

International Project Delivery in a Changing World

Course Number 355364

6/22/18, 7:00am to 8:00am

60 minute seminar, 1 LU

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Questions related to specific products and services may be addressed at the conclusion of this presentation.

Speakers List

- Steven Miller, FAIA
Managing Director, Planning and Design Consultants, LLC
- Sara K. Beardsley, AIA
Sr. Architect, Adrian Smith + Gordon Gill Architecture
- Allison Laas, AIA
Associate, Payette

Course / Learning Objectives

- Participants will learn the difference between project delivery methods commonly used in International projects using a great variety of work presented by the panelists including Modular construction. Panelists include a design-build specialist, an architect focusing on institutional work and an architect who delivers high-rise and expo projects.
- Participants will learn first-hand from project managers about the complex project teams that are assembled to deliver large international projects - including international design/build teams, international contractors and local architects.
- Participants will benefit from the presenters' experiences as they discuss the challenges, risks and successes in delivering large international projects.
- Participants will discover the far reaching places where American architects are now working and will gain knowledge about international work that may help them to expand their practices and their ambitions about working in other countries.

Presenter 1

Steven Miller, FAIA

Managing Director, Planning and Design Consultants, LLC

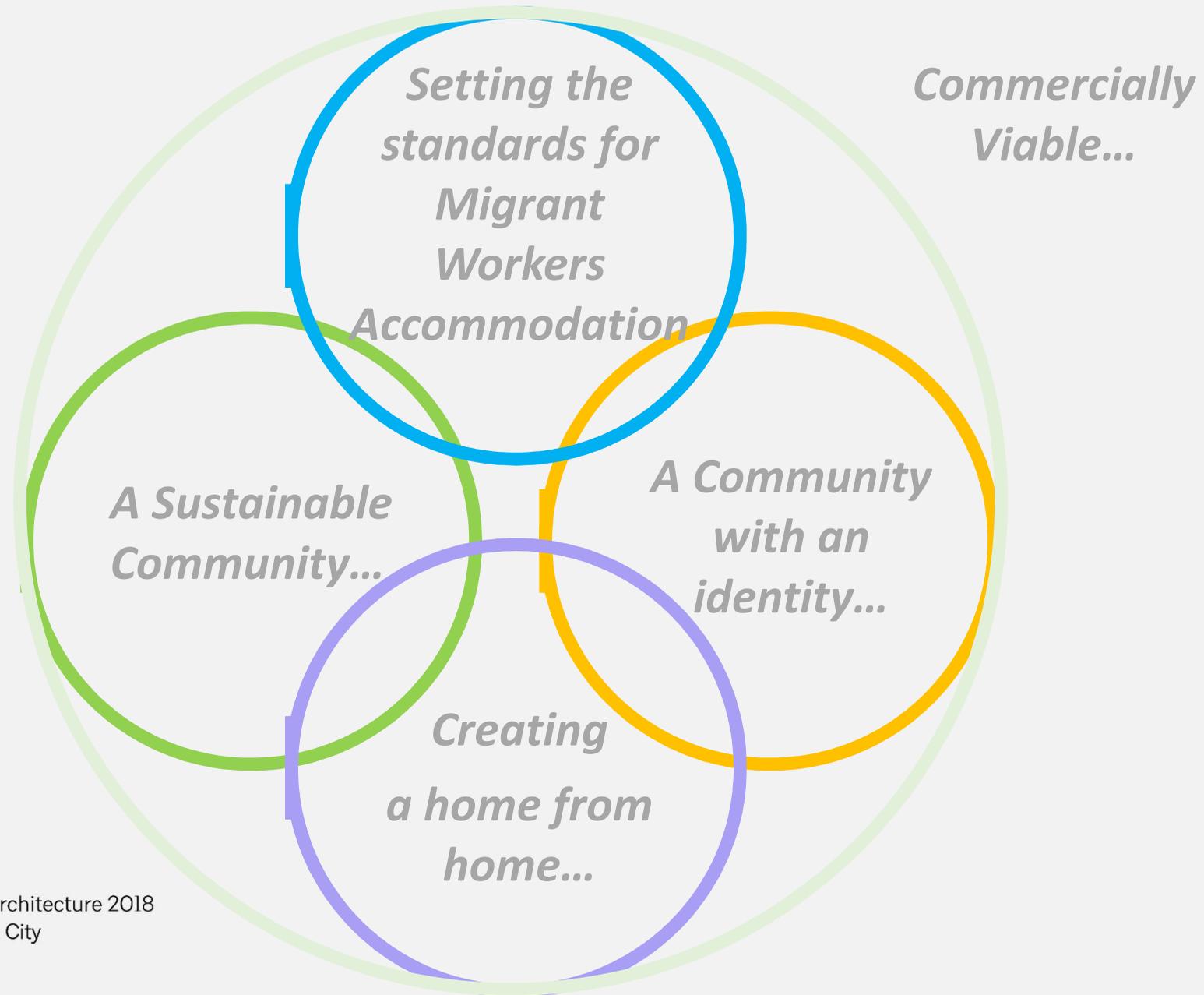




King Abdullah Economic City

Migrant Workers Solutions

The Teams Vision and Aims...



What do they need...?

WHAT ARE THE WORKERS NEEDS...?



Tradition



Community



Home

What do we want...?

WHAT ARE THE DEVELOPERS NEEDS...?



What extra do workers deserve?

WHAT MAKES A GREAT HOME...?



Diversity



Community Places



Neighbors

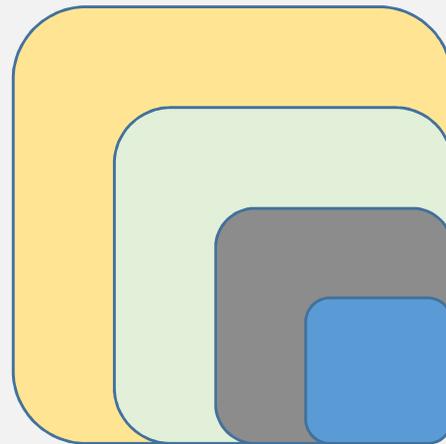
Community... 5000 Persons



Master Plan 100,145 sqm

Community Planning...

Accommodation Brief Requirements...



Community max 5000 persons

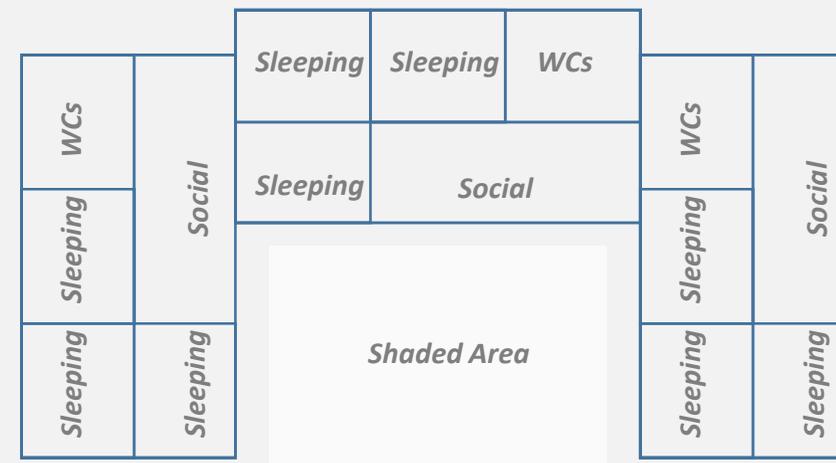
Neighborhood max 750 persons

Cluster max 100 persons

Living Unit max 12 persons

<i>Sleeping</i>	<i>Sleeping</i>	<i>WCs</i>
<i>Sleeping</i>	<i>Social</i>	

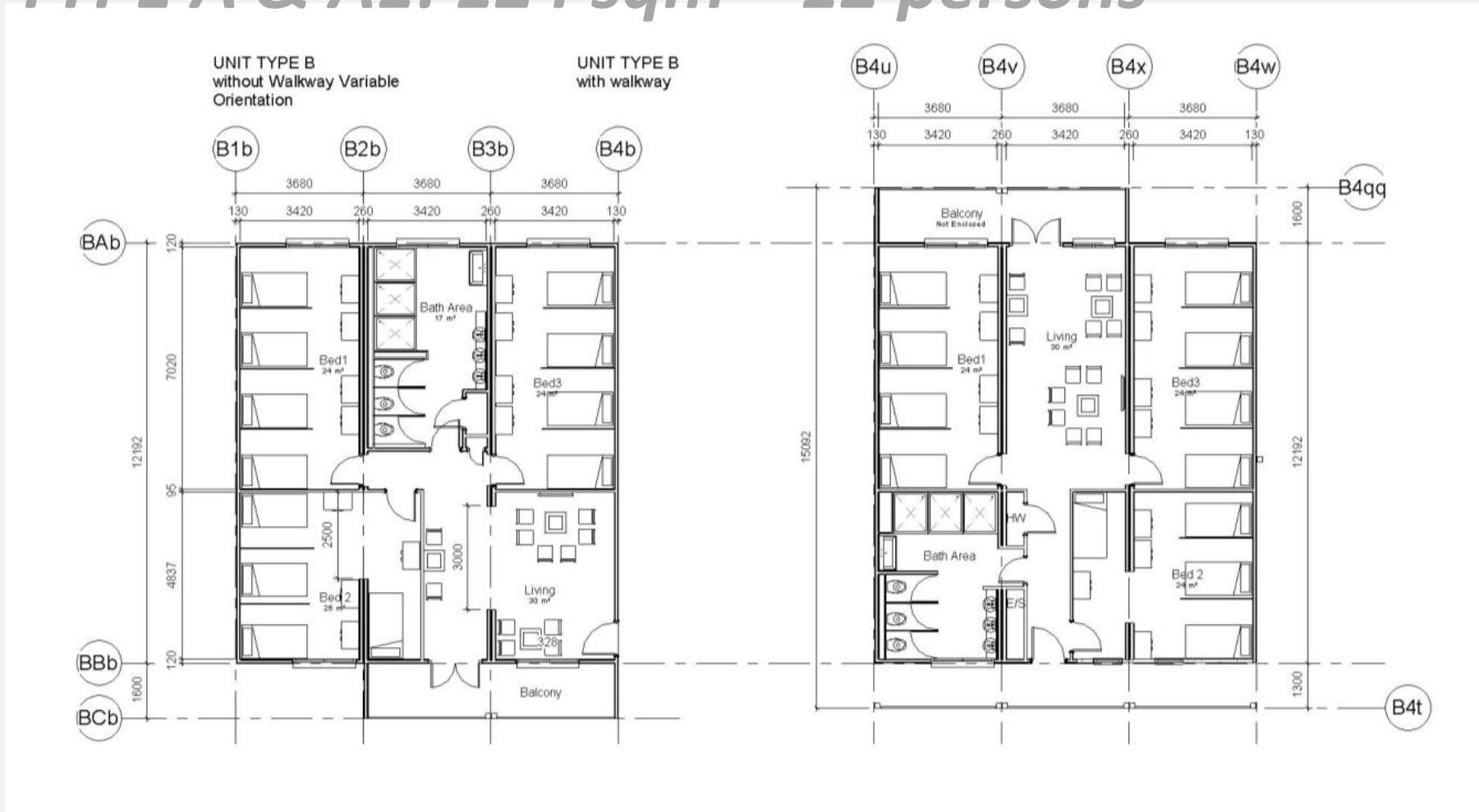
A Living Unit



A Cluster

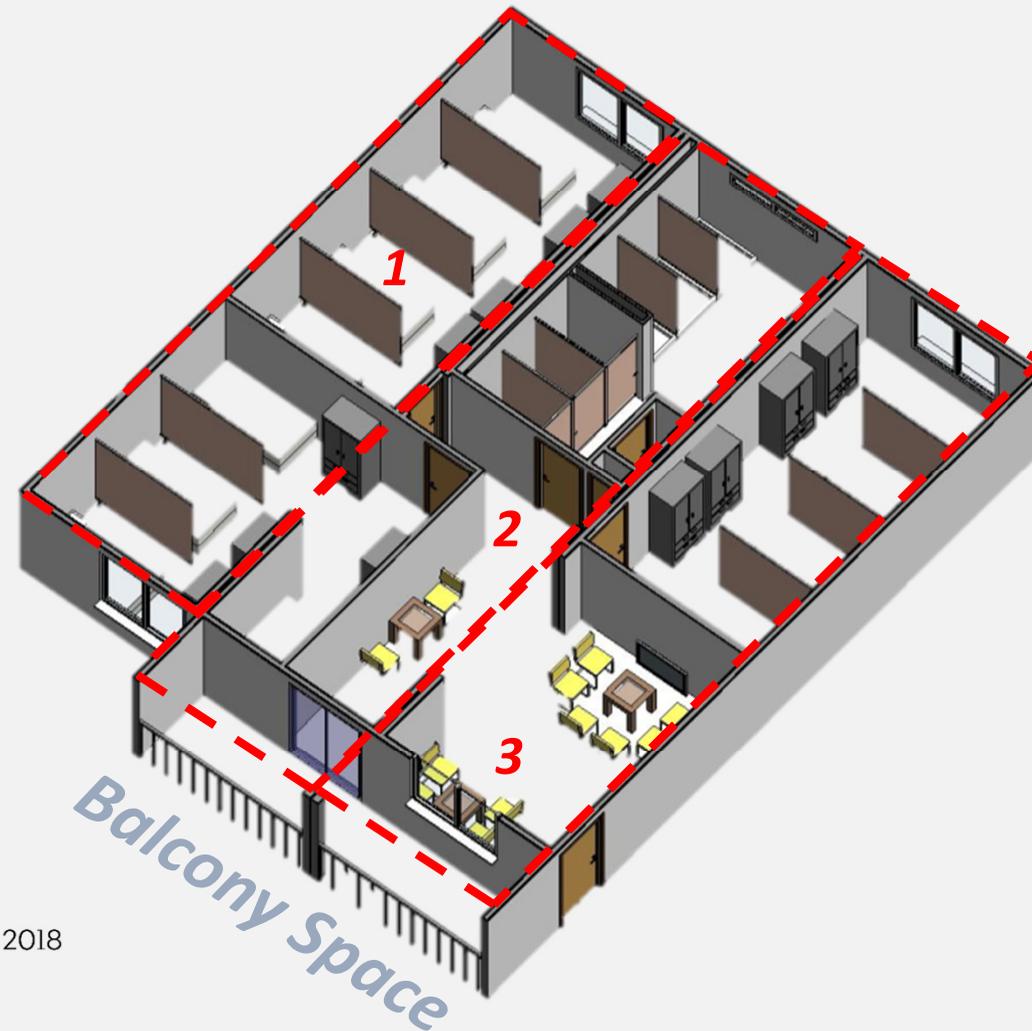
A Typical Unit...

TYPE A & A1: 124 sqm – 12 persons



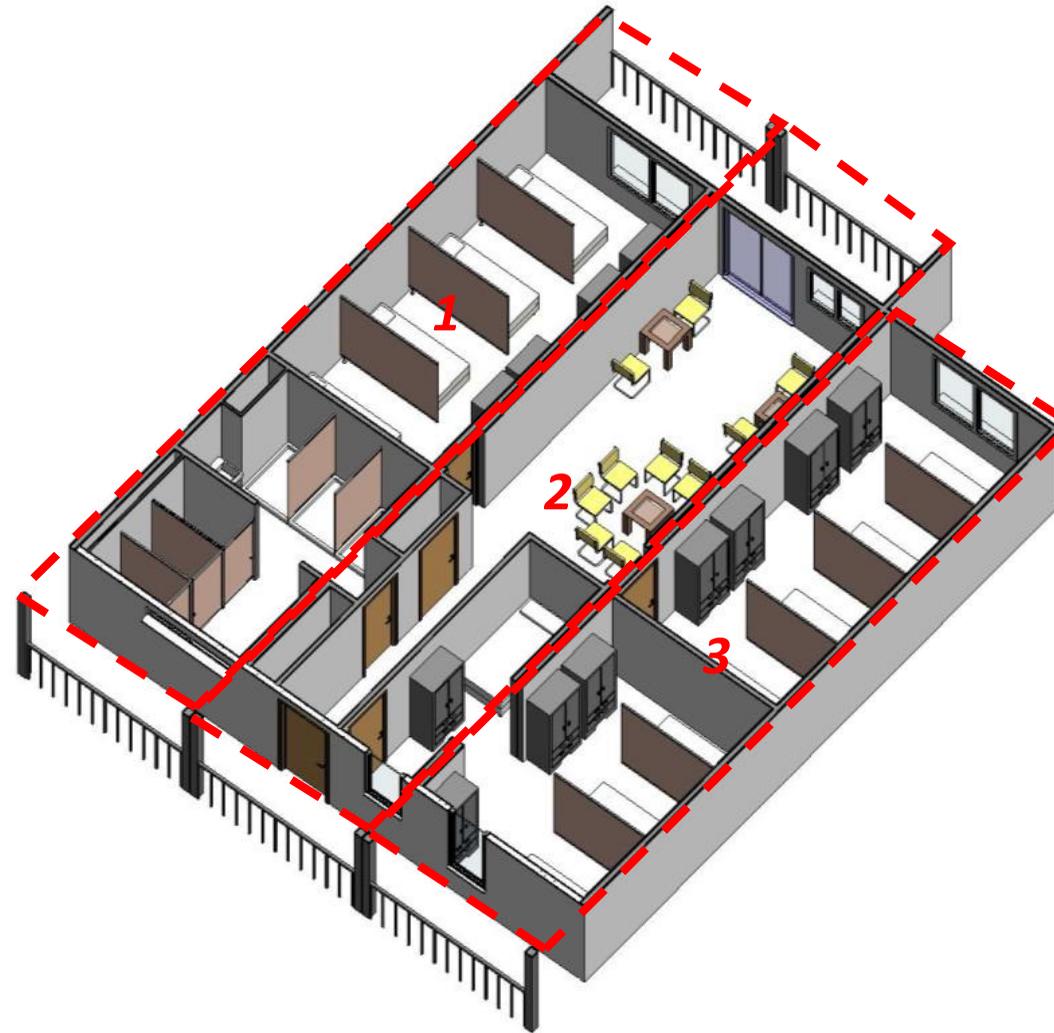
Unit...

TYPE A: Module Setting



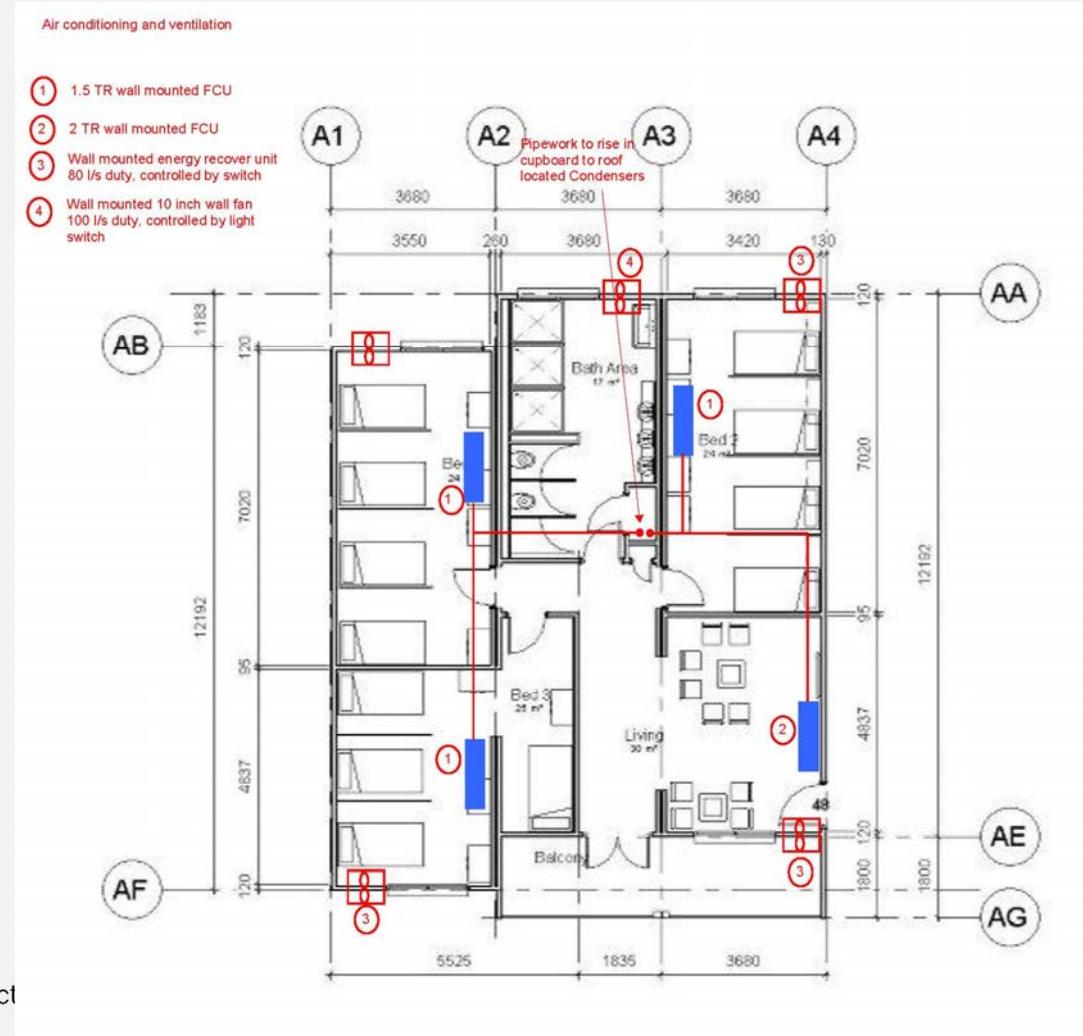
Unit...

TYPE A1: Module Setting



Unit...

MEP Services



Unit...

MEP Services



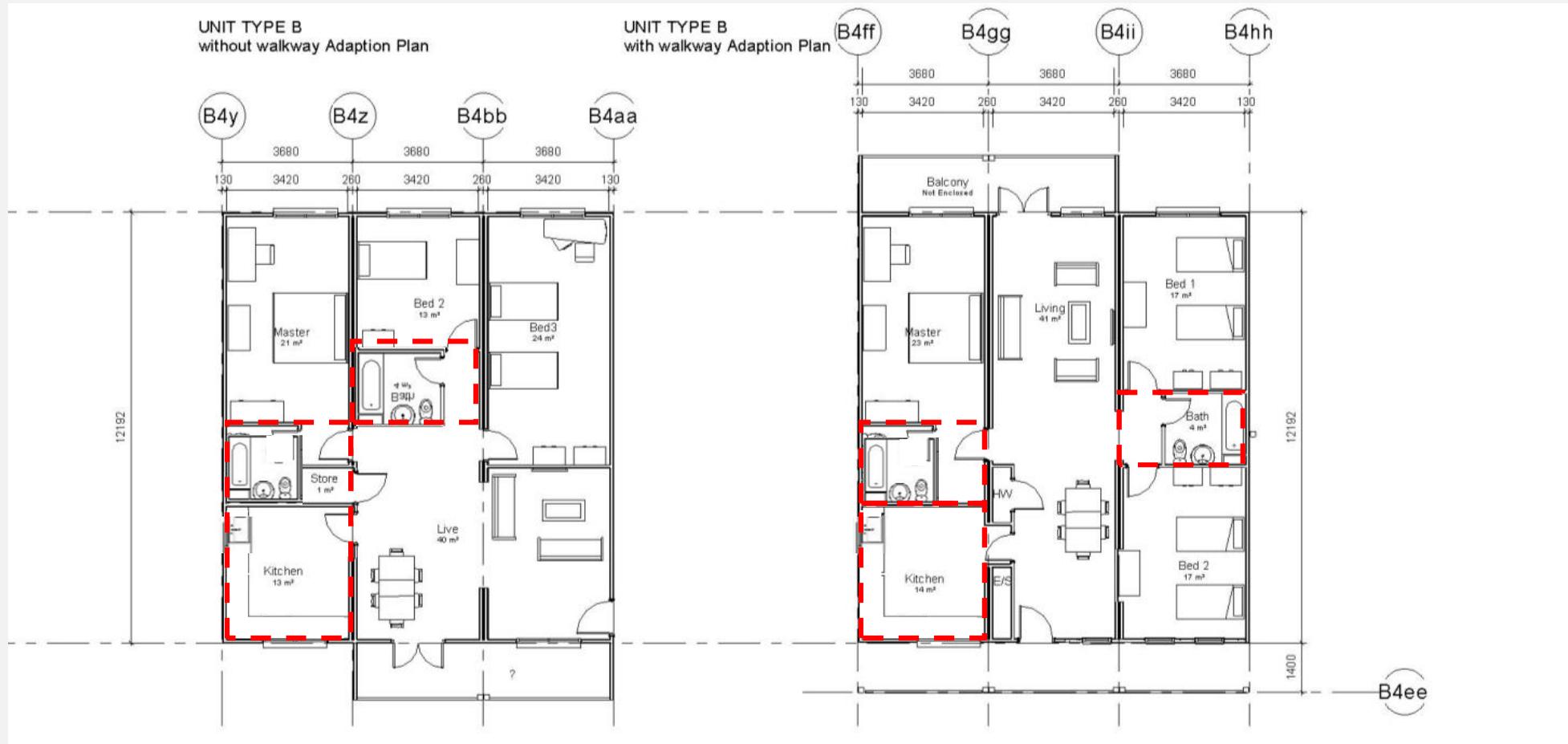
Unit...

MEP Services



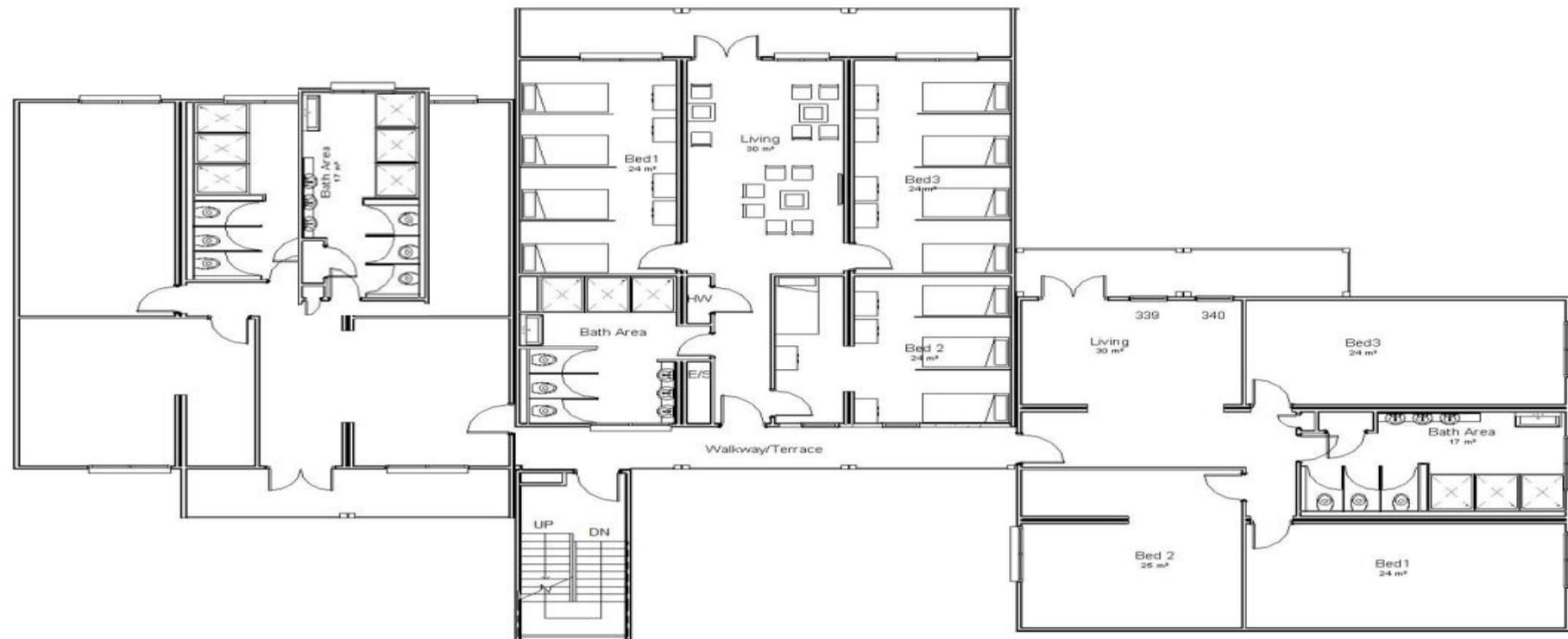
A Typical Unit...

