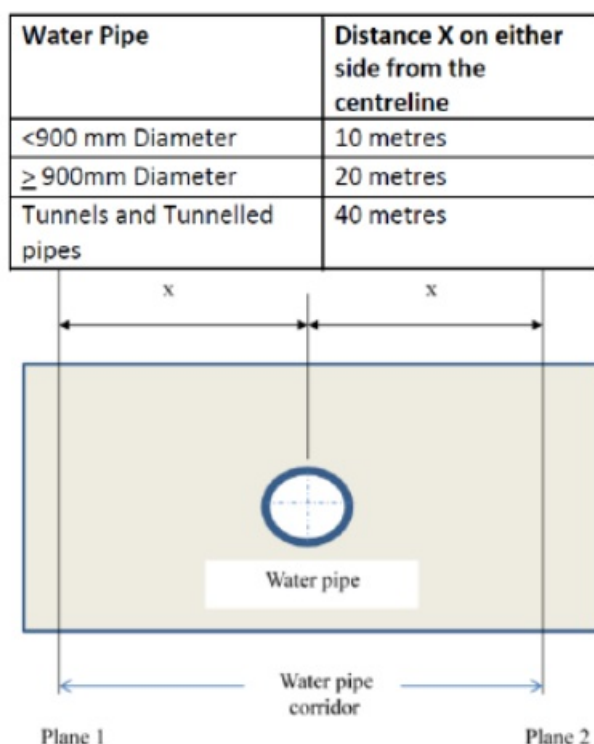


Request No. : A0541684H
Date : 18 JUL 2023

Dear Sir/ Mdm

APPLICATION FOR WATER SERVICE PLANS (WSP) ON LOT MK04-05895T

- 1 The approximate positions of PUB's existing watermain are shown in the enclosed drawing. Smaller submains and connection pipes (< 100 mm) to customers' premises/properties may not be included.
- 2 PUB's other comments/requirements are shown in the Annex.
- 3 For enquires on diversion work or protection of existing services on existing developments, please contact PUB, Water Supply (Network) officer at Tel No. 6885 2542 or email address: PUB_WSN_CENTRALBU@pub.gov.sg.
- 4 Please refer to the advisory notes for the prevention of damage to PUB's watermain when carrying out the proposed works in the vicinity of PUB's watermain. The advisory notes can be found at www.pub.gov.sg/Documents/Watermain_AdvisoryNotes.pdf.
- 5 Prior to carrying out of specified activities within the Watermain Protection Corridor (refer to the below table), the QP/Contractor/Consultant shall make a submission to PUB via the online portal for the Protection of Water and Sewer Pipes (POWS) at <https://bpu.pub.gov.sg/pows>.



This is a computer-generated document. No signature is required.

