Access Facilities for Telecommunications and Broadcasting Services

Introduction

It is the Government's policy objective to develop Hong Kong into a smart city to improve the quality of life of the people and strengthen Hong Kong's role as a regional communications hub.

2. To enable occupiers of a building to gain access to the full range of quality telecommunications and broadcasting services, the Communications Authority (CA) has, under section 14 of the Telecommunications Ordinance (TO) (Cap. 106), granted authorization to unified carrier licensees to provide public internal fixed telecommunications services (hereafter referred to as fixed network operators, or FNOs[1]) and to place and maintain facilities and cables for fixed telecommunications and broadcasting services in the common parts of buildings in private ownership.

3. To facilitate the expansion of the fifth generation mobile (5G) network coverage in Hong Kong, the Telecommunications (Amendment) Ordinance 2024 has been enacted to amend section 14 of the TO so that unified carrier licensees with authority to provide public mobile radiocommunications services (hereafter referred to as mobile network operators, or MNOs) are granted access right by the CA to place and maintain radiocommunications facilities, i.e. mobile communications facilities in specified buildings[2].

4. In order to accommodate the above telecommunications and broadcasting facilities and cables in buildings, regulation 28A of the Building (Planning) Regulations (B(P)R) requires the provision of access facilities for telecommunications and broadcasting services in every commercial building, industrial building, residential building (other than a building for residence of a single family) and hotel building in accordance with the design requirements specified by the Building Authority (BA).

/5. …

[1] FNOs are referred to as "Network Operators" in the Code of Practice for the Provision of Access Facilities in Buildings for the Supply of Telecommunications and Broadcasting Services and the previous revision (June 2006) of PNAP APP-84.

[2] Under section 14(10A) of the TO, a building is a specified building if the building is required to be provided with access facilities for telecommunications and broadcasting services under regulation 28A of the Building (Planning) Regulations, and the earliest approval of any of the plans for the building works for its erection (or rebuilding or alteration resulting in a new building) is given for the purposes of section 14(1) of the Buildings Ordinance (BO) (Cap. 123) on or after the specified date (i.e. 1 April 2025). For the purpose of implementing the new requirements under the BO, "approval of any of the plans" refers to "approval of the general building plans".

5. As there are a number of FNOs and MNOs who will provide telecommunications and broadcasting services, it is advisable to consolidate the requirements of access facilities for telecommunications and broadcasting from all the relevant FNOs and MNOs during the building planning stage and appoint more than one FNO to install block wiring cables in new buildings. The lists of FNOs and MNOs are given in the Annex to the "Code of Practice for the Provision of Access Facilities in Buildings for the Supply of Telecommunications and Broadcasting Services" and Annex 1 to the "Code of Practice for the Provision of Mobile Access Facilities in Specified Buildings for the Provision of Public Mobile Radiocommunications Services" respectively, both of which are issued by the CA and can be downloaded from the CA's website.

Access Facilities for Telecommunications and Broadcasting Services

6. Pursuant to regulation 28A of the B(P)R, the design requirements for access facilities for telecommunications and broadcasting services to be provided in buildings are set out below.

Fixed Telecommunications and Broadcasting Services

7. The number and size of lead-in ducts, telecommunications and broadcasting (TBE) rooms and vertical riser slots should be provided in accordance with the requirements specified in Appendix A.

8. The lead-in ducts should be properly sealed up to guard against the ingress of water and gases and the sealing materials should be of a type that can be easily removed by the FNOs.

9. TBE room should be placed at a location not susceptible to flooding. For development comprising of separate tower blocks on top of a commercial podium, separate TBE rooms to serve each tower block and the commercial podium respectively should be provided.

10. In addition, TBE room should also comply with the following requirements:

(i) the room should be linked up with the vertical block wiring system of the buildings;

(ii) no water pipes, sewage pipes, water drainage, water sprinklers, high voltage power supply (exceeding 600V between phase and earth for three-phase, or 1,000V for single-phase, or 1,500V dc) cables, power transformers should be installed inside the TBE rooms;

(iii) sufficient lighting, electricity supply and ventilation should be provided;

(iv) separate telecommunications earth electrode should be provided; and

/(v) …

(v) the minimum clear height as stipulated in Appendix A should be provided.

