

DEDICATED REHOUSING ESTATE
AT
HUNG SHUI KIU - PHASE 1A
HUNG PING ROAD, HUNG SHUI KIU,
YUEN LONG, NEW TERRITORIES
(HUNG SHUI KIU TOWN LOT NO.1)

USER MANUAL
FOR
MODULAR INTEGRATED CONSTRUCTION (MIC) SYSTEM

(FOR INDIVIDUAL OWNERS, OCCUPANTS / USERS)

21 May 2024 (Rev.2)

Declaration

Declaration by Authorized Person and Registered Structural Engineer of the following project / application for in-principle acceptance (IPA) of MiC system*:

(Project / ~~Model number of MiC system*~~) Dedicated Rehousing Estate at Hung Shui Kiu Phase IA
(Address of the development#) 12 Hung Shui Kiu Tin Sam Road

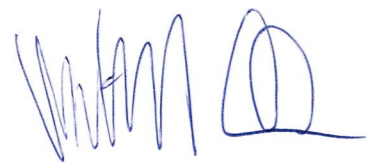
‘*’ Delete where appropriate

‘#’ Not applicable for application for IPA of MiC system

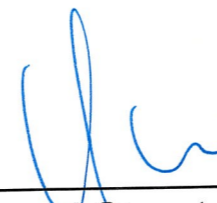
(a) I/We hereby confirm that the information contained in this User Manual is true and correct and duly prepared for the purposes of facilitating the uses and maintenance by the building owner, users and property manager;

(b) I/We hereby confirm that the safety notices and instructions for alteration, drilling and installation of addition fittings etc. advised thereafter are not contradictory to the provisions of the Buildings Ordinance; and

(c) I am / we are aware that the Buildings Department will upload this User Manual to the Building Records Access and Viewing On-line system of the Buildings Department for inspection by public.



Authorized Person
(Name: CHUI Pak Chung, Patrick)
Date: 2024-05-21



Registered Structural Engineer
(Name: YUEN Yat Chung)
Date: 2024-05-21

CONTENT PAGE

1. Introduction

2. Extent of Modular Integrated Construction (MiC)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

- A) Structural Members
- B) Structural Floors & Walls
- C) Fire Resisting Construction
- D) Waterproofed Wall and Floor
- E) Open Kitchen
- F) Aluminium Windows & Doors
- G) Common External Façade
- H) Pipe duct, Plumbing and Drainage in Domestic Unit

1. Introduction

1.1 This User Manual aims to provide the owners, users and property manager some basic information for the uses and maintenance of the Modular Integrated Construction (MiC) system adopted in the building. The information contained in this manual should not be construed as as-built records of the building.

1.2 Prior approval of plans and consent to commencement of works from the Building Authority (the Buildings Department (BD)) and appointment of building professionals and registered contractors are required before carrying out any alteration or addition works to the buildings, unless the works are exempted building works. If the works are designated as minor works under the Minor Works Control System (MWCS), the works may be carried out in accordance with the simplified requirements of the MWCS.

1.3 Under no circumstances shall the structural members/components, fire resisting construction (including wall (both internal and external) and door, floor slab and ceiling and cavity barriers between modules), drainage works, etc. be altered or removed without consulting registered building professionals.

2. Extent of Modular Integrated Construction (MiC)

2.2 Each typical floor involves 49 MiC modules, the configuration and the types of MiC modules involved are as shown in the layout plan of MiC Module below.



Layout of Typical Floor (2/F to 26/F)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

A) Structural Members

All floors, ceilings, structural walls and non-structural walls of each module are constructed by reinforced concrete. These elements are constructed fully fitted out in the factory with all internal finishes fixtures and fittings except at the module interface where the finishes are applied on-site. Structural members of this building includes precast walls and the structural slabs, walls and beams of MiC Modules. The structural members of each module are protected by adequate concrete cover as required by Buildings Ordinance.

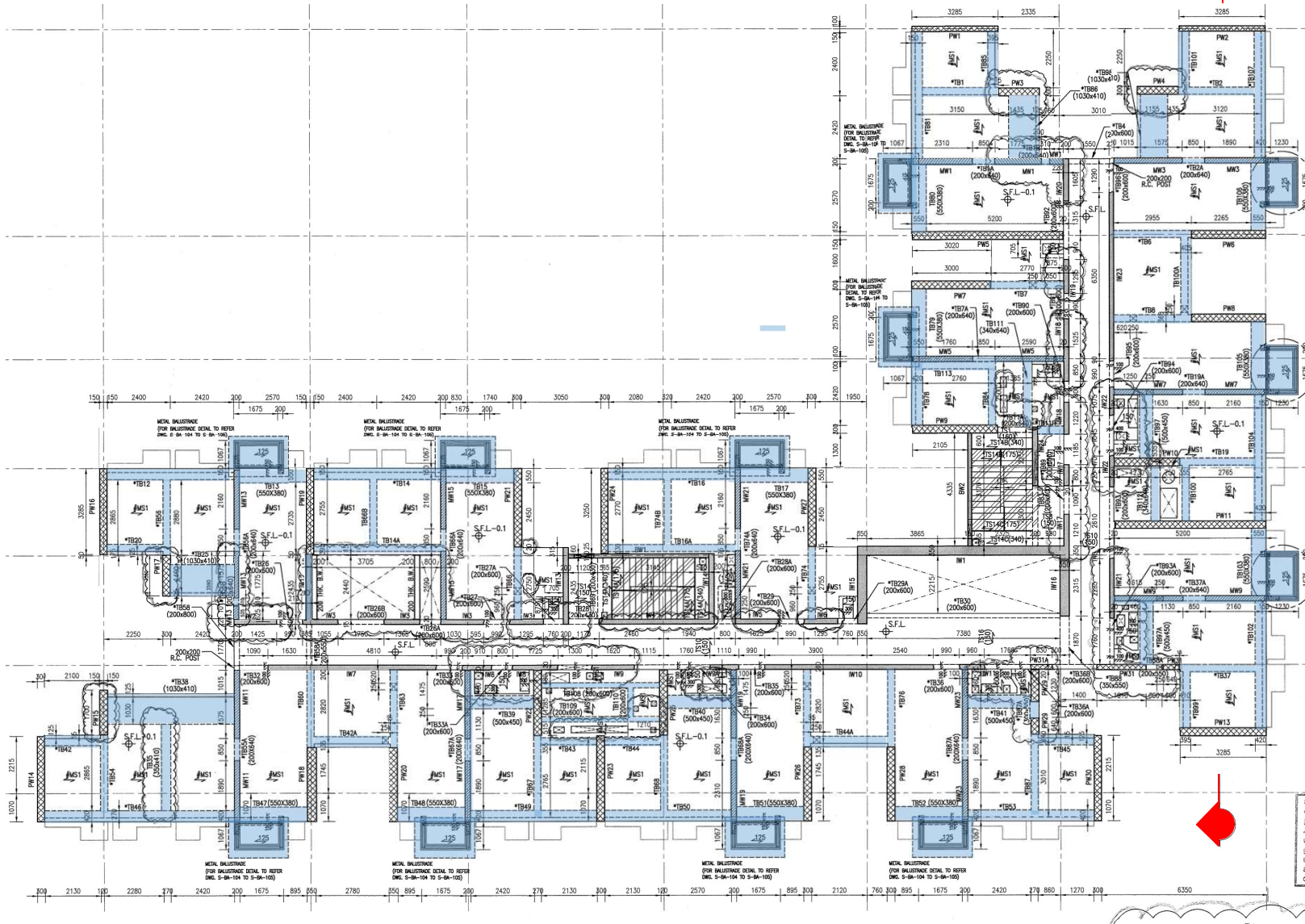
The structural members of the MiC modules provide structural stiffness and maintain integrity of the subject building. All structural elements of the module/building shall not be damaged and shall not be altered or removed without consulting registered building professionals. Unless the works are exempted works under the Buildings Ordinance or designated minor works under the Minor Works Control System (MWCS), any alterations and additions works shall obtain prior approval and consent from the Building Authority and shall be carried out by registered contractors under the supervision of relevant registered building professionals to ensure compliance with the relevant provisions of the Buildings Ordinance and its allied regulations.

The occupants shall timely report any defects or damages to the elements during the use of the unit and allow access for the maintenance personnel, if necessary.

Please refer to the drawings for the typical locations of the structural members in Typical Floor. Structural members for each modules are highlighted in following pages for illustration.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

TYPICAL SECTION
REFER TO 3(B)

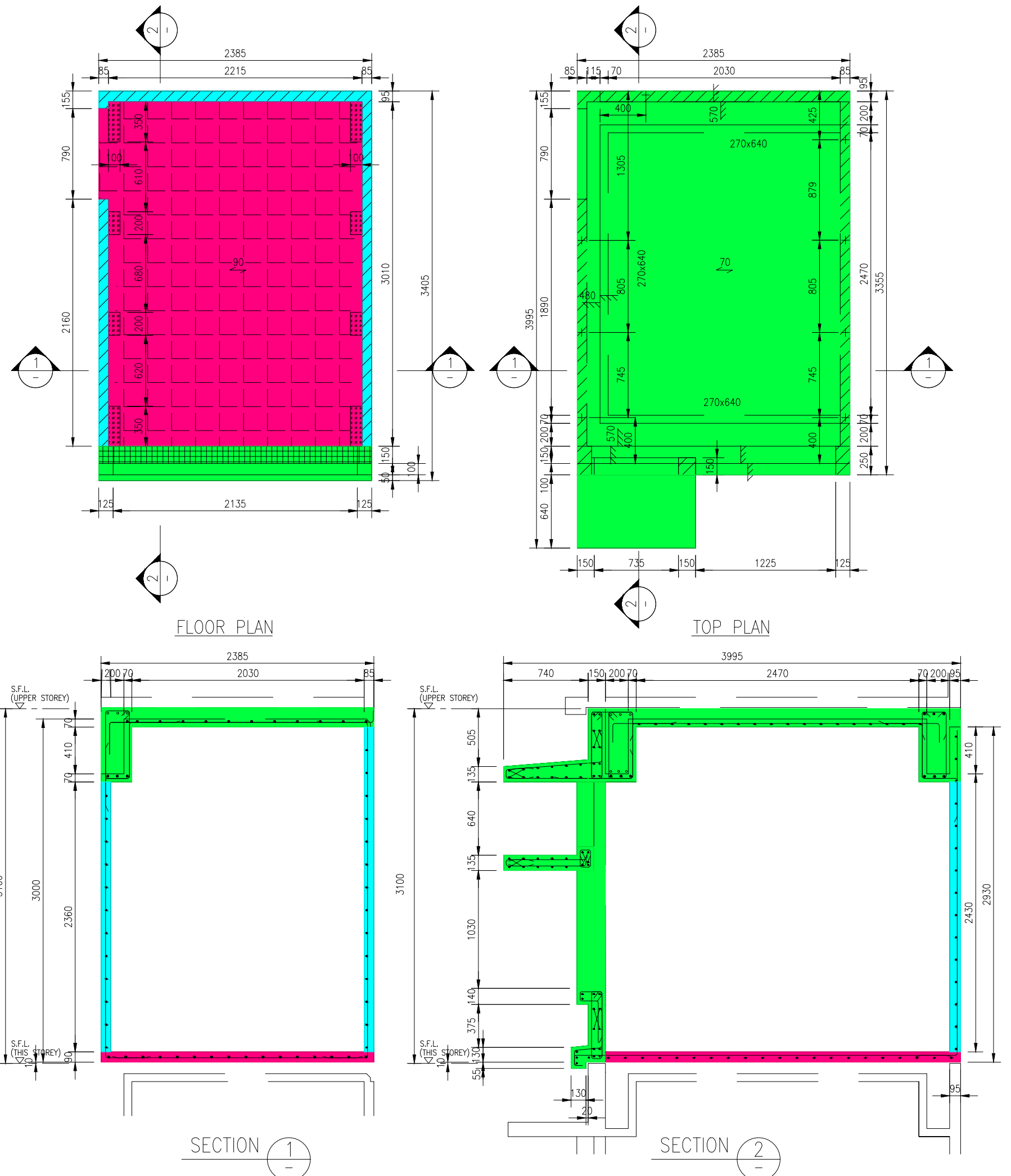


LEGEND:

 STRUCTURAL BEAM / WALL WITHIN MIC MODULES NOT ALLOWED TO ALTER, DAMAGE OR REMOVE WITHOUT ADVICE FROM REGISTERED BUILDING PROFESSIONALS.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

