

**PROPOSED PETROL STATION DEVELOPMENT
AT 264 QUEENSWAY**

**ADDITIONAL CONDITIONS OF TENDER
(TECHNICAL)**

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PART I

1.0 GENERAL

- 1.1 The Successful Tenderer must in addition to the Particulars and Conditions of Tender, observe and comply with these Additional Conditions of Tender (Technical) in the development and lease of the Land Parcel at 264 Queensway ("the Land"). The Conditions of Tender and these Additional Conditions of Tender (Technical) shall be read in conjunction with the technical information booklet enclosed in the eDeveloper's Packet. The Successful Tenderer shall also comply with all applicable guidelines issued by the Competent Authorities and Public Utility Licensees. All proposals are subject to the approval of all relevant Competent Authorities and Public Utility Licensees.
- 1.2 The conditions and requirements of all relevant Competent Authorities and Public Utility Licensees set out in these Additional Conditions of Tender (Technical) and in the Conditions and Requirements of Relevant Competent Authorities and Public Utility Licensees and the appendices thereto (to be complied with by the Successful Tenderer at his own cost and expense) are provided to Tenderers for their information only. Whilst every care and attention has been taken in the compilation and preparation of these conditions and requirements, the HDB does not warrant that they constitute an exhaustive list of the conditions and requirements of the relevant Competent Authorities and Public Utility Licensees in respect of the development or that they are free from any errors or omissions. These conditions and requirements are subject to change by the relevant Competent Authorities and Public Utility Licensees and the onus lies on the Successful Tenderer to verify these conditions and requirements with the HDB, the relevant Competent Authorities and Public Utility Licensees directly and comply with their current conditions and requirements.
- 1.3 The Government and HDB are not liable to any tenderer and tenderers shall not claim against the Government and/ or HDB for any errors and/ or omissions in and for any loss suffered by any tenderer arising directly or indirectly from the reference to, usage of and/or reliance on the contents of these Additional Conditions of Tender (Technical), the Conditions and Requirements of Relevant Competent Authorities and Public Utility Licensees and appendices thereto.
- 1.4 All references to "the Successful Tenderer" herein shall be deemed to include "the approved developer" as defined in the Particulars and Conditions of Tender where the context so admits.

PART II

2.0 PLANNING PARAMETERS

2.1 PROPOSED DEVELOPMENT

The Land Parcel at 264 Queensway ("the Land") with a site area of 1,207.80 sqm shall be for petrol station development ("the Development"). The site area is the area measured up to the boundary lines as shown on the Certified Plan No. 93375.

*Site area is subject to Cadastral Survey

2.2 ALLOWABLE GROSS FLOOR AREA (GFA)

The total GFA for the Development shall not exceed 603.90 sqm. Based on the site area of 1,207.80 sqm, the permissible Gross Plot Ratio (GPR) should not exceed 0.5*. Ancillary offices, stores, and compressor rooms shall not exceed 10% of the total proposed GFA. The total GFA shall be computed in accordance with Urban Redevelopment Authority's (URA) Development Control Guidelines.

*Indicated for information of the Tenderer only.

2.3 RETAIL SPACE

Retail space within the Development shall be allowed, subject to compliance with URA's Development Control Group and other relevant Competent Authorities' requirements. The total

retail quantum shall be 150sqm GFA maximum or 15% of the total approved GFA, whichever is lower. No preparation, processing and cooking of food are allowed within the retail space.

2.4 BUILDING LINE / SETBACK

The Successful Tenderer shall at all times comply with the URA's and the relevant Competent Authorities' requirements on the building line setback. Notwithstanding the generality of the foregoing, the building setbacks (including basement structures) shall be based on the boundary of the Land delineated on the Certified Plan No. 93375.

The Successful Tenderer shall conform to URA's Current Guidelines for petrol station development with regard to Building Spacing and Setback Standards.

2.5 BUILDING HEIGHT

The Development shall be subject to a technical height control of 160.0m SHD. The maximum allowable storey height for the Development is up to 1-storey high. The technical and storey height control of the Development is to comply with all applicable standing guidelines issued by the Competent Authorities, including URA's Development Control Guidelines. The Successful Tenderer is to check with the Competent Authorities on the standing guidelines as the guidelines are reviewed from time to time. The lowest technical and storey height control imposed by the Competent Authorities will be applicable to the Land. The final technical and storey height are subject to the approval of the Competent Authorities.

The Successful Tenderer shall ensure that any and all developments, structures and fixtures on the Land do not exceed the maximum allowable height of 160.0m SHD. Such developments, structures and fixtures including those on the roof tops of the building, whether permanent, temporary, transient or stationary (including but not limited to the building superstructure, TV antennae, water tanks, lift motor rooms, cranes, maintenance equipment, lightning conductors, moving objects, vegetation, etc) and all construction equipment and temporary structures (including but not limited to cranes, piling rigs, etc) shall all be subjected to the same height limit. Republic of Singapore Air Force's (RSAF) clearance shall be sought for the use of construction equipment and temporary structures above 160.0m SHD (email: Height_Control@defence.gov.sg). If the Successful Tenderer wish to pre-consult RSAF on the maximum allowable height for the use of construction equipment and temporary structures, the Successful Tenderer can consult RSAF with a copy of the tender conditions and the letter of award.

The Successful Applicant shall consult DSTA (landuse@dsta.gov.sg) and CAAS (caas_ansp_ols@CAAS.gov.sg) via email prior to making the submission at Design Gateway in CORENET X, to obtain DSTA's and CAAS' clearance for the total building height, site layout and vehicular access points(s). Please include URA Development Control Group in your email consultation to DSTA and CAAS. Prior to the Construction Gateway submission, the Successful Applicant should reconsult DSTA and CAAS if required.

The Successful Tenderer shall submit to CAAS a certified surveyor as-built plan prior to applying to the Building Control Authority (BCA) for the Temporary Occupation Permit or Certificate of Statutory Completion for the Development on the Land.

The Successful Tenderer shall obtain CAAS' prior written approval before mobilizing and/or installing any construction machineries on the Land. An application to CAAS is to be submitted online via the SkySafe portal at URL: skysafe.caas.gov.sg by the Successful Tenderer.

The Successful Tenderer is to consult MINDEF through URA's Development Control Group when the detailed development plans are available.

In the event where there are any communication installations on the Land, the Successful Tenderer is advised to seek clearance from relevant agencies such as Infocomm Media Development Authority (IMDA) of Singapore.

2.6 DEVELOPMENT CONTROL

The Development must comply with Development Control Guidelines issued from time to time by the Competent Authority under the Planning Act (Cap 232), where applicable.

Where applicable, the Successful Tenderer's Qualified Person shall submit a Development Statement of Intent (DSI) together with their development proposal to the Competent Authority under the Planning Act (Cap. 232) at the formal submission stage as per prevailing guidelines and circulars issued by the Competent Authority.

2.7 BUILDING LAYOUT

The building massing and design treatment of the Development must be sensitive to the surrounding environment. The layout of the building blocks shall be subject to evaluation at the Development Application stage. The Successful Tenderer can refer to URA's circular dated 4 March 2010 titled "*Sensitive Design and Development: An Industry Guide of Good Practices to Minimise Wall-like Developments*" on possible design treatment options for the Development.

2.8 ENVIRONMENT CONSIDERATIONS

The Successful Tenderer shall ensure that the Development and its activities will not cause any undue nuisance to the surrounding/adjacent developments in terms of traffic, noise, glare, smell and any other form of pollution. The Successful Tenderer should demonstrate that such potential downstream disamenities arising from the Development's activities are managed through careful upfront building design (e.g. locating source of disamenity away from sensitive receptors such as residential units, etc.). Services areas, M&E equipment, shall be visibly well-screened and integrated with the overall design.

2.9 PLATFORM LEVEL

The existing levels of the Land are as shown in the Topographical Survey Plan No. 3549-CAK-TP-QT-41025-01. The Public Utilities Board (PUB) has specified that the minimum platform level for the Land shall not be lower than 4m above Singapore Height Datum; or 300mm above the adjacent road/ground levels for general developments, or any other levels as determined by PUB as in stated in the latest edition of the Code of Practice on Surface Water Drainage, whichever is the highest. The final platform level is subject to the relevant authorities' approval. The Successful Tenderer shall be required to seek approvals from the relevant Competent Authorities on the platform levels before commencement of its building layout design.

All the costs and expenses incurred in carrying out earth cutting and filling of the existing ground, if necessary, to the proposed platform level shall be borne by the Successful Tenderer.

In changing the platform levels, the Successful Tenderer is required to seek PUB's approval and ensure that the revised platform levels of the Land satisfy the drainage requirements in compliance with PUB's current Codes of Practice on the Surface Water Drainage and the Sewerage & Drainage (Surface Water Drainage) Regulations. The Successful Tenderer shall also check and ensure that the revised platform level will still meet all the requirements of the relevant Competent Authorities.

