Kwong Wah Hospital, Ongoing

Australia Building Components Pty Ltd.

Compact Grade Laminate

Toilet Cubicles, IPS, Locker, Seating Bench

Contents

Introduction

Australia Building Components is an Australian company with more than 8 years of experience in building and construction services. Throughout our history, our company's talented team has supported major building developers across a multitude of projects.

Australia Building Component's Compact Grade Laminate series comes with a wide selection of designs to cater your taste or budget.

Compact Laminate Panels are strong and easy to clean. Able to withstand fire and strong impact damage with no de-lamination, the system is suitable for all forms and situations.

The performance properties of Compact Laminate make it suitable for a wide range of hard-wearing space applications including bench tops, furniture, claddings, wall linings and Integrated Panel Systems.

The material can be cut, shaped, and trimmed to produce the stylish shapes and forms demanded by contemporary design.

Our local partners can also offer design and manufacturing services starting from structure design, calculations, engineer endorsement, production, installation to post project maintenance.

As a pioneer in the industry, our team has experience applying Building Information Modelling (BIM) and Design for Manufacture and Assembly (DfMA) in our latest products, ensuring the efficiency, safety, and accuracy to satisfy our clients' requirements.

It is our company's goal to continue supporting and innovating within the construction industry, to improve upon the already high standards of building services that customers have come to enjoy.

1.0 System Features

Panels

Australia Building Component's Compact Laminate series comes with a wide selection of designs to cater your taste or budget.

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Features:

- Design for Manufacturing and Assembly (DfMA) implied
- High tolerance to building inaccuracies
- Low maintenance needed
- Simple refurbishment and re-configuration

Panel Specification:

- **Thickness:** 13mm Standard (+/- 1mm tolerance)
- **Core:** Homogenous phenolic core
  (Sandwich, honeycomb type available)
- **Finishing:** Decorative sheet on both side of panel
  Matte finish with other finishes available as request

Test Standards:

EN438: High-pressure decorative laminates (HPL)
BS476: Fire tests on building materials and structures
JIS Z 2801: Antibacterial activity and efficacy
ASTM G 21: Antifungal
ISO9001: Quality control

2.0 System Application

2.1 Toilet Cubicles

Model **ABC-SSW-NH** is a proprietary toilet cubicle system designed by Australia Building Component. The materials and construction of the system is made to comply the general technical specification requirement mostly suitable for Hong Kong market.

Our Asia partner - Wah Lam (International) provides service for the Hong Kong projects including the design, supply, installation, and one-year free on-site maintenance.

The cubicle system consists of two major parts: the system panel and hardware.

Different panel thickness may be applied based on the installation area. In general, our system come in a standard thickness of:

Door: 12mm
Pilaster: 12mm
Divider: 12mm

Other thickness available, please contact our local partners for details

For the finishing, ABC-Compact Laminate Panels are made to exacting standards, and quality is assured with its adherence to EN438 (BS EN 438-2:2016) quality specification.

Antibacterial coating is available for medical facilities usage.

2.0

The fixing hardware is another major part. It is used in fixing all the panels to fit the designed construction size and shape. The components include the coat hook/stopper, door lock, indicator, angle bracket, hinge and adjustable floor mounted leg. Major ironmongeries are produced in grade-304 stainless steel. For medical facilities application, top rails/head rails are removed to meet safety standards.

System outlook:

i) **Panel shape:**

- Flush design
- Lipping trim edges for accessories
- No head rails
- CNC bevelled panel edges and corners rounded with 2mm radius
- Internal conduct space option available for special use

ii) Panel colour:

There are 27 standard colours available for selection to suit necessary interior aesthetics.

Technical specification of Hardware.

Hardware comes in three types, from the standard Nylon, durable Grade 304 Stainless Steel to the most premium Grade 316 Stainless Steel for purchase and upgrade.

2.0 System Application

Cubicle system dimensions:

Overall Width: 800-900mm
Entrance Width: 600mm clear

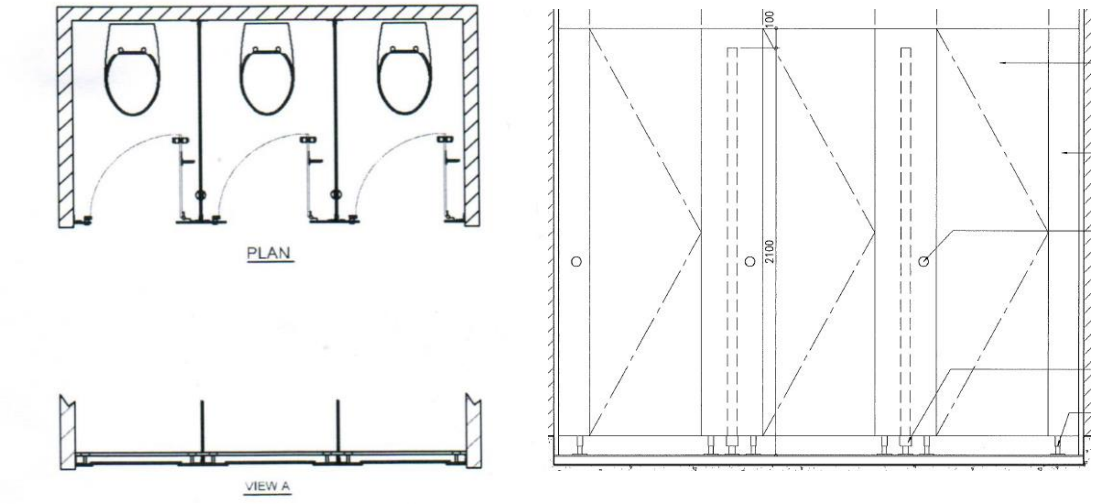
Pilaster Height: 2200mm (FFL)
Door Height: 2200mm (FFL)
Partition Height: 2100mm (FFL)
Standard panel size: 3600mm x 1800mm with 13mm or 50mm Thickness
Other custom size available upon request

Overall Depth: 1350-1500mm

Emergency call Interface: A concealed conduct (provided by client) to be casted into the panel at factor

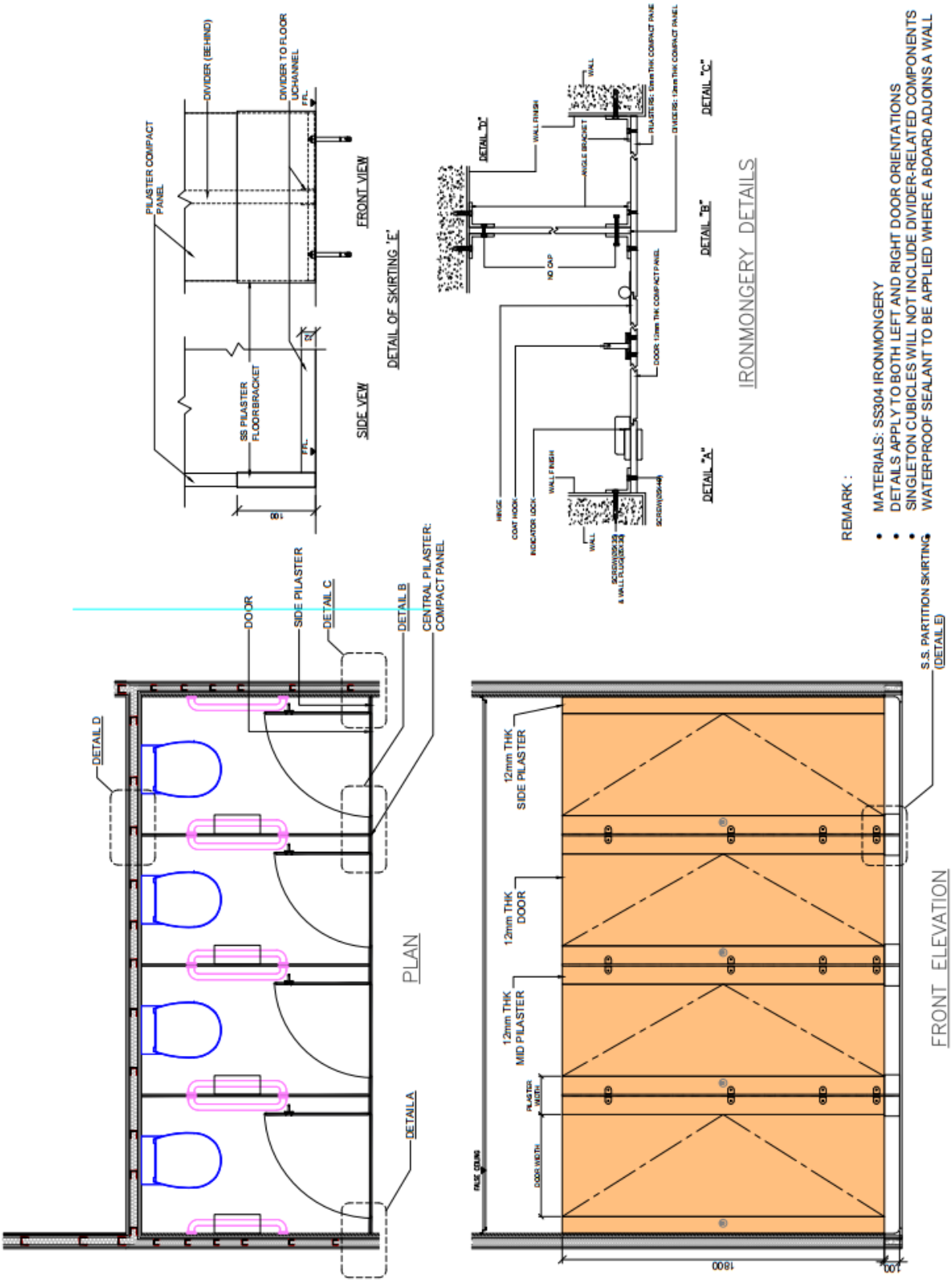
Headrail: NONE, comply to HTM 64 Anti-ligature requirement