11. A schematic diagram of the arrangement of the access facilities is attached at Appendix B for general reference.

Mobile Radiocommunications Services

12. In addition to the provision of access facilities for fixed telecommunications and broadcasting services as required under paragraphs 7 to 10 above, access facilities for mobile services (MAF), should be provided in specified buildings in accordance with the requirements specified in Appendices C and D. MAF includes TBE room for MAF (TBE_{MAF} room), rooftop telecommunications equipment (RTE) room, intermediate telecommunications equipment (ITE) room (where applicable), and associated vertical riser (vertical $riser_{MAF}$).

13. For a specified building which is not required to provide MAF, TBE_{MAF} room and vertical $riser_{MAF}$ may be provided to improve indoor mobile coverage.

14. Furthermore, for a specified building which is not required to provide MAF, RTE room or ITE room may be provided in special circumstances, e.g. where the building is located in an area in need of additional MAF, subject to support by OFCA. OFCA may seek justifications by the authorized person including proof of agreement between the building developer and MNO.

15. A schematic diagram of the arrangement of MAF is attached at Appendix E for general reference.

Exemption from Gross Floor Area (GFA) Calculation

16. Pursuant to regulation 23(3)(b) of the B(P)R, in determining the GFA for the purposes of regulations 21 and 22 of the B(P)R, the BA may disregard any floor space that she is satisfied, is constructed or intended to be used solely for, inter alia, access facilities for telecommunications and broadcasting services as required under regulation 28A of the B(P)R.

17. As stated in paragraph 3 above, both the requirements of MAF and access right to MAF granted under section 14 of the TO are only applicable to specified buildings. Hence, GFA exemption under regulation 23(3)(b) of the B(P)R for MAF is only applicable to MAF provided[3] in specified buildings under paragraphs 12 and 13, as well as those provided under paragraph 14 subject to support by OFCA. MAF in buildings other than specified buildings should be included in GFA calculation.

/Implementation …

[3] GFA exemption would not be granted if the size of TBE_{MAF} room, RTE room or ITE room to be provided is less than $10m^2$.

Implementation

18. The requirements for fixed telecommunications and broadcasting services set out in paragraphs 7 to 10 of this practice note should apply to new or major revision of general building plans approved on or after 1 November 2006. For the avoidance of doubt, new or major revision of general building plans approved before 1 November 2006 may continue to adopt the requirements set out in the practice note issued in September 2000.

19. The new requirements for mobile radiocommunications services set out in paragraphs 12 to 14 of this practice note should apply to new or major revision of general building plans of specified buildings approved on or after 1 April 2025. For the avoidance of doubt, such requirements should also apply to alteration and addition works resulting in a new specified building[4].

(YU Po-mei, Clarice)
Building Authority

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[4] Alteration and addition works where (a) not less than one-half (measured by volume) of the building is rebuilt; or (b) the building is altered to such an extent as to necessitate the reconstruction of not less than one-half of the superficial area of the main walls, in accordance with section 14(10A) of the TO.

Appendix A
(PNAP APP-84)

Requirements of Access Facilities for Fixed Telecommunications and Broadcasting Services

COMMERCIAL BUILDING, INDUSTRIAL BUILDING									
Usable floor space[1] per building /1000 m²	≤ 2	> 2 & ≤ 4	> 4 & ≤ 12	> 12 & ≤ 24	> 24 & ≤ 48	> 48 & ≤ 72	> 72 & ≤ 96	> 96 & ≤ 120	> 120 & ≤ 144
Min. number of lead-in ducts	2	3	3	4	4	8	8	8	8
Inside diameter of lead-in duct /mm	100	100	100	100	100	100	100	100	100
Min. area of TBE room required under Reg. 28A of B(P)R /m²	0	22	42	51	61	79	88	107	113
Max. area of TBE room that may be exempted under Reg. 23(3)(b) of B(P)R /m²	10	28	53	64	77	99	111	134	142
Clear height of TBE Room /m	3	3	3	3	3	3	3	3	3
Min. number of vertical risers	2	2	2	2	2	2	2	2	2
Min. size of vertical riser /mm	100 × 100	300 × 200	300 × 200	400 × 200	400 × 200	600 × 250	650 × 250	750 × 250	900 × 250