MB1L & MB1R



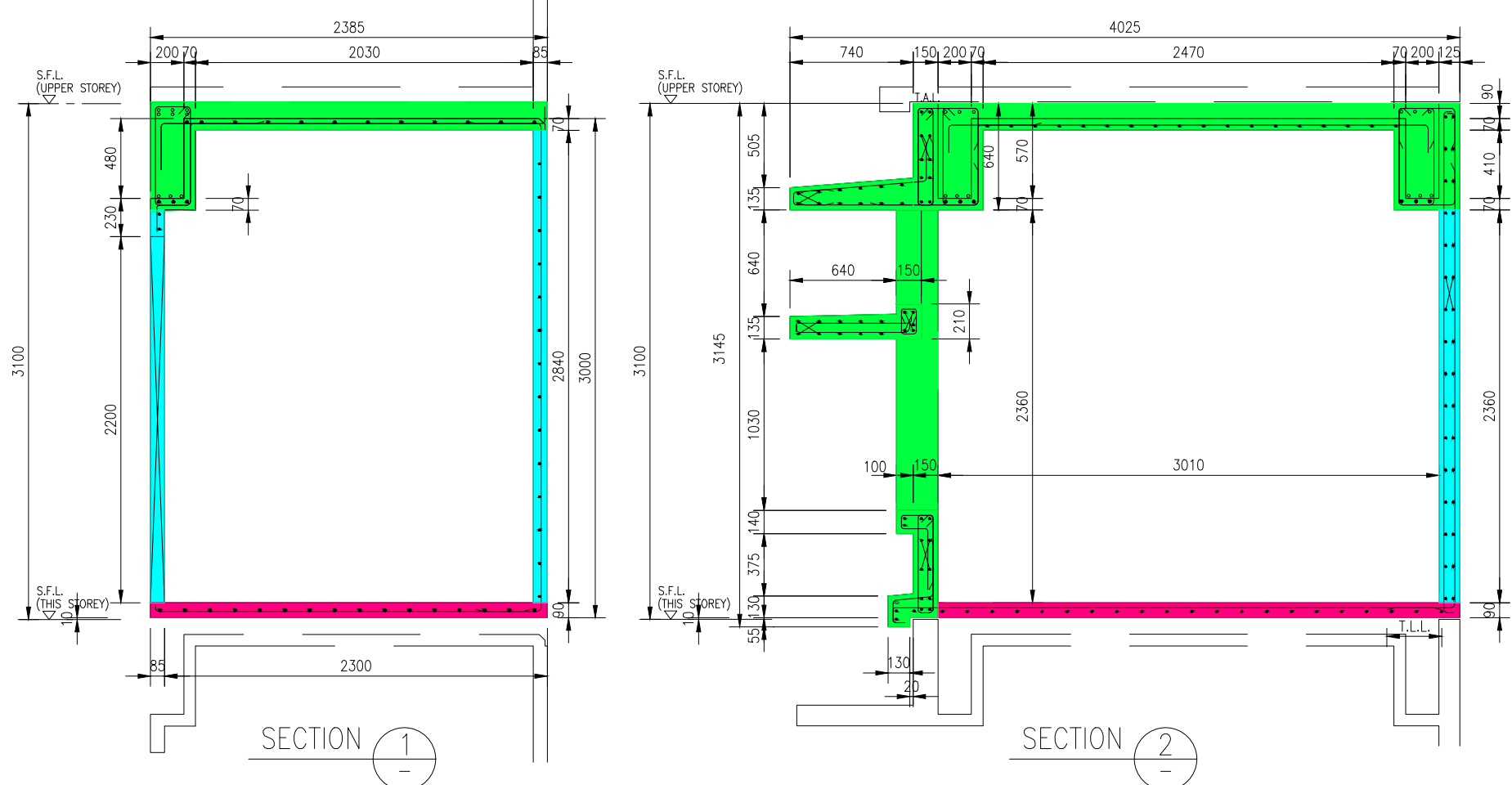
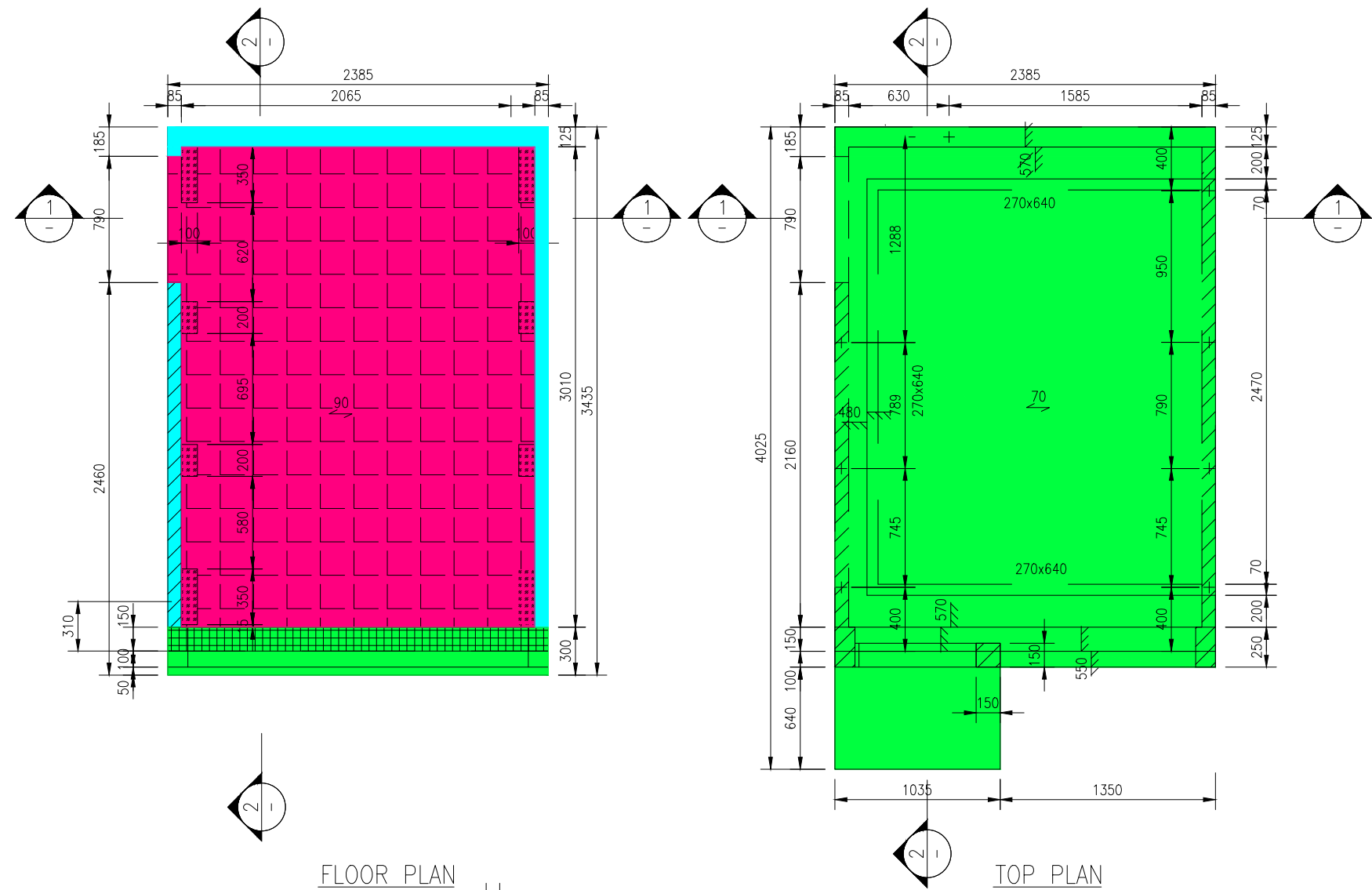
LEGEND :

- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

MB3



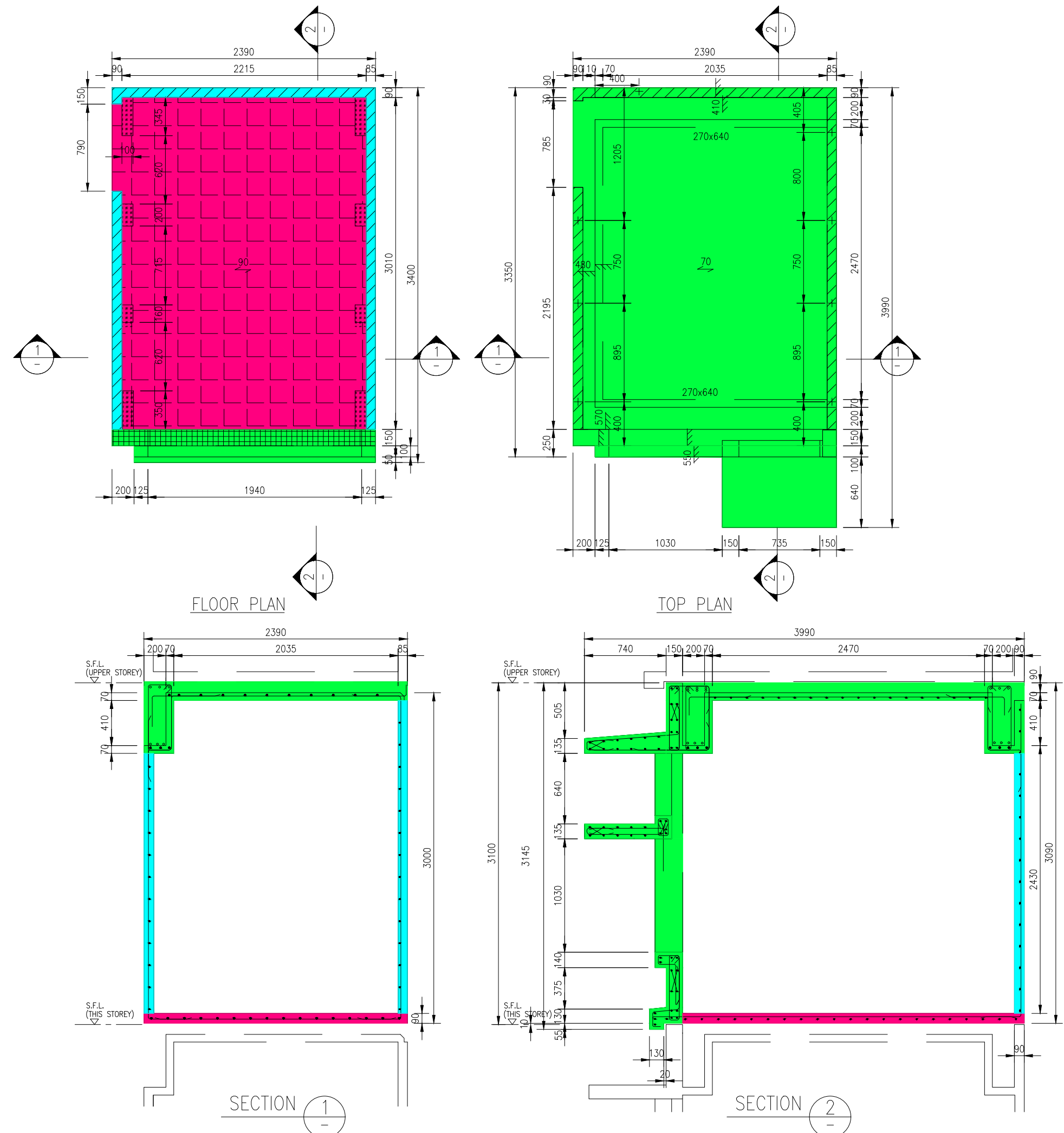
LEGEND :

- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/ BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

MB3L



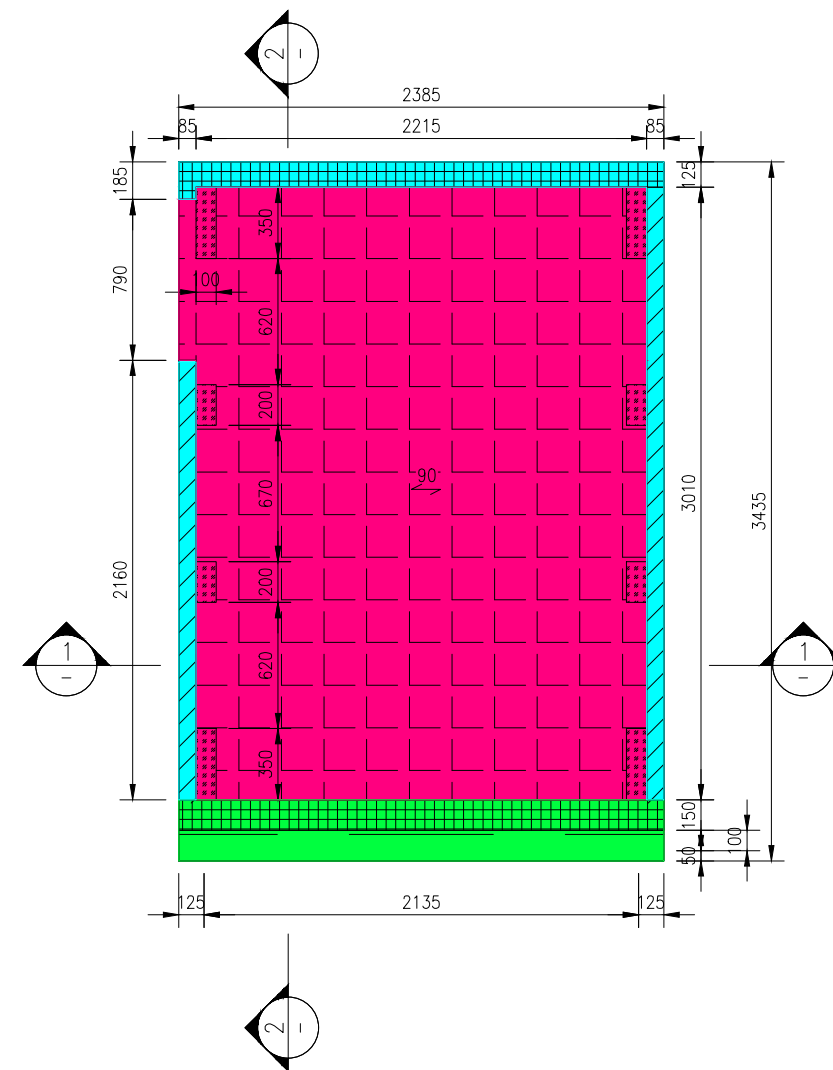
LEGEND :

- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/ BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

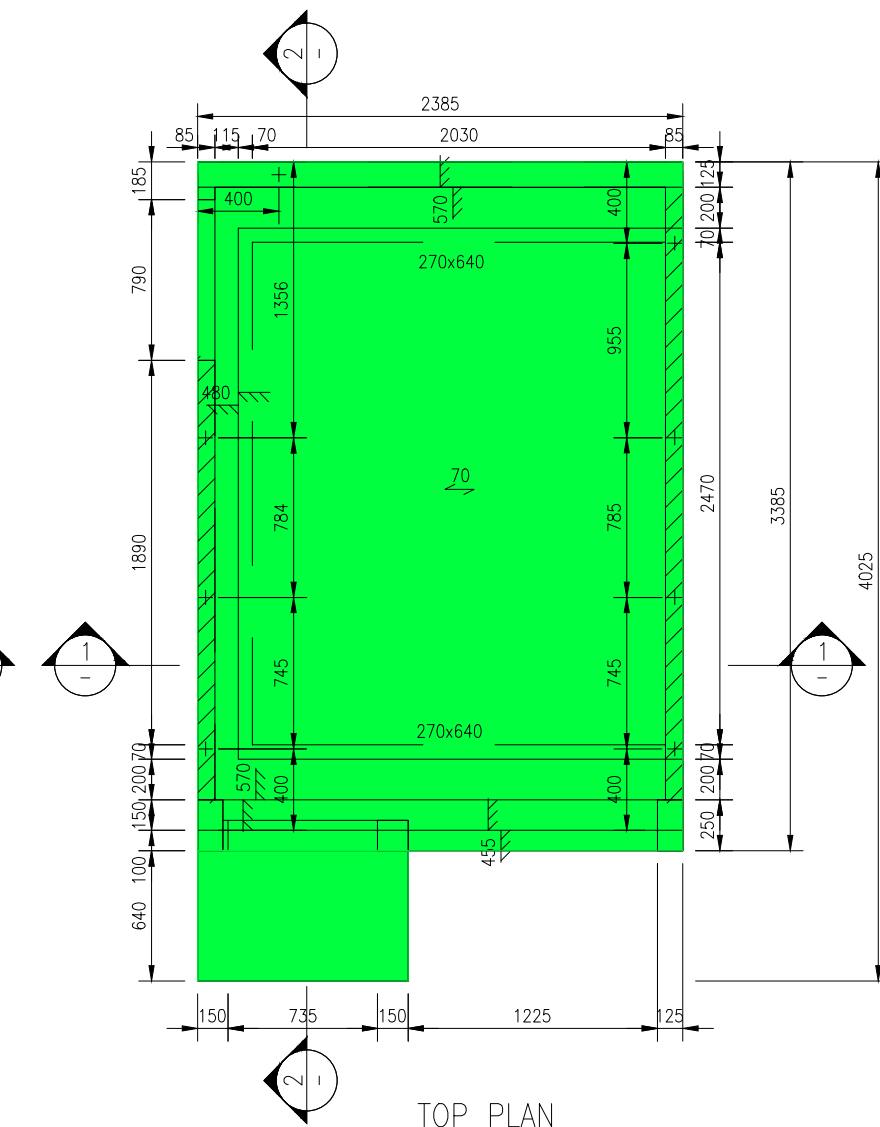
(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