Typical Configuration



Remarks: Cost implications may be applied when changing the panel color/size, stainless steel grading of the hard-ware and/or the color of the headrail.

Fig.i Typical details of Toilet Cubicle



2.0 System Application

2.2 Integrated Panel System (IPS) / Wall Panel

Model ABC-IPS is a proprietary integrated Panel system designed by Australia Building Component. Made of the same material as our Toilet Cubicle, the materials and construction of the system is made to comply the general technical specification requirement mostly suitable for Hong Kong market.

Our Asia partner - Wah Lam (International) provides service for the Hong Kong projects including the design, supply, installation, and one-year free on-site maintenance.

The IPS system consists of three major parts: the system panel, fixing and supporting frame.

Different panel thickness may be applied based on the installation area. In general, our system come in a standard thickness of:

Door:	12mm
Pilaster:	12mm
Divider:	12mm

Other thickness available, please contact our local partners for details

For the finishing, ABC-Compact Laminate Panels are made to exacting standards, and quality is assured with its adherence to EN438 (BS EN 438-2:2016) quality specification.

Antibacterial coating is available for medical facilities usage.

Panel Fixing

The fixing hardware is an especially important part of the IPS system. As most IPS system are made for suiting sanitary fitting system, a panel with access to the concealed system behind is always required. By providing such access, it allows building maintenance service staff to access the system without difficulties while the system remains a solid cover.

In general, two types of access opening is available for client's selection:

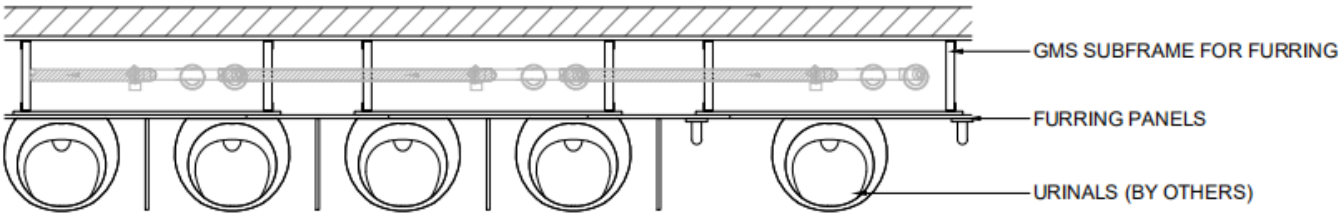
- Hinge type with swing open access
- Fixing clip type with detachable access

