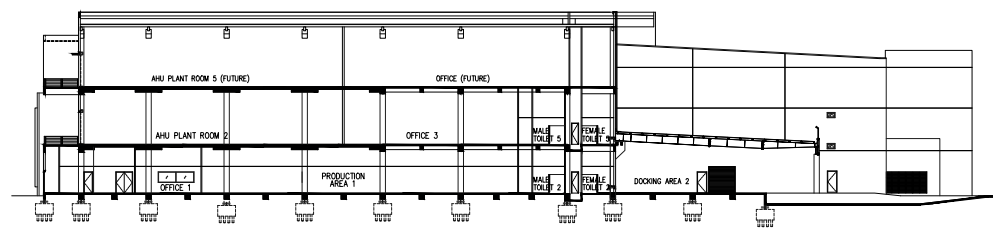
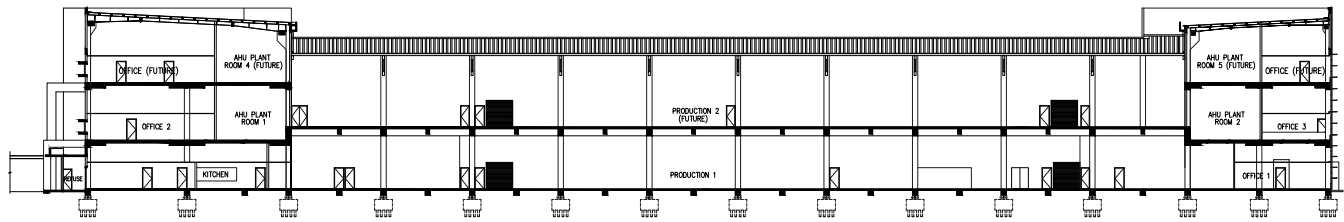


ELECTRONICS MANUFACTURING SERVICES PLANT

Built on reclaimed land, an electronics manufacturing plant in Vietnam has been smartly designed with flexible spaces and comprehensive green features.



SECTION A-A



SECTION B-B



The client is a Tier-1 US-based Electronics Manufacturing Services (EMS) company that provides solutions in electronics design, production and product management services to electronics and technology companies globally. It has more than 85,000 employees and facilities in 21 countries, and is traded on the New York Stock Exchange. Originally operating its Vietnamese manufacturing activities in a leased building, the client commissioned for a new

facility in 2010, located in Saigon Hi-Tech Park, Ho Chi Minh City, Vietnam. Set within an industrial zone dominated by a variety of global multinational companies, the site was originally situated within the body of a river, with the only means of access by boat. Land reclamation work had to be carried out by transporting sand with barges and pumping a mixture of water and sand to gradually build up the 5-hectare site. The nature of the client's business required large

manufacturing spaces that are very flexible. Energy efficient ceiling-free manufacturing areas were pioneered together with "plug + play" MEP utility grids with the capability to support the client's frequent operational needs for flexibility, allowing for the constant collapse and reconfiguration of production equipment and process lines to suit the variety of products being manufactured. This flexible reconfigurable concept has proven highly successful, and has since been deployed

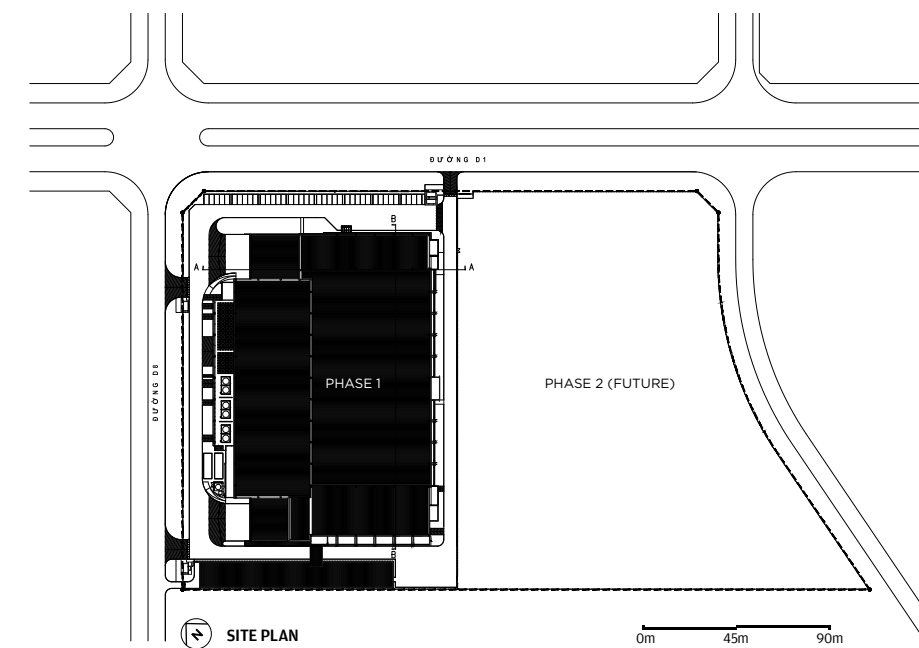
ANTI-CLOCKWISE FROM LEFT: A steel staircase is treated with client's corporate colours; double-volumed reception area; view of linkway gallery