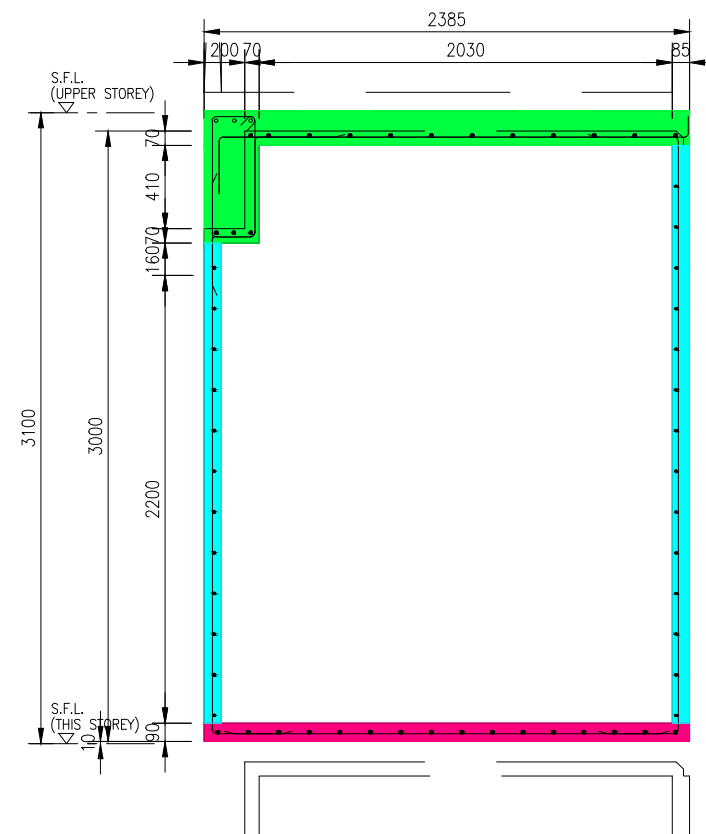
MB3R



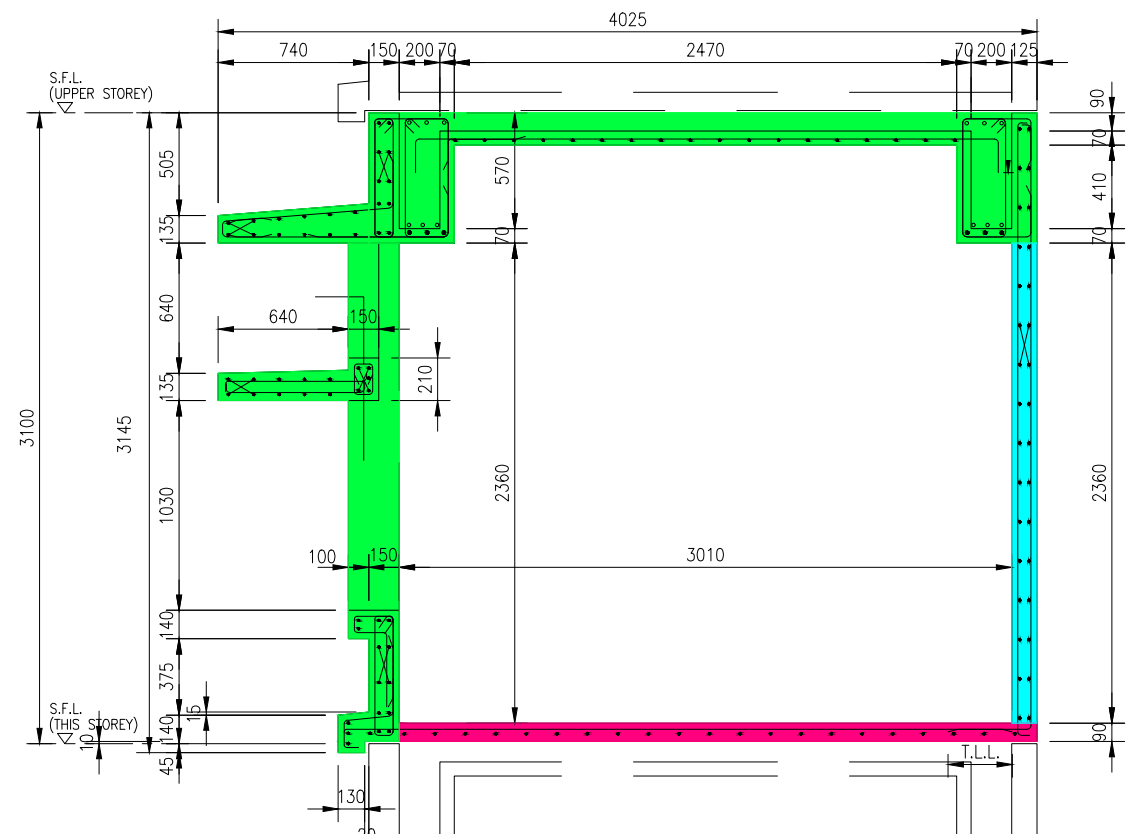
FLOOR PLAN



TOP PLAN



SECTION 1



SECTION 2

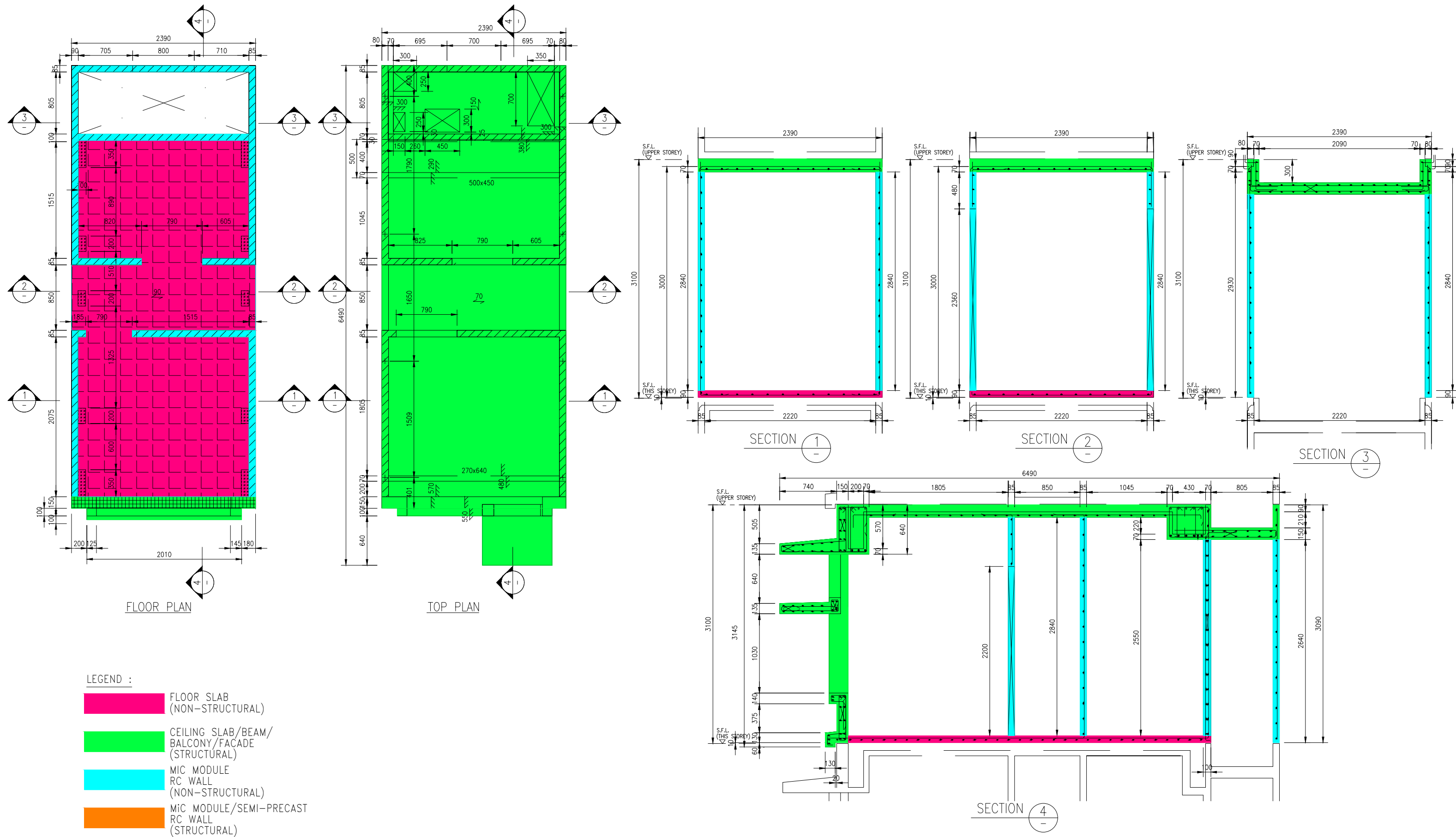
LEGEND :

- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/ BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

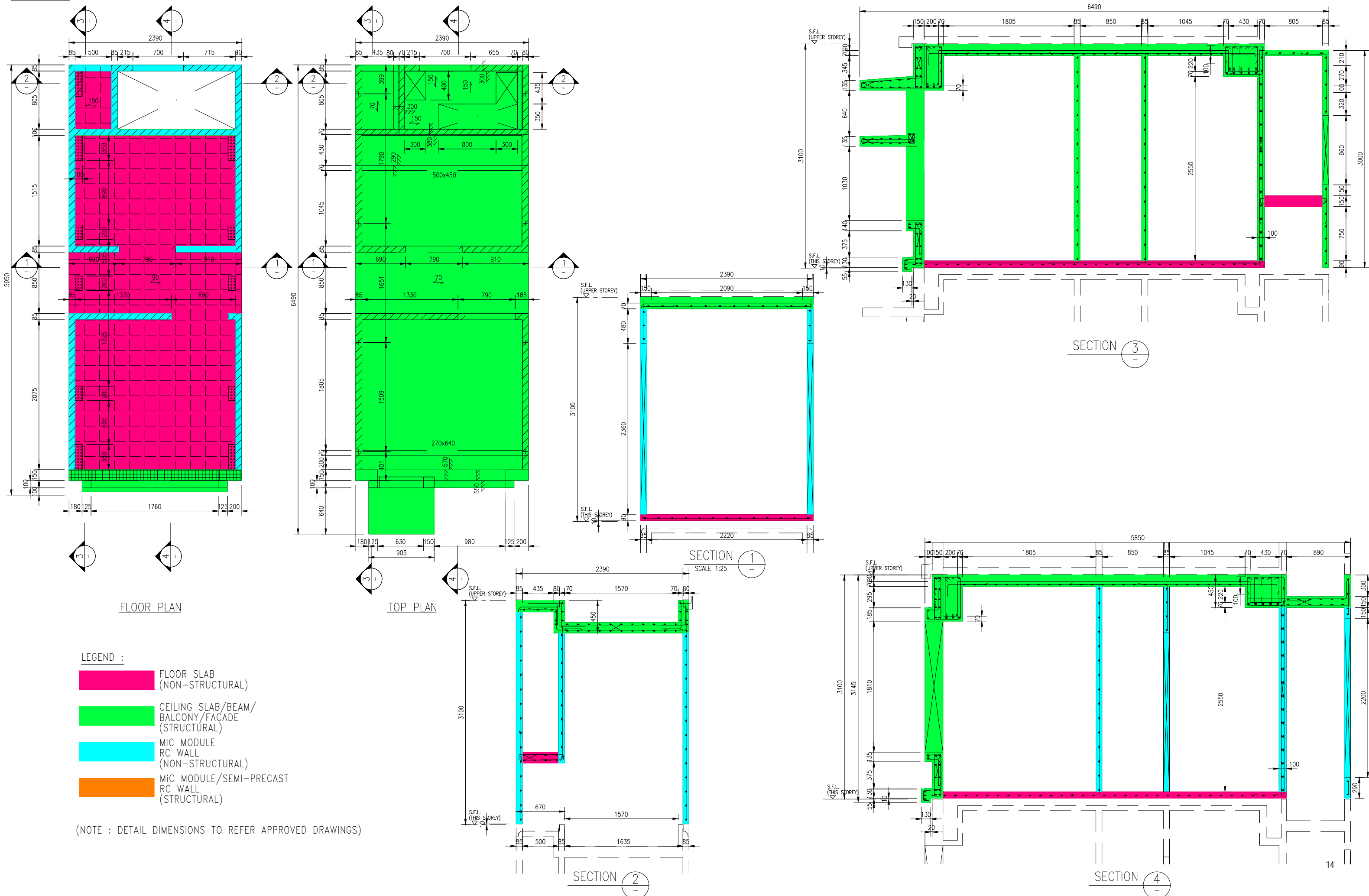
BT1L



(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

BT1R

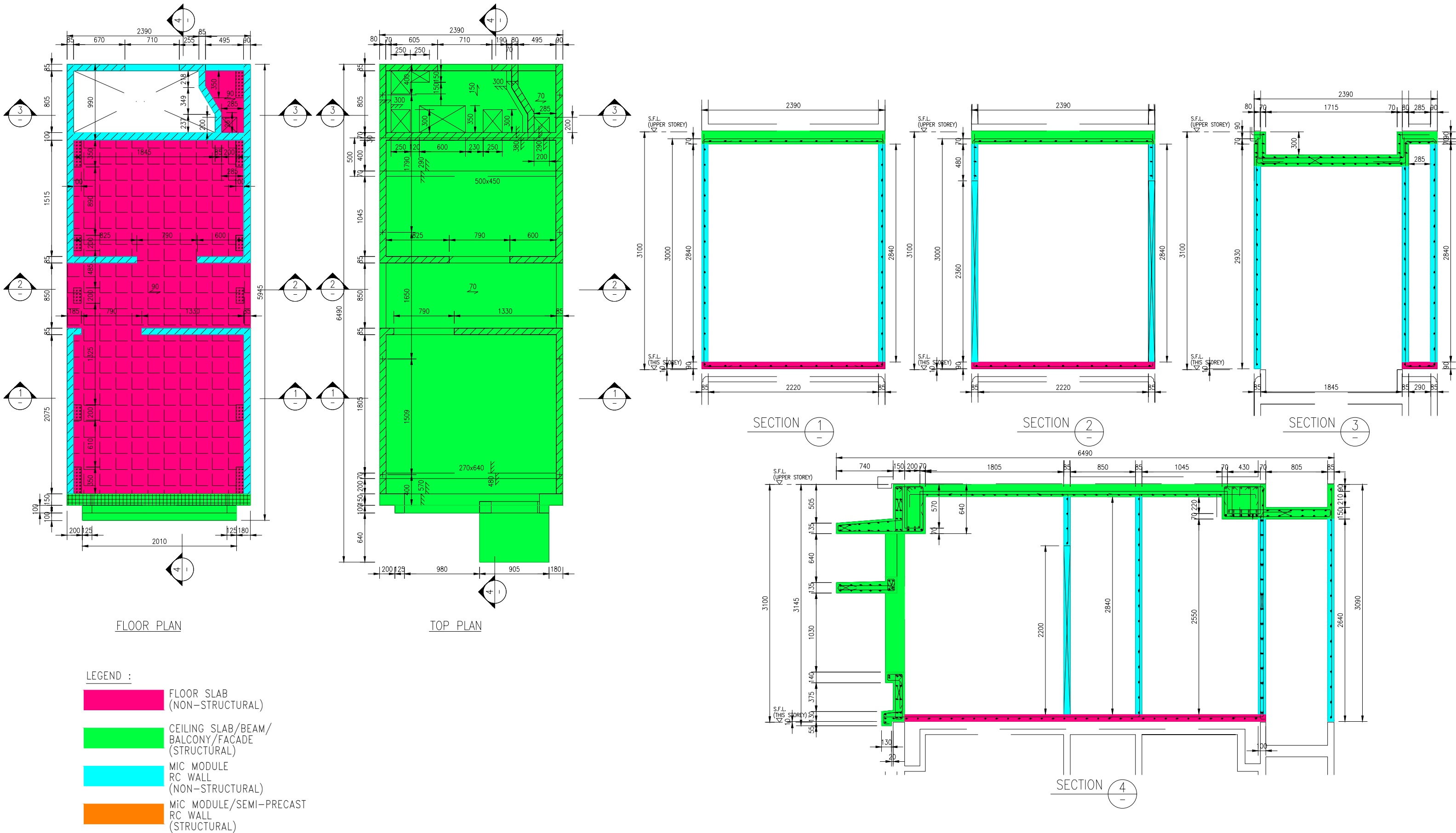


- LEGEND :**
- FLOOR SLAB (NON-STRUCTURAL)
 - CEILING SLAB/BEAM/ BALCONY/FACADE (STRUCTURAL)
 - MIC MODULE RC WALL (NON-STRUCTURAL)
 - MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

