCHITECTURE IN SELETAR FOR AN AEROSPACE ENGINEERING SUPPORT COMPANY.

Above: Between the production area and the office, a courtyard has been created by pulling back the facade of the office block at a fulcrum point.



TEXT » NARELLE YABUKA
 PHOTOGRAPHY » FABIAN ONG (COURTESY OF IPLI ARCHITECTS)



AEROSPACE TOOLING FOR THE manufacture and maintenance of aircraft engines is an industrial activity so niche and customised that it borders on craft. The thousands of components that constitute an aircraft engine require an equally astronomical number of specialised tools to put each part in place and maintain it during use. In Singapore, Wah Son Engineering is one of the few local engineering support companies specialising in the aerospace industry. The company offers its precision machining and welding craft to some of the world's leading aircraft-engine manufacturers.

Recently Wah Son Engineering relocated from Loyang to Seletar Aerospace Park – a new industrial and business zone for aerospace companies developed on land formerly occupied by colonial-era houses beside Seletar Airport. Some of the black-and-white bungalows have been retained, and are being adapted for new uses such as F&B outlets and aerospace training schools.

Wah Son Engineering's move required the construction of a new factory and office building to accommodate the activities of the company's 48 staff. Additionally, some of the office spaces were to be rented out to related companies. And

while a significant number of the Park's other plots remain vacant at this stage, there are enough new neighbours to make distinct the fact that the architecture of the Wah Son Engineering building deviates markedly from the typical hangar-like typology being replicated around it.

For Wah Son Engineering, ipli Architects designed three blocks of raw concrete, filigreed with a network of small openings and chamfered planes. The trio of blocks appear – despite the 'brutality' of the material with which they have been cast – more like a cathedral to industry than a purely functional production facility. Says ipli Principal Yip Yuen Hong, "The clients were very concerned about the wellbeing of their staff, and how they would feel spending so much time in that space. That was the premise."

He adds, "We've spent a lot of time looking at humanising offices and residential buildings, but not so much in the area of production. Our proposition was to humanise the space." And so began the design of a facility that embraces the sculptural possibilities of concrete for animating surfaces with orchestrated light and shadow.

Deviating from the most efficient construction



Top: The office block is heavily perforated by large openings to naturally ventilated corridors and smaller, more sculptural windows to bathrooms and a stairwell

Bottom: Inside the production area, two roof heights were defined to break up the expanse of space. The taller area accommodates a large crane

Right: Planes of raw concrete were pulled, incised and framed to poetically transfer light and ventilation through the spaces



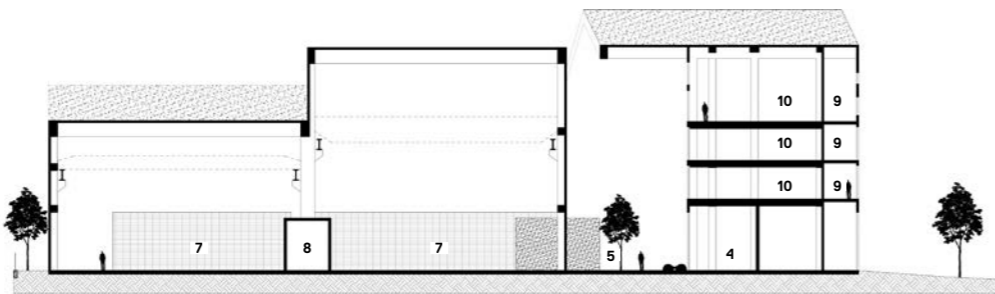
"IT'S NOT SO MUCH ABOUT THE MATERIAL; WHAT'S MORE SIGNIFICANT IS THE KIND OF ENVIRONMENT THAT WE CAN CREATE WITH IT."

» YIP YUEN HONG

mode of a single 'super block' forged from precast elements, ipli devised two internally linked cast-in-situ concrete blocks for the production areas and a separate block for the office spaces. The need to house a particularly large crane determined the height of one of the naturally ventilated production blocks. "I didn't want the whole space to be so tall just because of the height of one crane," says Yip, adding that such an arrangement would have been wasteful and over-scaled. The second production block therefore has a lower roof, pitched asymmetrically in comparison with that of the first to enhance the perception of a more variegated space within. Both roofs are pierced by skylights that flood the production area with natural light and reduce the consumption of energy for artificial illumination.