The Successful Tenderer shall conduct thorough investigations of the Land and ensure that the runoff within, upstream of and adjacent to the Land can be effectively drained away without causing flooding within the Development and in the vicinity of the Land, all in compliance with the PUB's relevant Codes of Practice.

All earthworks, slope and embankments shall be contained within the boundaries of the Land.

2.10 VEHICULAR INGRESS / EGRESS

The Land Transport Authority (LTA) requires the Successful Tenderer to comply with the following requirements:

- i) The vehicular ingress/egress (the access) to the Land shall be taken from Queensway Road (Cat 2) based on a separate ingress and egress. The approximate position of the access is as shown on the Site Plan. The exact location, and detailed proposal for the access point and the traffic layout arrangement are subject to the requirements and approval of the LTA and other relevant Competent Authorities at the formal submission stage.
- ii) Access to service areas (e.g. bin centre, electrical substation, loading/unloading bays) shall be taken from within the Development. No service access will be allowed to be taken from the public roads.
- iii) The internal layout of the Development shall be designed with adequate queue space within the boundaries of the Development to prevent any queue from spilling onto the public roads.
- iv) The Successful Tenderer shall at his own cost and expense construct the culverts for the access and hand it over to the relevant Competent Authorities for management and maintenance.
- v) Detailed plan submissions, including the traffic plans for the Development showing the details of the access, etc., shall be made to LTA's Planning Compliance Division of Development & Building Control sub-group for review and clearance during the Development Control (DC) and Building Plan (BP) stages.

PART III

3.0 OTHER REQUIREMENTS

3.1 CONDITIONS AND REQUIREMENT FOR ENGINEERING WORKS AFFECTING HDB PROPERTIES

- i) For engineering works that affect HDB properties, the Successful Tenderer / Qualified Person (QP) in charge of the engineering works shall submit to HDB an engineering works plan before the commencement of work. The engineering works plan shall be prepared, signed and supervised by the Successful Tenderer / QP. The following shall be included in the engineering works plan:
 - a) Layout plan including site boundaries and cross-sectional details of works;
 - b) Layout plan and cross-sectional details of retaining structure and temporary support;
 - c) Method Statement of Construction;
 - d) Design calculations for the works which affects HDB property;
 - e) Soil investigation report of site;
 - f) Proposal for monitoring the effect of the works on HDB property.
- ii) The Successful Tenderer /QP shall be fully responsible for the construction of all the works as shown in the works plan. The Successful Tenderer /QP shall also be responsible for carrying out the works in the manner as stated in the method statements.
- iii) The Successful Tenderer shall submit Pre-Construction Survey Report to the relevant Town Council and nearest HDB Branch before the installation of instrument on HDB property or the commencement of the works.

The Successful Tenderer shall highlight to Town Council on defect(s) that may have structural or public safety concerns and/or require close monitoring.

- iv) The Successful Tenderer / QP shall submit a Building Impact Assessment Report to HDB (Building & Infrastructure Group) before the commencement of the works.

3.2 INSTRUMENTATION MONITORING

HDB requires the Successful Tenderer to comply with the following requirements:

- i) For geotechnical building works that affect HDB properties, the Successful Tenderer / QP shall ensure that the proposed works do not affect the integrity or stability of the foundation and structure of HDB property. During the progress of the engineering works, the Successful Tenderer / QP must provide adequate means of instrumentation to monitor the effect of the engineering works on HDB property. The Successful Tenderer / QP shall submit the type and location of such monitoring instruments and frequency of reading to HDB for clearance. The physical movement to be monitored shall include but not be limited to the following:

- a) Lateral deflection of retaining structure;
- b) Vertical deflection of column of HDB property;
- c) Settlement of apron slab and beam of HDB property;
- d) Levels of road or carpark or sewer manhole adjacent to HDB property;
- e) Ground water level below / adjacent to HDB property;
- f) Vibration movement in HDB property.

The Successful Tenderer / QP shall submit an instrumentation report to HDB every month until the completion of works.

- ii) Instrumentation on Fiber Reinforced Polymer (FRP) columns (if any)

For the purpose of instrument installation, the diameter of holes drilled must not exceed 10mm on the fibre reinforced polymer wrapped column. The minimum spacing between these drilled holes is 300mm, centre-to-centre. No ram setting is allowed on the columns.

- iii) Alert (Trigger) and Work Suspension (Allowable) Instrumentation Level

The Successful Tenderer / QP shall establish Alert and Work Suspension levels for the instrumentation reading of the physical movement mentioned in Appendix B Clause 3.2(i) above. These Alert and Work Suspension instrumentation level readings shall be made known to HDB before the commencement of works. On breaching of Alert level at any location on site, the Successful Tenderer / QP is required to inform HDB and follow up with a report to HDB reviewing the movement and predicting further movement up to completion of the works. Where necessary, the Successful Tenderer / QP shall submit to HDB a proposal to mitigate further movement or install additional monitoring. On breaching a Work Suspension level at any location, the Successful Tenderer / QP shall stop the works immediately. The Successful Tenderer / QP shall immediately inform HDB and implement measures to mitigate further movement. The Successful Tenderer / QP shall allow the work to continue only if the measures implemented are proven to be effective by the relevant Authorities. The monitoring of movements shall be inclusive of another 6 months of monitoring after end of backfilling, shall be submitted to HDB.

- iv) Vibration

The Successful Tenderer / QP shall ensure that the proposed works or method of working does not cause undue vibration or unease and discomfort to HDB residents and damage to HDB property. The Successful Tenderer / QP shall take steps to minimise the magnitude and frequency of any such vibrations. If vibration is expected from the proposed works, the Successful Tenderer / QP shall submit to HDB detailed calculations showing the magnitude, frequency and the resultant load imposed on HDB property. The condition on instrumentation and monitoring contained in Appendix B Clauses 3.2(i) to 3.2(iii) above shall apply.

- v) Cessation of Instrumentation Monitoring

When the Successful Tenderer / QP intends to cease the instrumentation monitoring, the Successful Tenderer / QP shall notify HDB and submit a PE endorsed closing report to cease instrumentation monitoring on HDB property.

Upon removal of the building monitoring instruments, the surface shall be reinstated to its original condition and Town Council shall be notified for inspection and take over after painting completed.

vi) Piling and Pipe Jacking Works

The Successful Tenderer / QP shall ensure that the method of piling, piling operation and pipe jacking do not affect the structural integrity or stability of the existing HDB buildings or any building under construction. Piling shall generally be constructed by non-displacement techniques such as augering. The stability of the ground shall be ensured by the use of appropriate measures designed by the Successful Tenderer / QP. Notwithstanding the method used in the piling work, the Successful Tenderer / QP shall review and closely monitor the technical parameters and Instrumentation level as stated in Appendix B Clauses 3.2(i) to 3.2(iii) above. The Successful Tenderer / QP shall ensure that the noise generated as a result of the piling work is also kept to a minimum and within the limit set by the Relevant Authorities.

The Successful Tenderer / QP shall check the as-built plans on piling, footing, pile-cap and all related plans of the affected structures to ensure that their works do not encroach into existing piles, footings, pile-caps and other structures. A confirmation that such checks has been carried out shall be submitted to HDB (Building & Infrastructure Group) before work commences.

The structural drawings can be purchased at:

HDB Hub
480 Lorong 6 Toa Payoh Singapore 310480
Atrium 3rd Storey
Tel: 6490 3203
Email: hdb_sop@hdb.gov.sg

Attn: Officer-in-charge of Structural Drawings Plan

vii) Earth retaining or Stabilising System, Excavation Work and Tunnelling Work

The Successful Tenderer / QP shall ensure that the construction of earth retaining or stabilising system (ERSS), the excavation work or the tunnelling work does not cause the lowering of ground water table or any soil movement underneath the HDB property. If the lowering of ground water table or soil movement is expected, the Successful Tenderer / QP shall ensure that the construction of ERSS, excavation work or tunnelling work does not cause the movement of HDB property to exceed the allowable building settlement or tilt movement as specified in the relevant building codes, conditions or requirements imposed by the relevant Authorities. The Successful Tenderer / QP shall also install recharge wells if required and submit to HDB detailed calculations showing the resultant load imposed and the corresponding maximum movement on HDB property. The conditions of instrumentation and monitoring set out in Appendix B Clauses 3.2(i) to 3.2(iii) above shall also apply to ERSS, excavation work and tunnelling work.

3.3 SERVICES AND SOIL REPORT

The information on existing services and soil report is indicative only. The HDB shall not be liable for any damages suffered or expenses incurred as a result of the information given and shall not be held responsible for their accuracy. There may be departures from the courses and there may also be other findings of which no record is held. The Successful Tenderer is advised to carry out his own site verification at his own cost.

