



**Used Water
Submission Procedures**

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INTRODUCTION

In general, all proposed developments have to comply with the relevant regulations of the building authorities, i.e. URA, BCA, FSSD, NEA and PUB.

The building owner or developer of the land is required to appoint a Qualified Person (QP) (who is Registered Architect or Professional Engineer) to prepare plans and submit applications to PUB for development control clearance for the proposed development/building works and Clearance certificates for the proposed sewerage/sanitary works.

QPs should submit electronic plans and documents via the one-stop on-line portal – CORENET - .

BEFORE SUBMISSION

Before proceeding with the design, QP shall purchase the Sewerage Information Plan (SIP) which shows the location and alignments of public sewers and pumping mains in the vicinity of the development. QP should incorporate the public sewerage system onto the DC plan and DP for sewerage/sanitary works. See section on Purchase of SIP.

Where necessary, QP may pre-consult PUB on the availability of public sewers, major sewerage requirements or apply for waivers with supporting documents.

Building plan submissions are classified into several stages. QPs are encouraged to refer to the information below to get a better understanding on the flow of the submission and approval process.

(1) Purchase of Sewerage Information Plan (SIP)

Information on the sewer network is available on Sewerage Information Plan (SIP). They show the location of manholes and alignment of sewers.

Before proceeding with the design of a proposed development, QP shall obtain a copy of the SIP for the sewerage system in the vicinity of the development site. The link to purchase a SIP is appended below. If a project does not commence within 3 months from the date of issue of an SIP, a new SIP should be obtained.

QP shall ensure that the proposed development will not disrupt or affect any sewer/drainline that is serving the adjacent lots/premises.

The information given in the SIP is indicative. QP shall carry out site survey and investigation to ascertain the information. Any person who intends to dig, bore, trench, grade, excavate, tunnel or break any ground shall:

- a) carry out trial trenches to physically ascertain the exact location, alignments and levels of the sewerage system on site before commencement of any works
- b) ensure that a written approval from PUB for carrying out such works has been obtained
- c) comply with such requirements as specified by PUB to protect the sewerage system in the vicinity of such works

Please refer to **Annex 1** for info on how to purchase the SIP from PUB.

(2) Development Control (DC) Plan Submission

QP shall submit DC plan to PUB for clearance before commencing any Building works at the site.

Clearance for Development Control must be obtained if the development involves:

- buildings or structures to be erected over, across or adjacent to any public sewerage system (eg sewers, pumping mains, DTSS tunnels, etc);
- proposed connection of the development/premises to the public sewers/sewerage system;
- proposed new sewers/sewerage system (eg pump sump, retention tank, holding tank or on-site sewage treatment facilities, etc), extensions/diversions and/or abandoning of any existing public sewers/public sewerage system;
- using of existing sewers or sewer connection lines for intensified land use re-development or re-construction project; or
- any works which could affect any public sewers/sewerage system directly or indirectly.

PUB will check the DC plans for compliance with the sewerage requirements and Code of Practice on Sewerage and Sanitary Works and issue a Clearance for the DC plan.

For infrastructure projects by Statutory authorities (e.g. MRT/road tunnels, road works, MRT/road viaducts, etc.), QPs for Developing authorities shall submit the proposal directly to Water Reclamation Network Department for consultation and clearance on sewerage matters.

(3) Detailed Plan (DP) Submission on Sanitary Works

QP shall submit the following technical detailed plans to PUB for clearance.

- Proposed internal sanitary plumbing and drainage system
- Proposed M&E equipment for sewage ejector or sewerage installations (-to be submitted directly to PUB for clearance)

Detailed plans for sewerage (sanitary) works for developments requiring Building Plan / Detailed Plan submission under the Building Control Act /Sewerage and Drainage Act are required to be submitted by the Qualified Person (QP) via BCA Corenet e-submission system to PUB for registration and obtaining the clearance certificate. The QP shall use the "PUB-DPCLR" form to apply to PUB for the Clearance Certificate.

Upon obtaining clearance of the Detailed Plan (Sanitary) from PUB, the QP is required to apply for PUB(WRN)'s approval before allowing the workmen to enter the public sewer/manhole or other confined spaces to carry out any works including inspection.

During the progress of the sanitary works, the QP is required to carry out his own checks/inspections/water test to ensure that the sanitary works are constructed in accordance with the registered plans.

Upon completion, the QP is required to inspect the completed sanitary works and rectify all defects. The QP will then submit the "PUB-BPU-COMPOFWORK" form and a set of the "As-Built" plans via BCA Corenet e-submission system to (PUB BPU) to certify the completion of the sanitary works.

The Water Reclamation (Network) Department (PUB) may inspect the completed sanitary works before the Sewerage Clearance for TOP/CSC can be issued.

The QP shall give at least 3 weeks of advance notice to PUB (WRN) to carry out the inspection/water tests to avoid delay in obtaining the Compliance Certificate.

(4) Detailed Plan (DP) Submission on Sewerage Works

QP shall submit the following technical detailed plans to PUB for clearance.

