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BRISBANE CITY COUNCIL **HYDRAULIC SERVICES PLAN REQUIREMENT GUIDELINES** **1 March 2009**

Plumbing Services Group (PSG) will accept hydraulic plans from customers in **electronic format** only. When lodging a hydraulic plan in **electronic form**, a copy of the hydraulic plan can be submitted electronically online in DWG or PDF format. DWG format is regarded as industry standard and guarantee's clarity and scale. PDF drawings will be access and stamped with relevant approvals, but unlike DWG drawing format, **PDF drawing quality and scale can not be guaranteed**. A copy of the **Commercial Plumbing Online** User Handout is available in electronic format or printed copy from PSG.

Please contact PSG's hydraulic plan lodgement team on Ph [3403 8888](tel:34038888).

Drainage Plan Number

- The drainage plan number (minimum 8mm high) shall be positioned in the top right hand corner placed on each sheet of the hydraulic services design plan.
- It is the responsibility of the person designing the plan to obtain the correct drainage plan number, by contacting Brisbane City Council's Plan Storage and Retrieval Unit on telephone number [3403 8888](tel:34038888)
- An area of at least A4 size should be allocated on the front/cover sheet, to provide for the Plumbing Services Group's approval stamps.
- **All of the above are required on each sheet**

Title Status

- The title status (minimum 8mm high) of the development shall be shown on the front/cover sheet of the plan, eg;
 1. **Community Title**
 2. **Freehold Title**
- **Required on front sheet only.**

Owners Name

- The owner's name required shall be the one nominated on the Brisbane City Council's rate notice, or the Queensland Government Titles Office records.
- **Required on front sheet only.**

Tenancy Plan

- Tenant's Name
- Tenant's Business's Name
- Floor Level
- Shop/Tenancy Number
- **Required on each sheet.**

Address of Property

- The address of the property shall be the address nominated on the Brisbane City Council **Rates Notice**, the **Proposed Address**, or the one to be lodged with **State Government Titles Office**.
- **Required on each sheet.**



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Real Property Description

- The real property description shall be either the original full description or the proposed description.
- **Required on front sheet only.**

Designer

- The full name of the person who designed the plumbing and drainage system shall be shown on each sheet of the plan; the *Queensland Plumbing and Drainage Act 2002* also requires that the person who designed the plans, to be registered or licensed - the person's registration or licence number shall also be shown. This information is required on each sheet; or on the front/cover sheet, and references each sheet of the plan.
- **Required on front sheet only.**

Plan Design

- Nominate which Australian Standard the plans have been designed to, either, AS/NZS 3500.2.2:1996 or AS 3500.2.1-1996, example;

“These plans have been designed to and comply with AS/NZS 3500.2.2:1996”
or

“These plans have been designed to and comply with AS 3500.2.1-1996”

- **Required front sheet only.**

Fire Hydrant, Hose Reel and Sprinkler Systems

- Where a pipe, fitting or apparatus is to be installed as part of a fire service and is not a certified item ([MP 52](#)) a testable backflow prevention device shall be installed up stream of the item.
- All materials to be installed as part of the fire service shall be nominated on the hydraulic services design plan.

Drafting Requirements

- **A1** drafting sheet shall be the minimum size, for all proposed new, additions, extensions, and Community Title or Freehold designs.
- **A3** drafting sheet shall be the minimum size used for Tenancies.
- **Trade Waste Plan:** When a plan contains Trade Waste as part of the design, one copy of the plan shall be supplied on A3.
- **North Point:** All views shall be oriented to the north point on the plan.
- **Street Names:** All street and road names shall be shown on the site plan and other pages where applicable.
- **Sanitary House Drain Property Connection and Brisbane City Council Sewers:**
The size, depth (invert & surface levels), location of the sewer main and the sanitary house drain property connection shall be shown on the locality plan or floor plan, only that section relevant to the design is required to be shown.
Note: The designer is responsible for the documentation of the location and depth of the BCC sewer property connection and shall comply with the requirements of the *Queensland Plumbing and Drainage Act 2002*.
- **Site Plan/ Locality plan:** The information shall provide the plumbing inspector direction to locate the plumbing installation on the property. The information could be a; plan, written directions or a combination of both
- **Floor Plan:** All stacks, elevated pipework, cold water, hot water, tempered water, fire hydrant system, fire hose reels, rainwater, greywater, recycled water and landscape irrigation system shall be shown on the plan (The floor plan scale shall be a minimum 1:100.)
- **Diagrammatic:** The stacks, elevated pipework, cold water, hot water, tempered water, fire hydrant system, fire hose reels, rainwater, greywater, recycled water and landscape irrigation system (only the section under constant pressure) shall be shown on the plan (scale not required).
- **Levels:** All reduced levels (R.L) for fixtures up to ground floor level shall be clearly shown on drawing as AHD to three decimal places. eg 22.999



