

**PROPOSED EXECUTIVE CONDOMINIUM HOUSING DEVELOPMENT  
LAND PARCEL AT SENJA CLOSE**

**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 Senja Close. The Particulars and Conditions of Tender and these Additional Conditions of Tender (Technical) shall be read in conjunction with the technical information booklet enclosed in the sale 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, 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 HDB, the relevant Competent Authorities and Public Utility Licensees directly and comply with their prevailing 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 SUMMARY OF PLANNING REQUIREMENTS

A summary of the planning requirements is set out in Table 1. The detailed planning requirements are set out in Part III.

**Table 1** – Summary of Planning Requirements for the Land

<b>PARAMETERS</b>	<b>PROVISIONS / REQUIREMENTS</b>
Site Area	10,159.2 sqm
Land Use / Zoning	Residential
Type of Proposed Development	Executive Condominium Housing Development
Gross Plot Ratio	3.0
Permissible Gross Floor Area (GFA)	Maximum GFA: 30,478 sqm Minimum GFA: 27,430 sqm  In addition to residential use, a minimum of 500m <sup>2</sup> GFA shall be set aside for Early Childhood Development Centre (ECDC).
Building Height (maximum)	Subject to a technical height control of 150m to 153m Singapore Height Datum (SHD).  The details are set out in Part III (Clause 3.4) and as shown in the Control Plan.

## **PART III**

### **3.0 PLANNING REQUIREMENTS**

#### **3.1 PROPOSED DEVELOPMENT**

The Land Parcel at Senja Close (“the Land”) with a site area of 10,159.2 sqm shall be for Executive Condominium Housing Development (“the development”). The site area is the area measured up to the boundary lines as shown on the Certified Plan No. 91447.

Note: Executive Condominiums are non-landed housing developments that typically come with generous provision of communal and recreational facilities for the enjoyment of the residents.

#### **3.2 ALLOWABLE GROSS FLOOR AREA (GFA)**

The total GFA for the development shall not exceed 30,478 sqm but shall not be less than 27,430 sqm. Based on the site area of 10,159.2 sqm, the permissible Gross Plot Ratio (GPR) should not exceed 3.0\*. The total GFA shall be computed in accordance with the Urban Redevelopment Authority’s (URA’s) Development Control Guidelines<sup>^</sup>. A minimum 500m<sup>2</sup> GFA of Early Childhood Development Centre (ECDC) shall be provided, preferably on the ground floor of the development.

\*Indicated for information of the Tenderer only.

<sup>^</sup>The 10% (max) bonus balcony GFA computation is based on proposed GFA for the residential development which excludes the mandated ECDC GFA.

#### **3.3 BUILDING LINE / SETBACK**

The Successful Tenderer shall at all times comply with 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. 91447.

The Successful Tenderer shall conform to URA’s Current Guidelines for Condominium Housing Development with regard to Building Spacing and Setback Standards.

#### **3.4 BUILDING HEIGHT**

The development shall be subject to a technical height control of 150m to 153m Singapore Height Datum. 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 all developments, structures and fixtures on the Land do not exceed the maximum allowable height of 150m to 153m Singapore Height Datum. Such developments, structures and fixtures include those on the roof tops, whether permanent or temporary, transient or stationary, (including but not limited to building superstructure, water tanks, lift motor rooms, TV antennae, 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.) are subject to the same height limit.

The Successful Tenderer shall submit to the Civil Aviation Authority of Singapore (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 Republic of Singapore Air Force’s (RSAF) clearances shall be sought for the use of crane or

tall construction machineries above 112m Singapore Height Datum (Email [height\\_control@defence.gov.sg](mailto: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 awarded letter and a copy of this conditions of tender. For civil aviation height and requirements, please consult the Civil Aviation Authority of Singapore (“CAAS”). The more stringent height restriction(s) from the respective agencies shall apply.

All capital and operating costs or expenses incurred to meet all the above conditions and requirements will be borne by the Successful Tenderer.

The Successful Tenderer shall obtain CAAS’ and RSAF’s prior written approval before mobilising and/or installing any construction machineries on the Land. An application to CAAS is to be submitted by the Successful Tenderer using the Crane Application Form available at URL: <http://www.caas.gov.sg/e-services-forms/e-services/application-for-obstacle-clearance>.

The Successful Tenderer shall consult DSTA ([landuse@dsta.gov.sg](mailto:landuse@dsta.gov.sg)) via email prior to making the submission to Design Gateway in CORENET X, to obtain DSTA’s 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. Prior to the Construction Gateway submission, the Successful Tenderer should reconsult DSTA if required.

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 Info-communications Media Development Authority of Singapore (IMDA).

### **3.5 DEVELOPMENT CONTROL**

The Successful Tenderer shall comply with the Development Control (DC) Guidelines issued or may be issued by the Competent Authority under the Planning Act 1998, unless otherwise stated in the Additional Conditions of Tender (Technical).

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.

In addition, regardless of when the development application is submitted to URA, the Successful Tenderer shall comply with the revised Gross Floor Area (GFA) and strata area definitions as set out in the circular “Harmonisation of floor area definitions by URA, SLA, BCA and SCDF” issued on 1 September 2022.

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 1998 at the formal submission stage in compliance with prevailing guidelines and circulars issued by the Competent Authority.

#### **Existing Underground Structures**

The Successful Tenderer shall be responsible, at his own cost and expense, to carry out 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 Parcel, and ascertain their effect on the proposed development, including the removal of such sub-structure or obstructions, if necessary. The Successful Tenderer shall be deemed to have notice of any sub-structure or other obstructions in the ground of the Land Parcel and shall not raise any objection or requisition whatsoever in respect of any such sub-structure or other obstructions.

### **3.6 URBAN DESIGN AND ENVIRONMENT CONSIDERATIONS**

The architectural solution must respect the context/built environment of the Land in its setting.

The proposed design solution shall blend in with the surrounding developments and be conducive to the overall surrounding character/ambience.

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 noise, glare, smell and any other form of pollution.

The development should be designed sensitively to minimise potential disamenities from the nearby proposed Chinese temple. Where required, visual screening (i.e minimising window-facing units, openings, and internal spaces towards the Chinese temple or siting the gabled end facing the Chinese temple) and use of buffers (i.e siting carparking, ESS, and internal roads immediately fronting the Chinese temple) should be considered.

### **3.7 AIR NAVIGATION AND VISUAL CONTROL CONSIDERATIONS**

As the Land is located in proximity to Sembawang Airbase, aircraft noise and vibrations should be expected. These effects should be taken into account in the development, and in particular, in the design of the facilities and operating equipment. If necessary, the Successful Tenderer should assess if a noise study should be carried out. The development must not impose any constraint on MINDEF or curtail its existing and future developments, operations and activities in any way.

There may be a need for visual controls at the Land to shield the facilities at MINDEF's premises from external view. This can only be determined when design details such as number of storeys of the development, location of openings (e.g. windows) etc. are available. The Successful Tenderer shall comply with MINDEF's requirements for visual controls as set out in **Appendix D** Clause 9.0.

### **3.8 PLATFORM LEVEL**

The existing levels of the Land are as shown in the Topographical Survey Plan No. 3184-CSS-TP-BP-79101-01A. Public Utilities Board (PUB) has specified that the minimum platform level (MPL) for the Land shall not be lower than 4.5m above Singapore Height Datum, or be at least 600mm above the adjacent road / ground levels or any other levels as determined by PUB as in clause 2.1 of the latest 7th edition of Code of Practice on Surface Water Drainage (COP), whichever is the highest. The final platform level is subject to the relevant Competent 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 cost and expense 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 shall ensure that the revised platform levels of the Land shall 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 Land 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.

### 3.9 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 Senja Close and shall operate in a Left-In-Left-Out (LILO) arrangement. 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. Access to these service areas, if required, shall be taken via the ingress / egress point of the development as shown in the Site Plan, subject to the requirements and approval of the LTA and other relevant Competent Authorities. No separate service access will be allowed to be directly taken from the public roads.
- iii) The internal layout shall be designed such that the entrance drop barriers and guard post are located within the development away from the Road Reserve Line to provide sufficient vehicle queue length for at least 2 cars to prevent any congestion onto the public road.
- iv) All pick-up / drop-off points are to be provided within the development and shall be adequately designed for. It shall not affect the ingress / egress movement and shall be located further in the development to prevent traffic queues from spilling onto the public roads.
- v) Internal service driveway shall be provided within the development with sufficient storage length to avoid spillage of vehicles onto the public roads.
- vi) The building boundary and any landscaping near access points shall be designed to provide a good line of sight for pedestrians, cyclists and / or motorists. This would allow users exiting the development to clearly see oncoming active mobility users travelling along the path and vice versa, ensuring that there is sufficient time to take any necessary evasive actions to avoid collisions.
- vii) The Successful Tenderer is required to construct the vehicular culverts for the access and external works at his own cost and expense, and hand it over to the relevant Competent Authority for management and maintenance.
- viii) An existing cycling path scheme is located on the sidetable fronting the development. The scope and details of the cycling path treatment at the proposed vehicular access are to be determined in consultation with LTA during the Development Control submission stage.