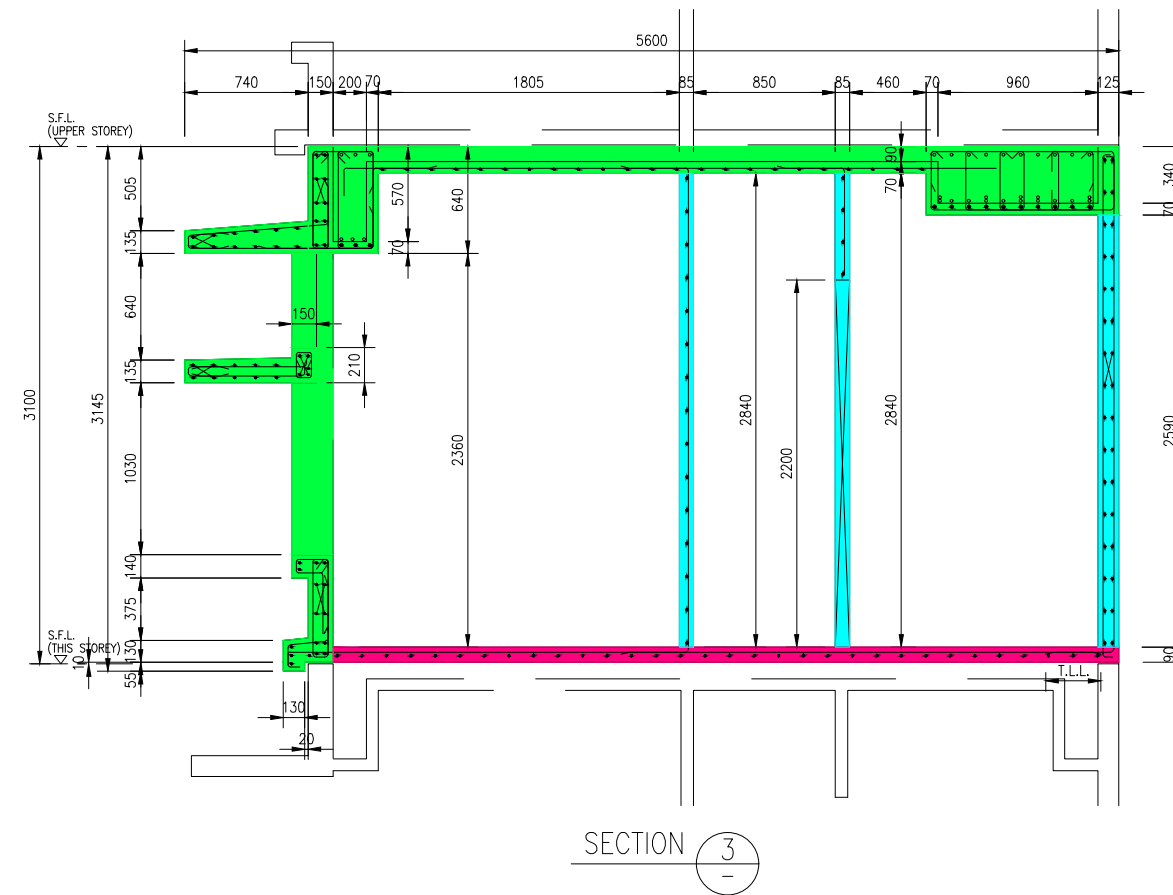
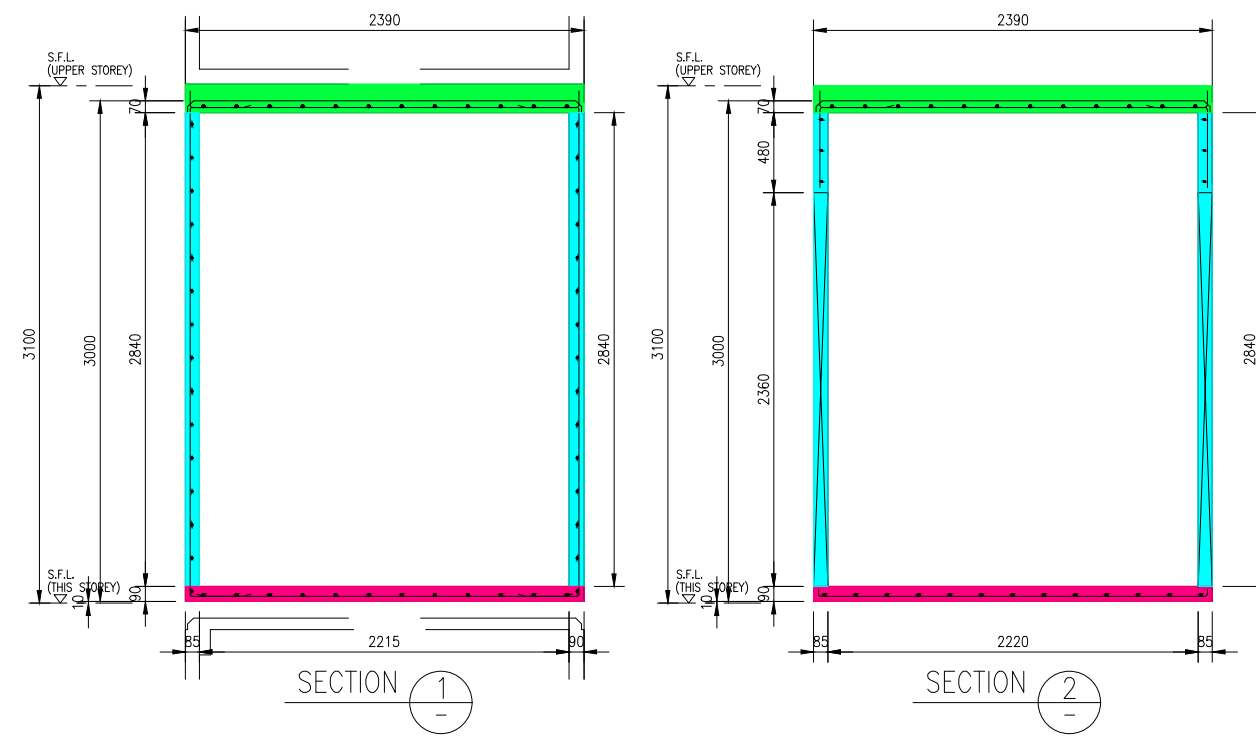
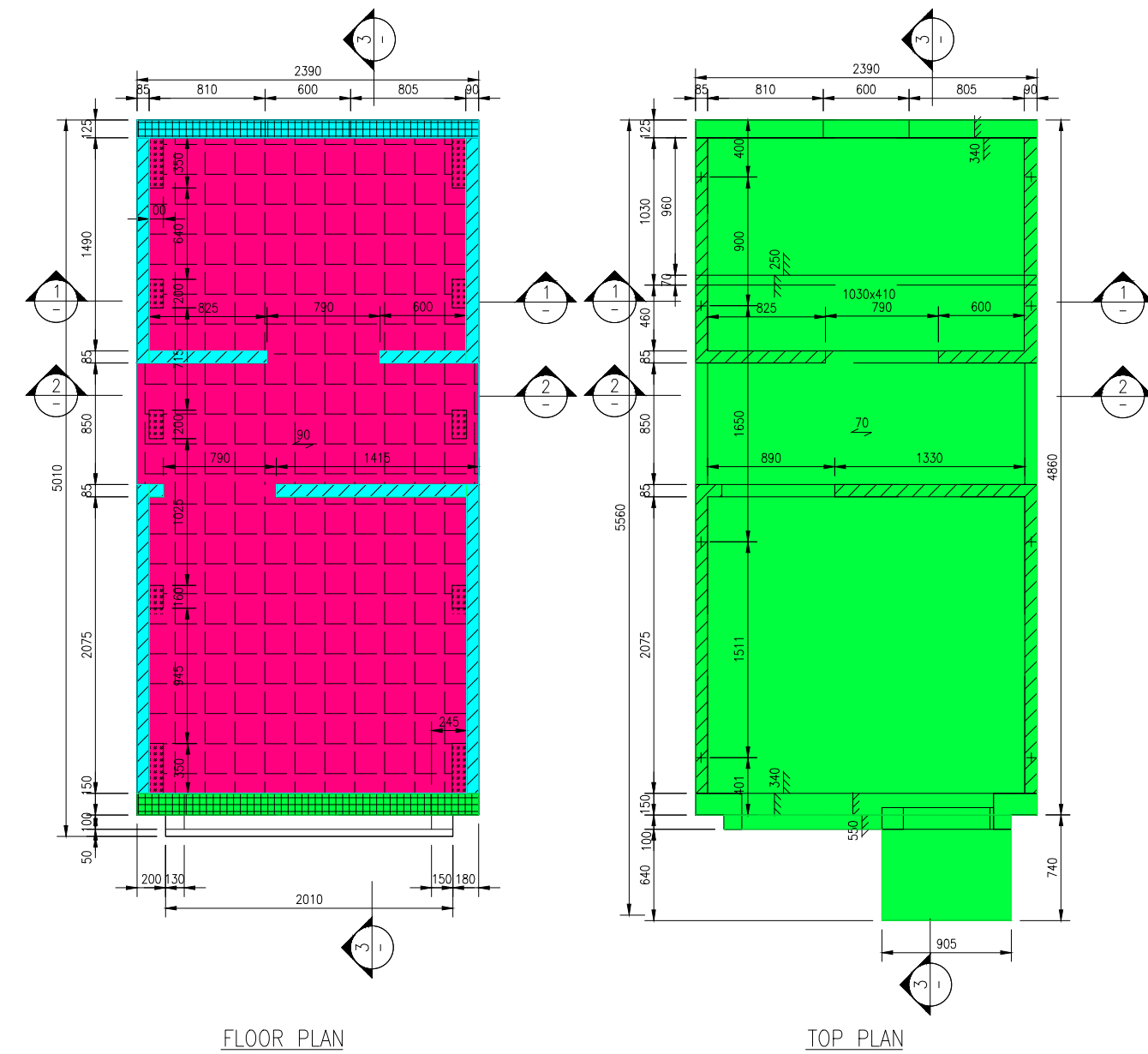
BT2L & BT2R



(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

BT3L & BT3R



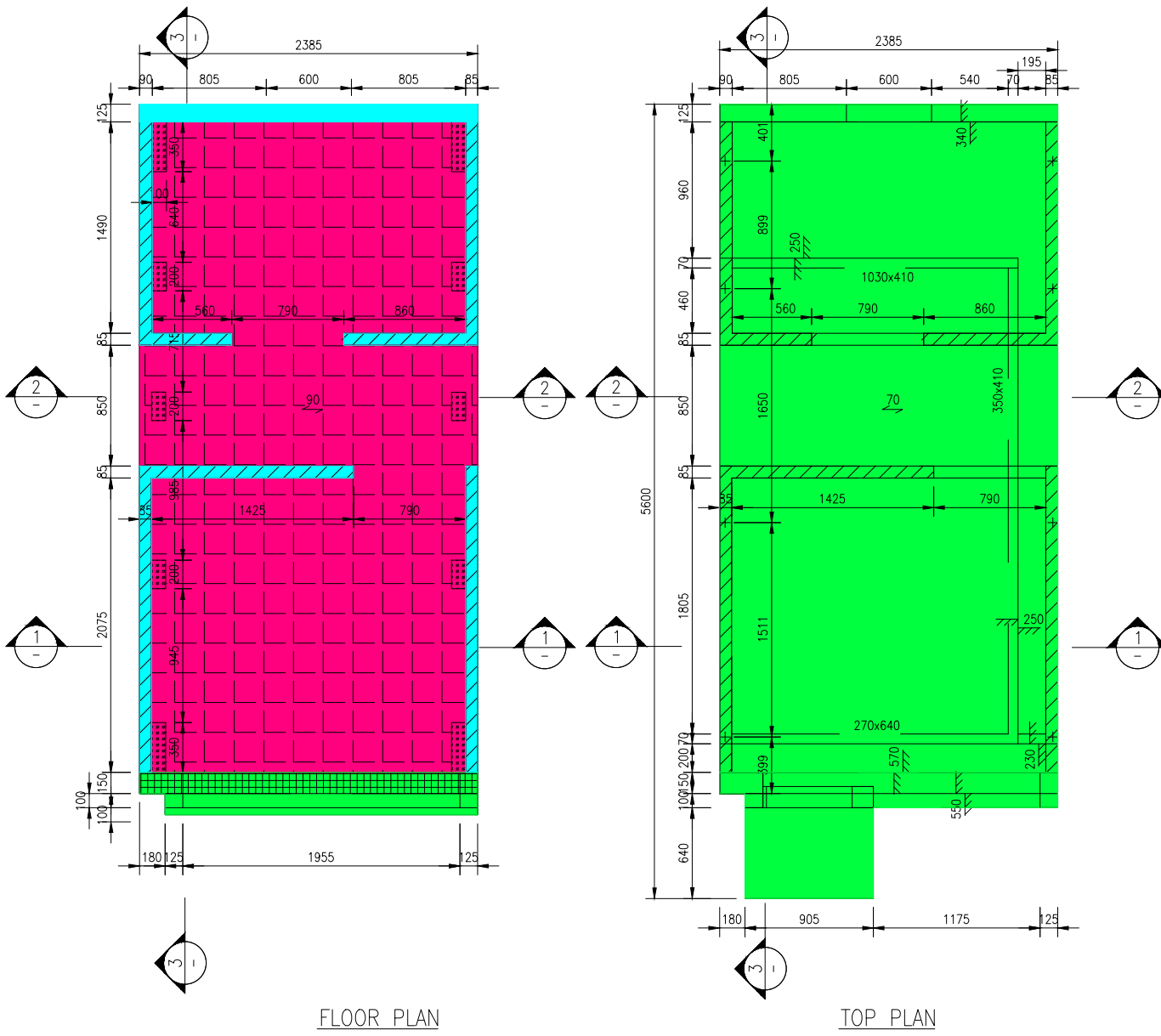
LEGEND :

- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/ BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

BT4



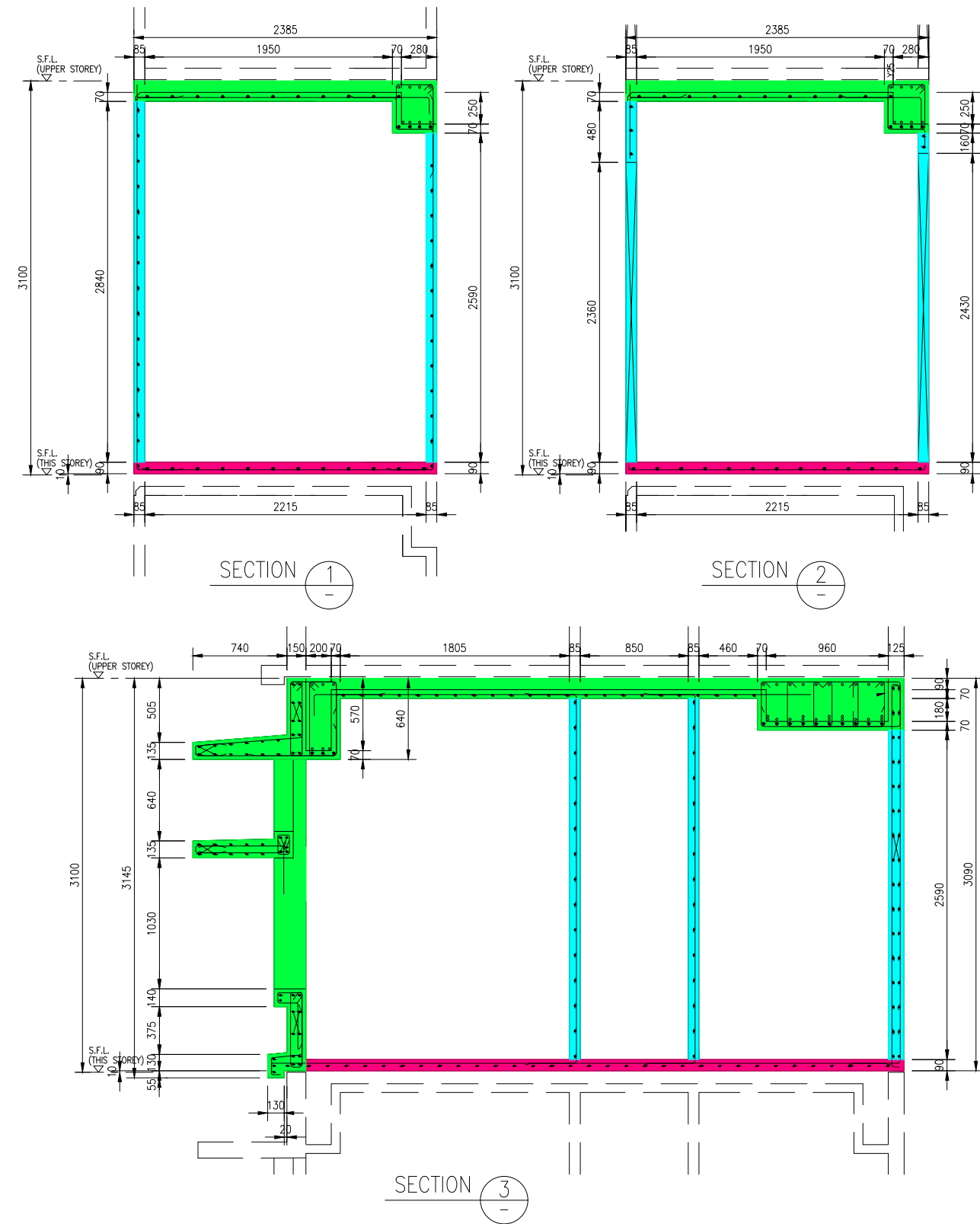
FLOOR PLAN

TOP PLAN

LEGEND :

- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/ BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)



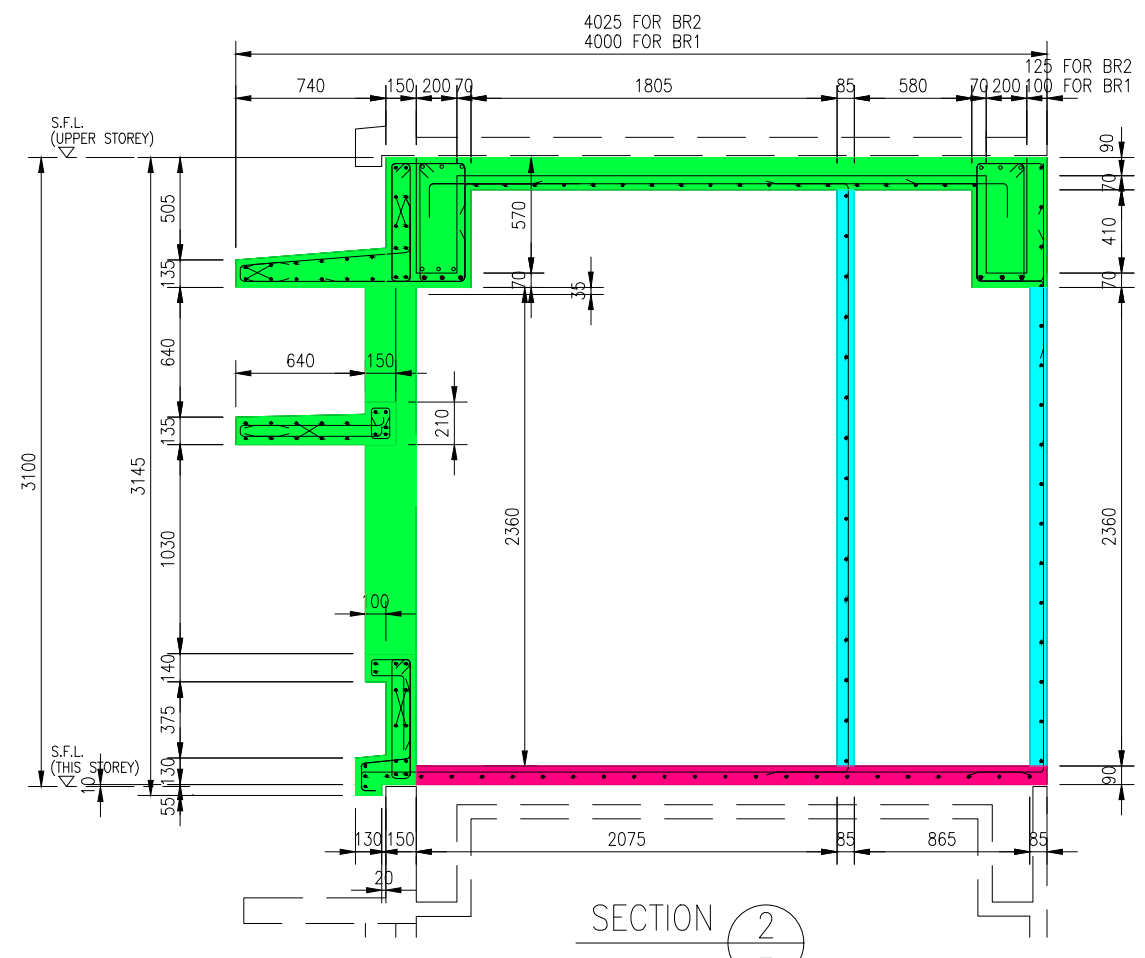
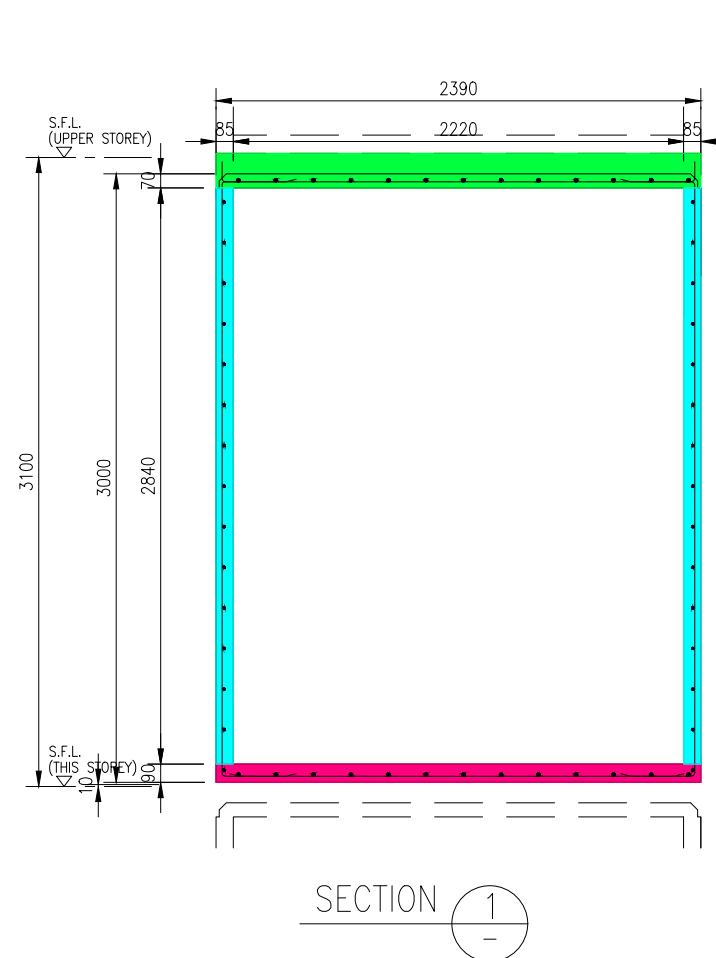
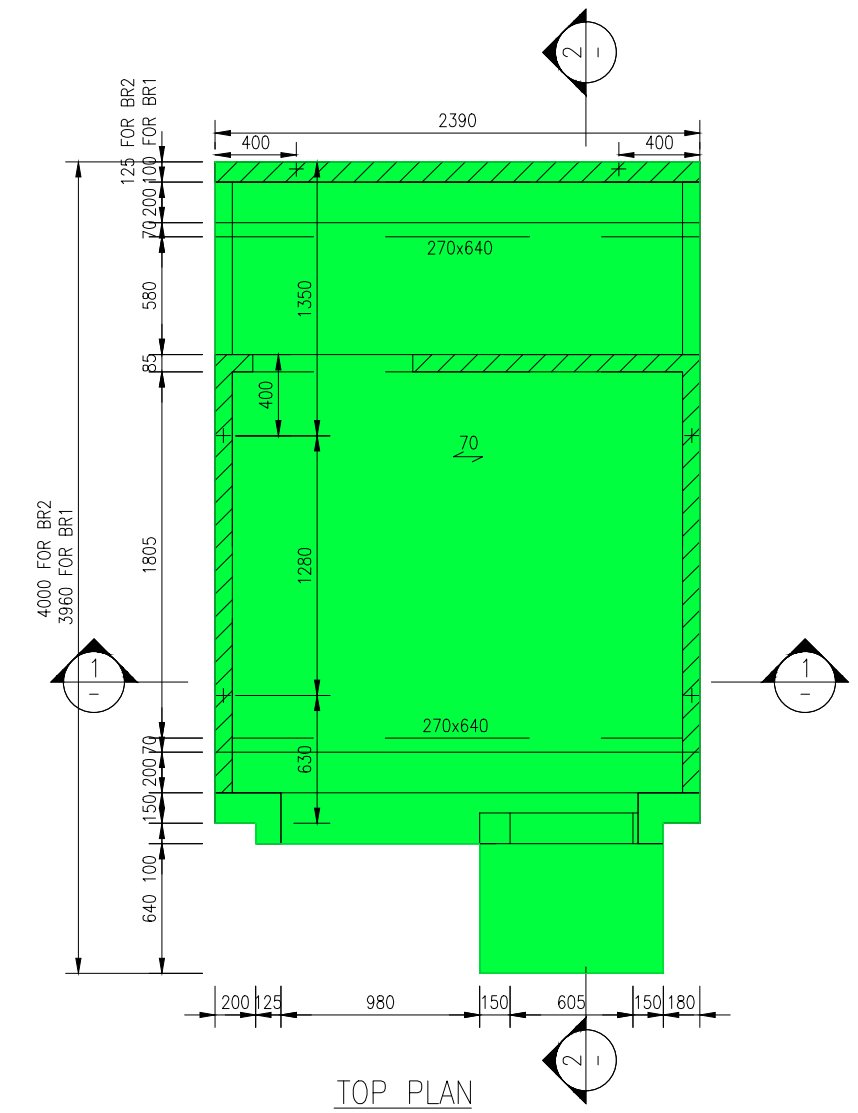
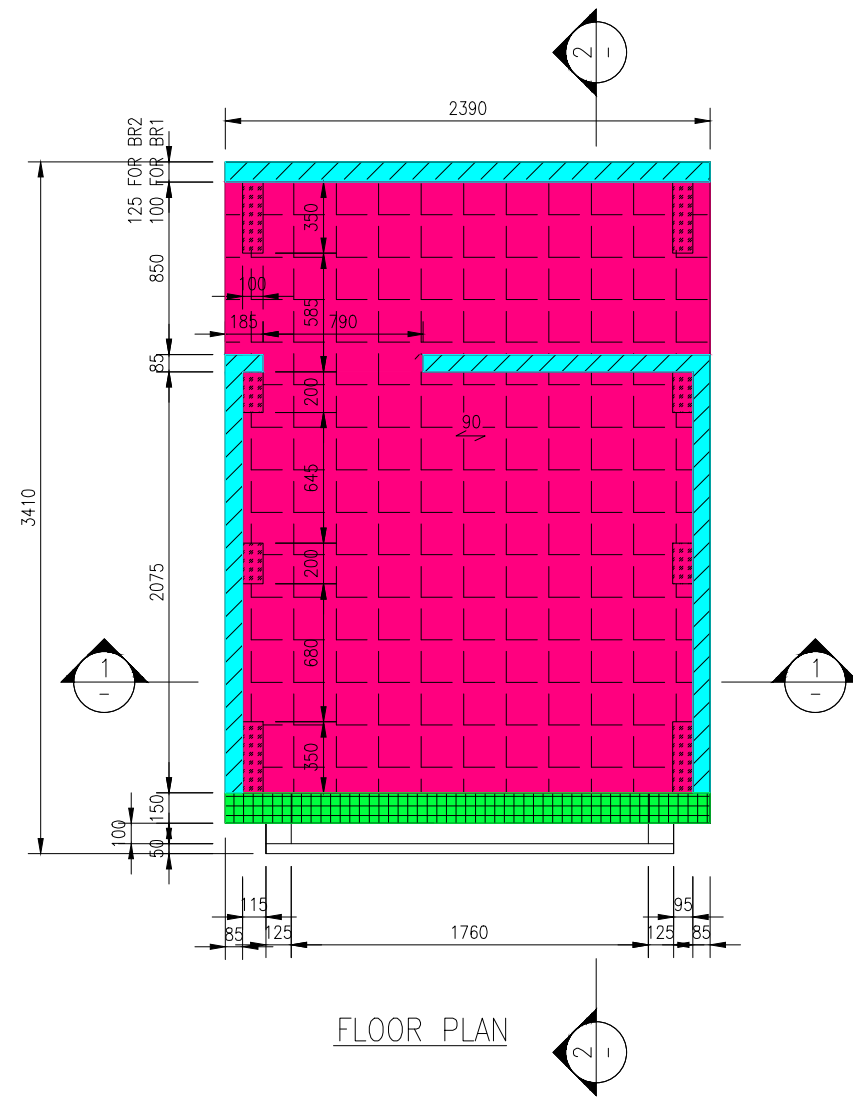
SECTION 1

SECTION 2

SECTION 3

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

BR1 & BR2



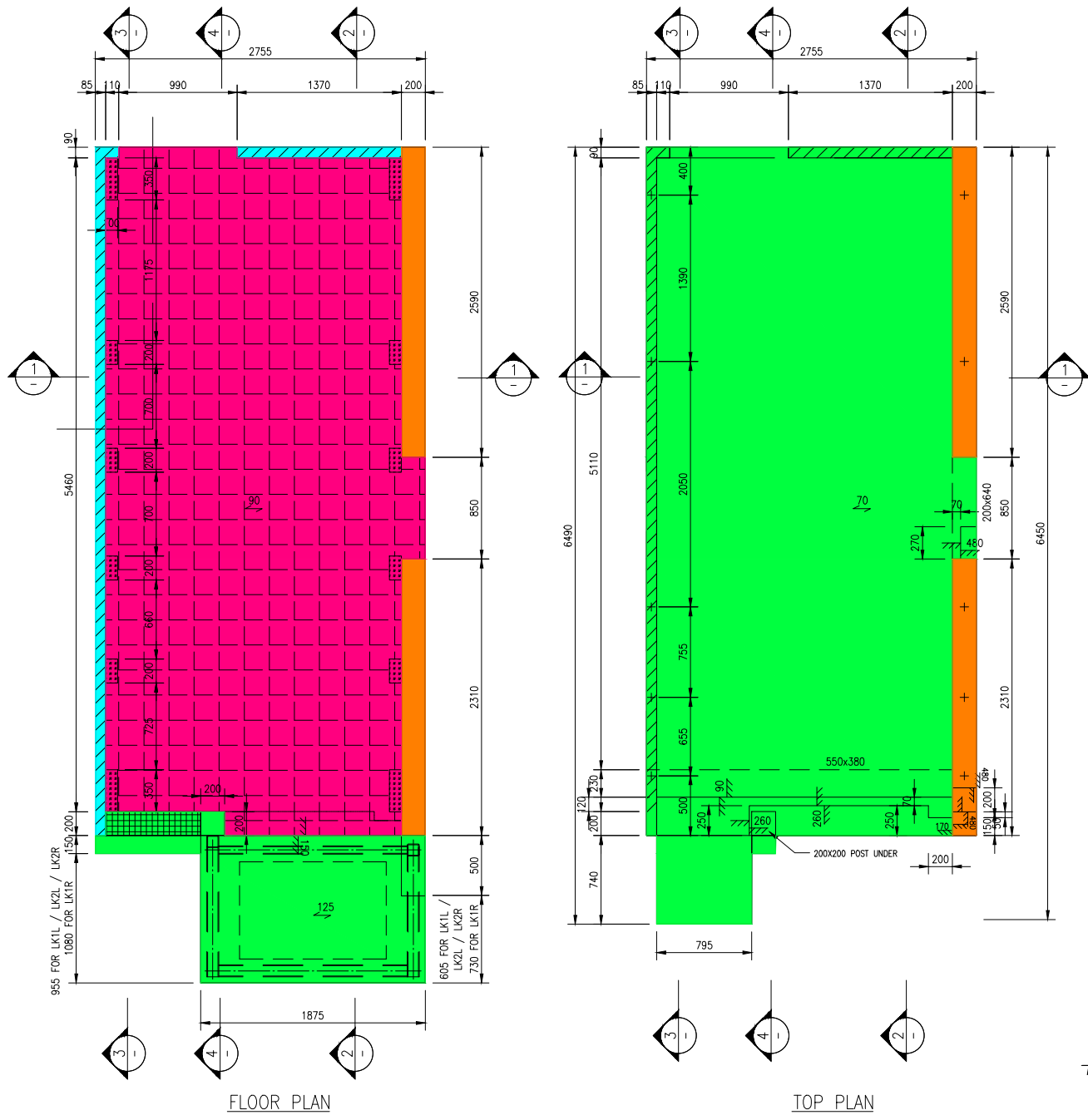
LEGEND :

- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

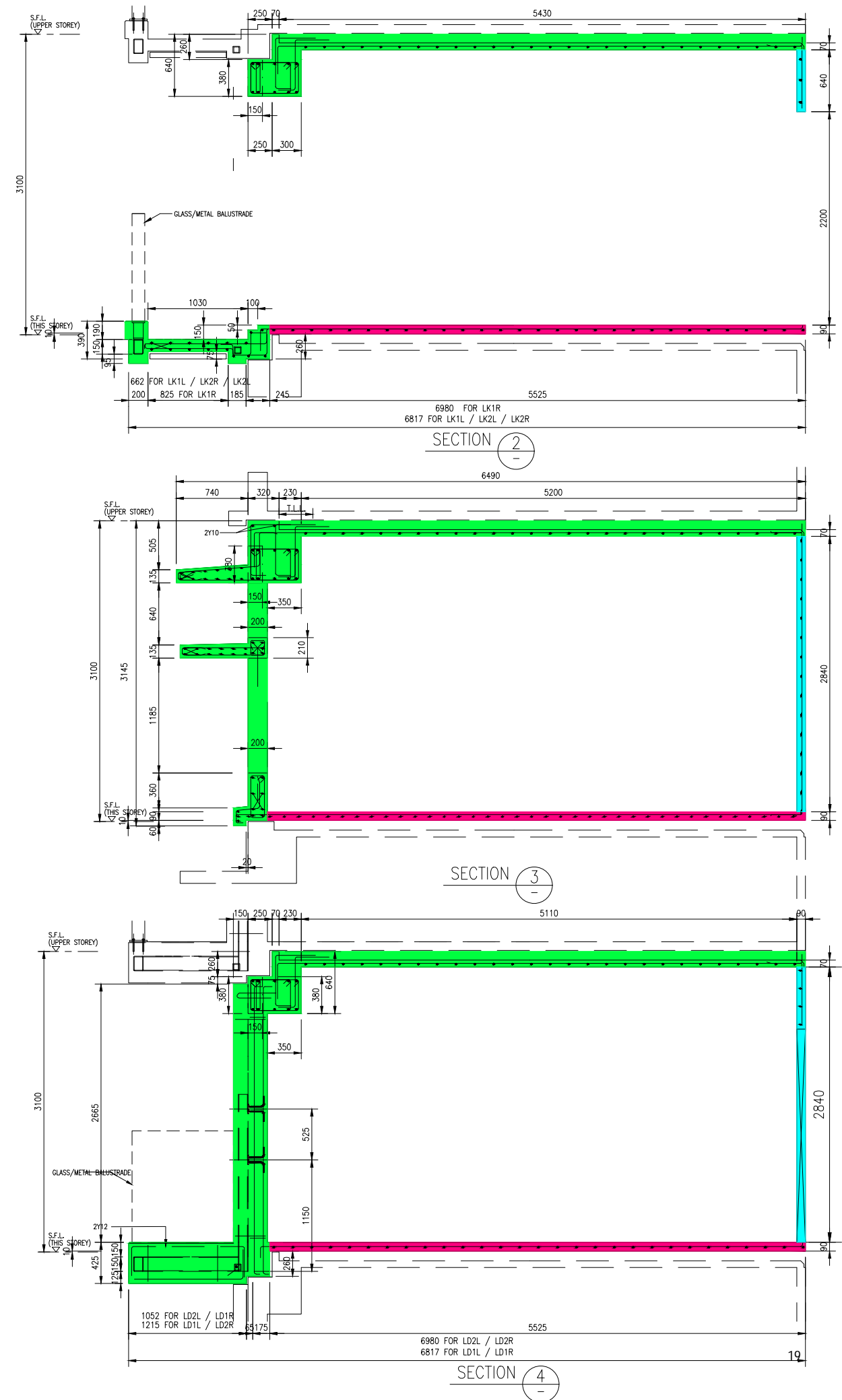
LD1L, LD1R, LD2L & LD2R



LEGEND :

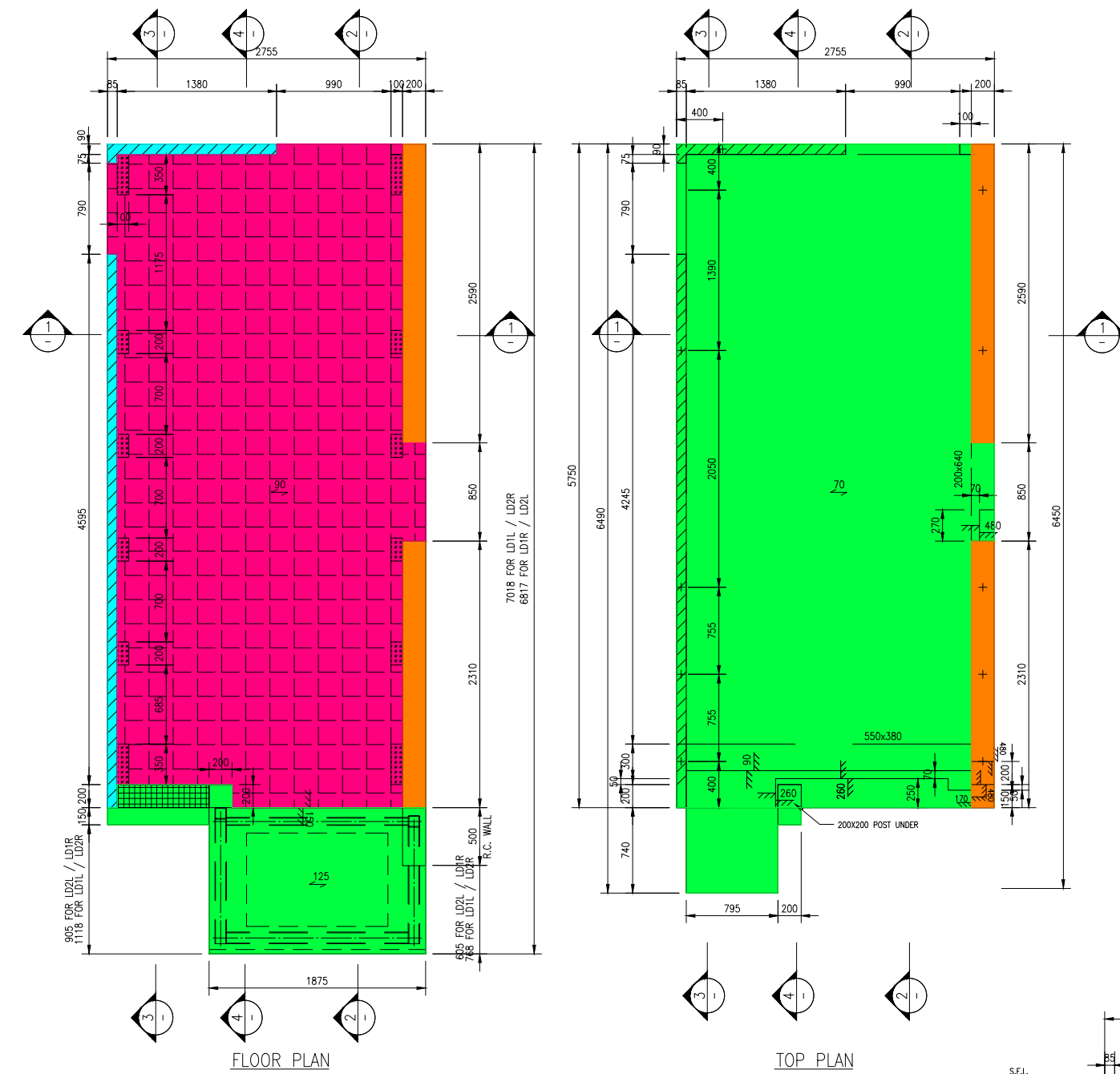
- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)



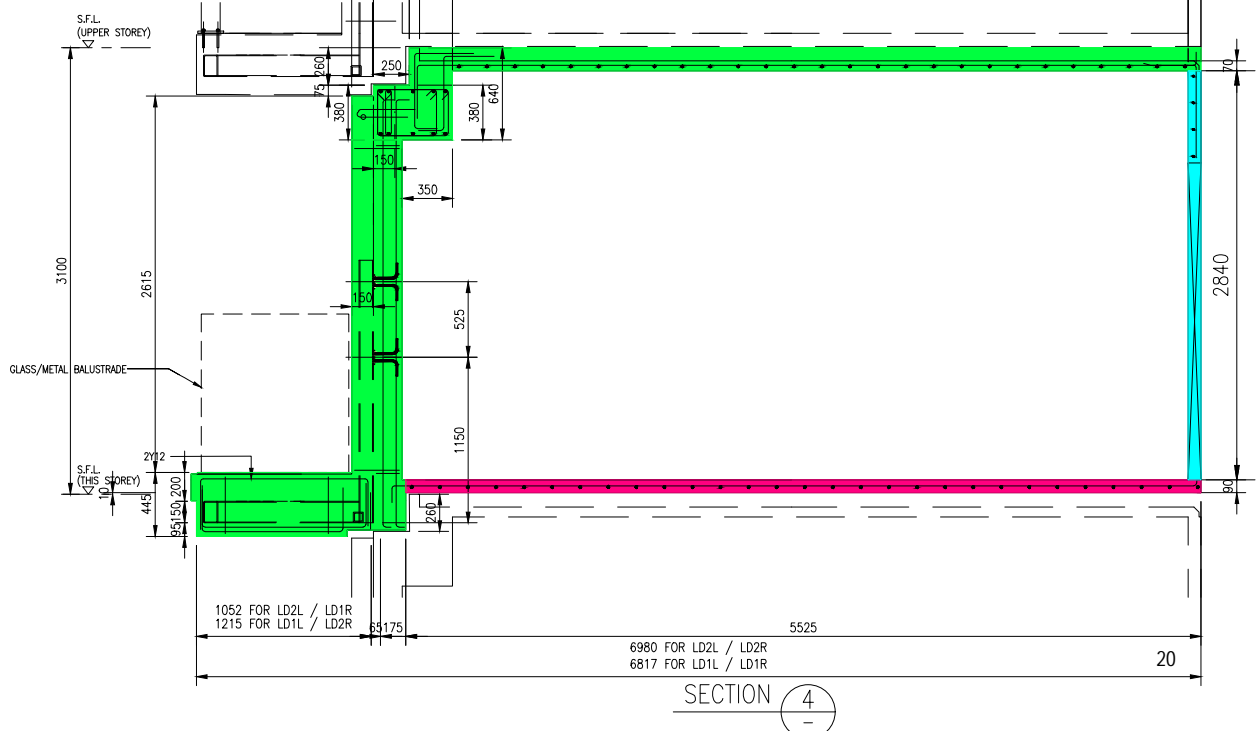
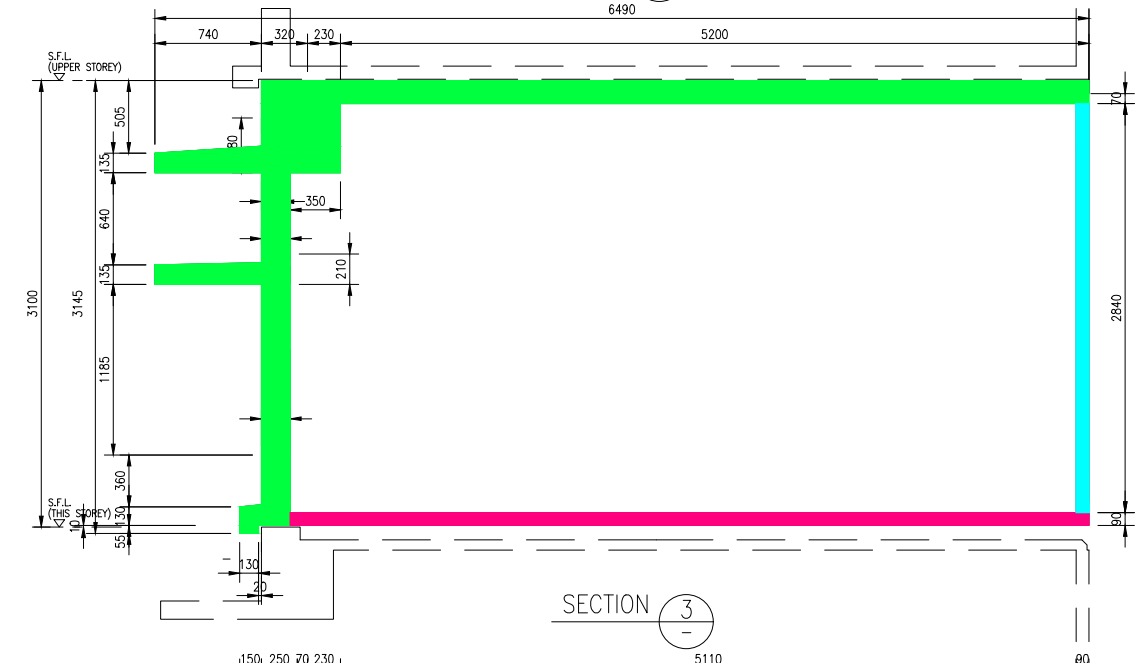
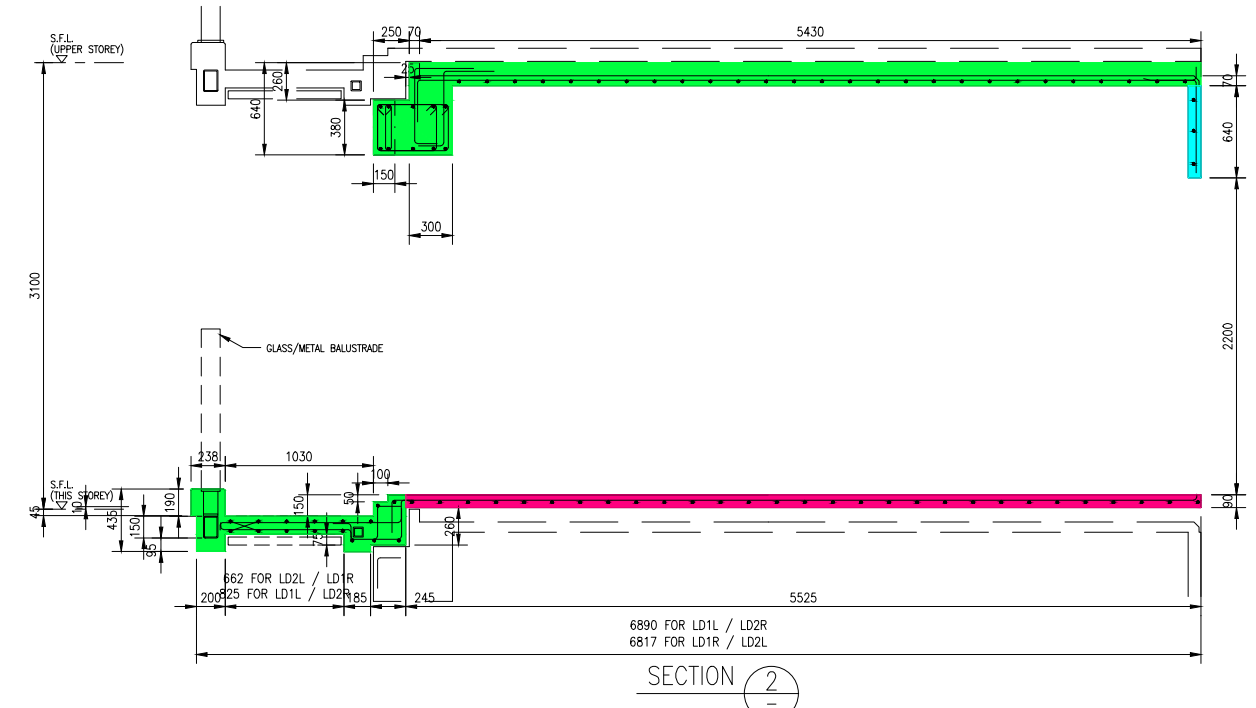
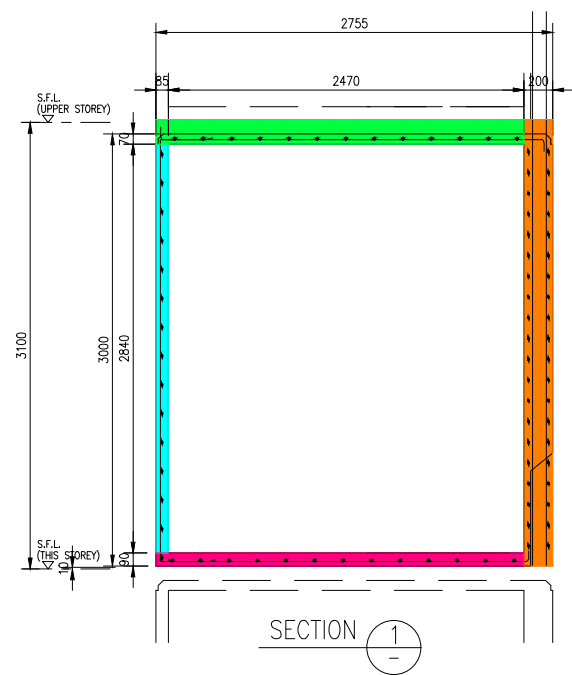
3. Overview of Modular Integrated Construction and Safety Notices and Instruction

