CONSULTANTS

Unit 10, Level 1
No. 1 Maitland Place
Baulkham Hills
NSW 2153

T 02 9634 6311
F 02 9438 5398

www.acor.com.au

PO Box 7660
Baulkham Hills
NSW 2153

ENGINEERS
MANAGERS
INFRASTRUCTURE PLANNERS
DEVELOPMENT CONSULTANTS

Ref: NW150210

07 April 2016

Lend Lease Building Pty Ltd (Millers Point)
Locked Bag 1
MILLERS POINT NSW 2000

Attn: Leonie So

Dear Leonie

Re University of Sydney - F23 Administration Building
SSD 7055 SEARS Condition-13 Integrated Water Management

SEARS Condition 13 states:

Preparation of an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end use of potable and non-potable, and water sensitive urban design.

The following details the F23 building potable and non-potable and alternative (Rainwater) supply system proposed for the project.

Refer to the Civil Design Report - University of Sydney F23 Administration Building - Document No 3161-160223-Civ for details on Water Sensitive Urban Design.

Project Description

The F23 Administration Building is located on the northern side of City Road at the entrance to University of Sydney Camperdown Campus.

The F23 Building will co-locate and consolidate a number of the Universities Administrative Functions and Senior Executive teams.

The project consists of the following:

Basement B2

- Car, motorbike and secured bicycle parking
- General storerooms
- Contractor / maintenance storeroom
- Plantrooms

Basement B1

- Car, motorbike and secured bicycle parking
- End of Trip Facilities
- Rainwater Re-Use Plant
- Plantrooms
- Waste Room

Level-1

- Exhibition Space
- Back of house area
- Café
- Lobby
- Male, female and accessible toilet amenities

Level-2-4

- Office space
- Breakout areas
- Meeting rooms
- Male, female and accessible toilet amenities
- Plant rooms

Level-5

- Office space
- Breakout areas
- Meeting rooms
- Male, female and accessible toilet amenities
- Executive Function area
- Plant rooms

Level-6

- Plantrooms
- Pump rooms
- Sprinkler tank

Building Classification

Building is a 7 storey building with a rise in storeys of 6 above ground level.
Effective height is less than 25m.
Type A construction.
Class 5, 6 and 9b.

Domestic Potable Cold Water System Description

All domestic cold water system will be designed for and installed throughout the building and in accordance with the requirements of AS3500.1, Sydney Water, Sydney University CIS Hydraulic Services Standards, manufacturers' specifications , relevant Australian Standards and National Construction Code – Building Code of Australia and requirements of the controlling authorities to ensure full completion of the works.

Domestic cold water will be extended from the existing Sydney University Infrastructure water main located in Fisher Road via master water meter, backflow device, filter, by-pass and interface with building the University's Advance Utilities Monitoring System (AUMS).

Domestic cold water supply will be boosted and circulated throughout the building to serve fixtures, fittings, domestic hot water plant, rainwater harvesting top up, mechanical equipment and fire hose reels.

Domestic cold water booster pump-set will consist of dual variable speed drive and vertical multistage pumps with duty, assist and standby operation. Domestic cold water booster pumps will automatically operate when the pressure drops below the pressure limit. Pump panel will control the pump operation so that each pump alternates after each cycle of operation. If the duty pump fails to operate, the standby pump will be brought into operation immediately and the control panel will indicate the non-operation of the duty pump to the Building Monitoring and Control System. (BMCS)

Water supply throughout the building will be regulated to ensure pressure will not be less than 350kPa and not more than 500kPa throughout. This will be managed with provision of pressure reduction valves as required.

Private sub-meters for the domestic cold water supply to the building including the café, base building plants and equipment for monitoring purposes.

Main stop valves will be provided for each group of fixtures and mini stop valves for individual fixtures and tapware to allow isolation for maintenance without undue affect to the other fixtures operations.

Flow control restrictors to all tapware and fittings will be provided to minimise and reduce potable cold water demand.

Recycled Rain Water Re-use System Description (Alternative Water Supply)

Recycled rainwater system will be provided throughout the building and in accordance with the requirements of AS3500, Sydney Water, University of Sydney Hydraulic and Sustainability Standard, manufacturers' specifications, all relevant Code Standards and requirements of the controlling authorities to ensure full completion of the works.

Rainwater collected from the roof will be conveyed and discharge into an external storage tank located outside the footprint of the building via first flush device (Refer figure-1 below for indicative tank location).

The size of the tank and final location will be determined at detail design phase.