2.0

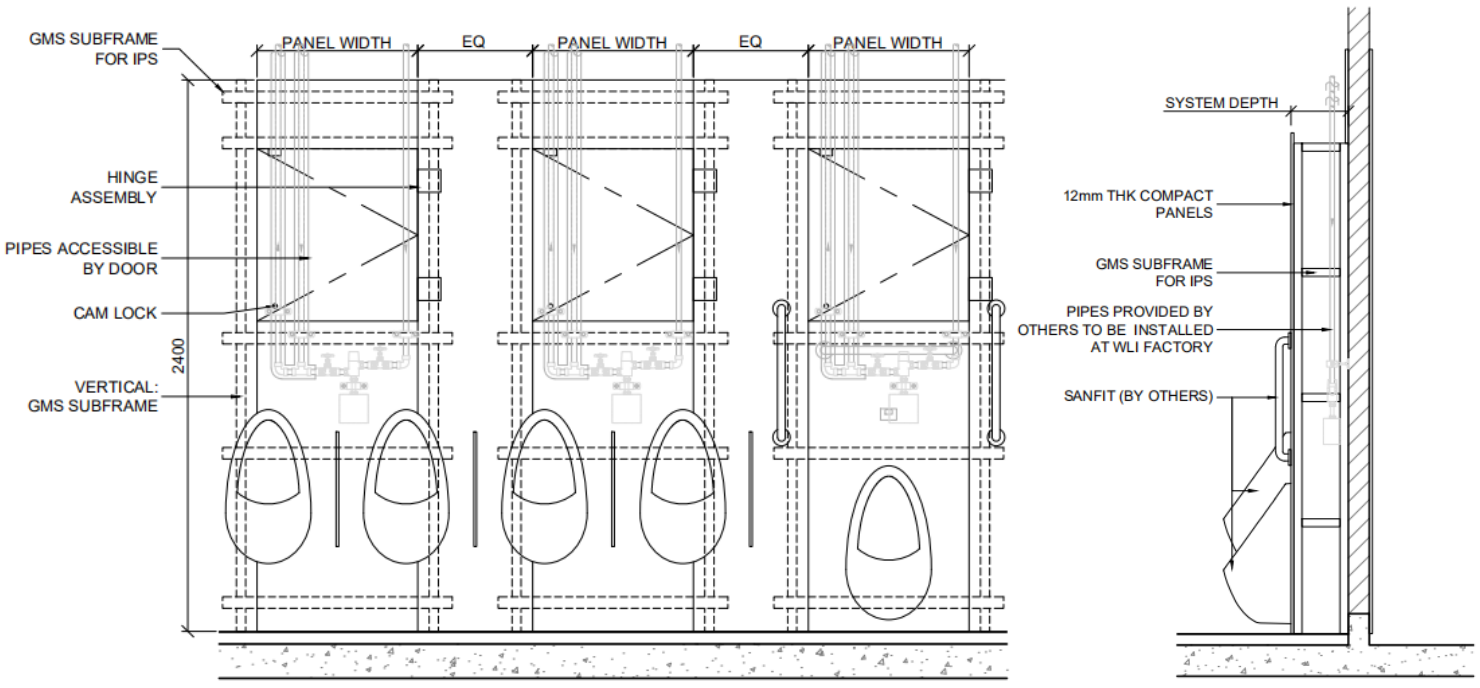
Supporting frame

The supporting frame is also a critical part in the IPS system. As it carries the load of both the compact panels and the related sanitary fitting, durable materials and professional calculations on the loading is required.