- Proposed minor sewers or pump sump/pumping mains
- Proposed on-site sewerage system (retention tank, holding tank or treatment plants/facilities)

Detailed plans for sewerage (sewer) works are required to be submitted by a QP (Professional Engineer) via BCA Corenet e-submission system to PUB for registration and obtaining the clearance certificate. The QP shall use

the "PUB-DPCLR" form to apply to PUB for the Clearance Certificate.

Upon obtaining clearance of the Detailed Plan (Sewer) from PUB, the QP (PE) responsible for the sewerage works is required to apply for PUB(WRN)'s approval before allowing the workmen to enter the public sewer/manhole or other confined spaces to carry out any works including inspection.

During the progress of the sewerage works, the QP is required to carry out his own checks to ensure that sewerage works are constructed in accordance with the registered plans.

Upon completion, the QP is required to inspect the completed sewerage works and rectify all defects. The QP will then submit the "PUB-BPU-COMPOFWORK" form and a set of the "As-Built" plans (to be endorsed by Registered Surveyor) via BCA Corenet e-submission system to (PUB BPU) to certify completion of the sewerage works.

Water Reclamation (Network) Department (PUB) may inspect the completed sewerage works before Sewerage Compliance Certificate can be issued.

The QP shall give at least 3 weeks of advance notice to PUB (WRN) to carry out the inspection/water tests to avoid delay in obtaining the Compliance Certificate.

(5) Application for Approval of Works Affecting Public Sewerage System

Even if DC clearance has been obtained or if it is not required, where any works (either permanent or temporary) or activity is to be carried out within the sewer corridor or if public sewers are present in the development lot or the site, the responsible QP for the works/activity shall submit the relevant detailed technical/engineering plans to PUB (Water Reclamation Network Department) to obtain a **written approval** before commencing such works/activity.

Builder/QP is required to conduct a Pre-construction CCTV* sewer inspection of the existing public sewer and submit the CCTV reports together with the application form (PUB-SEW-CLRDEV-OVER-SEW) to PUB.

*For small redevelopment/A&A works of single landed property (terrace, semi-detached and detached house), the submission of pre-construction CCTV survey report is **waived** and QP is only required to submit the post- construction CCTV survey report.

(6) Building Construction Stage

QP shall submit the following forms /documents via the Corenet e-submission system directly to PUB at various stages of the construction works:

- a. **Form B & B1** – to obtain the PUB’s approval before allowing the workman to enter the public sewer/manhole or other confined spaces at any sewerage installations to carry out works or inspection. If sewer connection work is required, in addition to obtaining approval of Form B, the contractor shall submit the Form B1 to the Network Management Branch (NMB, PUB) to arrange for PUB’s officer to witness the sewer connection works.
- b. **Form PUB-BPU-CLRDP01 – to obtain clearance on** detailed plan of the proposed RC trench, used water pumping system or sewer work (for infrastructure project).
- c. **Form PUB-BPU-COMPOFWORK** – to certify completion and inspection of the completed sewerage/sanitary works, RC Trench, or M&E works for the sewage ejector/sewerage installations and to arrange for site audit inspection by PUB.

(7) Sewerage Compliance Certificate for TOP/CSC

QP shall be fully responsible for the supervision and construction of the building/sewerage works in accordance with the PUB’s registered plans and the requirements in the Code of Practice on Sewerage and Sanitary Works.

Upon receiving the QP’s Completion of Work form (PUB-BPU-COMPOFWORK), PUB may conduct spot check on the completed sewerage/sanitary works.

QP should also include the results of their hydrostatic test when submitting their completion of work form. (**Annex 2**)

PUB will issue a Sewerage Compliance Certificate when all requirements pertaining to sewerage, sanitary, mechanical and electrical works for sewerage installations have been complied with and certified by the QP to be in order.

(8) PUB’s Clearance for TOP / CSC

Upon completion of the sewerage/sanitary works and drainage works and obtaining all the respective clearances and compliance certificates from PUB, QP shall apply to PUB for the PUB TOP clearance or PUB CSC clearance through PUB_BPU@pub.gov.sg with attachments of the clearances and/or compliance certificates where applicable OR PUB’s confirmation through Corenet or email that the project do not have works involving Sanitary/Sewerage and/or Drainage.

Worker's Dormitory

(9) PUB's In-principle Approval for Proposed Worker's Dormitory

The majority of sewers in industrial areas were put in place originally to support industrial land use and may not be adequate to serve factories converted to dormitories. There are many industrial estates currently having a large number of dormitories that were given planning permission. The sewers at these estates may no longer be able to support further addition of dormitories or if still possible, only a limited number.

To ensure that the existing sewers can support proposed dormitories, QPs shall consult PUB by submitting the following details of the proposal and obtain the prior clearance from PUB (WRN) before seeking URA's planning permission.