LK1L, LK1R, LK2L & LK2R



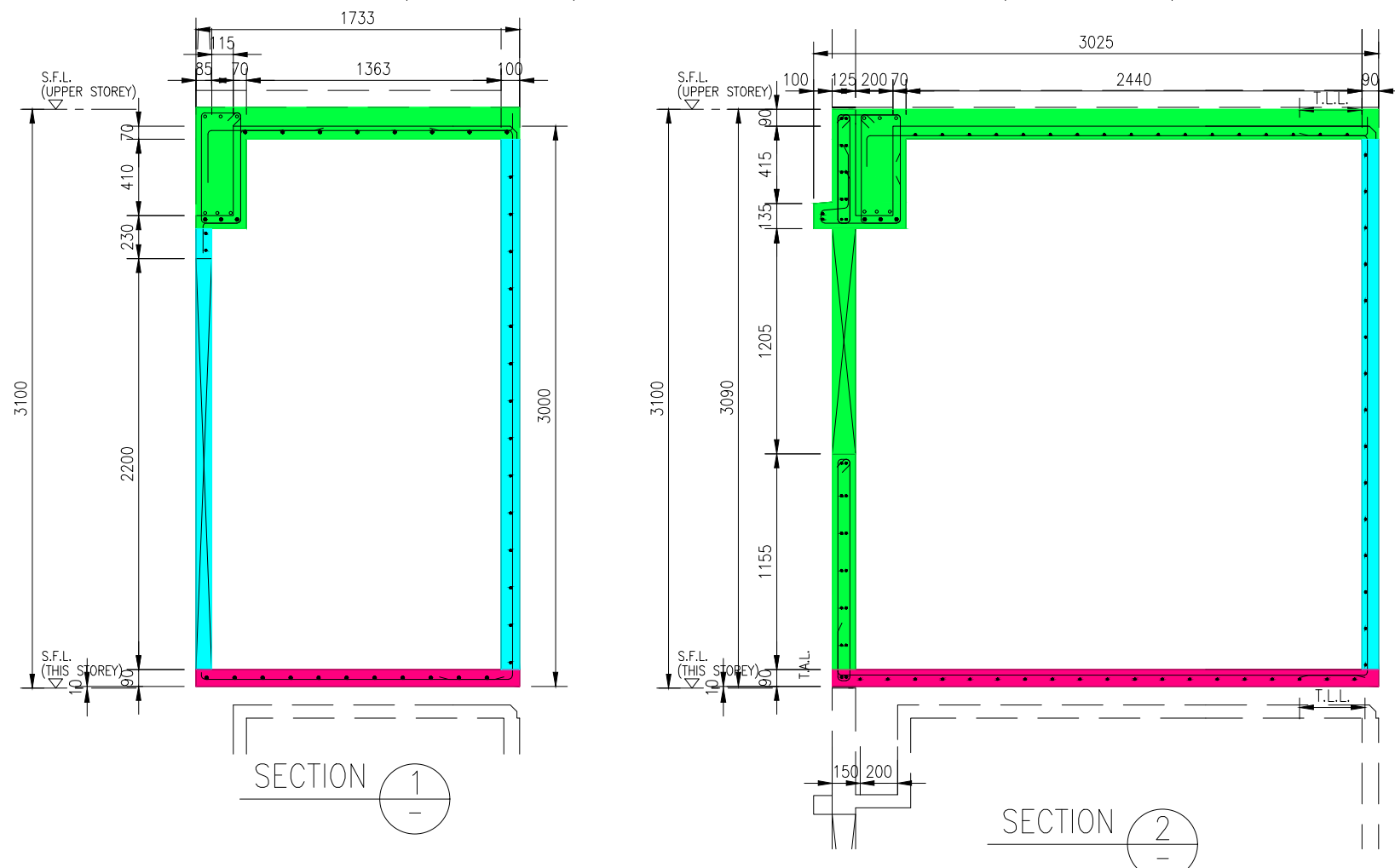
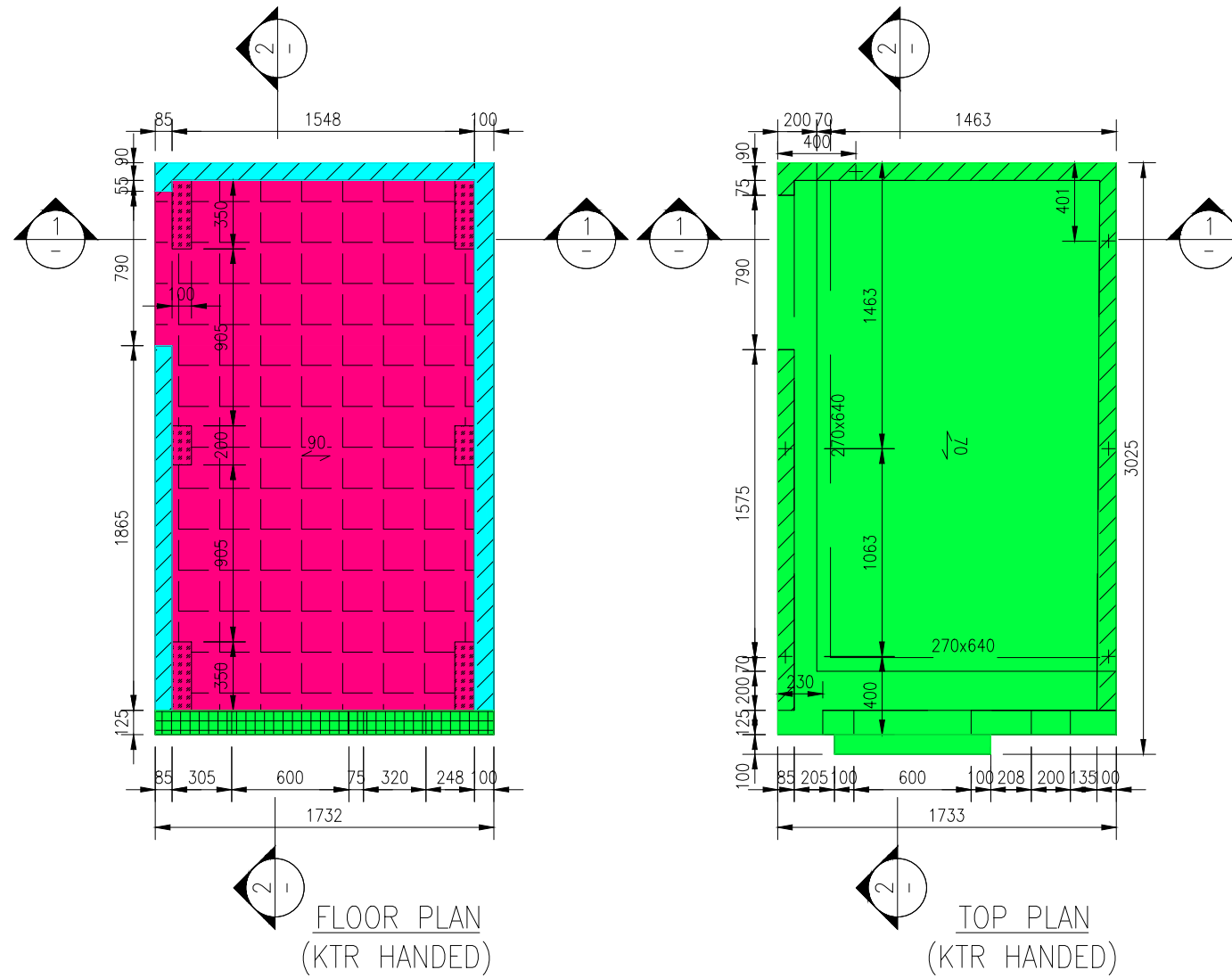
- LEGEND :**
- FLOOR SLAB (NON-STRUCTURAL)
 - CEILING SLAB/BEAM/BALCONY/FACADE (STRUCTURAL)
 - MIC MODULE RC WALL (NON-STRUCTURAL)
 - MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)



3. Overview of Modular Integrated Construction and Safety Notices and Instruction

KTL & KTR



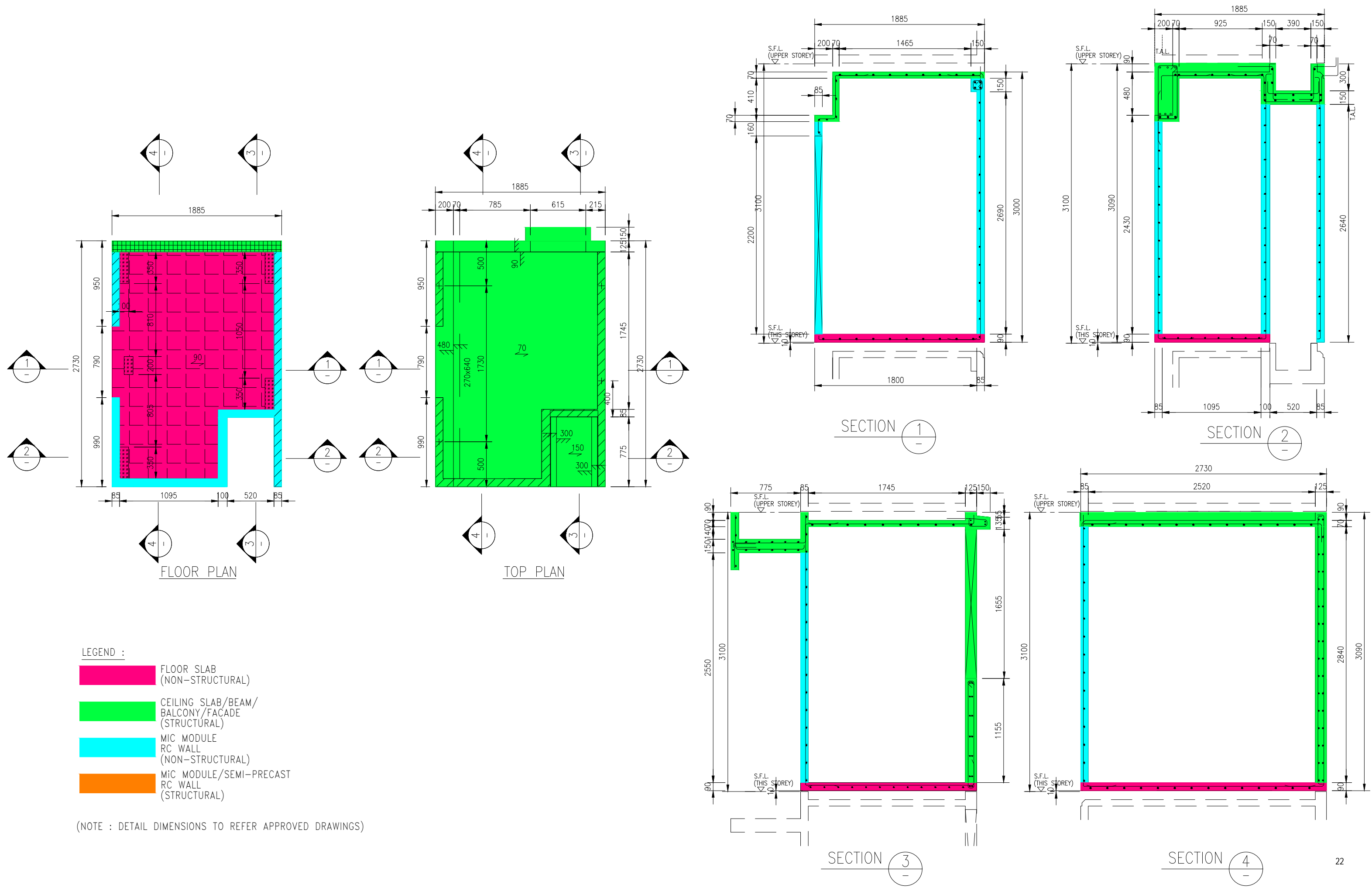
LEGEND :

- FLOOR SLAB (NON-STRUCTURAL)
- CEILING SLAB/BEAM/ BALCONY/FACADE (STRUCTURAL)
- MIC MODULE RC WALL (NON-STRUCTURAL)
- MIC MODULE/SEMI-PRECAST RC WALL (STRUCTURAL)

(NOTE : DETAIL DIMENSIONS TO REFER APPROVED DRAWINGS)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

TL



3. Overview of Modular Integrated Construction and Safety Notices and Instruction

For the structural details / other detailed information, please refer to the latest structural plans approved by BD and / or seek advice from the building professionals.

Structural Members - Safety Notices and Instructions:

Don't

- Alter, damage or remove any structural members to affect the structural integrity or adversely affect the Fire Resistance Rating (FRR)/ structural performance of the structural members
- Store anything beyond the maximum allowable loading capacity as stated in the loading key plan approved by BD.