Fig.ii Typical details of furring wall panels



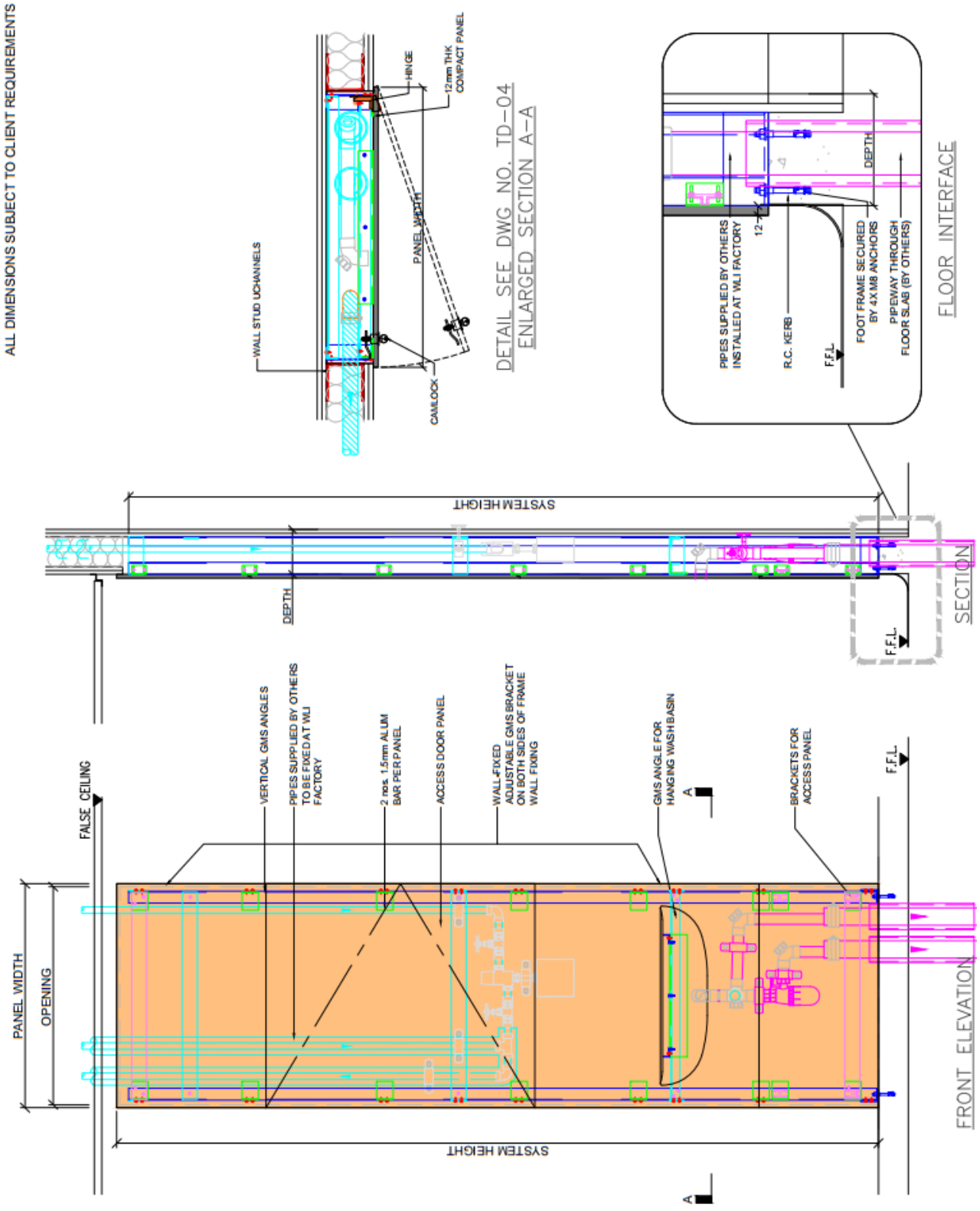
PLAN VIEW



ELEVATION

SECTION VIEW

Fig.iii Typical details of furring wall panels



2.0 System Application

2.3 Lockers

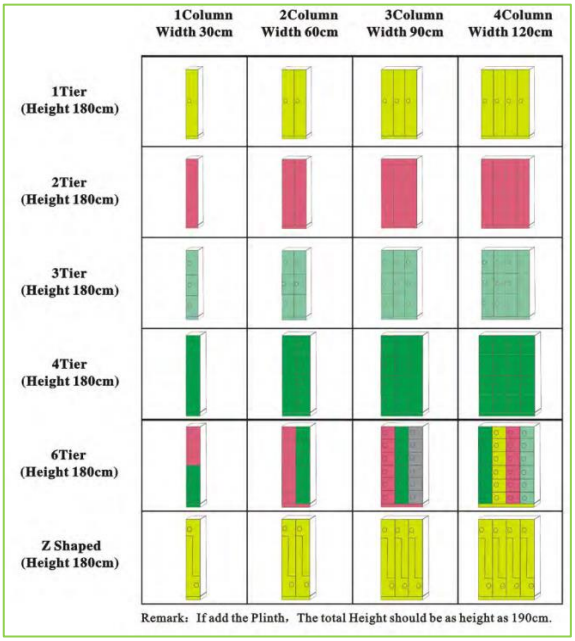
ABC Locker System is a proprietary locker system. The materials and construction of the system are designed to comply the technical specification requirement for most Hong Kong projects, include but not limited to government, institute, hotel and commercial projects. While the system is constructed of aluminum and compact panel, the system is best suited to be used for durable and humidity requirement, e.g. changing room.

Panel thickness:

Door: 12mm +-0.5
Back and column divider: 3mm +-0.5
Side panel: 8mm +-0.5
Shelf divider: 12mm +-0.5

System Configuration:

Frame: Aluminum
Number plate and name plate: Aluminum / plastic / SS available.
Door Lock: Pad lock / Cam lock / Coin return lock and Digital lock available.
Door key: Two individual keys for each locker. Optional Master key system available.
Door stop and Noise reduction: Rubber strip
Ventilation: Holes opened inside each locker.



2.0

Lock type and name plates:

Electronic password lock

Magnetic lock

Return coin lock

Cam lock

Pad lock-1

Pad lock-2

Number Plate-1

Number Plate-2

Password lock

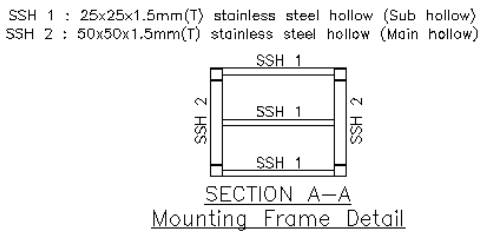
2.0 System Application

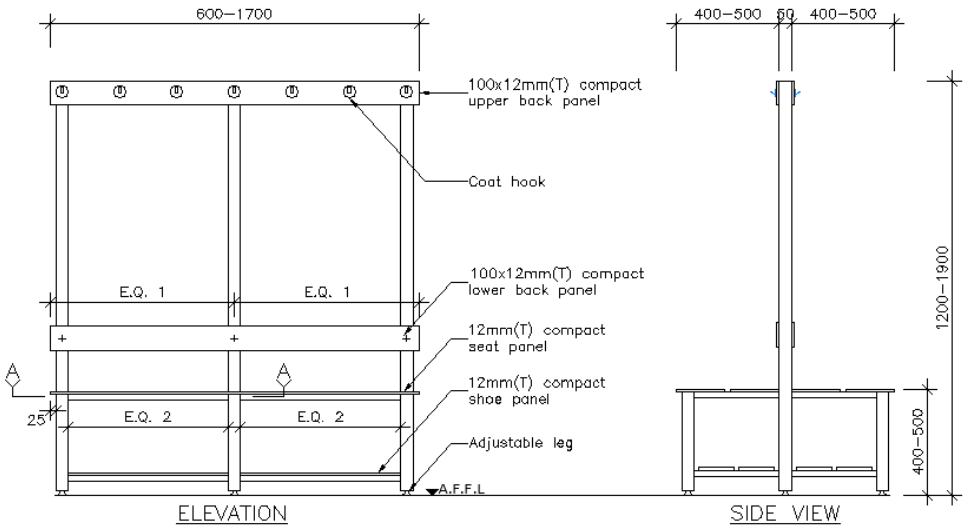
2.4 Benches

ABC Bench System is a proprietary seating bench. The materials and construction of the system are designed to comply the technical specification requirement for most Hong Kong projects, include but not limited to government, institute, hotel and commercial projects. While the system is constructed of steel and compact panel, the system is best suited to be used for durable and humidity requirement, e.g. changing room.

System Configuration:

Mounting Frame: #304 Stainless steel hollow (#316 is available) with adjustable leg.
1./ Main hollow: 50 x 50 x 1.5mm thick
2./ Sub hollow: 25 x 25 x 1.5mm thick.
Coat hook: Aluminum with black color nylon coated
Typical dimension: Refer to Diagram



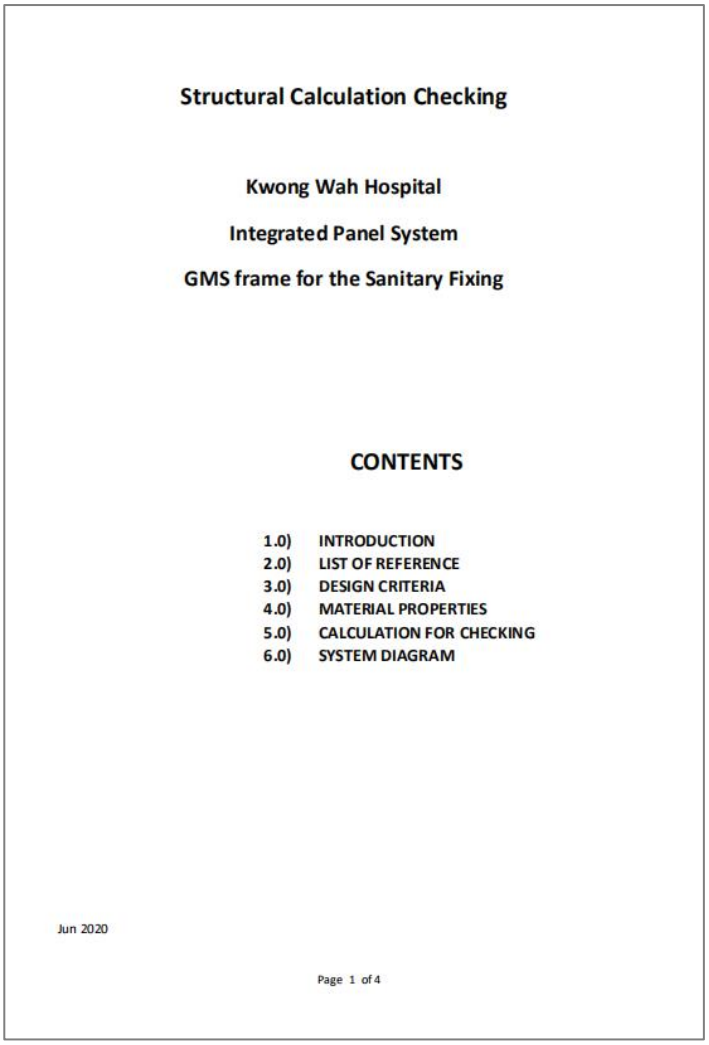


3.0 Calculation & Testing

To comply government authority's requirement, such as Building Department, and structure safety, all our system comes with structural calculation prior submission approval. RSE and RPE endorsement are available to ensure the validity of these calculations.

With tensile strength load test as a common requirement from building department, our team hires professional labs to proceed tensile load test on system's fixing and welding on the installed cladding and frames.