For underground services lines, the Successful Tenderer shall also carry out his own site verification and arrange and obtain approval from the relevant Competent Authorities to carry out any diversion or provision of the services including sewer lines etc. The cost of such verification and diversion of services which may affect the Land to meet the specifications and requirements of the relevant Competent Authorities shall be fully borne by the Successful Tenderer.

All new services lines serving the Development shall be contained within the Land boundaries. The approval of the relevant Competent Authorities must first be sought before any connection can be made. All costs incurred shall be borne by the Successful Tenderer.

There may be services within or near the Land. Prospective Tenderers are required to carry out due diligence by purchasing the services plans from the respective service providers. Please contact the respective service providers for the services plans. For plans on electrical cables and gas, please approach the following Competent Authority and Public Utility Licensee for details, as they would like to keep a record of the parties who view the plans:

Electricity and Gas

SP PowerGrid Ltd

Mapping & Earthworks Administration Section
2 Kallang Sector
Singapore 349277
Tel: 6916 5022
Email: mea@spgroup.com.sg

More information on purchase of cable or gas pipe plans are available under contact us at <http://www.singaporepower.com.sg>.

Singapore Telecommunications Limited (Singtel)

Singapore Telecommunications Limited
Outside Plant Engineering
375 Tanjong Katong Rd, #03-00
Blk 1 Tanjong Telecommunication Complex
Singapore 437132
Tel: 6342 5900 / Fax: 6440 6305
E-mail: g-plansale@singtel.com

More information on purchase of Singtel plant route plans are available at <http://info.singtel.com/earthwork>.

3.4 EXISTING FOOTINGS, OBSTRUCTIONS AND OTHER MATERIALS

There may be footings and other obstructions left in the ground. The Successful Tenderer shall at his own cost and expense carry out his own site verification of the possible positions of the footings, obstructions and other materials and ascertain the effect of these on the Development.

The costs of such verification, tests, removal of the possible footings, obstructions and other materials etc. which may affect the Development shall be fully borne by the Successful Tenderer.

3.5 SLOPES AND EARTH RETAINING STRUCTURES

The Successful Tenderer shall ensure that all slopes and earth retaining structures where required shall be designed to comply with the requirements of the relevant Competent Authorities. All slopes and earth retaining structures shall be kept within the boundary of the Land.

The Successful Tenderer shall submit the details and design calculations prepared by a Professional Engineer for any proposed slopes or earth retaining structures to HDB and to the relevant Competent Authorities for approval before commencement of works.

3.6 WORKING AREA

The Successful Tenderer shall confine the construction work within the boundary of the Land. He shall not cause obstruction to other parties who may be working around the Land at the same time.

Hoarding shall be put up by the Successful Tenderer to ensure the safety and well-being of pedestrians. These hoarding shall be maintained in good condition throughout the project completion period of the Development.

3.7 CLEANING AND MAINTENANCE OF ROADS AND DRAINS

The Successful Tenderer shall maintain the cleanliness of public roads and drains used by his vehicles throughout the project completion period. He shall construct a washing bay for the cleaning of earth-laden lorries before they leave the work site and shall be responsible for cleaning up all deposits left by his vehicles on the road. The Successful Tenderer shall be responsible for paying any fines imposed by the relevant Competent Authorities e.g. Environmental Health Department, Traffic Police etc.

3.8 PLANS OF PROPOSED DEVELOPMENT

The Successful Tenderer shall submit DC plans and BP to HDB for its endorsement on behalf of the Government as landowner before these plans are submitted to the Competent Authority for approval.

The HDB shall have the right to require the Successful Tenderer to amend and modify the above mentioned plans submitted by him.

3.9 DEVIATIONS FROM PLANNING REQUIREMENTS

The requirements set out in this Part relating to location, height, size, area or extent of uses, etc. are specified with a view to achieving the relevant planning objectives as outlined or indicated in the provisions in this Part. The Successful Tenderer may submit for the HDB's consideration alternative proposal to any such requirements. Where the HDB is satisfied that the alternative proposal will also serve to achieve the planning objective relevant to the requirement, the Successful Tenderer may be allowed to adopt such alternative proposal instead; in which event, the relevant provisions in this Part shall be deemed to be complied with. The HDB however reserves the absolute discretion to decide whether or not to allow any alternative proposal to be adopted.

**PROPOSED PETROL STATION DEVELOPMENT
AT 264 QUEENSWAY**

**CONDITIONS AND REQUIREMENTS OF RELEVANT COMPETENT AUTHORITIES AND PUBLIC
UTILITY LICENSEES
(FOR INFORMATION OF TENDERERS)**

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1.0 DEFINITION

The lease of the Land Parcel at 264 Queensway ("the Land") is subject to the Additional Conditions of Tender and the Conditions of Tender for the Land contained in the eDeveloper's Packet.

2.0 GENERAL CONDITIONS AND REQUIREMENTS

- 2.1 The Successful Tenderer is required to consult and comply with all technical conditions imposed by the relevant Competent Authorities such as Urban Redevelopment Authority, Land Transport Authority, National Environment Agency, Public Utilities Board, SP Power Grid and the Singapore Civil Defence Force etc.
- 2.2 The Successful Tenderer for the Land is required under the Conditions of Tender to ascertain the exact and detailed conditions and requirements of all relevant Competent Authorities and Public Utility Licensees in respect of the Land thereon and shall at his own cost and expense observe and comply with the same.
- 2.3 Without affecting the generality of paragraph 2.1 above and without prejudice to the obligations of the Successful Tenderer as set out therein, the contents herein are provided for the information of the Tenderers only. Whilst every care and attention has been taken in the compilation and preparation hereof, it does not warrant that the contents herein represent all the conditions and requirements of the relevant Competent Authorities and Public Utility Licensees in respect of the Development on the Land or that they are free from errors or omissions whatsoever. The contents herein are subject to changes by the relevant Competent Authorities and Public Utility Licensees concerned and the onus lies on the Successful Tenderer to verify these conditions and requirements directly with HDB, the relevant Competent Authorities and Public Utility Licensees and comply with their current conditions and requirements.
- 2.4 A summary of the initial services requirements of the relevant Competent Authorities and Public Utility Licensees is set out herein. It serves only as an indication of the possible work involved with regards to services, and is by no means exhaustive or final.
- 2.5 The Successful Tenderer shall ensure that the following requirements are complied with:
 - 2.5.1 to consult and liaise directly with the relevant Competent Authorities and Public Utility Licensees regarding the actual locations of all service mains within the Land and on the requirements and conditions for services diversion, if any, and provision prior to the commencement of site work. All necessary precautions shall be taken by the Successful Tenderer to safeguard the service mains before they are diverted.
 - 2.5.2 to engage his own licensed Cable Detection Worker and licensed Telecommunication Cable Detection Worker to carry out cable detection and if necessary to carry out trial trenches to locate any manholes and cable routes prior to the commencement of site work. The Successful Tenderer shall bear the cost of any diversion work.
 - 2.5.3 to ensure that all service mains that do not need to be diverted are identified and provided with protection, if necessary, during the construction stage of the Development. The cost of repairs to any damaged service main as a result of work carried out by the Successful Tenderer shall be borne by the Successful Tenderer.
 - 2.5.4 to ensure that the relevant Competent Authorities and Public Utility Licensees are allowed free and unconditional access at all times to services that remain within the Land for the purpose of installation, maintenance, repair and improvement works and all other work and activities incidental thereto.
 - 2.5.5 to make his own arrangements with the relevant Competent Authorities and Public Utility Licensees and pay for the fees and costs of any diversion and/ or "capping off" of existing services, provision of service mains and service connection, if any, in relation with the Development.
 - 2.5.6 to provide for all the internal distribution for water, electricity, drainage and sanitary discharge for the Development.

- 2.5.7 to liaise with all the relevant Competent Authorities and Public Utility Licensees on upgrading the road reserves abutting the Land to ensure that the necessary roadside drains, sidetable, kerb, etc are carried out in accordance with the prevailing Road Reserve requirements.
- 2.6 The Successful Tenderer shall be responsible to carry out at his own cost and expense his own site investigation to verify whether there is any sub-structure or other obstructions e.g. footings, piles, tree roots, etc, in the ground of the Land, and ascertain their effect on the Development.
- 2.7 There may be some other existing services affected by the Development. The Successful Tenderer shall inform the relevant Competent Authorities and Public Utility Licensees immediately and bear the necessary cost of diversion and/or "capping off" of these existing services, if any.
- 2.8 In general, no structure shall be sited close to or over existing and proposed services. The Successful Tenderer shall comply with all requirements as stipulated by the relevant Competent Authorities and Public Utility Licensees.

