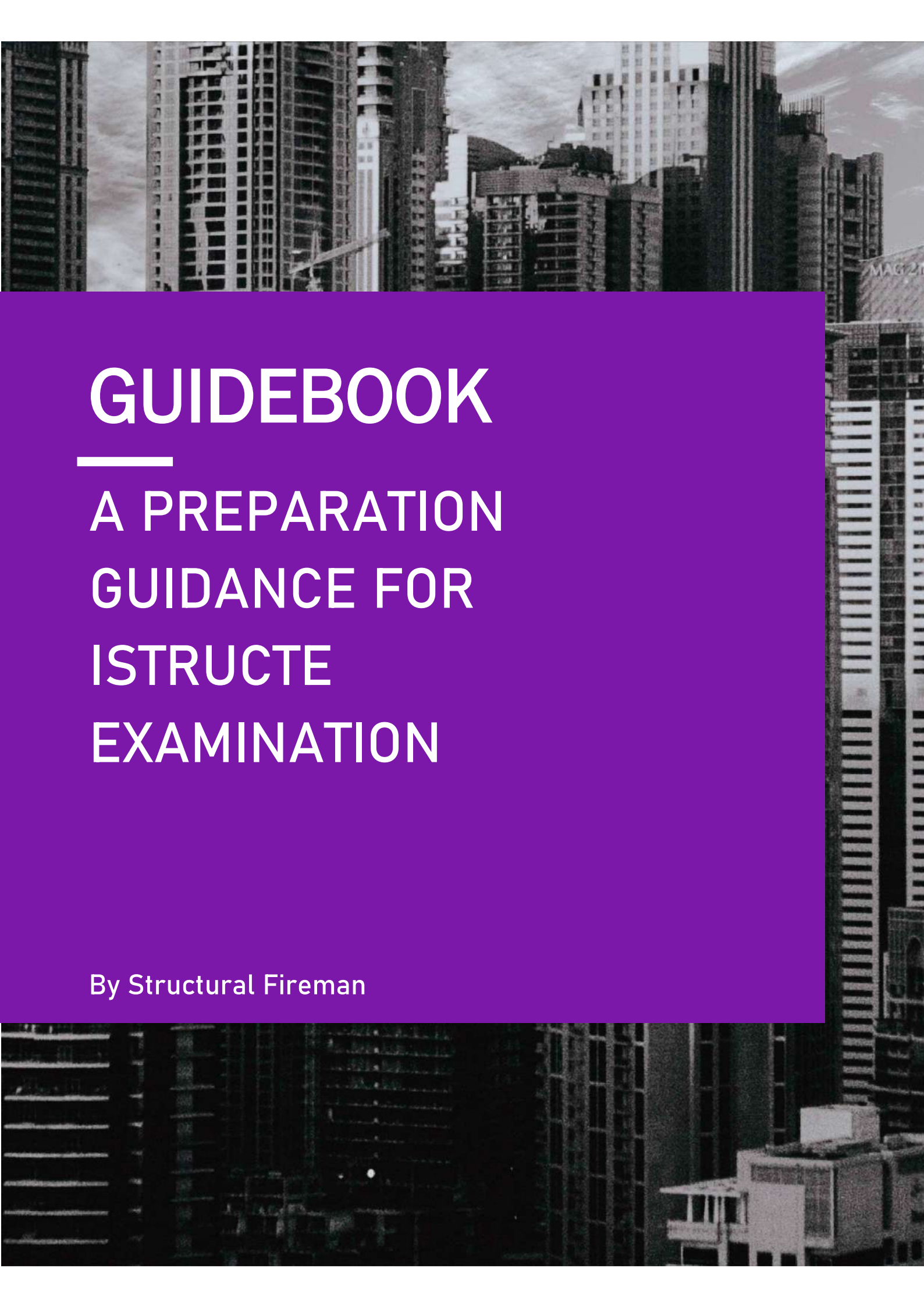




GUIDEBOOK

A PREPARATION GUIDANCE FOR ISTRUCTE EXAMINATION

By Structural Fireman

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4' SCHEME OPTIONS DRAFT

Must show to marker (target 3-5 分鐘)