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- **Dimensions:** All dimensions shown on the plan shall be in meters and to three decimal places.
eg. 1.500m or 0.150m
- **Overflow Relief Gully; Overflow Relief Valve:** AHD reduced levels are required for **ORG** or **ORV** and shall be shown for;
 - The Finished Ground Level adjacent to the Overflow Relief Gully or Overflow Relief Valve;
 - The grate of the Overflow Relief Gully or at the invert of the outlet of the Overflow Relief Valve;
 - The Finished Floor Level for the lowest fixture connected to the sanitary house drain. AS/NZS 3500.2.2:1996 section 4.6.6.6.
- **Overflow Relief Valve:** This fitting shall be installed on all properties that are located below AHD reduced level 2.600.

Car Wash Area– Residential Only

- The location of the car wash area shall be shown on the plan, wastewaters from such areas shall discharge via a Grease Arrestor or Oil/Silt Arrestor, registered for use in Brisbane City, a minimum 550 litre Grease Arrestor or Oil/Silt Arrestor to be installed;
- Additional information required on the plan for the treatment system are;
 - Manufacturer's Name of the treatment system;
 - Type and Model number of the treatment system;
 - Series number of the treatment system;
 - Size (capacity as specified by the manufacture) of the treatment system;
 - The cover/ lid shall be the airtight type.
- A hose tap shall be provided adjacent to the treatment system, a Reduced Pressure Zone Device (RPZD) shall be installed upstream of the hose tap as backflow protection.
- The area shall be roofed or located in the underground carpark.
- A diagrammatic of the roof and overhang shall be shown on the plan, the minimum length of the overhang shall be 25% of the height of the roof from Finished Ground Level;
- Trade waste approval is not required for this type of installation.

Bin wash or bin storage areas

- The location of the bin wash/storage area shall be shown on the plan, wastewaters from such areas shall discharge via a approved spring loaded self closing bucket trap or Grease Arrestor, registered for use in Brisbane City, a minimum 550 litre Grease Arrestor to be installed;
- Additional information required for spring loaded self closing bucket traps are;
 - Manufacturer's Name of the bucket trap;
 - Type and Model number of the bucket trap;
 - Size and location with grate and floor levels.
- Additional information required on the plan for the treatment system are;
 - Manufacturer's Name of the treatment system;
 - Type and Model number of the treatment system;
 - Series number of the treatment system;
 - Size (capacity as specified by the manufacture) of the treatment system;
 - The cover/ lid shall be the airtight type.
- A hose tap shall be provided adjacent to the bin area/treatment system, a Reduced Pressure Zone Device (RPZD) shall be installed upstream of the hose tap as backflow protection.
- The area shall be roofed or located in the underground car park.
- A diagrammatic of the roof and overhang shall be shown on the plan, the minimum length of the overhang shall be 25% of the height of the roof from Finished Ground Level;
- Trade waste approval is not required for this type of installation.



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Trade Waste – Commercial and Industrial

- The proposed trade waste installation is part of the plumbing and drainage system, and shall be assessed for compliance with the sanitary plumbing, sanitary drainage, etc. **The proposed installation shall comply with the requirements of the *Queensland Plumbing and Drainage Act 2002*.**
- **Note: Copies of the hydraulic plans are not required to be sent to Water distribution - plans submitted to Plumbing Services Group will be forwarded to Water distribution for their records.**
- The owner of the property or their managing agent will be required to submit a separate application to the Brisbane City Council's (Brisbane Water). Trade Waste Officers for trade waste approval as required by the *Water Act 2000* the trade waste approval application form can only be submitted when an occupier of the property eg; tenant or lessee is secured and such occupier will discharge trade waste to the sewer.
- Trade waste approval application form can be viewed or downloaded.
http://www.brisbane.qld.gov.au/BCC:BRISWATER:1939720581:pc=PC_1440#register
- Basic trade waste pretreatment infrastructure must be authorised for use in Brisbane by Brisbane City Council. Such infrastructure is listed on BCC's Register of Basic Trade Waste Pretreatment Infrastructure. This register can be viewed or downloaded at-

