



OUR TOWN HALL

Condition 6r: Perimeter boxing-in

Justification Statement

September 2020

OTH-PUR-XX-XX-RPT-A-0131

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Issue Details

DOCUMENT TITLE	DOCUMENT REVISION	ISSUED FOR	ISSUE DATE	ISSUED BY	REVIEWD BY	CLIENT REVIEW
OTH-PUR-XX-XX-RPT-A-0131		FOR INFORMATION			JC	

Introduction

At its heart, the ‘Our Town Hall’ project is a heritage-led project which seeks to achieve the following principal objectives outlined in document OTH-PUR-XX-XX-RPT-0007;

- To secure the long-term future of Manchester Town Hall, its civic role and its external setting
- To retain and enhance the building as a functioning and efficient Town Hall
- Restore and celebrate this significant heritage asset for Manchester
- To enhance the use of the building, as a visitor destination and increase access to Mancunians
- To transform users’ and visitors’ experiences
- To reduce carbon footprint and energy costs
- To maximise commercial opportunities and offset costs to the public purse
- To deliver economic and social value for Manchester

Manchester Town Hall is Grade I Listed and sits within the Albert Square Conservation Area. The significance of Manchester Town Hall was explored in detail for the Listed Building Consent for the main body of work and is therefore not replicated in full here.

This document relates to condition 6r of the Listed Building Consent application 125553/LO/2019

The design and extent of boxing in works within each different area of the building affected. Any instances of boxing in any areas of the building shall be fully justified and shall be as limited as possible where justifiable. Full details of the appearance and finishes of any of these structures that have been justified are also required.

This document should be read in conjunction with the following documents:

Perimeter boxing type details:

- OTH-PUR-TH-ZZ-DWG-A-5920
- OTH-PUR-TH-ZZ-DWG-A-5921
- OTH-PUR-TH-ZZ-DWG-A-5922
- OTH-PUR-TH-ZZ-DWG-A-5923
- OTH-PUR-TH-ZZ-DWG-A-5924

and Schedule:

- OTH-PUR-TH-ZZ-SCH-A-5919

They are based on Arup Schedule:

- OTH-ARU-TH-ZZ-SCH-B-0011

For location of perimeter boxing and indication of types refer to cabinetry

plans Refs:

- OTH-PUR-TH-LG-DWG-A-0600
- OTH-PUR-TH-GF-DWG-A-0601
- OTH-PUR-TH-01-DWG-A-0602
- OTH-PUR-TH-02-DWG-A-0603
- OTH-PUR-TH-03-DWG-A-0604
- OTH-PUR-TH-04-DWG-A-0605
- OTH-PUR-TH-05-DWG-A-0606
- OTH-PUR-TH-06-DWG-A-0607

and also to the Schedule:

- OTH-PUR-TH-ZZ-SCH-A-5919

For NBS Specifications refer to the following documents:

K10 - OTH-PUR-TH-ZZ-SPE-A-5926

K20 - OTH-PUR-TH-ZZ-SPE-A-5909

K32 - OTH-PUR-TH-ZZ-SPE-A-5934

P20 - OTH-PUR-TH-ZZ-SPE-A-5921

P31 - OTH-PUR-TH-ZZ-SPE-A-5937

M60 - OTH-PUR-TH-ZZ-SPE-A-5906

Z10 - OTH-PUR-TH-ZZ-SPE-A-5940



Figure 1 The proposed boxing in design

Significance of the areas affected

Two aspects of the heritage value of Manchester Town Hall will be affected by the proposals for the perimeter services:

- The removal of original and historic MEP services
- Alteration to the key value of ‘architectural form’ that forms a component of Manchester Town Hall’s significance

Original and historic MEP services hold historical value as functional and redundant building service installations that served the Town Hall. They illustrate the technology of their time and the original services were fully integrated into the design of the building. Later additions are of less importance and in many cases are detrimental to architectural form, building use and understanding. As a

functional system with a finite lifespan, the services have been extended, modified and replaced over time as would be expected. Original items in good condition are being retained as non-functional examples within the refurbishment.

It is not possible to give an estimate of the amount of original and historic panelling and boxing to be retained as many historic examples are likely to survive behind more modern boxing that is to be removed during the soft strip.

01 What is the level of change?

Proposals for the replacement perimeter services were outlined at LBC stage (as shown opposite) and during the design process this has been amended and adapted for a more bespoke solution for the Town Hall. These units will include space for heating and air conditioning MEP as well as space for maintenance and potential upgrades within the lifespan of the OTH project (60 years).

The proposals seek to replace existing perimeter boxing within approximately 75% of rooms with new boxing, associated MEP insertions and routes through the fabric of the building (for more accurate numbers see attached cabinetry plans). This represents a substantial change within the Town Hall but not necessarily a harmful one. Areas of the highest significance are excluded from the standard boxing design and will be addressed through a bespoke solution which retains the maximum amount of historic fabric whilst allowing the room to be adequately serviced. The detailed design for these very high significance spaces is still being developed.

The soft strip is still being undertaken so it is not possible give accurate details of the extent of repair and replacement at this stage. As a result, Purcell and MCC will maintain a watching brief and discuss these 'finds' as and when they are discovered. The heritage assets schedule will be updated once the full exercise has been undertaken.