3 Bedroom Adaption



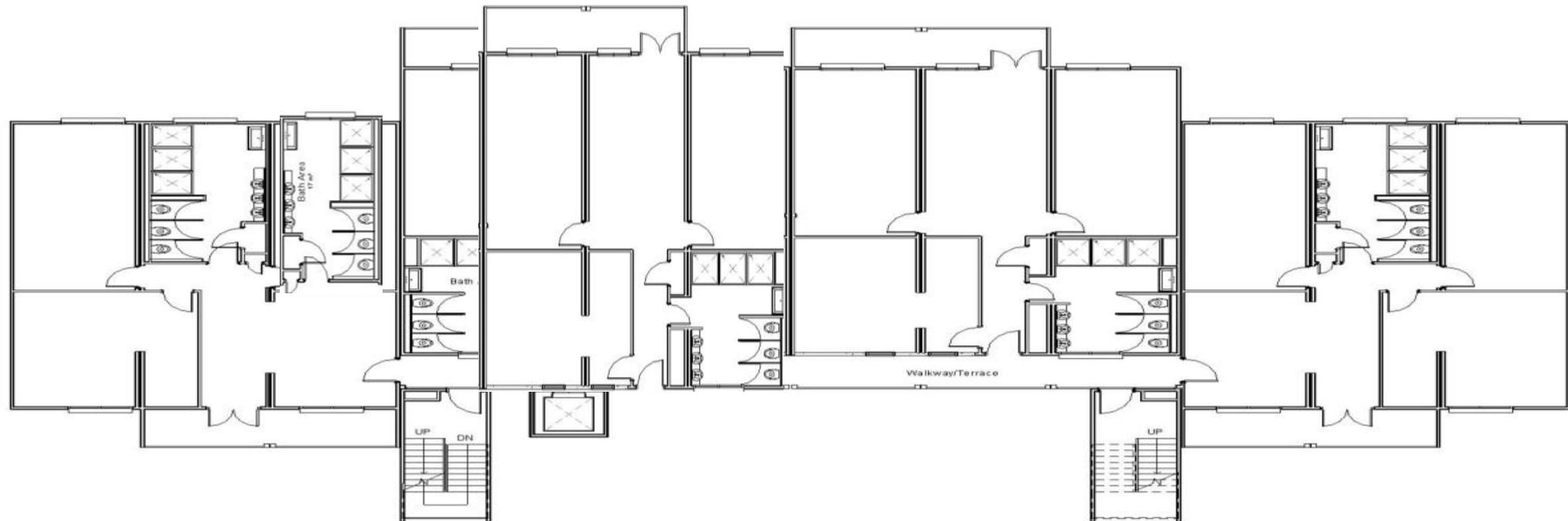
A Typical Unit...

Cluster 1 - Typical



A Typical Unit...

Cluster 2 - Typical



Community... 5000 Persons



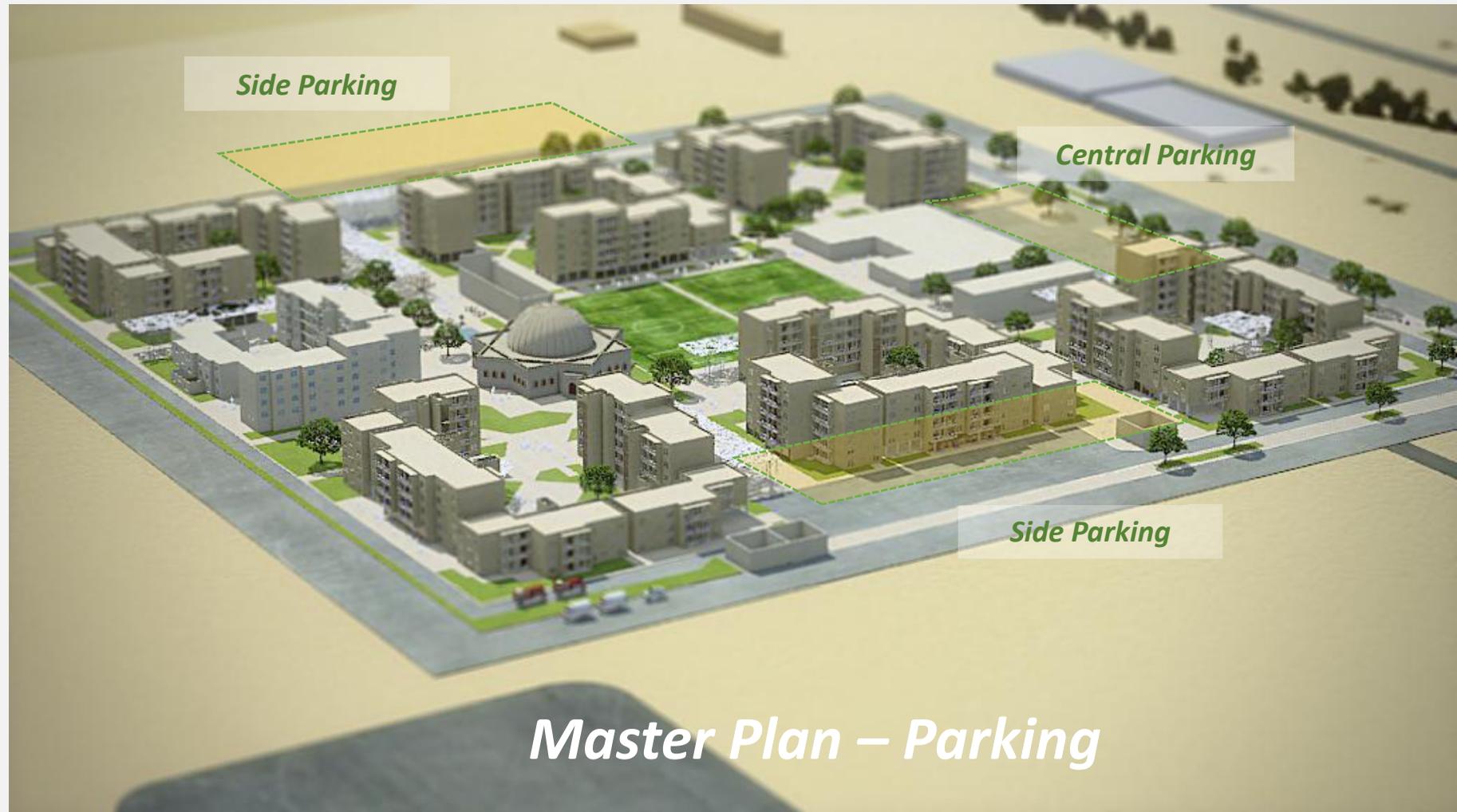
Community... 5000 Persons



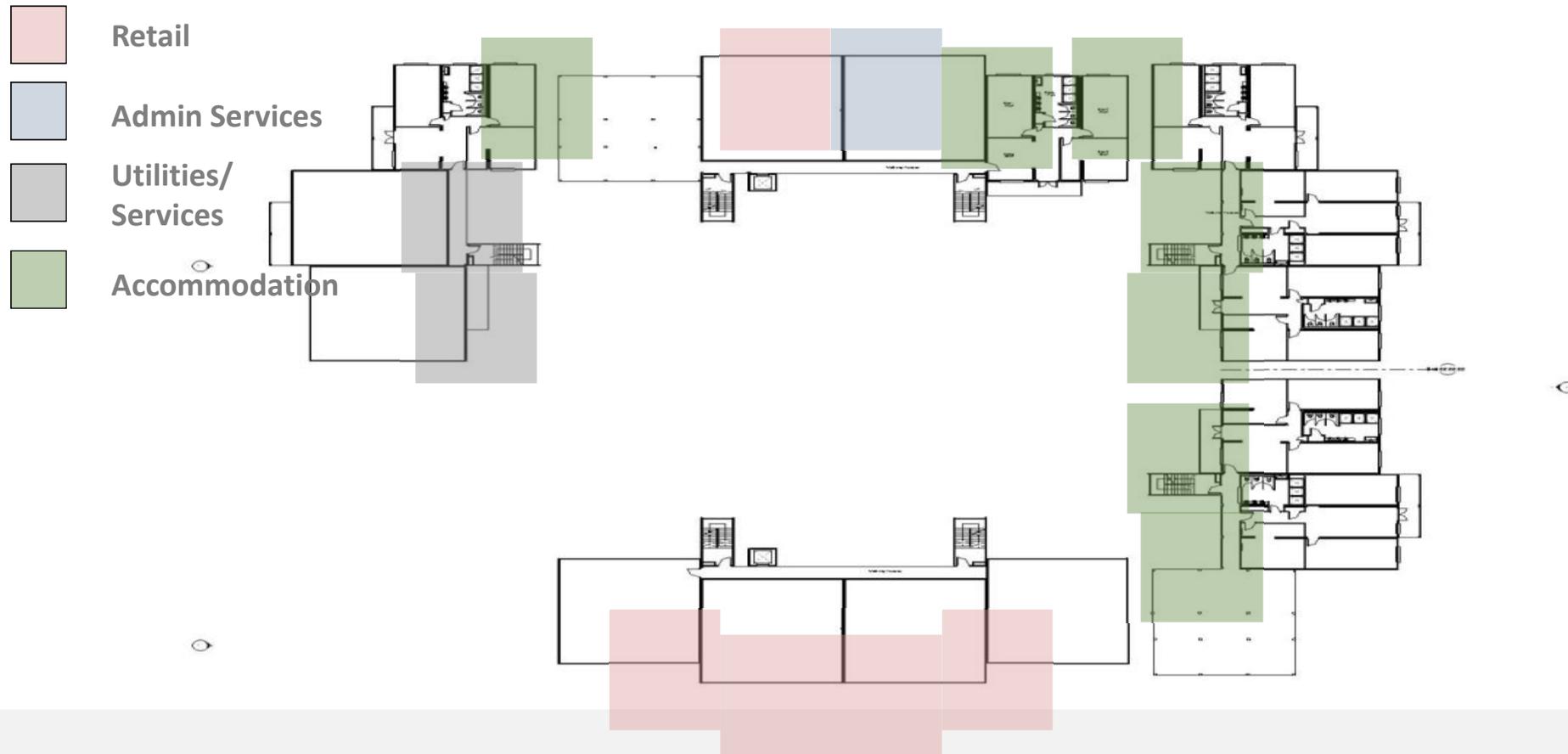
Community... 5000 Persons



Community... 5000 Persons



Ground Floor

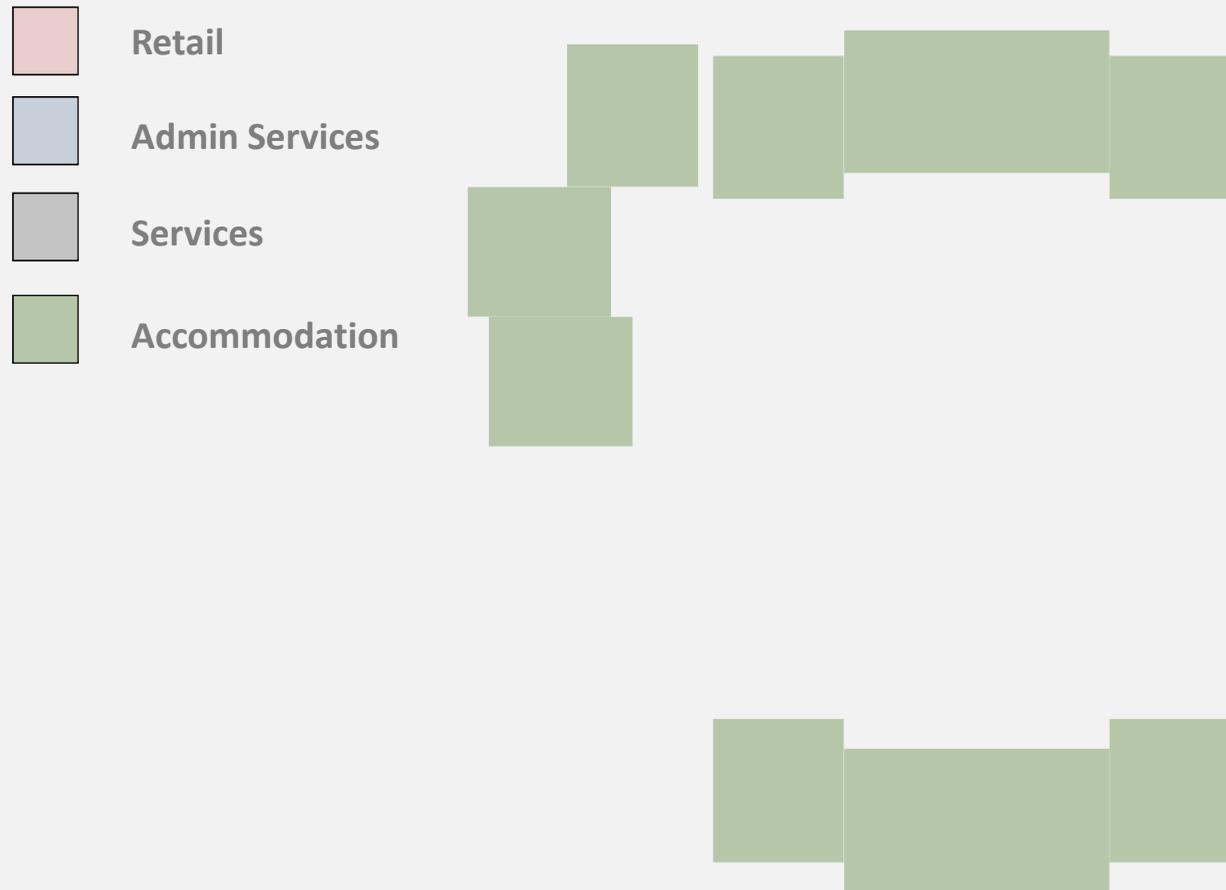


Floors 1 & 2

-  Retail
-  Admin Services
-  Services
-  Accommodation



Floors 3 & 4



Design Drivers...

To provide a community for community needs the team have adopted the following design criteria;

- A development that provides human rights to the workers in suitable conditions
- Passive Design based on Traditional Vernacular Communities
- Master Plan developed to provide active GF street facades, similar to a city street in the workers home town
- Active Community Areas
- Use of Vernacular Materials to create identity and reduce FM costs
- Identity – we believe that if you create an identity and a home then the community will benefit through happiness
- Addressing all regional migrant workers needs/ specification

Community Courtyard/ Streets...



Façade & Public Realm...



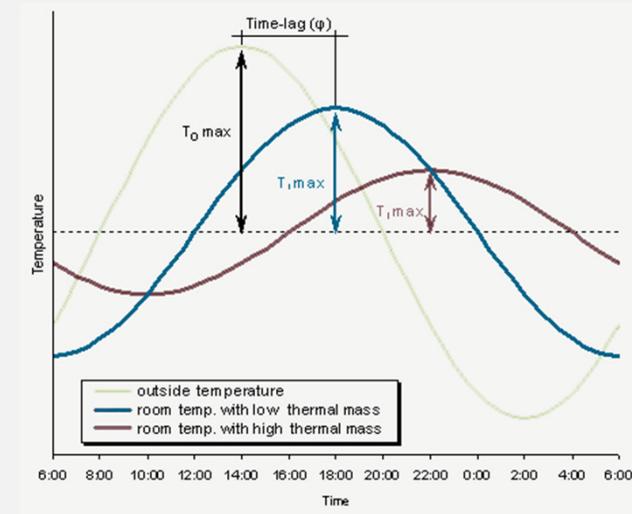
Passive Community Canopies...



Passive Façade Materials...



- High Thermal Mass Cladding Tiles
- Durability and low Maintenance
- Quick Easy Application
- Offers superb Thermal Protection



Construction Precedence



TWO CASE STUDIES OF 3-4 STAR INTERNATIONAL BRANDED HOTEL COMPANIES

- **STANDARD BASE CONSTRUCTION AND LIMITED VERTICAL CORES**
- **CONTAINERS FOR ROOMS AND CERTAIN STAIRS**
- **SAVE SUBSTANTIAL TIME AND QUALITY CONTROL AND CONTINUITY OF DESIGN REQUIREMENTS**

CASE STUDY -1-

HILTON GARDEN INN – LAGOS, NIGERIA

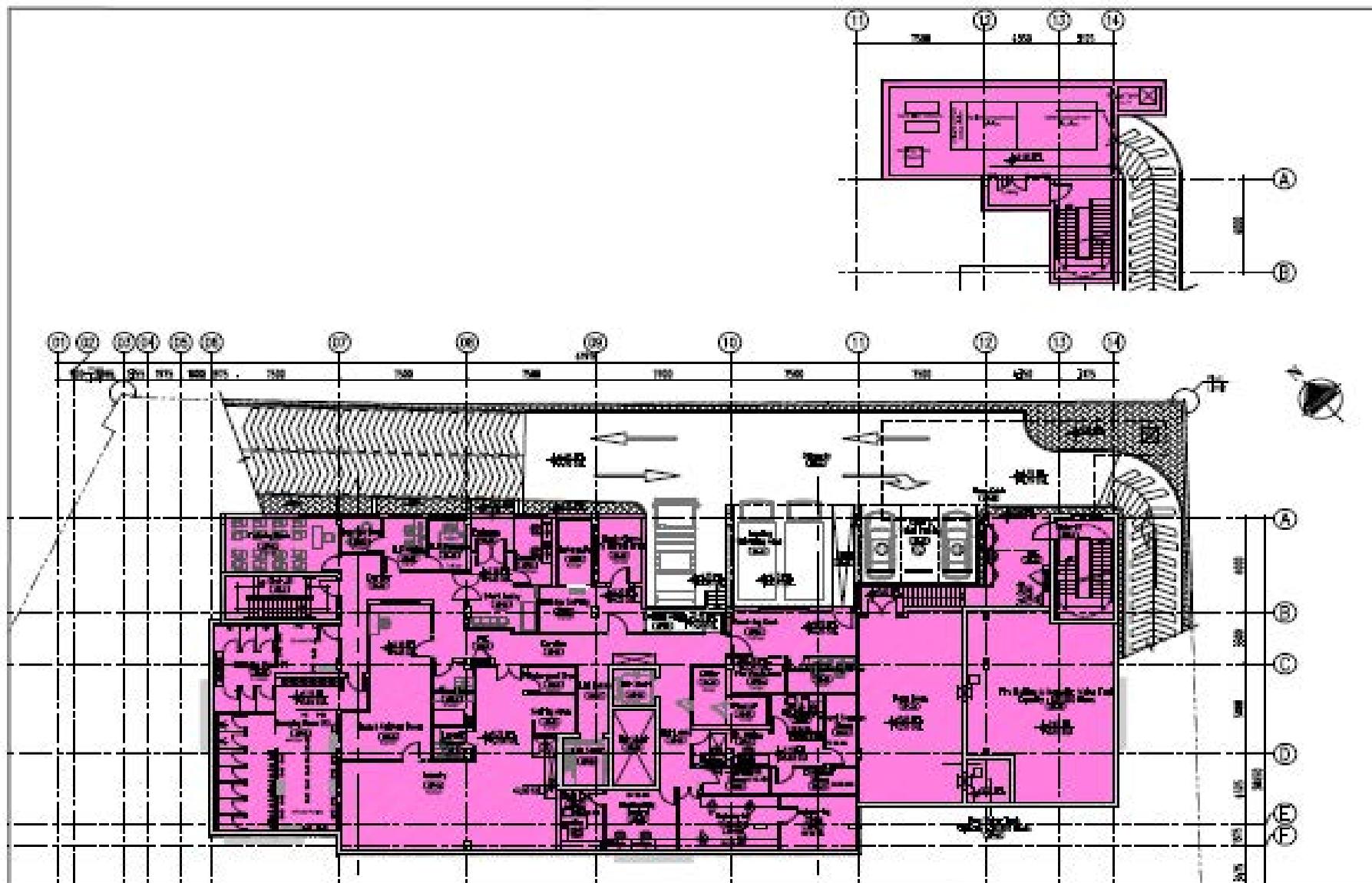
- **TOTAL AREA = 9,031 SQ.M**
- **NO. OF KEYS = 142**
- **PUBLIC SPACES:**
 - ❖ **RECEPTION LOBBY**
 - ❖ **ALL DAY DINING RESTAURANT**
 - ❖ **LOUNGE BAR**
 - ❖ **BUSINESS CENTER**
 - ❖ **MEETING ROOMS**
 - ❖ **SWIMMING POOL**
 - ❖ **GYMNASIUM**



HILTON GARDEN INN - LAGOS, NIGERIA
Concept Design Submission Revision VI 20th May 2013

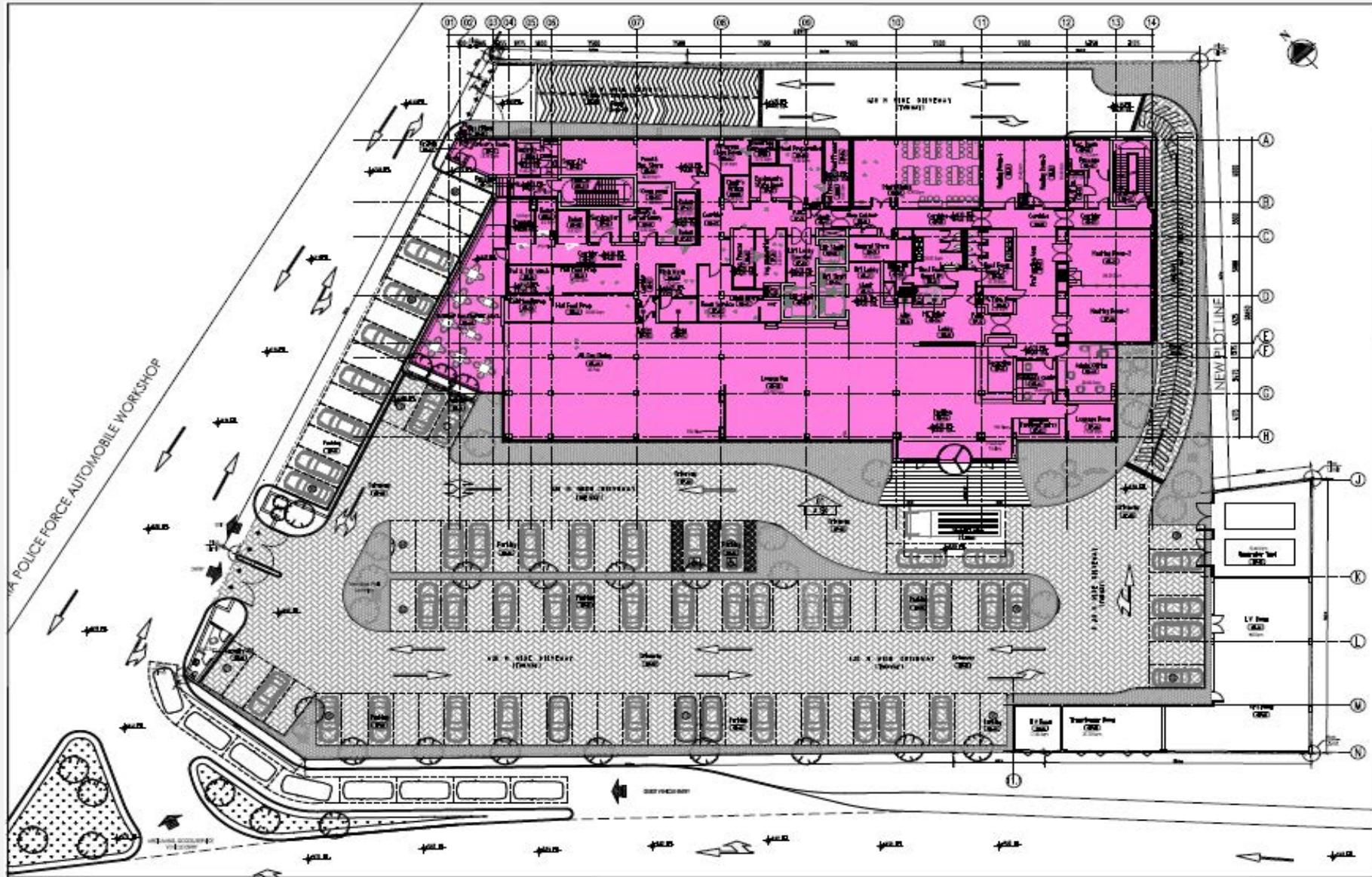


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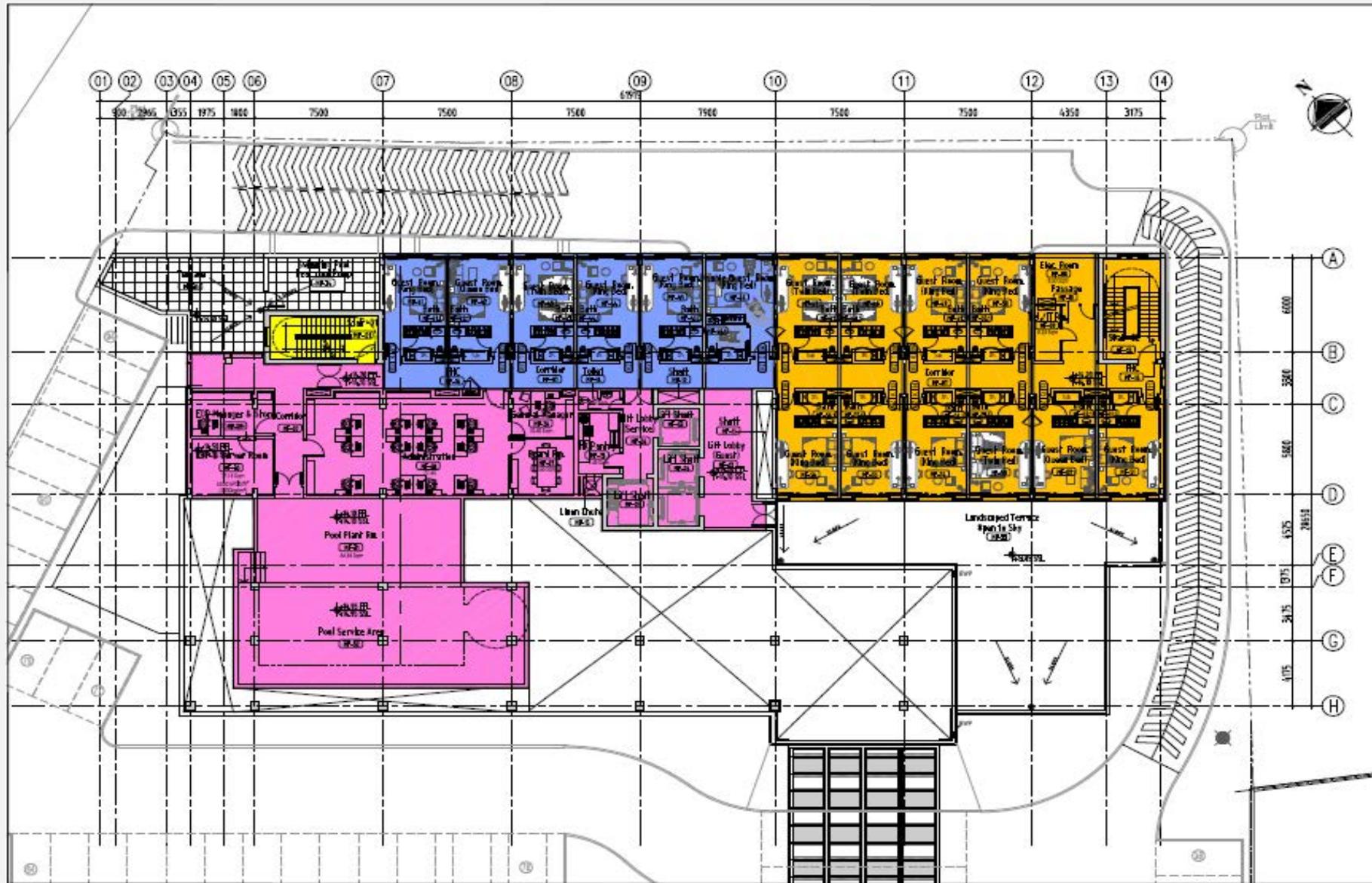
CONVENTIONAL CONSTRUCTION
 (RCC OR STEEL)

