

Demolition Works Measures for Public Safety

Introduction

To ensure public safety, the control of demolition works has been strengthened with the enactment of the Buildings (Amendment) Ordinance 1996, Building (Administration) (Amendment) (No.4) Regulation 1997 and Building (Demolition Works) (Amendment) Regulation 1997, which impose new requirements for :

- (a) application for approval of plans for demolition works;
- (b) application for consent to commence the works;
- (c) site safety supervision;
- (d) appointment of Technically Competent Person to supervise demolition works and operator of powered mechanical plant or equipment; and
- (e) certification of completion of works.

2. This practice note sets out the procedures to be followed by authorized persons (AP) and registered structural engineers (RSE) in meeting these requirements. Some points for practical application are also clarified.

Demolition Proposals

3. All demolition proposals should be submitted for formal approval as prescribed under Regulation 8(3) and (4) of the Building (Administration) Regulations. The Building Authority (BA) may refuse to approve under section 16(1)(a) and (e) of the Buildings Ordinance any demolition proposal which does not contain all the plans and documents prescribed in the regulations.

4. The BA will exercise his discretion to refuse an application for consent to the commencement of demolition works under section 16(3)(a) and (b) of the Buildings Ordinance where his approval to the demolition plans for the works has not been given.

/ Code

Code of Practice for Demolition of Buildings

5. When preparing plans for demolition works, reference should be made to the relevant regulations in the Buildings Ordinance and the Code of Practice for Demolition of Buildings issued by the Buildings Department (BD). The Code, which is issued as a draft, provides guidance on compliance with the requirements of relevant regulations. The draft will at a later date be replaced by a formal edition, when it will be refined through experience gained in application.

Site Safety Supervision Plan

6. A supervision plan as defined under section 2(1) of the Buildings Ordinance is required to be lodged with the BA by an authorized person prior to or at the time of application for consent to commence demolition works except for works which satisfy all of the criteria set out in paragraph 11 of the Technical Memorandum for Supervision Plans. Under section 16(3)(bc) of the Building Ordinance, the BA may refuse to give his consent to the commencement of demolition works where an authorized person has not lodged a supervision plan for the works.

Appointment of Operator of Powered Mechanical Plant or Equipment

7. The use of powered mechanical plant or equipment for demolition works carries risks and particular care should be taken. In certain circumstances, it may even be unsafe and should not be allowed, for example, the use of a crane and hammer in a densely populated area. To ensure public safety, the operator of powered mechanical plant or equipment used in demolition work shall meet the requirements as specified in Regulation 9(3) of the Building (Demolition Works) Regulations.

8. For the purpose of Building (Demolition Works) Regulation 9(3)(b), an operator should have completed a training course in "Demolition of Building Course for Plant Operators" organised by the Construction Industry Training Authority (CITA) and obtained the relevant certificate. Equivalent training and certificate issued by a recognised examining body may also be favourably considered by the BA for meeting the requirement.

9. Notwithstanding the need to include the precautionary and protective measures for the demolition works on the plans submitted for approval, the following measures, which at the time of their erection do not affect the structure of any building, may be erected without the consent of the BA for the commencement of the works for the erection of these measures :

- a) protective wire nettings;
- b) dust screens of plastic or tarpaulin sheets;
- c) scaffolds and intermediate catchfans;
- d) hoarding and catch platforms;
- e) shoring & propping for stabilising buildings under demolition or adjoining buildings.

10. An application for consent to the commencement of demolition works must be accompanied by the personal particulars, qualifications and experience of the operators of any powered mechanical plant or equipment proposed to be used in the demolition works in accordance with Regulation 31 of the Building (Administration) Regulations. The information to be submitted should include the operators' names in Chinese and English, Hong Kong identity card numbers, dates of birth, addresses and telephone numbers. The BA may refuse the consent application under section 16(3)(b) of the Buildings Ordinance where such particulars have not been submitted.

11. The BA will vet the particulars of the plant operators and advise the AP on the suitability of the operators as soon as possible, having regard to their qualifications, experience and training.

12. Where there is a change in the appointment of the operator, the BA should also be notified within 7 days of the change and provided with the personal particulars, qualifications and experience of the new operator.

