

1 June 2023

See Distribution List

Dear Sir/Madam

ADDENDUM NO.2 TO THE CODE OF PRACTICE ON SURFACE WATER DRAINAGE (7TH EDITION) TO ENHANCE FLOOD PROTECTION FOR CRITICAL INFRASTRUCTURE (CI) AND KEY INFRASTRUCTURE (KI)

This circular informs Developers, Qualified Persons and Agencies of the upcoming Addendum no. 2 to the Code of Practice on Surface Water Drainage (COPSWD) (7th Edition) on 1 September 2023 to better flood protect new or redeveloping infrastructure that deliver essential services against flood risks. (Please refer to Annex A for summary of key changes, Annex B for full list of changes).

Background

2 Climate change is a long-term existential challenge which has brought rising sea levels and extreme weather patterns. Across the globe, countries and cities have suffered from severe flooding. Infrastructure that deliver essential services were affected which caused significant disruptions to daily life, and threatened access to food, water, and energy.

Addendum No. 2 to the Code of Practice on Surface Water Drainage (7th Edition)

3 To better flood protect new or redeveloping infrastructure in Singapore that deliver essential services, new requirements will be added into the COPSWD (7th Edition). These include:

- i) Introduction of new terminologies “*Critical Infrastructure*” (CI), “*Key Infrastructure*” (KI) and “*Critical M&E Equipment*”;
- ii) Inclusion of “*Transmission Substations*” and “*Exchange or Central Office used for Telecommunication Purpose*” to the current list of “*Special Facilities*” developments;
- iii) New or redeveloping CIs and KIs within flood zones to be elevated above the modelled flood levels that will be provided by PUB; and
- iv) Critical M&E Equipment in CIs and KIs shall be located no lower than the MPL (*COPSWD Clause 2.1*), or within basements that meet the crest protection requirements (*COPSWD Clause 2.2*)

4 Qualified Persons (QP) will need to advise the developers and owners of CIs and KIs on the need to comply with the new requirements and adequately protect critical M&E within the developments. Qualified Persons shall also pre-consult PUB via pub_one@pub.gov.sg on the required MPL before embarking on site design of CIs and KIs, some of which may be integrated with a larger development (e.g. Distribution Substations).

5 Agencies with upcoming CI and KI developments will need to inform their appointed QPs on the CI and KI status of the development and pre-consult PUB on the required MPL before embarking on site design. Agencies can do so via the *Planning Consultation Checking System (PCCS)*. Should Agencies not have access to this platform, you may also contact the following officers:

Location of CI or KI	Officer-in-Charge	Email
Western/Northwestern region (e.g. Tuas, Jurong, Upp Bt Timah, Bt Batok, Bt Panjang, Choa Chu Kang, Lim Chu Kang)	Mr Idaly Mamat	Idaly_MAMAT@pub.gov.sg
Central region (e.g. CBD, Bt Timah, Queenstown, Bishan, Kallang, Geylang)	Ms Pratheipa Rajendram	Pratheipa_RAJENDRAM@pub.gov.sg
Eastern/Northeastern region (e.g. Changi, Punggol, Sengkang, Ang Mo Kio, Woodlands, Sembawang)	Ms He Qihui	HE_Qihui@pub.gov.sg

Queries on the Circular

6 If you have any queries, you may contact Mr. Derrick Low at derrick_low@pub.gov.sg or Mr. Daniel Tio at daniel_tio@pub.gov.sg.

Yours faithfully






Joanne Siew (Ms.)
Deputy Director
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Annex A
SUMMARY OF NEW FLOOD PROTECTION REQUIREMENTS FOR NEW OR REDEVELOPING CRITICAL INFRASTRUCTURE (CI) AND KEY INFRASTRUCTURE (KI)

1

“Transmission Substations” and “Exchange/Central Office used for Telecommunication Purpose” to be added to list of SF

	General	Multi-Unit Residential / Industrial / Commercial / Institutional	Special Facilities (SF)/ Devs with linkages to SF
			
Minimum Platform Level <i>(whichever is the highest)</i>	4m SHD for Southern Coast, 4.5m SHD for Northern Coast		
	300mm above adjacent road	600mm above adjacent road	1m above adjacent road
	2	300mm above modelled flood levels <i>(for CI/KI)</i>	300mm above modelled flood levels <i>(for CI/KI)</i>
Crest Level – ingress/egress to basement to have extra crest	150mm above MPL	300mm above MPL	

3

Critical M&E equipment in CIs / KIs to meet MPL and crest protection requirements