The following documents and details can be submitted online via Form J application at www.pub.gov.sg/compliance/usedwater/forms

- Site Location and Plan with details of sanitary drain lines (Sanitary Layout Plans) and sewer connection;
- Name of the Company applying for workers dormitory in the factory;
- Site area and Gross Floor Area (GFA) of the existing factory and the proposed GFA to be converted to workers dormitory;
- No. of workers proposed for the workers dormitory;
- No. of workers currently residing at the site and a copy of URA's Written

Permission (WP) and approved plans showing the approved capacity of the existing workers dormitory (applicable for renewal and/or proposals to increase the capacity of existing workers dormitory);

- No. of shifts, working hours per shift and no. of workers in each shift (if applicable);
- Maximum no. of workers residing in the premise at any point of time;
- Trade of workers (eg marine, construction etc);
- Estimated date of full occupancy/discharge;
- Past 6 months SP water bill for the existing premise (inclusive of all sub-meters);
- Nature of Trade/Business of the existing premise; and
- Type of Dormitory (e.g. ancillary or secondary).

Please also note the following requirements:

- The Applicant shall notify PUB if the premises are no longer used as a factory converted dormitory.
- The Applicant shall note that the proposed number of workers that can be approved to reside at the site is subject to the available carrying capacity of the existing sewerage network.

- The applicant shall notify PUB in writing upon the completion of the proposed workers dormitory and when the dormitory is fully occupied.
- The Applicant shall consult PUB if he wishes to carry out any of the following:
 - i. When he wishes to renew URA's Temporary Permission;
 - ii. When he wishes to change the number of approved workers residing in the premises. No increase in the number of workers housed is allowed without prior approval of PUB.
- QP shall attach the PUB's clearance together with the application for DC clearance to PUB stating whether there is any change to the details above.
- The dormitory operator shall provide PUB 6 months Singapore Power Services Pte Ltd's water bills as and when is required by PUB.

Other References:

[NEA - Applications for Workers' Dormitory in Industrial Premises](#)

SIMPLIFIED SUBMISSION

What is Simplified Submission Process?

- A self-declaration scheme where proposed works are checked and declared by a Qualified Person(QP) to be in full compliance with the prevailing code of practice, standards and guidelines.

Aim

-To streamline QP's submission process for simple projects.

Benefits to the Industry

-Self declaration process

-Reduced paperwork

-Eliminate the need for DC and DP submission for straight-forward cases

PUB-DCCLR

- Simplified submission – Type of Submission (Page 2)

		New Submission	Resubmission	Amendment
Development Control	SEW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DRA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Simplified Submission	SEW	<input checked="" type="checkbox"/>		
	DRA	<input checked="" type="checkbox"/>		

- Choose **ONE** of the three options that **best fit** the nature of project and declare that the project meets the criteria for **Simplified Submission on Works affecting Sanitary/ sewerage (Page 3)**

Simplified Submission for Works Affecting Sanitary/Sewerage	
I hereby declare that the project meets the following criteria:	
<p><input type="checkbox"/> A/A works to single landed residential house, factory (not including workers' dormitory) or shops (excluding food shops or food establishments) and including addition of sanitary facilities at basement.</p>	
<input type="checkbox"/>	<p>A. The proposal involves only construction works /activities within the existing building, such as</p> <ol style="list-style-type: none"> 1. New or alteration to the sanitary facilities and sanitary pipes fully comply with the Code of Practice requirements 2. Does not have any building/ structure/piling works outside the existing building that affecting the public sewer/combined sanitary drainline 3. No change to existing sewer connection 4. The design discharge capacity of the sewage ejector for basement sanitary facilities is 2 litres/sec or less
<input type="checkbox"/>	<p>B. The proposal involves extension of building/structure over public sewer, it is mandatory to pre-consult and obtain PUB written advice if</p> <ol style="list-style-type: none"> 1. RC trench is proposed 2. The proposed structure is designed to be demountable 3. The design discharge capacity of the sewage ejector exceed 2 litres/sec
<p>New erection or reconstruction of single landed residential house (including houses with basement),</p>	
<input type="checkbox"/>	<p>C. The proposal meets the following conditions:</p> <ol style="list-style-type: none"> 1. Does not have public sewer or combined sanitary drainline within the lot 2. Reuse existing sewer connection which is directly connected to the public sewer located at public area. 3. The design discharge capacity of the sewage ejector is 2 litres/sec or less.
<p>Simplified Submission is a lodgement process based on the QP's declaration. QP is reminded to submit for PUB TOP clearance upon completion of work.</p> <p>For proposal that does not meet any of the above criteria, normal DC submission should be made.</p>	

ADDITION AND MODIFICATION OF SANITARY FACILITIES

- Addition of New Sanitary Facilities or A/A Works to Existing Sanitary Facilities in Premises or Building

Sanitary works, except those that are minor and exempted under [Section 11\(5\) of the Act](#), will require the approval of PUB. This is to ensure that sanitary works are carried out in accordance with the requirements of the Code of Practice on Sewerage and Sanitary works.