### 3.10 LOCATION OF BIN CENTRE

The bin centre shall be sensitively located within the Land such that it does not become a nuisance to residents in the surrounding developments. The entrance of the bin centre shall face inwards within the development. The design of the refuse management system shall comply from the Code of Practice on Environmental Health.

The Successful Tenderer shall ensure that the bin centre and its entrance area, including any parking space for refuse trucks, are located away from any adjacent landed housing estate (if any).

The service driveway for the bin centre is to be integrated within the Land and the length of the service driveway must be able to accommodate all service vehicles.

Lush planting and / or screening shall be provided to screen the bin centre and service areas from view of the residents in the adjacent landed houses (if any), and users of the surrounding public roads and walkways.

### 3.11 CAR PARKING REQUIREMENTS

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

- i) The Successful Tenderer shall provide parking lots for the development in accordance with the full physical parking requirements of the prevailing Parking Places (Provision of Parking Places and Parking Lots) Rules or any statutory modification and re-enactment thereto. Basement carparks shall have a setback from the boundaries according to URA's guidelines.
- ii) The vehicular parking facilities will be subject to the requirements and approval of the Authority, LTA and the relevant Competent Authorities at the formal submission stage.
- iii) The design of the parking facility place is to provide adequate vehicle queuing length within the development for vehicles entering it in order to prevent causing congestion along the main road.
- iv) The design of the parking place shall include adequate spaces for vehicles to carry out furniture delivery or house-moving activities.
- v) The Successful Tenderer is strongly encouraged to provide motorcycle parking lots at areas where it is accessible to provide easy access to short term motorcycle parking for delivery activities.
- vi) The design and layout of the carpark will be subject to the requirements and approval of the Authority and the relevant Competent Authorities and Public Utility Licenses under LTA's requirements for the Land Parcel.

#### Electric Vehicles (EV) Charging Provision

- vii) The Successful Tenderer shall fulfil the required EV charging provisions under the Electric Vehicle Charging Act 2022 (EVCA), if applicable. Please refer to the guidelines published on LTA's website at [https://www.lta.gov.sg/content/ltagov/en/industry\\_innovations/technologies/electric\\_vehicles/transitioning\\_to\\_evs.html](https://www.lta.gov.sg/content/ltagov/en/industry_innovations/technologies/electric_vehicles/transitioning_to_evs.html) under 'Widening Coverage of Accessible EV Charging Points' for more information.

#### Bicycle Parking Provision

- viii) The Successful Tenderer shall comply with LTA's requirements for bicycle parking provisions as set out in **Appendix D** Clause 3.0, and shall be subject to the evaluation and approval of the Authority and other relevant Competent Authorities.

### 3.12 EARLY CHILDHOOD DEVELOPMENT CENTRE (ECDC) FACILITY

The Early Childhood Development Agency (ECDA) requires the Successful Tenderer to comply with the following requirements:

- i) The Successful Tenderer is required to provide an Early Childhood Development Centre <sup>[1]</sup> (ECDC) with Class A/B licences within the Land for a minimum of 10 years from the date of issuance of the ECDC licence. A minimum of 500 m<sup>2</sup> GFA shall be set aside for the ECDC. The ECDC is estimated to accommodate a total capacity of 100 children. The GFA of the ECDC is to be computed as part of the total maximum permissible GFA for the development.

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<sup>1</sup> An ECDC is defined as any premises where any early childhood development service is provided or is to be provided. An ECDC service refers to the provision of care or education, or care and education, habitually of 5 or more children who are below 7 years of age, for a fee, reward or profit by a person who is not a relative or guardian of all the children. All ECDCs are required to obtain a licence under the ECDC Act and Regulations before commencing operations. There are 3 classes of licences: (i) Class A licence (formerly known as infant care services); (ii) Class B licence (formerly known as child care services); and (iii) Class C licence (formerly known as kindergarten services). Operators must indicate the class of licence(s) they are applying for according to the types of services they wish to provide or are required to provide. Please refer to ECDC Act 2017 for more details.

- ii) The ECDC shall comply with the requirements and guidelines established by the ECDA for ECDCs. The Successful Tenderer may refer to the guideline published by ECDA “Guide and Application to Set Up an Early Childhood Development Centre” which is found on ECDA’s website: (<http://www.ecda.gov.sg>) to understand the requirements and guidelines for ECDCs.
- iii) The Successful Tenderer must inform ECDA when the Certificate of Statutory Completion for the development with ECDC is obtained and notify ECDA when the MCST (if any) is formed. The Successful Tenderer / MCST is to appoint an operator to run the ECDC. The operator shall comply with requirements stipulated under the Early Childhood Development Centres Act 2017 and be licensed accordingly. The Successful Tenderer / MCST may approach ECDA should they need assistance to identify an ECDC operator.
- iv) Where the ECDC is located within a pure residential development, the Successful Tenderer is not allowed to strata subdivide the ECDC space and the ECDC space shall form part of the common property of the residential development. If the ECDC is within a mixed-use or non-residential component of the development, it shall be part of the maximum 5 strata lots allowed.
- v) After the initial 10-year period, the Successful Tenderer/ MCST/ owner may convert the ECDC space within the development to other community uses, e.g. elder care centre, subject to the approval of ECDA, URA and relevant agencies. In the event ECDA, URA and relevant agencies deem that the space is no longer suitable or required for other community-based uses, the space can be converted for other compatible uses, subject to the approval of the Competent Authority.
- vi) The ECDC space should preferably be located on the ground floor of the building. The ECDC space shall not be located at the basement nor above the 5th storey of the development. The ECDC shall not be located along the road frontage and shall be located as far as possible from the main roads with sufficient space for the designated pick-up/drop-off points to be provided for the ECDC.
- vii) The ECDC space is to be located near the perimeter and access points (e.g. main entrance) of the development to facilitate public access. The Successful Tenderer shall provide for seamless and convenient pedestrian access from the nearest public transport node (e.g. bus stop) for parents arriving by public transport. The Successful Tenderer shall provide a single vehicular access point for entry into the development, with adequate segregation of vehicular traffic from the residents and the ECDC, e.g. separate lanes within the development catering to residential and ECDC uses. The Successful Tenderer shall also ensure the provision of sufficient queuing distance to prevent vehicular traffic tailing back to public roads.
- viii) The ECDC shall be served by a dedicated pick-up/drop-off facility with minimal sheltered walking distance and barrier-free accessibility. All pick-up and drop-off activities of the ECDC shall be contained within the boundary of the development and shall not overspill to public roads or be conducted along the public roads at all times. The appropriate security and amenity measures must be provided in the overall design of the development to safeguard residents’ privacy and living environment.
- ix) There shall be designated car parking spaces provided to serve the ECDC facility. The number of parking lots shall be based on the prevailing Parking Places (Provision of Parking Places and Parking Lots) Rules.
- x) Car park spaces for the ECDC shall be located as close as possible to the ECDC. Minimal sheltered walking distance with barrier-free accessibility between the ECDC and its car park spaces shall be considered. The ECDC will also need to work with the car park operator to enforce these dedicated car park spaces to prevent inconvenience to ECDC’s users.

Inform Home Buyer of the ECDC Facility

- xi) If the ECDC is proposed as part of the common property of the future residential development, the Successful Tenderer shall inform purchasers or sub-lessees on the

provision of the ECDC as part of the common property of the development as specified in Condition 23.3 of the Conditions of Tender.

## **PART IV**

### **4.0 OTHER REQUIREMENTS**

#### **4.1 PRODUCTIVITY IMPROVEMENT**

The Successful Tenderer is required to adopt the minimum level of use of Productivity Improvement as stipulated under the Building Control (Buildability and Productivity) Regulations 2011 for the proposed development on the Land as set out in **Appendix D** Clause 11.0.

#### **4.2 STORAGE AREA FOR PREFABRICATED PREFINISHED VOLUMETRIC CONSTRUCTION (PPVC) MODULES**

If PPVC method of construction is adopted, the Successful Tenderer is required to set aside some space within the Land for storage and/or holding area for PPVC modules. No additional space outside the Land will be granted on TOL basis for this purpose.

#### **4.3 CONDITIONS AND REQUIREMENTS 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 that affect HDB property;
  - e. Soil investigation report of the 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/Contractor shall submit a Pre-Construction Survey Report to the relevant Town Council and the nearest HDB Branch before the installation of instrument on HDB property or the commencement of works.

The Successful Tenderer/Contractor 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.

#### 4.4 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 Clause 4.4(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 Clauses 4.4(i) to 4.4(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 Clauses 4.4(i) to 4.4(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 3<sup>rd</sup> 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 Clauses 4.4(i) to 4.4(iii) above shall also apply to ERSS, excavation work and tunnelling work.

#### 4.5 SERVICES AND SOIL REPORT

The information on existing services and soil report is indicative only. 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 also 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 and pay for the cost of any diversion or provision of the services including sewer lines etc. He shall be deemed to have included in his tender price such verification and diversion of services which may affect the development to meet the specifications of the relevant Competent Authorities.

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 Services 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

All applications and requests for consultation, cable testing and diversion shall be submitted through the portal. Please visit <https://ebiz.spgroup.com.sg/index.html> to access the SP eBusiness Portal.