Certification on Completion of Demolition Works

13. Within 14 days of the completion of any demolition works, the AP and the RSE shall certify the completion of works in the specified form BA 14A for demolition works as **Appendix A**.

Accumulation of Debris

14. The accumulation of debris exerts great pressure on the walls of adjoining buildings, slopes or retaining structures and covered walkways, causing danger of collapse. RSCs for demolition works should be asked to ensure that demolition debris does not accumulate to an unacceptable height. In this respect, it is desirable for properly supported chutes to be used for disposal of debris from high levels. Where openings are formed in floor or roof slabs for such purpose, adequate protection and temporary shoring should be provided where necessary. All parties concerned should pay particular attention to the provisions of Building (Demolition Works) Regulation 10.

Dangerous Buildings

15. In addition to the normal procedures under the Building (Demolition Works) Regulations, some special arrangements specifically apply to the demolition of dangerous buildings under the BA's order. The following notes are given for guidance and are not intended to be exhaustive :

/(a) Closure

(a) Closure

Immediately after a closure order has been issued and the building vacated, the premises should be secured against unauthorized entry. Otherwise, the BA has the authority to secure the building and charge the costs to the owner. An AP, the owner or anyone affected by the closure who wishes to gain entry to the building subsequently, should apply to the Dangerous Buildings Section (DBS), Buildings Department for a permit.

(b) Shoring

All shores are to be in structural steel of Grade 250 or above and to comply with the Code of Practice for the Structural Use of Steel 1987 or equivalent. The position of dead shores should first be discussed with DBS. Raking shores or more permanent forms of support for party walls and any common structures should also be suitably designed and constructed. Plans should be submitted for agreement prior to their erection.

In the construction of shores, attention must particularly be given to the connection details between the steel shoring and the party wall.

Temporary shoring should be removed after the demolition works have been completed but, where necessary, should be replaced by a more permanent form of support.

(c) Pedestrian Passageways

Matters relating to pedestrian passageways associated with demolition works are dealt with in PNAP 75.

(d) Joint Demolition

Where several adjacent buildings are to be demolished, an AP appointed in respect of one should not arrange to commence demolition works until the demolition of all buildings can proceed simultaneously. Any consequential delays should be notified to DBS early, so that co-ordination by the parties concerned may be put in hand.

/ (e) Party Walls

(e) **Party Walls**

In most cases, exposed party walls which remain to enclose existing buildings will require raking or flying shores (**Appendix B**) from the site of the demolished building. In many cases, an order requiring such works may be issued by the BA. Where a party wall is next to a framed building, any such order served may require demolition of the party wall and provision of new enclosure to the framed building.

Where conditions permit, the BA may be prepared to consider alternative permanent measures, to be proposed by the AP in charge. Early discussion will avoid delays.

Party walls that will remain should be regularly inspected as demolition proceeds and repairs (including rendering, facing up cut brickwork and removing old wood joist ends) should be carried out concurrently with the demolition works or in special circumstances, as soon as possible.

(f) **Default**

Where works have not commenced or have not been carried out within the period specified in the order, the BA may cause the works to be carried out and then recover the costs together with plus supervision charges from the owner. The AP appointed should advise his client accordingly and attend to all matters without delay.

(g) **Liaison**

It is the duty of the AP to advise the BA of any unexpected weaknesses in adjacent buildings, structures and ground revealed by demolition works. He should immediately discuss with DBS any such problems encountered.

Street Name Signs on Buildings

16. To ensure efficient replacement of street name plates, AP are requested to inform the Director of Highways of any case where street name plates are affixed to buildings to be demolished : Buildings Ordinance section 32 refers.

/Public

Public Drainage System

17. To ensure proper updating of drainage records and better control of drainage connections, AP are requested to inform the Drainage Services Department (Hong Kong and Islands Division/Mainland South Division/Mainland North Division, as appropriate) once the RGBC or RSC has completed the sealing of drains : Building (Demolition Works) Regulation 3(2)(b) refers.

