



Appendix 4

Cheshire East County Council

Proposed Alterations to Lyceum Square Toilets and Support Offices

Feasibility Report

April 2013



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1 Summary

WYG Engineering Ltd were engaged to review the services at the above with a remit of making proposals for the separation of the electrical and mechanical services of the toilets and support offices.

The existing electrical and mechanical services emanate from a plant room opposite the managers office.

The electrical installation emanates from a 8 way TP/N distribution board which serves the small power and lighting installation to the toilets/offices and a separate supply to another distribution board located within the café area.

The mechanical services are served by a low temperature hot water system, the boiler for which is located in the plant room.

Hot water is derived from individual under sink type Zip water boliers.

Cold water services emanate from the plant room, the café being separately metered.



2 Introduction

WYG has been commissioned to undertake a feasibility study at Lyceum square with a view to separating the services serving the toilets such that they can be individually metered.

Each of the services have been considered and proposals and estimated budget costs for the various options indicated.

The following report is based on a survey undertaken on 15th April 2013.

Lyceum Square coffee shop and supporting accommodation/services was constructed in 2010.



3 Mechanical and Electrical Services Proposals

3.1 Utilities Infrastructure

The building is supplied with natural gas, water, electricity and drainage utility services

The incoming electrical supply is metered at the incoming mains position.

The only water meter noted was on a branch of pipe work serving the coffee shop which comes off the CWS serving the ladies toilets.

3.2 Option 1

The cost of physically splitting the services is disproportionate to the amount of services involved.

The lowest cost option in such an instance would be to agree with the prospective tenant a cost for the supply of heating, lighting, power and water.

This would be based electrically on a Watts/m², typically 25Wm² for power & 12Wm² for lighting.

Heating loads would typically be based on 60Wm².

Water consumption per person would typically be 10lt per person for hot water and 45 litres per person cold water.

The café has its own water meter and if it has not already got one can be easily metered electrically.



3.3 Option 2

Electrical

The toilets have the largest number of ways taken at the distribution board (10 Number). From a practical point of view it would be better to install a separate distribution board for the circuits serving the office, plant room and kitchen.

The office, kitchen and plant room occupy 8 ways of the distribution board and the café 3 ways.

The simplest option would be to install a new distribution board adjacent to the existing distribution board. This would be fed via a 63A MCB and wired in 16mm² 6491B cables.

A new 6 way TP/N distribution board could be installed c/w integral meter and the existing cabling extended to the new distribution board. The cables' could be extended preferably via a purpose made joint box c/w din rails or crimped connection.

The only other alternative to extend the cables would be to re wire but this we would consider to be a costly option.

Heating

The existing heating system is served via a LTHW system, given the level of heating required in a toilet i.e. 16°C it would be more practical to adopt the solution offered in option 1 above.

The alternative would be to remove the existing LTHW radiators and adopt an electric wall mounted panel heater. There are low surface temperature panel heaters on the market which will work via a wireless wall mounted controller. This would control hours of operation and temperature.

This would necessitate a new circuit being wired from the distribution board.

We would suggest that electric panel heaters whilst offering a reasonably cheap solution may be more prone to vandalism than a LTHW radiator, in the long term this may work out an expensive option.



Water

Currently there is only one water meter serving the premises and this is on the leg to the café which is spurred off the ladies toilets CWS supply.

It would be possible to install a water meter on the incoming supply in the main plant room and work out by subtraction the approximate water consumption for the toilets.

We use the word approximately as there is also the kitchen to consider.

This is another instance where an agreement based on litres of water used would make more sense rather than install yet another water meter on a single sink.

3.4 Option 3

Electrical

As Option 2 above.

Heating

The existing heating system is served via a LTHW system, given the level of heating required in a toilet i.e. 16°C it would be more practical to adopt the solution offered in option 1 above.

The alternative would be to remove the existing LTHW radiators and adopt an electric wall mounted fan assisted convactor heater mounted at high level.

This would necessitate a new circuit being wired from the distribution board.

Additional controls would be required in the form of a thermostat, local contactor and time clock.

Water

Currently there is only one water meter serving the premises and this is on the leg to the café which is spurred off the ladies toilets CWS supply.



It would be possible to install a new CWS water supply pipe to the Café area and install an additional water meter on the leg serving the toilets.

A new water meter could be installed under the sink of the kitchen/staff area, this would enable individual meter readings for each area.



4 Budget Costs

The following costs relate to the services replacement & modifications:

Option 1

There are no construction costs for this option, only legal costs to draw up an agreement to amend the lease.

Option 2

Electrical

Supply and install new 4 way TP/N distribution board c/w meter and extend circuits as required via purpose made joint box c/w Din rail mounted connectors.

£2,500.00

Heating

Remove 3 No. LTHW radiators and pipe work back to main circuit run.

£500.00

Supply and install 3 No. 13 A fused spurs on a 32A ring main

£500.00

Supply and install 3 No. low temperature stainless steel panel radiators and 3 No. wireless thermostatic/time controllers.

£2000.00

Water Meter

Supply and install Water meter to incoming water supply.

£300.00

TOTAL BUDGET COST OPTION 3

£5,800.00

Option 3



Electrical

Supply and install new 4 way TP/N distribution board c/w meter and extend circuits as required via purpose made joint box c/w Din rail mounted connectors.

£2,500.00

Heating

Remove 3 No. LTHW radiators and pipe work back to main circuit run.

£500.00

Supply and install 3 No. 13 A fused spurs on a 32A ring main

£500.00

Supply and install 3 No. low temperature panel radiators and wireless thermostatic/time controllers.

£2000.00

Water Meter

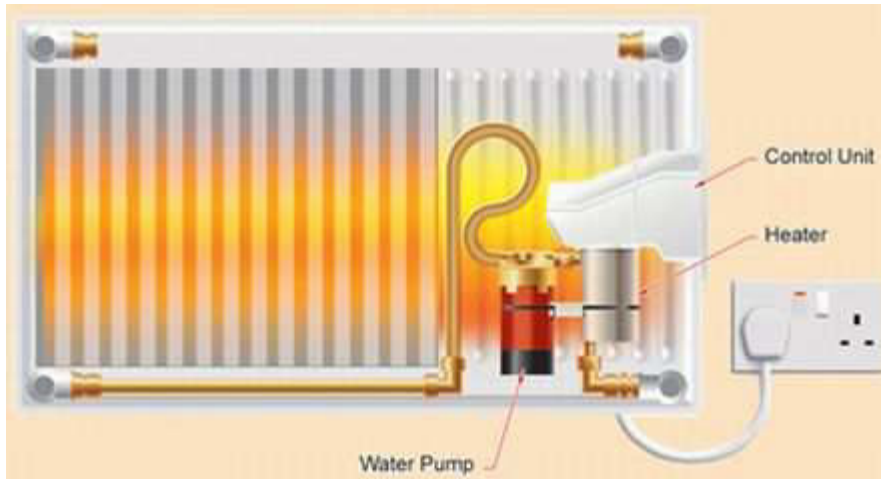
Supply and install Water meter to incoming water supply.

£1,200.00

TOTAL BUDGET COST OPTION 3

£6,700.00

Appendices: Typical Proposed Equipment.



Proposed low surface temperature wall mounted radiator



Proposed fan assisted convector heater mounted at high level