The four-storey office block is more finely articulated, with angular walls that pull away from the adjacent production block to form a courtyard, and a far greater intensity of windows. On the courtyard-facing walls, the grid of fenestration is fine enough to call to mind the aesthetic of leadlight windows – albeit at a larger scale. And within some of the lofty office spaces, the effect is almost cathedral-like. It is somewhat unsurprising to learn that real estate agents have placed (unsuccessful) requests with the owner to rent out the office spaces to religious groups on weekends.

Such uplifting moments of spatial experience come as a surprise in the industrial context, and it is clear that the quest to humanise a typology that is typically focused on industrial function has been successful. The point of transition from office block to production area provides another such special moment – where windows grant a view down the length of the courtyard and the sun casts gridlines of shadows (from an overhanging framework)



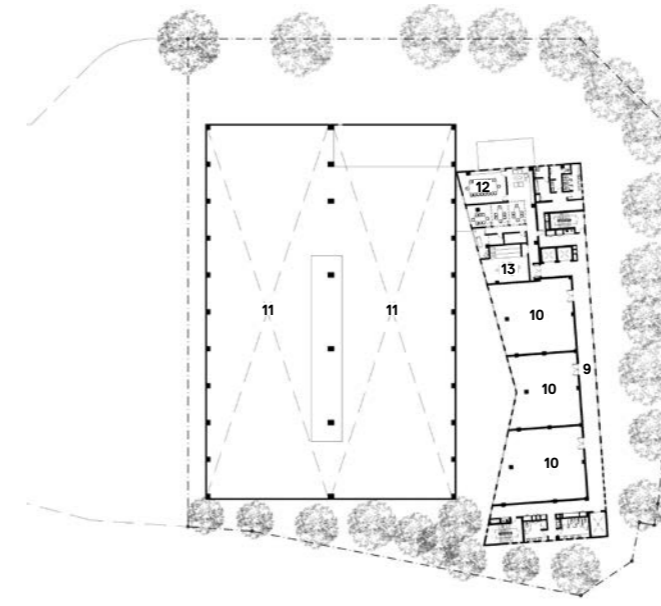
SECTION

- LEGEND
 1 Office Entrance | 2 Office Lobby | 3 Reception and Work Area |
 4 Staff Kitchen | 5 Courtyard | 6 Linkway | 7 Production Area |
 8 Production Planning Room | 9 Corridor | 10 Office | 11 Void |
 12 Meeting Rooms | 13 Staff Communal Area

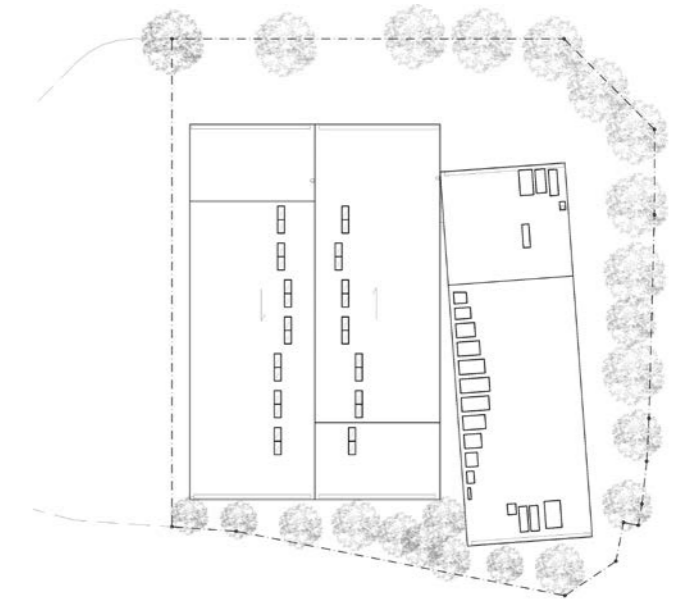
Top: The office spaces are yet to be fully occupied. Views direct the eye to the simple beauty of the adjacent concrete wall and the sky

Bottom left: The office lobby area is a gallery-like space containing enclosures crafted from the crate wood used to deliver machinery

