



# HKU's Client Approach to MiC Pilot Projects

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# The BIG Concept



# Understand the Fundamental Principles

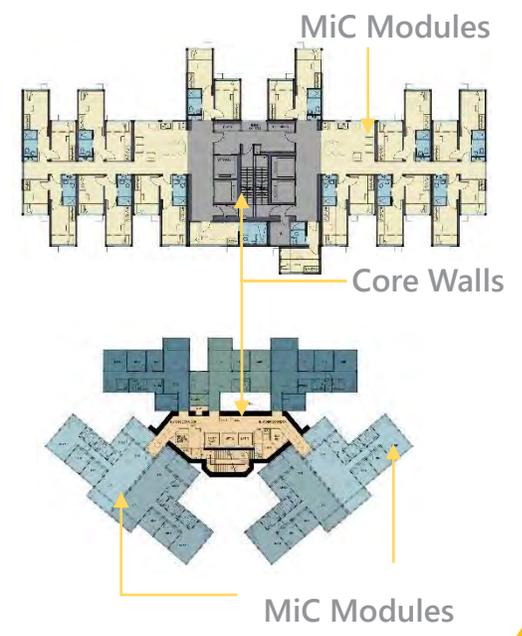


# Design Aspects

## What are our design considerations?

### 1. Repetitive

938 student places and 266 residential flats with approx. **1800** modules



# Design Aspects

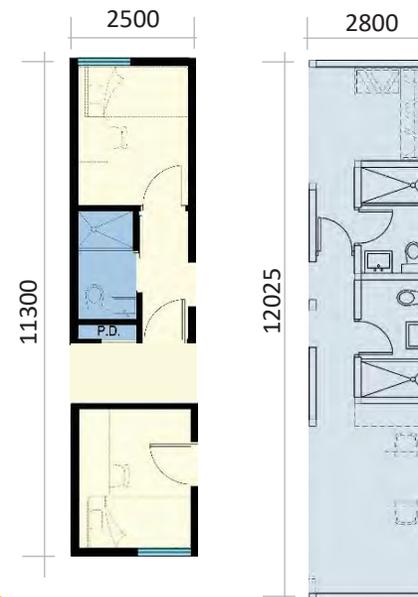
## What are our design considerations?

1.  
Repetitive

2.  
Compact

Maximum module length and width at approx. **12.2m x 2.8m**.

Designed with transportation consideration.



# Design Aspects

## What are our design considerations?

1.  
Repetitive

2.  
Compact

3.  
Weight

All module weight ranging from **20 - 25 tones** via the use of lightweight materials.



# Design Aspects

## Basic principles when planning MiC

1.  
Repetitive

2.  
Compact

3.  
Weight

4.  
Furnished

Units are **fully finished** and furnished utilizing the **improved quality** offered by MiC.



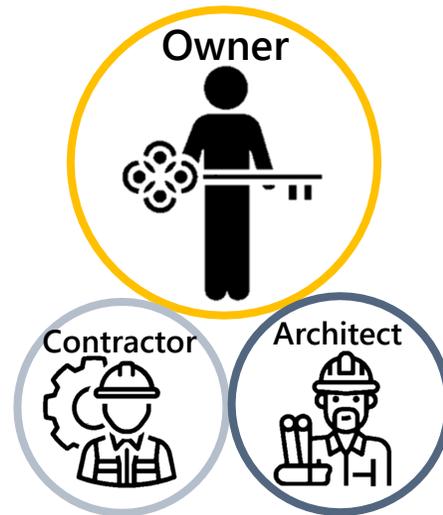


# Responsibility & Planning

## Key Team Players

# Responsibility & Planning

MiC Knowledge is required for all parties



# Planning

MiC Knowledge is required for all parties

## Site Selection

Appropriate site for logistic & module delivery

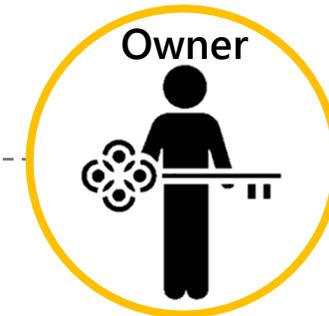
## Project Scale

Module quantity for economical production

## Project Type

Building typology with adequate repetition

Suitability



Project Conception Stage

# Planning

MiC Knowledge is required for all parties

## Project Programme

Identify the overall project programme and time frame

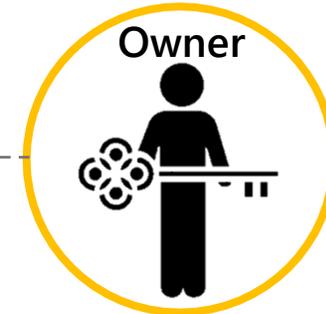
## Consultancy Engagement

Consider the appropriate timing to engage consultants

## Main Contractor Engagement

Engage main contractor & MiC supplier at appropriate time

Project Planning



Project Conception Stage

# Planning

MiC Knowledge is required for all parties

## Consultant Procurement

CITF application, liability  
differentiate & MiC Ready  
concept

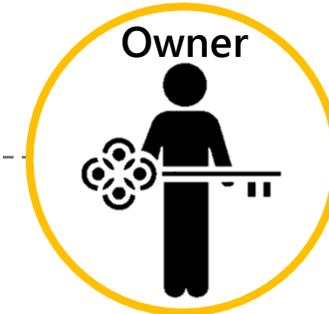
## Main Contract Procurement

Form of procurement for  
substructure & superstructure,  
DSC vs NSC MiC supplier