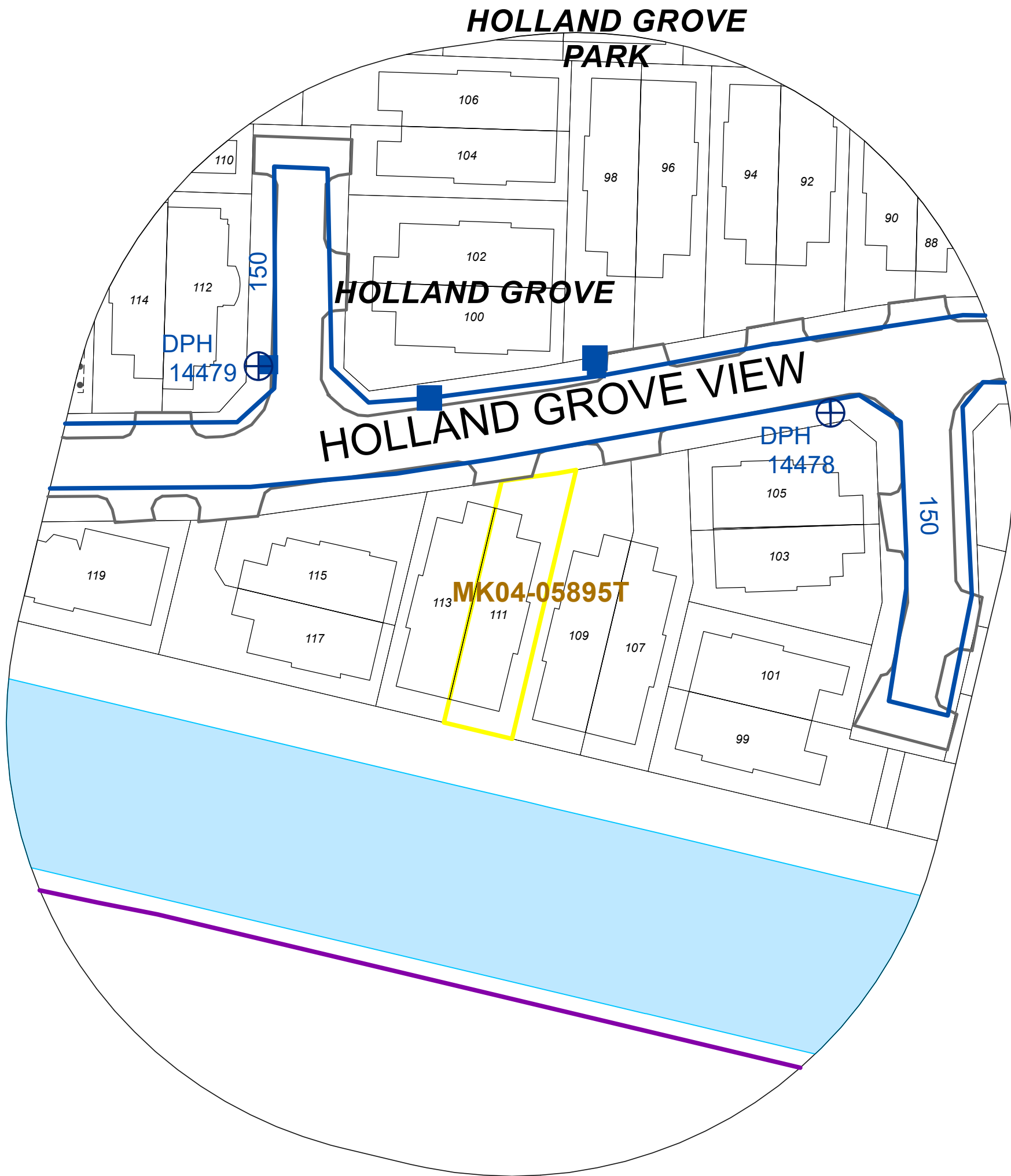
PUB REQUIREMENTS FOR CONNECTION OF WATER SERVICES

1. The design of the internal water reticulation system shall comply with the Public Utilities (Water Supply) Regulations, Singapore Standard 636 - Code of Practice for Water Services and all other relevant statutory requirements. The modes of water supply to be adopted are as follows:

Height of Highest Fittings	Method of Supply
i) Up to 25 m above mean sea level	Direct
ii) Higher than 25 m above mean sea level but up to *37 m above mean sea level.	Indirect supply through high level storage tanks.
iii) Higher than 37 m above mean sea level	Indirect supply through low level tank with pumping to high level storage tanks.
(* Refers to height of inlet pipe to high level storage tanks.)	