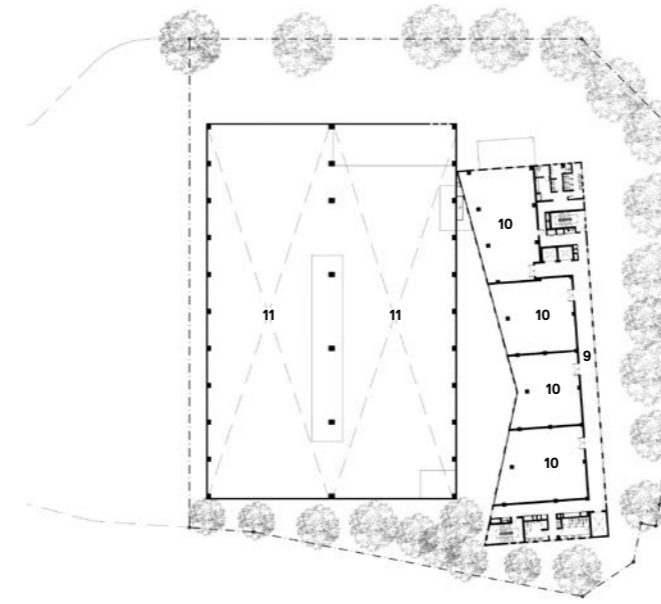
Bottom right: The client also used the crate wood to make an oval-shaped reception table. Beyond, a sculptural staircase formed by sheet metal leads to the mezzanine



4TH STOREY PLAN



ROOF PLAN



2ND STOREY PLAN



1ST STOREY PLAN



over the filigreed facade in a secondary layer of tracery. It is no matter that a vegetable garden, which is being developed in the courtyard, is in its awkward infancy; the idea that it will soon flourish and mature with the building simply adds to the enjoyment of the moment. The owner plans to use the harvest for meal preparation at the adjacent staff kitchen.

Equal attention was paid to the office lobby area – a gallery-like space in which the company has hosted social events. Pine crates used for the delivery of new machinery from Europe were repurposed by ipli into enclosures for guest registration, waiting and the serving of beverages. On the upper floors, broad external corridors were designed for purposes beyond the sheltered transition from lift to office; they will in future accommodate creepers that will colonise mesh screens at the edge of the building, and considerably alter its appearance.

“To me, concrete is not brutal; it’s just a very hardy, strong, and long-lasting material. And because of that, it’s relatively maintenance-free,” says Yip when asked about the current general interest in brutalist architecture. “It’s becoming very fashionable in the UK. It’s not so much about the material; what’s more significant is the kind of environment that we can create with it,” he says. At Wah Son Engineering, Yip and his team have succeeded in creating a building that gives the sense that it is living – interacting with the elements, and set to grow and develop with the occupants over time. «



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WAH SON @ SELETAR AEROSPACE PARK

CLIENT Wah Son Engineering Pte Ltd
ARCHITECTURE FIRM ipli Architects
PROJECT TEAM MEMBERS Yip Yuen Hong (Principal), Tan Sok Leng, Lin Hui Ying, Matthew See
BUILDER Brilliant General Building Construction Pte Ltd
C&S ENGINEER WTS Consulting Engineers
M&E ENGINEER WISTEC Engineers & Associates
QUANTITY SURVEYOR Rodney Chng & Associates Pte Ltd
LANDSCAPE CONTRACTOR Kosin Contractor

TIME TO COMPLETE 12 months
TOTAL FLOOR AREA 7,702.86 sqm

IPLI ARCHITECTS
 (65) 6536 9881 ipli.sg

FINISHES
 Metal screens to corridor are Jakob Webnet in 316 stainless steel

supplied by Licas Engineering. In toilets, TOTO sanitary ware supplied by W Atelier; ‘Vis Grey’ stone vanity tops supplied by Kstone; homogenous tiles are 300 x 600mm straight-edge ‘Cemento Natural’ supplied by Rice Fields.

LIGHTING
 ‘Liberty Fluorescent and Integral Ballast’ supplied by Krislite. Solar light is Steinel ‘XSolar’ supplied by Intellihub.

FURNITURE
 Office system furniture is Posh ‘SLO’ system supplied by Xtra Office. Herman Miller office chairs supplied by Xtra Office.

Intellihub Pte Ltd (65) 6276 9188 intellihub.com.sg **Krislite Pte Ltd** (65) 6543 8000 krislite.com **Kstone Pte Ltd** (65) 6543 0993 kstone.com.sg **Rice Fields** (65) 6692 1199 rice-fields.com **W Atelier Pte Ltd** (65) 6270 8828 wateller.com **Xtra Office** (65) 6883 0330 xtraoffice.com.sg

Top: Mesh screens to a lofty office corridor await the planting of creepers, which will give the building another character over time

Bottom: The entrance facade is dominated by the large openings to the two production blocks. The building’s overall height was limited by airport-related restrictions

Right: In the chasm between the office and production blocks, the owner has created a vegetable garden at ground level, which will soon supply the staff kitchen