3.0 REQUIREMENTS OF LAND TRANSPORT AUTHORITY (LTA)

In addition to Appendix B Clause 2.10, LTA requires the Successful Tenderer to comply with the following requirements:

- i) The Successful Tenderer shall demonstrate that the internal circulation layout is operationally feasible and do not cause congestion on the public roads or affect the efficiency of the access. This would be reviewed during the detailed plan submission stage to LTA.
- ii) All proposed street works, as well as proposed engineering/construction works within the road reserve shall be prepared/designed, submitted, supervised and constructed in accordance with Street Works (Private Street Works) Regulations, Street Works (Public Street Works) Regulations and the following prevailing standards and code of practice:
 - a) Code of Practice (COP) on Street Works Proposals relating to Development Works
 - b) LTA Standard Details of Road Elements
 - c) Materials & Workmanship Specifications for Civil & Structural Works
 - d) Code of Practice for Road Opening Works
 - e) Code of Practice for Traffic Control at Work Zone
 - f) Infrastructure Design Criteria (IDC)
 - g) Civil Design Criteria
- iii) The above comments should be incorporated in the detailed submission plans and to be submitted to LTA's Development and Building Control Division (DBC) at the DC and BP submission stages for approval.
- iv) If there are any proposed work activities within the public street including occupation of carriageway and walkway, the Successful Tenderer is required to apply for a Works on Public Streets Permit from the LTA – PROMPT portal before commencement of works on site.
- v) Requirement for Electric Vehicle (EV) Charging Station
The Successful Tenderer shall, at its own costs and expense, implement at least two active EV charging points of minimum 50kw DC ratings as stipulated by the relevant agencies and appoint a Licensed Electrical Worker (LEW) and certified EV Charger Equipment Specialist (ES) to install, test and certify the fitness of the installation. The EV charging points should also be smart-charger enabled (e.g. OCPP). The Successful Tenderer and its appointed LEW and ES are required to comply with the prevailing technical requirements for installation and maintenance of the EV charging points based on the tender specifications. In the event that there is insufficient power capacity to support the proposed EV charger deployment, the Successful Tenderer is to consult the relevant agencies to review the provision requirements.

4.0 REQUIREMENTS OF CATCHMENT AND WATERWAYS DEPARTMENT, PUBLIC UTILITIES BOARD (PUB)

PUB requires the Successful Tenderer to comply with the following requirements:

- i) The minimum platform level (MPL) for the Land shall not be lower than 4m above Singapore Height Datum, or 300mm above the adjacent road/ground level for general developments, 600mm for multi-residential and commercial developments, 1m for special facilities and developments with direct or indirect linkages to underground special facilities, or any other level as determined by PUB as in stated in the latest edition of the 'Code of Practice on Surface Water Drainage', whichever is the highest.
- ii) The minimum crest levels for basements of general developments shall be at least 150mm above the MPL as stated above. For basements of industrial, institutional, commercial or multi-unit residential developments, the minimum crest level shall be at least 300mm above the MPL as stated above. The minimum crest level for entrances to the underground pedestrian network having direct or indirect underground linkage to MRT Stations, or other underground special facilities shall be 300mm above the MPL as stated above. Please pre-consult PUB(C&W) on the required MPL before making DC/BP submission.
- iii) In complying with the MPL requirement, thorough investigations of the Land shall be conducted to determine suitable platform profiles to ensure that the runoff within, upstream of and adjacent to the Land can be effectively drained away without causing flooding within the Land and in the vicinity of the Land. Any proposal to level/backfill the Land shall be submitted to PUB(C&W) for comments and approval.
- iv) The Successful Tenderer shall ensure that the design and construction of the Development within the Land will not cause damage and affect the structural integrity of the existing drains. The Successful Tenderer shall ensure that the runoff within, upstream of and adjacent to the Land shall be effectively drained away without causing flooding within the Land and in the vicinity of the Land.
- v) The Successful Tenderer shall locate and identify all existing drains within and in the vicinity of the Land. The existing drainage system within and in the vicinity of the Land shall not be interfered with, in any manner, without written approval from PUB(C&W). All works shall not cause damage or affect the structural integrity of the roadside/outlet drains.
- vi) The Successful Tenderer shall take due care and precautionary measures to ensure that no damage, settlement or any adverse impacts occurs to any existing drain/drainage facilities in the course of the works. Free flow of water in the drains shall be maintained at all times. Any damages caused to the drainage structures shall be reinstated at the service provider/ contractor's own cost to the satisfaction of PUB(C&W). The Successful Tenderer shall carry out an impact assessment to establish the influence zone of the proposed works which affect the existing drains and drainage facilities. The impact assessment to be submitted to PUB shall be endorsed by a qualified person (QP).
- vii) Pre-work and post-work surveys shall be submitted to PUB and shall cover drains/drainage facilities in the area affected by the work (and shall extend to at least the area within the second reserve of the MRT lines - if applicable). All drains/drainage facilities shall be located and identified. The survey shall show the levels of the drains/drainage facilities and shall be accompanied by a set of photographs showing the conditions of the drains/drainage facilities. All survey work shall be carried out by a Registered Surveyor.
- viii) The Successful Tenderer shall carry out soil instrumentation for monitoring the soil/geo-technical/structural movements or changes at and around the worksite in particularly existing drains/drainage facilities throughout the contract period. The Successful Tenderer shall set the critical alert levels and put in place a contingency plan to rectify any damages to the drains/drainage facilities. The soil instrumentation shall be monitored daily and weekly summary reports of the results of the soil instrumentation shall be submitted to PUB. Any breach of the alert levels and/or anomaly found in the reports shall be immediately reported to PUB and rectify immediately to the full satisfaction of PUB. Details of the contingency plan including the schedule of works and organisation chart of the

Successful Tenderer and consultant/contractor shall be submitted to PUB before commencement of works.

- ix) In the event of breach of alert levels and/or anomaly in the soil instrumentation results, Successful Tenderer shall alert PUB immediately and activate the contingency plan to mitigate and rectify the situation. The analysis and rectification reports of the affected drains and drainage facilities shall be submitted to PUB for comments/approval.
- x) The Successful Tenderer shall conduct a joint visual inspection and any defects identified shall be made good to the full satisfaction of PUB and shall follow up with an incident report for the affected drains and drainage facilities within 3 days including remedial/repair works. If necessary, briefing/meeting shall be conducted by Successful Tenderer to address the damage and follow up actions to rectify the situation.
- xi) The method of construction of temporary drains and/or drains affected by the works shall be submitted to PUB for comments and approval before commencement of the works. Upon completion of the works, postcondition survey and topography survey of the affected drains shall be submitted and PUB may request for joint site inspection of the rectification works.
- xii) The Successful Tenderer shall inform PUB in writing at least one week before the commencement of any work at the Land which affects drains.
- xiii) PUB may require the affected drain to be upgraded in conjunction with the proposal. Please further consult PUB(C&W) with the detailed proposal for further comments
- xiv) The planning, design, construction activities and procedures for plan submission shall comply fully with the requirements as stipulated in the latest edition of the Code of Practice on Surface Water Drainage and The Sewerage and Drainage (Surface Water Drainage) Regulations 2007. You may download the latest version of the COP from the PUB website: <https://www.pub.gov.sg/Professionals/Resources/Code-of-Practices>.
- xv) The topography of the Land shall not be changed without the approval of PUB.
- xvi) All affected drains and Drainage Reserves (location and alignment) and their respective sizes shall be indicated in the detailed plan drawings. Details such as inverts/copes of affected drains, adjacent ground levels and amount of soil cover shall also be indicated in the detailed submission to PUB. All drain crossings within road reserves (e.g. culverts and roadside drains) shall be clearly highlighted in the plans. Detailed proposal plans shall be submitted at the detailed planning stage for our comments and clearance before the commencement of works.
- xvii) The existing drainage system within and in the vicinity of the Land (if any) shall be upgraded/improved to cater for increased runoff from the Development. In addition, new drains, depending on the type and nature of the Development, may be built within the Land. Appropriate Drainage Reserves shall be set aside for drains in accordance with the prevailing Code of Practice on Surface Water Drainage.
- xviii) The Successful Tenderer/QP shall pre-consult PUB(C&W) on the required size of the proposed drains affected by the Development before making DC/BP (Drainage) submission. Detailed drainage plans for the proposed crossing-over/reconstruction of roadside drain / outlet drain including hydraulic calculations, backwater analysis, longitudinal and cross sections etc shall be submitted to PUB for approval before the commencement of works.
- xix) The Land is within Marina Water Catchment. The proposal shall not result in any loss of yield from the catchment area.
 - a. Stringent pollution control measures shall be incorporated in the design and during the construction of the Development.
 - b. All sewage and sullage water shall be discharged into a public sewer.
 - c. Bulk storage of toxic and hazardous materials shall not be allowed.