## Supply & Material Procurement

Type of MiC (steel/ concrete/  
hybrid) & degree of finishes

Procurement  
Strategy



Project Conception Stage

# Planning

MiC Knowledge is required for all parties

## Design Solution

Should have a draft MiC Ready Design Solution

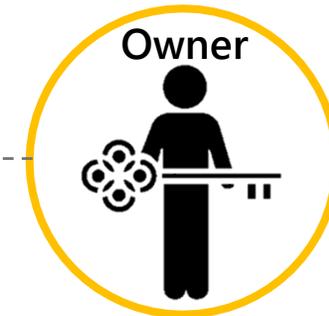
## Design Study

Preliminary review study on unit size & weight

## Logistic

Limitation on transportation restriction

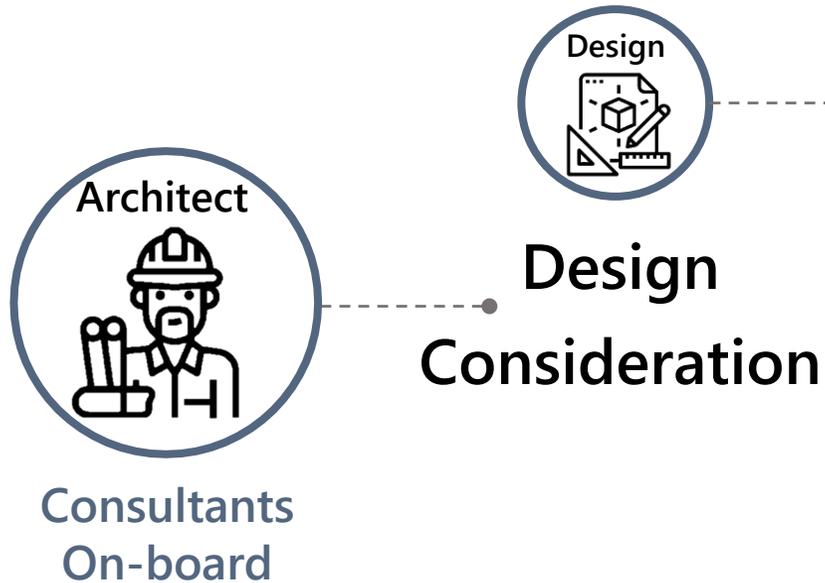
Design Consideration



Project Conception Stage

# Planning

MiC Knowledge is required for all parties



## Type of Module

Limited module type to generate max. repetition

## Module Division

Min. external joints for better waterproofing

## Material Selection

Appropriate material for weight consideration

## Module Size

Proper module size with transportation restriction

## Structural Issues

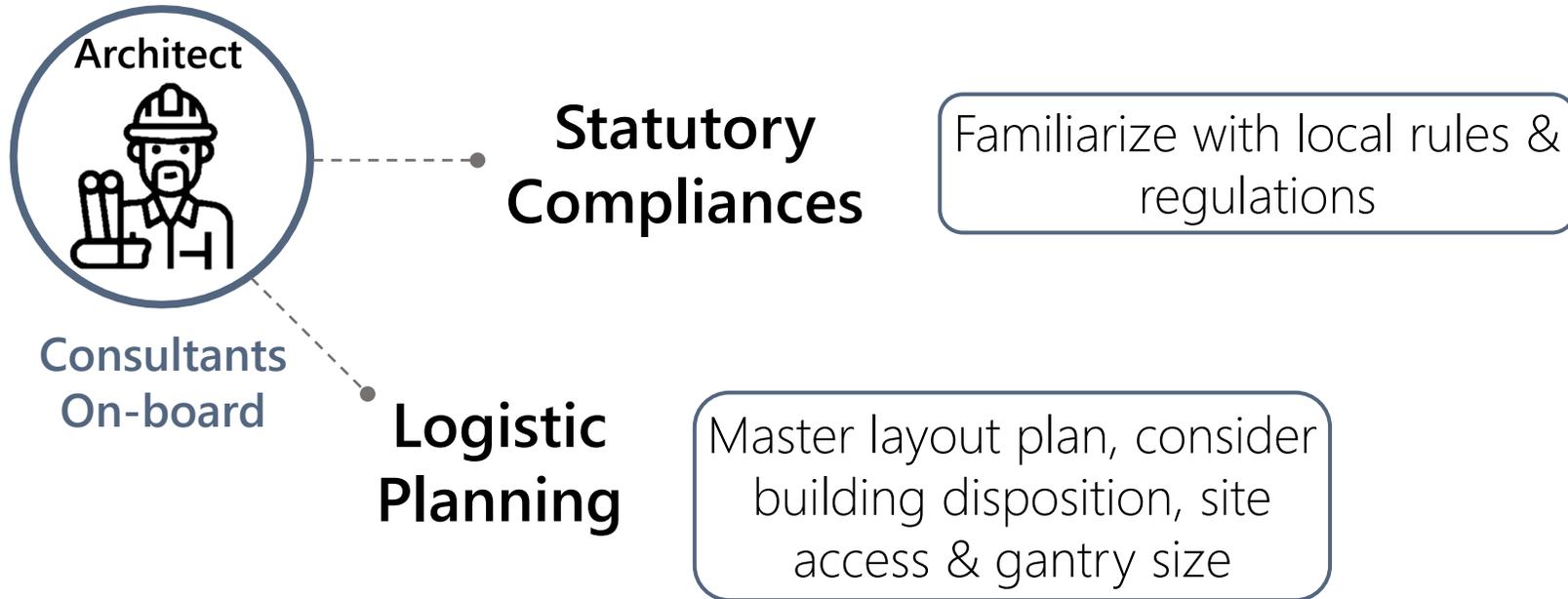
Structural core to cater for module installation

## E&M Routing

Minimize in-situ installation & module crossing

# Planning

MiC Knowledge is required for all parties



# Planning

MiC Knowledge is required for all parties

## Transportation Consideration

Max. module that does not required wide-load permit

## Delivery Programme

Deliver modules to suit manufacturing & installation

## Means of Delivery

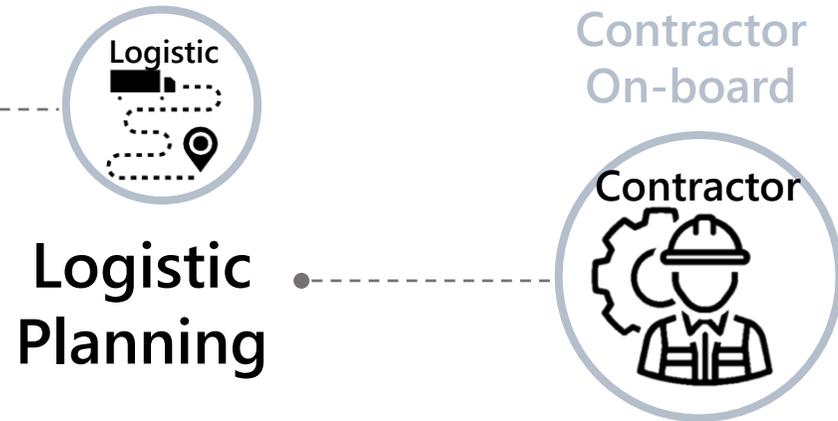
Decide routing & ways to maintain module integrity

## Temporary Storage

Consider holding area or Just-in-time delivery

## Procurement Strategy

Boarder custom & material delivery



# Planning

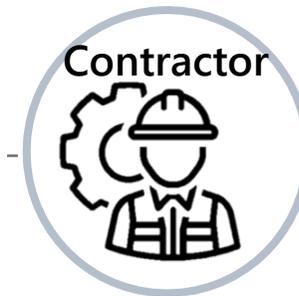
MiC Knowledge is required for all parties

Know the details of factory  
assembly-line and method

Review production workflow  
and ensure QA&QC

**Manufacture** •

Contractor  
On-board



# Planning

MiC Knowledge is required for all parties

## Site Planning

Crane displacement & allocation

## Hoisting Safety

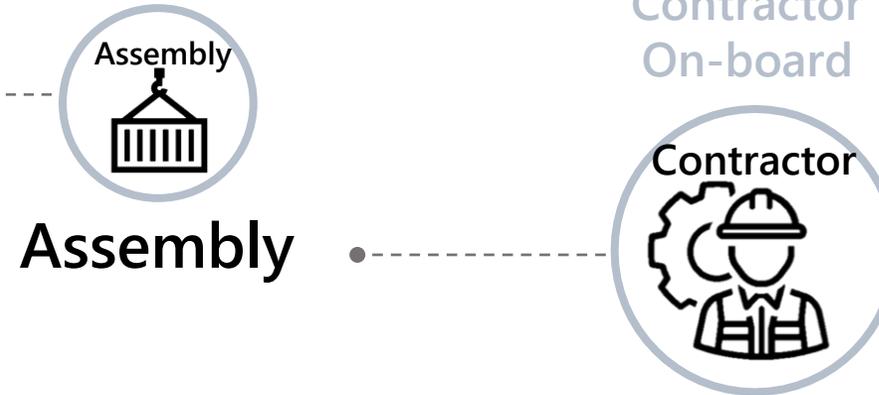
Design for safety & module integrity

## Weight Consideration

Module weight limit for conventional crane

## Hoisting Detail

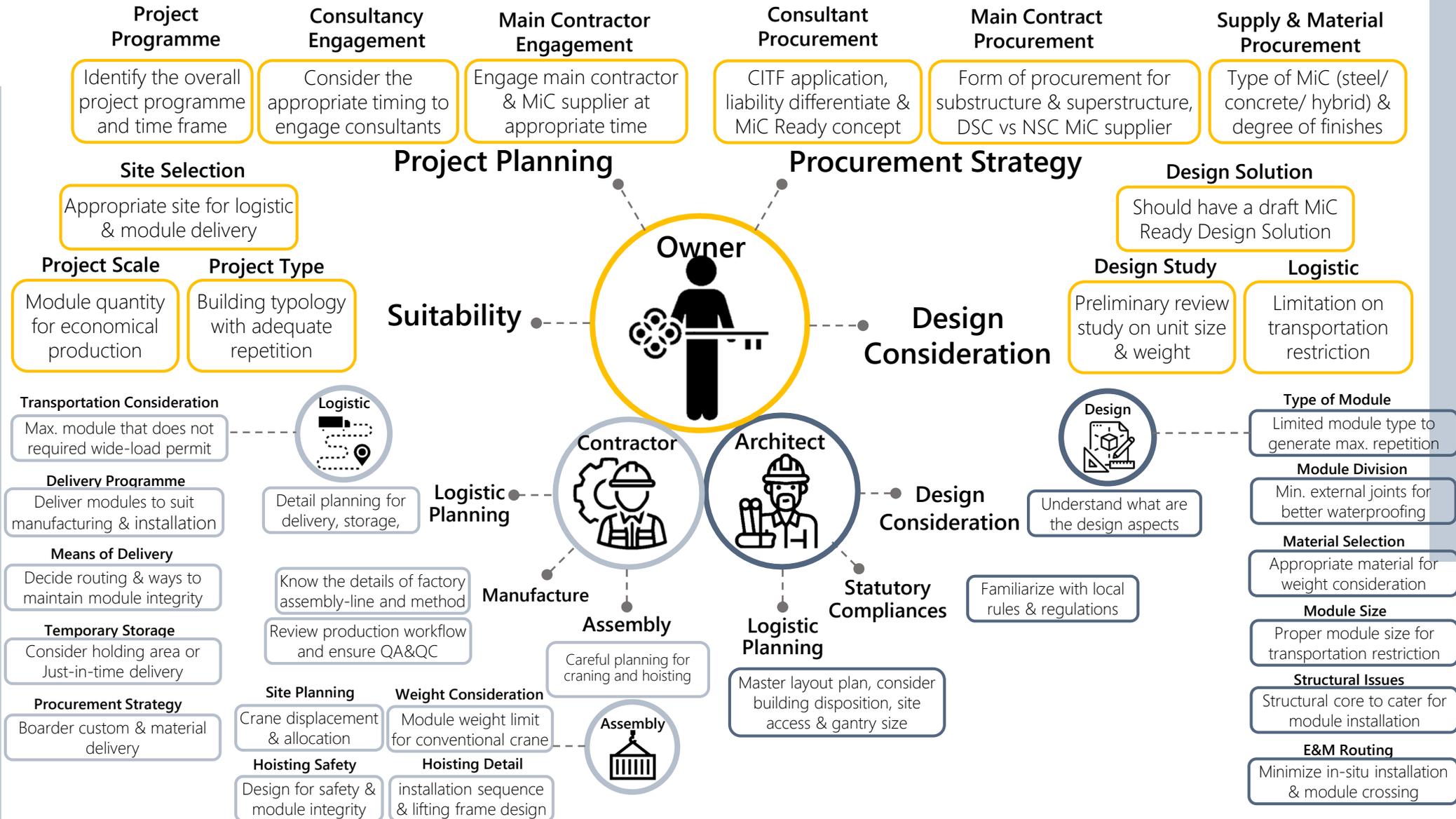
installation sequence & lifting frame design