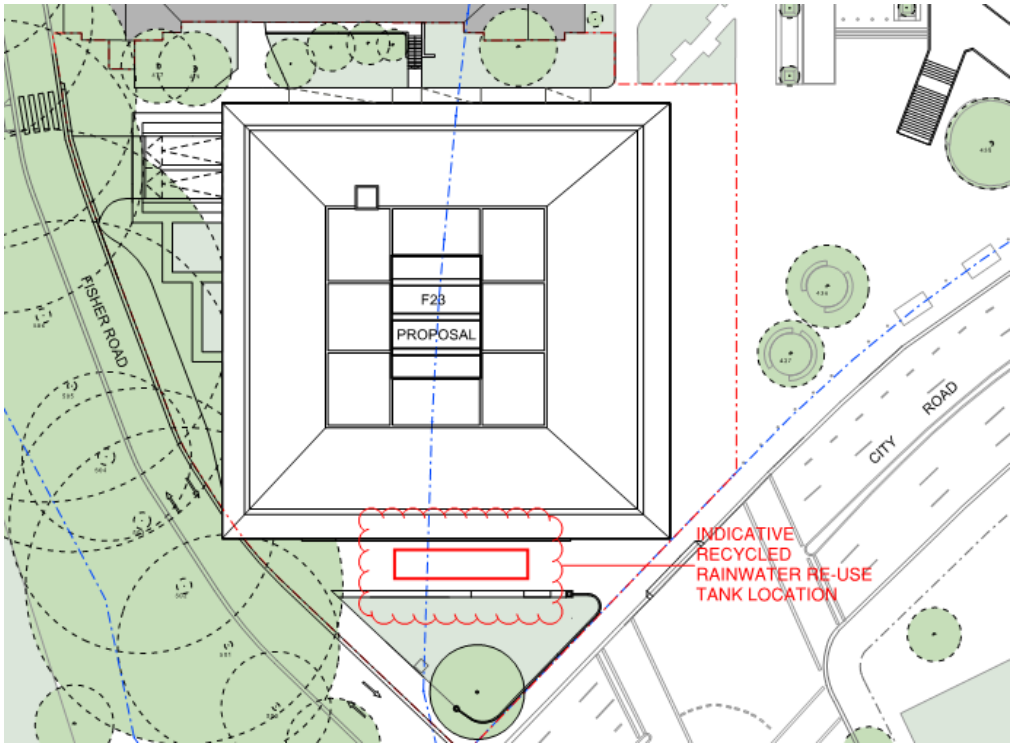

Figure-1

The rainwater tank overflow pipe will connect to the external stormwater pipe network which will be constructed as part of the civil works package.

Recycled rainwater will be boosted and circulated throughout the development to supply external landscape irrigation hose taps, and sanitary flushing.

Recycled rainwater will be treated by the filtration plant comprising of auto backwash, bag filters and UV disinfection.

Recycled rainwater booster pump-set will consist of dual variable speed drive and multiple vertical multistage pumps with duty assist and standby operation. Pumps shall automatically operate when the pressure drops below the pressure limit. Pump panel will control the pump operation so that each pump alternates after each cycle of operation. If the duty pump fails to operate, the standby pump will be brought into operation automatically and the control panel will indicate the non-operation of the duty pump to the BMCS.

Recycled rainwater supply throughout the building will be regulated to ensure pressure will not be less than 350kPa and not more than 500kPa throughout. This will be managed with provision of pressure reduction valves as required.

Fixtures and fittings supplied by recycled rainwater will be provided with ‘non-drinking water’ warning signs.

Fire Services Water Re-use

The fire services pump test water will be recycled back to the roof level water storage tank from the adjacent fire pumps for pump flow testing requirements.

The provision of a high flow hydrant test drain and flowswitch drain within the fire stair to the rainwater harvesting tank within the Basement will be incorporated from the remote fire hydrants to allow capture and reuse of remote hydrant test water.

Fire hydrant / sprinkler system pipework drain down & low level drains will be discharged to sewer as due to the water quality of long standing water within the pipework is not suitable for reuse.

The above method of capturing most of the fire services water used for testing and reuse via the rainwater harvesting tank would comply with the UoS CIS guidlines to recycle fire test water for building F23.

Commissioning and Maintenance

On completion of works, the hydraulic subcontractor will commission the system and ensure as part of the handover of operation and maintenance manuals, the maintainers are familiar with how the hydraulic systems operate and are to be maintained.

Potable and Recycle Water Minimisation

In order to reduce potable and recycled roof water consumption for F23 Building all tapware, sanitary ware and white goods specified will be registered and approved under the Water Efficiency Labelling & Standard Scheme (WELS)

Should you require additional information or wish to discuss further any of the above items please do not hesitate to contact my office

Yours faithfully

ACOR Consultants Pty Ltd

Brian Alcasid

Associate - Senior Hydraulic & Fire Consultant