- d. If there is any earth filling work at the Land, use good earth free of any debris or construction waste materials. If sand is used for backfilling, do not use marine sand. Only washed sand with chloride content not exceeding 0.01% (by Weight) shall be allowed. Test reports on the chloride content of the washed sand shall be submitted to PUB(C&W) for records before commencement of work.
- xx) If the existing roadside drain is within the Land to be alienated or amalgamated, the Successful Tenderer shall realign the existing roadside drain to within/about the road reserve and reconstruct the roadside drain into covered drain. The Successful Tenderer shall construct the proposed drain to the required size as determined by PUB. The Successful Tenderer shall ensure that the design and construction of the Development within the Land will not cause or affect the structural integrity of the existing roadside drains.
- xxi) The detailed drainage plan shall be submitted to PUB(C&W) for approval prior to the commencement of work on site. Appropriate Drainage Reserves shall be set aside and secured for in accordance to the latest edition of the 'Code of Practice on Surface Water Drainage'.
- xxii) The development schedule of the Land shall be properly considered to avoid a situation where Land and/or the lands in the vicinity of the Land become 'land locked' without proper drainage outlets. The runoff within, upstream of and adjacent to the Lands shall be effectively drained away without causing flooding within the Land and in the vicinity of the Land. Any proposal to level/backfill the Land shall be submitted for PUB(C&W)'s comments and clearance.
- xxiii) Industrial, commercial, institutional and residential developments greater than or equal to 0.2 hectares in size are required to control the peak runoff discharged from the Land. The maximum allowable peak runoff to be discharged to the public drains will be calculated based on a runoff coefficient of 0.55, and for design storms with a return period of 10 years and for various storm durations of up to 4 hours (inclusive). Peak runoff reduction can be achieved through the implementation of ABC Waters design features and structural detention and retention features, such as:
- a. Detention tanks;
 - b. Retention/Sedimentation ponds;
 - c. Wetlands;
 - d. Bioretention swales;
 - e. Porous pavements;
 - f. Bioretention basins or rain gardens, etc.
- xxiv) The Qualified Person (QP) shall be required to submit details (calculations and/or hydraulic model results) showing how the proposed system meets the required peak runoff rates. Due consideration shall be given to meeting ABC Waters stormwater quality objectives, which will often require treatment of stormwater runoff using ABC Waters design features. For design guidance on the ABC Waters design features, Successful Tenderer/QPs can refer to the ABC Waters Guidelines and relevant chapters in the Engineering Procedures, available on the PUB website.
- xxv) PUB has in 2006 launched the Active, Beautiful and Clean Waters (ABC Waters) Programme. As part of the Programme, PUB has launched ABC Waters design guidelines which provide ideas on how natural runoff treatment systems termed ABC Waters design features such as rain gardens, vegetated swales and bioretention swales can be integrated within a development. These features detain/ slow down stormwater runoff and improve water quality by using plants and soil. They also enhance landscape and biodiversity of the development. Specific information on the design of these features can be found at the website: <https://www.pub.gov.sg/Professionals/Resources/Guides-and-Handbooks>.
- xxvi) PUB encourages the implementation of ABC Waters design features in the development as well as the achievement of ABC Waters certification. Information regarding ABC Waters Certification can be found via the link: <https://www.pub.gov.sg/Professionals/Awards-and-Certification/ABC-Waters-Certification>.

- xxvii) If applicable, the design and construction supervision of ABC Waters design features as well as drawing up the maintenance plan for these features shall be carried out by an ABC Waters Professional.

The Successful Tenderer could contact Ms Kelly Sng (kelly_sng@pub.gov.sg) and Ms Jennifer Yeo (jennifer_yeo@pub.gov.sg) for issues related to ABC Waters design features.

Please contact Lim Hui Yen, Sophie (email: Sophie_LIM@pub.gov.sg), Tan Siew Noi Jenny (email: TAN_Siew_Noi@pub.gov.sg) if you need any clarifications on the requirements of PUB Catchment and Waterways Department..

5.0 REQUIREMENTS OF WATER RECLAMATION NETWORK DEPARTMENT, PUBLIC UTILITIES BOARD (PUB)

PUB requires the Successful Tenderer to comply with the following requirements:

- i) The planning of this project shall comply with the prevailing **Code of Practice on Sewerage and Sanitary Works** [hereafter referred to as the “**COPSSW**”].
- ii) There are existing 152mm, 260mm, 300/305mm, 381mm, 600mm diameter sewers and existing drainlines within/ in the vicinity of the Land. Thorough site investigation shall be carried out to determine the exact positions and levels of the existing sewerage infrastructure.
- iii) No structure/object/building/piling/retaining structure, etc. (whether temporary or permanent), except lightweight and demountable elements (such as decking, awnings, fencing, planting troughs and link-way shelters), shall be sited over or across any sewers/pumping mains without the approval of PUB. All proposed structures shall be kept as far away from the existing sewers/pumping mains as possible and no nearer than the following minimum lateral clearances (also known as sewer/ pumping main setback):

Sewer/Pumping Main Nominal Diameter (mm) D	Sewer Depth (m)	Minimum Distance (m)*
≤ 600	≤3	1.0
	>3 and ≤5	1.5
	>5	2.0
>600 to 1500	All	0.5D + 2.5
>1500 to 2500		0.5D + 3
>2500		0.5D + 4
Deep Tunnel Sewerage System (DTSS)		0.5D + 6
*measured from the outer most edge of the structure, including footings and overhangs, to the centreline of the sewer pipe or DTSS		

- iv) Proposed drains with a maximum width of 2m may over-cross sewers with a minimum vertical clearance of 1m (measured from the bottom of the drain structure to the crown of the sewer pipe) but they shall not be laid parallel to and over the sewer. More details can be found in COPSSW Section 1.2.4.
- v) The Successful Tenderer shall take every measure to protect all existing sewers, particularly large (≥900mm diameter) sewers, affected by or in close proximity of the proposed works.
- vi) Sullage water from businesses involving the use of oil such as motor workshop, lubrication bay or car washing bay shall be discharged into the public sewerage/retention tank/holding tank system via an oil interceptor (see Standard Drawing No. PUB/WRN/STD/042C). https://www.pub.gov.sg/-/media/PUB/PDF/Code-of-Practices-and-Submission-Guidelines/Standard-Drawings-for-Sewerage-Works/WRN_STD_042C.pdf

- vii) PUB's approval shall be obtained for any proposed abandonment of sewers/pumping mains/manholes/chambers/drain-lines/ADCs as well as the manner in which they will be abandoned. The Successful Tenderer /QP shall note that the upstream (inlet) and downstream (outlet) ends of the abandoned drainline connections to the public sewers, drain-lines, ADCs or sewers/pumping mains of all sizes shall be sealed watertight with 225mm thick brick plugs rendered with cement mortar.
- viii) All abandoned sewers/pumping mains of diameter 300mm or larger and abandoned sewers/pumping mains/ADCs of all sizes within the road reserve shall be grouted with cement grout or other approved materials.
- ix) All abandoned manholes/chambers are to be demolished, filled up with well compacted approved material, and the manhole frames and covers removed. Details of the requirements can be found in the COPSSW Section 1.2.8 and "Standard Requirements for Abandoning of Disused Sewerage System" for compliance [https://www.pub.gov.sg/-/media/PUB/PDF/Code-of-Practices-and-Submission-Guidelines/Sewerage-and-Sanitary-Works/STD_REQ_SEALING_SEWERCONN_ABANDONEDSEWERS_MANHOLES_PU MPING-MAINS_Apr2023_.pdf].
- x) The abandoned sewers/pumping mains/manholes/chambers/drain-lines/ADCs, including the manner of abandonment (remove, seal, grout, partial demolition, etc.), shall be indicated on the as-built drawings submitted to PUB(WRN). The following details shall also be included:
 - a. Whether the abandoned sewers/pumping mains/drain-lines/ADCs are removed, grouted or sealed;
 - b. For manholes/chambers that are only partially demolished with approval from PUB(WRN), the extent of demolition shall be shown;
 - c. The exact extent/length of the abandoned sewers/pumping mains/drain-lines/ADCs that is removed, grouted or sealed;
 - d. The exact locations of the watertight seals; and
 - e. The type of watertight seals.
- xi) No sewerage systems (including abandoned sewers/pumping mains, any sensors, meters, equipment, instruments, etc. within manholes) shall be altered/interfered with without the approval from PUB(WRN) Department. Where diversion/removal of any sewer/pumping main is required, it shall be carried out by the Successful Tenderer at his own cost & expense. Details of the diversion (pipe size, gradient, invert level, etc.) shall be submitted to PUB(WRN) Department for approval before the commencement of works.
- xii) The Successful Tenderer shall be responsible for seeking approval from all relevant authorities/land owners for any proposed sewerage works to be carried out beyond the Land. Such approval or consent from the authorities/land owners shall not include any conditions that require PUB to provide a letter of undertaking to divert the sewerage infrastructure in future. The Successful Tenderer is to ensure that all sewerage and sanitary designs comply with PUB's COPSSW.
- xiii) All sewers and manholes shall be readily accessible at all times to PUB for inspection and maintenance.
- xiv) Air-tight manhole covers may be required to be provided for vortex drop constructed near residential estates or places with high footfall, please refer to **COPSSW Section 3.2.3.b**. For enquiries or clarifications, please contact Mr Wong Kin Wee at WONG_Kin_Wee@pub.gov.sg or Mr Lim Li Fu at LIM_Li_Fu@pub.gov.sg from PUB(WRN) Department.