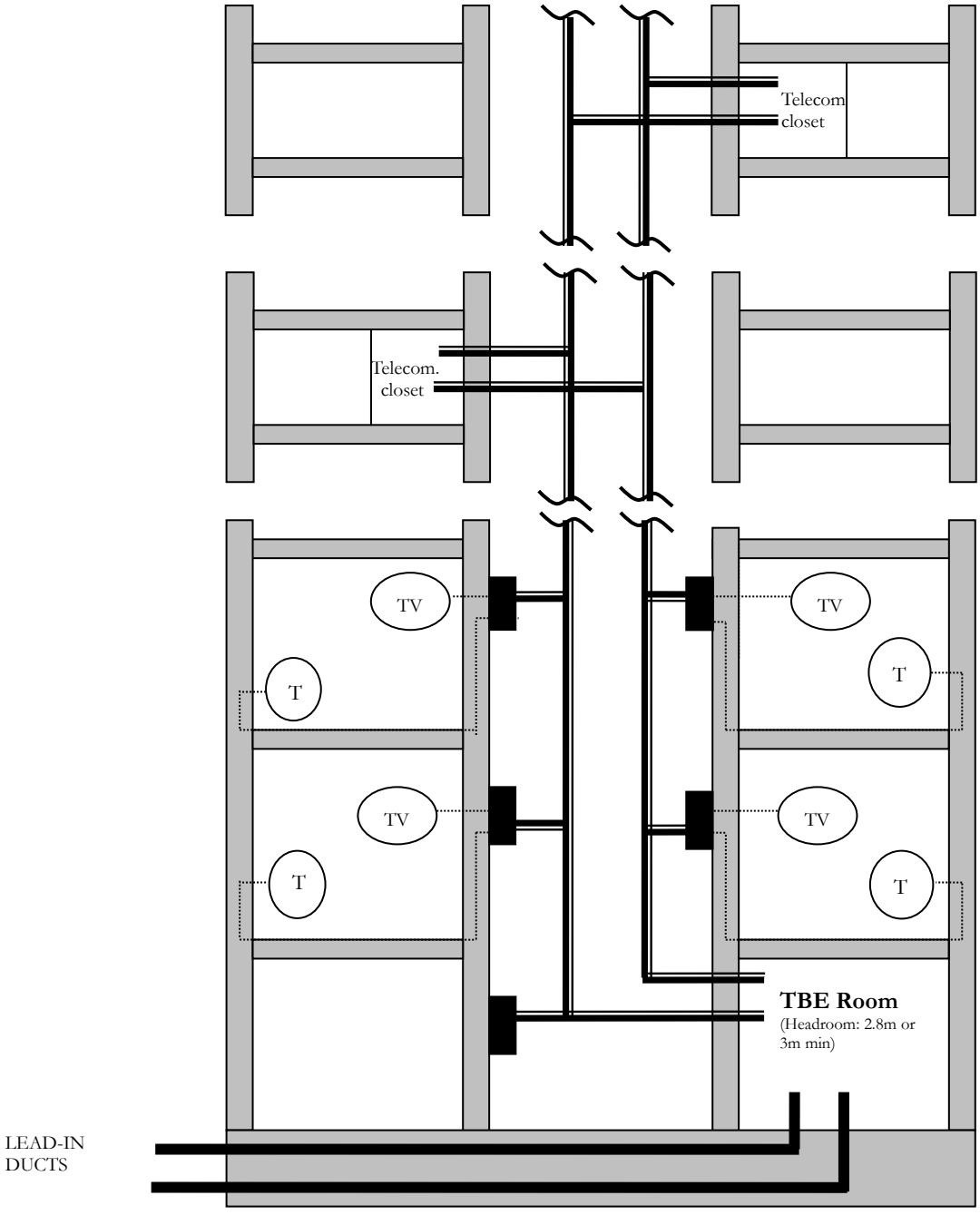
RESIDENTIAL BUILDING (OTHER THAN A BUILDING FOR RESIDENCE OF A SINGLE FAMILY)								
No. of flats in a block	≤ 5	> 5 & ≤ 50	> 50 & ≤ 100	> 100 & ≤ 250	> 250 & ≤ 500	> 500 & ≤ 750	> 750 & ≤ 1000	> 1000 & ≤ 1500
Min. number of lead-in ducts	2	3	3	3	4	4	4	4
Inside diameter of lead-in duct /mm	100	100	100	100	100	100	100	100
Min. area of TBE room required under Reg. 28A of B(P)R /m²	0	7	21	24	29	39	43	48
Max. area of TBE room that may be exempted under Reg. 23(3)(b) of B(P)R /m²	4	9	27	31	37	49	54	60
Clear height of TBE Room /m	2.8	2.8	2.8	2.8	2.8	2.8	3	3
Min. number of vertical risers	1	1	1	1	1	2	2	2
Min. size of vertical riser /mm	75 × 75	200 × 100	200 × 100	200 × 200	300 × 200	300 × 200	300 × 200	400 × 200