Safety and Convenience of Third Parties

18. Proper protection and safe passage for the public must be provided at all times by the erection and maintenance of suitable hoardings, covered walkways and protective fans. [Note : A typical section showing the dimensions and other details for the construction of a steel catch platform is in **Appendix C.**]

19. Every effort must be made to minimize any nuisance to the public arising from dust, noise and vibration.



(LEUNG Chin-man)
Building Authority

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Demolition of Buildings Supporting Ground
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Mechanical Plant - Use of In Demolition Works
Party Walls
Public Drainage System, Protection of During Demolition
Shoring
Street Name Signs

BUILDINGS ORDINANCE
(Chapter 123)
BUILDING (ADMINISTRATION) REGULATIONS
Regulations 25

Certificate on completion of demolition works

To the Building Authority

In accordance with the provisions of regulation 25 of the Building (Administration) Regulations,

*I/we (name in full) _____

(Chinese) _____, *registered general building contractor/
registered specialist contractor ontractor of (address) _____

certify that the demolition work _____

carried out at (address of site) _____

on (Lot No.) _____ have been carried out in accordance with the provisions of
the Buildings Ordinance and Regulations and completed on (date) _____.

You consented to the above works on (date) _____ by Permit No. _____

(Your Ref No. _____).

Date _____

Signature

Certificate of Registration No. : _____

Date of expiry of registration : _____

In accordance with the provisions of regulation 25 of the Building (Administration) Regulations, I
(name in full) _____ (Chinese) _____,
registered structural engineer of (address) _____

_____ ,
certify that the above demolition works have been completed in accordance with the plans approved by
you (your Ref. No. _____); and any structure or building remaining on the site, in
my opinion, is structurally safe; and any land or street affected by the demolition works has an adequate
margin of safety.

Date _____

Signature

Certificate of Registration No. : _____

Date of expiry of registration : _____

In accordance with the provisions of regulation 25 of the Building (Administration) Regulations, I
(name in full) _____ (Chinese) _____,
authorized person of (address) _____

_____ ,
certify that the above demolition works have been completed in accordance with the plans approved by
you (your Ref. No. _____); any structure or building remaining on the site is, in my
opinion, structurally safe; and any land or street affected by the demolition works has an adequate margin
of safety.