#### **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>.

#### **4.6 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.

#### **4.7 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.

#### **4.8 WORKING AREA**

The Successful Tenderer shall confine the construction work within the boundary of the Land. The Successful Tenderer 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.

#### **4.9 WORK BY OTHERS / AUTHORITIES / AGENCIES CONTRACTORS NEAR / WITHIN VICINITY OF CONTRACT BOUNDARIES**

The Successful Tenderer shall coordinate with adjacent landowners, contractors and sub-contractors regarding the shared maintenance of the existing facilities and other construction systems including road furniture and public or work accesses.

There will be other contractors working near/ within the vicinity of contract boundaries of the development. The Successful Tenderer shall deem to know that other contractors will be working near the contract boundaries and shall liaise / work with the Contractors on site to ensure any interfacing works with other contractors are carried out in a smooth and cordial manner. All interfacing works with other contractors' works are deemed to be included in the contract. No claim for additional costs and extension of contract/phases period time would be entertained on these grounds.

The Successful Tenderer shall be responsible for all necessary coordination, liaison, provision of attendance, accesses, etc. with all relevant Authorities / Agencies contractors and their subcontractors for satisfactory completion works.

#### **4.10 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 soil deposits left by his vehicles on the road. Adequate Earth Control Measures should be implemented at the Successful Tenderer's own cost to prevent any cloggage or silty discharges into the public drains.

The Successful Tenderer shall be responsible for paying any fines imposed by the relevant Competent Authorities e.g. Environmental Health Department, Traffic Police etc.

#### **4.11 PLANS OF PROPOSED DEVELOPMENT**

The Successful Tenderer shall submit the design of the proposed development in both DWG and IFC formats to HDB for its endorsement on behalf of the Government as landowner before submission to the regulatory agencies for clearance at each Regulatory Gateway. The HDB shall have the right to require the Successful Tenderer to amend and modify the above-mentioned plans submitted by him.

#### **4.12 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 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 an alternative proposal instead; in which event, the relevant provisions in this Part shall be deemed to be complied with. HDB however reserves the absolute discretion to decide whether or not to allow any alternative proposal to be adopted.

#### 4.13 PUBLIC COMMUNICATIONS PLAN

The Successful Tenderer is required to carry out a public communications plan as part of the efforts to keep the local community informed of the development plans for the Land.

The local community is defined as:

- a) all residents of HDB flats, private condominiums / flats and landed houses;
- b) Management Corporation Strata Title (MCST) Committee of private residential developments and Neighbourhood Committees; and
- c) administration of schools and other institutions

that fall within a 100m (approximate) radius of the Land.

In addition, it shall include the local Member of Parliament (MP), Advisor, Constituency Director of the Constituency and General Manager of Town Council.

The Successful Tenderer is required to meet up with the local community (when required) to explain the internal development layout of the project and the mitigating measures.

The Successful Tenderer is required to handle any feedback from public arising from the proposed development and the associated works.

##### Stage 1: Prior to the first submission of plans to HDB for Endorsement

Prior to the erection of any hoarding or commencement of any clearance and / or tree-felling on the Land, the Successful Tenderer shall distribute flyers to the local community containing the following information and ensure this information are accurately presented:

- a) Project information (e.g. type of development, number of units, storey height, vehicular access);
- b) Location map showing hoarding, construction access etc;
- c) Infrastructure works to be carried out and removal of existing facilities;
- d) Key milestones in the construction programme [e.g. site clearance, hoarding works, commencement and duration of piling works, expected date of issuance of Temporary Occupation Permit (TOP)];
- e) Details of proposed measures to mitigate the impact of development to the surrounding environment and users;
- f) Contact details of the Successful Tenderer for the community to highlight issues such as noise and dust arising from the construction activities, and to provide feedback on the proposal; and
- g) The hotline numbers of the relevant departments in BCA, NEA, MOM and URA.

Prior to the distribution of the flyer, the Successful Tenderer shall ensure that information as outlined above (a – g) are included in the flyer and inform the HDB on the distribution date with a copy of Form A as shown in **Appendix C (I)** and flyer.

After the distribution of the flyers, the Successful Tenderer shall submit to the HDB a duly completed Form B as shown in **Appendix C (II)**. This Form B is to be submitted together with the first submission of plans to HDB for endorsement.

Upon submission of Form B to the HDB, the Successful Tenderer may proceed with the erection of hoarding, on which the contact details of the Successful Tenderer and the hotline numbers of relevant departments in BCA, NEA and MOM shall be prominently displayed.

##### Stage 2: Prior to the submission of plans to HDB for endorsement for WP application

After the grant of Provisional Permission by the Competent Authority under the Planning Act (Cap. 232) for the proposed development, the Successful Tenderer shall distribute additional flyers to the local community containing detailed information on the proposed development. The information to be provided shall include those in the Stage 1 flyer as well as (but not limited to) the following:

- a. Schematic site layout showing the location of building blocks and facilities such as the bin centre, electrical substation, BBQ pits, etc.; and
- b. Indicative timeframe for the community to respond to the proposal, which shall be at least 2 weeks from the date the flyers are distributed.

The Successful Tenderer is required to submit a copy of the flyer for the HDB's approval before the distribution to the local community.

At least 2 weeks after the date of distribution of flyers, the Successful Tenderer shall submit to the HDB a duly completed Form C as shown in **Appendix C (III)** and a duly completed Form D as shown in **Appendix C (IV)**, which is a final collation of the feedback received on the proposed development, if any, together with an explanation of how the development proposal seeks to sensitively address the concerns raised by the local community. Both Forms C & D are to be submitted together with the submission of plan, which shall be made no earlier than 3 weeks from the date the flyers are distributed, to the HDB for endorsement.

After the endorsement of the submission of plans by the HDB, the Successful Tenderer is required to submit to the Competent Authority a copy of Form C & D as part of the application for planning approval.

The Successful Tenderer shall not commence structural works until the Competent Authority has given written consent for the Successful Tenderer to proceed to apply to BCA for the permit to commence structural works, or has granted Written Permission under the Planning Act (Cap. 232).

**FORM A**  
**PUBLIC COMMUNICATIONS PLAN**

<b>Details of Developer</b> Company Name:  Address:  Tel no: Email:	<b>To:</b> Land Sales & Lease Administration Housing & Development Board HDB Hub 480 Lorong 6 Toa Payoh Singapore 310480	<b>INSTRUCTION:</b> This form is to be duly completed and submitted to the HDB prior to the distribution of the Stage 1 flyer.
Proposed Development: _____ _____		
Lot no.: _____ TS/MK: _____		
<b>Key milestone</b>		<b>Proposed date of commencement* (MM/YYYY)</b>
1.	Send Stage 1 flyer to local Member of Parliament (MP) and Advisor	
2.	Distribution of Stage 1 flyer containing brief project information and contact details of parties specified	
3.	Submission of Form B	
4.	First submission of development proposal	
5.	Erection of hoarding / site clearance	
6.	Obtain grant of Provisional Permission	
7.	Send Stage 2 flyer to local Member of Parliament (MP) and Advisor	
8.	Distribution of Stage 2 flyer containing detailed project information	
9.	Submission of Form C	
10.	Submission of Form D	
11.	Construction schedule a) Piling b) Sub-structure c) Superstructure d) M&E works e) Finishes	
Name, Designation & Signature of Developer's representative		

\* Subject to changes. The HDB shall be kept informed of any changes to the public communications plan.

**FORM B  
DECLARATION BY THE DEVELOPER (FOR FIRST SUBMISSION OF PLANS TO HDB)**

<b>INSTRUCTION:</b> This form is to be duly completed and submitted to the HDB together with the first submission of plans for HDB's endorsement, which shall be made no earlier than 1 week from the date the flyers are distributed	
<b>Details of Developer</b> Company Name:  Address:  Tel no: Email:	<b>To:</b> Land Sales & Lease Administration Housing & Development Board HDB Hub 480 Lorong 6 Toa Payoh Singapore 310480
Proposed Development: _____ _____	
Lot no.: _____ TS/MK: _____	
I, _____ (Name), _____ (Designation), hereby declare on behalf of the developer that in accordance with Condition 4.13 of the Additional Conditions of Tender, flyers containing brief information on the project and the contact details of the parties specified in the said Condition have been distributed to the local community* on _____ (Date).	
Signature:	Date:

\* Local community is defined and includes the parties specified in Condition 4.13 of the Additional Conditions of Tender

**FORM C**  
**DECLARATION BY THE DEVELOPER**

**(FOR SUBMISSION OF PLANS SUBSEQUENT TO THE GRANT OF PROVISIONAL PERMISSION)**

<p><b><u>INSTRUCTION:</u></b></p> <p>This form is to be duly completed and submitted to the HDB together with the submission of plans to HDB subsequent to the grant of Provisional Permission, which shall be made no earlier than 3 weeks from the date the flyers are distributed.</p>	
<p><b>Details of Developer</b></p> <p>Company Name:</p> <p>Address:</p> <p>Tel no:</p> <p>Email:</p>	<p><b>To:</b></p> <p>Land Sales &amp; Lease Administration Housing &amp; Development Board HDB Hub 480 Lorong 6 Toa Payoh Singapore 310480</p>
<p>Proposed Development: _____</p> <p>_____</p> <p>Lot no.: _____ TS/MK: _____</p>	
<p>I, _____ (Name), _____ (Designation), hereby declare on behalf of the developer that in accordance with Condition 4.13 of the Additional Conditions of Tender, flyers containing detailed information on the development project and the contact details of the parties specified in the said Condition have been distributed to the local community* on _____ (Date).</p>	