HOTEL BUILDING						
No. of rooms	≤ 200	> 200 & ≤ 400	> 400 & ≤ 600	> 600 & ≤ 800	> 800 & ≤ 1000	> 1000 & ≤ 1200
Min. number of lead-in ducts	3	3	3	3	3	3
Inside diameter of lead-in duct /mm	100	100	100	100	100	100
Min. area of TBE room required under Reg. 28A of B(P)R /m²	24	24	26	28	35	37
Max. area of TBE room that may be exempted under Reg. 23(3)(b) of B(P)R /m²	30	30	33	36	44	47
Clear height of TBE Room /m	3	3	3	3	3	3
Min. number of vertical risers	1	1	2	2	2	2
Min. size of vertical riser /mm	200 × 200	300 × 200	300 × 200	300 × 200	400 × 200	400 × 200

Note 1 : "Usable floor space" (UFS) has the same meaning assigned to it in regulation 2(1) of the Building (Planning) Regulations.

2 : Regarding the assessment of area requirements of TBE room for buildings which exceed the largest range in this Appendix, summation of the area requirement of the largest range and that of the remaining part should be adopted. For example, the minimum area of TBE room required and maximum area of TBE room that may be exempted for a commercial building with UFS of 180,000 m² (i.e. 144,000+36,000) should be 174 m² (i.e. 113+61) and 219 m² (i.e. 142+77) respectively.

General Schematic Arrangement of Access Facilities for Fixed Telecommunications and Broadcasting Services



Notes :

1. The size of TBE Room should conform to Table in Appendix A.
2. The construction of TBE Room should comply with the Building (Construction) Regulation.
3. The FNOs should seal all the lead-in ducts after laying the underground cables.

(Rev. 9/2024)

Appendix C
(PNAP APP-84)

Design Requirements of Access Facilities for Mobile Services

1. Specified buildings that are required to provide access facilities for mobile services (MAF) include:

(a) subject to paragraph 2 below, a building that meets the criteria below:

(i) a commercial building with more than 3,000 m^2 in usable floor space;

(ii) an industrial building with more than 3,000 m^2 in usable floor space;

(iii) a residential building[1] with more than 50 residential flats;

(iv) a hotel building with more than 75 hotel rooms; and

(b) for a development comprising more than 5 specified buildings but all the specified buildings do not fit the criteria set out in item (a) above, one building is required to provide MAF[2].

2. For a development comprising more than one specified building which fits the criteria set out in paragraph 1(a) above, the number of specified buildings required to provide MAF should be equal to the lowest integer that is not less than 25% of the specified buildings which fit the criteria set out in paragraph 1.

3. For a development comprising separate tower blocks on top of a commercial podium, each tower block and the commercial podium will be considered as separate specified buildings for the purpose of determining the number of specified buildings required to provide MAF.

4. For a specified building comprising more than one type of use, if at least one type of use fits the criteria set out in paragraph 1(a), the building as a whole is considered as one building for the purpose of determining the number of specified buildings required to provide MAF[3].

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[1] For the avoidance of doubt, a building for the residence of a single family is not required to provide access facilities under regulation 28A of Building (Planning) Regulations (B(P)R). Hence, it is not a specified building.