# Planning

MiC Knowledge is required for all parties

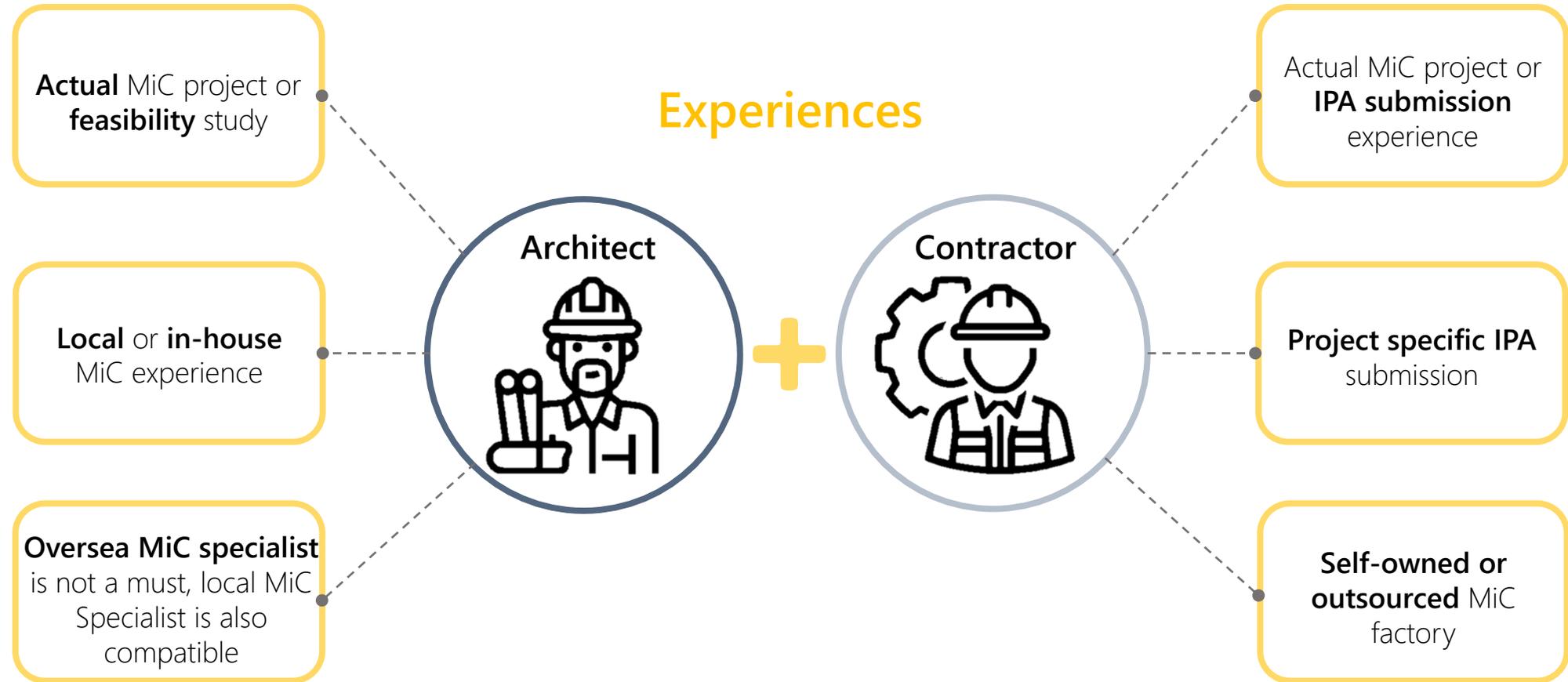




# Requirements & Responsibility

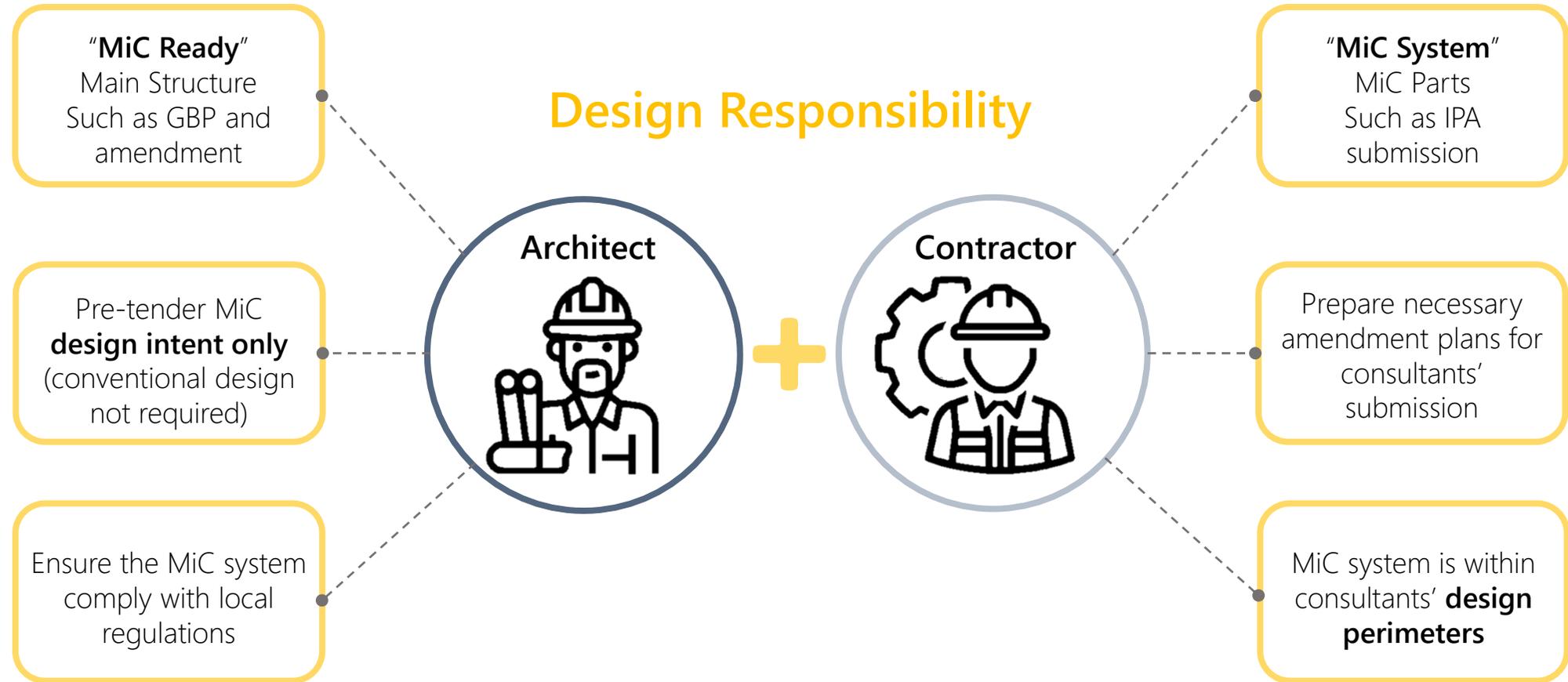
## Consultant vs Contractor Procurement

# MiC Requirements Experiences



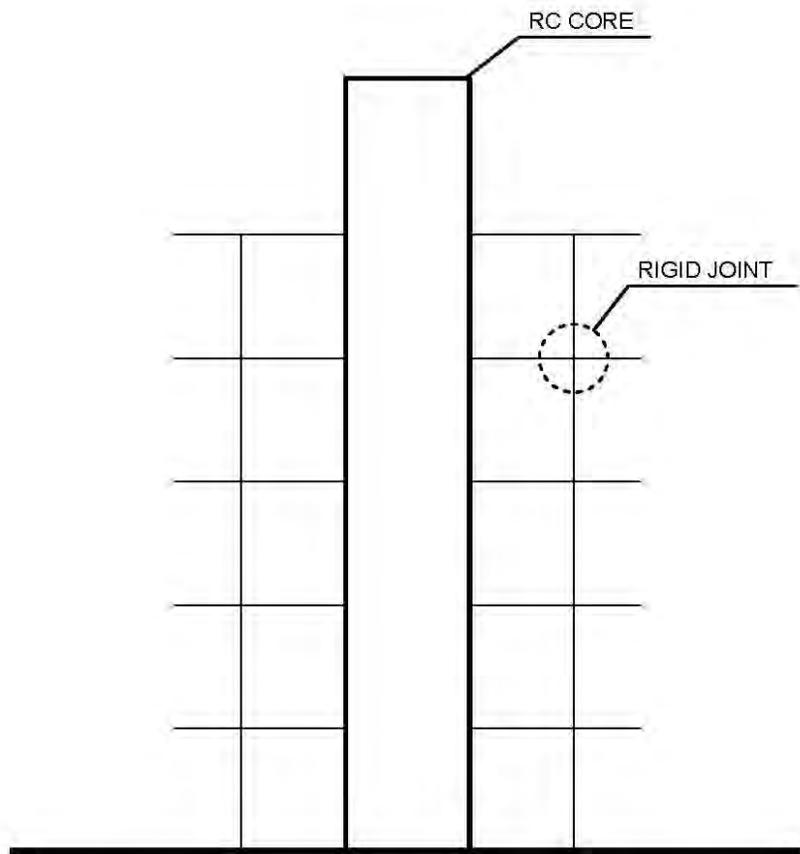