House/building owners are encouraged to engage trained and qualified plumber to carry out the sanitary works that involve:

- construction of new or relocating of existing sanitary facilities (bathroom, toilets, facilities for washing, etc),
- new installation, alteration or relocating of any sanitary plumbing system or sanitary drainage system, including floor traps, inspection chambers and the connection of the sanitary system to the public sewer,
- new provision and installation of grease traps, oil & grease interceptor
- diversion of any on-site sewage treatment facilities into public sewer; etc

Owner/Occupier of the premises or the plumbing contractor shall submit an on-line [Form F](#) together with the layout/detailed plan showing the proposed sanitary works to PUB for approval.

Exemption:

Approval of PUB is not required for the following minor sanitary works:

- a. repair, replacement or removal of any existing sanitary facilities (bathroom, toilets, facilities for washing) in a building; or
- b. the addition of sanitary appliance (washbasin, bathtub, sink, urinal, toilet bowl) within the existing sanitary facilities in a building.

To ensure good workmanship, PUB encourages the public to engage the Singapore Plumbing Society (SPS)'s Registered Sanitary Plumbers (RPs) or PUB-licensed Water Service Plumbers (LPs). HDB dwellers can also contact their respective Town Councils to seek the Town Council's assistance to engage its term contractor's trained and qualified plumbers.

To prevent overcharging, quotations from more than one plumber should be obtained to compare prices.

Registered Sanitary Plumber: The Singapore Plumbing Society (SPS) maintains a list of trained and qualified plumbers to serve the construction industry and the public. The list of SPS Registered plumbers is published in the [SPS website](#). If you need the service of a SPS registered Plumber, you may look it up at the SPS website or contact the SPS at Tel: 62949252 or e-mail: sinspa@singnet.com.sg

Water Service Plumber: Water service plumbers are licensed by PUB to carry out water service plumbing works (- refers to the laying, installation, alteration, repair or replacement of water pipes, tanks, taps and fittings in the drinking water supply system, for the conveyance of drinking water).

- Sanitary Wares, Pipes and Fittings, Manhole/Inspection Chamber Frames and Covers

The sanitary wares, pipes and fittings, manhole/inspection chamber frames and covers used in the construction of a sanitary plumbing and drainage system shall be of a design and construction complying with the Singapore Standards or other acceptable Standards prescribed in the Code of Practice on Sewerage and Sanitary Works. Separate approval from the Water Reclamation (Network) Department (PUB) for their use is not required. However, the Water Reclamation (Network) Department (PUB) may require valid certificates/test reports to be submitted for verification.

The sanitary ware, pipes and fittings, manhole/inspection chamber frames and covers shall be clearly embossed or permanently marked with the brand name/trade mark, the country of origin and the Standards which the product conforms to at a conspicuous position so that they can be clearly identified.

The sanitary ware, pipes and fittings, manhole/inspection chamber frames and covers for use in sanitary works/sewerage works may be listed in the "Product Listing Scheme (PLS)" administered by the PSB Singapore. The PLS directory can be viewed at PSB Singapore's website at URL Address: <http://www.tuv-sud-psb.sg/sg-en/resource-centre/certificate-finder/product-listing-scheme>.

- Minor Sanitary Works

For A & A works that involves new provision and installation of grease trap and new sanitary plumbing and drainage system in an existing premises/building (which originally has no sanitary facilities), the Owner/Occupier/contractor shall submit an on line [application Form F](#) to the Water Reclamation (Network) Department for approval of the proposed works. The layout/detailed plan showing the proposed sanitary works shall be submitted together with the application.

House owners/Occupiers of the premises are encouraged to engage a SPS registered plumber, to carry out the minor sanitary works.

Exemption:

For minor sanitary works such as the repair, removal or replacement of WCs/floor traps and defective/corroded sanitary piping or any addition to existing sanitary facilities or sanitary appliances in an existing premises/building, submissions of plans and notification for commencement and completion of the works are not required.

For further information, please contact our officers at 6731 3302, 6731 3730 or 6731 3340.

- Temporary Sanitary Facilities at Trade Fairs

For provision of temporary toilet/sanitary facilities at trade fairs, after the organiser has obtained the NEA's trade fair permit, the plumber / operator / contractor shall submit an online application Form I attaching the detailed plans showing the proposed connection of the temporary toilets/ sanitary facilities to public sewers/holding tanks to the Water Reclamation (Network) Department for approval.

For info on General Requirements for Temporary Sanitary Facilities for Trade Fairs please refer to **Annex 3**. You can also contact our officers at 6731 3254 or 6731 3306.

- Temporary Sanitary/Toilet Facilities at Construction Sites

For provision of temporary toilet/sanitary facilities at construction sites, after the QP has registered the detailed plans on environmental health for provision of temporary toilets with CBPU (NEA), the contractor/plumber shall submit an online application Form E attaching the detailed plans showing the proposed connection of the temporary toilets/ sanitary facilities to public sewers/holding tanks to the Water Reclamation (Network) Department for approval.