- xv) Where there are any Specified Activities (including excavation/tunnelling/jacking/boreholes/installation of ERSS for services diversions) within the public sewer corridor [i.e. 10m for sewer/main of diameter <900mm, 20m for sewer/main of diameter ≥ 900mm and 40m for DTSS tunnel] as stipulated in **COPSSW Section 2.1.2**, a written approval from the Director, Water Reclamation Network (WRN) Department of PUB should first be obtained before carrying out the specified activities at the Land. QP shall make a Protection of Water and Sewer Pipes (POWS) submission via PUB's Business & Professional (B&P) Portal at <https://eservices.pub.gov.sg/bpp> prior to any commencement of the specified activities. The Successful Tenderer shall refer to **COPSSW Section 2** for the technical requirements on sewer protection.
- xvi) The guideline on 'Prevention of Damage to Public Sewerage System' can be found in PUB website at https://www.pub.gov.sg/-/media/Images/Feature/Content-Pages/Professionals/Compliance/Applications/Revised_PUB_WRN_AdvisoryNotes_Mar_2023.pdf. The QP/contractor is required to submit a notification to our Network Management Branch (NMB) at least 7 days before the commencement of any works or specified activities within the public sewer corridor.
- xvii) The Successful Tenderer / QP must check for the presence of public sewerage pipelines by referring to the Sewerage Information Plan (SIP) and through site investigation. The SIP is available on SLA's INLIS at <https://app.sla.gov.sg/inlis/#/PUB/UP/Search>. Please note that the sewerage information in SIPs is indicative and for reference only. A thorough site investigation, including trial trenches, shall be carried out to determine the exact position and levels of the existing existing sewers/pumping mains.
- xviii) For development control clearance of the Development/building/infrastructure/utility works, and to obtain the clearance certificate for the proposed sewerage/sanitary works, the QP shall prepare the necessary plans and submit the relevant applications via Corenet X or Corenet 2.0 to PUB's Building Plan Division (BPD).

Please contact Goh Jian Hong email: GOH_Jian_Hong@pub.gov.sg), Noorhuda Binte Ridawi (email: NOORHUDA_RIDAWI@PUB.GOV.SG), Muhammad Sufiyan Bin Shafari (email: MUHD_SUFYAN_SHAFARI@PUB.GOV.SG), Tan Ke Han, Regina REGINA_TAN@PUB.GOV.SG), if you need any clarifications on the requirements of PUB Water Reclamation Network Department.

6.0 REQUIREMENTS OF WATER SUPPLY (NETWORK) DEPARTMENT, PUBLIC UTILITIES BOARD (PUB)

PUB requires the Successful Tenderer to comply with the following requirements:

I WATER SUPPLY PLAN (WSP)

- i) The Water Supply Plan (WSP) shows the approximate positions of our proposed/underconstruction/ existing water pipes of 100 mm diameter and above in the vicinity of the Land. Smaller water pipes to customers' premises / properties may not be indicated. The presence of water meters near the work zone is an indication of the presence of water pipes. The latest WSP is available on SLA's INLIS portal at <https://app.sla.gov.sg/inlis>. Notwithstanding, during the planning/design stage, please determine by means of trial holes within your worksite to ascertain the exact alignment and levels of all the proposed/under-construction/existing water pipes and consult PUB(WSN) at the contact information provided below. No structures are allowed above water pipes at all times as they may pose damage risks and/or impede future maintenance access.

II WATER PIPES DIVERSION FOR PROPOSED WORKS WITHIN WATER PIPE CORRIDOR

- ii) The Successful Tenderer shall consult PUB at the earliest opportunity (typically 6 months before commencement of works) during the design stage on the handling of the affected water pipe. The Successful Tenderer shall arrange for site meetings with PUB to seek PUB's comments on whether the affected water pipe should be diverted or remain in its original position with adequate protection measures implemented. If deemed necessary by PUB, the affected water pipe shall be diverted out of the water pipe corridor and the Developer / Contractor shall be responsible for engaging a Licensed Plumber / Contractor to carry out the diversion works according to PUB's pipe-laying specifications. If PUB deems that diversion of the affected water pipe is not feasible, the Developer / Contractor shall make necessary modifications or design changes to his works such that the water pipe is either no longer affected or adequately protected by appropriate measures.
- iii) If PUB deems that that the proposed works (whether within or outside of the water pipe corridor) impose risks or constraints on the future operation, maintenance or repair of the water pipe, PUB may direct the Successful Tenderer to divert the water pipe or make necessary modifications or designs changes to his works.
- iv) The cost of all abovementioned diversions, modifications and design changes to proposed works, as PUB may direct, shall be borne by the Successful Tenderer.

III REQUIREMENTS FOR CARRYING OUT WORKS WITHIN THE WATER PIPE CORRIDOR

- v) If there are works within the water pipe corridor, please comply with the protection and submission requirements stated in the Advisory-Prevention of Damage to Water pipes <https://www.pub.gov.sg/Professionals/Requirements/Application>. Submissions to seek approval for the works shall be made via our online portal, Protection Of Water and Sewer pipes (POWS) at <https://www.eservices.pub.gov.sg/bpp/account>.
- vi) For queries on matters relating to water pipes please contact PUB(WSN) officer at 68852542 or Email: PUB_WSN_CENTRALBU@pub.gov.sg.
- vii) For diversion of water mains, please contact PUB(WSN) officer Jovin Choong at Email: Jovin_CHOONG@pub.gov.sg.

IV WATER CONSERVATION

- viii) Water conservation measures as stipulated in the Public Utilities (Water Supply) Regulations and SS 636 – Code of Practice for Water Services shall be adopted.
- ix) 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 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/Professionals/Requirements/Water-Supply-Services/Water-Fittings>. 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).
- x) 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 Development should obtain the Water Efficient Building (Basic) Certification by PUB.

- xi) 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, Successful Tenderers are encouraged to use drought tolerant plants.
- xii) 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.
- xiii) 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 Development.
- xiv) 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. PUB provides financial support to organisations seeking out efficient ways to reduce their water consumption. More details of funding can be found at <https://www.pub.gov.sg/Public/WaterLoop/Water-Conservation/Incentives-and-Grants>.
- xv) Use non-water cooled systems (such as air-cooled, refrigerant-cooled, etc) for cooling purposes wherever possible.
- xvi) Cooling towers should achieve minimum 7 and 10 Cycles of Concentration (COC) using potable water and NEWater respectively.
- xvii) From 1 January 2024, the following requirements apply to new projects (including expansion of existing plants) that will consume at least 60,000m³ of water annually:
 - 1. Minimum 50% RR for wafer fabrication plants involved in front-end semiconductor manufacturing; and
 - 2. Recycling of specified waste streams for electronics plants and biomedical plants.
- xviii) More details can be found at <https://www.pub.gov.sg/Public/WaterLoop/Water-Conservation/Mandatory-Water-Efficiency-Requirements>

V SUBMISSION OF PLANS

- xix)** If water supply is required, the Successful Tenderer shall engage a Professional Engineer/Licensed Plumber to submit the Notification of WSI Works to PUB. 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.

Please contact Ms Tay Zi Hui, Julia (email: Julia_TAY@pub.gov.sg). Ms Ang Liew Kwee (email: ang_liew_kwee@pub.gov.sg), from PUB(WSN) for any clarification on the requirements of Water Supply Network Department.