http://www.brisbane.qld.gov.au/BCC:BRISWATER:1939720581:pc=PC_1440#register

Trade waste generating areas (TWGA) shall be roofed.

- A diagrammatic of the roof and overhang shall be shown on the plan, the minimum length of the overhang shall be 25% of the height of the roof from TWGA Finished Ground Level.
- The grade of the floor of the TWGA and surrounding stormwater collection areas shall be shown on the plan.
- **No direct or indirect sewer connections to fuel dispensing areas, chemical storage areas.**
- **A water meter must be installed on the water service to each individual commercial shop.**

Pre-treatment System information required on the hydraulic plans:

- Manufacturer's Name of the treatment system;
- Type and Model number of the treatment system;
- Series number of the treatment system (if applicable)
- Size (capacity as specified by the manufacture) of the treatment system;
- The cover/ lid shall be the airtight type.
- A hose tap shall be provided adjacent to the treatment system, a Reduced Pressure Zone Device (RPZD) shall be installed upstream of the hose tap as backflow protection.

Trade Waste Generating Area information (for both existing and new tenancies) required on the hydraulic plans:

- Description of designed or actual industry type (eg. food retailing, laboratory, mechanical workshop, car wash bay, bin wash area, cooling tower, laundry, etc.) (Note Bin Wash Areas only require approved self closing bucket trap complete with floor grate)
- Designed peak trade waste flow in litres/hour;
- Predicted average daily trade waste flow in litres.
- For external areas (eg. wash-bays and bin areas), the grade of the trade waste generating area floor and of the immediate surrounding ground areas must be shown – if no bunding or wall is incorporated into the design.



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Grease Arrestor Sizing Guidance:

- Trade waste must have a one hour detention time in the grease arrestor at peak flow and peak load;
- The **minimum** size or capacity of the grease arrestor must be the **greater** of either-
 - The size calculated according to legislative requirements - **Sections 39 & 40** of the **Standard Plumbing and Drainage Regulation 2003**; or
 - Predicted peak hourly volume multiplied by 1.2 (takes peak loading into account); or
 - 550 litres for a single shop premises; or
 - 500 litres per shop for a multiple shop premises (eg. 4 food retailing shops = a minimum 2000 litre grease arrestor).

To provide transparency in how trade waste hydraulic loads have been allocated for each grease arrestor within a premises, an information schedule (detailed below) shall be provided on the plan -

- Where there is more than one arrestor on the premises, each arrestor must be allocated, an identification number (contact a Trade Waste Officer if you wish to use the official Brisbane Water Arrestor ID number).
- The information schedule must detail the arrestor that will service each tenancy (see example below).
- Where an addition, alteration or re-calculation is to be carried out on an existing trade waste installation, the schedule details must be updated with the new hydraulic loadings.
- Where there is a new premise, the information schedule shall also be used.
- Where a new shop fit-out is to be installed in a premises, with multiple shops connected to a grease arrestor. The above trade waste generating area information must be supplied for all shops connected to the grease arrestor (empty shops should be marked empty).
- For existing shops, water consumption data may need to be reviewed to determine existing trade waste flows to allow assessment of hydraulic loadings on existing infrastructure.
- Consideration should also be given to the requirements of **Sections 39 & 40** of the **Standard Plumbing and Drainage Regulation 2003**.