Do's

- Keep all structural elements in good condition to ensure structural integrity.
- Consult/appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works to ensure compliance with relevant provisions of Buildings Ordinance and its allied regulations.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

B. Structural Floors & Walls

Floor slabs of MiC modules are 260mm thick reinforced concrete (RC) measured below the floor finishes, which composes of 90mm thick non-structural slab at floor level of MiC module, 160mm thick RC ceiling slab (structural) of MiC module below and 10mm thick cement grout in-between. Walls of MiC modules consist of 85mm thick non-structural RC wall of MiC module and 200mm thick semi-precast structural walls. Structural elements having an FRR of not less than 60 minutes (60/60/60) is provided to all structural floors of MiC modules. Maximum uniformly distributed imposed load of 0.2tons per meter square (i.e. 2 kPa) is allowed for the premises.



3. Overview of Modular Integrated Construction and Safety Notices and Instruction

B) Structural Floors & Walls

Safety Notices and Instructions:

Don't

- Alter, damage or remove any structural floor of the module.
- Store anything beyond the maximum allowable loading capacity as stated in approved drawings.

Do's

- Keep all structural floors in good condition to ensure the structural integrity.
- Consult / appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works to ensure compliance with relevant provisions of Buildings Ordinance and its allied regulations.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

C) Fire Resisting Construction

Description of construction:

RC walls having an FRR of not less than -/60/60 separating each domestic unit from other units and internal common corridor. RC structural walls having an FRR of not less than 60/60/60 in MiC modules. RC walls having an FRR of not less than -/30/30 separating the kitchen from the rest of the unit. A full height wall having an FRR of not less than -/30/30 for open kitchen adjacent to the unit exit door. RC walls having an FRR of not less than -/120/120 for Refuse Storage and Material Recovery Rooms. Entrance door to individual units having an FRR of not less than -/60/-. Units with enclosed kitchen have kitchen doors of FRR -/30/-.

Safety Notices and Instructions:

Don't

- Alter, damage or remove the fire rated walls /ceilings.
- Alter, damage or remove the fire protection penetration seals for electrical cables, plumbing and other services at openings and penetrations in fire barriers.

Do's

- Keep all fire-rated walls /ceilings and doors in good condition to ensure fire integrity of the fire resisting construction.
- Keep all self-closing device and smoke seal of doors in good condition to ensure fire integrity of the fire resisting construction.
- Consult/appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works to ensure compliance with relevant provisions of Buildings Ordinance.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

C) Fire Resisting Construction (Location Plan)



Layout of Typical Floor (2/F to 26/F)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

D) Waterproofed Wall and Floor

Description of construction:

Walls of bathroom , kitchen are provided with full height ceramic tiles underlaid with waterproof membranes of up to 1800 mm above finished floor level for shower cubicle. Apart from the above, the rest of the area should not be less than 1000mm upturn.

Floors of bathroom, kitchen and Balcony are provided with homogeneous floor tiles underlaid with waterproof membranes.

Floors / junctions and penetrations of Pipe Duct are provided waterproof membranes of upturn 300mm.

Safety Notices and Instructions:

Don't

- Alter, drill, damage or remove the waterproofing.

Do's

- Consult registered building professional for any proposed alterations, additions and repair works.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

D) Waterproofed Wall and Floor (Location Plan)



Layout of Typical Floor (2/F to 26/F)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

E) Open Kitchen

Description of construction:

Open kitchens are provided with sprinkler head(s) and smoke detector(s) with sounder base in accordance with the Code of Practice for Minimum Fire Service Installations and Equipment to ensure the fire safety is not compromised. A full height block wall of minimum 600mm width having an FRR of not less than -/30/30 is provided at the location as indicated on layout plan to shield the evacuees from radiant heat of stove fire, allowing the necessary pause of evacuees to open the door for escape.

Smoke Detectors:

Addressable smoke detector fitted with sounder base is provided inside the subject flat. The alarm signal of the smoke detector should be connected to the main fire alarm and control panel of the building and should not be linked to the fire services communication centre. The smoke detector shall not be removed and no fixtures or fittings shall be allowed to cover or obstruct the smoke detector in order to keep it in effective working order at all times.

As smoke detector in the subject flat is installed in accordance with the relevant statutory provisions and Code of Practice, the owners of such devices will be required to carry out the statutory duty of keeping it in efficient working order at all times and having them inspected by an Registered Fire Service Installation Contractors at least once in every 12 months.

Sprinkler Head:

Sprinkler head is provided to cover the notional kitchen area. The alarm signal of the system should be connected to the main fire alarm and control panel, the common fire alarm system of the building and the fire services communication centre. The sprinkler head shall not be removed and no fixtures or fittings shall be allowed to cover or obstruct the sprinkler head in order to keep it in effective working order at all times

Full Height Screen Wall of minimum 600mm width :

A full height screen wall having an FRR of not less than -/30/30 is provided at the location as indicated on layout plan to shield the evacuees from radiant heat of stove fire, allowing the necessary pause of evacuees to open the door for escape.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

E) Open Kitchen

Safety Notices and Instructions:

Don't

- Alter, damage, remove, cover or obstruct the smoke detector, sprinkler systems and fire rated screen wall.

Do's

- Always keep the fire service installation or equipment in efficient working order.
- Keep the fire rated screen walls in good condition to ensure the integrity of the fire resisting construction.
- Have such fire service installation or equipment inspected by a registered contractor at least once in every 12 months.
- Allow registered contractors to access for maintenance.
- Consult/appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works to ensure compliance with relevant provisions of Buildings Ordinance and Code of Practice for Fire Safety in Buildings
- Perform annual inspection and certification by a registered fire service installation contractor

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

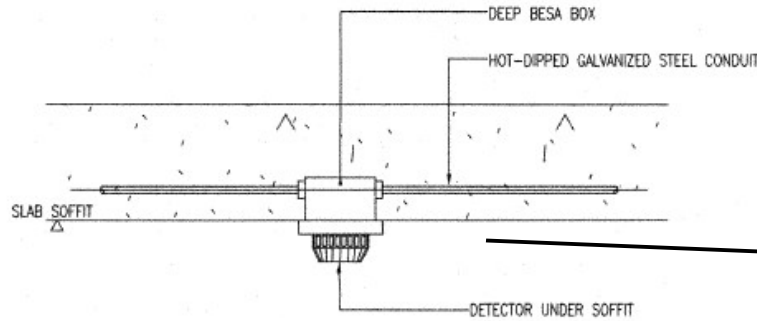
E) Open Kitchen (Location Plan)



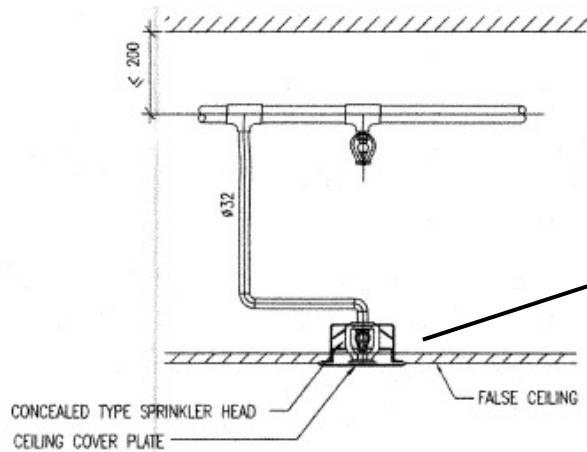
Layout of Typical Floor (2/F to 26/F)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

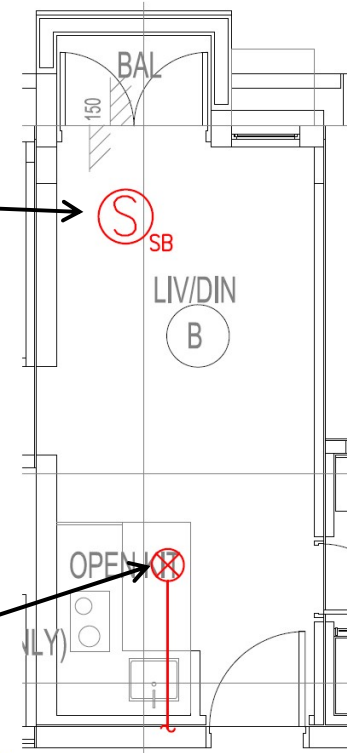
E) Open Kitchen Sprinkler and Smoke Detector (Typical Detail)



**TYPICAL INSTALLATION DETAIL FOR
DETECTOR WITHOUT FALSE CEILING**



**TYPICAL ARRANGEMENT OF CONCEALED SPRINKLER HEAD AND
SPRINKLER INSIDE FALSE CEILING INSTALLED IN DOUBLE LAYER**



3. Overview of Modular Integrated Construction and Safety Notices and Instruction

F) Aluminium Windows, Doors and Glass / Metal Balustrade

Description of construction:

Top / side hung operable aluminum framed Windows, Doors assemblies at living rooms, bedrooms, bathrooms and kitchens are fitted with minimum 6 mm thick tempered glass. Balconies of flats A, B, C, D, E, F, G, are fitted with aluminum balustrades. Balconies of flats K, J & H are fitted with glass balustrades of laminated glass (12mm +1.52PVB+12mm).

Safety Notices and Instructions:

Don't

- Alter, drill, damage or remove the aluminium Windows, Doors and Glass / Metal Balustrade.
- Impose additional loads on the Doors, Glass / Metal Balustrade, Window frames and hinges. For example, hang clothes or other items on window sashes.

Do's

- Keep the aluminium Windows, Doors and Glass / Metal Balustrade in good condition.
- Consult / appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works to ensure compliance with relevant provisions of Buildings Ordinance.
- Clean the surface with water / non-corrosive household cleansing agent dampened cloth for cleaning to general surface only.
- Check the Windows, Doors and Glass / Metal Balustrade regularly to ensure the structural safety.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

F) Aluminium Windows, Doors and Glass / Metal Balustrade

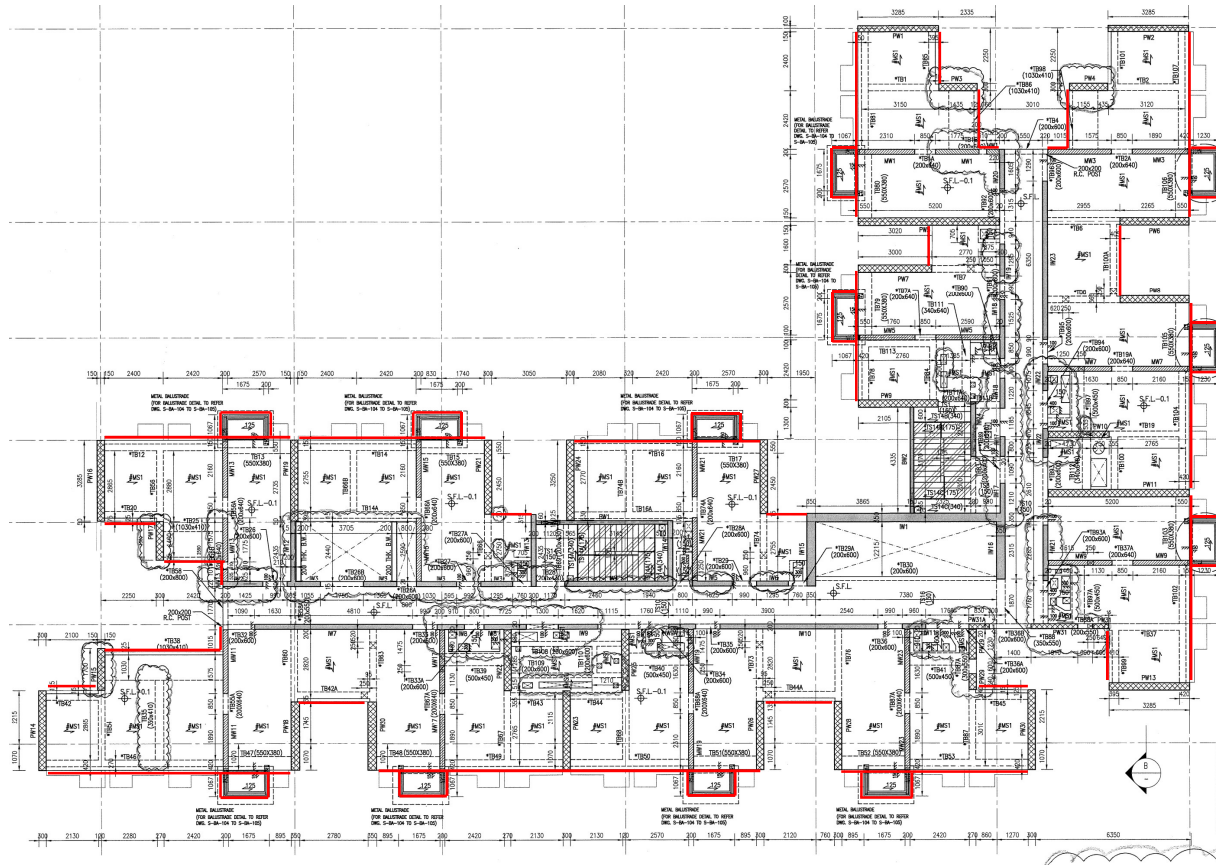


Layout of Typical Floor (2/F to 26/F)

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

G) Common External Facade

All external façade shall not be damaged and shall not be altered or removed without consulting registered building professionals. Unless the works are exempted works under the Buildings Ordinance or designated minor works under the Minor Works Control System (MWCS), any alterations and additions works shall obtain prior approval and consent from the Building Authority and shall be carried out by registered contractors under the supervision of relevant registered building professionals to ensure compliance with the relevant provisions of the Buildings Ordinance and its allied regulations. For safety notices and instruction, please refer to 3 A) Structural Members.



LEGEND:

— Common External Façade of MiC Module

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

G) Common External Facade

Description of construction:

Wall with ceramic tiles or paints, connection joints between MiC and Precast Units are installed in the captioned areas.

Safety Notices and Instructions:

Don't

- Alter, drill, damage or remove of the tiles, paints and connection joints will affect the function of the waterproof membranes, resulting in possible seepage.

Do's

- Consult / appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

H) Pipe Duct, Plumbing and Drainage in Domestic Unit

Description of construction:

Plumbing pipes are copper pipe while drainage pipes on external wall / inside pipe duct are uPVC pipe and epoxy cast iron pipes respectively.

For AC condensate pipes on external wall, UPVC pipe are provided.

Safety Notices and Instructions:

Don't

- Alter, damage or remove drainage pipes.
- Block or seal the drainage.

Do's

- Keep all drainage work in good condition.
- Consult/appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works to ensure compliance with relevant provisions of Buildings Ordinance.

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

H) Pipe Duct, Plumbing and Drainage in Domestic Unit

Description of construction:

Plumbing / drainage pipework and electrical accessories are installed in the Domestic Unit.

Safety Notices and Instructions:

Don't

- Alter, damage or remove the E&M installation.
- Alter, damage or remove the building services penetrating fire barrier walls

Do's

- Keep all pipework and E&M services in good condition
- Consult/appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works to ensure compliance with relevant provisions of Buildings Ordinance

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

H) Pipe Duct, Plumbing and Drainage in Domestic Unit

Description of construction:

AC condensate pipe, towngas, plumbing and drainage pipework are installed at Domestic Unit.

Safety Notices and Instructions:

Don't

- Alter, damage or remove the E&M installation.

Do's

- Keep all pipework in good condition
- Consult/appoint registered building professional and registered building contractor for any proposed alterations, additions and repair works to ensure compliance with relevant provisions of Buildings Ordinance
- Use of scaffolding or suspended working platform to carry out any maintenance work

3. Overview of Modular Integrated Construction and Safety Notices and Instruction

G) Pipe Duct, Plumbing and Drainage in Flat (Location Plan)

LEGEND

- FIRE SERVICES
- PLUMBING SERVICES
- DRAINAGE SERVICES
- TOWNGAS SERVICES
- HEATING, VENTILATION & AIR CONDITIONING