He is also required to notify the Water Reclamation (Network) Department of the completion of the temporary toilet/sanitary/sewerage works via online Form H.

Refer to **Annex 4** for info on General Requirements for Temporary Sanitary Facilities for Construction Site.

For further information, please contact our officers at 6731 3582, 6731 3254 or 6731 3306.

Annex 1

Request for Services Plans

1. Before proceeding with the design of a proposed development, QP must apply to PUB for the relevant sewerage, drainage and water information:
 - a. Sewerage Information Plan (SIP) indicates the location and alignment of public sewers or pumping mains in the vicinity of the development. Details of the existing sewer connections at the development may not be shown on the SIP. QP should ascertain/verify details of the existing sewer connection on site;
 - b. Drainage Interpretation Plan (DIP) indicates drainage reserves or land reserved for future drainage schemes. The DIP may not show details of the common drain at the development. QP should ascertain/verify details of the common drains on site; and the Minimum Platform Level (MPL) for effectual surface water drainage.
 - c. Water Service Plan (WSP) indicates the approximate position of the water mains and raw water mains in the vicinity of the development. Smaller submains and connection pipes (< 100 mm) to customers' premises/properties may not be included. QP is to determine and indicate the exact alignments and depths of the watermains, submains and connections, on site by means of trial holes before commencement of any work. The position and alignment of the watermains shall be indicated on the survey plan, and shown at site to allow easy identification of the watermains in future after completion.
2. QP shall provide the following information when requesting for service plans
 - a. Lot Information of project site (Mukim No. and Lot No.)
 - b. Plan Type (service plan for drainage/sewerage/water)
 - c. Requestor Details
3. QP need not apply for infrastructure plans for additions and alterations to existing developments which do not involve an increase in the existing building coverage area.
4. QP can apply for infrastructure plans online by clicking on the button at the bottom, subjected to the terms and conditions (**Annex 1.1**). Click [here](#) for the user guide. Please call PUB Building Plan Unit hotline 6731 3512 if you need any clarification/assistance or email (pub_bpu@pub.gov.sg). Please call hotline only during office hours between 9am to 5pm. Applications for SIP/DIP will be processed within 7 working days and emailed to the email address provided.
5. Upon receipt of infrastructure plans, QP shall conduct site surveys to verify the alignments and invert levels of the public sewers/pumping mains/sewer connections and drainage reserves/common drains/water mains.

6. For DC submission, QP shall use the Receipt No. BPU-XXXXXXX as Reference No. and the date QP received SIP/DIP from PUB officer as the Date of SIP/DIP.

Annex 1.1

Terms and Conditions

Prices

All prices are in Singapore Dollars and subjected to 7% Goods & Services Tax unless stated otherwise.

Purchase Policy

The shopper is advised to check to ensure that their request is correct before confirming the order and making payment. Cancellation of orders will not be entertained once the order is confirmed and payment has been made.

Terms of Payment

Payment can be via credit card, debit card.

Payment by Credit Card or Debit Card Payments may be made by

- VISA credit cards
- MasterCard credit cards
- MasterCard debit cards

You shall be responsible for all transactions effected through this Site regardless of whether such transactions were made with or without your authority.

If you notice any error, inaccuracy or discrepancy in the amount(s) debited or charged you shall inform PUB in writing within 3 days of such debit or charge, failing which the amount(s) debited or charged shall be deemed correct, and you shall not be entitled to dispute any such amount(s) so debited or charged.

Refund Policy

PUB has a no-cancellation order policy. We also have the right to refuse any requests for refunds without cause or explanation. We shall not be held liable for any reason if it does not receive the Customer's refund request, whether on-line or via e-mail.

No request for refunds would be entertained **except in cases of excess payment**. PUB will refund such amounts paid in excess but is not obliged to pay interest or compensation in respect thereof.

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- your access to or use of this Site;
- any loss of access to or use of this Site, howsoever caused
- any inaccuracy or incompleteness in, or errors or omissions in the transmission or supply of any Contents;
- any delay or interruption in the transmission of the Contents on this Site, the provision of services on this Site, the execution of any requires or delivery of any Contents whether caused by delay or interruption in transmission over the internet or otherwise; or
- any damage to your computer, software, modem, telephone or other property resulting from your use of the services on this Site or Contents.
- any decision made or action taken by you or any third party in reliance upon the Contents,

For Enquiries

1. For all enquiries, please contact our hotline: 67313512 during office hours or send your query to our email pub_bpu@pub.gov.sg
2. For plans where information is unavailable online, the applicant is advised to contact PUB to request for the plans.
3. The requested service plans will be sent to the applicant via email

Annex 2

Result of Hydrostatic Tests on Sanitary Drainlines, Inspection Chambers, Sewer, Manholes

Project Reference:

Project Title:

Test Method: *(a) water test method as specified in the Code of Practice on Sewerage and Sanitary Works, or
 *(b) water test method as specified in Clause 13.3 of BS EN 1610:1998.
 (* to delete if not applicable)

Test Results: as tabulated below.