2. Notwithstanding the above modes of supply, where water is essential for the operations of the proposed development, storage tanks of capacity equivalent to 1 day's water requirements shall be provided for the purpose of maintaining a continuous supply of water in the event of supply interruptions.
3. Where pumping system or storage tanks are required for the water services, a Professional Engineer must submit the Notification of WSI Works together with a set of drawings to PUB. If all the fittings in the water service installation are receiving direct water supply from PUB watermain, then a Licensed Plumber shall be engaged to submit the Notification of WSI Works together with a set of drawings to PUB prior to commencement of the WSI works.
4. PUB is presently supplying NEWater for direct non-potable purposes such as for cooling towers, industrial processes, general washing, landscaping, and other non-potable purposes. All new non-domestic premises, such as commercial and industrial developments, etc., including those existing premises undergoing addition/alteration works where it is applicable to use NEWater, are therefore required to provide a dedicated NEWater pipe system now to facilitate the supply of NEWater when it becomes available in future. Provision shall also be made for a NEWater storage tank to be installed within the premises with its inlet not higher than 15m above mean sea level and a capacity equivalent to the 1 day's non-potable water requirement. There shall be no cross connection between the PUB water and NEWater supply pipelines. Developers / consultants may consult PUB during the pre-planning stage on the detailed requirements.
5. Water fittings (e.g. pipes, pipe fittings, valves, water storage tanks, taps and mixers (basin, sink/bib, shower), dual-flush low capacity flushing cisterns (LCFCs), flush valves, materials in contact with water, etc.) to be used in the proposed development shall be tested for compliance with the standards and requirements as stipulated in PUB's Stipulation of Standards & Requirements for Water Fittings (PUB S&R) which is available for downloading from PUB's website at <https://www.pub.gov.sg/compliance/watersupplyservices/standards>. Additionally, water fittings such as taps and mixers, LCFCs and flush valves shall be registered under the PUB's Mandatory Water Efficiency Labelling Scheme (MWELS).
6. Only water fittings (i.e. taps and mixers, LCFCs, WC flush valves and urinal flush valves/waterless urinals) that are of at least 2-tick rating under PUB's MWELS shall be installed. The proposed development should obtain the Water Efficient Building (Basic) Certification by PUB.
7. Unless with written permission by PUB, fixed or movable sprinklers are not allowed to be used to deliver any form of water supplied by PUB, including potable water, NEWater, raw water, effluent water, industrial water for watering any garden, lawn or other land including commercial market gardens, commercial nurseries, sports grounds, golf courses, race courses, public and club tennis courts. Where possible, developers are encouraged to use drought tolerant plants.
8. For non-domestic developments with estimated water requirements of at least 5,000 m³/month, and government developments with estimated water requirements at least 3,000 m³/month, private water meters in accordance to PUB's requirements to monitor water usage in the key areas as stipulated in the Fourth Schedule of the Public Utilities (Water Supply) Regulations shall be installed.
9. Wherever possible, alternate sources of water (such as industrial water, high grade industrial water, sea water, recycled water, rainwater and AHU condensate etc) should be used to meet the non-potable water requirements of the proposed development.
10. Wherever possible, water recycling system should be set up to reclaim water for reuse for non-potable purposes such as production process, toilet flushing, irrigation and as cooling tower make up water, etc.

- 11 Use non-water cooled systems (such as air-cooled, refrigerant-cooled, etc) for cooling purposes wherever possible.
- 12 Cooling towers should achieve minimum 7 and 10 Cycles of Concentration (COC) using potable water and NEWater respectively.



1. The plan and the information contained herein is privileged and is given solely to the intended recipient for the specific purpose in which the plan is given. No part of the plan shall be reproduced or circulated to others under any circumstances.
2. The information of the watermains on this plan is valid as at date plotted and is given without any liability for any error, mis-statement or omission therein.
3. Position of watermains, water chambers and hydrants indicated on this plan are approximate only. Smaller submains and connections to customers' premises/properties may not be included. Trial holes must be carried out to determine the exact alignments and levels of all watermains before commencement of any works.
4. The cost of diversions, if required, of any watermains shall be borne by owner / developer. For watermains of 500mm diameter and above, these are our vital trunk mains and diversions should be avoided unless absolutely necessary. Owner / developer shall determine by means of trial holes the exact alignment and levels of all existing watermains during the design stage and let PUB know whether they are affected by the proposed work so that PUB can advise whether diversion is required. If deem necessary by PUB, the affected watermains shall be diverted and the cost of diversion shall be borne by owner / developer. The cost of diversion shall be finalized upon confirmation on the length of watermains affected.
5. All other necessary precautions must be taken to safeguard and to avoid the damaged to the watermains. The cost of repairs to any watermains damaged as a result of work carried out is to be borne by party which causes the damage. The party will also be billed for the repair of the mains and the estimated quantities of water lost from the damaged mains. The party will also be required to indemnify PUB against all losses and claims arising from damage to watermains.
6. Please inform PUB 24-hour Call Centre at Tel No 1800-CALL PUB (1800-2255782) immediately in the event of damaged to watermain.

Type of Water Mains:

PUB Water Mains	Dia
NEWater Mains	NW - Dia
Industrial Water Mains	IW - Dia
Raw Water Mains	RW - Dia

Legend:

Line styles of water mains in different states

Existing Water Mains	—
Proposed Water Mains	- . - . - .
Water Mains Under Construction	- - - - -
Abandoned Water Mains	- - - - -
Water Chamber	□
Double Pillar Hydrant	⊕
Ground Pillar Hydrant	●
Triple Pillar Hydrant	⊗
PUB Installation	■
PUB Power Cables	6.6kV cables
Drain Line	—
The Proposed Site is outlined in YELLOW	□