Details of preliminary feedback received from the local community (if any):

Signature:

Date:

*Local community is defined and includes the parties specified under Condition 4.13 of the Additional Conditions of Tender*

**FORM D  
CONSOLIDATED FEEDBACK ON PROPOSED DEVELOPMENT**

*(FOR SUBMISSION OF PLANS SUBSEQUENT TO THE PROVISIONAL PERMISSION)*

<p><b><u>INSTRUCTION:</u></b></p> <p>This form is to be duly completed and submitted to the HDB as part of the submission of the plans subsequent to the grant of the Provisional Permission, which shall be made no earlier than 3 weeks from the date the flyers are distributed.</p>	
<p><b>Details of Developer</b></p> <p>Company Name:</p> <p>Address:</p> <p>Tel no:</p> <p>Email:</p>	<p><b>To:</b>                  Land Sales &amp; Lease Administration                  Housing &amp; Development Board                  HDB Hub                  480 Lorong 6 Toa Payoh                  Singapore 310480</p>
<p>DC Reference:                  _____</p> <p>Proposed Development:                  _____                  _____</p> <p>Lot no.: _____ TS/MK: _____</p>	
<p>I, _____ (Name), _____ (Designation),                  hereby declare on behalf of the developer that in accordance with Condition 4.13 of the Additional Conditions of Tender, the table below has included all feedback that has been received from the local community, up to the date of the submission of this development application.</p>	

Feedback received from the local community and how the development proposal has sensitively addressed the feedback raised\*:

<b>Feedback Received from Local Community</b>	<b>Proposed Measures</b>

Signature:

Date:

*\* This must include all feedback received up to the point of the submission of the plans to HDB.*

**PROPOSED EXECUTIVE CONDOMINIUM HOUSING DEVELOPMENT  
LAND PARCEL AT SENJA CLOSE**

**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 Senja Close (“the Land”) is subject to the Additional Conditions of Tender and the Conditions of Tender for the Land contained in the eDeveloper’s Tender 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 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 said 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 development 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 prevailing 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.
- 2.5.8 To ensure that all proposed infrastructure is to be implemented in accordance to the requirements of the relevant Competent Authorities, and to initiate and complete the handover of the relevant infrastructure to the respective Competent Authorities upon completion.
- 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)**

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

- i) 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 Codes of Practice:
  - a. Code of Practice (COP) for Street Work 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. Architectural Design Criteria;
  - g. Infrastructure Architectural Design Criteria; and
  - h. Civil Design Criteria.
- ii) The conditions, requirements and information given are based on data available at the time of compiling the document and are given without prejudice to any changes that may subsequently occur. LTA disclaims any liability for any damage or loss that may be caused to any person or property directly or indirectly as a result of the conditions imposed herein.
- iii) The technical details, extent and completion date of such works shall comply with the requirements of the LTA and other relevant Competent Authorities.
- iv) The Successful Tenderer shall at this own cost and expense, carry out all the proposed works as detailed in the Additional Conditions of Tender (Technical).
- v) Detailed plan submission, including the traffic plans for the development showing the details of the access, etc., shall be made to LTA's Development Building Control (DBC) Division for review and clearance during the formal Design Gateway and Construction Gateway submission stages.

### Bicycle parking facilities

- vi) The Successful Tenderer is required to construct and provide a minimum number of bicycle parking lots within the Land at the rate of 1 bicycle parking lot for every 6 dwelling units or prevailing requirements set out by the relevant Competent Authority at the formal submission stage.
- vii) The Successful Tenderer is required to comply in full with the LTA bicycle parking requirement under the Parking Places (Provision of Parking Places and Parking Lots) Rules 2018. A guide for Bicycle Parking and related facilities can be found in the Code of Practice for Street Works Proposals relating to Development Works and the Code of Practice for Vehicle Parking Provision in Development Proposals.
- viii) As a good practice, the Successful Tenderer should set aside a portion of the bicycle parking lots on the ground floor where it is freely accessible and visible to visitors and the general public for short term bicycle parking. The percentage of the short-term bicycle parking requirement can be found in Code of Practice for Street Works Proposals relating to Development Works and Code of Practice for Vehicle Parking Provision in Development Proposals.
- ix) The Successful Tenderer is encouraged to provide end-of-trip facilities such as showers, lockers and changing rooms in close proximity to the bicycle parking facilities where appropriate.
- x) The bicycle parking lots shall be securely anchored and non-removable. The Successful Tenderer may, however, propose alternative layouts and designs for LTA's consideration and approval.
- xi) The Successful Tenderer should consider existing vehicular and pedestrian movement when locating bicycle parking lots within the development. Bicycle parking lots shall be segregated from pedestrian walkways, driveways and car park access to ensure safety of motorists, pedestrians and cyclists. It is advantageous to provide separate pathways for cyclists and motorised vehicles to avoid conflict between cyclists and other road users.
- xii) The Successful Tenderer is strongly encouraged to provide higher capacity lifts to cater to higher cycling demand. The recommended dimensions for such lifts can be found in Code of Practice for Street Works Proposals relating to Development Works.
- xiii) The Successful Tenderer shall obtain clearance from the Competent Authority on all matters related to the bicycle parking facilities before commencing the construction of the bicycle parking lots.

### Wayfinding signage

- xiv) The Successful Tenderer is to provide a comprehensive wayfinding system to guide residents and visitors of the said development to transportation nodes in the vicinity and towards the pedestrian and cyclist related facilities (e.g. bicycle parking) within the said development. A guide for wayfinding signage and related facilities can be found in the Code of Practice for Street Work Proposals relating to Development Works or at [https://www.lta.gov.sg/content/ltagov/en/industry\\_innovations/industry\\_matters/development\\_construction\\_resources/street-work-proposals/codes\\_of\\_practice\\_standards\\_specifications\\_guides\\_and\\_forms.html](https://www.lta.gov.sg/content/ltagov/en/industry_innovations/industry_matters/development_construction_resources/street-work-proposals/codes_of_practice_standards_specifications_guides_and_forms.html).
- xv) The Successful Tenderer shall obtain clearance from the Competent Authority on all matters related to the wayfinding system before commencing construction of the development.

### Prefabricated Prefinished Volumetric Construction (PPVC)

- xvi) Feedback related to PPVC transportation activities  
  
Feedback related to PPVC transportation activities shall be handled by the Successful Tenderer.

- xvii) Delivery of PPVC Modules
- a) The Successful Tenderer is to obtain a permit from LTA for laden or unladen vehicles which fall into the following categories:
    - i) Having an overall width exceeding 2.6 metres wide when travelling on controlled roads (please see <https://prompt.lta.gov.sg/WebUIPWAS/Information/RoadsControlledList.aspx>); or
    - ii) Having a rear overhang of length 1.8 metres or 40% of the vehicle length, whichever is lesser; or
    - iii) Having an overall weight exceeding its allowable weight limit (please see <https://prompt.lta.gov.sg/WebUIPWAS/Home/FaqInfo?faqType=Rule16>)
  - b) In addition to a permit, Auxiliary Police Escort, which is only allowed from 1900 hours to 0500 hours for major roads and from 2300 hours to 0500 hours for expressways, is required if the laden or unladen vehicles are:
    - i) more than 3.4 metres wide or more; or
    - ii) more than 80 tonnes in weight or more; or
    - iii) with the overall height of more than 4.5m
  - c) The Successful Tenderer shall comply with LTA guidelines “Special Vehicles that require Submission of Notice to LTA”.
- xviii) Oversized Vehicle Delivery Operation / Access Point
- a. Deliveries are to be carried out outside of AM and PM peak hours (630am-930am, 5pm-8pm).
  - b. Strictly no parking or waiting of construction vehicles / staff vehicles by the road side.
  - c. All loading and unloading activities of PPVC shall only be carried out within the Land/contained within the Land.
  - d. Ingress/egress shall be taken off from Senja Close and be of a Left-In Left-Out configuration and should be at the same location as the development main access point. Please ensure that vehicles are able to manoeuvre to enter/ leave the Land Parcel.
  - e. Delivery trucks trucks are recommended to use Senja Link → Senja Close to enter the site, and to use Senja Close → Senja Link → Senja Road to exit. This reduces interactions with residential traffic/pedestrian movements within Senja Estate.
  - f. Marshalls shall be present to help guide/regulate traffic and ensure smooth flow of vehicles
  - g. There are existing public buses plying through this area and construction operations shall not obstruct public buses.
  - h. The Successful Tenderer / Contractors are to plan the traffic routes properly.
  - i. All traffic operation plan consisting of delivery of the PPVC modules, marshalling of traffic, etc. (road diversion, if any) shall be submitted to LTA for advice before implementation.
- xix) The Successful Tenderer shall comply with LTA’s guidelines on oversized vehicle movement.