[2] The smallest MAF according to the type of use of the building in Appendix D should be followed.

[3] If the building with more than one type of use is selected to provide MAF, the requirements corresponding to the type of use of the building that fits the criteria specified in paragraph 1(a) and would provide the largest MAF as specified in Appendix D should be followed.

5. MAF including TBE room for MAF (TBE_{MAF} room), rooftop telecommunications equipment (RTE) room[4], intermediate telecommunications equipment (ITE) room (where applicable)[5], and associated vertical riser (vertical $riser_{MAF}$), should be provided. For a development comprising multiple specified buildings, the tallest building(s) should be selected for the provision of MAF. The selection of an alternative building(s) may be acceptable subject to support by OFCA[6].

6. RTE room and ITE room should be designed to minimise any adverse visual impact to the surroundings. For a development with more than one specified building required to provide MAF, RTE rooms and ITE rooms (where applicable) should be provided in each of these selected specified buildings. Furthermore, RTE room is not allowed to be combined with ITE room.

7. MAF should be designated as common parts and be accessible from the common parts of the building. The access pathway to the MAF should be adequate and reasonable such that MNOs could easily access the MAF reserved for site survey, installation, operations and maintenance of their mobile communications facilities.

8. Appropriate power connection points with associated facilities (e.g. fused switches or circuit breakers) should be provided in the TBE_{MAF} room, RTE room and ITE room for MNOs to apply to power companies for electricity supply and meter.

9. RTE room and ITE room should also comply with the following requirements:

(i) the room should have fixed opaque windows that allow effective propagation of radio signals (for example, glass or fibre glass window pane);

(ii) the room should be linked up with the vertical $riser_{MAF}$ of the building;

(iii) no water pipes, sewage pipes, water drainage, water sprinklers, high voltage power supply cables, power transformers should be installed inside the room; and

(iv) sufficient lighting, electrical power supply, maintenance access and ventilation should be provided.

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[4] If there are genuine difficulties in locating the RTE room on the rooftop such as where the rooftop is designed for use other than the four types of uses specified in regulation 28A of B(P)R, or due to the height restriction under the Hong Kong Airport (Control of Obstructions) Ordinance (Cap. 301), the RTE room may be located at a level not lower than 90% of the height of the specified building.

[5] ITE room and associated facilities should be provided at a lower or intermediate level of a specified building that exceeds 175 metres in height, in addition to the provision of RTE room and associated facilities on rooftop. The height of a building is measured in accordance with regulation 23(1) of B(P)R.

[6] OFCA may seek justifications by the authorized person including proof of agreement between the building developer and MNO.

10. If TBE_{MAF} room is combined with TBE room[7], relevant demarcation (e.g. different colour marking on the floor) should be provided in the $TBE_{Combined}$ room. The requirements for TBE room as stated in paragraphs 9 and 10 of this PNAP should also apply to TBE_{MAF} room and $TBE_{Combined}$ room.

11. Regarding the application of paragraphs 1 to 4 above, illustrative examples are available in the "Code of Practice for the Provision of Mobile Access Facilities in Specified Buildings for the Provision of Public Mobile Radiocommunications Services" published by the CA.

12. Sample of information to be included in the general building plans for MAF provision is at Annex of this Appendix.

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[7] If it is not practicable to combine TBE_{MAF} room with TBE room, separate TBE room and TBE_{MAF} room should be provided.

Annex of Appendix C
(PNAP APP-84)

Sample of Information to be included in General Building Plans for MAF Provision

Provision of Access Facilities for Mobile Services (MAF)

I. No. of Buildings with MAF Required

1.			**No. of buildings in the development**	**No. of buildings in the development meeting the criteria**	
	a.	**Commercial or Industrial Building**	2	**> 3,000 m² in UFS**	1
	b.	**Residential Building**	6	**> 50 residential flats**	4
	c.	**Hotel Building**	2	**> 75 hotel rooms**	1
		Total (A)	10	Total (B)	6
2.	**No. of buildings with MAF required**				
	a.*	If (B) > 0, then, no. of buildings with MAF required = not less than (B) x 25% =			2
		OR			
	~~b.*~~	~~If (B) = 0 & (A) > 5, then, no. of buildings with MAF required =~~			~~1~~