**BASEMENT
FLOOR PLAN**



CONVENTIONAL CONSTRUCTION
 (RCC OR STEEL)

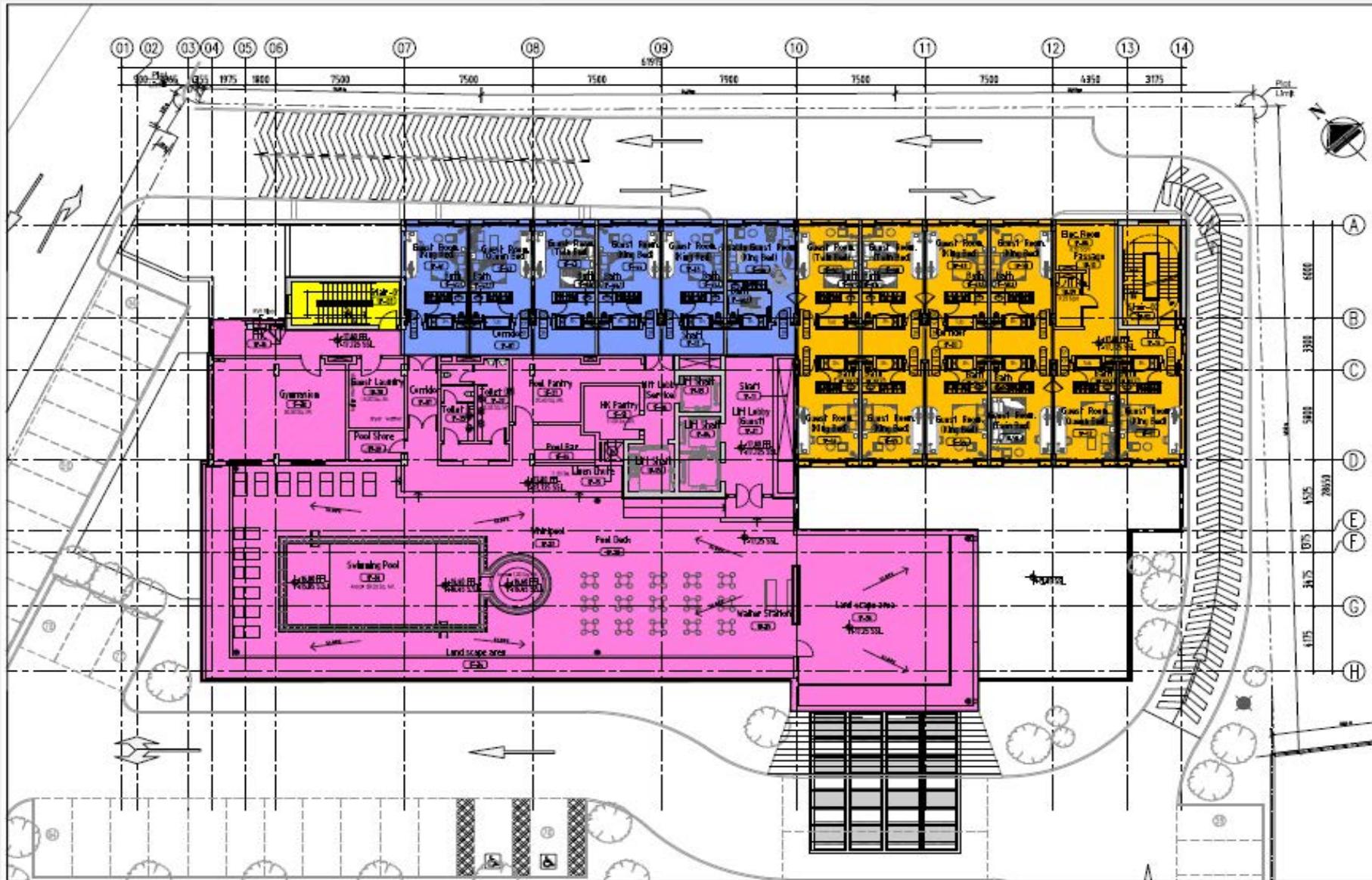
GROUND FLOOR PLAN



LEGEND

- MODULE- 1 = 2 GUEST ROOM + CORRIDOR
 - MODULE- 2 = 1 GUEST ROOM + CORRIDOR
- MODULE- 3 = STAIRCASE / SERVICES
 - CONVENTIONAL CONSTRUCTION (RCC OR STEEL)

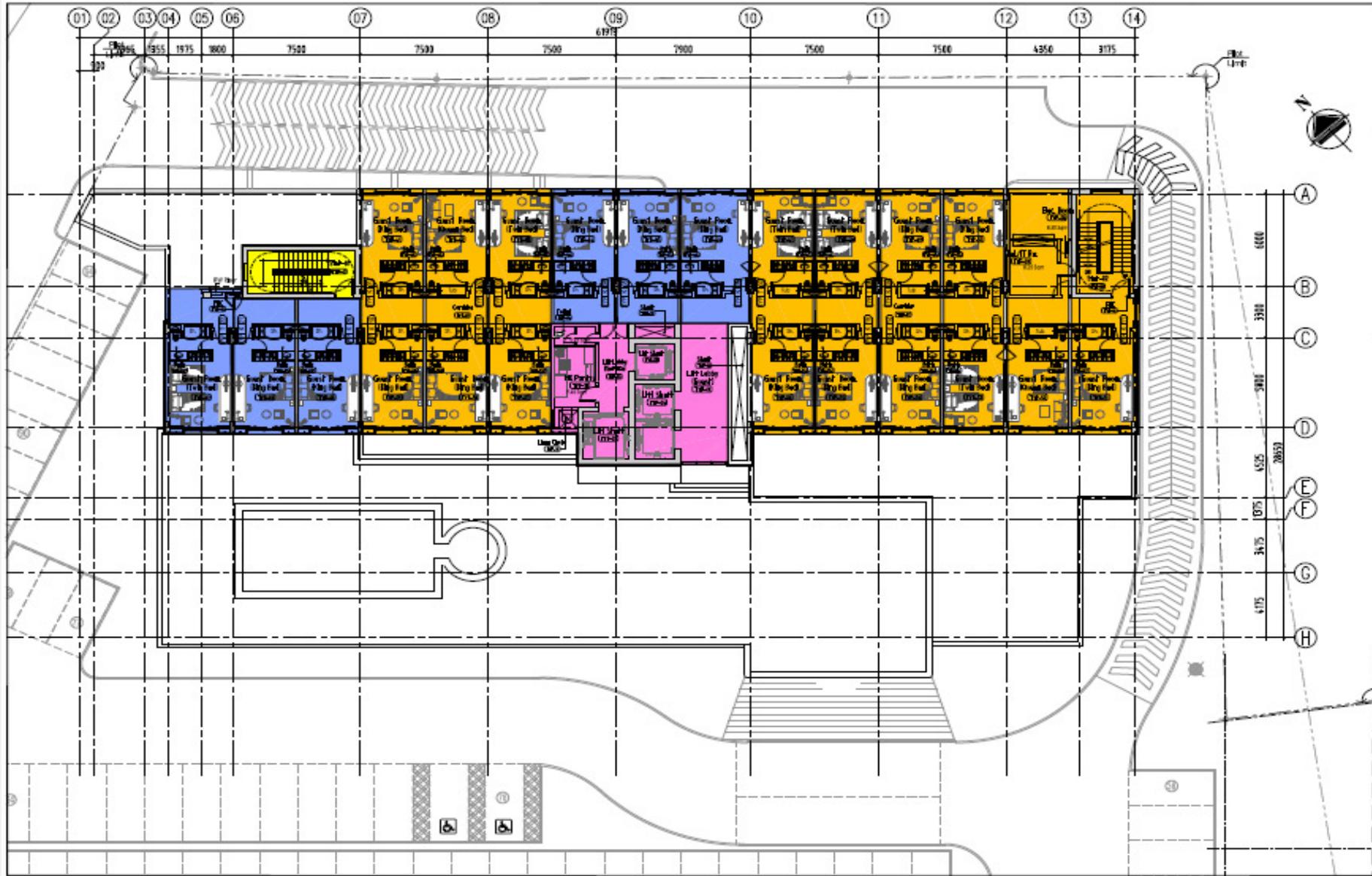
MEZZANINE FLOOR PLAN



LEGEND

 MODULE- 1 = 2 GUEST ROOM + CORRIDOR	 MODULE- 3 = STAIRCASE / SERVICES
 MODULE- 2 = 1 GUEST ROOM + CORRIDOR	 CONVENTIONAL CONSTRUCTION (RCC OR STEEL)

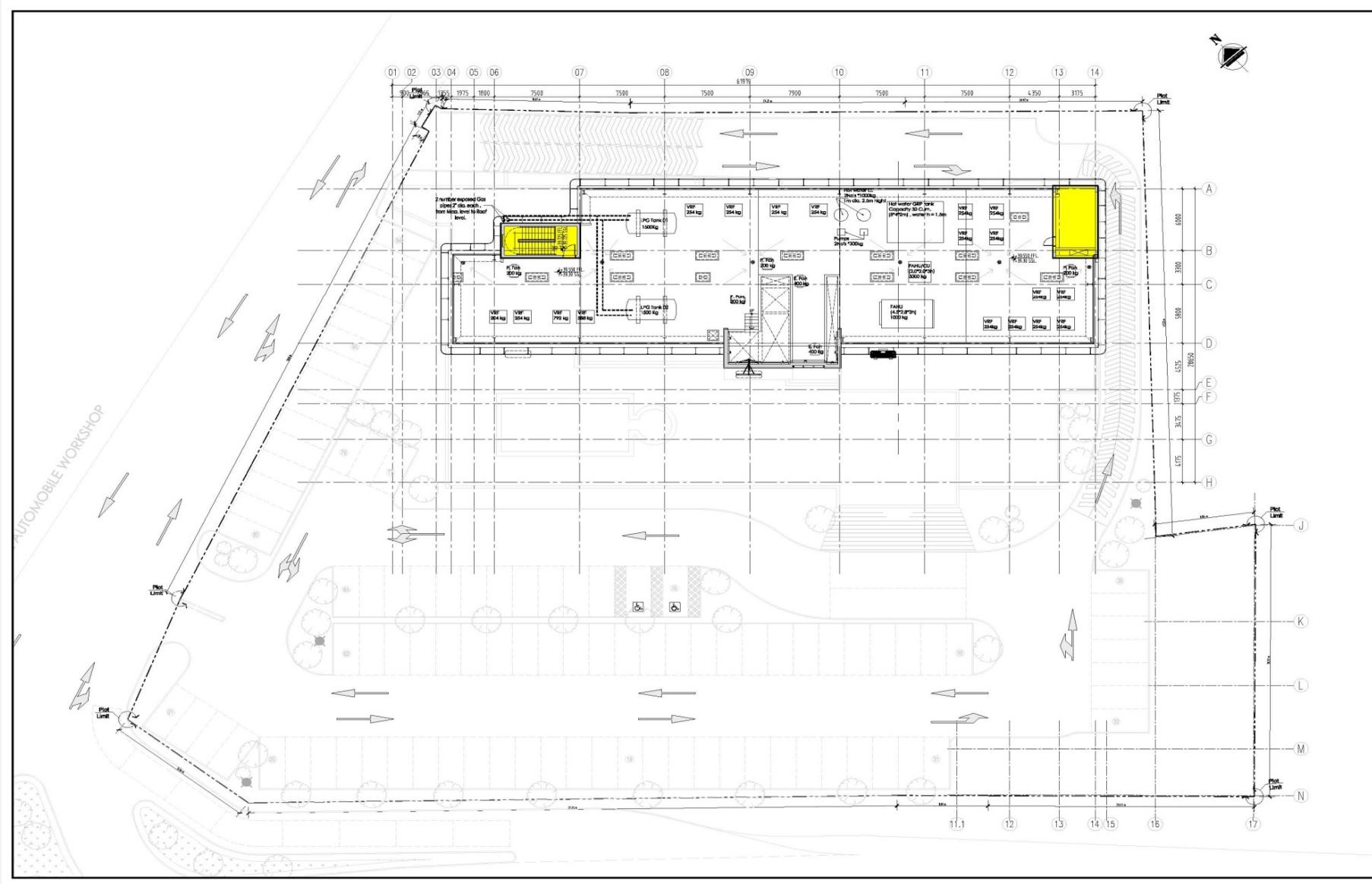
FIRST FLOOR PLAN



LEGEND

- | | |
|---|---|
|  MODULE- 1 = 2 GUEST ROOM + CORRIDOR |  MODULE- 3 = STAIRCASE / SERVICES |
|  MODULE- 2 = 1 GUEST ROOM + CORRIDOR |  CONVENTIONAL CONSTRUCTION (RCC OR STEEL) |

TYPICAL FLOOR PLAN (2ND, 4TH & 6TH)



LEGEND

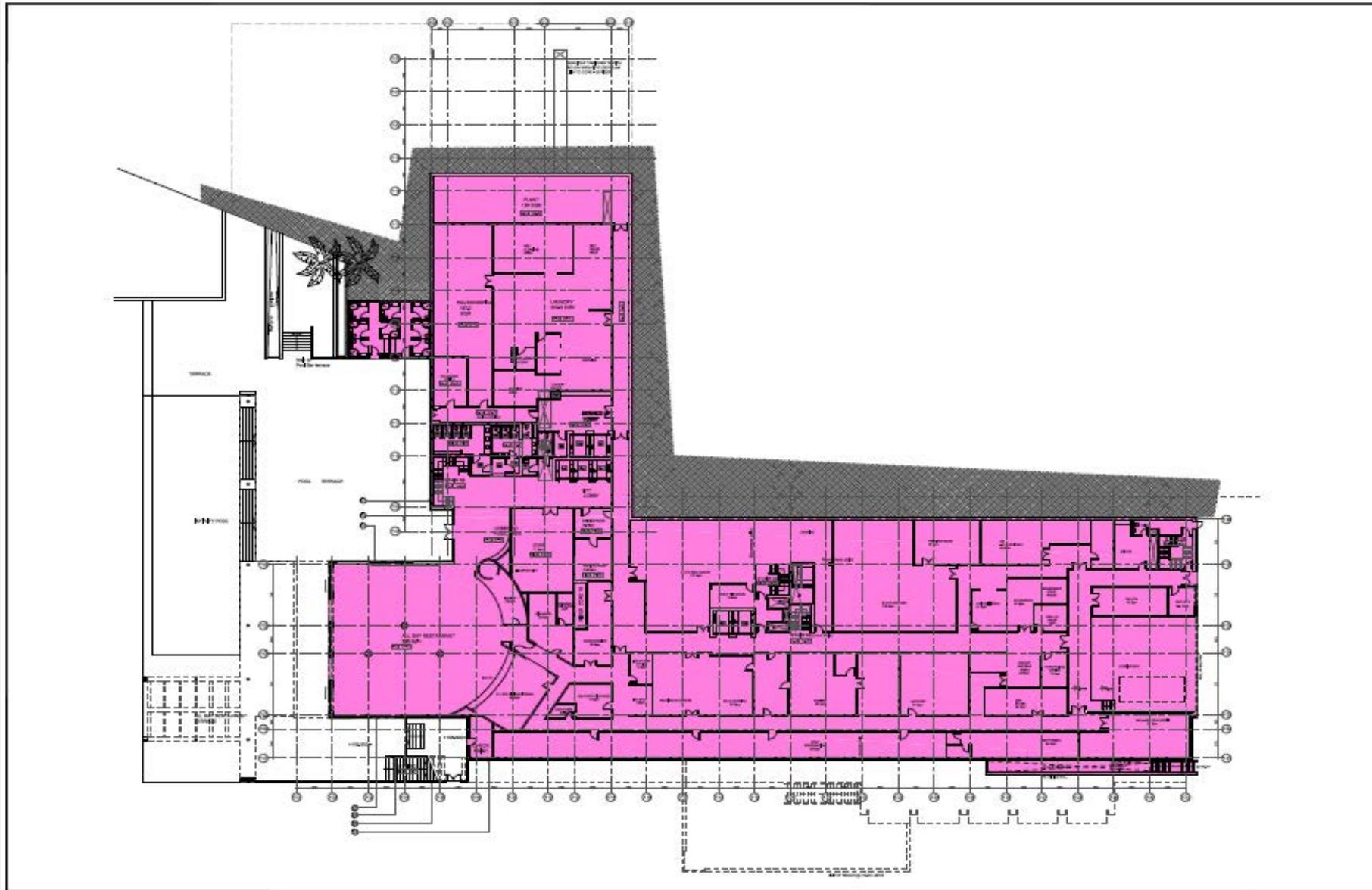
- MODULE- 1 = 2 GUEST ROOM + CORRIDOR
 - MODULE- 2 = 1 GUEST ROOM + CORRIDOR
- MODULE- 3 = STAIRCASE / SERVICES
 - CONVENTIONAL CONSTRUCTION (RCC OR STEEL)

ROOF FLOOR PLAN

CASE STUDY -2-

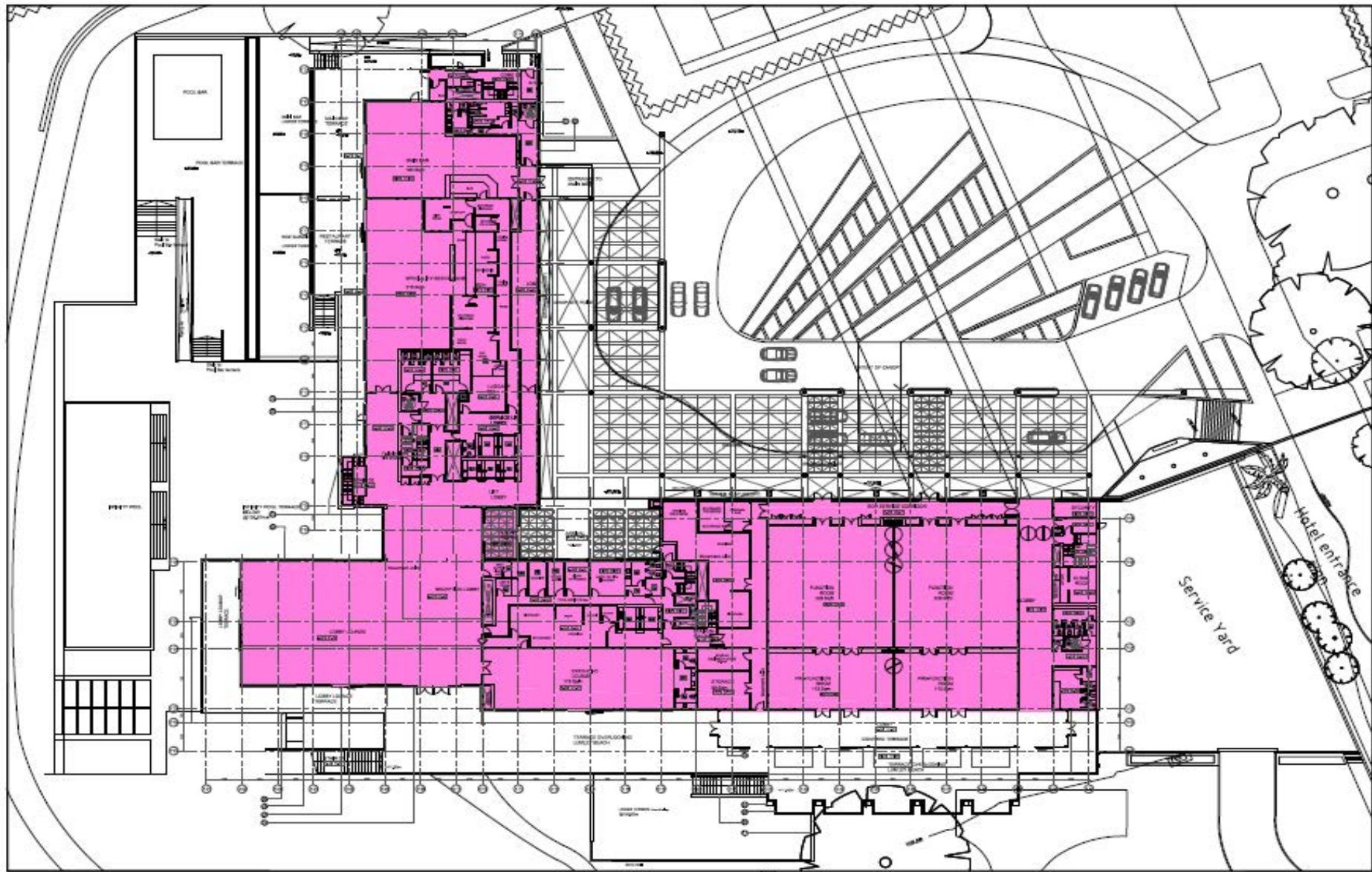
HILTON CAPE SIERRA – SIERRA LEONE

- **TOTAL AREA = 21,284 SQ.M**
- **NO. OF KEYS = 200**
- **PUBLIC SPACES:**
 - ❖ **RECEPTION LOBBY**
 - ❖ **ALL DAY DINING RESTAURANT**
 - ❖ **SPECIALITY RESTAURANT**
 - ❖ **LOUNGE BAR**
 - ❖ **BALL ROOM & PRE-FUNCTION LOBBY**
 - ❖ **BUSINESS CENTER**
 - ❖ **MEETING ROOMS**
 - ❖ **BOARD ROOM**
 - ❖ **SWIMMING POOL**
 - ❖ **GYMNASIUM**



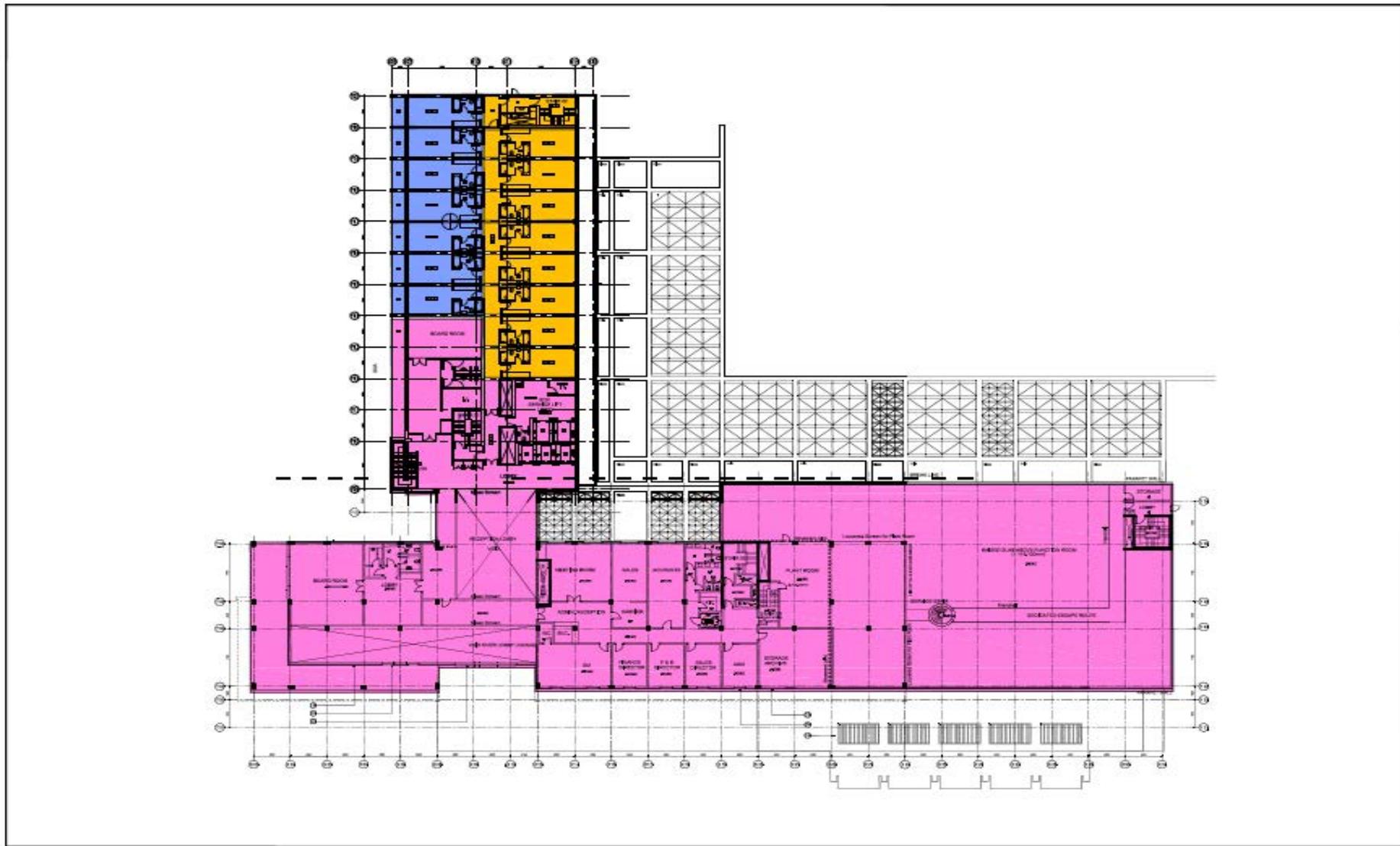
 CONVENTIONAL CONSTRUCTION
(RCC OR STEEL)