Fig.iv Calculation report prepared with manufacturing team
Project: Kwong Wah Hospital Redevelopment Phase 1



Structural Calculation Checking

Kwong Wah Hospital

Integrated Panel System

GMS frame for the Sanitary Fixing

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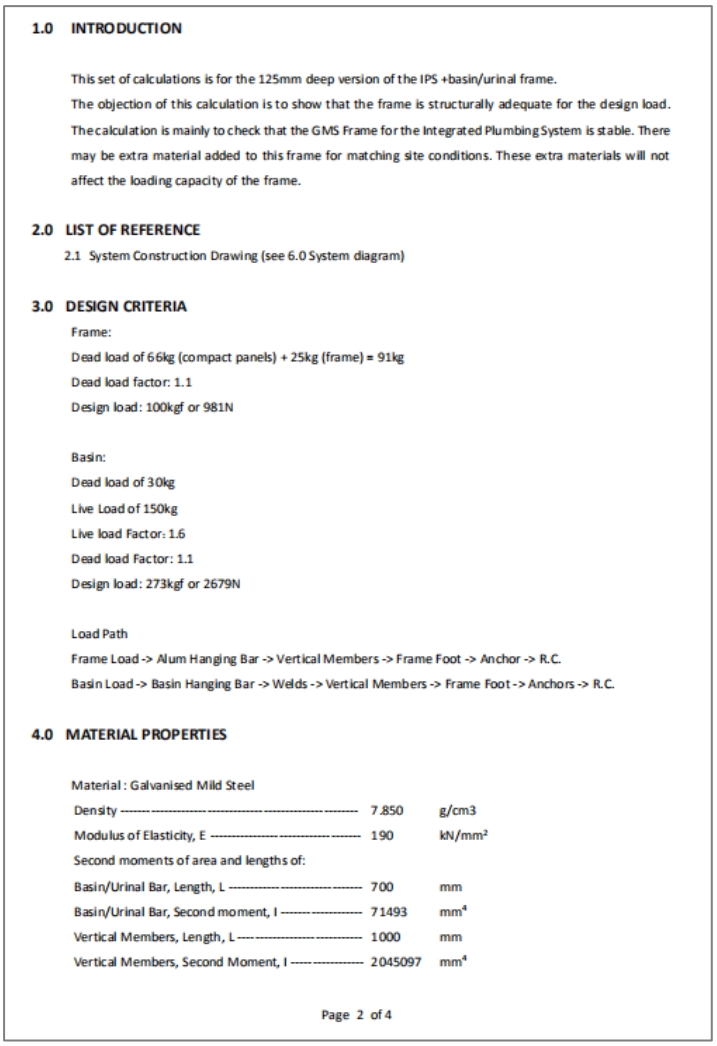
Jun 2020



1.0 INTRODUCTION

This set of calculations is for the 125mm deep version of the IPS +basin/urinal frame.
The objection of this calculation is to show that the frame is structurally adequate for the design load.
The calculation is mainly to check that the GMS Frame for the Integrated Plumbing System is stable. There may be extra material added to this frame for matching site conditions. These extra materials will not affect the loading capacity of the frame.

2.0 LIST OF REFERENCE

2.1 System Construction Drawing (see 6.0 System diagram)

3.0 DESIGN CRITERIA

Frame:
Dead load of 66kg (compact panels) + 25kg (frame) = 91kg
Dead load factor: 1.1
Design load: 100kgf or 981N

Basin:
Dead load of 30kg
Live Load of 150kg
Live load Factor: 1.6
Dead load Factor: 1.1
Design load: 273kgf or 2679N

Load Path
Frame Load -> Alum Hanging Bar -> Vertical Members -> Frame Foot -> Anchor -> R.C.
Basin Load -> Basin Hanging Bar -> Welds -> Vertical Members -> Frame Foot -> Anchors -> R.C.

4.0 MATERIAL PROPERTIES

Material : Galvanised Mild Steel

Density	7.850	g/cm3
Modulus of Elasticity, E	190	kN/mm²
Second moments of area and lengths of:		
Basin/Urinal Bar, Length, L	700	mm
Basin/Urinal Bar, Second moment, I	71493	mm⁴
Vertical Members, Length, L	1000	mm
Vertical Members, Second Moment, I	2045097	mm⁴

4.0 Advanced Construction on IPS Walls

To adapt to the fast-changing technological environment and increase efficiency, Wah Lam has already implemented **Building Information Modeling (BIM)** and **Design for Manufacture and Assembly (DfMA)**.

We begin the IPS system design with BIM. BIM is a process supported by multiple tools to allow a networked communication to support decision-making regarding a built asset. In particular, its 3D implementation allows contractors to identify and settle potential clashes between our framework and other third-party systems.