3.	**No. of buildings with MAF**	**Required**	**Provided**	**Tallest building(s) in the development selected** *(If no, the selection of alternative building should seek support from OFCA)*
		2	2	Y

* *Delete if not applicable*

II. Details of MAF provided

Buildings with MAF		**TBE$_{MAF}$ Room**			**RTE Room**			**ITE Room** *(required for building with building height^ > 175m)*		
		Required	**Max. GFA may be exempted**	**Provided**	**Required**	**Max. GFA may be exempted**	**Provided**	**Required**	**Max. GFA may be exempted**	**Provided**
Residential Tower 5 *(No. of flats = 70)* *(Building Height^ > 175m)*	Area /m²	10	20	15	10	20	15	10	20	15
	Clear height /m	2.8	0	3	2.8	0	3	2.8	0	3
Residential Tower 6 *(No. of flats = 60)* *(Building Height^ ≤ 175m)*	Area /m²	10	20	15	10	20	15	0	0	0
	Clear height /m	2.8	0	3	2.8	0	3	0	0	0

^ *The height of a building is measured in accordance with regulation 23(1) of B(P)R.*

Appendix D
(PNAP APP-84)

Requirements of Mobile Access Facilities (MAF) in Specified Buildings

COMMERCIAL BUILDING, INDUSTRIAL BUILDING				
Usable floor space[1] per building /1000 m²		> 3 & ≤ 12	> 12 & ≤ 72	> 72
TBE_{MAF} Room				
	Min. area required under Reg. 28A of B(P)R /m²	10	15	20
	Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m²	20	25	30
	Clear height /m	3		
RTE Room				
	Min. area required under Reg. 28A of B(P)R /m²	10	15	20
	Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m²	20	25	30
	Clear height /m	3		
ITE Room (required for building with building height[2] exceeds 175m)				
	Min. area required under Reg. 28A of B(P)R /m²	10	15	20
	Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m²	20	25	30
	Clear height /m	3		
$Vertical\ riser_{MAF}$				
	Min. number of slots	1		
	Min. size /mm	200 × 200		

RESIDENTIAL BUILDING (OTHER THAN A BUILDING FOR RESIDENCE OF A SINGLE FAMILY)				
No. of flats per building	> 50 & ≤ 100	> 100 & ≤ 500	> 500 & ≤ 750	> 750
TBE_{MAF} Room				
Min. area required under Reg. 28A of B(P)R /m²	10	15	20	
Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m²	20	25	30	
Clear height /m	2.8			3
RTE Room				
Min. area required under Reg. 28A of B(P)R /m²	10	15	20	
Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m²	20	25	30	
Clear height /m	2.8			3
ITE Room (required for building with building height[2] exceeds 175m)				
Min. area required under Reg. 28A of B(P)R /m²	10	15	20	
Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m²	20	25	30	
Clear height /m	2.8			3
$Vertical\ riser_{MAF}$				
Min. number of slots	1			
Min. size /mm	200 × 200			

Requirements of Mobile Access Facilities (MAF) in Specified Buildings (Cont'd)