7.0 REQUIREMENTS OF NATIONAL PARKS BOARD (NPARKS)

NParks requires the Successful Tenderer to comply with the following requirements:

- i) If the Successful Tenderer intends to carry out any regulated activities under the Parks and Trees Act and its Regulations that arise out of or pursuant to the use of the Land, it **must** seek the approval from the Commissioner of Parks and Recreation ("Commissioner") before doing so.
 - a. Before seeking the Commissioner's approval, the Successful Tenderer is required to consult the Commissioner, through NPARKS_GDP@nparks.gov.sg at the planning and design stage of the development works concerning the Land.
 - b. The Successful Tenderer is required to present the following at the consultation:
 - i. A survey plan (dated not more than 2 years at the point of application and endorsed by a qualified surveyor) of the Land and its peripheral roads, at a scale of at least 1:500. The plan must also clearly indicate the location, species, height and girth of trees at the Land; and
 - ii. All other relevant additional information such as plans on construction hoardings.
- ii) The Successful Tenderer is required to adhere to the Parks and Trees Act and its Regulations, relating to the following requirements in respect of the green verge(s) / road table(s) / green buffer(s) surrounding the Land. Further details of these requirements can be found in NParks' "Guidelines on Greenery Provision and Tree Conservation for Developments". It is available for downloading at <https://www.nparks.gov.sg/publications-resources/guidelines-greenery-provision-tree-conservation-developments>. In particular, the Successful Tenderer shall ensure that:
 - a. The Development shall not affect or encroach on the green verge(s) surrounding the Land
 - b. The Successful Tenderer shall ensure that the green verge(s) abutting the Land are not to be affected by the Development, including without limitations:
 - i. Ensuring that the construction or provision of any vehicular ingress / egress, acceleration / deceleration / storage / vehicular lanes, services access, bus stops, and any structure required under statute to be erected to divert or reconstruct services or road features / elements shall not affect the trees and plants located in the green verge(s);
 - ii. Ensuring that the green verge is kept clear and shall be free from obstructions and encumbrances at all times, including without limitation bicycles parked on the green verge or items left on the green verge;
 - iii. Ensuring that vehicular and service access points, pick-up / drop-off points, taxi lay-bys, loading / unloading bays and fire engine hard-standing areas are to be located within the Land and not within the green verge(s); and
 - iv. Ensuring that there is no change of soil level to the green verge(s) without prior approval from the Commissioner of Parks and Recreation
 - c. The Successful Tenderer must also ensure that the Development complies with the requirements for green buffers, including without limitation the following:
 - i. The green buffers must be free from any encroachment above ground, and/or any structures or services are to be recessed to at least 2-metres below ground level and are not to slope with gradients steeper than 1:2.5; and

- ii. The width of the green verges adjacent to the Land and the width of the planting areas within the Land shall be in accordance to LTA's standard road code for that category of road or aligned with the existing green verge along the road, whichever is wider.
 - iii) If there is any indication that the works on the Land will affect the green verge(s) / planting area(s) in any way whatsoever, the Successful Tenderer must seek the Commissioner's approval as set out in Clause 7.0 (i) , as well as the approval of the other applicable authorities under the relevant legislation, for the conduct of the works that will affect the green verge(s) / planting area(s).
 - iv) The Successful Tenderer may wish to consider evaluating the need for a public communications plan to address any possible public feedback arising from the Development.
- Other technical requirements
- v) The Land falls within a Tree Conservation Area (TCA). Pursuant to Section 14 of the Parks & Trees Act (Cap.216)), any tree with a girth exceeding one metre (measured one metre from the ground), growing on any TCA or any vacant land shall not be cut except with the prior approval of the Commissioner of Parks and Recreation. The Successful Tenderer is therefore reminded to apply for the Commissioner's approval under Section 14 of the Parks and Trees Act to cut trees of more than one meter girth in the Land.

8.0 REQUIREMENTS OF NATIONAL ENVIRONMENT AGENCY (NEA)

NEA requires the Successful Tenderer to comply with the following requirements:

- i) The Land falls within a water catchment, where rainwater and surface run-off are collected at the downstream reservoir for treatment to produce drinking water. The proposed uses shall not cause pollution directly or indirectly to our water resources. Activities that could cause serious contamination problem to our water resources shall not be carried out. In addition, goods, materials, machinery or equipment that could cause contamination to rainwater or surface run-off, shall be stored within a sheltered area equipped with spillage containment facilities. They shall not be stored in open areas so as to avoid causing water pollution.
- ii) Usage of any wastewater holding tank is not allowed. The Development is required to connect to the nearest sewer line. Sewage and used water from the Development shall be discharged into the public sewer in accordance with PUB's requirements.
- iii) Refuse and solid wastes shall be collected and kept in a proper holding area before removal by a licensed general waste collector for disposal at an approved waste disposal facility. The refuse holding area should comply with the provisions and requirements stated in the Code of Practice on Environmental Health.
- iv) The Land shall avoid any features that may result in water stagnation and become potential breeding habitats for mosquitoes.
- iv) The underground fuel storage tanks to be designed with secondary containment and leak detection system coupled with an alarm as stated in the Singapore Standard on the Code of Practice for Pollution Control (SS593:2013).
- v) Vapour recovery systems shall be provided for the underground storage tanks and fuel pump dispensers to prevent petroleum vapours from being discharged into the air during re-filling of underground fuel storage tanks and re-fuelling of vehicles operation.
- vi) Vent pipes for underground fuel tanks shall be 4m in height and sited at least 9m away from any window openings of adjacent residential premises.
- vii) The Development and its operations shall not pose any dust, smell, or noise nuisance to the neighbouring residential premises. Dust, smell, or noise mitigating measures shall be put in place, where necessary to avert any potential complaints. The Successful Tenderer

shall front and the complaints from the neighbouring premises, including implementing necessary abatement measures, where feasible, to mitigate any potential disamenities (fumes, noise etc.).

- viii) There shall be no mechanical/repair bays or workshop at the Development.
- ix) The Development shall comply with all the applicable requirements and provisions of the Singapore Standard on Code of Practice for Pollution Control (i.e. SS593:2013), the Code of Practice on Environmental Health, the Environmental Protection and Management Act 1999, the Environmental Public Health Act 1987, the Energy Conservation Act 2012, the Radiation Protection Act 2007 and their Regulations.
- x) Under the Environmental Protection and Management (Control of Noise at Construction Sites) Regulations, construction sites within 150m of residential estate need to comply with more stringent noise limits at construction stage especially during night time hours. Hence, the Successful Tenderer/ QP shall implement noise control measures during the construction period to ensure that the noise emission levels from the building and construction activities are within noise limits and would not cause nuisance to any nearby residents. In addition, construction activities are not allowed to be carried out on the Land from 10pm on Saturday and eve of public holiday to 7am on the following Monday and the day after the public holiday respectively.
- xi) From 1 Apr 2025, a new project* that meets the following two criteria is required to have noise barriers installed along the perimeter of the worksite:
 - a. Construction project value of \$50 million and above (per project location), and
 - b. Worksite located within 75 meters of nearby sensitive premises (e.g. hospital, school, institution of higher learning, home for the aged sick or residential building).

*Refers to tenders for construction projects that are published on and after 1 Apr 2025.

The noise barriers to be installed shall meet the specifications stated in the following circular: <https://www.corenet.gov.sg/media/2392015/mandating-of-noise-barriers-at-selected-construction-sites.pdf>. If you have any enquiries on the requirement for noise barriers at worksites, please contact NEA at NEA_Noisebarrier@nea.gov.sg.

9.0 REQUIREMENTS OF SINGAPORE CIVIL DEFENCE FORCE (SCDF)

SCDF requires the Successful Tenderer to comply with the Fire Safety Act 1993 and its Regulations, the prevailing "Code of Practice for Fire Safety Precautions in Buildings" (Fire Code), the relevant Codes of Practices and Guidelines, and SCDF Circulars. These general fire safety requirements apply to going-to-build Petrol Service Station or Petrol Service Station undergoing alteration / addition (A&A) works. In addition, the following conditions will apply when applicable:

- i) The Successful Tenderer shall ensure that the Development will not affect existing other surrounding developments (neighbouring) such as their exit provision, sidelane / backlane, window openings [the unprotected openings requirements, i.e. the Successful Tenderer and their Qualified Person (QP) shall strictly observe these existing conditions and provide more setback if necessary to prevent fire spread] and fire engine accessway etc.
- ii) Based on Fire Code (CI 9.6.2a(2)), the Successful Tenderer shall ensure that the boundary line of Petrol Service Station shall be at least 50m from any residential building, or 90m from any place of public assembly (Fire Code CI 1.4.12).
 - a) If the separation distance(s) in clause (ii) cannot be complied with, fire barrier(s)¹ of at least 2hr fire resistance or equivalent (e.g.; other buildings) can be accepted in lieu of the required separation distances. Other engineering solutions

¹ The dimension of the fire barrier shall be such that the unobstructed line-of-sight distance from the centre of the site to the nearest and lowest exposed openings on the building facade of the residential building or place of public assembly area shall not be less than 50m and 90m respectively. The dimension of the fire barrier is also subjected to compliance with other authorities' (e.g. URA) requirements.

to address fire hazards (worst case scenario) may be considered if they can achieve the same intended outcome.

b) For existing Petrol Service Station undergoing A&A works, the 50/90m separation distance stipulated in the Fire Code is not applicable if the fire safety work does not involve deviation from existing approved plan (1) tanker parking position; (2) tanker refilling point; (3) position or capacity of the underground tanks.

c) For rebuilding of Petrol Service Station on existing Land (e.g., retendered to new operator), due consideration may be given for the adoption of the layout of the former Petrol Service Station design for (1) tanker parking position; (2) tanker refilling point; (3) position or capacity of the underground tanks, subject to acceptance by SCDF.