# MiC Ready Concept

## Roles and Obligations

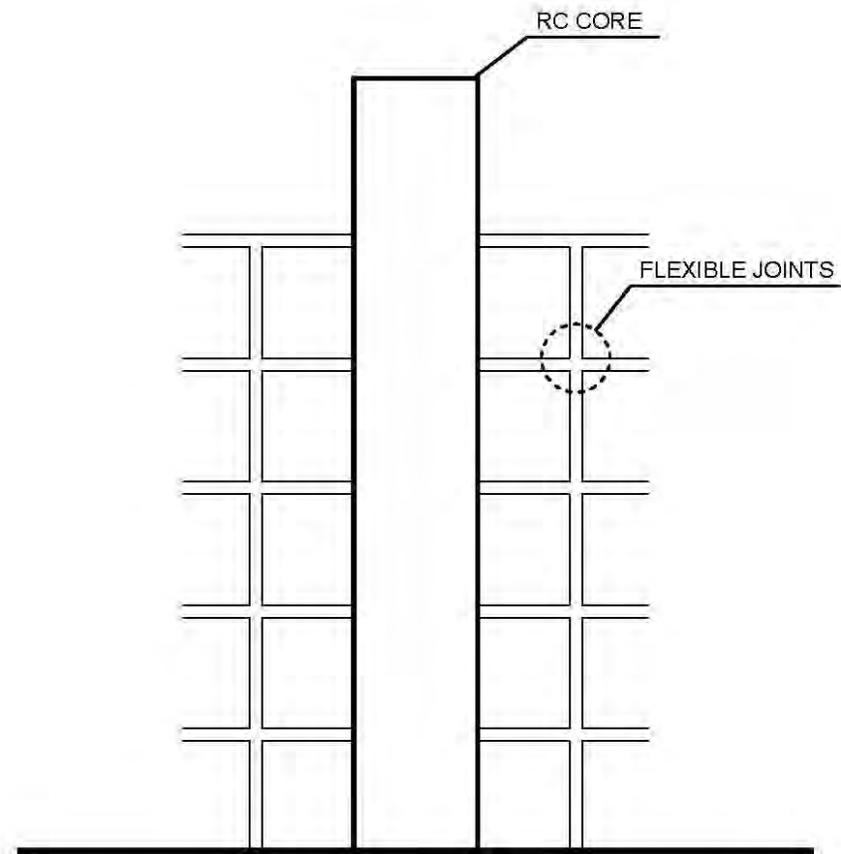


# MiC Ready Concept

## What is MiC Ready?



CONVENTIONAL RC CORE WITH STEEL FRAMING

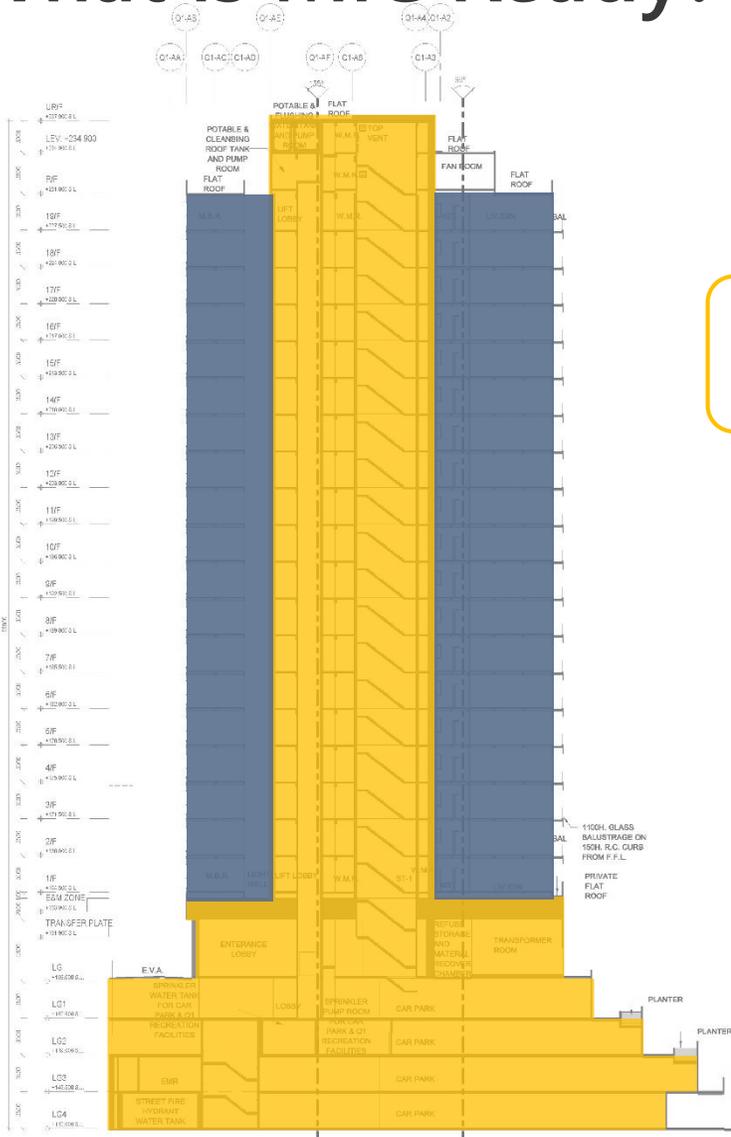


RC CORE WITH STEEL FRAMING (DOUBLE BEAM & DOUBLE COLUMN)