2. The total cost of the demolition works is \$ _____.

Date _____

Signature

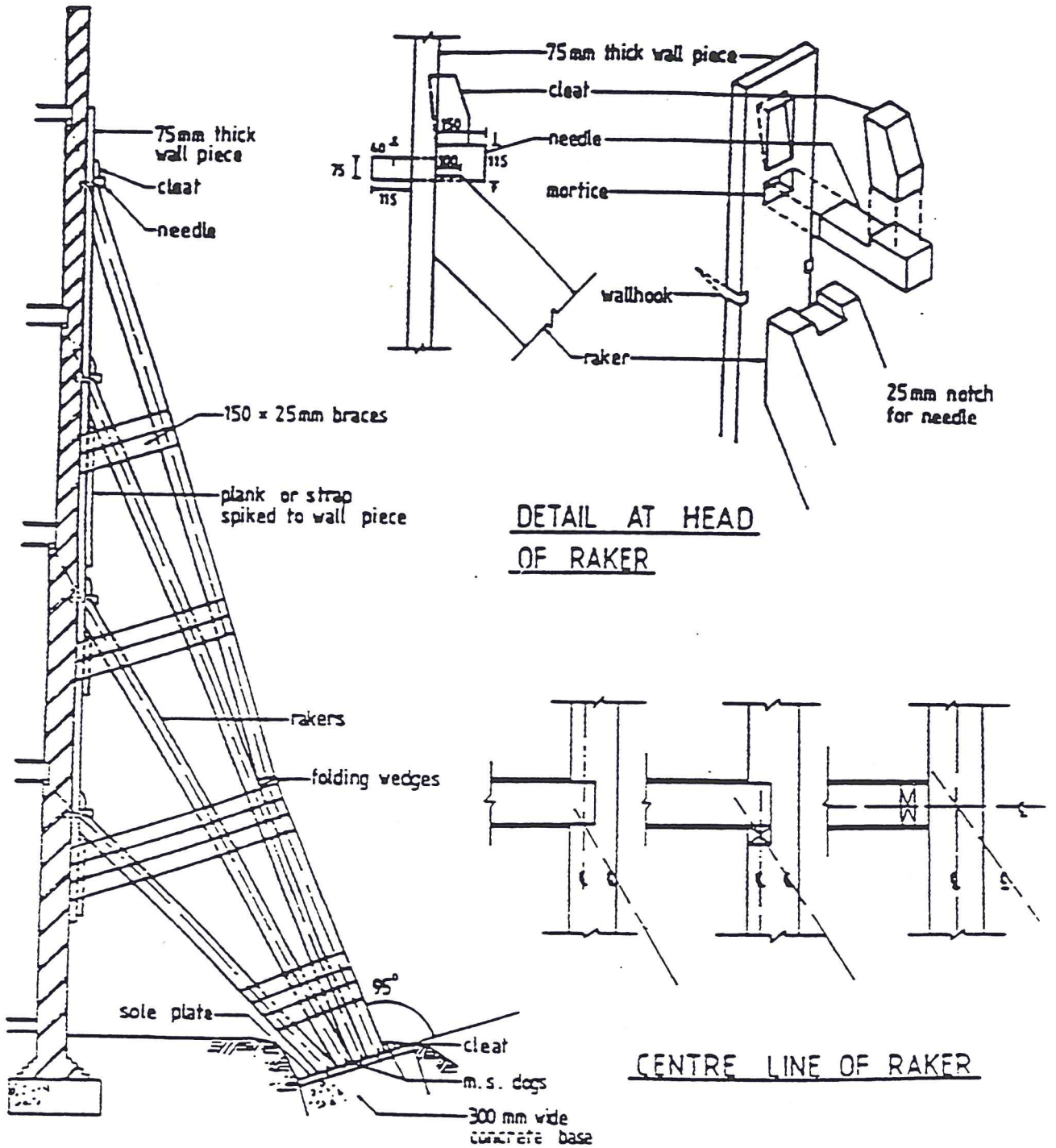
Certificate of Registration No. : _____

Date of expiry of registration : _____

