



Kyeemagh Infants School Environment Impact Statement Report - Utilities



Services



contents

1. INTRODUCTION.....	3
2. HYDRAULIC SERVICES	4
3. HYDRAULIC SERVICES DIAGRAM	6

Rev	Date	Description of Revision	Prepared By	Reviewed By
0	3/12/18	Final Issue	MR	MS

The reader's attention is drawn to the following important information:

Disclaimer:

Energy or resource magnitudes advised are based on theoretical modelling data and may vary from the actual usage for systems.

Exclusive Use:

This report has been prepared for the exclusive use of erbas™ client to meet their particular objectives and by its nature is limited in scope. The material contained in this report should not be used for any other purpose or by other persons or entities without contacting erbas™.

Copyright:

erbas™ retains all rights to written and graphic materials used in the report. No part may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of erbas™.

1.introduction

1.1 general

This return brief describes the extent of building engineering services to be provided for the proposed development at Kyeemagh Infants School.

The objective of this return brief is to define the design concepts and parameters to be agreed and adopted for the design of the following building services:

- o Hydraulic services

The intent of the recommendations within is to compliment the new facility with a modern application. These will cater for the growing and changing needs of the school community by using innovative, adaptable and easily maintained services solutions that deliver comfort, ease of use and promote a happy, healthy learning environment.

1.2 limitations

Whilst detailed design is yet to be finalised the preparation of this document is subsequent to past educational developments across Australia. The design approach for each of the building services disciplines is based upon preliminary concept planning solutions and discussions to the date of issue of this report.

The recommendations herein are fluid and changeable once the needs of the project are further refined.

1.3 applicable documents

The following standards will be applicable throughout the project:

- o National Construction Code BCA;
- o NSW Statutory Regulations;
- o Relevant Australian Standards including but not limited to AS 1170, AS2118, AS 2441, AS 2419, AS 1668.1, AS 1668.2, AS 3666, AS 4254, AS 1432, AS 3000, AS 3008, AS3500 and AS 5601.

1.4 sources of information

This report is based upon the following information:

- o Architectural plans (where available);
- o Existing external utilities information;
- o Non-intrusive site investigation.
- o Concept Plans
- o Site Survey

2.hydraulic services

2.1 general

The scope of services under this section for the development will include all hydraulic systems as listed below:

- o Sanitary plumbing, drainage & vents
- o Trade waste plumbing, drainage and vents
- o Hot, Cold and tempered water systems
- o Fire Hydrant system
- o Hose Reel system
- o Natural Gas system

2.2 sanitary drainage system

Currently there is two sewer connections to the 225 Vitrified Clay sewer main within Jacobson Avenue. At this stage, we see this as a sufficient size to service the proposed development. This will be subject to Authority application via the Section 73 requirements at Development Application stage. This application will result in the issuance of any Authority required works.

Appended to this report is a services overlay showing a detailed location and planning methodology for the site.

The site Authority information identifies a sewer line running adjacent to the northern boundary. This is shown on the internal sewer services diagram from Sydney Water, but is not reflected on the hydra map (DBYD) information from Sydney Water. As a result of this conflict, we have investigated this service on site and whilst we can find no firm visual evidence of it on site, it is our assumption that the line does exist. The site works will need to obtain an Authority survey (Peg Out) of this asset to ensure it is handled within the requirements of Sydney Water and Council. It is likely this asset will need to be removed and capped at the connection as part of these works.

Within the new development, the sanitary drainage system will essentially be a gravity installation, in accordance with AS3500.2 and NSW code of practise. The sanitary plumbing and drainage will be constructed of durable material and proprietary fittings and a material fit for purpose.

The sanitary drainage and ventilation system will be designed as drainage principles to provide flexibility of the drainage installation with special consideration where pressure zones are created at changes of direction, including the piping material used for mechanical durability, thermal movement and future maintenance to serve the proposed development.

Horizontal pipe runs will be installed with sufficient gradients to achieve self-cleansing velocities to avoid potential problems with blockage.

Any requirement for trade waste within the site will be assessed when architectural plans are received. This would likely be included for canteen where more than food reheat is required. This can also be required for any Lab facility, though we do not anticipate this in this case.

2.3 potable water systems

Currently the water meter is 40mm and is located within the boundary fence along Jacobson Avenue. The need for a fire services connection for the site will require this connection to be upgraded. This is intended to be upsized to a single 100mm feed to the premises that will serve the purposes of Hydrant protection and potable water needs.

The street main is currently 100mm and the parameters of the mains have not yet been received from Sydney Water. Sydney Water can request a main augmentation if there is a perceived performance risk to the performance of the main by connection of any new developments. This is formally requested by Sydney Water through the channel of the Section 73 application. The Section 73 can only be completed after the issuance of the Development application.

The surrounding water mains are 100mm, and there is a trunk main (1800mm) running S/N on Tancred Avenue. The likelihood of mains upgrade is small.

Water metering will be required at the boundary via an authority meter complete with backflow prevention to Sydney Water requirements.