# MiC Ready Concept

## What is MiC Ready?



**Legend:**

- Consultant's Design Responsibility
- Contractor's Design Responsibility

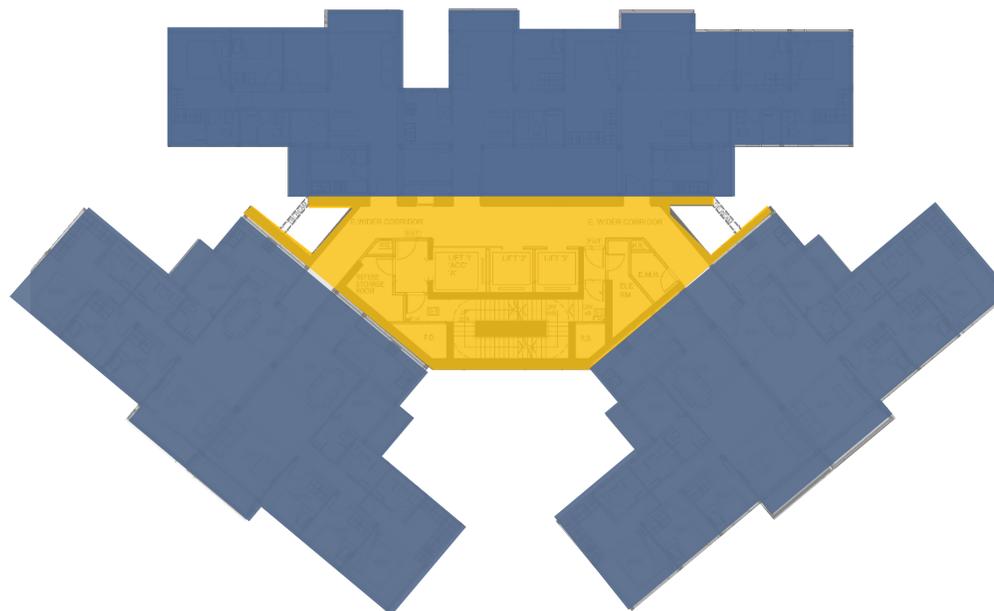


Less design role in comparison to conventional design contract

Clear Demarcation of Design Responsibility between Engineer and Main Contractor



Less design role in comparison to conventional design & build contract

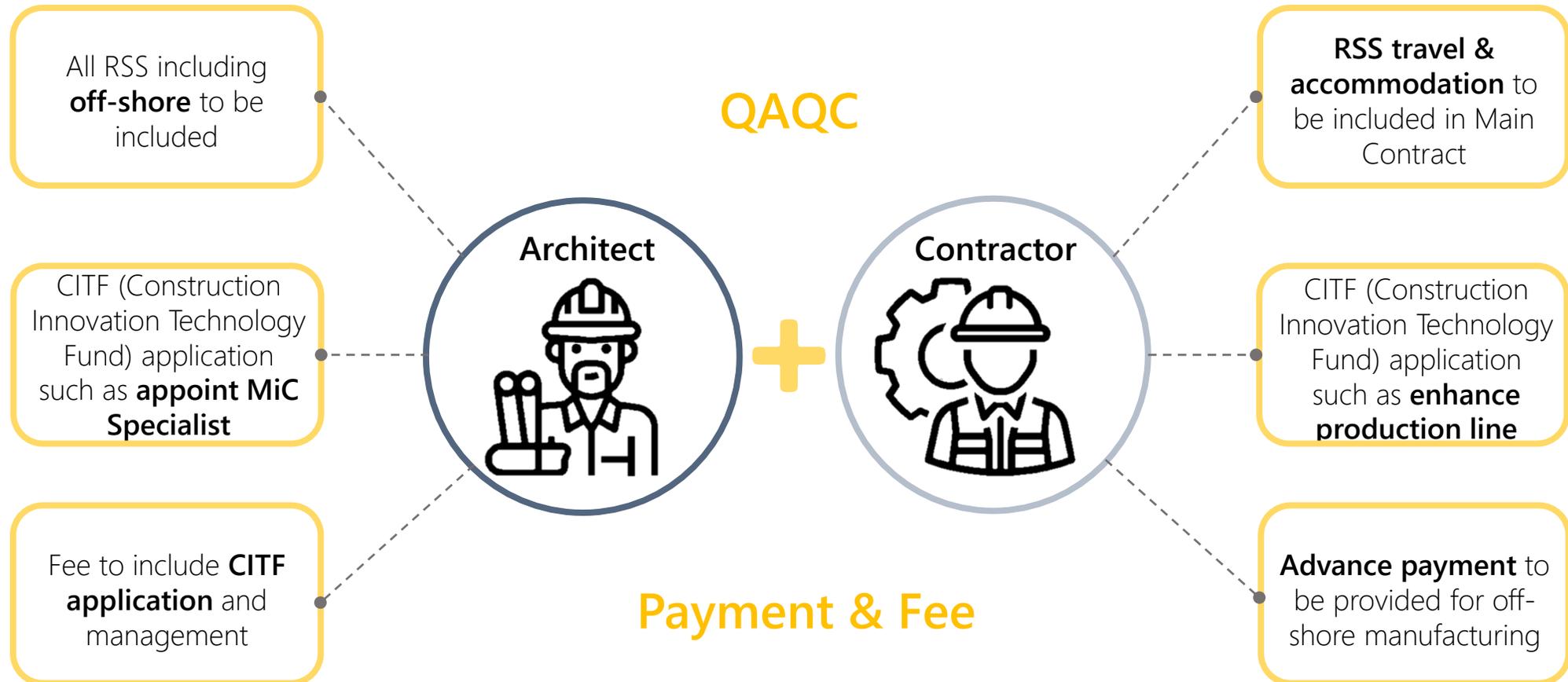


Similar to curtain wall DSC.  
MiC-ready scheme to be submitted to BD.



# MiC Ready Concept

## Quality Assurance & Quality Control



# From Wong Chuk Hang to High West



**It is not just another MiC Project**



# The Outcome

Between WCH and HW

# Our Procurement

## WONG CHUK HANG

## HIGH WEST SITE

### Intro Briefing

Industry received MiC in a lackadaisical manner



### Intro Briefing

Great feedback received from the industry



### EOI

9 nos. of companies expressed interest



### EOI

36 nos. of companies expressed interest



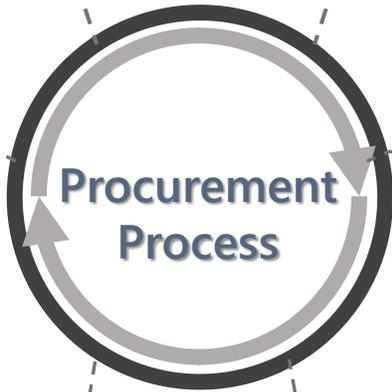
### Shortlisting

Lack of enthusiasm, all 9 companies were invited to submit tender



### Shortlisting

17 nos. of companies shortlisted to submit EOI and 13 nos. returned



# Our Procurement

WONG CHUK HANG

HIGH WEST SITE

## Pre-tender Briefing

Introduce main scope of work and MiC Ready concept to tenderer



## Pre-tender Briefing

Introduce main scope of work and MiC ready design to tenderer



## Tender

Lack of enthusiasm, all 9 companies were invited to submit tender



## Tender

9 nos. of companies are shortlisted to submit Tender



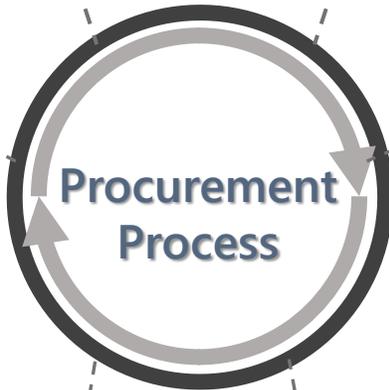
## Tender Briefing Sessions

4 nos. of group briefings were held with tenderers and MiC- supplier



## Tender Query Sessions

Query sessions were held with individual tenderer to answer questions



# Our Procurement

**WONG CHUK HANG**

## Submission

8 nos. of submissions received



**Half** of the tenderers are technically capable to deliver the MiC project;

## Contract Award

Tender awarded to Main Contractor in August 2019



**HIGH WEST SITE**

## Submission

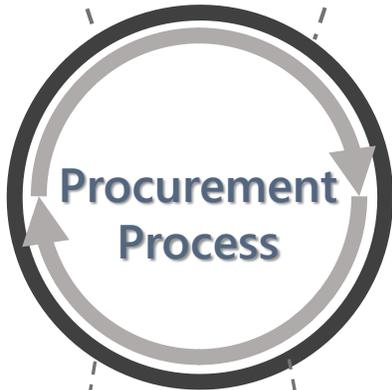
8 nos. of submissions received (1 no. less than invitation due to JV)



**All** of the tenderers are technically capable to deliver the MiC project;

## Contract Award

Tender submissions under evaluation and expected to be awarded in May 2021



# Our Result For WCH

7% saving

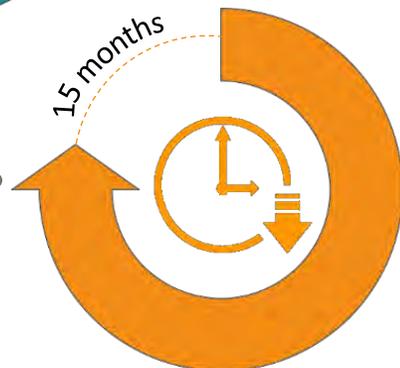


## Cost Saving

Based on our awarded MiC contract, there is a **7% saving** in comparison to conventional RC construction

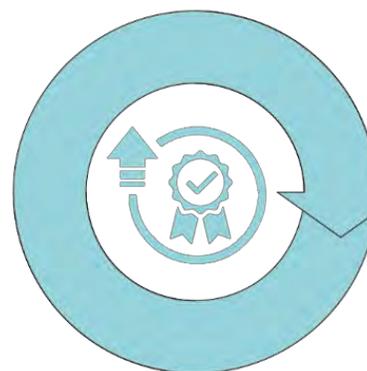


15 months



## Time Saving

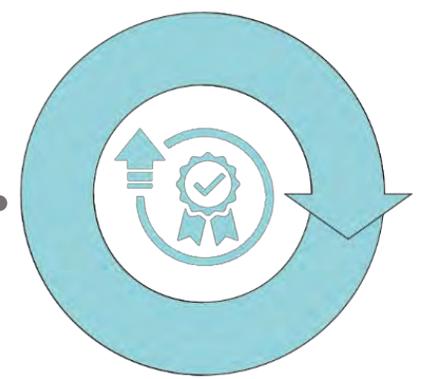
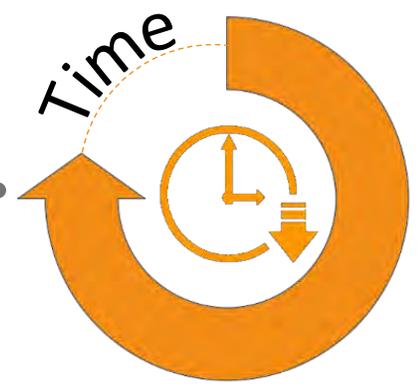
In comparison with conventional construction, there is a **15 months (25%)** time saving



## Better Quality

Improves construction accuracy via mass production and planning under a controlled environment