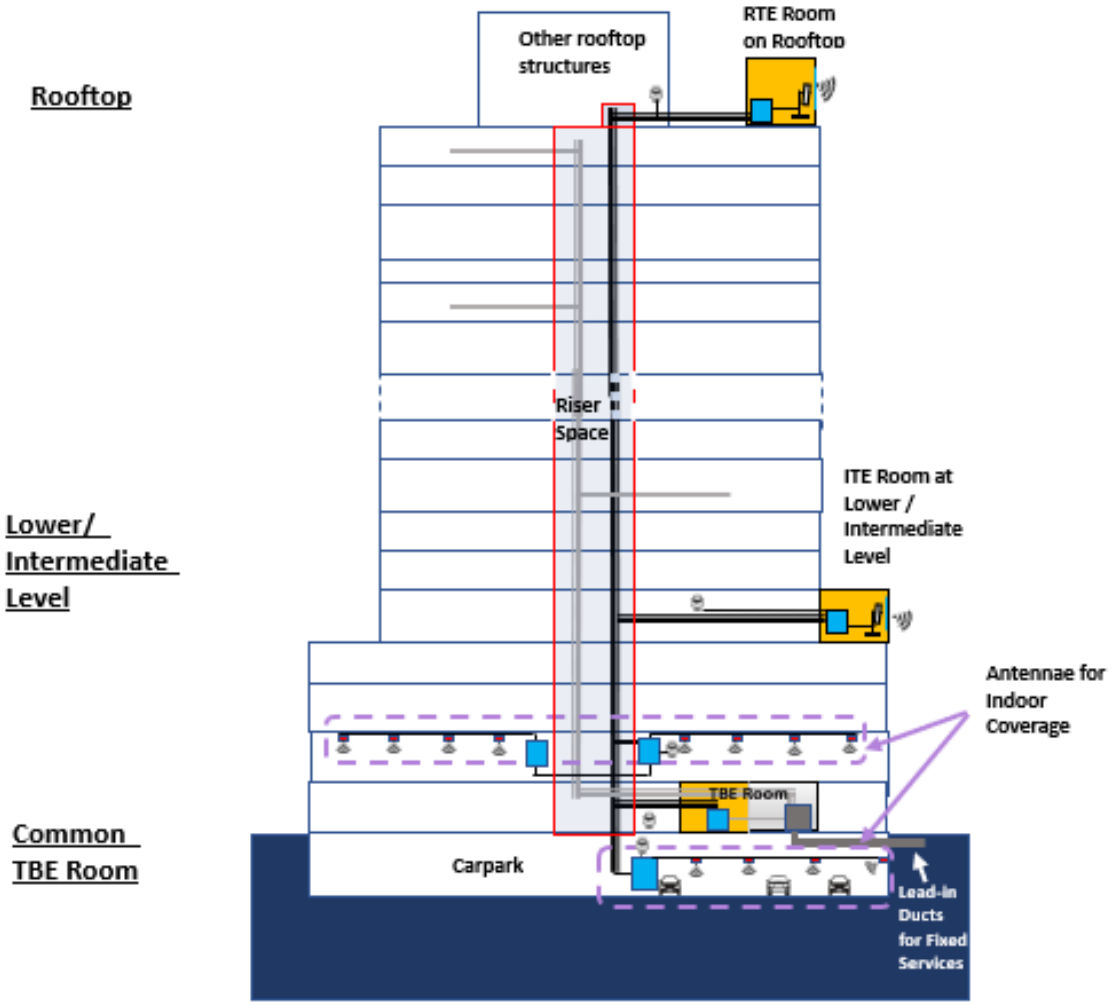
HOTEL BUILDING				
No. of hotel rooms per building		> 75 & ≤ 200	> 200 & ≤ 600	> 600
TBE_{MAF} Room				
	Min. area required under Reg. 28A of B(P)R /m^2	10	15	20
	Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m^2	20	25	30
	Clear height /m	3		
RTE Room				
	Min. area required under Reg. 28A of B(P)R /m^2	10	15	20
	Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m^2	20	25	30
	Clear height /m	3		
ITE Room (required for building with building height[2] exceeds 175m)				
	Min. area required under Reg. 28A of B(P)R /m^2	10	15	20
	Max. area may be exempted under Reg. 23(3)(b) of B(P)R /m^2	20	25	30
	Clear height /m	3		
Vertical $riser_{MAF}$				
	Min. number of slots	1		
	Min. size /mm	200 × 200		

Note 1 : *"Usable floor space" has the same meaning assigned to it in regulation 2(1) of the Building (Planning) Regulations (B(P)R).*

2 : *The height of a building is measured in accordance with regulation 23(1) of B(P)R.*

(9/2024)

General Schematic Arrangement of Access Facilities for Mobile Radiocommunications Services



LEGEND:

- RTE/ITE room with windows allowing effective radio signals propagation
- Mobile equipment
- Antennae for outdoor coverage
- Antennae for indoor coverage
- Riser/ horizontal duct/ trunking for mobile equipment
- Duct/ trunking for fixed telecommunications / broadcasting services
- Electricity meter by power company