Sydney WATER

06 April 2016

Mr Brendon Roberts
Acting Team Leader
Key Site Assessments
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

RE: Re-development of the IMAX Theatre and surrounding public domain upgrades at Darling Harbour (SSD 7388)

Dear Mr Roberts,

Thank you for notifying Sydney Water of the development listed above. We have reviewed the application and provide the following comments for your consideration.

Stormwater

Sydney Water has reviewed the proposal and found that it does not meet Sydney Water's "Building over or adjacent to Sydney Water's stormwater assets" policy and guidelines. These guidelines seek to:

- ensure the ongoing provision of local drainage and broader flood mitigation services to our customers;
- facilitate urban development by providing timely information, advice and responses to enquiries and applications;
- manage risks associated with building over and adjacent to stormwater assets;
- protect the interest of customers by ensuring that build over and or build adjacent to proposals do not:
    - increase flood risks
    - have adverse flood impacts
    - increase costs to maintain and replace stormwater assets

However, in line with the guidelines, Sydney Water will consider a proposal to locate the building over a stormwater asset where there is an existing building located over the asset and building over the asset is the only feasible solution to facilitate reasonable development of the property. Therefore, the proponent is required to prepare a feasibility report demonstrating the options considered to divert Sydney Water's stormwater channel around the proposed redevelopment.

To support this feasibility report the applicant is required to:

- investigate and identify the condition of existing stormwater culvert. Specifications for conduit inspections can be found in Attachment 3. Note that Sydney Water requires deviation or reconstruction of the asset in circumstances where the:

  - remaining life of the asset is less than the expected life of the proposed structure
  - proposed structure will intersect the asset
  - type of asset is not suitable for building over
- demonstrate building over Sydney Water stormwater assets is the only feasible option. No new structure is to be placed over or adjacent to Sydney Water stormwater assets that interferes with its operation and accessibility.
  - determine options to deviate the stormwater assets around the proposed building is not feasible. Consent to build over will be provided if the applicant can demonstrate that a future deviation and or adjustment is not feasible through engineering investigations, modelling, concept designs including costs. Note: the alignment route identified must be reserved under Sydney Water on the title of the land.
  - provide a Stormwater Impacts Report from a qualified and experienced person with access to Sydney Water's GIS Asset Database (Hydra). The report is to be verified by the Water Service Coordinator for Sydney Water to assess and formulate further requirements.
  - submit a 2D flood study with flood extents, velocities and depths for 5, 20 and 100 year storm events with provisional hydraulic and hazard categories (low and high, refer to flood models adopted for the Darling Harbour redevelopment by proponents Lend Lease). In addition:
  - include any necessary design elements or works to ensure that local flood risks are suitably managed and mitigated. The proposed development shall incorporate sufficient flood management elements to ensure that the development shall not increase flood risks to the community nor shall there be any potential for increased community expectation or demand for stormwater asset amplification to be undertaken by Sydney Water in the future.
  - demonstrate a best practice approach to managing people and property in high flood hazard areas.

Water

- The proponent will be required to adjust the existing 150mm water main constructed within the lot boundary (WO 90248) at Wheat Street. This main currently services the IMAX site.
- The proponent will also need to adjust the existing 200mm diameter main that loops through Tumberlong Park.
- A link will be required between the two mains.
- The proposed drinking water infrastructure for this development will be sized & configured according to the Water Supply Code of Australia (Sydney Water Edition WSA 03-2002).

- Detailed drinking water requirements will be provided at the Section 73 application phase.

Wastewater

- The proponent will be required to adjust the existing 525mm sewer main on the eastern side of the development.
- The proponent will also need to adjust the 300mm diameter sewer main at the southern side of the development.
- Sydney Water has no objection to the proposed adjustments using the existing main sizes. All works are to be constructed in accordance with the Sewerage Code of Australia (Sydney Water Edition WSA 02-2002) and adjusted pipes must meet minimum standard depth requirements.
- Detailed wastewater requirements will be provided at the Section 73 application phase.

Sydney Water E-Planning

Sydney Water has an email address for planning authorities to submit statutory or strategic planning documents for review. This email address is urbangrowth@sydneywater.com.au.