*Delete whichever is inapplicable

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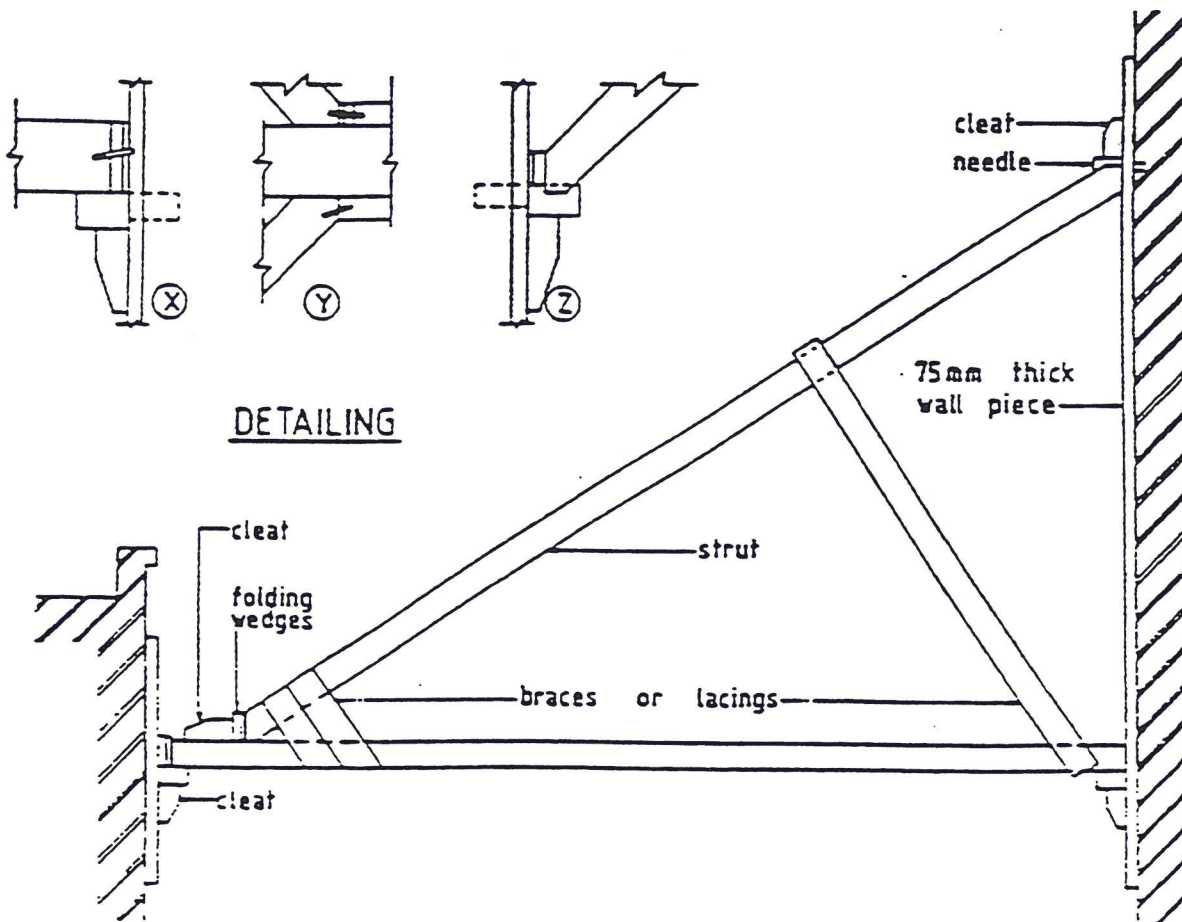
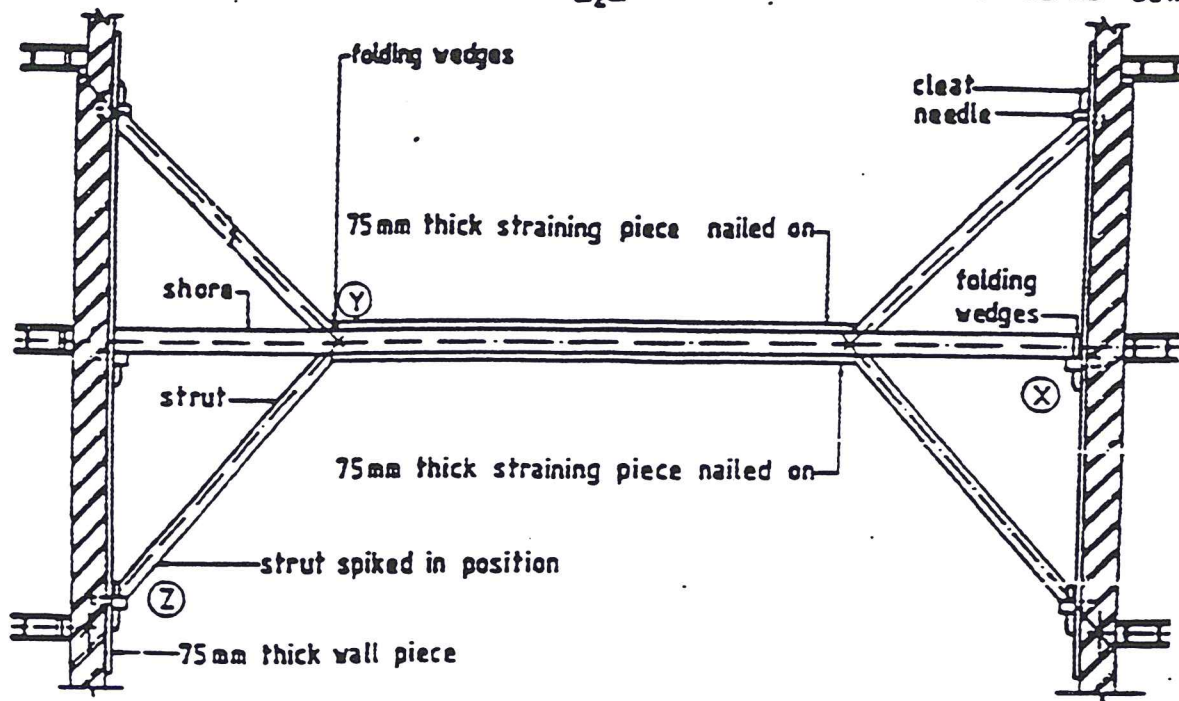
STANDARD DETAILS