Example of Information Schedule (using above guidance)-

Tenancy/ Unit No.	Tenancy Peak Hourly Trade Waste Volume (l/hr) (A)	Tenancy Peak Hourly Trade Waste Load (l/hr) (B = A x 1.2)	Arrestor No.	Arrestor Peak Working Capacity (l/hr) Total of B's	Arrestor Capacity (l)
1	650	780	BW2635		
2 (new)	400	480	BW2635	1260	2000
3 (new)	1550	1860	BW2636	1860	1500
4 (new)	100	140	New trap	140	550

Tenancy 2 is OK as arrestor capacity is greater than arrestor peak working capacity. Tenancy 3 is not OK and will need additional grease trap capacity whilst tenancy 4 needs a new trap installed due to it's location - since it's arrestor peak working capacity is less than 500 litres, it must comply with the minimum 550l sizing guidance.

Notes:

1. There is no requirement to detail how the tenancy peak hourly trade waste load was calculated, however, the above grease arrestor sizing guidance must be followed as a minimum requirement.
2. Plans will not be approved if the Arrestor Peak Working Load exceeds the Arrestor Capacity – additional capacity will need to be provided in these situations.

Sub-division or Reconfigured Plan

- A copy of the proposed sub-division or reconfigured site plan shall be supplied, where the existing Lots have been or will be reconfigured or amalgamated etc.



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Combined House Drain

- If the property is serviced by a combined house drain, and the assessment for the proposed work requires the combined house drain to be disconnected, renewed or relocated, new connection/s shall be provided for the proposed installation and other affected properties;
- The proposed method of reconnection for each of the affected properties, owners name, address's, RPD and drainage plan number shall be shown on the plan, a separate application shall be submitted for each affected property.

Pump Wells and Discharge Chambers

- Permission to pump shall first be obtained from the Plumbing Services Manager, Plumbing Services Group on telephone [3403 8888](tel:34038888), facsimile [3334 0234](tel:33340234) and e-mail eddie.denman@brisbane.qld.gov.au
- The inlet pipe and the outlet pipe connected to the ejector, wet well or small bore macerator shall comply with the relevant sections of AS/NZS 3500.2.2:1996 section 10;
- **Requirements for pumping direct to Council's sewer and Private sanitary house drains;**
 - Provide a copy of the written permission and the maximum litres/second permitted to pump to sewer, shall be obtained from Brisbane City Council's Development and Regulatory Services Technical Specialist Engineering Team, contacting BCC Call Centre on telephone number 34038888;
 - Where practical the discharge chamber shall be located within the premises being serviced.
 - Provide a copy of written permission to install the discharge chamber and rising main in either the roadway or footpath areas, from the DRS engineer, the letter shall indicate;
 - The nominated alignment (distance off boundary line or from the crown of the road);
 - The nominated depth (below road shoulder, crown of road or from top of kerb);
 - A maximum pump-rate of 1 l/s to Private sanitary house drain;
- **Package plants;**
 - Manufacture's name;
 - Model number;
 - Type: pump size and duties;
 - Capacity;
- **In-situ plants;**
 - Full design to be shown on plan,
 - Type: pump size and duties;
 - Dual pumps;
 - Alarm system;
 - High and low automatic switches;
 - Pump well vent;
 - Dual control valves and non-return valves;
- **Rising Main;**
 - Shown on the plan the pipe-size and type of material (eg. 100mm upvc);
- **Discharge Chambers;**
 - Package Discharge Chambers;
 - Manufacture's name;
 - Model number;
 - In-situ Discharge Chambers (as documented in the Water & Sewerage Reticulation standards.);



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Requirements for Alternative Water Sources for Commercial Buildings

- The new mandatory requirements are set out in the Queensland Development Code (QDC) part MP 4.3, Queensland Plumbing and Wastewater Code and Queensland Development Code (QDC) part MP 4.2
- The law applies to commercial and industrial buildings class 3 to 9 and class 10 buildings associated with or ancillary to those buildings.
- Alternative water sources must be connected internally to the total required pedestals, cold water washing machine tap and externally to (minimum) 1 tap. Note: At least 1 external tap must be supplied by from water supplies main.