# Our Target For HW

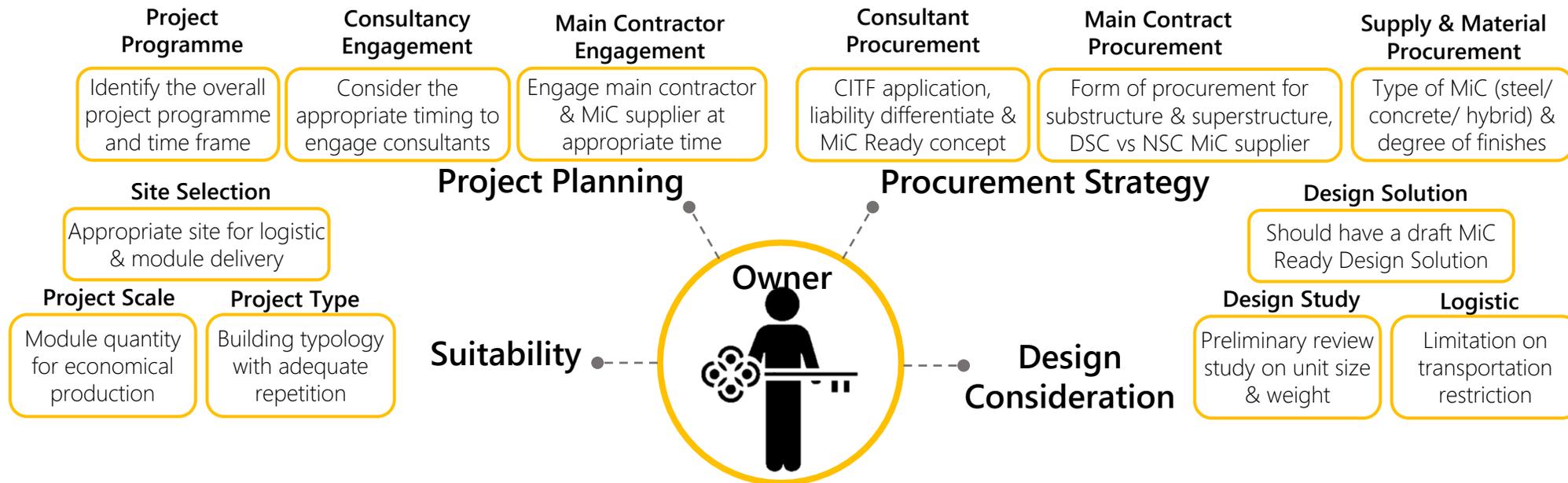


With such great cost and time saving achievement for Wong Chuk Hang Student Hostel, we also expect saving at High West Site Development



# Guidance

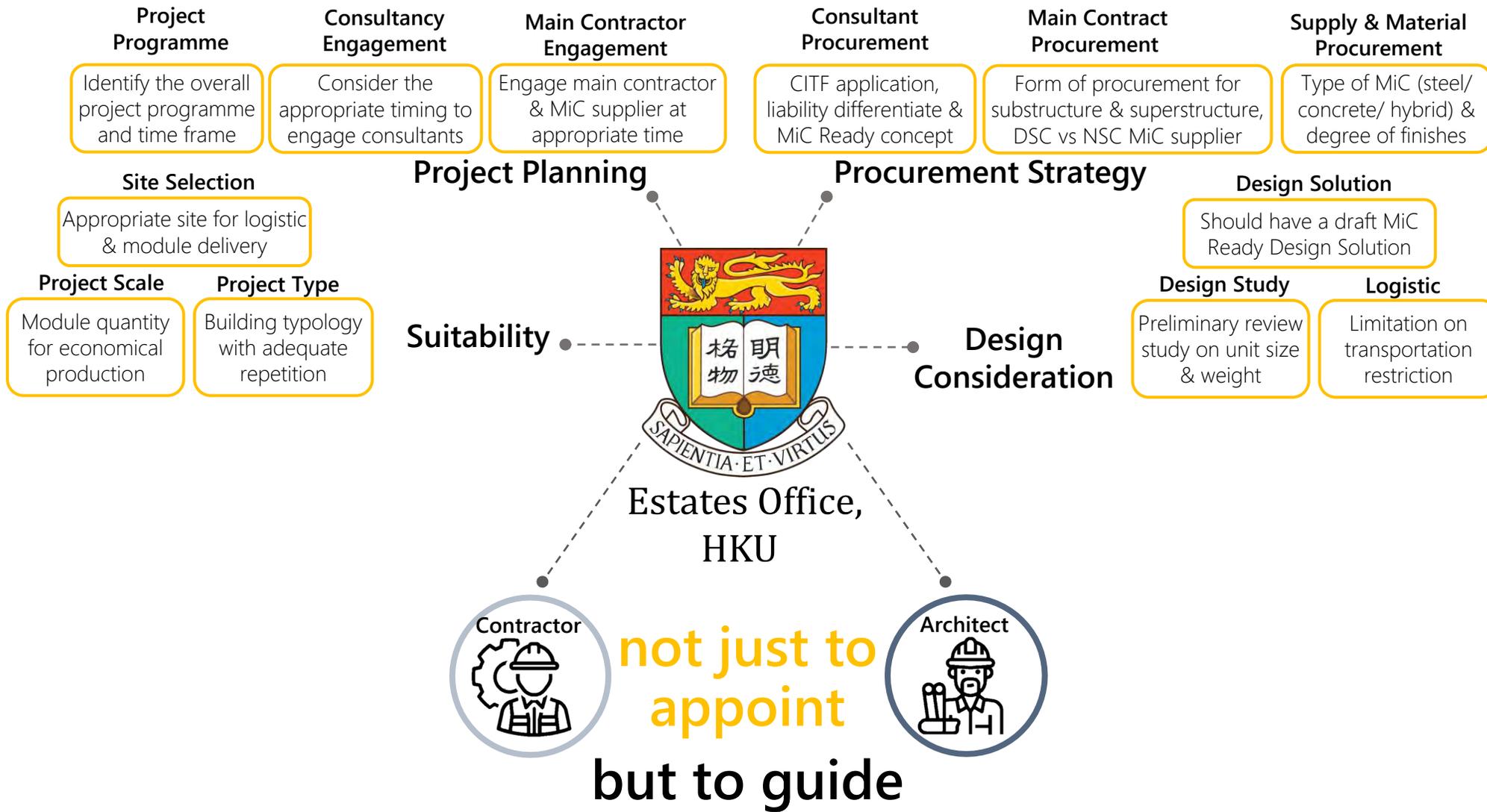
## Strategic Project Planning



Owner should have knowledge in MiC because strategic planning starts right at the beginning