Section of Drainlines/ Sewers (eg. <small>CH102, CH401</small>) Inspection chamber/manhole	Diameter (mm)	Length of Pipe (m)	Date of Test	Rate of Water Loss ((l/s)	Result (Pass/Fail)

Tested/Checked by: (Name of plumbing contractor in charge of test)	Signature:	Company & Designation:	Date:
Witnessed by: (Name of QP's authorised representative)	Signature:	Company & Designation:	Date:
Certified by: (Name of QP and QP's stamp)	Signature:	Company & Designation:	Date:

Result of Air Tests on Sanitary Plumbing System

Project Reference:

Project Title:

Test Method: Air test method as specified in Clause NG 3.1 of BS EN 12056-2:2000 Test Results: as tabulated below.

Block No	Storey Level: (eg 1 st Floor, 2 nd Floor)	Unit No: (eg. #02-01, #03-01, etc)	Date of 1st test of sanitary discharge pipes/stacks, ventilating pipes/stacks, WCs, floor traps, etc, at the unit	1 st Test Result (Leak/No Leak) (To specify the points of leak detected)	(If found leak at 1 st Test) Date of final retest which shows no leak in the sanitary discharge pipes/stacks, ventilating pipes/stacks, WCs, floor traps, etc, at the unit
	Example 1				
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Tested/Checked by: (Name of plumbing contractor in charge of test)	Signature:	Company & Designation:	Date:
Witnessed by: (Name of QP's authorised representative)	Signature:	Company & Designation:	Date:
Certified by: (Name of QP and QP's stamp)	Signature:	Company & Designation:	Date:

Annex 3

General Requirements for Temporary Sanitary Facilities for Trade Fairs

1. All used water discharged from the Trade Fair operation must be collected and disposed of via the temporary sanitary facilities to an approved sewerage system. No used water shall be discharged into drains, soil and surrounding environment.
2. Approval from PUB(WRN) on the design of the temporary sanitary facilities/holding tank must be obtained prior to commencement of Trade Fair Operation. The design shall be in accordance with the below **General Requirements for temporary sanitary facilities for Trade Fairs**. The design submission to PUB(WRN) shall include the detailed design and layout plan of the temporary sanitary facilities and NEA's Trade Fair license permit.
3. The used water from the Trade Fair operations shall be either collected in holding tank(s) and be disposed of by tankering by a NEA's Licensed Waste Collector (LWC) or be discharged into the existing public sewers if available via a pumped system or other means subject to the site condition and approval of WRN(PUB).
4. Where public sewer is available at or near the trade fair site, the temporary sanitary facilities shall be connected to the public sewer. The sewer connection works shall be carried out in compliance with the detailed plans/drawings approved by PUB, the Code of Practice on Sewerage and Sanitary Works, Sewerage and Drainage Act and the Sewerage and Drainage (Sanitary Works) Regulations.
5. All used water discharge points at the inspection chambers or manholes shall be properly protected and adequately covered up to ensure that safety is not compromised. Where connections are made into inspection chambers/manholes, metal cover plates of sufficient strength to withstand human weight and equipped with holes for used water discharge pipe entry shall be provided to temporarily replace the existing inspection chamber / manhole cover. In addition, connections into the inspection chambers/manholes should be adequately barricaded. To address foul smell concerns, additional measures must be taken to seal up all gaps at the inspection chamber / manhole to ensure that no foul smell leaks out from the sewerage system.
7. If holding tank is proposed for collection and disposal of used water, the holding tank shall be designed and constructed in accordance with the below general requirements for holding tank.
 - (a) The holding tank shall be made of reinforced concrete (RC), steel or GRP and provided either under or above ground.
 - (b) The design calculation on the capacity of all holding tank(s) shall be based on the parameters given in the Code of Practice on Sewerage and Sanitary Works and the flow rates of the water fittings given in the Code of Practice for Water Services. In addition, if disposal of used water is by tankering by LWC, the total capacity of holding tank(s) incorporated in the design shall be at least **10m³**.

[For information, above ground portable holding tanks of various capacities can be rented from contractors or some LWCs]

(c) For any pumped system installed, the pumping mechanism shall be automated to start up the pump based on a preset water level in the holding tank(s) to ensure there is no used water overflow. The pumped system shall consist of at least two pumps – one duty pump and one standby pump. Each of the duty and standby pumps shall be sized to handle the full capacity discharge from the holding tank. The standby pump shall be configured to start automatically in the event of the failure of the duty pump. The pump should be housed in a pump sump of 2 ft x 2.5 ft x 3 ft deep as a guide or sufficient to house both the duty and standby pumps.

(d) All holding tank(s) installed including pump sumps should be equipped with SMS alarm based level sensor system having both a high level and overflow level alarms. The pump sumps shall also be considered as holding tanks.

i) High level alarm. Used water in the holding tank(s) shall be removed by a LWC or discharged into/leading into the public sewerage system prior to level reaching high level alarm set-point. When, “High level” is reached, the alarm system shall send a “High level” alarm via SMS to alert at least 2 **senior management** staff, appointed by the owner/operator, who must take immediate actions that are necessary to prevent used water from overflowing.