1. Requirements for Rainwater Tanks

- The new mandatory requirements are set out in the Queensland Development Code (QDC) part MP 4.2
- A minimum storage capacity of 1500 litres per required pedestal
- Water must be connected internally to the total required pedestals, cold water washing machine tap and external use
- Internal fixtures supplied from a rainwater tank must have a continuous supply of water. Automatic switching device or a trickle top up system from the reticulated town water supply main.
- Signage to comply with part 1.12 QDC Part MP 4.2

2. Requirements for Greywater Treatment Plants

- The new mandatory requirements are set out in the Queensland Plumbing and Wastewater Code and Queensland Development Code (QDC) part MP 4.2
- End use water quality to comply with table T1 in the QPW
- All greywater plumbing work requires plumbing and drainage approval from Brisbane City Council
- Greywater treatment plant must:
 - Be installed to receive greywater from all bathroom sanitary outlets in the building
 - Have a minimum processing capacity to treat total greywater input vessel volume in 24 hours
 - Greywater must be connected internally to the total required pedestals, cold water washing machine tap and one external hose tap.
 - Have a continuous supply of water. Automatic switching device or a trickle top up system from the reticulated town water supply main.
 - Dispose of untreated greywater to sewer
 - Must be an **APPROVED** greywater treatment system

3. Requirements for Blackwater Treatment Plants in Sewered and Unsewered Areas

Permission to install a Blackwater system in an unsewered area must be granted from the Plumbing Services Manager prior to commencement of design or construction of proposed treatment plant (Blackwater Treatment Plants in Sewered Areas must obtain written approval from Building Codes Queensland Chief Executive Officer)



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4. Sub-Meter Requirements

- The new mandatory requirements are set out in the Queensland Plumbing and Wastewater Code part 4
- The performance requirements for sub-meters are for **new premises only**
- Meterable premises will be all, sole occupancy units of certain classes of building (2,4,5,6,7 & 8) Cl:1.3 QPW
- Location of sub-meters must be located in a Public and Common area as defined in the QPW code
- Drawing will indicate submeter requirements – Meter size, Manufacturer, model number and specification as required.
- Location of master and sub meters must be clearly identified on drawing showing common area and AMR systems if required.
- All water meters shall be installed in accordance with the Water Services Network Provider's (Water Distribution) **Appendix WH Sub metering of Multi-Unit Properties Specifications Document.**
- As constructed drawings for sub meters must include
 1. Submeter serial numbers (and MIU serial numbers if applicable)
 2. The unit number they serve.
 3. The location of the submeters.
 4. The date of installation of the submeters.
 5. The submeter readings at the time of installation.
 6. The submeter readings at the end of construction.

Additional Design Information

- Individual lots in a Community Title development shall be connected to the Premises Group Sewer separately via a minimum single 100mm sanitary house drain branch and the inspection opening (io) for each shall be installed at the Unit/Lot boundary;
- The Premises Group Sewer and Water main to be designed and installed in common property (Body Corporate owned);
- The Premises Group Watermain to be designed and installed in common property (Body Corporate owned), the main should not pass through private units or be installed in abutting or common walls;
- The plumbing, drainage and water supply for each lot shall be contained wholly within that lot and shall have individual and separate connections to Premises Group Sewer and the Premises Group Watermain;
- Water meters shall be located in accessible positions, so a Council Officer or Agent of the Council can read or carry out maintenance;
- Water meters and the meter boxes shall be purchased from Brisbane City Council or approved BCC supplier;
 - 20mm meter box - minimum size - L. 368mm x W. 271mm;
 - 25mm meter box – minimum size - L. 492mm x W. 271mm;

The method of providing future installation of water meters shall be shown on the plan.

As- Constructed Plans

When a hydraulic plan has been approved by council and the development constructed, council will require an as constructed plan from the plumbing contractor. If no changes have been made to the design plan this plan may be used as the As-Constructed Plan.

Where changes have been made to the approved plan a redesign shall be supplied showing all changes and containing the same information documented in the approved plan. (Approved plan 5 pages = As-Con plan 5 pages)

The As - Con plan shall be drawn to the same standard as the Approved Plan.

The As - Con Plan shall be supplied in hard copy format and as a CD.

Electronic Lodgement

- An electronic lodgement form to be filled in with your submission
- Line Types, fonts and abbreviations shall be as set below;
- Plotting scale should be 1:100 OR 1:1;
- All requirements shall be as set out in the standard design requirements.
- All documents shall be in AutoCAD or PDF format.

Standard Line Types

The standard legend and line types shall be in accordance with the Australian Standards. All plot styles and line type profiles shall be supplied to Plumbing Services Group to allow for documents to be read correctly in AutoCAD;