Additionally, our design team with the production plant and installation staff are ready for DfMA projects; by combining the design for ease of manufacturing the parts and assembly at site, this system is best use for large-scale order for standardized cladding panels.

BIM & DfMA approach - Works in factory：

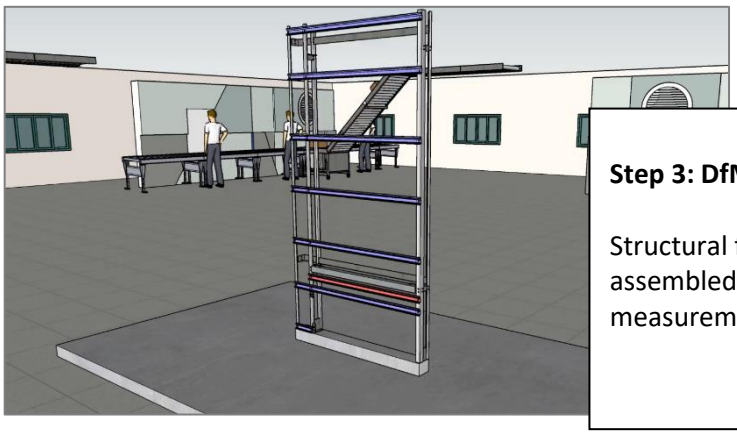
Step 1: BIM design and pre-assembly in factory for DfMA

At factory, a simulate concrete base is built according to BIM / on site measurement.
The information is then used for designing the frame as well the cladding.

Step 2: A simulated wall, panel & support frame are made in factory for pre-assembly.

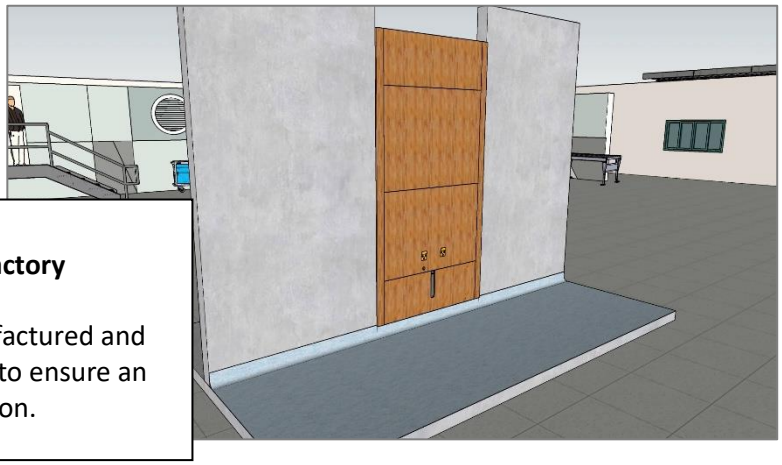
For full video, scan above

BIM & DfMA approach – Works in factory：



Step 3: DfMA for structural frame in factory

Structural frame and its attached piping are assembled according to the BIM / on site measurement to fit onto the simulated wall.



Step 4: DfMA for IPS in factory

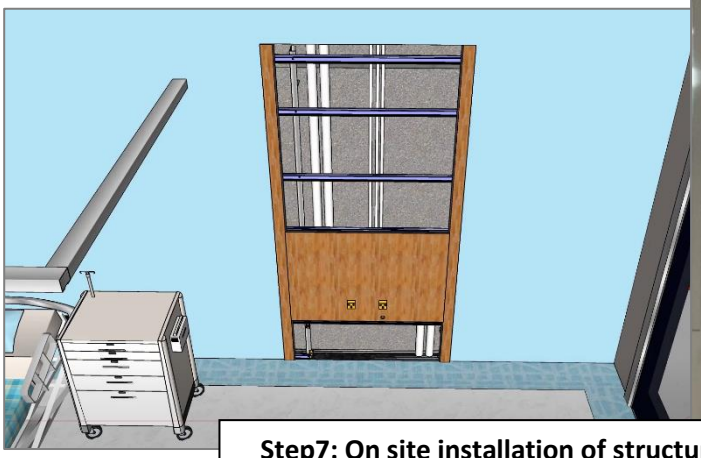
Whole system also manufactured and pre-assembled in factory to ensure an accurate size for installation.

Step 5: Transportation to site

The pre-assembled frame and cladding are packed for shipping to site.

BIM & DfMA approach – Works at site：

Step 6: On site installation
Factory pre-assembled structural frame and cladding arrived at site for installation.



Step7: On site installation of structural frames with piping and panels

Step9: Complete (Kwong Wah Hospital)

SEE MORE

at

www.wlibm.com.hk

NOTE

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