The high level set-point shall be set at a level that allows sufficient response time for owner/operator to take remedial actions to prevent used water overflow. The format of the SMS shall indicate the following:

Operator’s name and contact No: -
.....
Location of Trade Fair: -
.....
Holding tank capacity: -
.....
Type of alarm: - ...High level / Overflow
Date of activation: -
.....
#Time of activation: -
.....

ii) Overflow alarm. “Overflow level” is a level at which overflow is most likely to occur/have occurred. This float switch shall be located above the “High level” float switch and slightly below the overflow level of the holding tank. When activated, the alarm system shall send “Overflow level” alarms via SMS to alert at least 2 **senior management** staff of the owner/operator and also to [PUB \(Tel: 96663700\)](tel:96663700). The format of the SMS shall be the same as that for the “High level” as mentioned above.

iii) As part of the submission for PUB(WRN) approval, the names and mobile phone numbers of the two **senior management** staff responsible for receiving the alarm SMS shall be provided.

iv) A signboard, indicating the contact numbers of the two **senior management** staff, shall be prominently displayed to inform members of the public should any abnormalities such as used water overflow so that remedial action could be taken promptly.

7. A dedicated and competent contractor shall be engaged to carry out regular preventive and breakdown maintenance of all parts of the temporary sanitary facilities designed for Trade Fairs such as used water pipes, fittings, supports, tanks, pumps, level sensor system M&E equipment etc to ensure proper functionality to prevent used water overflow.

8. All parts of the temporary sanitary facilities design for Trade Fairs such as used water pipes, fittings, supports, tanks, pumps, level sensor system M&E equipment shall not be installed inside the drains.

9. PUB regularly carries out audit checks on temporary sanitary facilities at Trade Fairs. Owners/operators are required to produce at the site immediately on demand the following documents during audits: -

- Preventive and Breakdown maintenance records of all M&E equipment.
- Licensed Waste Collector disposal receipts (where applicable)
- PUB(WRN) approval letter for temporary sanitary facilities.

10. Following PUB(WRN)'s approval, if there would be any proposed change in the site condition / access to the holding tank, types of activities or increase in the number of users which may result in an increase of the used water discharging to the temporary sanitary facilities, the owner/operator shall consult PUB(WRN) for approval before making such changes. In a such case, the owner/operator shall review and upgrade/amend the temporary sanitary facilities including the holding tank to ensure the pipe size and holding capacity are adequate to meet the used water discharge volume/flow rate and incorporate any additional requirements as imposed by PUB(WRN). Amended design for the temporary sanitary facilities shall be resubmitted to PUB(WRN) for approval. Approval from PUB(WRN) on the design of the temporary sanitary facilities must be obtained prior to commencement of Trade Fair Operation.

Annex 4

General Requirements for Temporary Sanitary Facilities for Construction Site

1. All used water discharged from temporary toilets, sanitary appliances and washing facilities at the construction site must be collected and disposed of via the temporary sanitary facilities. No used water shall be discharged into drains, soil and surrounding environment.
2. Approval from PUB (WRN) on the design of the temporary sanitary facilities must be obtained prior to its construction and operation at the construction site. The design shall be in accordance with the **General Requirements for temporary sanitary facilities for Construction Site**. The design submission to PUB (WRN) shall include the detailed design and layout plans of the temporary sanitary facilities and NEA's Clearance Certificate on Environmental Health.
3. The used water from the temporary toilets, sanitary appliances and washing facilities shall be either collected in holding tank(s) and be disposed of by tankering by a NEA's Licensed Waste Collector (LWC) or be discharged into the existing public sewers if available via a pumped system or other means subject to the site condition and approval of WRN (PUB). In addition, the following requirements shall be complied with:
 - (a) If holding tank is proposed for collection and disposal of used water, the holding tank shall be made of reinforced concrete (RC), steel or GRP. **All holding tanks (includes pump sump) shall be below ground level.**
 - (b) The design calculation on the capacity of all holding tank(s) shall be based on the parameters given in the Code of Practice on Sewerage and Sanitary Works and the number of staff & workers residing at the construction site. In addition, if disposal of used water is by tankering by LWC, the total capacity of holding tank(s) incorporated in the design shall be **at least 10m³**.
 - (c) For any pumped system installed, the pumping mechanism shall be automated to start up the pump based on a preset water level in the holding tank(s) to ensure there is no used water overflow. The pumped system shall consist of at least two pumps – one duty pump and one standby pump. Each of the duty and standby pumps shall be sized to handle the full capacity discharge from the holding tank. The standby pump shall be configured to start automatically in the event of the failure of the duty pump. The pump should be housed in a pump sump of 2 ft x 2.5 ft x 3 ft deep as a guide or sufficient to house both the duty and standby pumps.
 - (d) All holding tank(s) installed including pump sumps should be equipped with SMS alarm based level sensor system having both a high level and overflow level alarms. The pump sumps shall also be considered as holding tanks.
 - i) High level alarm. Used water in the holding tank(s) shall be removed by a LWC or discharged into/leading into the public sewerage system prior to level reaching high level alarm set-point.