The table below shows how you might think about putting together your different ideas to form two distinct and viable solutions:

#	Type	Scheme 1	Scheme 2
1	Materials	Reinforced Concrete	Structural Steel
2	Structural Grid	MORE TO BE SHOWN IN FULL VERSION	
3	Vertical Stability System / Floor ??		
4	Lateral Stability System		
5	Beam and slab arrangement		
6	Basement	RC ground bearing slab 太大水壓唔好做 / Suspended Slab	RC raft / Suspended Slab
7	Foundation solution	MORE TO BE SHOWN IN FULL VERSION	
8	Construction method		
9	Retaining Wall		
10	Cantilever	R.C. downstand beams cantilever	internally Diagonal steel struts to external envelope

Consider Flat slab 如果 headroom 好小!!!

Distinct

The more of these attributes you can vary between your two schemes the better.

Aim for **at least three/four**:

#	Type	Distinct Point
1	Materials	- Steel - Concrete
2	Structural Grid	- Square / rectangular - Distance between columns - Constant or varied grid
3	Stability System	MORE TO BE SHOWN IN FULL VERSION
4	Slab Span Direction	
5	Primary / Secondary Beam Layout	
6	Foundation solution	
7		
8		
9		

Example

Scheme Options Draft (2016 Jul Q1)

	Scheme 1	Scheme 2
Structural Grid		
Internal Floors		
Level -1		
Columns		
Cantilever		
Stability		
Foundations		
Basement		
Retaining Wall		

MORE TO BE SHOWN
IN FULL VERSION

Scheme Options Draft (2019 Jul Q4)

	Scheme 1	Scheme 2
Superstructure (L3 – L11)		
Superstructure (L2)		
Level -1 (Substructure)		
Penthouse L11		
Stability		

MORE TO BE SHOWN
IN FULL VERSION

7' RECOMMENDATIONS

Scheme Recommendation

For each scheme, list a number of advantages and disadvantages (at least 2-3 of each).

Aspect	Think about...
Superstructure geometry	- Slimmer floorplate - Fewer downstand beams - Greater column spacing (Steel) - Smaller column
Site / Construction issues	- No large elements to be delivered to site - Simper temporary works condition - Reduced health and safety risks
Quality / Aesthetics	
Programme	MORE TO BE SHOWN IN FULL VERSION
Economy	
Environmental	
Health and Safety	

Based on the above discussion, I recommend that option X is the scheme taken forward.

Sustainability Aspect for RC Scheme

* 整段 **description** 再揀幾個黎寫

Strengths:

- Superior operational carbon performance through thermal mass
- Minimal maintenance requirements reducing lifecycle interventions
- Reduced embodied carbon through efficient use of materials
- High durability and long service life

Enviro

-
-
-
-
-
-

Resou

-
-
-
-
-
-

MORE TO BE SHOWN
IN FULL VERSION

Whole

-
-
-
-
-
-

Social

-
-
-
-
-
-

Economic Longevity

- Delivers extended maintenance-free service intervals (20-30 years typical)
- Requires minimal whole-life maintenance expenditure
-
-
-
-

MORE TO BE SHOWN
IN FULL VERSION

2024 UPDATE FOR SUSTAIBABILITY

REDUCE THE MATERIAL USE WHILE MAINTAINING THE FLOOR PLAN AND NUMBER OF STOREYS

Example

Case 1 – 如果題目有 Transfer Requirement

PROPOS/

Current I

- S
- T
- R

Proposec

- A
- F

Benefits:

- E
- R
- F
- C
- e
- M

Case 2 –

PROPOS/

Current I

- 2
- C

Proposec

- L
- L
- S
- H

Benefits:

- C
- R
- L
- V
- 2

MORE TO BE SHOWN
IN FULL VERSION

WIND LOAD CALCULATIONS

Part 1 – Building Information

Floor	no. of floor x	Floor Height	Total Height (H)	Effective Height H_e (m)	breadth (m) - b	depth (m) - d
G - R	6	7.77	46.6	46.6	85	62
0	0	0	0	0	0	0
0	0	0	0	0	0	0

(added if different floor area)

Part 2 – Wind Load Factor

Floor
G - R
0
0

(added i

Floor
G - R
0
0

(added i

MORE TO BE SHOWN
IN FULL VERSION

Part 3 –

Floor
G - R
0
0
0
0

(added i

CARBON CALCULATIONS per meter run (for IStructE) for beam (formwork ignored)

1. Qu

- Mas
- Reba
- Mas

th)) = 0.78 t/m
out

2. Car

- Conc
- Reba

placement)

3. Car

- Conc
- Reba

MORE TO BE SHOWN
IN FULL VERSION

Total C

Details

It's assumed that a cost estimate will be prepared using the drawings and so the following information should be provided on the plans: (min. of 3)

Item	Details	Location
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

MORE TO BE SHOWN
IN FULL VERSION

- 根據 Marking

Details to be provided (For IStructE only)

Item	Standard Details (S)	Bespoke Details (B)
1	Slab to primary beam connection	Truss detail
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

MORE TO BE SHOWN
IN FULL VERSION

METHOD STATEMENT CHECKLIST

Constraints	Initial Thought
1. Preliminaries	- Contractor site setup, site compound, hoarding, access routes
2. Existing buildings	- Carry out condition surveys, temporary shoring (e.g. façade retention), permanent support (e.g. underpinning)
3. Neighboring buildings	
4. Enabling works	
5. Foundations	
6. Basement	
7. Superstructure	MORE TO BE SHOWN IN FULL VERSION
8. In-situ concrete slabs	
9. Scheme specific issues	

SECTION 2(e): CONSTRUCTION PROGRAMME (FOR HKIE ONLY)

Examiner Report / Marking Scheme

(HKIE 2020 Q3)

Sub.

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MORE TO BE SHOWN
IN FULL VERSION

(HKIE

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CONSTRUCTION PROGRAMME

Construction Programme Checklist

Process	Duration	Lead-in Time
Enabling works		
Mobilization		4 weeks
Site set-up	2 weeks	
Surveys	1-2 days plus 1-2 weeks write-up	2 – 4 weeks

MORE TO BE SHOWN
IN FULL VERSION

APPENDIX A: HKIE PASTPAPER ANALYSIS & TIPS (2025)

(2016 – 2019)

#	Type	Scheme 1 ①	Scheme 2	1	2	3	4	5	6	7	8	9
How to Distinct ?	Building Size / Properties			2016 Q2	2016 Q3	2016 Q4	2017 Q2	2017 Q3	2018 Q2	2018 Q4	2019 Q2	2019 Q3
1	M		B	80	35	72	165	57	72	64	52.5	52
2	St		D	34	46	54	100	36	48	52	19.5	38
3	V Tr		H	20.2	168.5	35	21	79.3	28	187.5	31	97.5
4	Ho Tr											
5	Be arre											
6	For											

MORE TO BE SHOWN
IN FULL VERSION

(2020 – 2024)

#	Type	Scheme 1 ①	Scheme 2 ②	10	11	12	13	14	15	16	17	18
How to Distinct ?	Building Size / Properties			2020 Q2	2020 Q3	2021 Q1	2021 Q2	2022 Q1	2022 Q3	2023 Q2	2024 Q4	2024 Q3
				60	VAR	36	85	55	37	58	64	67
				30	36	36	63	84	37	62	24	29
				19	76.5	145	46.6	73.5	120	51	32.9	62
1			B									
2			D									
3			H									
4												
5												
6												

MORE TO BE SHOWN
IN FULL VERSION