**LOWER GROUND
FLOOR PLAN**



 CONVENTIONAL CONSTRUCTION
(RCC OR STEEL)

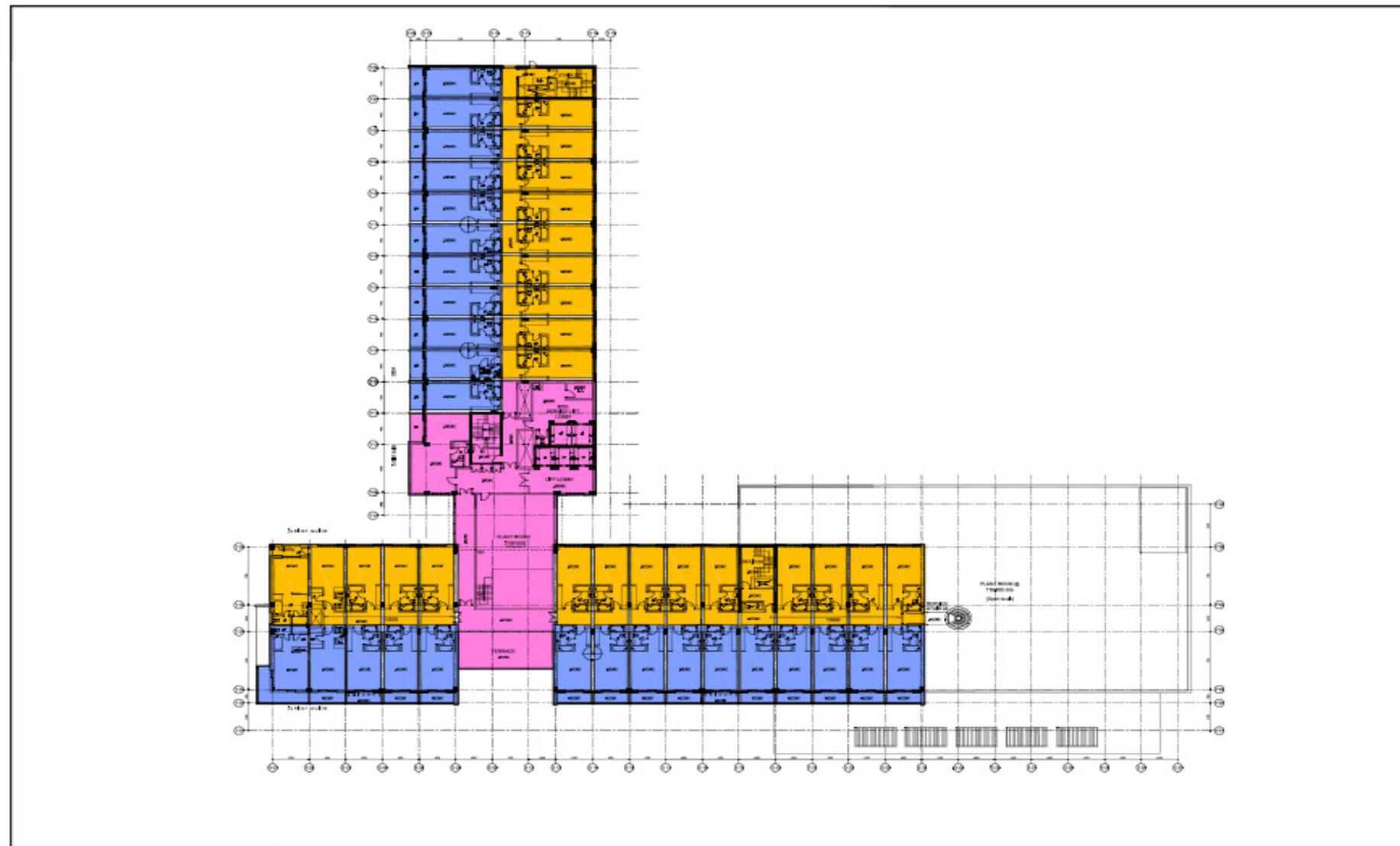
UPPER GROUND FLOOR PLAN



LEGEND

- MODULE- 1 = 1 GUEST ROOM + CORRIDOR
- MODULE- 2 = GUEST ROOM ONLY
- CONVENTIONAL CONSTRUCTION (RCC OR STEEL)

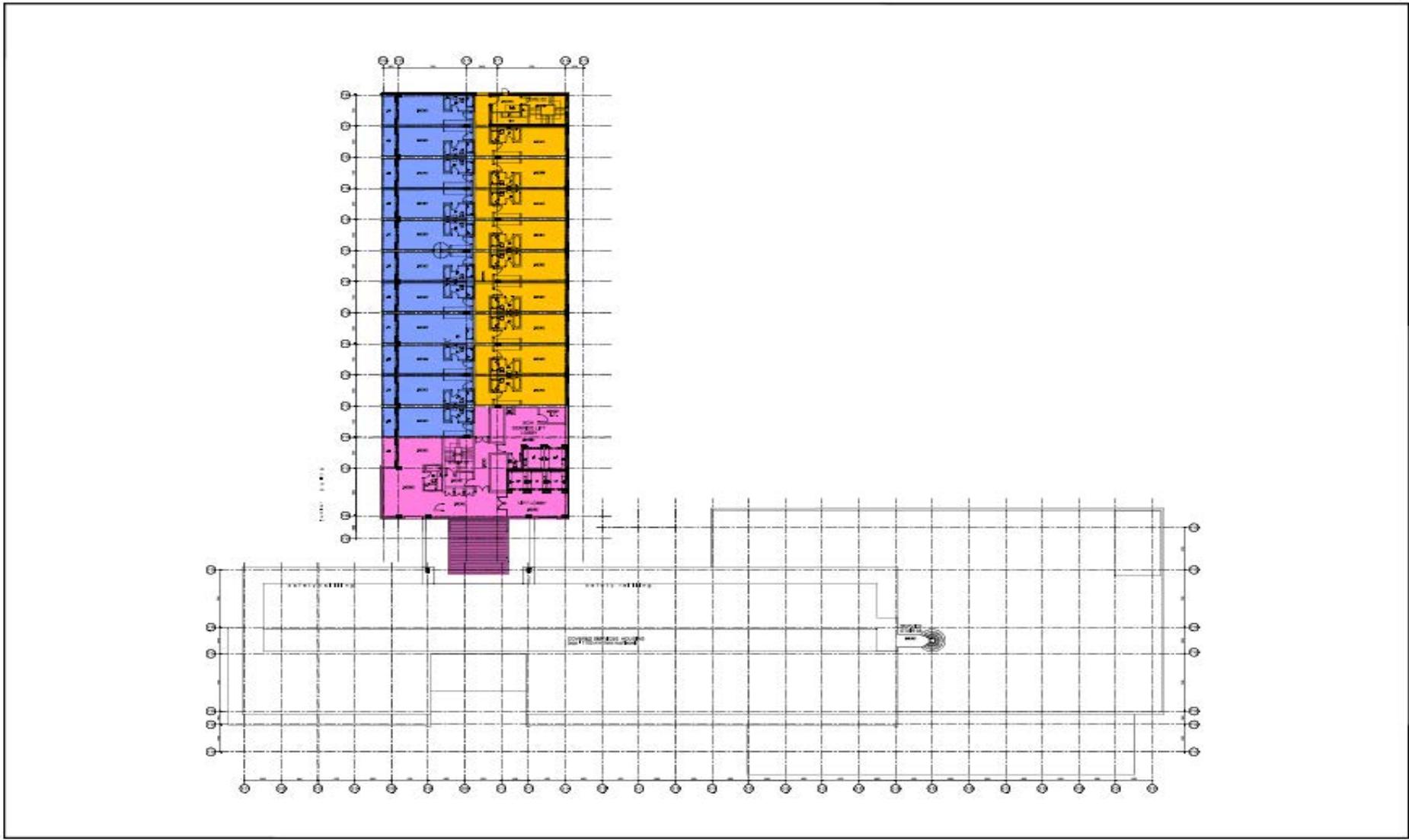
MEZZANINE FLOOR PLAN



LEGEND

- MODULE- 1 = 1 GUEST ROOM + CORRIDOR
- MODULE- 2 = GUEST ROOM ONLY
- CONVENTIONAL CONSTRUCTION (RCC OR STEEL)

FIRST FLOOR PLAN

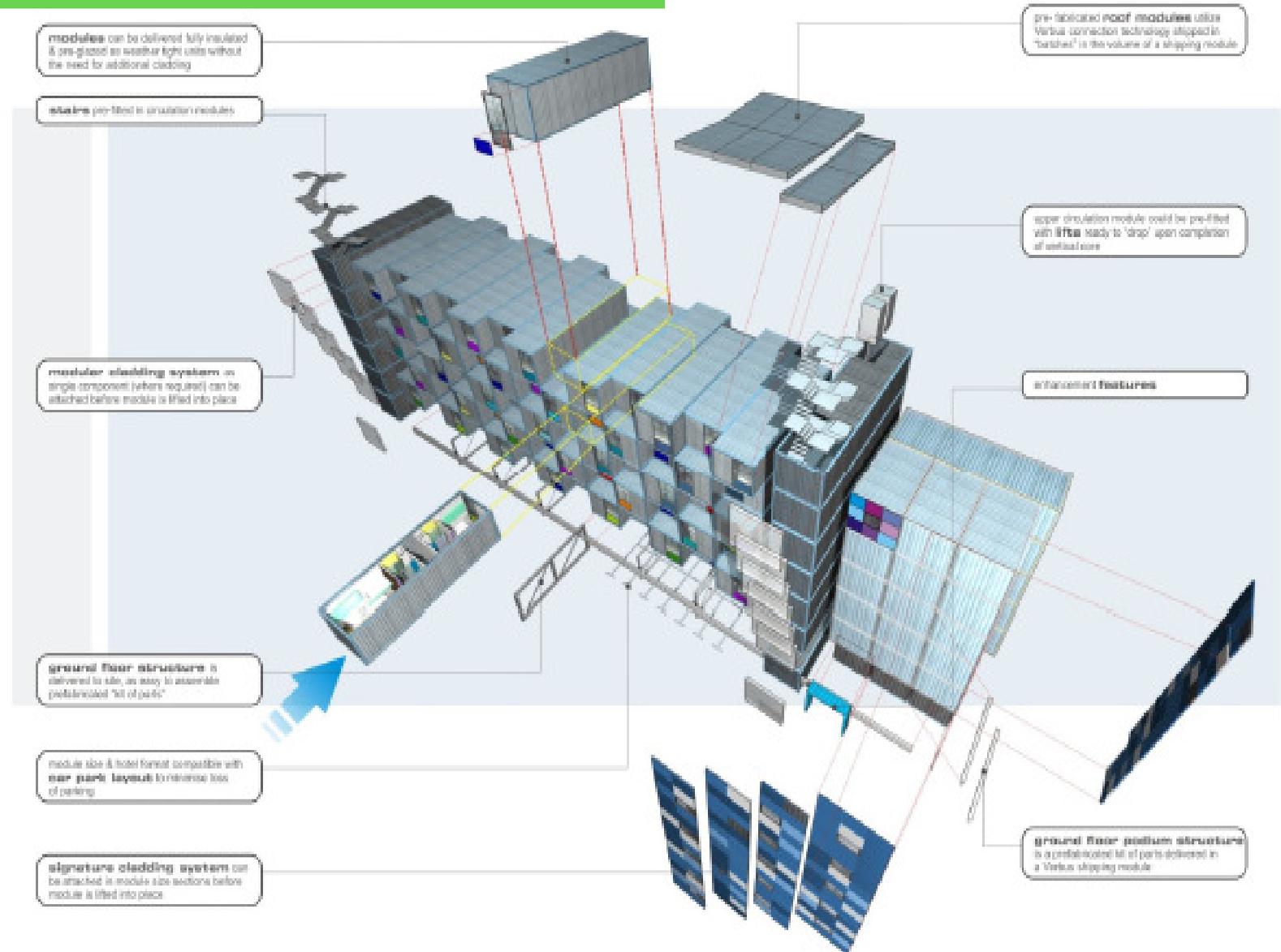


LEGEND

- MODULE- 1 = 1 GUEST ROOM + CORRIDOR
- MODULE- 2 = GUEST ROOM ONLY
- CONVENTIONAL CONSTRUCTION (RCC OR STEEL)

THIRD & FOURTH FLOOR PLAN

Construction Method...



Construction Method... Benefits

Design and Construction

- The only modular technology in the world that can be used to erect 16+ storey buildings
- Ability to replicate the design and production process, leading to huge efficiency gains when rolling out large pipelines
- Deployable anywhere in the world

Quality

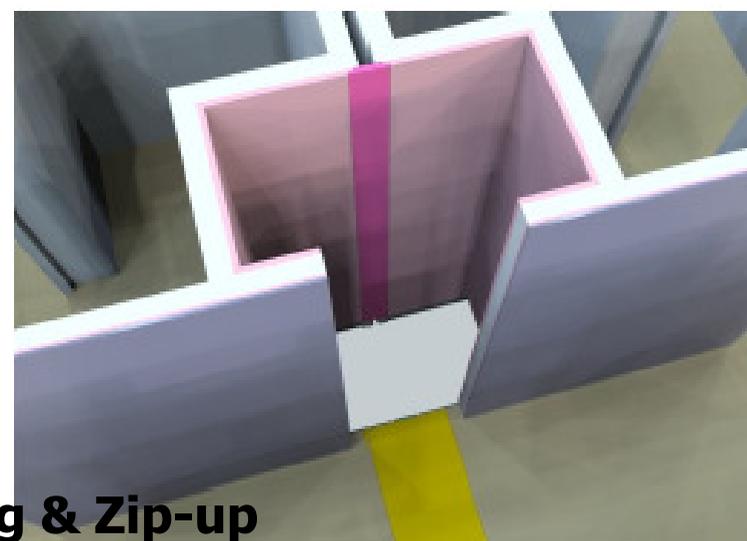
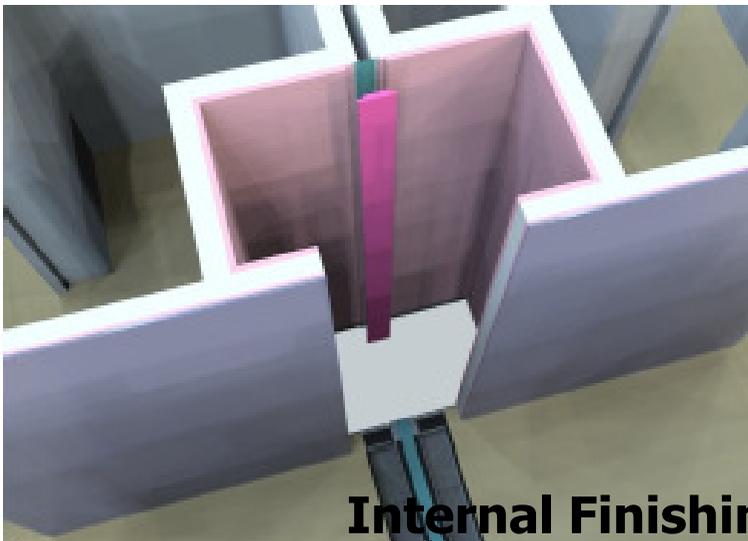
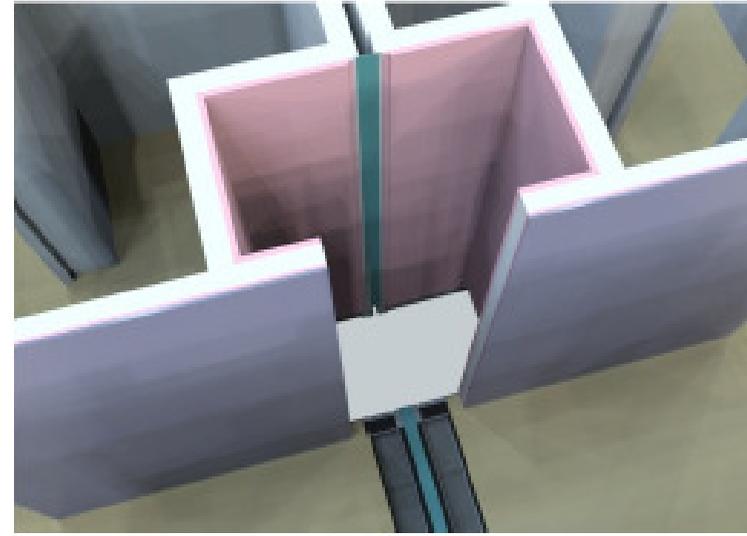
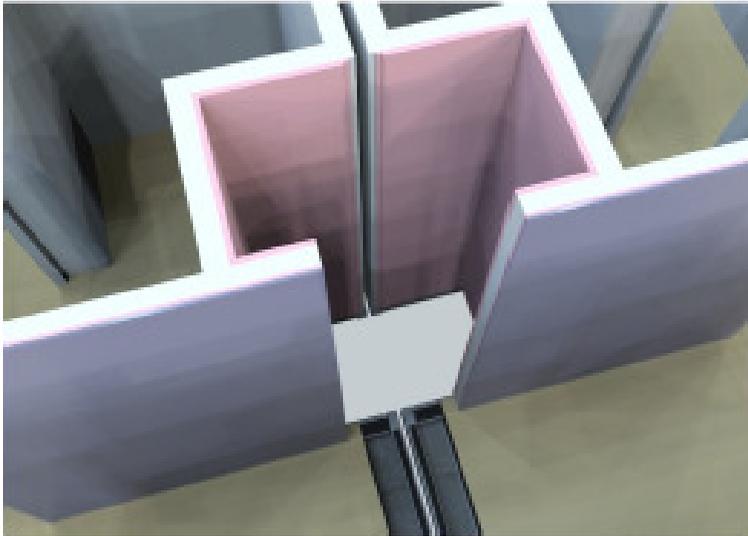
- Vertical integration across the development chain: proprietary design, module production and fit-out, and shipping
- ISO certified quality control, compliance with clients' local building codes
- 60-year life expectancy
- Proven technology, favoured by market leading brands

Timing

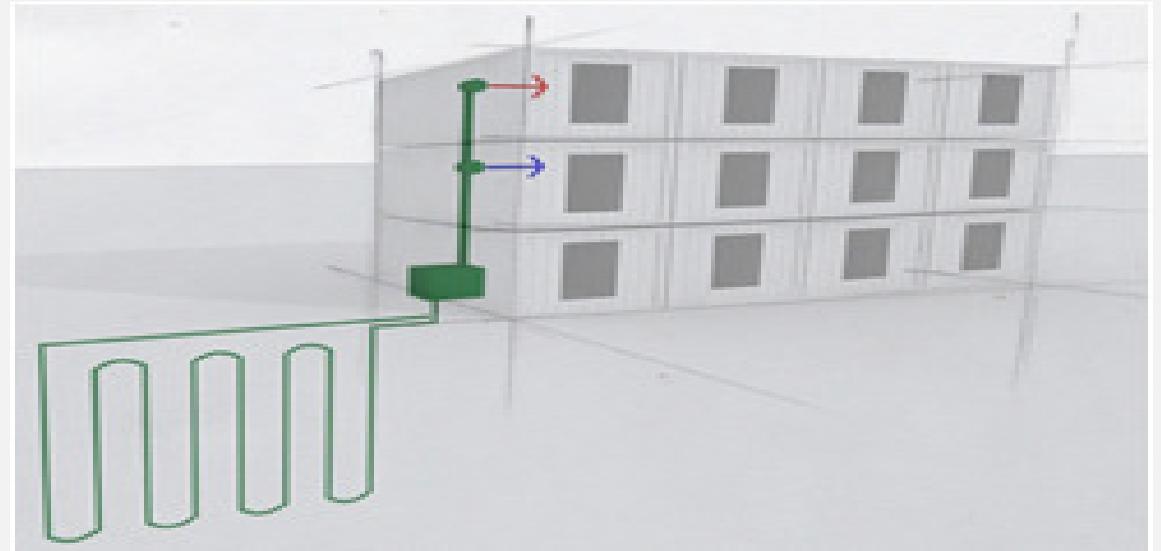
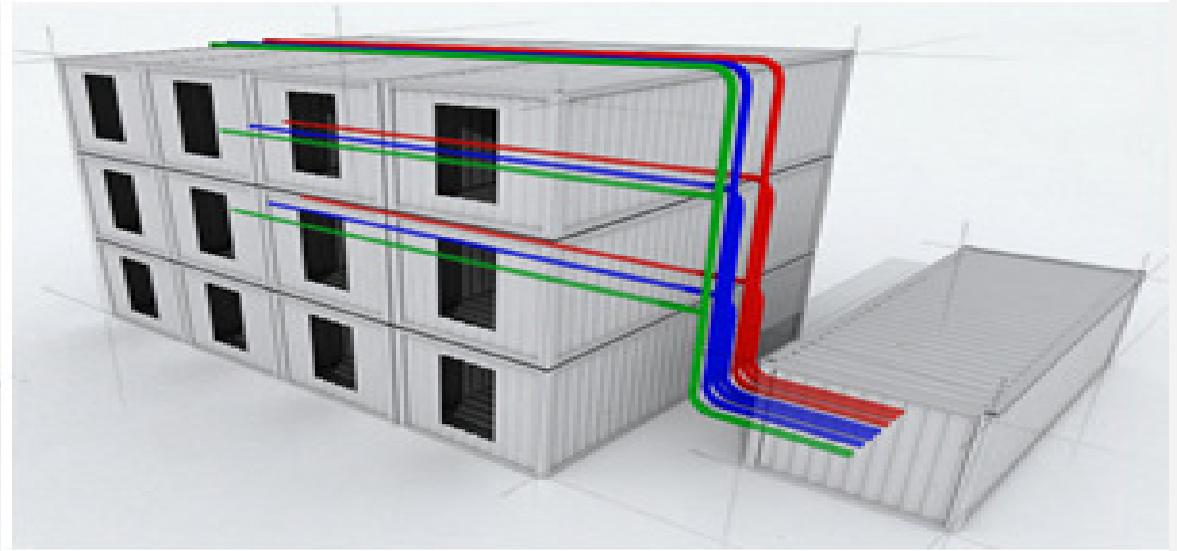
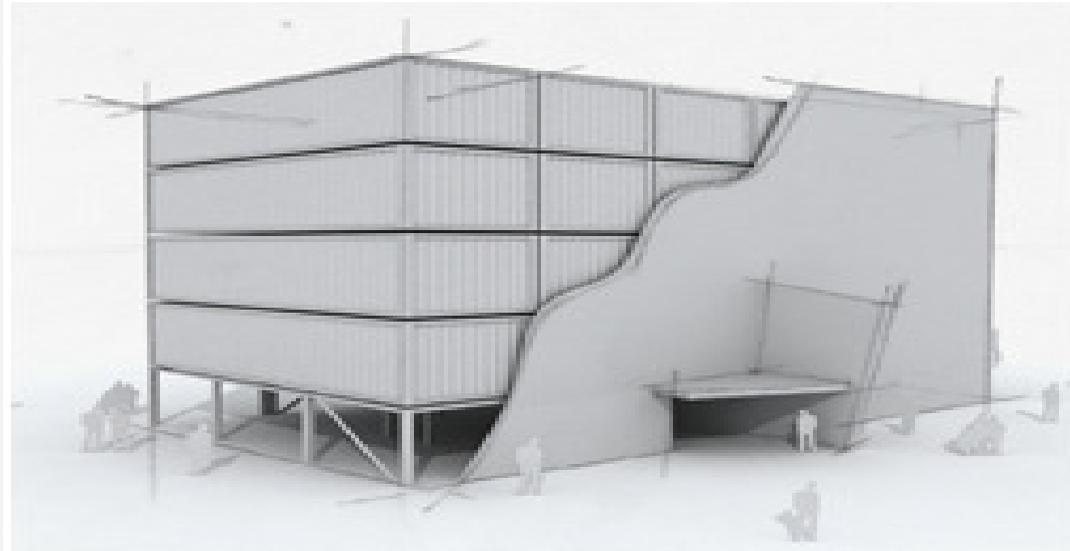
- Rapid build times, potentially twice as fast as traditional construction
- 30 bedrooms can be erected per day
- More predictable and lower risk building process
- Ability to more effectively plan and manage project timelines