Further advice and requirements for this proposal are at attachments 1, 2 and 3 (overleaf).

If you require any further information in relation to stormwater, please contact Fernando Ortega of Land and Waterways on 8849 5402 or email fernando.oretga@sydneywater.com.au.

If you require any further information on planning and other matters, please contact Beau Reid of Urban Growth Strategy on 02 8849 4357 or e-mail beau.reid@sydneywater.com.au.

Yours sincerely,

Greg Joblin
Manager, Growth Strategy

Attachment 1

Sydney Water Servicing

A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water.

Make an early application for the certificate, as there may be water and wastewater pipes to be built that can take some time. This can also impact on other services and buildings, driveways or landscape designs.

Applications must be made through an authorised Water Servicing Coordinator. For help either visit www.sydneywater.com.au > Plumbing, building and developing > Developing > Land development or telephone 13 20 92.

Building Plan Approval

You must have your building plans stamped and approved before any construction is commenced. Approval is needed because construction/building works may affect Sydney Water's assets (e.g. Water, sewer and stormwater mains).

For further assistance please telephone 13 20 92 or refer to the Building over or next to assets page on the Sydney Water website (see Plumbing, building and developing then Building over or next to assets).

Attachment 2

Requirements for Business Customers for Commercial and Industrial Property Developments

If this property is to be developed for Industrial or Commercial operations, it may need to meet the following requirements:

Trade Wastewater Requirements

If this development is going to generate trade wastewater, the property owner must submit an application requesting permission to discharge trade wastewater to Sydney Water's sewerage system. You must wait for approval of this permit before any business activities can commence.

The permit application should be emailed to Sydney Water's Business Customer Services at businesscustomers@sydneywater.com.au

It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.

A Boundary Trap is required for all developments that discharge trade wastewater where arrestors and special units are installed for trade wastewater pre-treatment.

If the property development is for Industrial operations, the wastewater may discharge into a sewerage area that is subject to wastewater reuse. Find out from Business Customer Services if this is applicable to your development.

Backflow Prevention Requirements

Backflow is when there is unintentional flow of water in the wrong direction from a potentially polluted source into the drinking water supply.

All properties connected to Sydney Water's supply must install a testable Backflow Prevention Containment Device appropriate to the property's hazard rating. Property with a high or medium hazard rating must have the backflow prevention containment device tested annually. Properties identified as having a low hazard rating must install a non-testable device, as a minimum.

Separate hydrant and sprinkler fire services on non-residential properties, require the installation of a testable double check detector assembly. The device is to be located at the boundary of the property.

Before you install a backflow prevention device:

1. Get your hydraulic consultant or plumber to check the available water pressure versus the property's required pressure and flow requirements.
2. Conduct a site assessment to confirm the hazard rating of the property and its services. Contact PIAS at NSW Fair Trading on 1300 889 099.

For installation you will need to engage a licensed plumber with backflow accreditation who can be found on the Sydney Water website:
http://www.sydneywater.com.au/Plumbing/BackflowPrevention/
Water Efficiency Recommendations

Water is our most precious resource and every customer can play a role in its conservation. By working together with Sydney Water, business customers are able to reduce their water consumption. This will help your business save money, improve productivity and protect the environment.

Some water efficiency measures that can be easily implemented in your business are:

- Install water efficiency fixtures to help increase your water efficiency, refer to WELS (Water Efficiency Labelling and Standards (WELS) Scheme, http://www.waterrating.gov.au/
- Consider installing rainwater tanks to capture rainwater runoff, and reusing it, where cost effective. Refer to http://www.sydneywater.com.au/Water4Life/InYourBusiness/RWTCalculator.cfm
- Install water-monitoring devices on your meter to identify water usage patterns and leaks.
- Develop a water efficiency plan for your business.

It is cheaper to install water efficiency appliances while you are developing than retrofitting them later.

Contingency Plan Recommendations

Under Sydney Water's customer contract Sydney Water aims to provide Business Customers with a continuous supply of clean water at a minimum pressure of 15meters head at the main tap. This is equivalent to 146.8kpa or 21.29psi to meet reasonable business usage needs.