RAKING SHORES

NOTE SPACING OF RAKING SHORES NOT TO EXCEED 5m

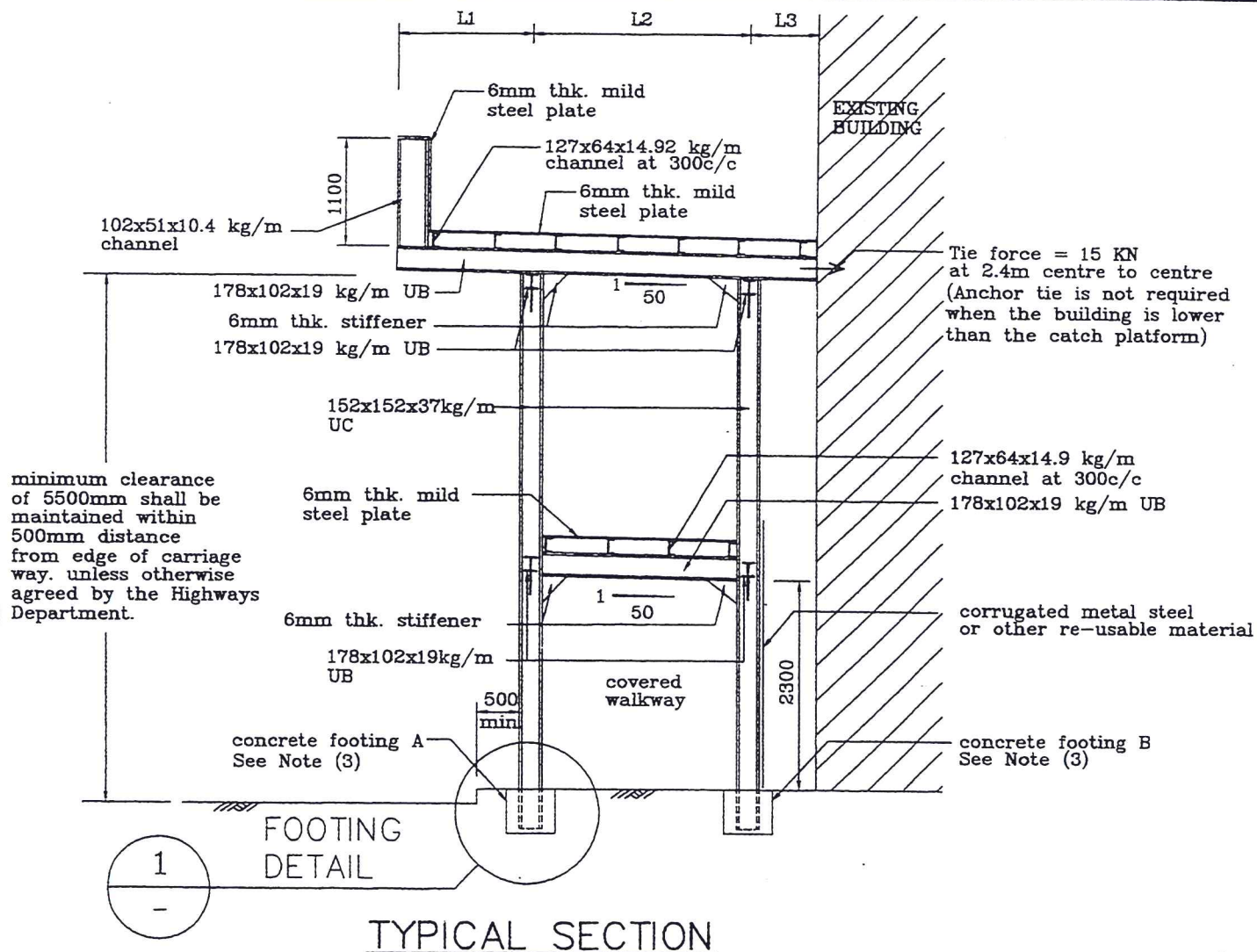
HEIGHT OF WALL	NO OF RAKERS PER SET	SIZE OF RAKERS
0m	2	150 x 150
0m	3	150 x 150
1.2m	4	175 x 175
1.5m	5	200 x 200