Financials

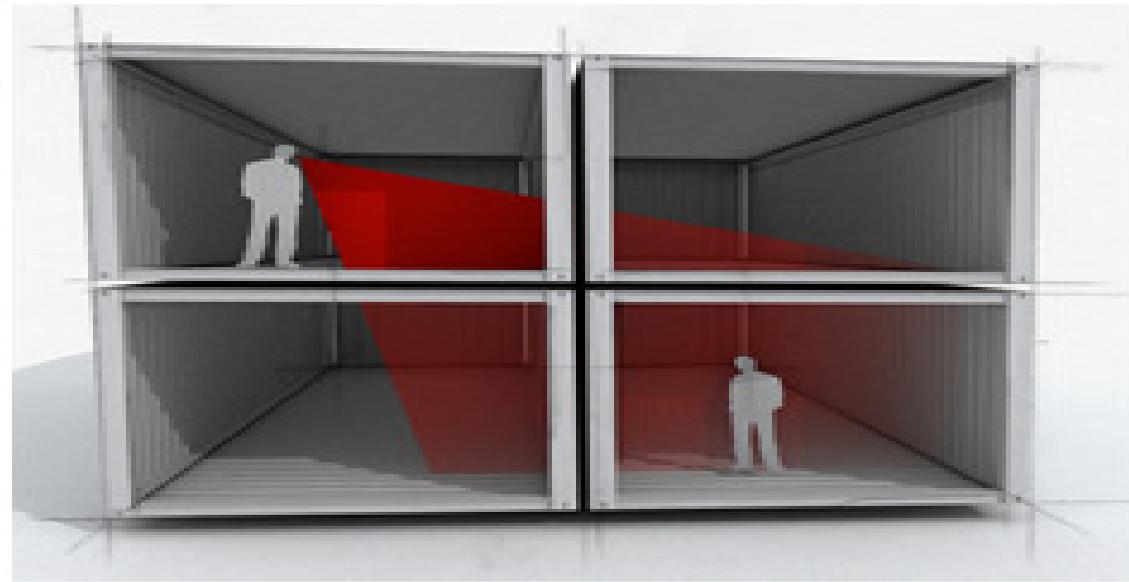
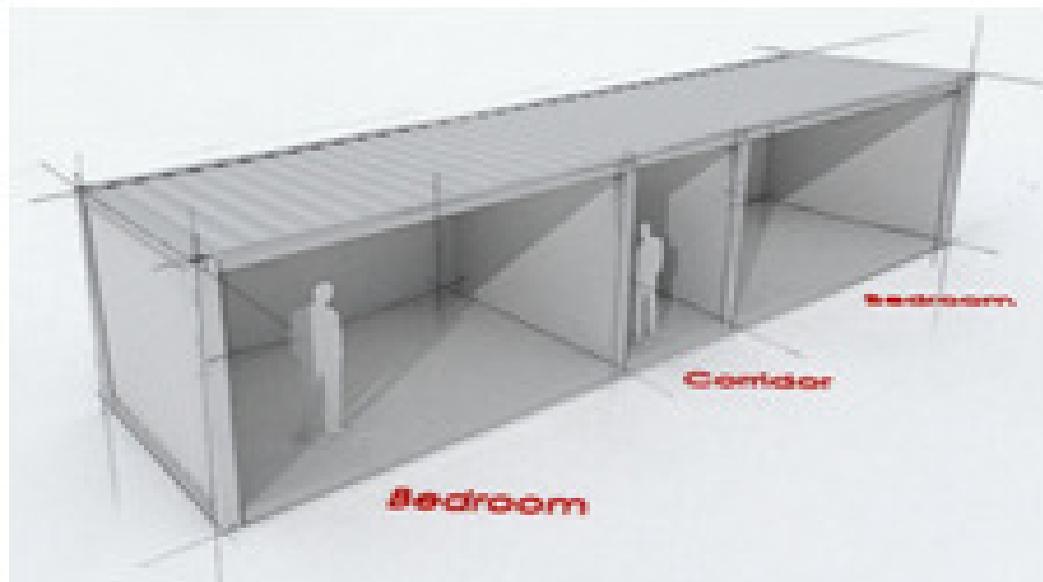
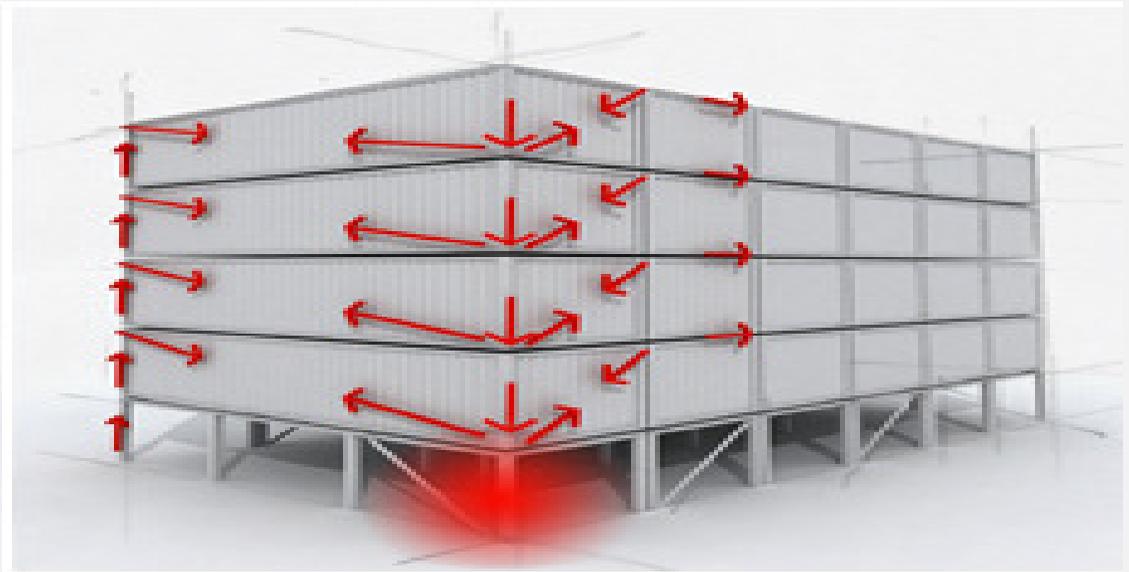
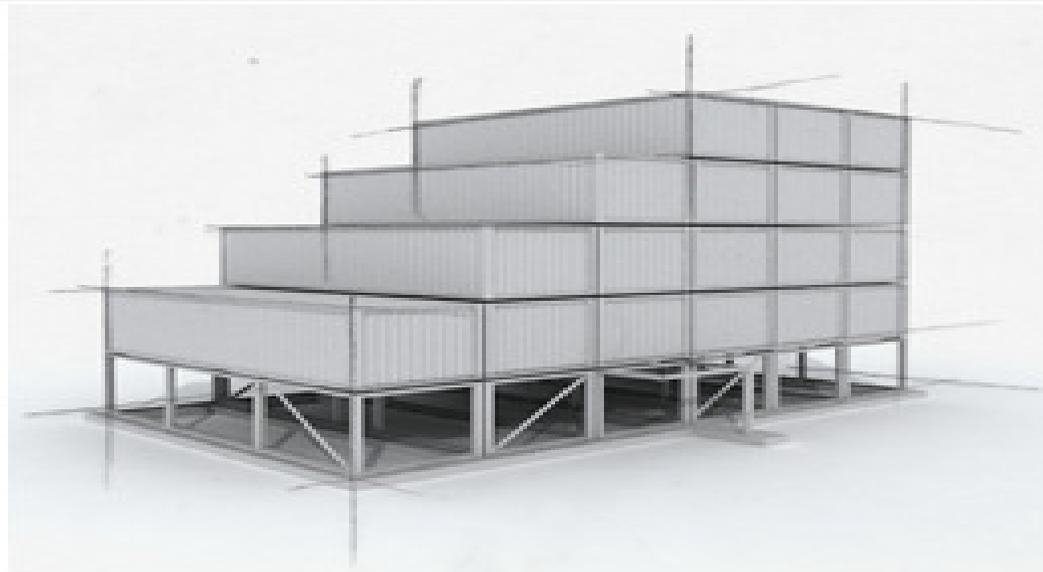
- Competitive cost, lower than traditional construction methods
- Reduced on site project and commercial management required by the principal contractor
- Accelerated cash flows and better investment return
- Access to construction finance in partnership with CIMC Treasury Company



Internal Finishing & Zip-up



MEP Services



Structural Decking



Site Installations



Site Installations



Presenter 2

Sara K. Beardsley, AIA

Sr. Architect, Adrian Smith + Gordon Gill Architecture

Delivery Methods – US Based Design Firm working Overseas

- Design Architect, DD Hand-off [with or without peer review]
- Design Architect, CD Hand-off [with or without peer review]
- CD scope, but only for certain parts of the project
- Local architects perform Construction Administration and Permit Drawings
- Hand off may be to another architect, or to a Design/Build Contractor

Pros and Cons of Limited Scope

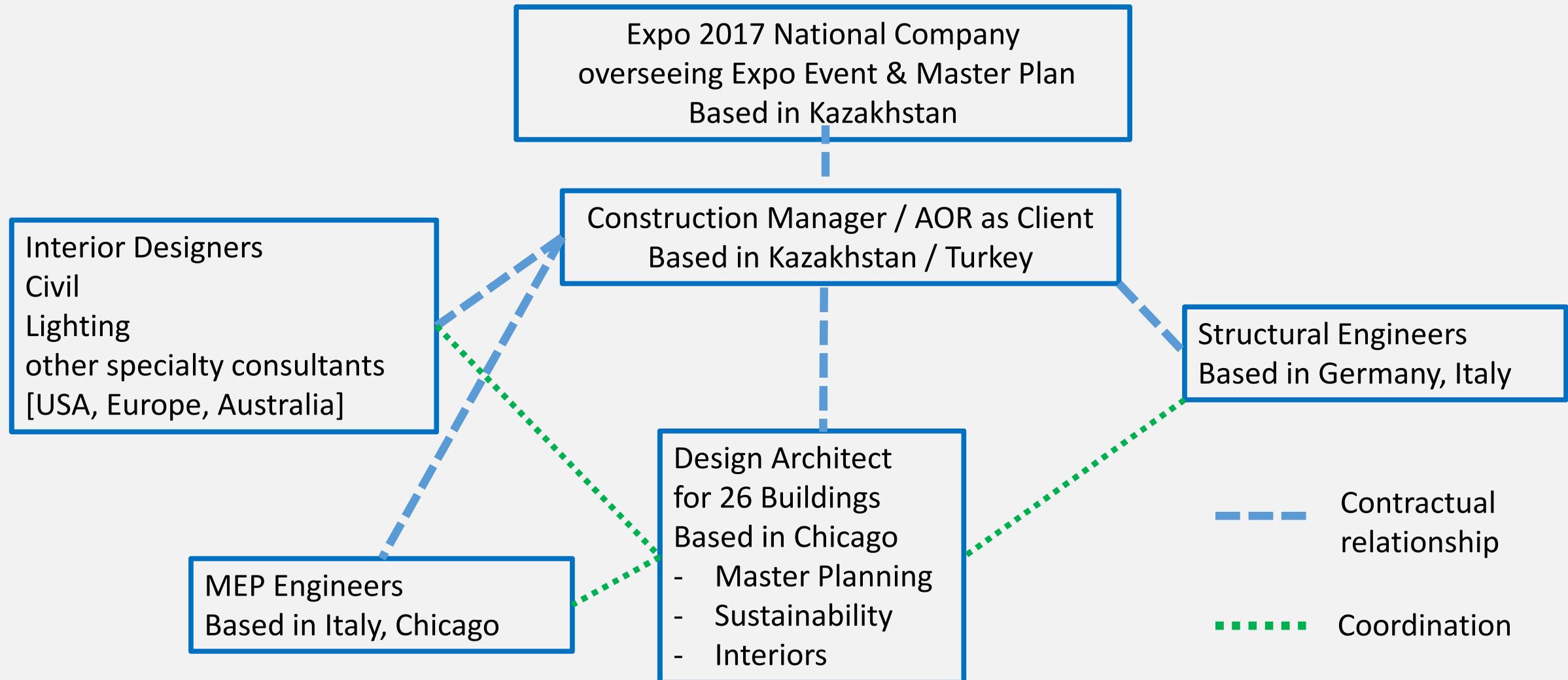
Advantages

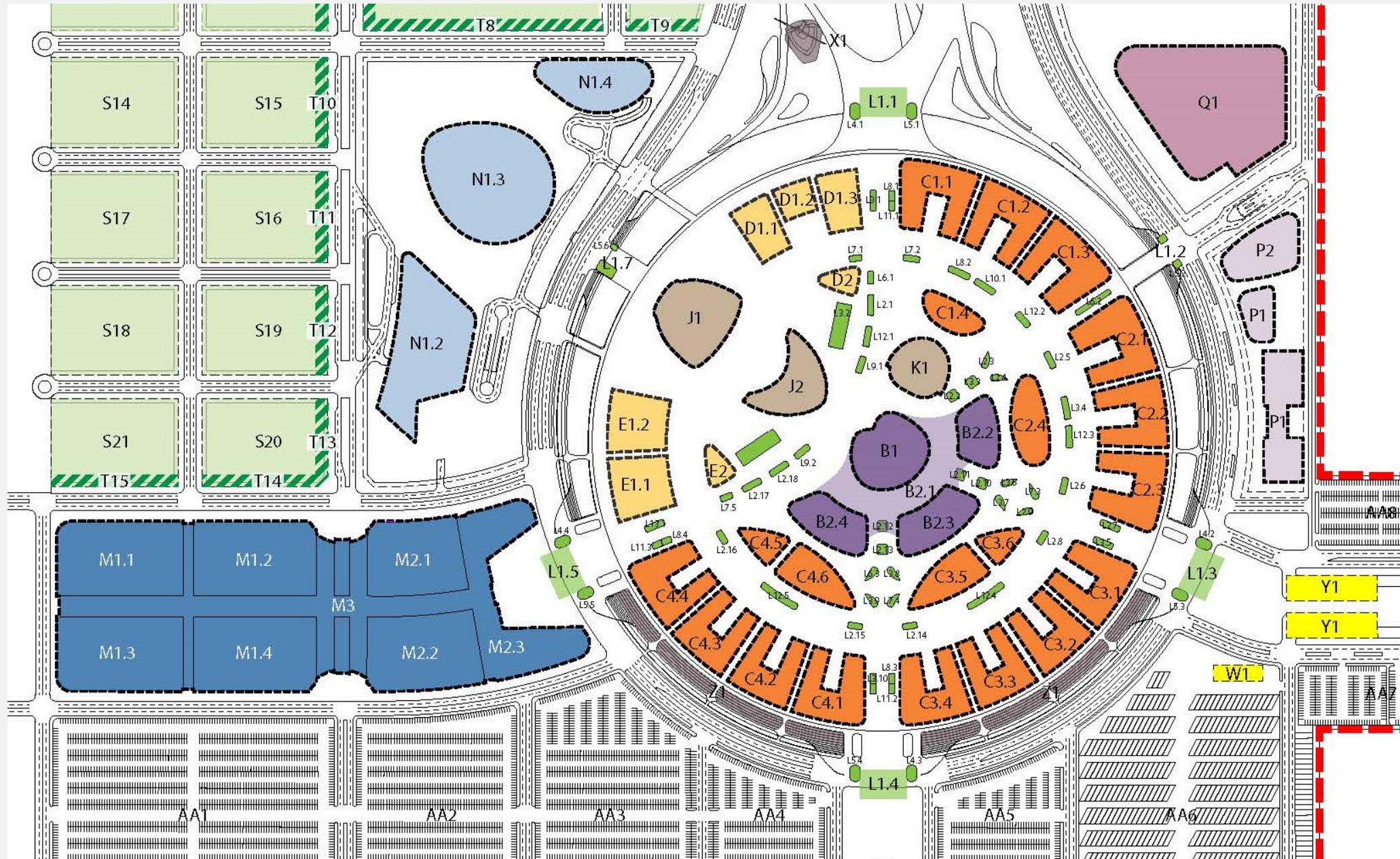
- Control and limitation of Liability
- Typically no requirement to be licensed in overseas countries
- Less on-site staff required

Disadvantages

- Quality Control
- Control of final design adjustments / “Value Engineering”
- Less opportunity for architects to visit the site and see project
- Less control of changes made after hand-off

Astana Expo 2017 – DD Design Build Hand-off to Contractor

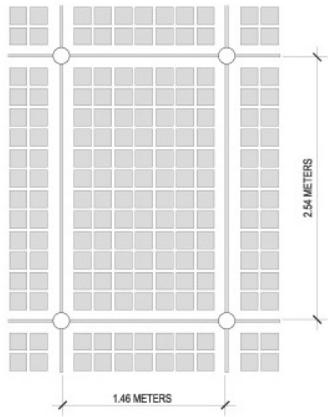
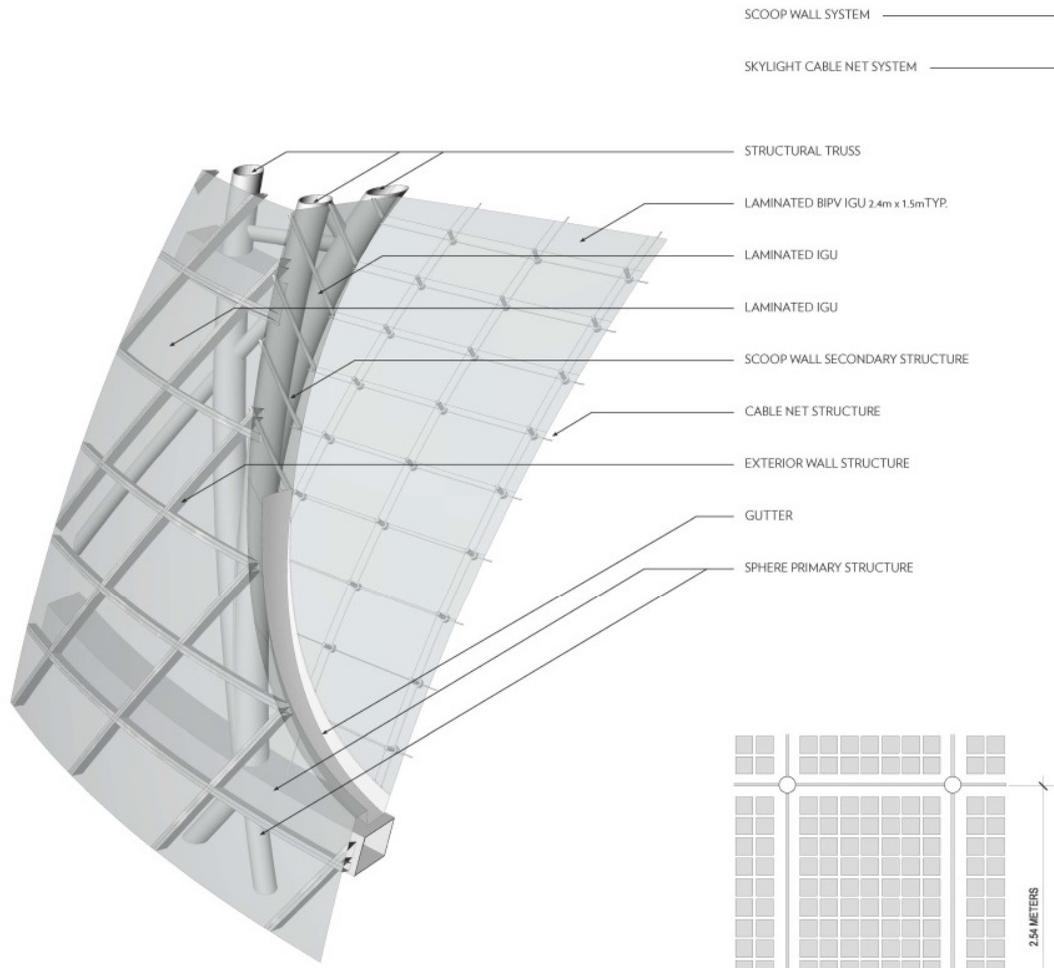




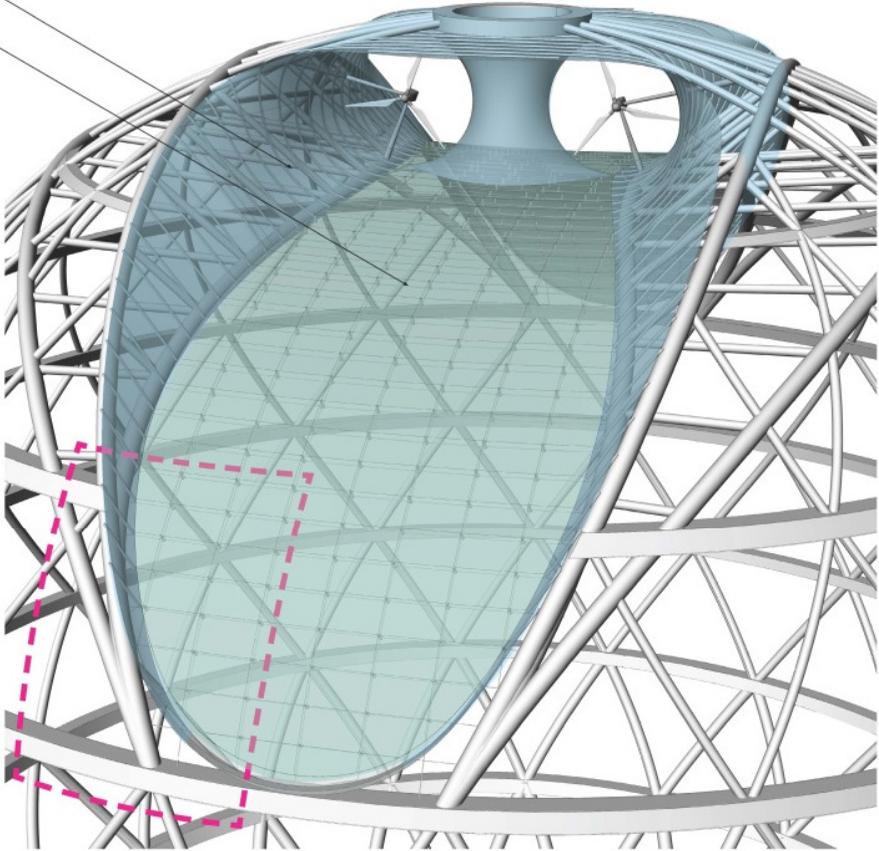


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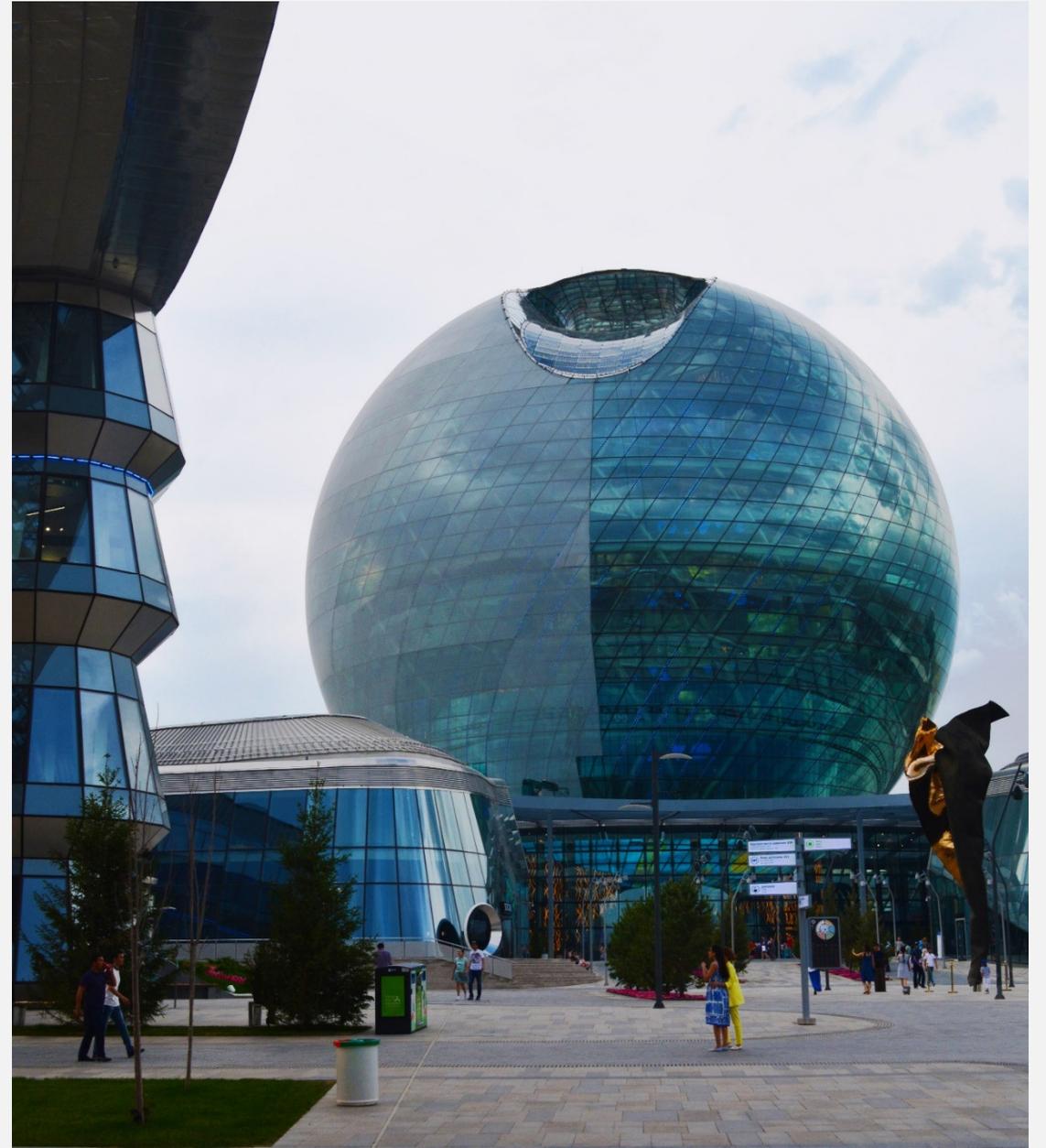


TYP. SKYLIGHT PANEL
SCALE 1:15



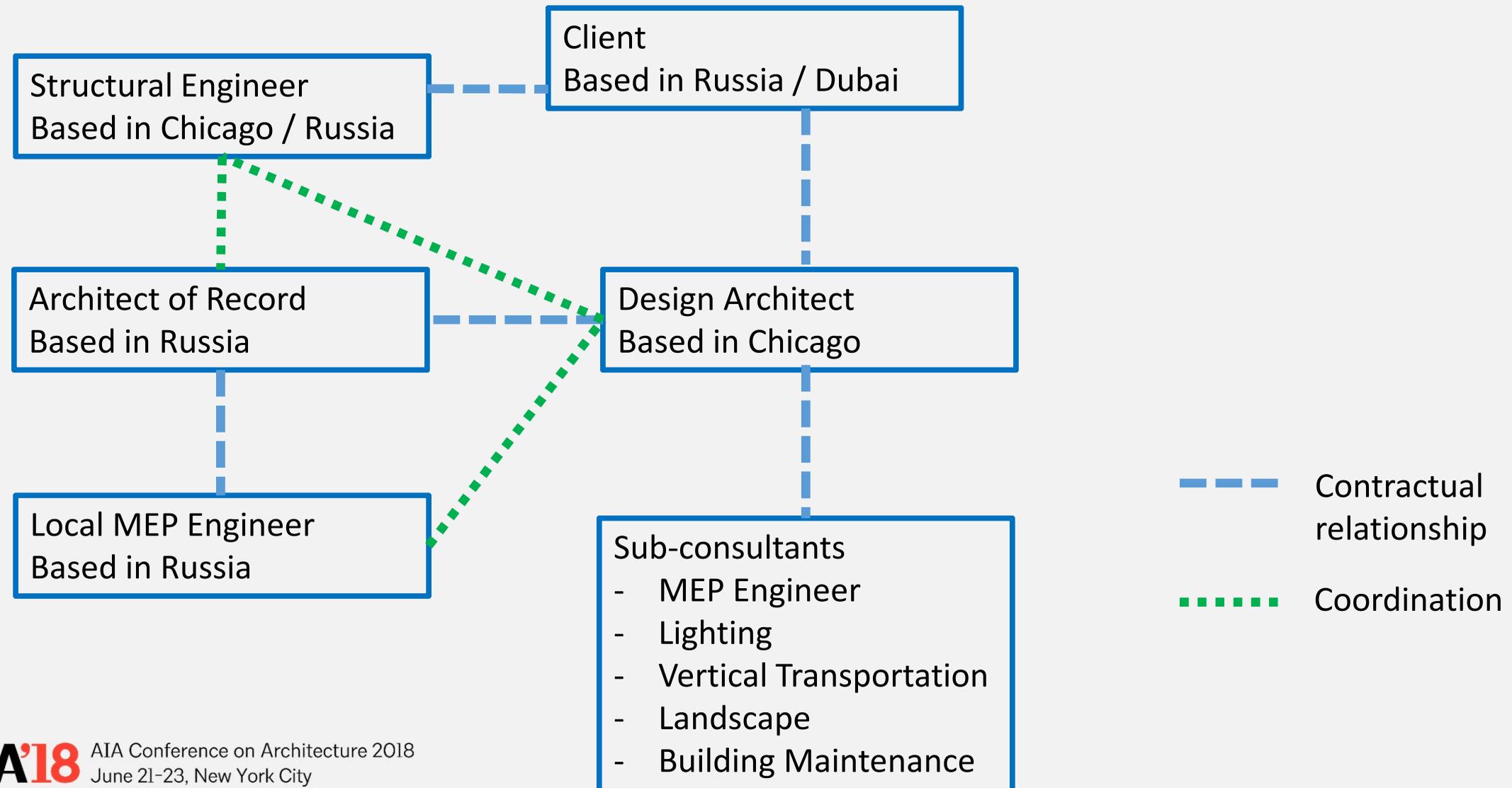
TOTAL AREAS FOR SCOOP GLAZING SYSTEMS

SYSTEM	PANEL	TOTAL AREA (m ²)
SCOOP WALL SYSTEM	LAMINATED IGU (DOUBLE CURVED)	1355
SKYLIGHT CABLE NET SYSTEM	LAMINATED FLAT BIPV IGU	1254