Until we can exclude the need for pressure boosting, we anticipate that cold water booster pump will be required to be serve the site.

Hot water units will be provided to areas where heated water is required. This will likely be by a centrally located plant utilising a flow and return loop system to provide tempered water to student areas for ablution, and hot water to utility areas as required.

2.4 fire hydrant system

The final hydrant strategy is dependent of the performance of the existing authority water main, although at this stage we can state that a hydrant booster will be required at the principle entry way to the school. This shall connect to an internal system of pipework that will incorporate a mixture of internal and external hydrants to afford compliant hose coverage as required by AS2419.1 (2005).

Dependant on supply quantity and performance of the available water main water tanks and pumping may be required. This cannot be completely discounted until schematic design is completed and water main characteristics are finalised through a process of application with the relevant authority.

2.5 hose reel system

Fire hose reel requirements will be assessed based on the building class on the BCA report. Currently the BCA 2016 does not require fire hose reels to protect classrooms within a primary school. Administration areas are required to be covered and it is anticipated that some areas will require such protection.

This will need confirmation and acceptance of the PCA prior to design finalisation to enable suitable certifications for occupation.

2.6 natural gas system

Currently there is no gas connection to the site. It is possible for the site to be connected to natural gas if requested. At this stage, we are not considering gas supply for the design of the proposed development.

3.hydraulic services diagram

3.1 hydra map

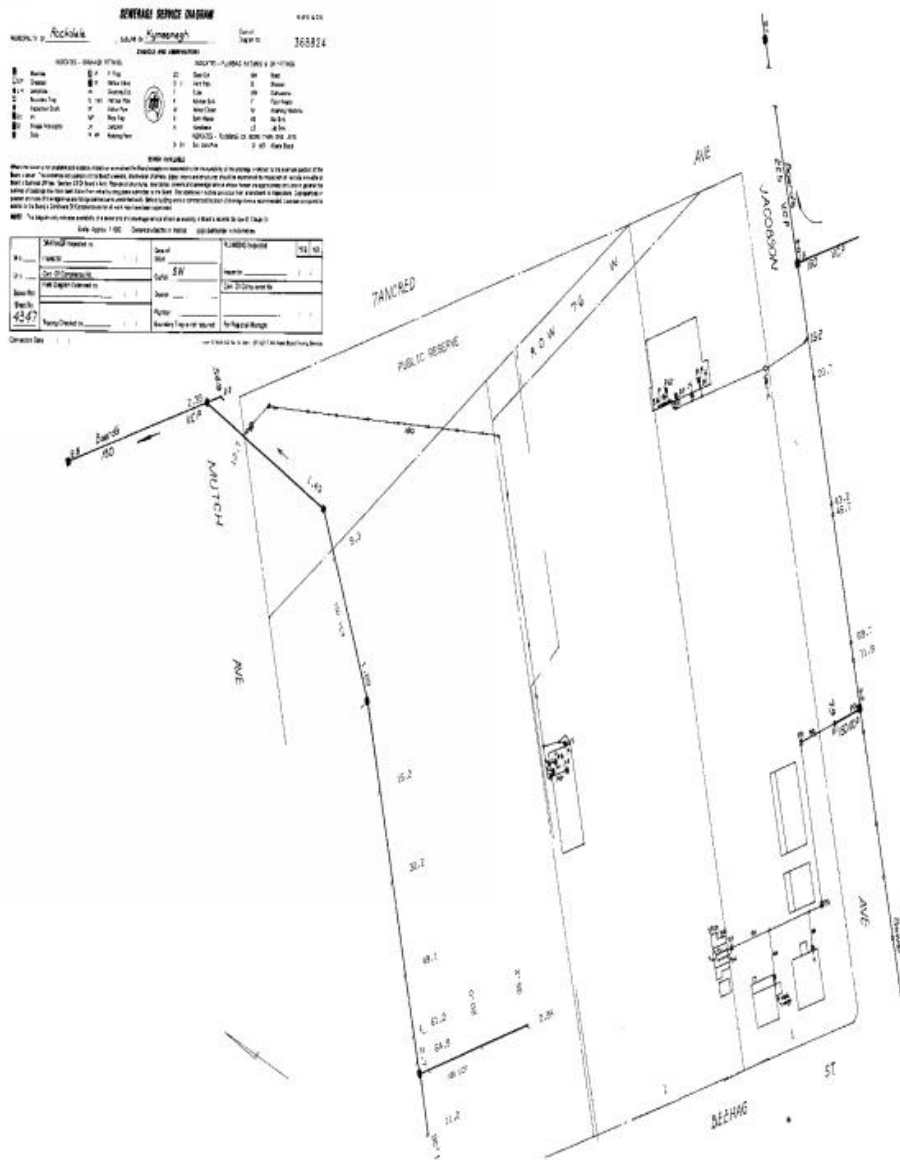


3.2 internal sewer diagram



Sewer Service Diagram

Application Number: 364271



Document generated at 05-12-2017 07:16:38 PM