- xx) First-time applicants must register through LTA.PROMPT via <https://prompt.lta.gov.sg/WebUIPWAS/Login.aspx> for access. Applications are to be made at least 3 working weekdays in advance.

#### **4.0 REQUIREMENTS OF CATCHMENT AND WATERWAYS DEPARTMENT (C&W), PUBLIC UTILITIES BOARD (PUB)**

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

- i) The Land is not affected by PUB's current drainage scheme. However, there is a 1.8m wide drainage reserve beside the site. All structures including foundation and proposed works shall not encroach into the drainage reserve.
- ii) The minimum platform level (MPL) for multi-unit residential development shall not be lower than 4.5 m SHD or be at least 600 mm above the adjacent road / ground level, whichever is the highest. The minimum crest levels for basements of multi-unit development shall be at least 300 mm above the MPL as stated above. The Successful Tenderer is to pre-consult PUB on the required MPL before making submission to CORENET X Design Gateway.
- iii) In complying with the minimum platform level requirement, the Successful Tenderer shall conduct thorough investigations of the sites and determine suitable platform profiles to ensure that the runoff within, upstream of, and adjacent to the development site can be effectively drained away without causing flooding within the site or in the vicinity of the site. Any proposal to level/backfill the subject site shall be submitted to PUB(C&W) for comments and approval.
- iv) Surface runoff from the Land shall discharge into the drain within the 1.8m wide drainage reserve.
- v) The existing drainage system shall not be altered, disturbed, filled, diverted, blocked or interfered with, without the prior approval from PUB(C&W).
- vi) The design and construction of the development within the site shall not cause damage or affect the structural integrity of the roadside drain / outlet drains.
- vii) The Land is within the Sungei Pang Sua and Sungei Pang Sua West water catchments.
- viii) The proposal shall not result in any loss of yield from the catchment area.
- ix) Stringent pollution control measures shall be incorporated in the design and during the construction of the development.
- x) Incense waste shall be properly disposed of by a licensed waste collector. No incense waste shall be discharged into controlled watercourses.
- xi) Storage of toxic and hazardous materials shall not be allowed.
- xii) All sewage and sullage water shall be discharged into a public sewer.
- xiii) If there is any earth filling works at the development site, 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.
- xiv) 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/abcwaters/designguidelines>.

- xv) 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 development sites. 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. Bioretention basins or rain gardens;
  - f. Porous pavements.

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.

- xvi) PUB encourages the implementation of ABC Waters design features in the development. The design and construction supervision of ABC Waters design features as well as drawing up of the maintenance plan for these features, if implemented shall be carried out by an ABC Waters Professional.

The development can also apply for ABC Waters Certification. Information regarding ABC Waters Certification can be found via the link: <https://www.pub.gov.sg/abcwaters/certification>.

The Successful Tenderer could write to [PUB-ABCWaters@pub.gov.sg](mailto:PUB-ABCWaters@pub.gov.sg) for issues related to ABC Waters design or certification.

- xvii) The planning, design, construction activities and procedures for plan submission shall comply fully with the requirements as stipulated in the current 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/drainage/COPsurfacewaterdrainage>.

- xviii) Effective erosion and sediment control measures shall be provided by the Successful Tenderer and the QP shall advise his Successful Tenderer to provide such effective measures and facilities with inputs from a Qualified Erosion Control Professional (including site management system and perimeter cut-off drain, silt traps, storage ponds, treatment plants, etc) to ensure clean discharge that complies with the statutory requirement. The proposed erosion and sediment control measures shall be submitted by a Qualified Erosion Control Professional (QECP) to Public Utilities Board before commencement of works. All affected watercourses shall be desilted and cleared until completion of work.

- xix) Safeguarding of existing drains/drainage facilities during construction works
- a. The Successful Tenderer shall take due care and precautionary measures to ensure that no damage or settlement occurs to any existing drain / drainage facilities in the course of the works. 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).

- b. 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.
  - c. The Successful Tenderer shall carry out soil instrumentation for monitoring the soil/geotechnical/ structural movements or changes at and around the work-site 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 rectified 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.
  - d. In the event of breach of alert levels and/or anomaly in the soil instrumentation results, the 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.
  - e. 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 the Successful Tenderer to address the damage and follow up actions to rectify the situation.
  - f. 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, post-condition survey and topography survey of the affected drains shall be submitted and PUB may request for joint site inspection of the rectification works.
  - g. The Successful Tenderer shall inform PUB in writing at least one week before the commencement of any work at the site which affects drains.
- xx) Please contact Ms Jennifer Yeo via Jennifer\_Yeo@pub.gov.sg/ Ms Eugenia Tan via Eugenia\_Tan@pub.gov.sg if you need any clarifications.

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

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

- i) The planning of this development shall comply with the prevailing **Code of Practice on Sewerage and Sanitary Works** [hereafter referred to as the “**COPSSW**”].
- ii) There is existing sewerage infrastructure in the vicinity of the Land:
  - a. Existing internal drain lines;
  - b. Existing sewerage infrastructure 250mm and 300mm in diameter.
- iii) The proposed development shall connect to the existing 300mm dia sewer fronting the site via MH ID3290528.

- iv) Any facilities or buildings (e.g. toilet, wastewater treatment facility, etc.) where used water will be generated must be sited on high ground (> 130.908 mRL). Should such facilities/buildings be sited at ground lower than this level, ejector(s) would be required. This is needed to prevent backflow to the development in the event of high used water level in the sewer due to sewer blockage. If ejectors are not used, the Successful Tenderer shall need to ensure that the floor level of the house and the levels of the sanitary appliances, floor traps and inspection chambers shall be constructed suitably higher than the top level of the manhole to which the sanitary drainline is connected, as stipulated in COPSSW.
- v) Thorough site investigation shall be carried out to determine the exact positions and levels of the existing sewerage infrastructure.
- vi) Manholes shall not be buried under any circumstances. Where there is a need to raise or lower any existing manholes, the Successful Tenderer shall liaise with PUB(WRN)'s Network Management Branch and carry out the necessary works at his own cost and expense. In Detailed Plan submissions, the QP shall provide details of the proposal including the surveyed existing manhole top and invert levels, proposed new manhole top level and manhole details (i.e. new headroom clearance from the intermediate platform, etc.). Upon completion of the manhole raising/lowering work, as-built drawings showing the surveyed final manhole top and invert levels and updated details of manhole details of the affected manholes shall be submitted to PUB(WRN). For such proposals, please contact Mr Muhd Nabil Mohd Raus (email: muhd\_nabil\_mohd\_raus@pub.gov.sg) or Mr Aliff Sufian (email: aliff\_sufian\_osman\_munawar@pub.gov.sg) at Tel 6517 2230 from PUB(WRN).
- vii) For minimum clearances of utilities crossing and parallel to sewers, please refer to **COPSSW Section 1.2.4c**. In addition, pre- and post-construction CCTV inspection shall be carried out on the affected sewers and manholes. The CCTV reports and video shall be submitted to PUB(WRN). A WRc certified CCTV specialist contractor [<https://www.pub.gov.sg/-/media/Images/Feature/Content-Pages/Public/Singapore-Water-Loop/Used-Water/RegisteredCCTVContractor.pdf>] shall be engaged to interpret, prepare, and certify CCTV reports in accordance with PUB(WRN)'s CCTV inspection requirements. Please note that the defect classification shall be in accordance with the latest edition of the WRc/WAA "Manual of Sewer Condition Classification".
- viii) 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). 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) for approval before the commencement of works.
- ix) The Successful Tenderer shall be responsible for seeking approval from all relevant authorities/land owners for the proposed sewerage works to be carried out beyond the development site. Such approval or consent from the land owner/authorities 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.
- x) All sewers and manholes shall be readily accessible at all times to PUB for inspection and maintenance.
- xi) No building/ structure/piling/retaining structure, etc. (whether temporary or permanent), except lightweight and demountable elements (such as awnings, surface drains, compound boundary wall & fencing, planting troughs and link-way shelters), shall be sited over or across any sewers without the approval of PUB. All proposed structures shall be kept as far away from the existing sewers as possible and no nearer than the following minimum lateral clearances (also known as sewer 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.		

More details can be found in **COPSSW Sections 1.2.4 and 1.2.5.**

- xii) 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 of PUB should first be obtained before carrying out the specified activities at the site. 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 applicant shall refer to **COPSSW Section 2** for the technical requirements on sewer protection.
- xiii) 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](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 PUB's Network Management Branch (NMB) at least 7 days before the commencement of any works or specified activities within the public sewer corridor.
- xiv) 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.
- xv) The Successful Tenderer 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 sewers.
- xvi) For clearance certificate for the proposed development/ building/ infrastructure/ utility works and the proposed sewerage/ sanitary works, the QP shall prepare plans and submit applications to PUB's Building Plan Division (BDP) via the respective CORENET X Regulatory Approval for Building Works (RABW) Gateways.
- xvii) Please contact Mr Syafiq Bin Mohamad Sarip (Syafiq\_MOHD\_SARIP@pub.gov.sg) / Mr Pham Huy Phuong (Pham\_Huy\_PHUONG@pub.gov.sg) if you require any clarifications.