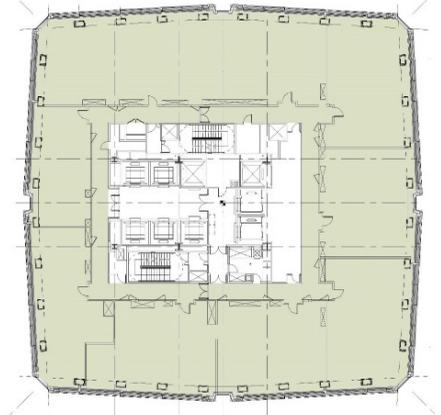
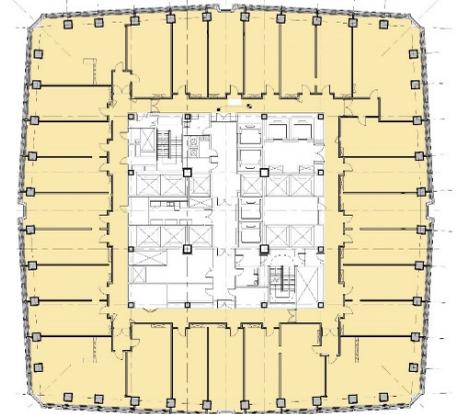
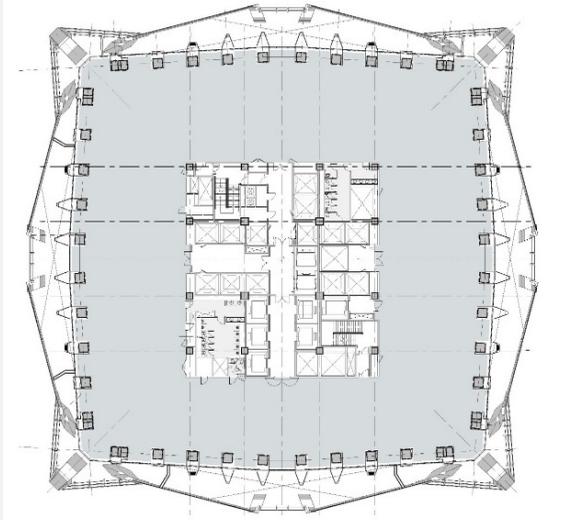
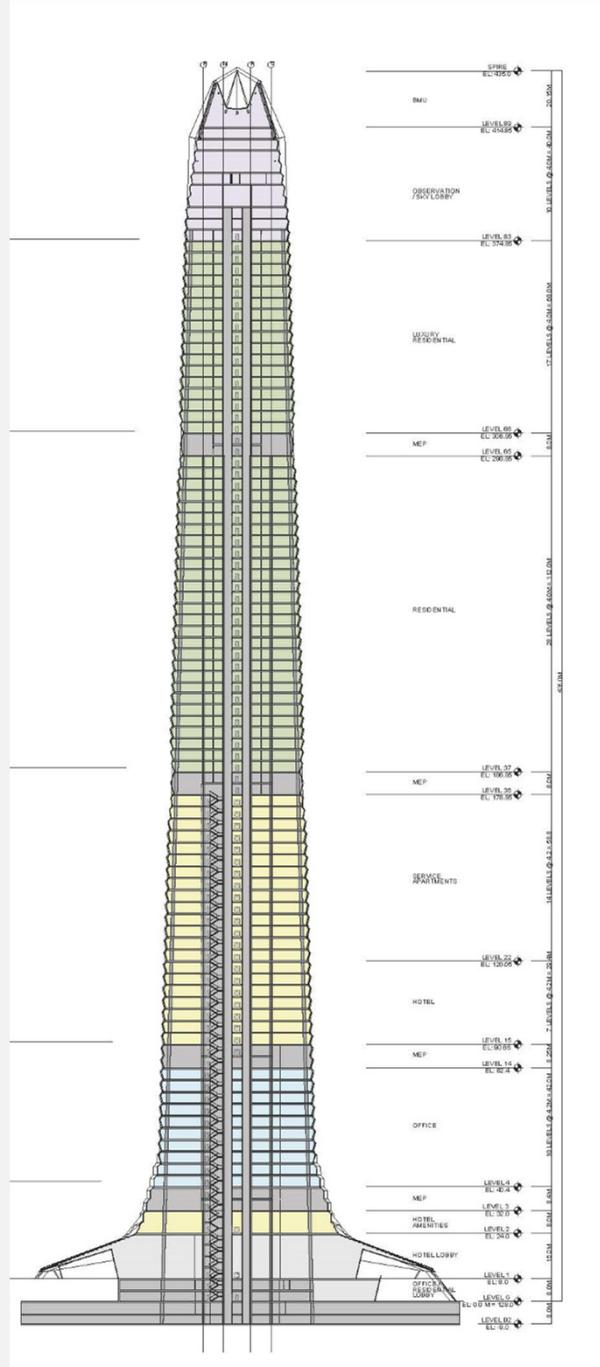
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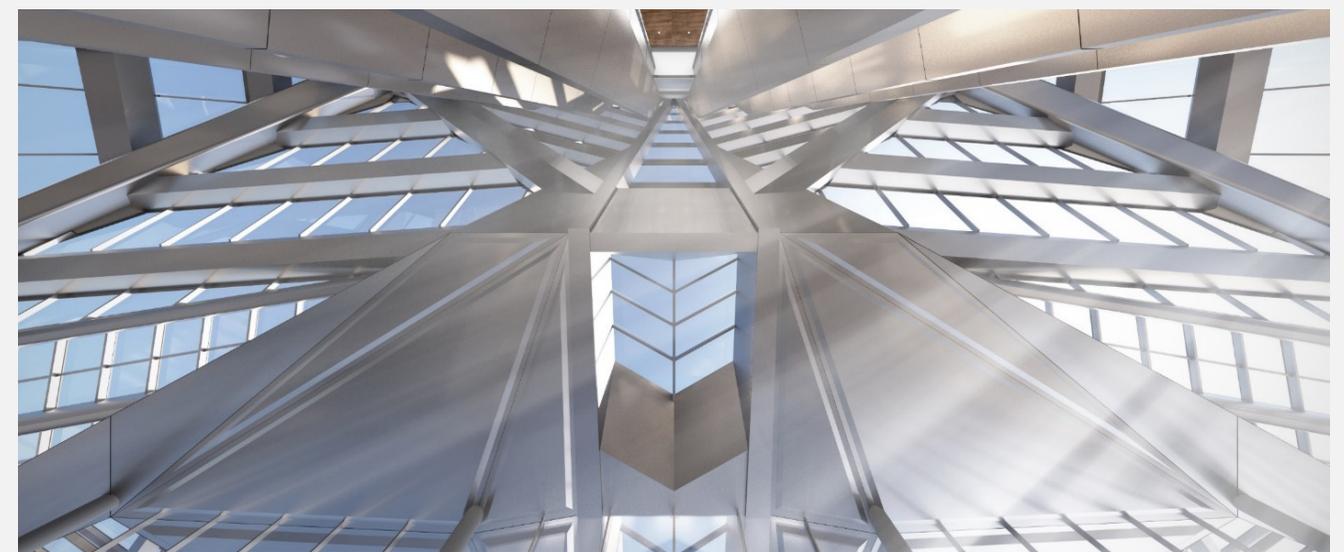
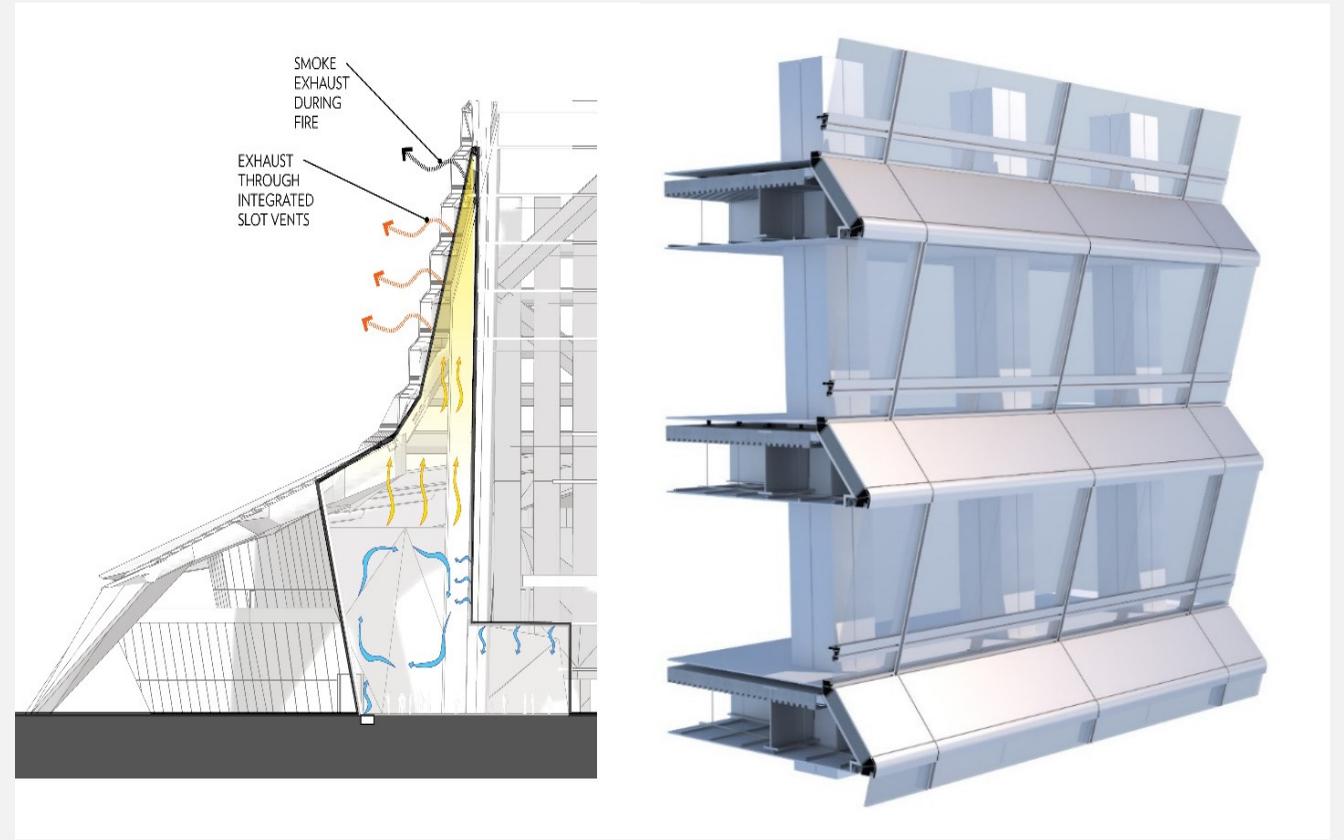
Akhmat Tower – DD Hand-Off to Architect of Record





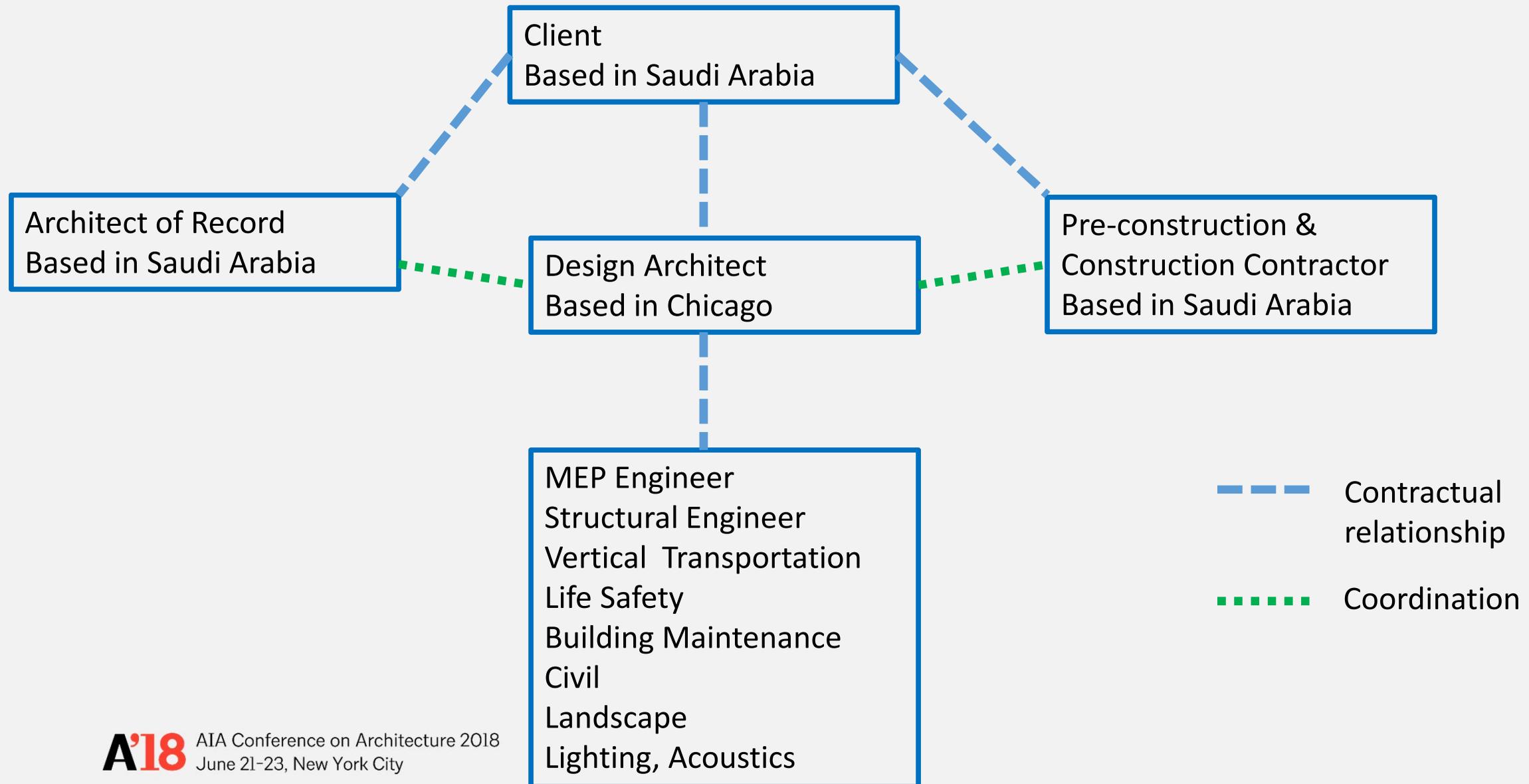
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Jeddah Tower – CDs with Construction Admin. [design review]

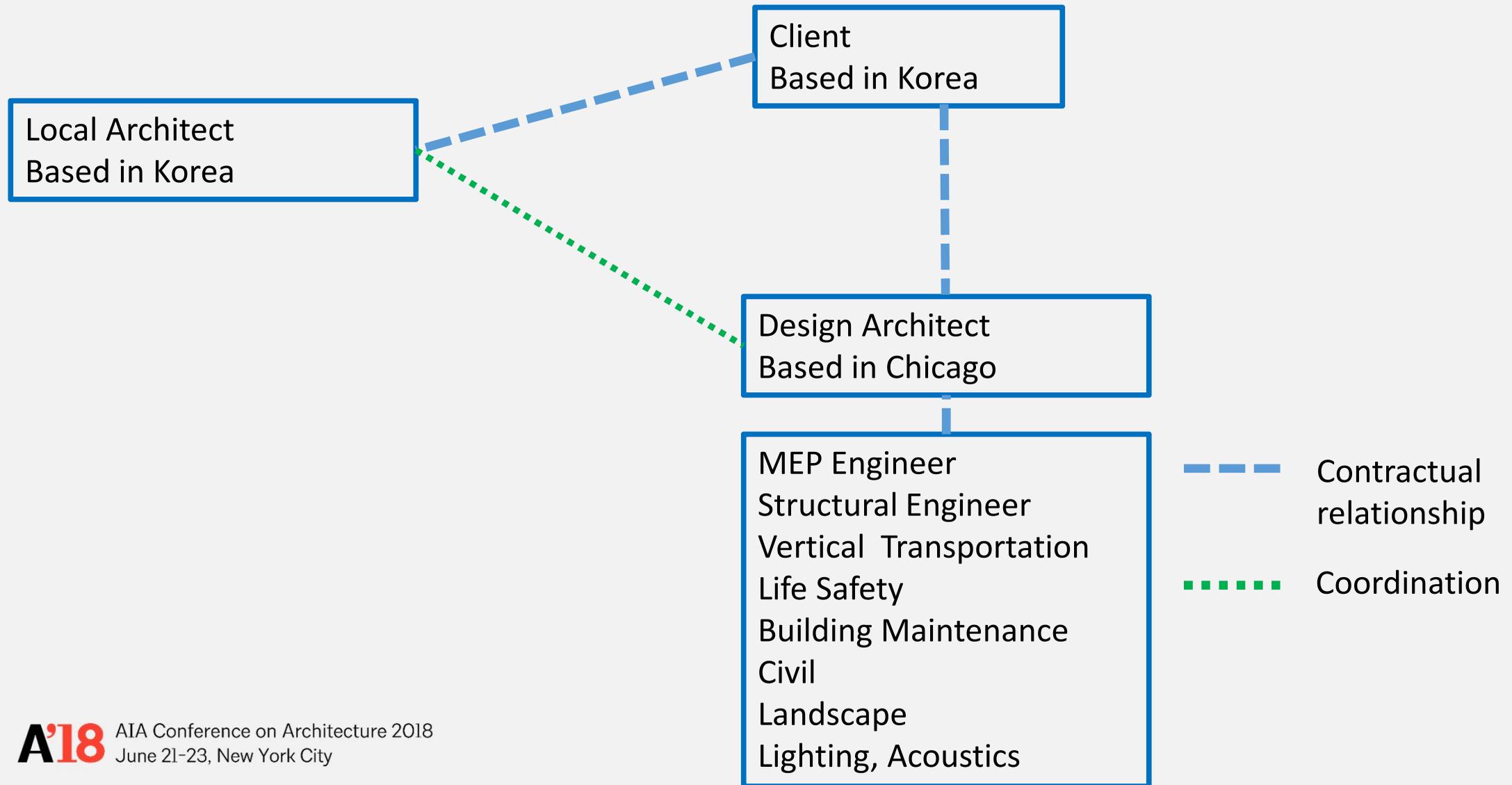






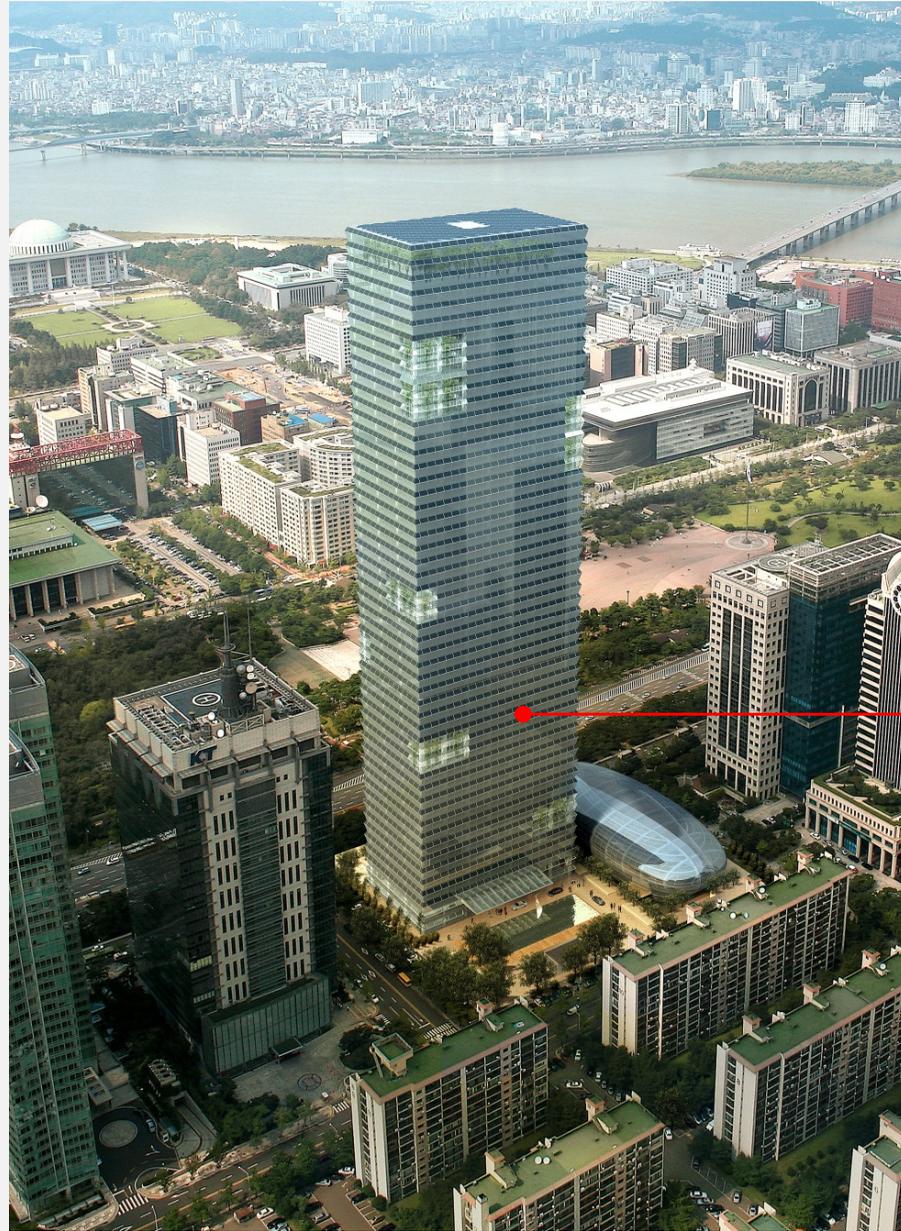
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FKI Headquarters – DD Hand-off to Architect of Record, Design Review

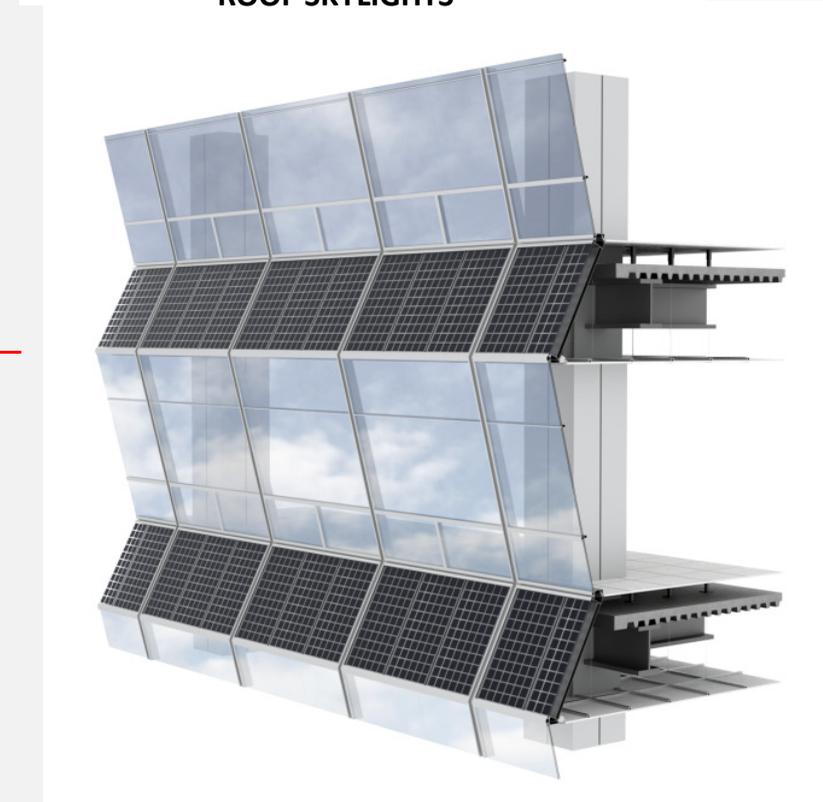




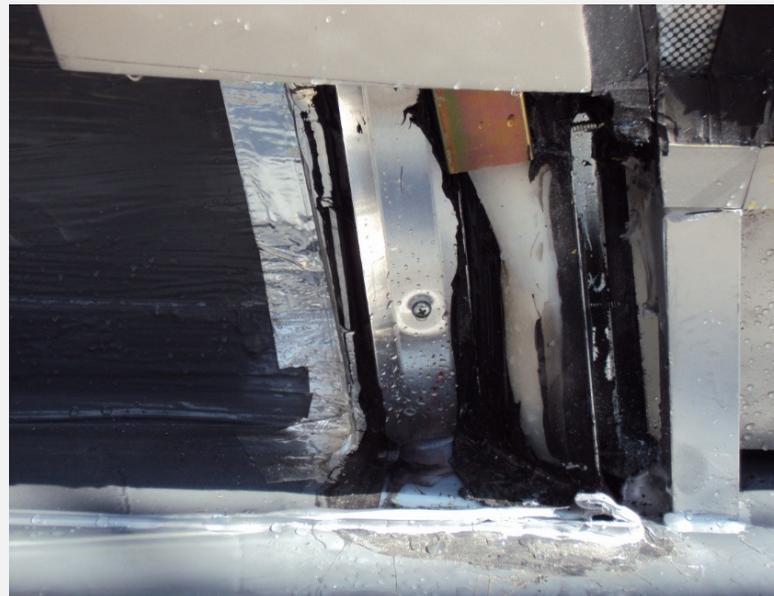
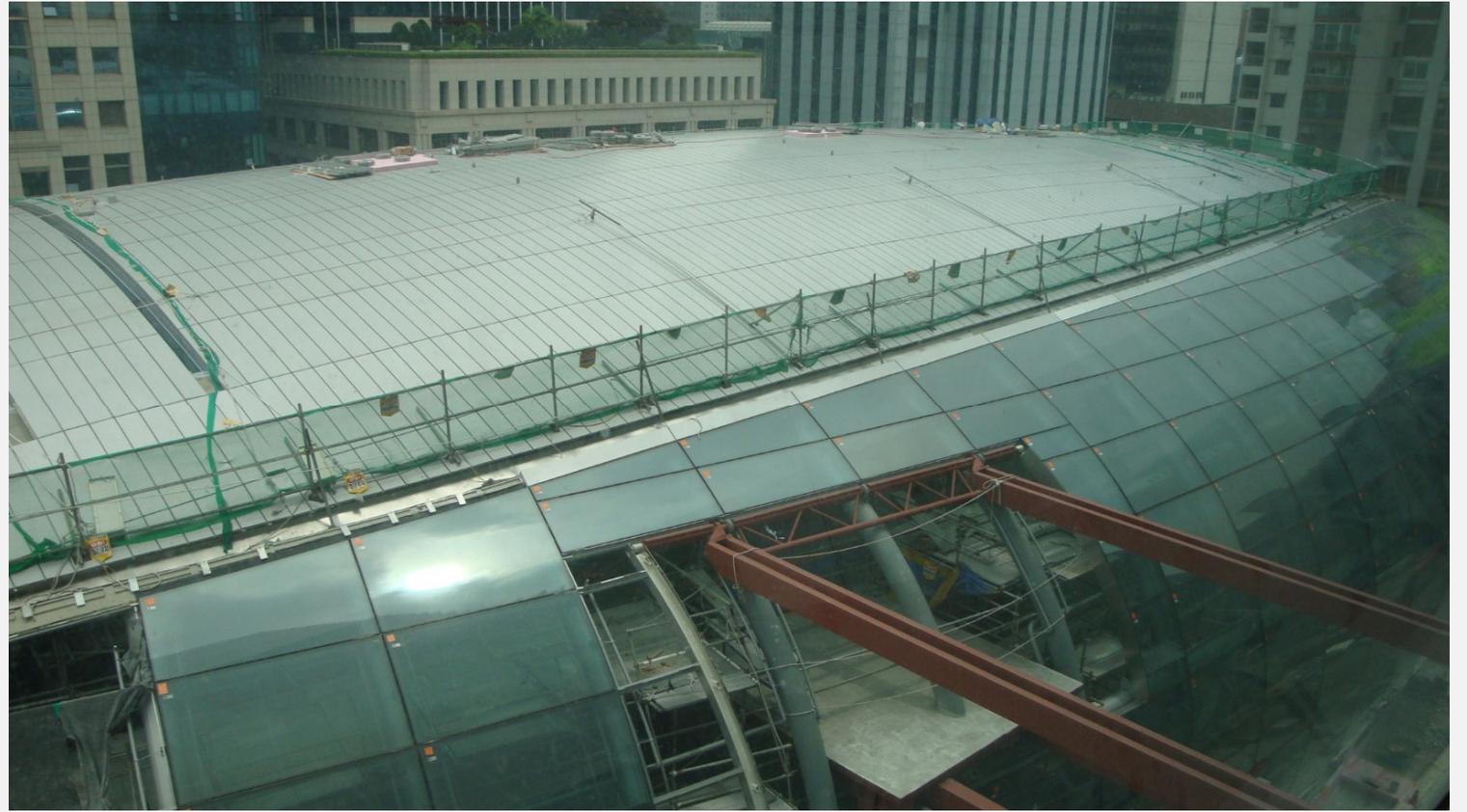
PODIUM TYPICAL EXTERIOR WALL