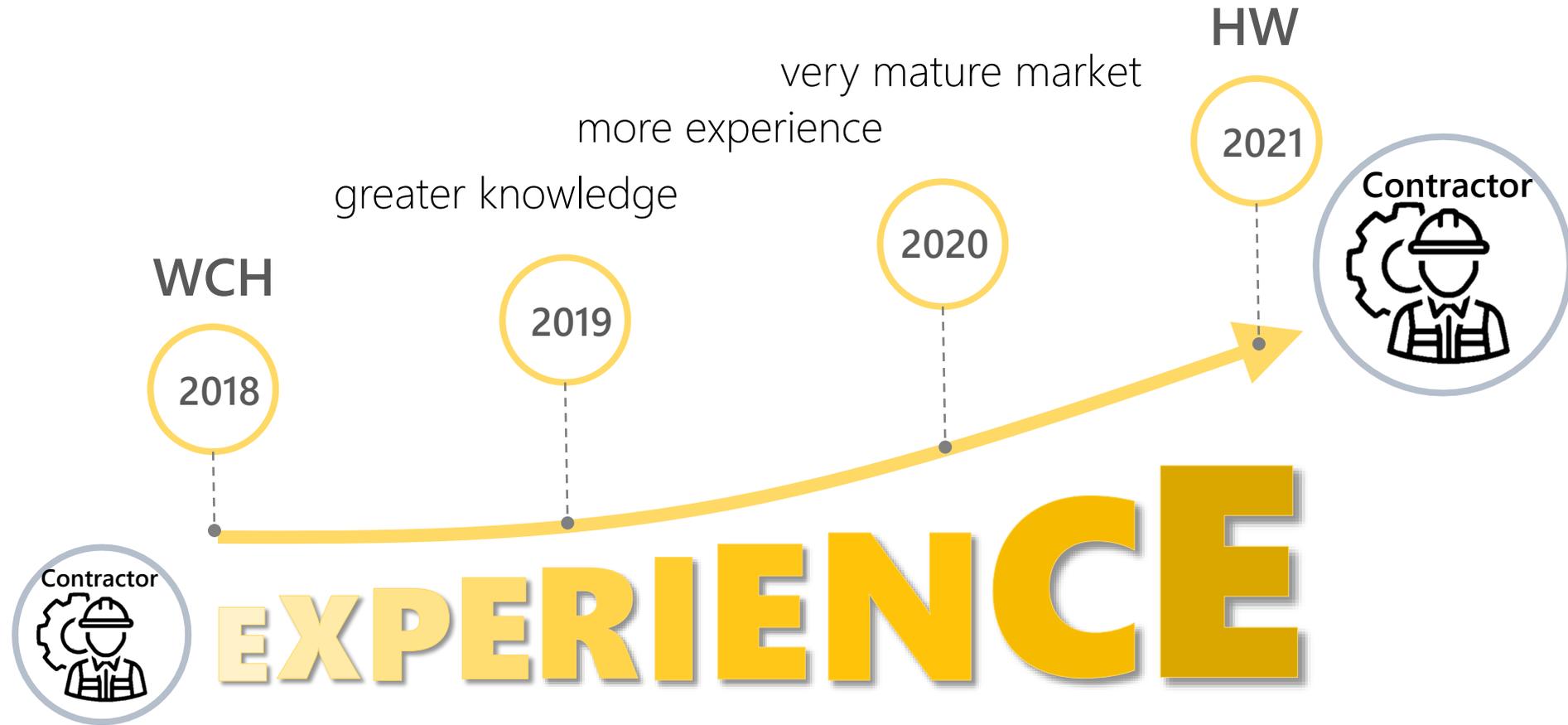
# Guidance

## Strategic Project Planning



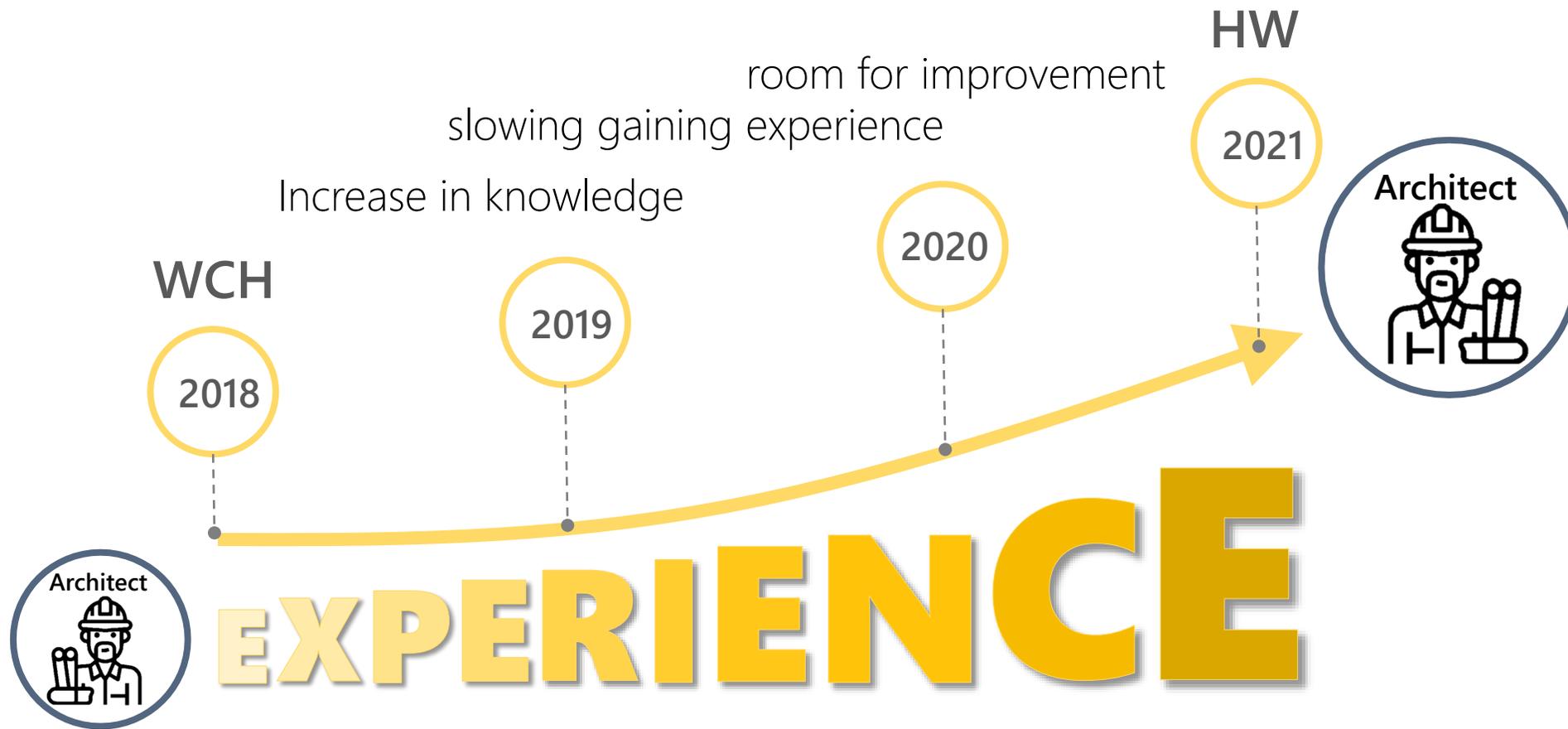
# The Market

MiC Knowledge is required for all parties



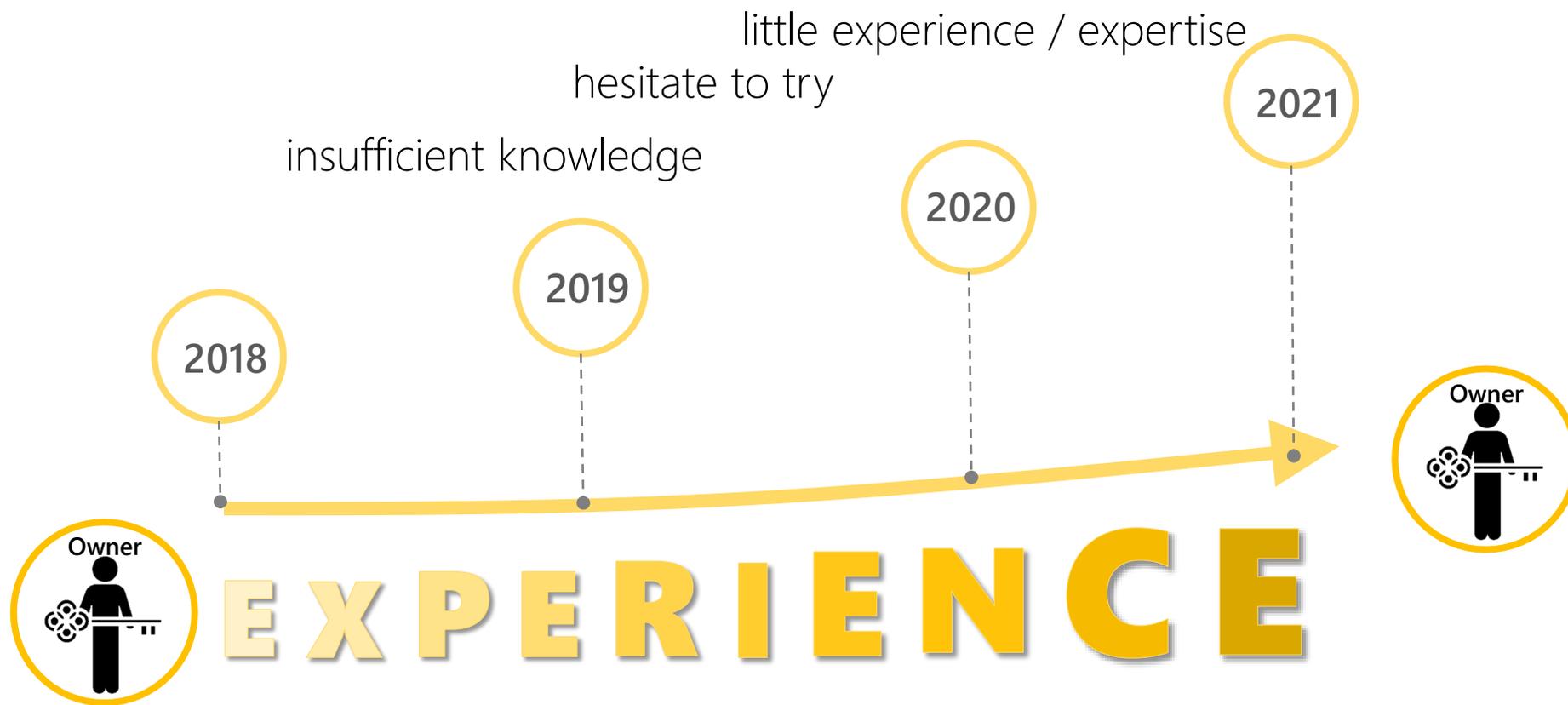
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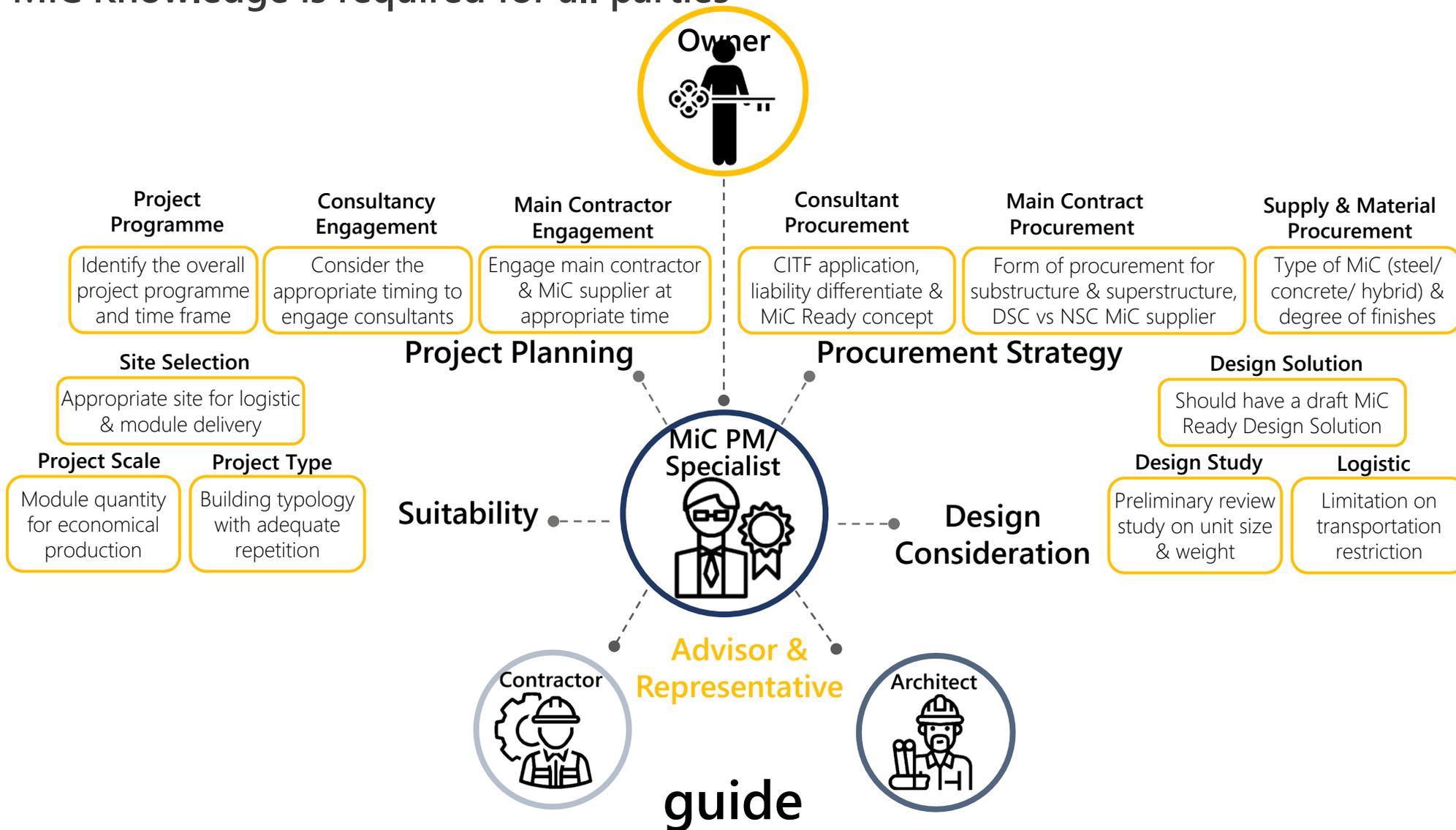