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

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

### WATER SUPPLY PLAN

- i) Provision shall be made by the Successful Tenderer for PUB to lay new water mains, if required, along public road reserves / sidetables to the Land. The cost for the laying of new water mains, if any, and connecting pipes to serve the Land shall be borne by the Successful Tenderer.
- ii) The proposed development is in close proximity to PUB's proposed/ under construction/ existing water pipes.
- iii) The Water Supply Plan (WSP) shows the approximate positions of PUB's proposed/ under construction/ existing water pipes of 100mm dia 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 the 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.

- iv) If there are water pipes affected by the proposed development, PUB(WSN) will advise that the water pipes be diverted. Consultation for water pipes diversion must be made at least 6 months ahead of the proposed development and the cost of diversion of any water pipes shall be fully borne by the Successful Tenderer. The Successful Tenderer is advised to engage a qualified water pipe laying contractor with CR07 work head with at least 5 years of experience to carry out the diversion works.
- 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 West BU: Please contact PUB officer Mr Shahrudin or Mr Abu at 68852475/ 68852477. Email to: [Shahrudin\\_ABDUL\\_SAMAD@pub.gov.sg](mailto:Shahrudin_ABDUL_SAMAD@pub.gov.sg) or [Abu\\_Hasli\\_ABU\\_BAKAR@pub.gov.sg](mailto:Abu_Hasli_ABU_BAKAR@pub.gov.sg)
- vii) For Pipe diversion at West Zone, please contact Mr Leonard Chay ([Leonard\\_chay@pub.gov.sg](mailto:Leonard_chay@pub.gov.sg)) or Mr Aloysius Lim ([Aloysius\\_lim@pub.gov.sg](mailto:Aloysius_lim@pub.gov.sg)).

**SUBMISSION OF PLANS**

- viii) 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 in the table below.

Height of Highest Fittings Method of Supply

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 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.)	

- ix) 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 Centralised Services Department. 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 and a set of drawings to Centralised Services Department prior to commencement of the WSI works.

**WATER CONSERVATION**

- x) Water conservation measures as stipulated in the Public Utilities (Water Supply) Regulations and SS 636 – Code of Practice for Water Services shall be adopted.
- xi) 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/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).

- xii) 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.
- xiii) 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, the Successful Tenderer is encouraged to use drought tolerant plants.
- xiv) 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.
- xv) 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.
- xvi) Use non-water cooled systems (such as air-cooled, refrigerant-cooled, etc.) for cooling purposes wherever possible.
- xvii) Cooling towers should achieve minimum 7 and 10 Cycles of Concentration (COC) using potable water and NEWater respectively.
- xviii) Please contact TAY ZI HUI, JULIA (email: [Julia\\_TAY@pub.gov.sg](mailto:Julia_TAY@pub.gov.sg)), from PUB(WSN), if you need any clarifications.

## 7.0 REQUIREMENTS OF NATIONAL PARKS BOARD (NPARKS)

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

### General Requirements

- i) Pursuant to the Parks & Trees Act (Cap.216) read together with the Parks and Trees Regulations (Reg. 1), any tree with a girth exceeding 1.0 metre measured 1.0 metre from the ground, growing on, any tree conservation area or any vacant land shall not be cut except with the prior approval of the Commissioner of Parks and Recreation.
- ii) The Successful Tenderer shall ensure that roadside trees and green verge(s) abutting the Land are not to be affected, especially by 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, etc. Similarly, the Successful Tenderer shall ensure that pick-up/drop-off points, taxi lay-bys, loading/unloading bays and fire engine hard-standing areas are to be located within the Land.
- iii) The Successful Tenderer shall replace the existing roadside trees and green verge fronting the Land if it is affected by the proposed development. The width of the replacement green verge should be in accordance to LTA's standard road code for that category of road or match the existing green verge along the road, whichever is wider.
- iv) There must not be any change of soil level to the roadside planting verge without prior approval from NParks.
- v) There must not be any widening and/or raising of existing carriageways and realignment of road kerbs and drains on abutting roads without prior approvals from the relevant authorities.

- vi) Development works are to be confined within the subject site and working boundaries. There must not be any vegetation clearance, illegal dumping and/or storing of construction materials beyond the approved boundaries. The proposed development shall not encroach on the road reserve line and affect any roadside table.
- vii) The development shall comply with requirements for green buffers and 2-metre wide peripheral planting verges. The green buffers and peripheral planting verges must be free from any encroachment above ground, and/or any structures or services are to be recessed to at least 2-metre below ground level, and are not to slope with gradients steeper than 1:2.5.
- viii) The Successful Tenderer shall consult NParks' Greenery & Development Planning (GDP) Branch early at the planning and design stage on the felling of any trees that may be affected by the proposed development with a copy of recently survey plan of the site (of less than 2 years) and its peripheral rods, at a scale of at least 1:500, clearly indicating information of trees, such as location, species, height and girth. Relevant additional information such as plans on construction hoardings and vehicular access points should also be submitted.
- ix) The Successful Tenderer shall consult NParks on the tree protection criteria for roadside trees during early planning and design stage.
- x) The Successful Tenderer shall inform NParks at least 8 weeks before the commencement of works for NParks to transplant/salvage existing affected plants within the Land and/or along affected roadside tables.
- xi) The Successful Tenderer shall comply with planting provision and aeration requirements for open air parking at street level. More details can be viewed on NParks' website at <https://www.nparks.gov.sg/partner-us/development-plan-submission/guidelines-on-greenery-provision-and-tree-conservation-for-developments>.

#### Other Technical Requirements

- xii) There is a safeguarded park connector along the northern boundary of the Land. The Land is to exclude the safeguarded Park Connector.
- xiii) The Successful Tenderer shall seek NParks' approval for any future connections from the Land to the park connector/park such as footpath/footbridge etc.
- xiv) The Successful Tenderer shall bear the construction cost of such connections mentioned in Clause 7.0(xiii) and shall maintain the connections (whether or not the entire structure or part thereof will be evaluated later based on site conditions).

## **8.0 REQUIREMENTS OF NATIONAL ENVIRONMENT AGENCY (NEA)**

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

- i) The Land is located within a water catchment area, where rainwater and surface runoff are collected in the downstream reservoir for treatment to produce drinking water by PUB. The development shall not cause pollution directly or indirectly to our water resources. Any activity that could cause contamination problem to our water resources shall not be carried out. Please also ensure that the requirements for developments in water catchment areas in **Appendix D(I)** are duly complied with.
- ii) Sewage and used water from the development shall be discharged into the public sewer. The Successful Tenderer / QP of the development shall check with PUB (Water Reclamation Network Department) on the point of sewer connection and the allowable discharge rate. Holding tanks shall not be used at locations served by the sewer network.
- iii) Refuse and other solid wastes generated from the development shall be collected by a licensed waste collector for disposal at an approved waste disposal facility. Please ensure that the proposed refuse storage and collection system (e.g. bin centre) is in compliance with the public health requirements stated in the Code of Practice on Environmental Health.

- iv) Abatement measures shall be provided for all proposed M&E equipment installed in the development to mitigate the impact of noise, smell, fume, vapour or heat flux from operations and maintenance of these equipment on residential and noise sensitive premises. The Successful Tenderer / QP shall ensure that the noise emitted from the operations of M&E equipment installed in the development does not cause nuisance to surrounding residential and noise sensitive premises. The Successful Tenderer / QP shall comply with the NEA's Technical Guideline on Boundary Noise Limits for Air-Conditioning and Mechanical Ventilation Systems in Non-Industrial Buildings for the noise limits. A copy of the said Guideline may be viewed at the following website: <https://www.nea.gov.sg/docs/default-source/default-document-library/technical-guideline-on-boundary-noise-limit-for-air-conditioning-and-mechanical-ventilation-systems-in-non-industrial-buildings---feb-2018.pdf>.
- v) The development is located in the vicinity of Kranji Expressway, proposed Chinese Temple and residential developments. Hence, the Land has high ambient noise level attributed to road traffic, M&E equipment operations and community events / activities carried out in the vicinity. The Successful Tenderer / QP shall factor the high ambient noise level and other nuisance impacts in the planning layout and design of the development, such as siting the proposed residential buildings as far away as possible from the nuisances sources, and incorporate mitigation measures in the development to mitigate noise and other nuisances impact. The Successful Tenderer / QP shall carry out a land impact noise impact assessment (NIA) to demonstrate that the noise level at residential buildings façade does not exceed 67 dBA (Leq 1 hour) and the indoor noise level does not exceed 57 dBA (Leq 1 hour) under natural ventilated condition with windows/sliding doors fully opened. The Successful Tenderer shall obtain NEA's NIA clearance at pre-submission and submit it as part of the pre-submission to URA before Design Gateway, subject to compliance with relevant planning requirements. The Successful Tenderer / QP shall also inform or socialise the prospective buyers of the apartment units of the potential disamenities posed by the activities carried out in the vicinity of the Land. Abatement measures shall be provided to further mitigate the impact if nuisance sensitive uses are included in the development.
- vi) In line with the Singapore Standard on Code of Practice for Pollution Control (i.e. SS593:2013), when a site that had undergone past polluting activities which could pose any risks to public health, is to be redeveloped, rezoned or reused for a non-polluting activity, a study should be conducted on the site to assess the presence and extent of land contamination. If there are indicators that point to the presence of land contamination (e.g. visual signs of soil discoloration and/or odour) found at the Land, a site assessment study should also be conducted on the Land to assess the presence and extent of land contamination. If the site assessment study shows that the Land is contaminated, the Land shall be remediated or mitigation measures to be taken before it is redeveloped for residential or any non-industrial use, to ensure that the Land is suitable for its intended uses. The Successful Tenderer/ QP shall comply with the site contamination study requirement if the Land meets the abovementioned conditions.
- vii) In accordance to the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guideline published in 1998: <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>, the electromagnetic field emission from all the electrical installations and underground electrical cables should not result in the general public being exposed to extremely low frequency (ELF) magnetic field strength above or anywhere close to the guideline values. Similarly, the World Health Organisation (WHO) has recommended that (i) "Provided that the health, social and economic benefits of electric power are not compromised, implementing very low-cost precautionary procedures to reduce exposure is reasonable and warranted" and (ii) "Policy-makers, community planners and manufacturers should implement very low-cost measures when constructing new facilities and designing new equipment including appliances". Taking guidance from WHO, the Successful Tenderer is encouraged to explore the implementation of cost effective measures as a precaution to further lower exposure to ELF radiation when building new facilities or modifying existing facilities.
- viii) 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 Radiation Protection Act 2007, the Energy Conservation Act 2012 and their Regulations.