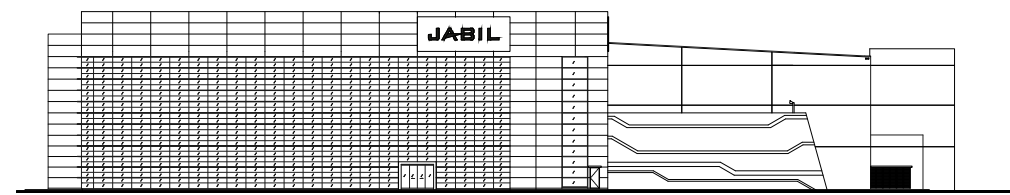


View of the building from 'Duong D1'

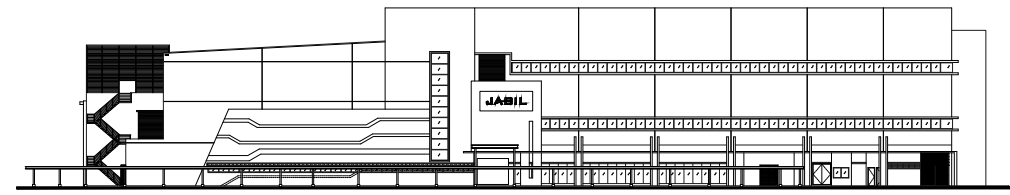
to other EMS facilities in Malaysia, China and India, which were also designed and managed by the architect. The development of the site masterplan was divided into 2 phases, with the built-up area of Phase 1 covering a total of 26,434 sqm. The execution of both phases is designed to be seamlessly scalable, without the need for redundant demolition and zero interruption to production operations. The client's corporate colours of blue, white and green were integrated into the design scheme for the building exterior. The massing of the

building frontage is softened by blue aluminium composite panels, and curtain wall glazing with white aluminium sun shading fins. A special feature is the visual motif of 12 millimetre thick 'PCBA' circuit lines, that was constructed by cement plastering at some feature walls. This motif provides for visual interest and a theme association with the client's business. Green features were considered into the design, such as the placement of sunshading to all major windows to reduce direct heat infiltration and

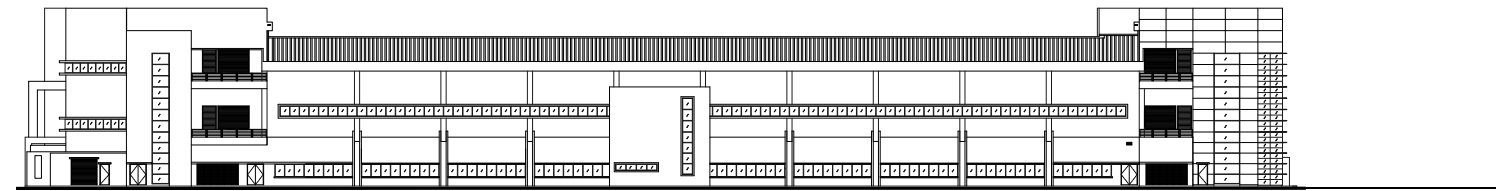




NORTH-EAST ELEVATION



SOUTH-WEST ELEVATION



SOUTH-EAST ELEVATION



NORTH-WEST ELEVATION

CLIENTS
JABIL VIETNAM CO LTD

LOCATION
SAIGON HI-TECH PARK,
DISTRICT 9, HCMC, VIETNAM

YEAR COMPLETED
OCTOBER 2012

ARCHITECT
BYG ARCHITECTURE SDN
BHD IN COLLABORATION
WITH BYG PROJECTS
(VIETNAM) LTD

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ANG TOK MENG, LOH
CHONG LING, NG CHEE
MENG, LEE CHUN LIM,
HUYNH NGUYEN XUAN VI
AND DANG NHAT LINH

SITE AREA
50,000 SQM

BUILT-UP AREA
26,434 SQM (PHASE I)

C&S ENGINEER
CHAN PHUONG
ENGINEERING JOINT STOCK
COMPANY

M&E ENGINEERS
PEN KONSULT SDN BHD

QUANTITY SURVEYOR
KUANTIBINA SDN BHD

INTERIOR DESIGNER
TOAN BICH COMPANY IN
COLLABORATION WITH BYG

CONTRACTOR
TRUNG DUNG
CONSTRUCTION CO LTD

PHOTOGRAPHER
ANG TOK MENG AND DANG
NHAT LINH

LEFT PAGE: Deep aluminium fins as passive sun-shading feature; BELOW FROM LEFT: Transporting sand with barges to site; pumping a mixture of water and sand from barge to site which was originally part of the body of a river



glare, and the use of white metal roofing to reflect heat and reduce solar gain. The building is also enveloped in double-layer brick external walls for better thermal insulation, and equipped with high efficiency chillers to reduce power consumption. About 60 to 75 percent of the construction materials were locally sourced, except for the metal roofing and MEP equipment.

The building employs a Variable Air Volume system (VAV) for the office Air Handling Units (AHU) and Variable Frequency Drive (VFD) on the condenser water pumps. Additionally, alternative treatments for chilled water, process cooling and condenser water systems are employed, which do away with the use of chemicals that are used in conventional systems. ❸