Sometimes Sydney Water may need to interrupt, postpone or limit the supply of water services to your property for maintenance or other reasons. These interruptions can be planned or unplanned.

Water supply is critical to some businesses and Sydney Water will treat vulnerable customers, such as hospitals, as a high priority.

Have you thought about a contingency plan for your business? Your Business Customer Representative will help you to develop a plan that is tailored to your business and minimises productivity losses in the event of a water service disruption.

For further information please visit the Sydney Water website at:
http://www.sydneywater.com.au/OurSystemsandOperations/TradeWaste/ or contact Business Customer Services on 1300 985 227 or businesscustomers@sydneywater.com.au

Attachment 3

Specifications for conduit inspections

TS-09.1. Standards

The Contactor must ensure that all work carried out under Clause TS-09 is in compliance with the latest edition of Conduit Inspection Reporting Code of Australia CIRCA WSA-05 and record information using the current version of WinCan.

TS-09.2. CCTV

TS-09.3.1. On the Superintendent's Representative's direction, the Contractor must carry out Close Circuit Television (CCTV) inspection on nominated conduit (identified in the Work Order) to provide an internal visual condition of the nominated conduit.

TS-09.3.2. The Contractor must ensure that the CCTV inspection equipment and associated software have the capability to:

TS-09.3.2.1. Inspect conduits that are circular, oviform and box shaped of varying sizes

TS-09.3.2.2. Inspect conduits varying in sizes from less than 150mm up to over 1500mm diameter

TS-09.3.2.3. Locate and internally inspect maintenance holes and inspection shaft

TS-09.3.2.4. Be integrated with the latest version of WinCan for viewing or other format as may be approved by Superintendent's Representative.

TS-09.3.2.5. Meet the following minimum standard requirement, but not limited to:

a) Standard CCTV camera with tilt / panning head which produces full colour images.

b) Sond Camera with tilt / panning head which produces full colour images.

c) Push rod camera that has capacity to carry out inspection and navigate bends up to 90 degree in 100mm diameter conduit which produce full colour video.

d) The speed of the inspection camera in the conduit shall be as specified below, or at such other speeds as agreed by the Superintendent's Representative to enable all conduit details to be observed and extracted from the video recording.

- 0.1 m/s for conduits of diameter less or equal to 150 mm.
- 0.15 m/s for diameters between 200 mm - 300 mm.
- 0.20 m/s for diameters exceeding 300 mm.

TS-09.3.3. Produce Reports including but not limited to:

TS-09.3.3.1. Conduit Condition Report – including hard and soft copy of colour video using WinCan (or similar) software to visually depict:

a) The conduits internal condition from maintenance hole to maintenance hole including all laterals, junctions, side-lines (along the axis of the lateral)
b) Detailing and coding all internal structural and service defects found in the conduit.
c) All significant internal defects (structural and service) images / photographs (high quality jpeg format) which are clearly marked with:
   - Conduit asset number
   - Asset number of upstream and downstream maintenance hole
   - direction of inspection,
   - chainage,
   - conduit dimension,
   - defect observed,
   - date and time.

TS-09.3.3.2. Any significant errors/ deviations from supplied asset data shall be noted in the Notes / Comment Field in the latest version of WinCan or as otherwise instructed by the Superintendent's Representative.

TS-09.3.3.3. A format requested and approved by the Superintendent's Representative including but not limited to CD, DVD disks, or incorporated with WinCan reports.

