Planning Works Introduction Report

2201- Proposed Lifecycle Replacement of existing site steam and condensate mains

Proposed Lifecycle Works to Building K10-01 Energy Centre inclusive of all necessary architectural, mechanical, electrical, and public health works.

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Development name:	Manchester Royal Infirmary
Landowner:	Manchester University NHS Foundation Trust (MFT)
Site address:	Oxford Road Site, Manchester
Site postcode:	M13 9WL
Existing site use:	Hospital
Summary of works:	**Mechanical Systems** The new steam and condensate design is a N+1 arrangement with 100% resilience, 2No steam lines, 2No condensate lines. Should one of the steam lines fail. New steam and condensate lines to run across the existing external service corridor on steel gantry steels. Steam and condensate to cross North Road blue/red light route. To continue on Phases I&II Roof, terminating into plantroom 2,3, 9 & 10. There is also a set of connections which will be left on plantroom 4 roof for a ongoing development named Project RED (Manchester Royal Infirmary Emergency Department). This a new A&E department which requires the new steam connections for its heating and hot water amenities. This load has been given by the building services engineers HoreLea.

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Report Produced by:

Name & Role	Signature	Date
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1.0 Introduction

Steam and Condensate

Steam currently provides the heat source to practically all of the building on the hospital site. This is also the inclusion of the new development which his ongoing named Project RED, Project RED (Manchester Royal Infirmary Emergency Department) is new A&E department which requires the new steam connections for its heating and hot water amenities.

The new steam and condensate infrastructure which is being designed to be replaced under the lifecycle works for site provides high temperature steam namely to the below buildings and can be identified on the proposed drawings within this report:

- Phases 1&2
- West Side of Site
    - Rehabilitation
    - Physiotherapy
    - Critical Science
- NEW Project RED A&E development.

Steam is a high temperature medium, which is necessary for the distribution of large heating loads for the hospital site. The proposed philosophy is that the new steam and condensate pipe work which has been designed as two steam lines and two condensate return lines for 100% resilience will replace very old sections of steam pipe work located in below ground service routes or corridors. In the interim the existing steam services must remain in situ, until a change over period can take place to allow the new services to be energised, and the old decommissioned and removed from site.

CM Oxendale

C M Oxendale Ltd has been appointed by Equans to provide a detailed design for the Proposed Lifecycle Replacement of existing site steam and condensate mains. A Later report has been created to support the size of the selected pipe work by Redworth Associates. The loads have been created though calculation and using reasonable engineering judgement. Where lack of information is not available, an estimation of the allowable loading can be made through the survey of the plantrooms as identified in the report. The report will also highlight the routes which are required to be taken so that the existing building being fed from the steam remain operational through the construction period of the works. A detailed changeover period will be given to EQUANS and the trust before any other change over works commence.

North Road Crossing

After initial Topography surveys around the north road crossing, it was found that due to the location of the sub-station critical power supplies were in the proposed under croft crossing. It was at this stage that the hospital trust indicated that the under croft crossing of north road was not viable and that a pipework bridge be used in place.