ROOF SKYLIGHTS



TOWER TYPICAL EXTERIOR WALL



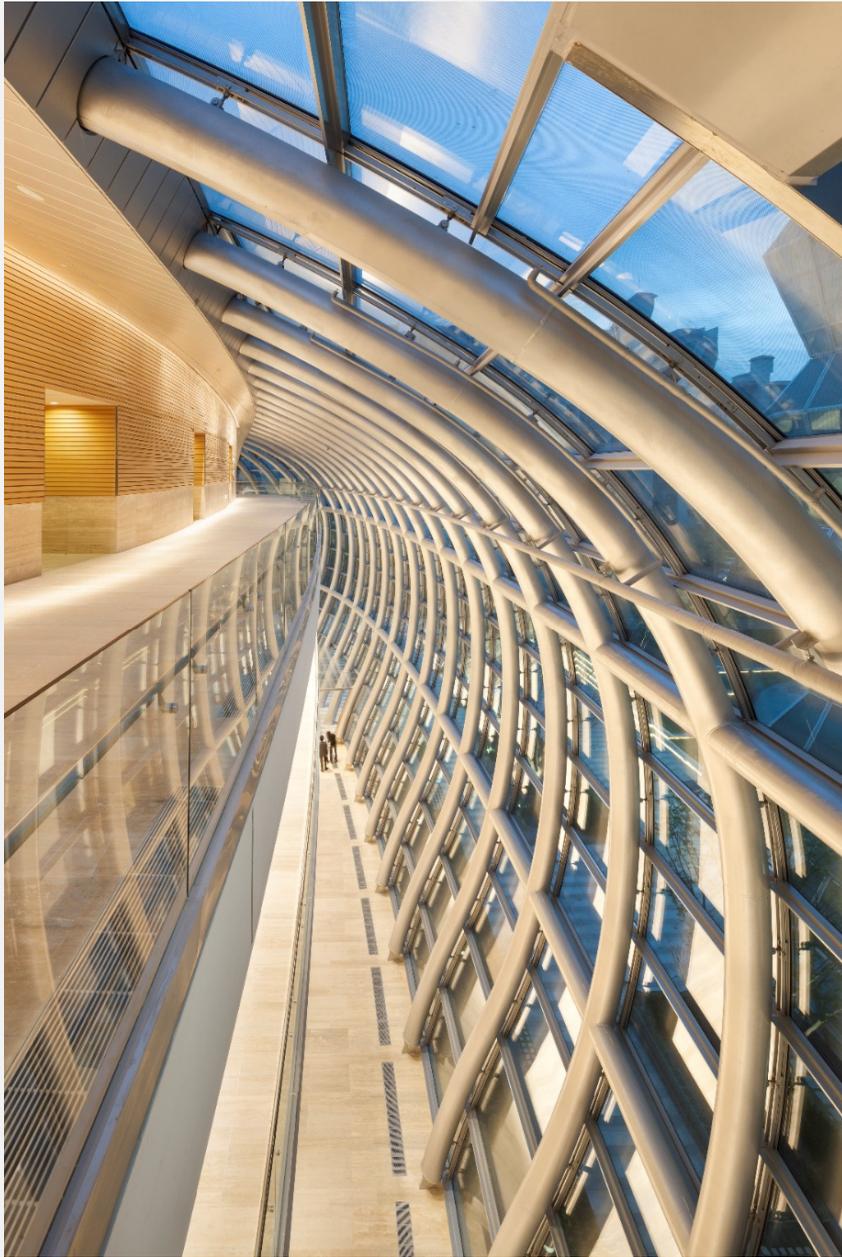
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Visual Mock-up during Schematic Design

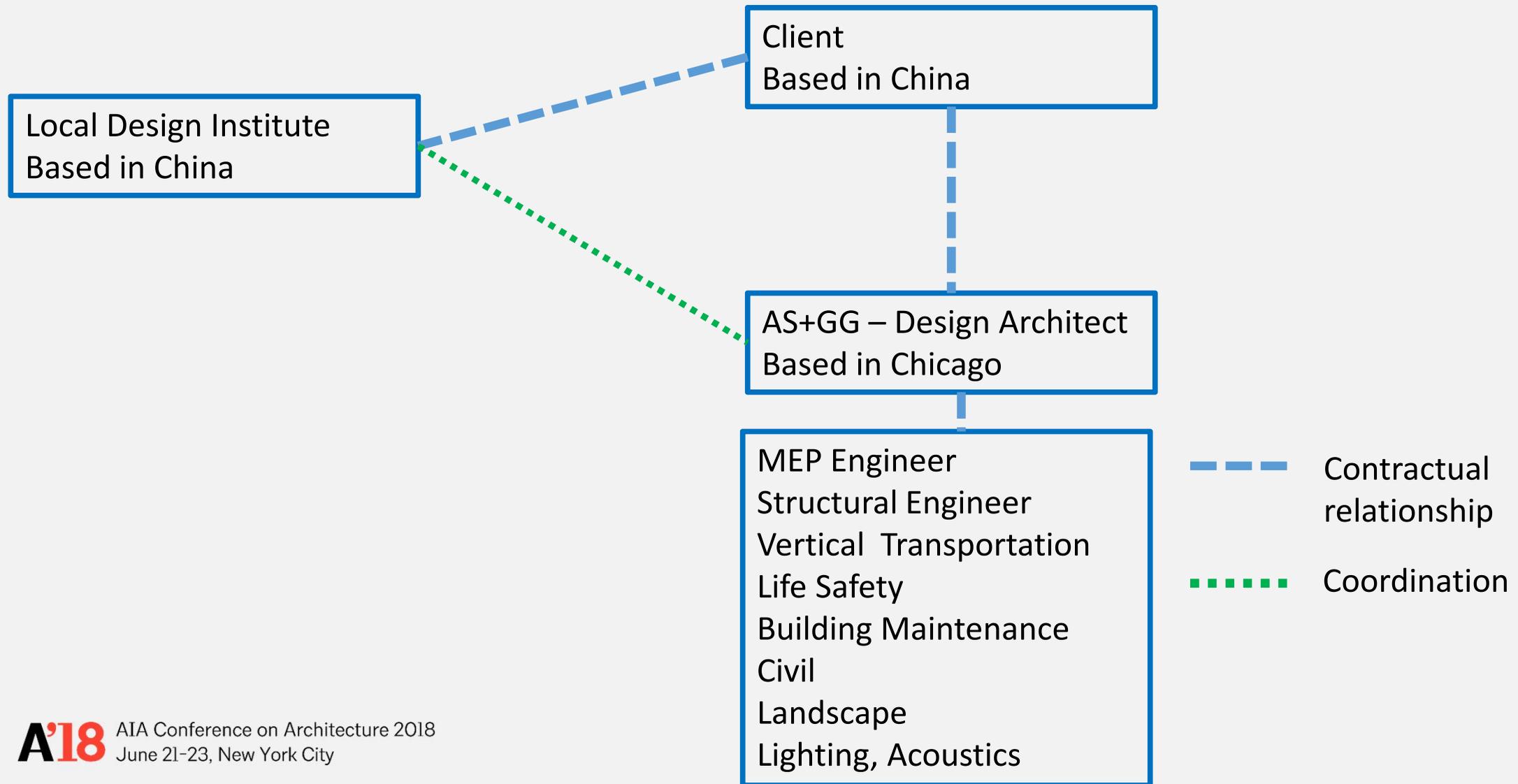


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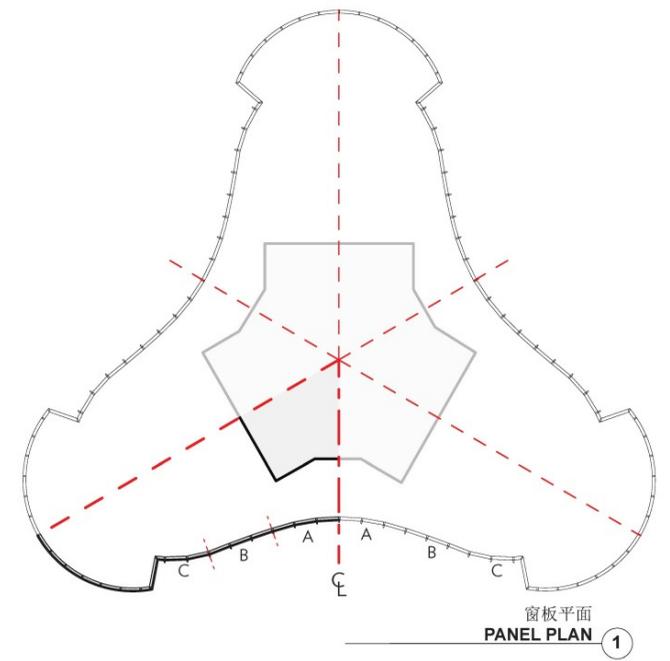
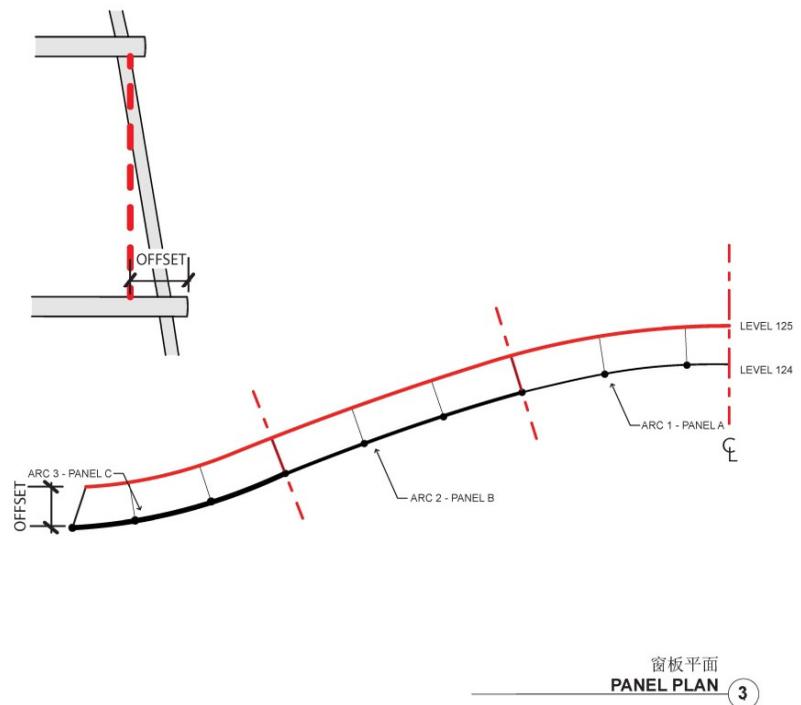
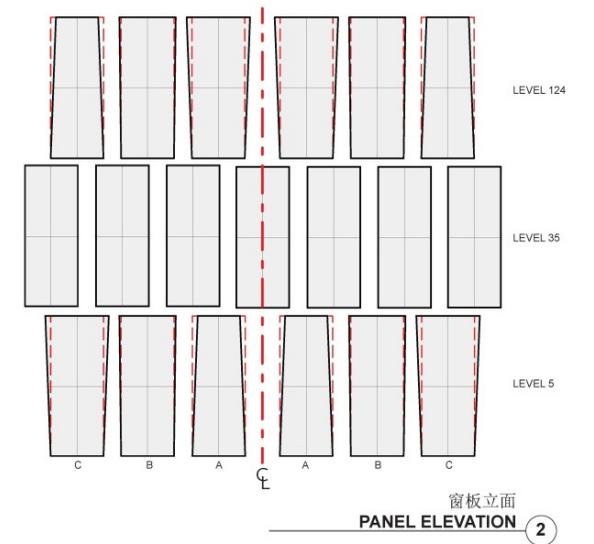
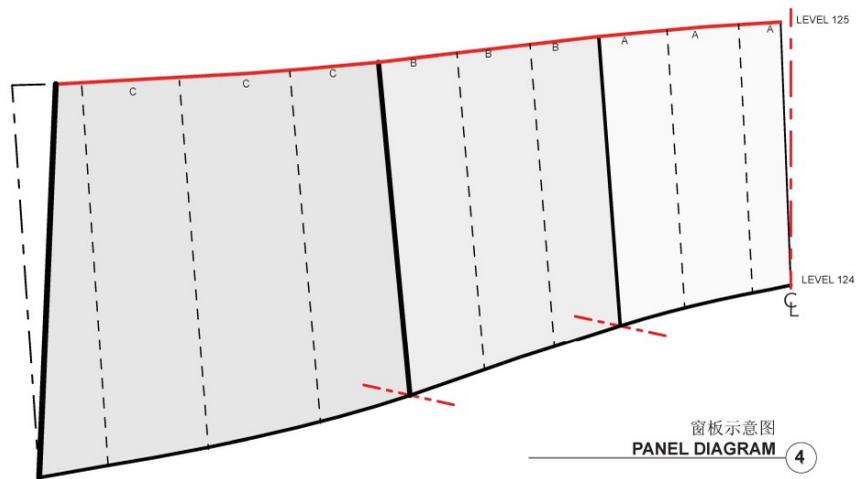
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Wuhan Greenland – DD Hand-off to Local Design Institute, Design Review, Construction Documents for Exterior Wall





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Contact Information

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2018 Vice Chair, AIA International Practice Committee

sarabeardsley@smithgill.com

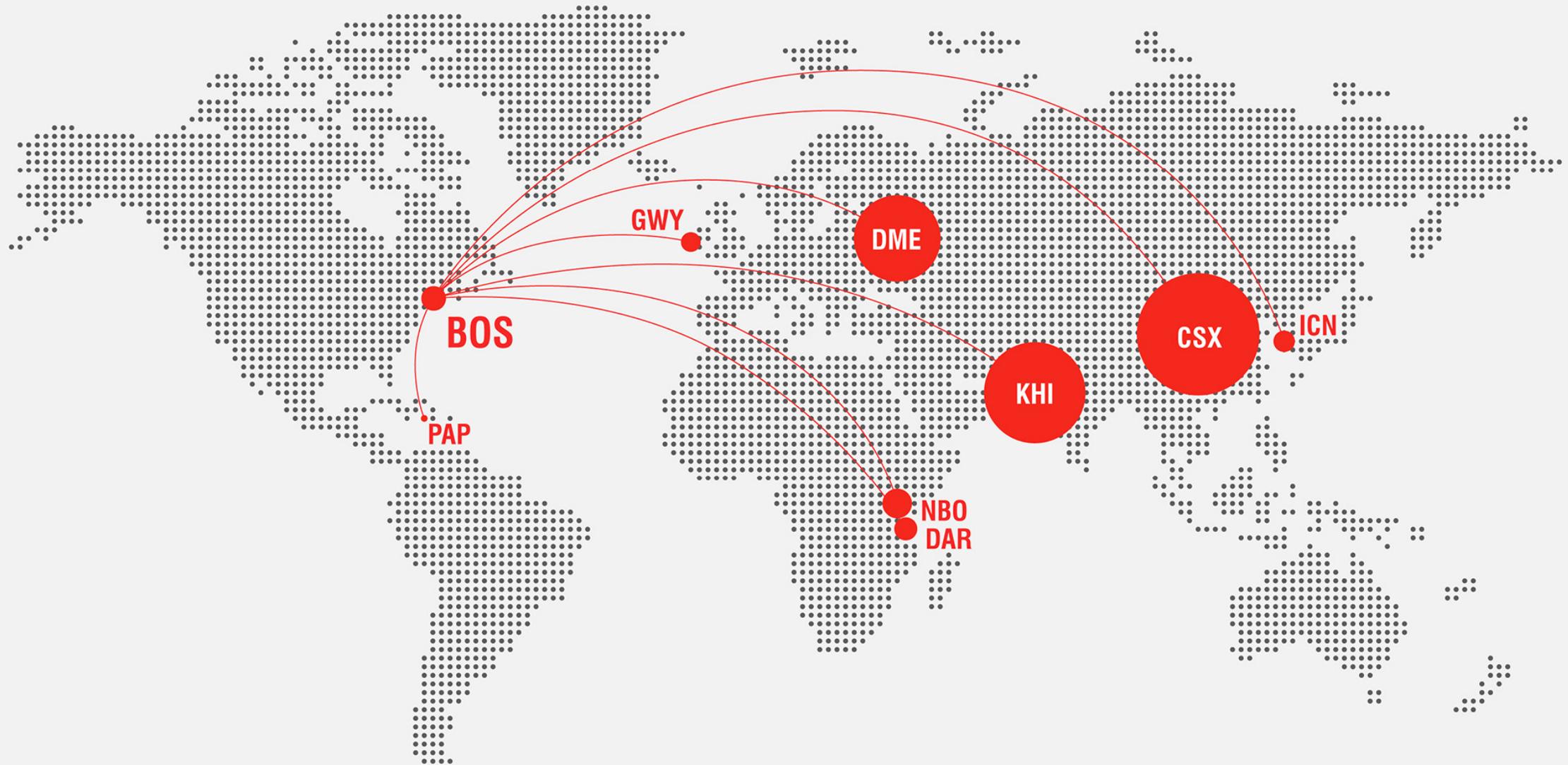
Presenter 3

Allison Laas

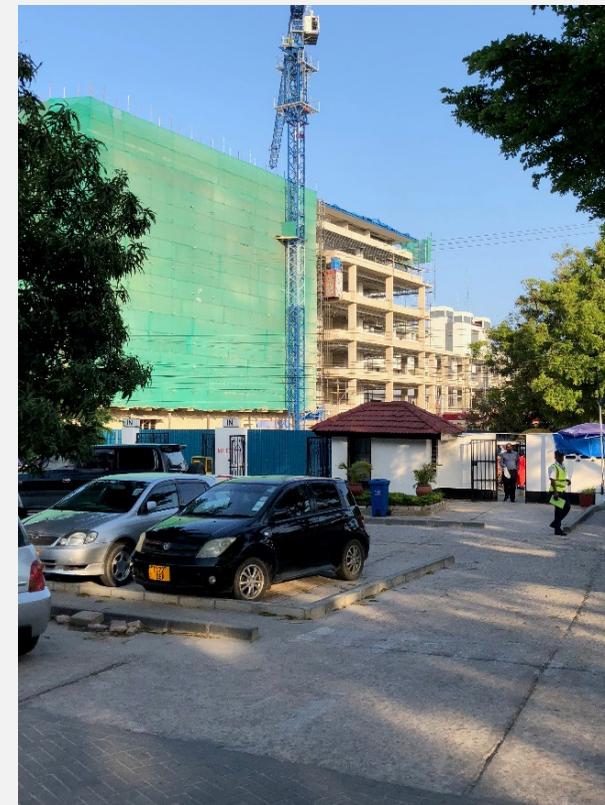
Associate, Payette

International projects completed, under construction, or in design since 1985:

13 million SF







Partnerships



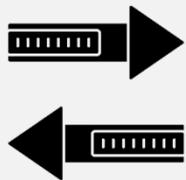
Partnerships



Contractual Relationships

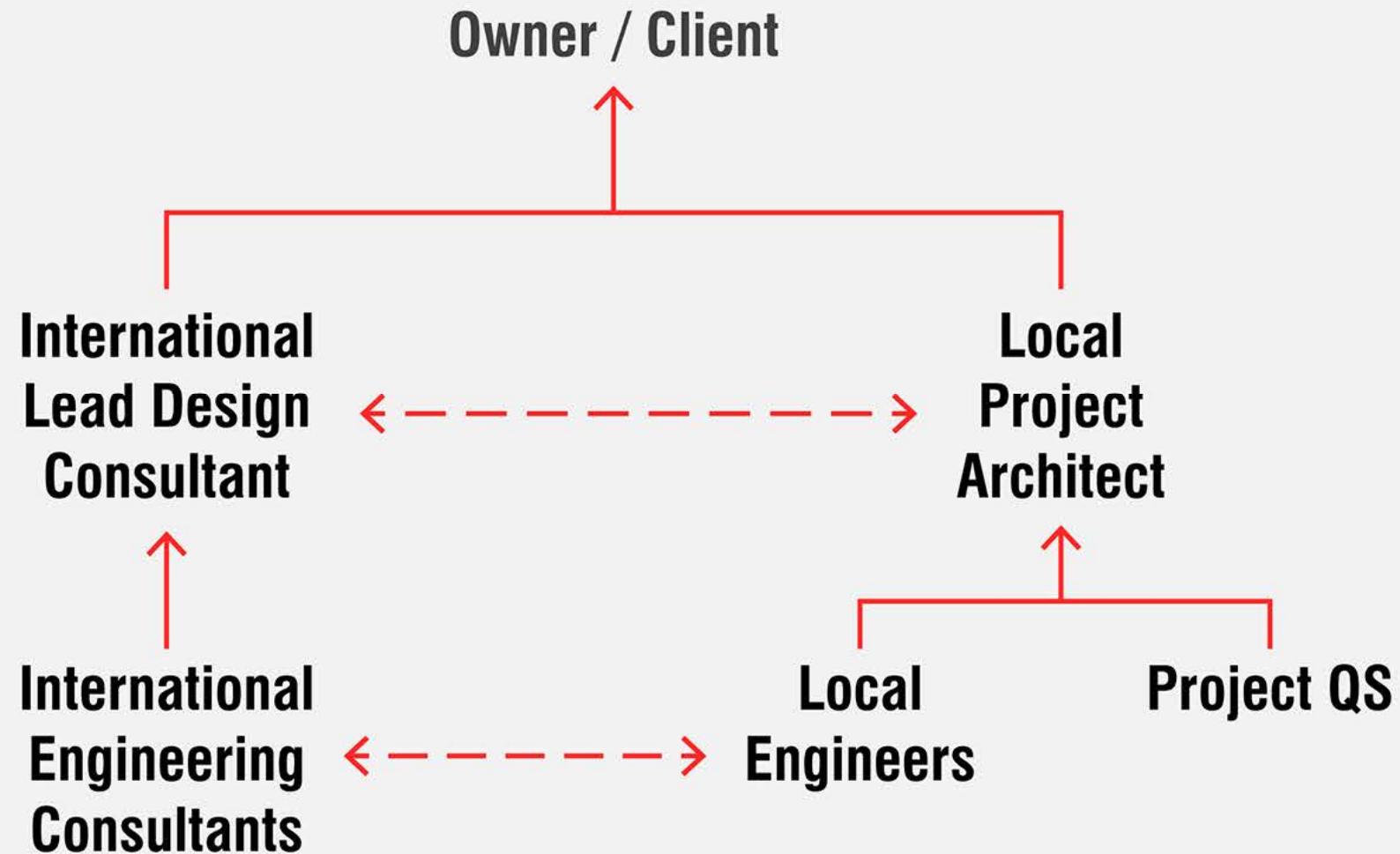


Expectations

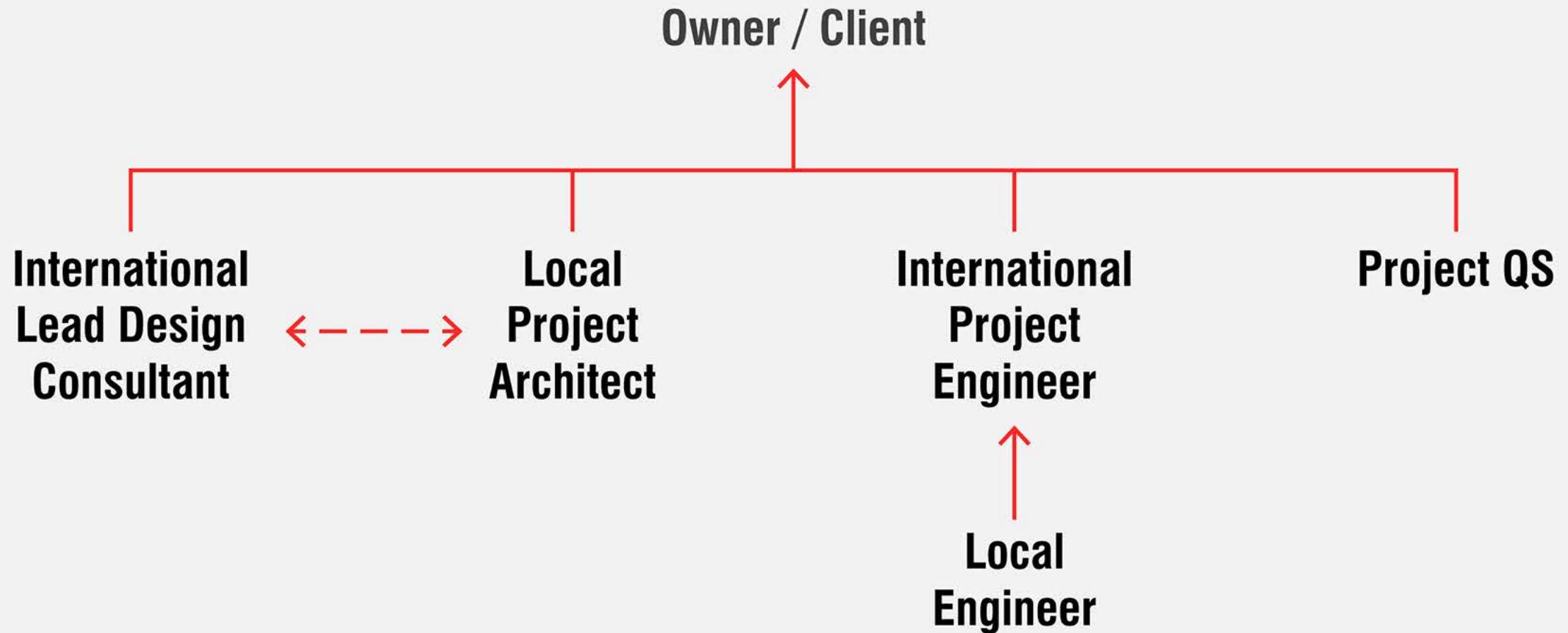


Communication

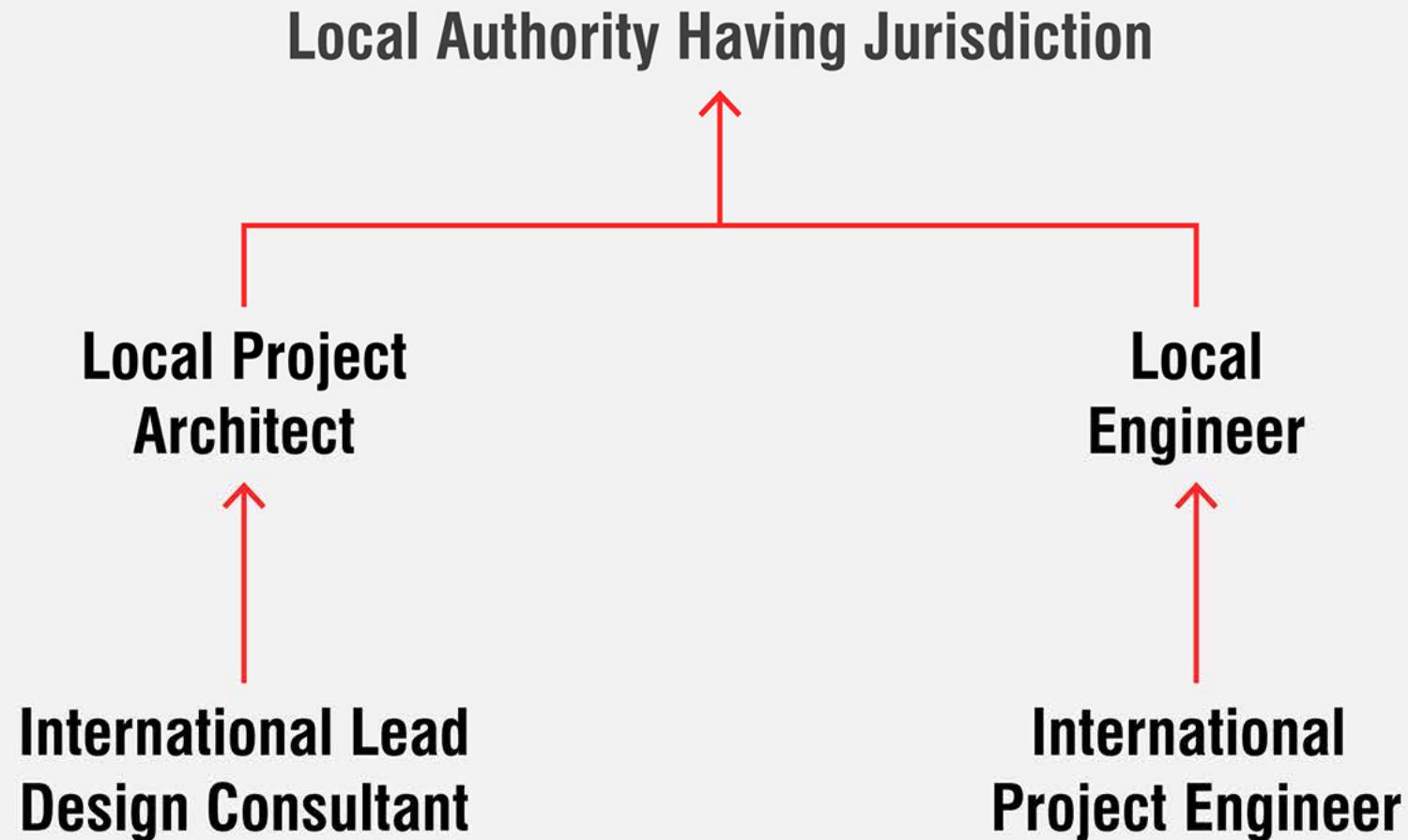
Contractual Relationships



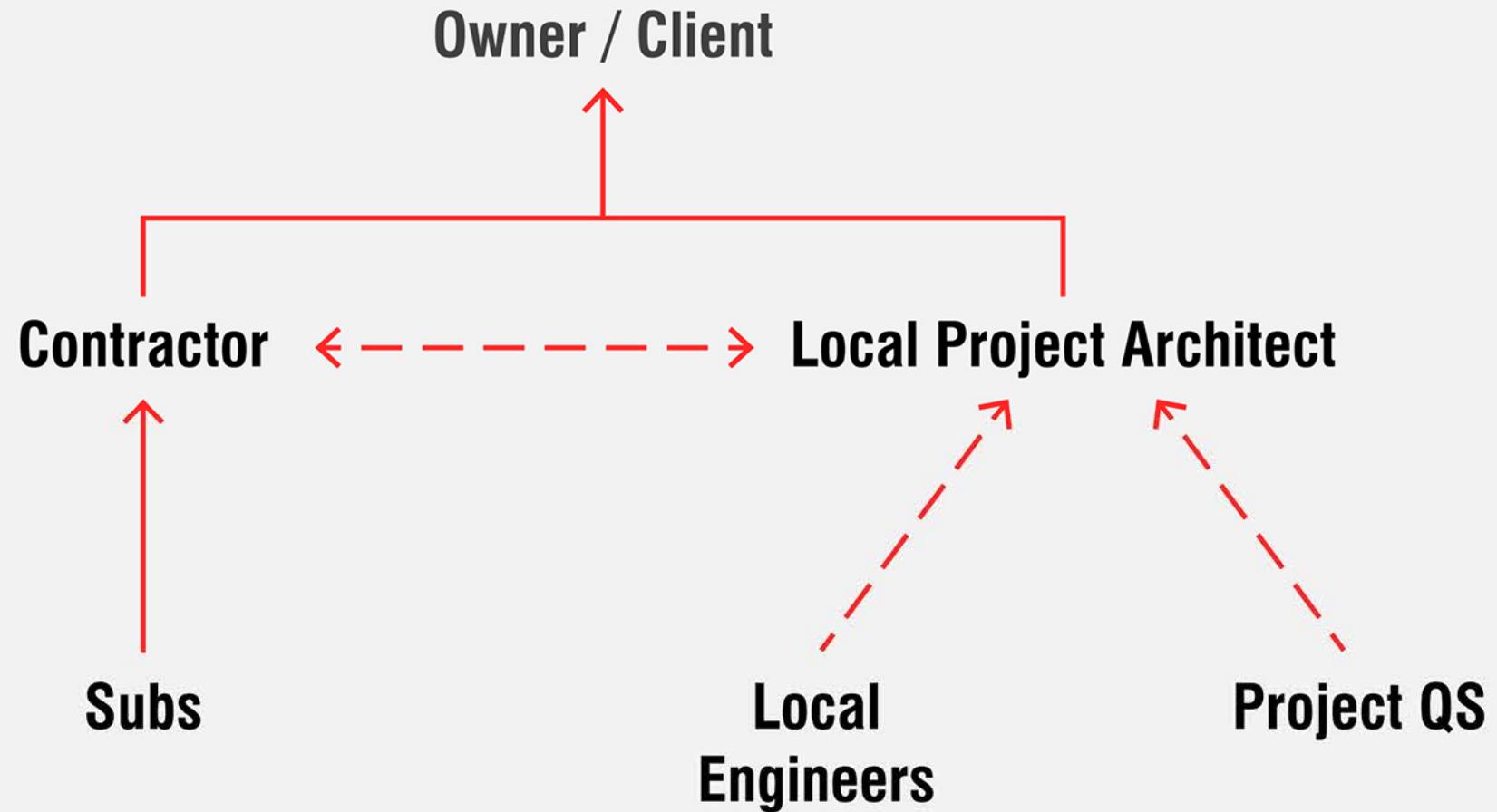
Contractual Relationships



Relationships for AHJ



Relationships for Construction



Expectations

EXAMPLE 1

	PLANNING / PROGRAMMING	CONCEPT DESIGN	SCHEMATIC DESIGN	REGULATORY PLANNING / CODE REVIEW	DETAILED DESIGN DEVELOPMENT	CONSTRUCTION DOCUMENTATION	CONSTRUCTION IMPLEMENTATION
International Architect	Lead design	Lead design	Lead design	Support / Review	Support / Review	Support / Review	Support / Review
International Consultant	Lead design	Lead design	Lead design	Support / Review	Support / Review	Support / Review	Support / Review
Local Architect	Information only	Information only	Support	Lead design	Lead design	Lead design	Lead design
Local Consultant	Information only	Information only	Information only	Lead design	Lead design	Lead design	Lead design
Contractor	x	x	Support / Review	Support / Review	Support / Review	Support / Review	Lead implementation

EXAMPLE 2

International Architect	Lead design	Lead design	Lead design / handoff	x	x	x	x
International Consultant	Lead design	Lead design	Lead design / handoff	x	x	x	x
Local Architect	x	x	x	Lead design	Lead design	Lead design	Lead design
Local Consultant	x	x	x	Lead design	Lead design	Lead design	Lead design
Contractor	x	x	x	x	x	x	Lead implementation

Expectations

APPENDIX 1: Scope of Services

NORMAL SERVICES

Key to Responsibility Matrix:

- R Responsible:** Means the party is responsible for the proper and timely completion of the task in question, including responsibility for the proper and timely performance of the other parties of their respective roles for such task.
- S Support:** Means providing to a project and timely manner the advice or services under the responsible party's general area of responsibility, reasonably required by the responsible party to complete such task.
- C Review and Comment:** Means providing to a project and timely manner such comments as the responsible party may have in regard to documents or other materials submitted by the Responsible party for the specific task.
- I Information only:** Means a party is entitled to be informed in regard to the task in question, but has no duty or obligation to contribute or comment to it.
- N No Role**

Scope of Services			
Item	Description of Services	Responsibility	
		Lead Consultant	Project Architect
1.	GENERAL CONDITIONS		
1.1	The Lead Consultant shall: <ul style="list-style-type: none"> 1) coordinate, manage, administer, train, supervise and direct all the project team members in the design, construction and commissioning of the project, including all the responsibilities of the project team members as set forth in the agreement; 2) provide a single, unified, and complete response to all questions, requests, and information requests, including all the responsibilities of the project team members, which the Lead Consultant is to coordinate, manage, administer and control. 	R	N
1.2	The Lead Consultant's performance of its Services is	R	R
1.3	Lead Consultant shall review the Project Architect's design	R	S
1.4	Project Architect shall make progress submissions on a	R	R

Expectations

Payette

06 Floor Plan Checklist

Floor Plan Checklist by Phase

Small scale (1/8" scale minimum) overall floor plans. Typically the 1/8 scale plans provide the overall view of the project and are supplemented by highly developed, detailed, and dimensioned 1/4 scale plans.

Establish design criteria for floor plan elements

- Communication closets
- Exterior envelope
- Material management
- Structural bay sizing, typical column sizes, and specialty floor loading conditions)

- Indicate exterior walls and fenestration items (curtainwall, doors, louvers, overhead coiling doors/ grilles, removable panels, storefronts, and windows). Indicate major materials graphically.

- Indicate structural grid and structural system (columns/ posts, depressed/ raised slabs, expansion joints, foundation walls/ pilasters, floor openings, floor penetrations, and lateral bracing/ shear walls)

- Indicate building core elements (chases, elevators, escalators, housekeeping, laundry/ trash chutes, recycling, shafts, stairs, toilet rooms, and trash)

- Indicate major MEP spaces (areaways, communication rooms, electrical rooms, fire pumps, and mechanical rooms)

- Indicate partition with interior borrowed lights, doors and sidelights

- Indicate casework (cabinets, counters, fixed seating, paneling, reception desks, and work stations)

- Indicate millwork (handrails, guardrails, railings, paneling, and shelving)

- Indicate specialty items (access flooring, bumper rails, chalk/ marker/ tackboards, corner guards, fire extinguishers and cabinets, floor gratings/ mats, ladders, lockers, operable partitions, and toilet compartments)

- Indicate equipment
 - Audio-visual (projection screens and projectors)
 - Animal facility(cage wash equipment, cage racks, and biological cabinets)
 - Food service (cooking equipment, cleaning and disposal equipment, ice machines, and walk in coolers and freezers)
 - Healthcare (biological safety cabinets, freezers, fume hoods, incubators, pneumatic tube systems, refrigerators, and sterilizers)
 - Laboratory (biological safety cabinets, controlled environmental rooms, freezers, fume hoods, incubators, refrigerators, and sterilizers)
 - Loading dock (levelers, lifts, seals, and shelters)

Pre-Design
Schematic Design
Design
Development
Contract Documents

Payette

07 Roof Plan Checklist

Roof Plan Checklist by Phase

Small scale (1/8" scale minimum) roof plans.

Establish design criteria for roof plan elements

- Air/ vapor/ water barrier requirements
- Fire ratings
- Roofing system(s)
- Structural capacity of roof to accommodate roof ponding
- Thermal insulating values (roofs and walls)
- Window washing strategy
- Life line and fall restraint strategy
- Owner's insurance requirements

- Indicate roof perimeter (copings, gravel stops, railings, and parapets). Indicate roof penthouse exterior wall and fenestration.
- Indicate typical dimensions and typical detail references
- Indicate all dimensions, detail references, keys and drawing notes

- Indicate structural grid and structural system (columns/ posts, depressed/ raised slabs, expansion joints, lateral bracing/ shear walls, roof openings, and roof penetrations).

- Indicate structural steel equipment dunnage/ support systems. Indicate typical dimensions and typical detail references.
- Indicate all dimensions, detail references, keys and drawing notes

- Indicate major roof mounted elements (equipment screens, hatches, and skylights).

- Indicate all roof mounted elements (flagpoles, ladders/ safety cages, life line/ fall restraint system, and window washing equipment supports).

- Indicate steep slope roof elements (downspouts/ leaders, eaves, eave vents, gutters, ridges, ridge vents, snow guards, and splash blocks).

- Indicate fire protection elements (roof hydrants)

- Indicate plumbing elements (hose bibbs, plumbing vents, roof drains, and roof overflow drains)

- Indicate HVAC elements (air handling units, chillers, cooling towers, exhaust fans, and ventilators)

- Indicate major electrical elements (emergency generator).

- Indicate all electrical elements (aircraft warning lights, antenna, roof outlets, roof lighting, and lightning protection system).

- Indicate typical dimensions and typical detail references

- Indicate all dimensions, detail references, keys and drawing notes

- Indicate roof drains or gutters

- If structure cannot support roof ponding, indicate roof overflow drains and/ or scuppers.

- Indicate roof high points, low points and direction of slope to drain

Pre-Design
Schematic Design
Design
Development
Contract Documents

Payette

08 Exterior Elevation Checklist

Exterior Elevation Checklist by Phase

Small scale (1/8" scale minimum) overall exterior elevations showing the entire elevation. These elevations should include all items from the footings/ foundations up to the roof structures.

Establish design criteria for exterior enclosure elements

- Air/ vapor/ water barrier requirements
- Clearances/ tolerances
- Fire ratings/ safing requirements
- Sealant joint design
- Solar control/ window treatment
- Structural requirements (dead load, live load, wind load, seismic control)
- Thermal insulation and thermal break requirements

- Indicate building setbacks and profiles
- Indicate equipment screens, fascias, ladders/ safety cages, lightning protection, parapets, penthouses, railings, signage, skylights, soffits, and window washing equipment. Add typical dimensions and partial drawing notes

- Indicate loading dock items (bollards, bumpers, lifts/ levelers, overhead doors, signal lights, signs)
- Indicate all dimensions, detail references, keys, and drawing notes

- Indicate general fenestration items (curtainwall, doors, louvers, removable wall panels, storefront, vents and windows)

- Indicate all fenestration items. Add typical dimensions and partial drawing notes

- Indicate all dimensions, detail references, keys, and drawing notes

- Indicate fire protection items (fire beacon, fire department connection, lock box, master box, sprinkler gong, and test connection)

- Indicate plumbing items (gas meters, gas vents, hose bibbs, and roof overflow drains)

- Indicate HVAC items (chillers, cooling towers, exhaust stacks, fuel oil fill and vent)

- Indicate electrical items (automatic door operators, door bells, emergency generator, exterior lighting, electrical outlets, and intercoms)

- Indicate security items (cameras, card readers, and security phones)

- Indicate all dimensions, detail references, keys, and drawing notes for mechanical, electrical and security items

- Indicate general existing and finished grades

- Indicate detailed existing and finished grades, coordinated with topography. Indicate exterior landings, ramps, site walls, and stairs. Add typical dimensions and partial drawing notes.

- Indicate all dimensions, detail references, keys, and drawing notes

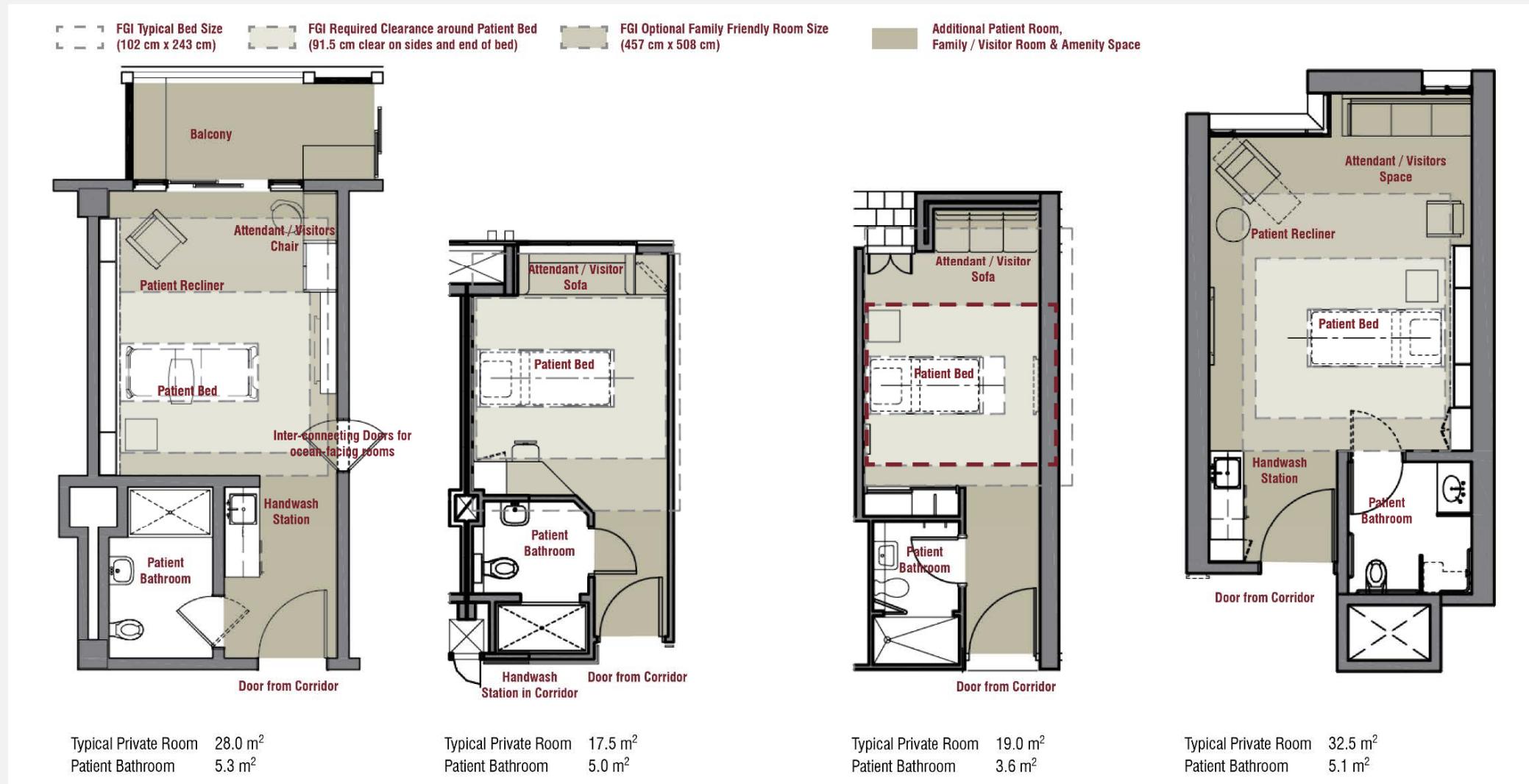
- Indicate structural grid

Pre-Design
Schematic Design
Design
Development
Contract Documents

Expectations



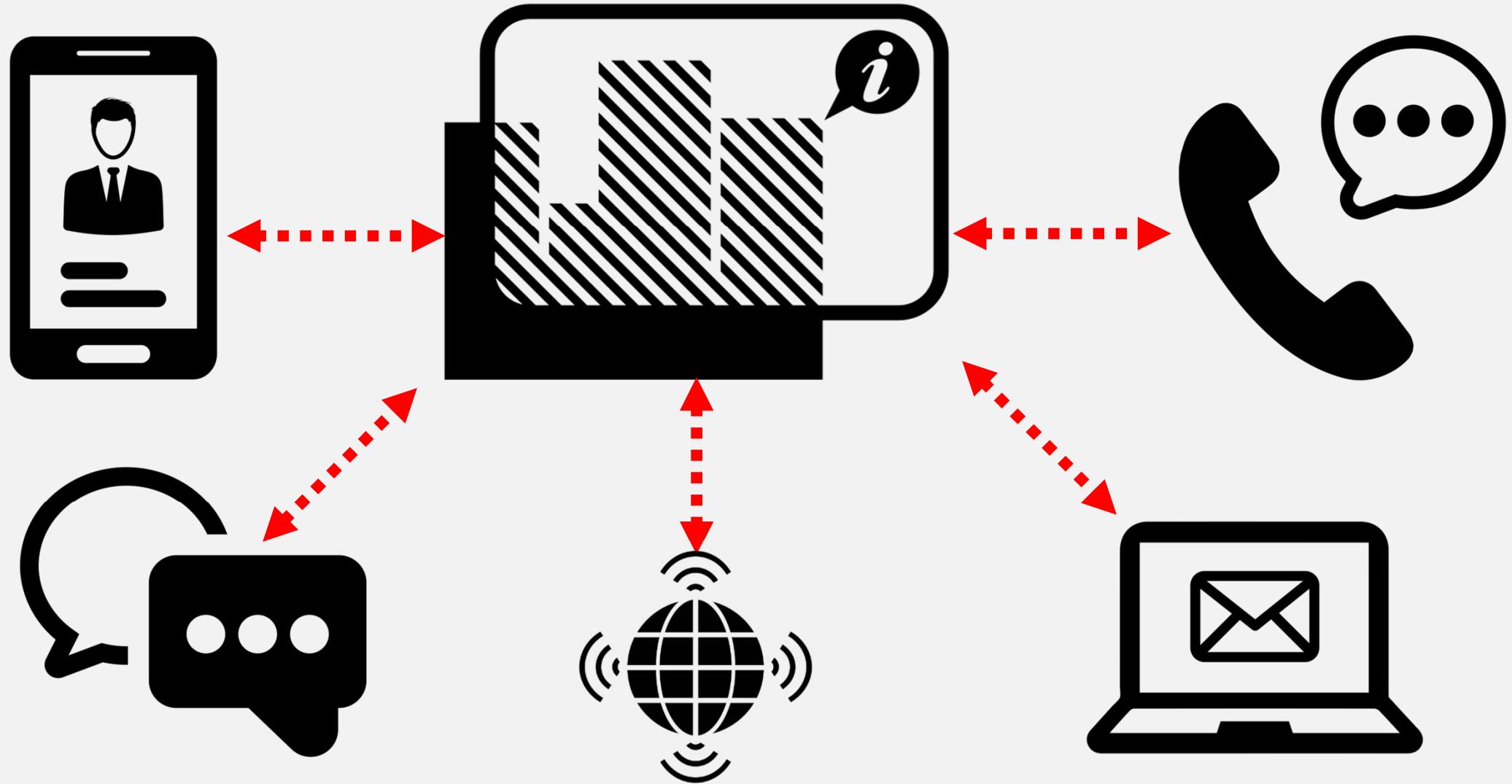
Communication



Communication

Item no.	Action required	Responsibility	Date initiated	Status	Target date	Date completed	Notes
022	Regular communication between Payette and Symbion.	Symbion / Payette	18-Jan-18	Record			Payette and Symbion to communicate on a daily basis to ease pressure on formal design reviews and continue design momentum as needed with tight schedule.
023	As part of Scheme package review, Payette will identify areas that may need dropped slabs for raised flooring and other key coordination items to be addressed by Symbion/HH.	Payette	18 Jan 18	Closed5	2 Feb 18	23 Feb 18	Coordination and email communication ongoing between Symbion and Payette regarding dropped slab/raised floor locations. Payette comments on Scheme Design drawings include requests for updated information on dropped slab areas. 50% DD Structural Package included notes on dropped slab areas. Payette provided additional comments for Symbion review.
024	AKU to confirm that two design reviews are not required from Payette during Detailed Design given the tightness of the design schedule.	AKU / Payette	18 Jan 18	Closed4	24 Jan 18	9 Feb 18	Payette and Symbion to communicate on a daily basis to ease pressure on formal design reviews and continue design momentum as needed with tight schedule. As Payette has already reviewed a Detailed Design set for the previous scheme, the design review should focus on those items that have changed in the new scheme and are critical for coordination going forward. Payette and AKU to provide initial comments in one week from Scheme Design issue on 1 February. Payette issued Scheme Design review comments to
025	Water tank size increases, pump room addition, and plant room coordination	Payette / Symbion	29-Jan-18	Complete		26-Feb-18	Coordination between architecture and engineering on plant room layout ongoing. Water tanks and pump rooms included in Scheme Design Drawings.

Communication



Communication



2017
城市设计与设计城市
Urban Design And Designing Cities
蒋泳非

Communication



Contact Information

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<https://www.aia.org/resources/25876-aia-global-practice-primer>

Thank you!