- ix) Under the Environmental Protection and Management (Control of Noise at Construction Sites) Regulations, construction sites within 150m of residential estates have to comply with more stringent construction noise limits, especially during the evening and night time hours. Hence the Successful Tenderer/QP/developer shall implement noise control measures during the construction period to ensure that the noise levels from the construction activities are within the noise limits and to minimise dis-amenity to any nearby residents. In addition, the construction sites located within 150m of any hospital, home for the aged sick or residential building are not allowed to carry out construction activities from 10pm on Saturdays or eves of public holidays to 7am on the following Mondays or days after public holidays respectively.
- x) 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>. Please contact NEA at [NEA\\_Noisebarrier@nea.gov.sg](mailto:NEA_Noisebarrier@nea.gov.sg) for any enquiries on the requirement for noise barriers at worksites.

## 9.0 REQUIREMENTS OF MINISTRY FOR DEFENCE (MINDEF)

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

- i) The views from windows, corridors, staircases, or any openings, or any surveillance cameras, devices or equipment (e.g. CCTVs) on the Land exceeding the height of 120m Singapore Height Datum (indicative) as shown on the Control Plan must be directed away from MINDEF's premises.
- ii) If Clause 9.0(i) becomes impracticable to implement, the Successful Tenderer can propose visual screening measures in the form of permanent fixtures which are impossible or difficult to remove. They can include but are not limited to the following:
  - a. Window openings are to be recessed or have fixed frosted glass panels;
  - b. Corridors, staircases, fixtures and other openings are to be provided with louvres; and
  - c. Access to rooftops is to be restricted. If the development includes a roof garden, measures to screen off the view are required to achieve the above.
- iii) The Successful Tenderer is advised to liaise with MINDEF early on the requirements for visual controls and submit the proposal to DSTA for MINDEF's comments and clearance at the detailed design stage. If the screening measures implemented on site are found by MINDEF at its sole discretion to be inadequate or ineffective, the Successful Tenderer shall undertake to carry out any and all necessary rectification works at its own cost and expenses, to comply with the visual control requirements stated above and to the satisfaction of MINDEF.

## 10.0 REQUIREMENTS OF FIRE SAFETY AND SHELTER DEPARTMENT (FSSD), SINGAPORE CIVIL DEFENCE FORCE (SCDF)

SCDF requires the Successful Tenderer to comply with the Fire Safety Act 1993 and Regulations, the prevailing "Code of Practice for Fire Safety Precautions in Buildings" (Fire Code), the relevant Codes of Practices & Guidelines, and SCDF Circulars. These general fire safety requirements are also applicable to any proposed temporary usage or installation. In addition, the following conditions will apply where applicable:

- i) To consult SCDF on the specific design requirements if the premises is to store, handle, use, transport or import of hazardous materials, including petrol station or CNG station which may have impact within the premises or on the surrounding existing or new developments. SCDF may impose the Quantitative Risk Assessment study (QRA) and/or additional Fire Safety requirements, or disapprove such proposal if there is possible impact within the premises or on the surrounding developments.
- ii) To consult SCDF on any specific developments or structures having impact on SCDF operations e.g. deep basement works (which are more than 4 storey or more than 24 metres in depth), tunnel or any other special developments, etc. SCDF may impose additional Fire Safety requirements.
- iii) The Successful Tenderer shall ensure that their proposal 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. The Successful Tenderer and their QP shall consult SCDF directly for those new proposed building structures to be sited near to common boundary line, as additional Fire Safety requirements may be imposed.
- iv) The Successful Tenderer shall ensure that the boundary line of petroleum service stations, either be an existing<sup>[1]</sup> or going-to-build petrol station, shall be at least 50m from any residential building, or 90m from any place of public assembly.  
  
<sup>[1]</sup> For existing petrol service stations 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 or position; (3) position or capacity of the underground tanks.
- v) For existing premises, the Successful Tenderer may wish to note that the SCDF's Plan Approval and Fire Safety Certificate (FSC) will have to be obtained if there is any change in use or involving any alteration / addition works. The Successful Tenderer shall ensure that the existing premises, including existing layouts and usages, have obtained the necessary Approvals from SCDF.
- vi) For lease extension, the Successful Tenderer is urged to engage their own QP in assisting them to obtain the SCDF's Plan Approval and FSC (basing on the prevailing Fire Code) if it is not done so for the entire buildings / premises. The fire safety provisions and mitigation measures are essential for all buildings; it is particularly true for religious premises where congregation of general public is possible, and for premises with similar usage as Nursing Home & Childcare Centre where the occupants are vulnerable to emergency situations. (The Successful Tenderer shall engage the operator and see how to address the shared concerns before considering granting their lease extension application).
- vii) For applications of non-exclusive and limited religious use, the Successful Tenderer shall liaise directly with the building owner / management to ensure their proposed usage and number of occupants for that particular room / floor does not exceed the limit as originally designed & approved for. The Successful Tenderer shall also provide the full details to the building owner / management so that the Emergency Response Plan (ERP) can be updated accordingly.
- viii) For new road development (including road widening, realignment, road expunction & interim measures etc), it shall not affect or encroach upon any part of existing development

compounds. For public fire hydrant, the Successful Tenderer is requested to liaise with PUB directly for any proposed relocation or erection of new fire hydrant.

- ix) For drainage system development (including widening, realignment, extension & interim measures etc), it shall not affect or encroach upon any part of existing development compounds.
- x) Before making any commitment (purchase/occupation or rental/lease etc) or commencement of any proposal, the Successful Tenderer shall engage a QP to carry out a feasibility study to ensure the entire premises and new proposals are able to comply with all the Fire Safety requirements (the current Fire Code & other relevant standards/guidelines/circulars). The feasibility study shall also ensure those existing fire safety provisions of surrounding developments are not affected. The QP will then assist them to obtain the SCDF's Plan Approval and the FSC. If the Successful Tenderer has any doubts or queries regarding the fire safety requirements or plan approval procedures, he may enquire the Fire Safety Department via SCDF\_QP\_Consultant@scdf.gov.sg.
- xi) For projects involving petroleum and flammable materials (P&FM) such as Chemical Plants, Petroleum Refineries and Buildings/Structures used for handling & storage of bulk P&FM, the Successful Tenderer and their QP shall provide the overall layout details to SCDF at SCDF Headquarters at 91 Ubi Ave 4, for further comments, as additional fire safety provisions and mitigation measures will be imposed. The Successful Tenderer and their QP may wish to consult Hazmat Department at (Email: Bryan\_NG@scdf.gov.sg or Glen\_Chua@scdf.gov.sg).

## 11.0 REQUIREMENTS OF BUILDING AND CONSTRUCTION AUTHORITY (BCA)

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

### Environmental Sustainability

- i) The BCA Green Mark Scheme is a green building rating system to evaluate a building for its environmental impact and performance. Under this scheme, a building will be assessed based on the level of environmental performance that can be achieved in its design and construction. More details are available at <https://go.gov.sg/gm2021>.
- ii) The Successful Tenderer is required to incorporate energy-efficient, water-efficient and environmentally friendly design, technologies and practices to achieve a minimum BCA Green Mark Rating of Green Mark Platinum Super Low Energy (SLE) with exemplary performance under the Maintainability (Mt) section (i.e. obtain Maintainability Badge) for each development on the Land Parcel.
- iii) The Successful Tenderer is required to apply to BCA for assessment of the environmental features and performance of each development under the BCA Green Mark Scheme and achieve the rating of Green Mark Platinum SLE with Maintainability Badge. In the application under the BCA Green Mark Scheme, the Successful Tenderer is to submit all relevant building plans and documents to BCA and to comply with all requirements, procedures, directions and requests, and pay all fees, charges and other amounts payable to BCA for, and in relation to, the assessment of each development under the BCA Green Mark Scheme. The Successful Tenderer is advised to render full co-operation to BCA, its officers, employees and agents in relation to the assessment.

