Integrated Water Cycle Management Report

TAFE NSW – Kingswood Campus - Construction Centre of Excellence

2-44 O'Connell St Kingswood NSW 2747

JN
Responsive Engineering

HRPT - N0200816.02B

Revision History

REVISION	DATE	BY	CHECKED	COMMENTS
A	15/12/2020	DL	MK	Draft Issue
B	15/12/2020	DL	MK	Issued for State Significant Development Application

The recipient of the latest issue as noted above will be responsible for superseding/destroying all previous documents.

Contents

1. Introduction

This report has been prepared to accompany a detailed State Significant Development Application (SSDA) SSD_ 8571481 for the development of an educational facility at the TAFE Nepean Kingswood Campus, located at 2-44 O'Connell Street, Kingswood (the site). The legal description of the site is Lot 1 in DP 866081. The site comprises a rectangular lot with an area of approximately 23 hectares.

The purpose of this report is to provide:

- Detail any sustainability initiatives that will minimise/reduce the demand for drinking water, including any alternative water supply and end uses of drinking and non-drinking water that may be proposed, and any water conservation measures that are likely to be proposed.

Specifically, the SSDA seeks development consent for the construction and operation of the TAFE NSW Construction Centre of Excellence (TAFE CCoE) a multi-level, integrated educational facility designed to accommodate specialised training and education for construction-related TAFE NSW courses (the project). The TAFE CCoE will be a new learning environment with an emphasis on flexibility and adaptability, to encourage cross-disciplinary collaboration, industry engagement and educational excellence. On 27 February 2019, the NSW Government announced the delivery and associated funding for the CCoE.

The proposed development is classified as State Significant Development (SSD) on the basis that it falls within the requirements of clause 4, Schedule 19 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP), being 'development for the purpose of a tertiary institution… that has a capital investment value of more than $30 million'.

The Minister for Planning, or their delegate, is the consent authority for the SSDA and this application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) issued for the project. Specifically, this report has been prepared to respond to the Integrated Water Cycle Management Requirements Section 17 of SEARs Report.

2. Water Saving, Sustainability and Reuse Initiatives

2.1. Rainwater Re-use Water System

A recycled rainwater installation is to be provided throughout that will be designed and installed in accordance with the requirements set out in the Australian Standard AS3500.1 and AS3500.3, Sydney Water, Sydney TAFE NSW hydraulic services standards, all relevant Australian Standards, National Construction Code and the requirements of all controlling authorities to ensure full compliance of the works.

Rainwater is to be collected from the roof area catchment and conveyed to and discharge into a storage tank of adequate capacity to suit the balance between the catchment areas collected and the supply of treated rainwater to flush toilets and feed cooling towers. The proposed size of the tank currently is 80,000Litres. aiming for a rainwater turnaround of 3 weeks to reduce stagnating and maximise collection volume available during rainfall events.

Prior to connection of the down pipes to the rainwater storage tank a first flush management device to control and prevent debris and material entering the tank will be installed. Rainwater water supply from the storage tank will pass through a filtration system comprising bag filtration and UV disinfection. Overflow from the tank will connect to the stormwater drainage system and be conveyed to the point of discharge as detailed on the civil documents.

The treated supply is to be boosted via inline dual computer controlled variable speed drive pump sets with internal pipelines reticulated throughout to all points of demand complete with necessary isolation and pressure control valves to ensure supplies do not exceed 500kPa at tap outlets.

Rainwater water supplies are to be installed with all necessary appropriate signage as well as non-drinking water warning signs at non-potable outlets to ensure cross connection and contamination of potable water systems does not occur.

2.2. Greywater Re-use Water System

A greywater collection and treatment system installation is to be provided to collect, treat and reuse greywater for landscape irrigation purposes. The system will be designed and installed in accordance with the requirements set out in the Australian Standard AS3500.1 and AS3500.3, Sydney Water, Sydney TAFE NSW hydraulic services standards, all relevant Australian Standards, National Construction Code and the requirements of all controlling authorities to ensure full compliance of the works.

A dual pipe drainage system will be designed and installed to collect grey water from showers and hand basins, conveying it to a grey water storage tank. From the storage tank the greywater will be pumped to a treatment plant where it will be filtered and treated to a water quality suitable for landscape irrigation purposes and in line with statutory requirements.

The recycled water supply is to be boosted via inline dual computer controlled variable speed drive pump sets with pipelines reticulating to the landscape areas.

Recycled water supplies are to be installed with all necessary appropriate signage as well as non-drinking water warning signs at non-potable outlets to ensure cross connection and contamination of potable water systems does not occur.

2.3. Fire Service Water Re-use

Clean fire service test water will be directed to the storage tank for collection, treatment and re-use. The water will be from fire hydrants and sprinkler annubar testing that will discharge to a drainage system to convey the clean water to the rainwater storage tank.

Fire services drain down water system will be directed to the sewer system as the water is dirty, stagnated and not suitable for re-use purposes.

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