FLYING SHORES

NOTE SPACING OF FLYING SHORES TO BE 3m-5m

	SIZE OF MEMBERS	
	SPAN UP TO 5m	SPAN 5m-10m
FLYING SHORES	125 x 125	150 x 150 TO 225 x 225 (e.g. for 6m — 175 x 175)
BRACING STRUTS	125 x 125	125 x 125 TO 200 x 200



DESIGN LOADS ON COVERED WALKWAY/CATCH PLATFORM

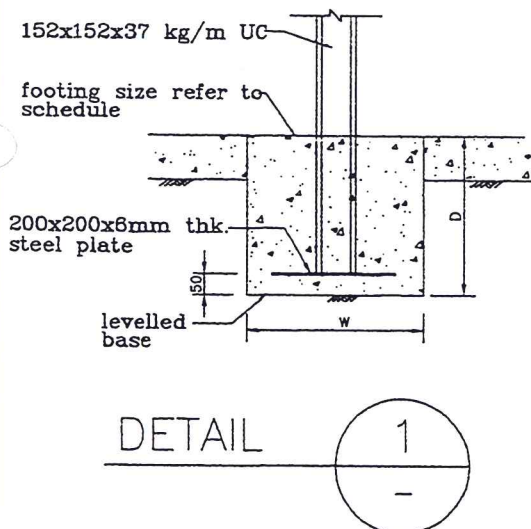
The roof of the covered walkway shall be designed to support a uniformly distributed load of 5.0kPa. The catch platform structure shall be designed to sustain a uniformly distributed load of 5.0kPa or a point load of 20kN acting on an effective area of 300mm x 300mm. The wind load acting on the covered walkway and catch platform may be taken as equal to 37% of the design wind pressure given in Table 1A or Table 1B of the Code of Practice on Wind Effects in Hong Kong 1983, as appropriate to the terrain.

PARTICULAR PARAMETERS ASSUMED IN THIS DESIGN

- Spacing of the structural frame does not exceed 2.4m.
- Wind pressure is based on 37% of design wind pressure of 1.2kPa.
- Safe bearing pressure of soil underneath pavement is 100 kPa (125kPa with wind)

SCHEDULE OF FOOTING SIZE

L1(m)	L2(m)	L3(m) (Maximum)	size of footing A (L x W x D) (m)	size of footing B (L x W x D) (m)
0.9	1.7	0.5	0.7 x 0.5 x 0.4	0.9 x 0.5 x 0.4
0.9	2.3	0.5	0.8 x 0.5 x 0.4	0.5 x 0.5 x 0.4



TYPICAL STRUCTURAL DETAILS OF STEEL CATCH PLATFORM AND COVERED WALKWAY

- NOTE: (1) - REFER TO PNAP 75 FOR GUIDELINES GOVERNING THE DESIGN OF COVERED WALKWAY.
- (2) - AP/RSE SHOULD PROVIDE PRECISE DETAILS TO SUIT SPECIFIC CIRCUMSTANCES OF INDIVIDUAL SITES.
- (3) - THE SIZE OF THE FOOTING IS FOR GENERAL REFERENCE ONLY WHEN CONCRETE IS USED. WHERE THE WIDTH OF THE FOOTPATH IS NARROW, THE DESIGNER SHOULD CONSIDER ADOPTING OTHER SUITABLE DESIGN AND BUILDING MATERIAL SUCH THAT THE TOTAL WIDTH, 2W, OF THE FOOTINGS A AND B SHOULD NOT BE MORE THAN HALF OF THE WIDTH OF THE FOOTPATH IN ORDER NOT TO IMPEDE ACCESS TO UNDERGROUND PUBLIC SERVICES.
- (4) - THE FOOTINGS SHALL NOT REST ON OR ENCLOSE ANY UNDERGROUND UTILITIES. IN ANY CASE, THE UTILITY UNDERTAKINGS SHOULD BE CONSULTED REGARDING LOCATIONS OF UNDERGROUND UTILITIES.