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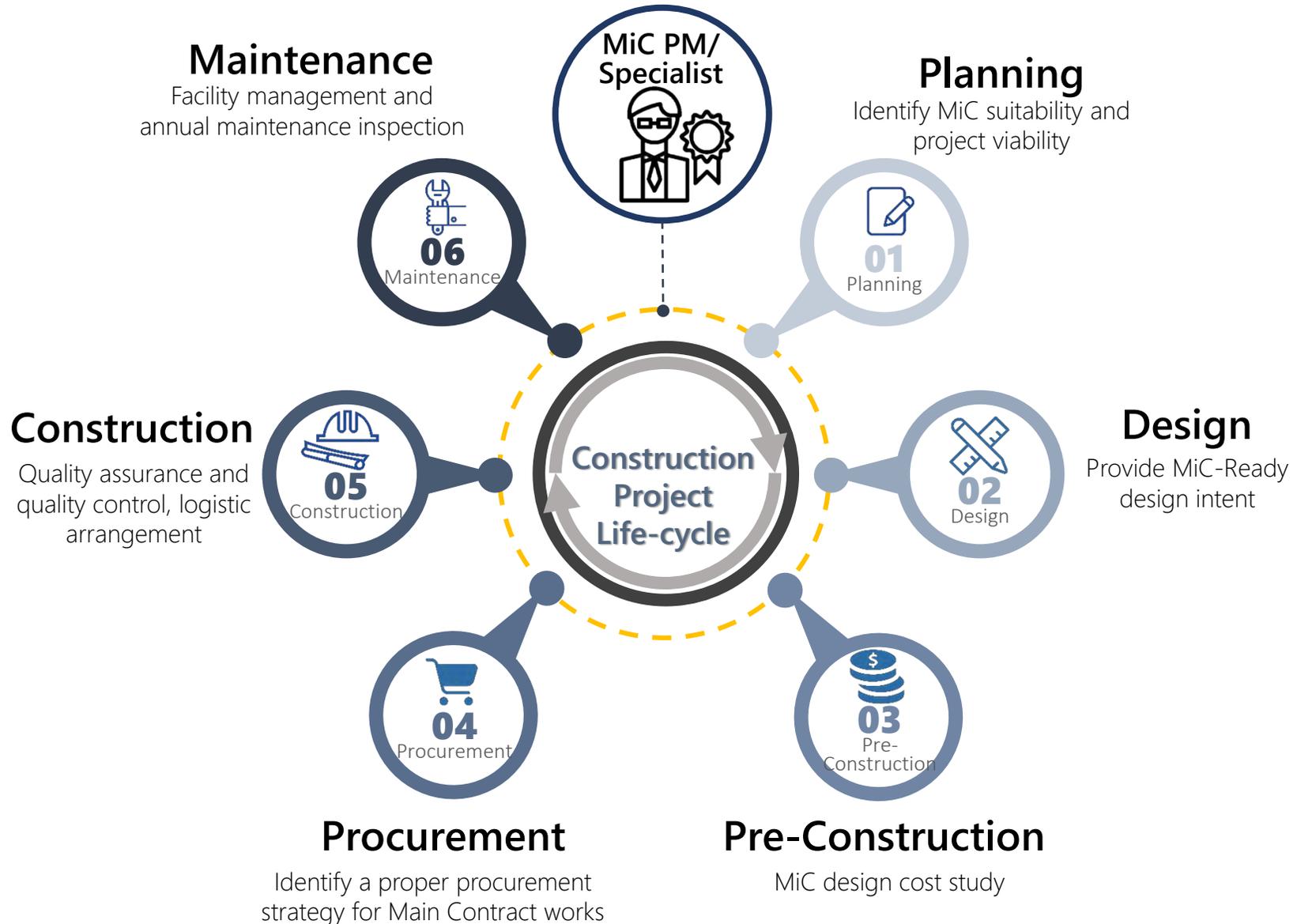
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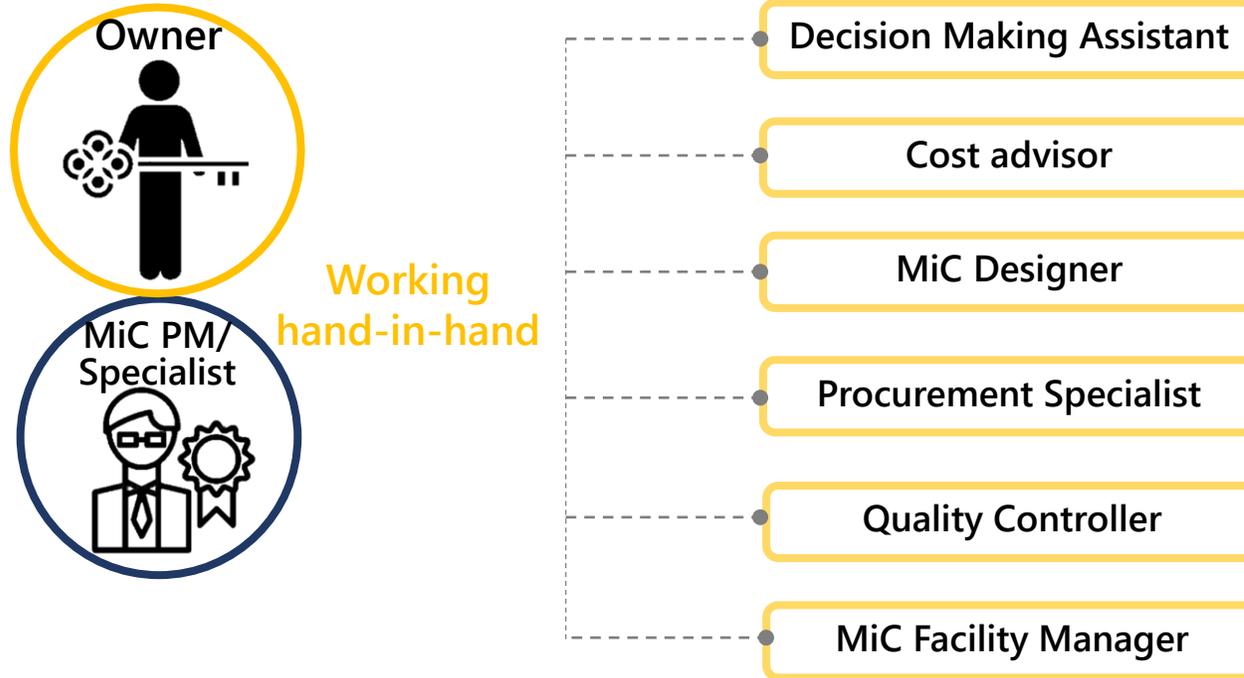
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# The Market

MiC Knowledge is required for all parties



Lifelong knowledge

**Thank You**