When, “High level” is reached, the alarm system shall send a “High level” alarm via SMS to alert at least 2 **Senior Management** staff, appointed by the Builder/Contractor, who must take immediate actions that are necessary to prevent used water from overflowing. The high level setpoint shall be set at a level that allows sufficient response time for Builder/Contractor to take remedial actions to prevent used water overflow. The format of the SMS shall indicate the following: -

- # Operator’s name and contact No: -
- # Location of Trade Fair: -
- # Holding tank capacity: -
- # Type of alarm: -High level / Overflow
- # Date of activation: -
- #Time of activation: -

ii) Overflow alarm. “Overflow level” is a level at which overflow is most likely to occur/have occurred. This float switch shall be located above the “High level” float switch and slightly below the overflow level of the holding tank. When activated, the alarm system shall send “Overflow level” alarms via SMS to alert at least 2 **Senior Management** staff of the Builder/ Contractor who owns and maintains the system and also to [PUB \(Tel: - 96663700\)](tel:96663700). The format of the SMS shall be the same as that for the “High level” as mentioned above.

iii) As part of the submission for PUB (WRN) approval, the names and mobile phone numbers of the two Senior Management staff responsible for receiving the alarm SMS shall be provided.

iv) A signboard, indicating the contact numbers of the two Senior Management staff, shall be prominently displayed to inform members of the public should any abnormalities such as used water overflow so that remedial action could be taken promptly.

4. A dedicated and competent contractor shall be engaged to carry out regular preventive and breakdown maintenance of all parts of the temporary sanitary facilities designed for the construction site such as used water pipes, fittings, supports, tanks, pumps, level sensor system M&E equipment etc to ensure proper functionality to prevent used water overflow.

5. All parts of the temporary sanitary facilities design for the construction site such as used water pipes, fittings, supports, tanks, pumps, level sensor system M&E equipment shall not be installed inside the drains.

6. PUB regularly carries out audit checks on temporary sanitary facilities at construction site. Builder/Contractors are required to produce at the site immediately on demand the following documents during audits: -

- Preventive and Breakdown maintenance records of all M&E equipment.
- Licensed Waste Collector disposal receipts (where applicable)
- PUB (WRN) approval letter for temporary sanitary facilities.

7. Where public sewer is available at or near the construction site, the temporary sanitary facilities shall be connected to the public sewer. The sewer connection works shall be carried out in compliance with the detailed plans/drawings approved by PUB, the Code of Practice on Sewerage and Sanitary Works, Sewerage and Drainage Act and the Sewerage and Drainage (Sanitary Works) Regulations.

8. No structure/piling/retaining structure (whether temporary or permanent) shall be sited over or close to the existing sewer/manhole within the construction site. All manholes shall be properly and adequately covered to ensure that safety is not compromised. The Builder/Contractor shall ensure that no debris/building material such as sand, earth, gravel, cement, cement grout, timber, wood or any other materials are disposed of or accidentally get into the inspection chambers/ manholes/sewerage system.

9. Following PUB (WRN)'s approval, if there would be any proposed change in the site condition / access to the holding tank, types of activities or increase in the number of users which may result in an increase of the used water discharging to the temporary sanitary facilities, the Builder/Contractor shall consult PUB (WRN) for approval before making any such changes. In such a case, the Builder/Contractor shall review and upgrade/amend the temporary sanitary facilities including the holding tank to ensure the pipe size and holding capacity are adequate to meet the used water discharge volume/flow rate and incorporate any additional requirements as imposed by PUB(WRN). Amended design for the temporary sanitary facilities shall be resubmitted to PUB (WRN) for approval. Approval from PUB (WRN) on the design of the temporary sanitary facilities must be obtained prior to putting the temporary sanitary facilities into use or operation.

10. The Builder/Contractor shall take note that failure to obtain an approval from PUB (WRN) on the design of the temporary sanitary facilities prior to its construction, use or operation or the construction/installation of temporary sanitary facilities not in accordance with the approved design is a violation of Section 11 of the Sewerage and Drainage Act (SDA). In addition, failure to comply with any condition stated in PUB (WRN)'s approval letter is also an offence under Section 63(b) of the SDA. Offenders are liable for enforcement actions.

11. For any queries on submission and requirements of temporary sanitary facilities/holding tank, please contact Mrs Lau-Lim Siew Kee at Tel: 67313254 (email: lim_siew_kee@pub.gov.sg), Ms Mary Yan at Tel: 67313306 (email: mary_yan@pub.gov.sg) or Mr Ler Seng Chye at Tel: 67313264 (email: ler_seng_chye@pub.gov.sg)

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