Annex B

**ADDENDUM NO. 2 TO CODE OF PRACTICE ON SURFACE WATER DRAINAGE
(7TH EDITION)**

Clause	COP 7 th Edition -Existing Clauses	Amended Clauses	Remarks on Changes
Terminology	<i>(None)</i>	<p>“Critical Infrastructure”</p> <p>Refers to physical infrastructure and assets that are vital to the continued delivery of the essential services that Singapore relies on, the loss or compromise of which would lead to a debilitating impact on security, economy or public health and safety.</p>	
Terminology	<i>(None)</i>	<p>“Key Infrastructure”</p> <p>refers to developments that fall outside the definition of a critical infrastructure, but are identified by agencies to be important to agencies’ function, such as distribution substations (22kV, 6.6kV), prison complexes, bus interchange and depots, and neighbourhood police centres.</p>	
Terminology	<i>(None)</i>	<p>“Critical M&E Equipment”</p> <p>refers to power (i.e. distribution substations, transformers, standby generator sets), communication (i.e. main distribution frame rooms, server rooms) and other M&E equipment deemed as critical by the asset owner;</p>	
Terminology	<p>"Special Facilities"</p> <p>refers to developments such as Rapid Transit systems, port/aviation facilities, wafer fabrication plants, underground road networks, power</p>	<p>"Special Facilities"</p> <p>refers to developments such as Rapid Transit systems, port/aviation facilities, wafer fabrication plants, underground road networks, power</p>	

Clause	COP 7 th Edition -Existing Clauses	Amended Clauses	Remarks on Changes
	generation plants, healthcare with A&E services, gas transmission/ receiving station or any developments as specified by the Board;	generation plants, healthcare with A&E services, gas transmission/ receiving station, transmission substations, exchange or central office used for telecommunication purpose , or any developments as specified by the Board;	
2.1.1 (b)	<p><u>Industrial/ Institutional/Commercial/Multi-Unit Residential Developments</u></p> <p>The minimum platform level shall not be lower than:</p> <p>(i) 4.0m above Singapore Height Datum for developments along the southern coast; and 4.5m above Singapore Height Datum for developments along the northern coast; or</p> <p>(ii) 600 mm above the adjacent road/ground level; or</p> <p>(iii) Any other level as may be specified by the Board;</p> <p>whichever is the highest.</p>	<p><u>Industrial/ Institutional/Commercial/Multi-Unit Residential Developments</u></p> <p>The minimum platform level shall not be lower than:</p> <p>(i) 4.0m above Singapore Height Datum for developments along the southern coast; and 4.5m above Singapore Height Datum for developments along the northern coast; or</p> <p>(ii) 600 mm above the adjacent road/ground level; or</p> <p>(iii) 300mm above modelled flood levels if the development is a CI or KI</p> <p>(iv) Any other level as may be specified by the Board;</p> <p>whichever is the highest.</p>	<p>To request for information during consultation stage if the development is a CI or KI.</p> <p>Note that the additional requirement for this clause is only applicable to CI and KI</p>
2.1.1 (c)	<p><u>Special Facilities and Developments with Direct or Indirect Linkages to Underground Special Facilities</u></p> <p>The minimum platform level shall not be lower than:</p> <p>(i) 4.0m above Singapore Height Datum for developments along the southern coast; and</p>	<p><u>Special Facilities and Developments with Direct or Indirect Linkages to Underground Special Facilities</u></p> <p>The minimum platform level shall not be lower than:</p> <p>(i) 4.0m above Singapore Height Datum for developments along the southern coast; and</p>	(As above)

Clause	COP 7 th Edition -Existing Clauses	Amended Clauses	Remarks on Changes
	<p>4.5m above Singapore Height Datum for developments along the northern coast; or</p> <p>(ii) 1 m above the adjacent road/ground level; or</p> <p>(iii) Any other level as may be specified by the Board;</p> <p>whichever is the highest.</p>	<p>4.5m above Singapore Height Datum for developments along the northern coast; or</p> <p>(ii) 1 m above the adjacent road/ground level; or</p> <p>(iii) 300mm above modelled flood levels if the development is a CI or KI</p> <p>(iv) Any other level as may be specified by the Board;</p> <p>whichever is the highest.</p>	
2.5	(None)	<p>2.5 Critical M&E equipment in Critical Infrastructure and Key Infrastructure:</p> <p>The QP shall advise the developer/owner on the need to identify power, communications and other critical M&E equipment prior to the design of the development site.</p> <p>Critical M&E equipment shall be located /installed at the minimum platform level or higher.</p> <p>For critical M&E equipment located at the basement, the structural crest level for all entrances, exits and openings leading to the basement must comply with crest level requirements as stipulated in clause 2.2.</p>	

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