TS-09.3.3.4. Any other Report in a format requested and approved by the Superintendent's Representative

TS-09.3.4. Quality

Where the Contractor is to provide a Video or Photograph in accordance with Clause TS–09.3.5 and Clause TS–09.3.6 then the Contractor must ensure that in addition to the requirements specified in latest edition of CIRCA WSA-05 Section 2.5, on camera positioning and picture quality the following shall be noted:

a) The camera shall be positioned to reduce the risk of picture distortion and the lens shall be positioned to look along the axis of the pipe.
b) Unless approved by the Superintendent Representative, the inspection equipment shall be run opposite to flow direction to ensure full view of any branch / house service line joining-in at an acute angle.
c) The inspection survey shall give a clear view of each internal cut-out at junctions and house service connections looking along the axis of the lateral.
d) The camera and illumination shall provide a clear, accurate and in-focus record of the pipe's internal condition, in colour.
e) Distance measurement for pipe inspection, in all instances, shall commence from the face of the maintenance hole where the pipe starts.

f) Steam and fog shall not be a reason for abandonment of survey. The line has to be ventilated in case of steam/fog in the line or the lens cleaned in the case of steam/fog on the lens. In each case the survey must be re-started at the Contractor's expense.

TS-09.3.5. Video Report

Where the Contractor is to provide a Video Report in accordance with Clause TS–09.2 then the Contractor must ensure that:

TS-09.3.5.1. Video Report must show the following information on the first screen as per recommended by CIRCA WSA-05 or latest version:

- Date and time of inspection
- Program/driver Title as provided by the Superintendents Representative.
- Name/ Hydra asset number of sewer pipe (known as System Generated Asset Number)
- Start maintenance hole Hydra asset number to finish maintenance hole Hydra asset number
- Conduit dimension/size and material.
- Site address

TS-09.3.5.2. The inspection monitor display shall incorporate an automatically updated camera position record in metres and tenths of a metre, from the set up point, at the start of the survey, along the line of the conduit. The display on the monitor during run shall be restricted to the identification of the line (asset no.), size of pipe and distance.

a) The Contractor shall ensure that linear measurement is accurate to + or - 1% or 0.3 m whichever is the greater.

b) Distance measurement in all instances, shall commence from the face of the maintenance hole where conduit starts. The Contractor shall ensure that the metreage counter starts to register immediately the camera moves.

c) The Contractor shall clearly demonstrate that the accuracy in linear measurement is being complied with using one or both of the following methods.

- Use of a cable calibration device;
- Tape measurement of the surface between maintenance hole.

d) The Contractor shall input site coding sheets onto an electronic data file using the WinCan (or similar) software. The Contractor may enter data directly into WinCan (or similar) software on site.

e) All inspection recordings are required to be documented in sequence with the work carried out.

f) Video stills, digitised pictures or photographs shall be provided if requested by the

Superintendent's Representative to demonstrate the condition of pipes after cleaning. Or Conditions that might affect any pipe rehabilitation work.

TS-09.3.6. Photograph

TS-09.3.6.1. Where the Contractor is to provide a Photograph in accordance with Clause TS–09.2 then the Contractor must ensure that:

a) Where the internal condition of the conduit has significant defects, photograph should be able to capture the entire defects. These defects may include:
   - Crushed or collapsed pipe
   - Fractures conduits
   - Evidence of erosion or gas attack and/or where reinforcement is exposed
   - Intruded connection
   - Service conditions such as heavy root intrusions, infiltration gusher, heavy encrustation etc.

b) Where significant continuous defect exist over a certain length, photographs should be taken to represent a typical defect over that particular length.

TS-09.3.6.2. Digital photograph files shall be clearly identified in relation to the location (minimum requirement maintenance hole / node start and finish asset numbers), survey direction, metreage and date when photograph was taken.

TS-09.3.7. Report on entirety

Unless otherwise allowed for in Clause TS-09.7 or by the Superintendent's Representative, the Contractor must carry out the CCTV inspection and report on the entire nominated conduit - ie. the reports cannot be based on sample sites within the nominated conduit.

TS-09.3.8. Work Direction

TS-09.3.8.1. Unless otherwise approved by the Superintendent's Representative, the Contractor shall ensure that the CCTV equipment during conduit inspections will travel upstream from the downstream maintenance hole to the upstream maintenance hole for each nominated conduit section.

TS-09.3.8.2. Where the Contractor abandons whole or part of the nominated conduit in line with Clause TS–09.7, then, the Contractor must carry out the CCTV inspection on the remaining nominated conduit by ensuring that the CCTV equipment travels downstream from the upstream maintenance hole to the downstream maintenance hole for each nominated conduit section