iii) Before making any commitment (purchase/occupation or rental/lease, etc.), or commencement of any A&A works, the Successful Tenderer shall engage a Qualified Person (QP) to carry out a feasibility study to ensure the proposal is able to comply with all the Fire Safety requirements (the current Fire Code and other relevant standards/guidelines/circulars). The feasibility study shall also ensure those existing fire safety provisions of surrounding developments are not affected.

a) To assist Successful Tenderers in making an informed assessment regarding the mitigating measures and associated costs needed to address the separation distance requirements, tender bidder(s) are advised to use the previous layout plan, included in **Appendix C(I)**, as reference. In addition, tender bidder(s) are strongly encouraged to arrange for a consultation with SCDF (Md_Faizal_Latiff@scdf.gov.sg / Glen_Chua@scdf.gov.sg) between 7 May 2026 to 21 May 2026. Tender bidder(s) are strongly encouraged to involve your Qualified Person for this consultation.

b) For proposal involving A&A works, the QP will assist the Successful Tenderer to obtain the SCDF's Plan Approval and the Fire Safety Certificate (FSC). Should the Successful Tenderer require information relating to the application of Fire Safety Certificate (FSC) or Temporary Fire Permit (TFP), the Successful Tenderer may visit the following listed link to obtain relevant information such as application criteria and pre-requisites at (<https://www.scdf.gov.sg/home/fire-safety/permits-and-certifications/fire-safety-certificate-temporary-fire-permit>). If the Successful Tenderer has any doubts or queries regarding the plan approval procedures, he may enquire the Fire Safety Department via <http://www.scdf.gov.sg/home/feedback>.

c) For petroleum and flammable materials (P&FM) licensing requirements, the Successful Tenderer may visit the following listed link to obtain relevant information at <https://www.scdf.gov.sg/fire-safety-services-listing/petroleum-and-flammable-material-licences>.

10.0 MINISTRY OF DEFENCE (MINDEF)

i) If the Development entails solar panels installation, the Successful Tenderer is to ensure that the lighting system and solar reflectance from materials (e.g. façade cladding, solar panels, etc) for the Development must not affect aircraft in flight. The Successful Tenderer shall ensure that any working/outdoor lightings and solar reflectance must be directed downwards and/or shielded to prevent causing glare and confusion to pilots. The Successful Tenderer shall undertake all necessary rectifications at its own cost and expenses to the satisfaction of the RSAF if the lightings are assessed by the RSAF to be a hazard to air navigation. The Successful Tenderer shall submit detailed plans on any glare-inducing installation to RSAF (email: Height_Control@defence.gov.sg) with the subject title: "Glare Proposal for AOD", for comments prior to implementation. The Development shall not tap or affect any MINDEF sub-stations at all times.

11.0 ELECTRICITY

- i) The Successful Tenderer shall liaise with the Transmission Licensee authorised under the Electricity Act for the electricity supply and any other electrical provisions required for the purpose of and in connection with the Development.
- ii) The Successful Tenderer shall apply to the SP PowerGrid Ltd directly for the electrification scheme and any electrical substation, which need to be constructed within the Land to serve the Development. The cost of the construction of such electrical substation(s) shall be fully borne by the Successful Tenderer.

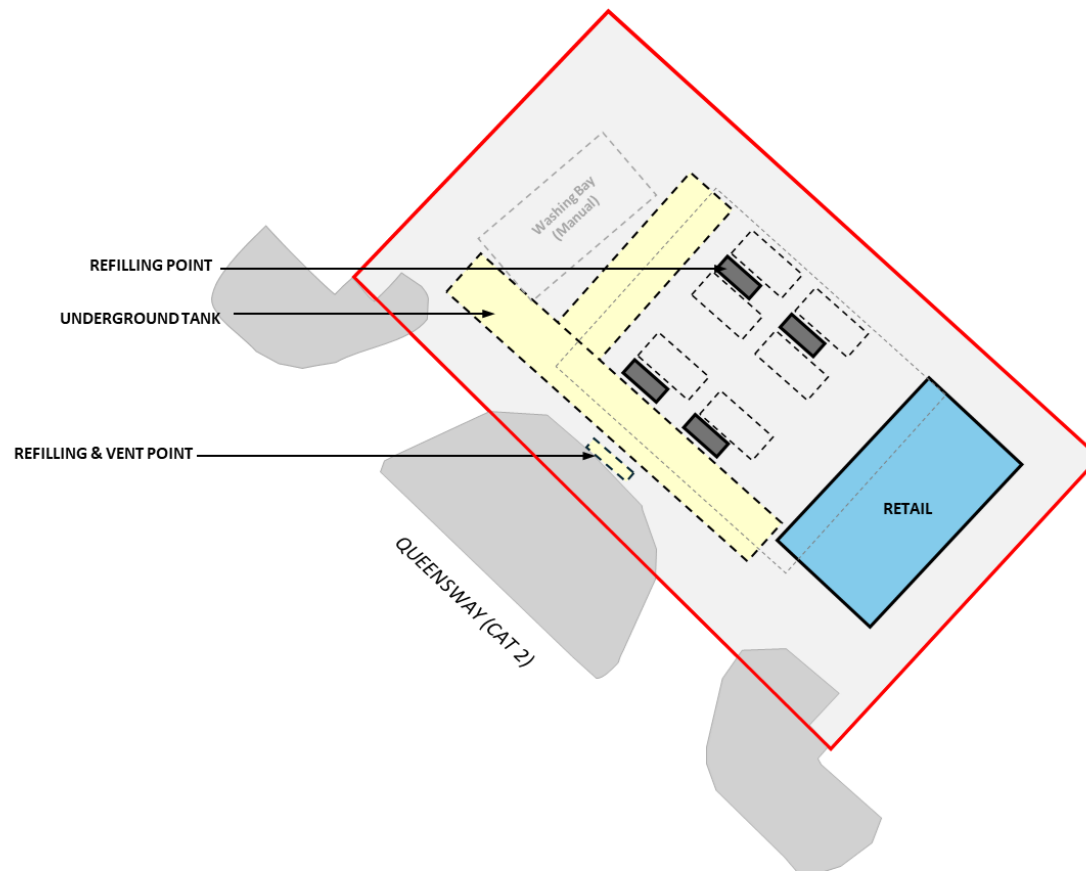
12.0 TELECOMMUNICATIONS

- i) The Successful Tenderer shall liaise with the Telecommunication System Licensee authorised under the Telecommunication Act, for the telecommunication supply to the Development.
- ii) The Successful Tenderer shall provide all facilities for telecommunication services, such as MDF room, Telecom riser ducts, lead-in pipes and manholes etc, within the Land. All Telecom facilities shall be provided according to the prevailing Info-communications Media Development Authority of Singapore (IMDA) Code of Practice for Info-communications Facilities in Buildings.
- iii) The Successful Tenderer is advised to consult the relevant Telecommunication System Licensees (e.g. Singapore Telecommunications Ltd, StarHub Ltd, StarHub Cable Vision Ltd, SP Telecommunications Pte Ltd, etc) early during the planning stage of the Development, on the location and diversion of existing Telecoms services.
- iv) The detailed Telecoms facilities plans for the Development shall be submitted to and duly verified by Telecommunication Facility Co-ordination Committee (TFCC) through the CORENET esubmission system, and approved by the IMDA prior to the commencement of works.

13.0 GAS

- i) The Successful Tenderer shall liaise with a gas retailer on the requirements for gas supply to the Land. For reference, the information on gas pipeline network in Singapore and the list of gas retailers in the market can be found at <https://www.ema.gov.sg/our-energy-story/energy-market-landscape/gas> and https://www.ema.gov.sg/Licensees_Gas_Retailer.aspx.
- ii) The Successful Tenderer shall at his own cost and expense, purchase the gas plan from PowerGrid's Mapping & Earthworks Administration section, carry out trial trench/ holes to determine the exact alignment and levels of any identified gas main during the design stage and ascertain whether they will be affected by the development works. If affected, the Successful Tenderer shall liaise with the Gas Transporter to request for diversion.
- iii) The Successful Tenderer shall provide a suitable diversion corridor, and the proposed corridor for the gas mains diversion works must be made available without any obstructions. The Successful Tenderer shall contact gasenquiry@spgroup.com.sg for diversion consultation if the gas mains are affected and bear the necessary diversion cost.
- iv) The Successful Tenderer is to submit written notice to SP PowerGrid Ltd (Earthworks Surveillance & Patrolling Section) if the intent is to carry out earthworks in the vicinity of gas pipelines at least 7 days prior to commencing the earthworks. All necessary precautionary measures must be taken to prevent damage to our gas pipelines at the worksite

CONCEPTUAL LAYOUT PLAN OF EXISTING PETROL STATION



PLAN IS INDICATIVE ONLY AND NOT TO SCALE