### Digitalisation

- iv) The Successful Tenderer is required to carry out building works for each development on the Land in accordance with the requirements of Integrated Digital Delivery (IDD) as set out in the Code of Practice on Buildability Addendum No. 1 in relation to IDD.
- v) The Successful Tenderer is required to submit the preliminary IDD implementation plan to BCA for BCA's review within three months from completion of Design Gateway.
- vi) When submitting the plans of building works for a development on the Land to the Commissioner of Building Control for approval at Construction Gateway, the Successful Tenderer is also required to include the final IDD implementation plan as stipulated under

the Building Control (Buildability and Productivity Regulations) 2011. The IDD implementation plan must include the following:

- a. Details of the five (5) IDD essential use cases adopted for the building works; and
- b. Any additional documents or information required by the Commissioner of Building Control.

Productivity Improvement

- vii) The Successful Tenderer is required to adopt suitable productive technologies for the development to achieve a minimum level of 30% productivity improvement\*.
- viii) The Successful Tenderer is also required to adopt the minimum level of use of prefabricated systems for the development on the Land as stipulated in the Building Control (Buildability and Productivity) Regulations 2011 as shown below:

a) Prefabricated structural systems of minimally advanced precast concrete system in respect of total structural floor area of the building works	65%
b) Prefabricated architectural systems in respect of total wall length of the building works	80%
c) Prefabricated mechanical, electrical and plumbing systems in respect of the total qualifying areas in the development as specified in the Code of Practice.  The mechanical, electrical and plumbing components or equipment are required to be manufactured and assembled in an accredited fabrication facility, in accordance with any accredited fabrication method.	65%
d) System formwork in respect of the total cast-in-place areas of super structural works	70%

- ix) A Productivity Concept Implementation Plan (PCIP), which demonstrates a minimum level of 30% productivity improvement\*, is to be submitted to BCA in the following manner:  
\*compared to the base figure for 2010 as set out in BCA's website (at <https://go.gov.sg/measuringprojectproductivity>)
  - a. Within three months from obtaining clearance of Design Gateway, the Successful Tenderer is required to submit the Productivity Concept Implementation Plan (PCIP) to BCA before the Piling Gateway (where applicable) and/or the Construction Gateway. The Successful Tenderer must attach BCA's acknowledgement letter on the submission of PCIP as part of the application for Structural Plans (ST) Approval. If the BP Approval is obtained before the Successful Tenderer applies for the ST Plans Approval, the acknowledgement letter on submission for PCIP will not be required.
  - b. As part of the application for Construction Gateway, the Successful Tenderer is required to submit the final PCIP, by incorporating and highlighting any design changes to BCA together with the application for Construction Gateway. Once the PCIP has been approved by BCA, the Successful Tenderer is required to design and carry out the building works in accordance with the approved PCIP under the Building Control (Buildability and Productivity) Regulations 2011.
- x) If the Successful Tenderer adopts Prefabricated Prefinished Volumetric Construction (PPVC) for the development, he shall:
  - a. Include in all options and agreements for the sale, sublease or disposition of the residential units within the development such information as to highlight to the purchasers, sublessees or parties agreeing or intending to agree to accept from the Successful Tenderer the disposition of the residential units within the development that the PPVC method is used for the development and any resulting conditions of use

of the residential units (arising from the use of the PPVC method), including but not limited to:

- i) Restrictions on hacking/alteration of walls (including by way of drilling) within the residential units
  - ii) For localised chasing and drilling works on load-bearing structures within the residential units, the following shall apply:
    - a. Appointing a Professional Engineer (PE) to issue a formal letter affixed with PE stamp and signed prior to carrying out such works to confirm that strengthening of the structures will not be required and that the structural integrity of the building will not be affected by the proposed works. The PE shall supervise the works being carried out, and provide a further formal letter affixed with PE stamp and signed after the completion of such works stating that such works are satisfactory;
    - b. Obtaining clearance from the Management Corporation (MCST) of the Development prior to carrying out such works, and in the case where there is no MCST constituted in respect of the Development, obtaining clearance from the owner developer of the Development prior to carrying out such works.
  - iii) Keeping access panels (if any) within the residential units unobstructed to facilitate periodic inspections
- b. Ensure that the PPVC which is used must conform to the requirements set out in the Code of Practice in relation to PPVC.
  - c. The PPVC system adopted is to be of a concrete system and must allow for flexibility for removal of internal walls in the event the homeowners want to make any modifications to their units.

#### Buildability and Constructability Requirements

- xi) The Successful Tenderer is required to adopt labour-efficient designs and construction technologies to meet the Buildability and Constructability requirements as set out in the Code of Practice on Buildability for the development on the Land.
- xii) Buildability considers the extent of standardisation, simplicity and integrated elements applied to buildings at the design stage and the potential impact of a building's design on labour usage. Constructability considers the level of adoption of labour-efficient construction methods and construction processes such as system formwork and climbable scaffolding which would result in savings in manpower and shorter construction time. More details are available at <https://go.gov.sg/bpregulations>.
- xiii) The Successful Tenderer is required to consult BCA early before the Piling Gateway (where applicable) and/or the Construction Gateway on the designs and productive technologies of the proposed development to meet the Buildability and Constructability requirements as set out in the Code of Practice on Buildability.
- xiv) The Successful Tenderer shall comply with the requirements, procedures, directions, and requests of BCA and shall also render his full co-operation to BCA, its officers, employees, and agents in relation to meeting the Buildability and Constructability requirements.

#### Prefabricated Bathroom Units (PBU)

- xv) The Successful Tenderer is required to adopt Prefabricated Bathroom Units ("PBUs") for 65% or more of the bathroom units in the non-landed residential component of the said development on the Land as stipulated under the Building Control (Buildability and Productivity) Regulations 2011.

- xvi) The PBUs which are used must conform to the requirements set out in the Code of Practice on Buildability in relation to the performance requirements and acceptance framework for PBUs.
- xvii) In situations where PPVC is adopted and the PPVC modules for the residential component of the development also contain bathroom units which conform to the latest Code of Practice on Buildability stipulated for both the PPVC and PBU units, the adoption of these modules can be counted towards meeting the required minimum levels of use for both the PPVC method and PBUs. The adoption of these PBU modules may also contribute towards meeting the minimum level of productivity improvement as stated in Clause 11.0 (vii).

#### Construction Quality Assessment System (CONQUAS)

- xviii) The Successful Tenderer shall be required to refer and submit the proposed development to BCA to be assessed for the construction quality of the building works under the Construction Quality Assessment System (CONQUAS).
- xix) The Successful Tenderer is to comply with all requirements, procedures, directions and requests of BCA and pay all fees, charges and other amounts payable to BCA for and in relation to the assessment of the construction quality of the Development under CONQUAS. The Successful Tenderer is to render full co-operation to BCA, its officers, employees and agents in relation to such assessment under CONQUAS.

#### Quality Mark (QM) for Good Workmanship

- xx) The Successful Tenderer is required to apply for and comply with all the requirements under the BCA Quality Mark for Good Workmanship scheme.]

#### Barrier-Free Accessibility (BFA) & Universal Design (UD)

- xxi) The Successful Tenderer shall comply with the mandatory requirements specified under the prevailing Code on Accessibility in the Built Environment (Code).
  - a. All areas intended for access by residents, visitor or the public shall be made accessible for persons with disabilities in accordance with the provisions specified under the prevailing Code.
- xxii) Where there are direct pedestrian connections to adjacent developments, parks, walkways/linkways and commuter facilities like MRT station, public bus stops and taxi stands; whether underground, on grade or elevated, all such connecting routes must be made accessible for persons with disabilities.
- xxiii) The development on the Land should be designed and built to be inclusive and accessible for a wide range of people, including persons with disabilities, the young and the old. The BCA Universal Design index self-assessment framework (UDi) is a tool for evaluating the level of user-friendliness of buildings through its provision of user-friendly features. The Successful Tenderer should use the BCA Universal Design index (UDi) Checklist at the onset of design and achieve higher UDi rating for the development. More details are available at <https://www1.bca.gov.sg/regulatory-info/building-control/universal-design-and-friendly-buildings/universal-design-index>.

## **12.0 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 Successful Tenderer shall be deemed to have included in his tender price for the construction of the electrical substation(s).

### 13.0 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, NetLink Trust, 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.

### 14.0 GAS

- i) The Successful Tenderer shall liaise with a gas retailer on the requirements for gas supply to the Land Parcel. 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](https://www.ema.gov.sg/Licensees_Gas_Retailer.aspx).
- ii) The Successful Tenderer shall at his own cost and expense 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. 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](mailto:gasenquiry@spgroup.com.sg) for diversion consultation if the gas mains are affected and bear the necessary diversion cost.