02 What is the potential impact of change?

The majority of rooms within the Town Hall currently contain original, historic or modern MEP services and boxing-in to accommodate this. Only very limited examples of this are of heritage value, with the majority being constructed in low-quality materials that are now in a poor condition (see figure 4).

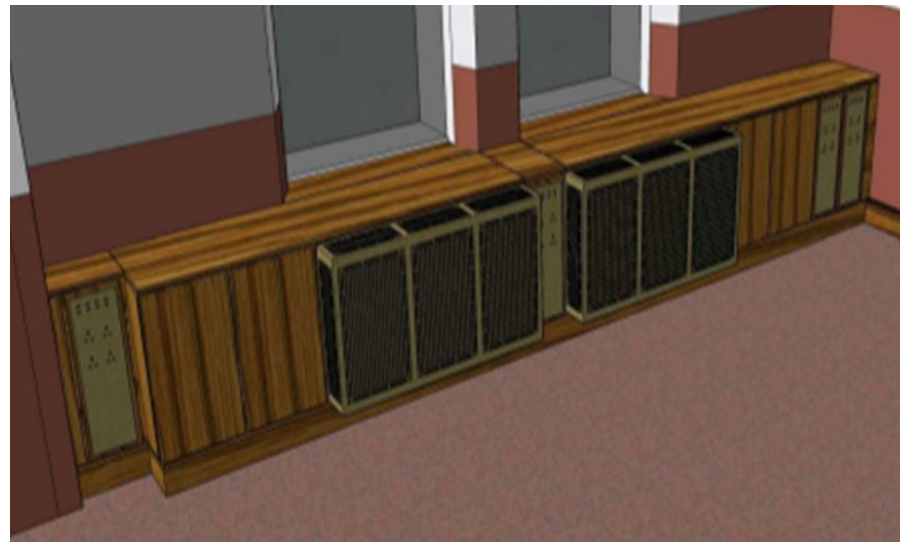


Figure 2 The boxing in design as proposed at LBC stage



Figure 3 The current boxing in design

The removal of this fabric does not therefore constitute a harmful impact and enhances the significance in some locations. A principle of the alterations is that any identified MEP services of heritage

value will be recorded or retained and any high-quality joinery will be retained or adapted.

The level of potential harm through loss of fabric associated with MEP services considers the functionality and finite lifespan of these components. When considering the design intent of the original architect Alfred Waterhouse, his use of new technology illustrates his intent for a modern, functional and comfortable building. It should be noted that the concept of perimeter services and boxing is a continuation of a historic solution to services, therefore, an expectation follows, that when these services fail they should be replaced with modern technology offering a similar solution and the perimeter boxing proposed best reflects this along with the retention of bespoke examples in the very high significance spaces. For example,

'Keeping a large machine, like a water mill or boat lift, in use, may require replacement and modification of structural or moving parts which could be retained if it ceased to operate, producing a tension between authenticity of fabric and function' .¹



Figure 4 An example of 20th century boxing-in that would be replaced

¹ Historic England (2008: 45), Conservation Principles, Policies and Guidance

In this instance the overriding value of adequately servicing the building and improving aesthetics of the spaces outweighs the loss of mechanical historic fabric, therefore, replacement of this historic fabric does constitute a loss, but is not considered harmful in the same way as the loss of architectural or decorative features would be.

It should be noted that evidence from the soft strip suggests that the service punch throughs in the walls were undertaken later and not part of Waterhouse's original design although they are historic in nature. Many of the examples are designed as demountable to allow access to the services and in the very high significance spaces joinery is installed under perimeter seating or murals in the state rooms. This demonstrates how the perimeter services were incorporated into the building design historically and the proposal continues this approach.

The design is well-considered and respects the context of Waterhouse's High Victorian design. There will be consistency across the building and the boxing will represent a clear addition from a single phase of installations in the 2020s. As part of the MEP services, there is scope beyond the life of the project as the service runs and boxing are designed with future proofing in mind as a key feature, so as technology changes additional services can be installed without completely retrofitting the proposed system or replacing and adapted the perimeter boxing.

In the spaces of very high significance, such as the state rooms, visual intrusions are minimised through the use of trenched services and retaining and reusing existing high-quality joinery to contain the services. Penetrations for service runs in the walls between rooms currently exist as part of the original services design and these will be reused.

Some of these will need to be expanded in size, resulting in the loss of some built fabric at each location including some decorative plasterwork, which although original, has been hidden for much of the 20th century, representing a low adverse impact.



Figure 5 Proposed retention and adaptation of existing historic boxing.



Figure 6 Existing historic boxing in (to be retained and adapted)



Figure 7 Example of the Unistrut as part of a mock up that was constructed

An assessment of individual installations in specific rooms has not been made within this assessment as the need remains the same in all instances and the impact varies only moderately between neutral and minor adverse. Areas of particularly high aesthetic value make use of a bespoke design solution that can be seen in the accompanying drawings and ensures the level of harm remains the minimum necessary to achieve a workable solution.

In the LBC submission, the heritage impact in an area of lower significance/capacity for change was assessed as being neutral (see appendix A – extract from the LBC submission). In more significant

spaces, this raised to minor adverse. This assessment does not alter the level of impact as part of the new, developed proposals.

03 What is the need for change?

At a basic level, the fundamental need is that the perimeter services and their associated current boxing-in have reached the end of their functional life and require replacement. This will be carried out using new technologies and high-quality design/materials to meet the project objectives. Existing services are ad-hoc, layered and partly non-functional. The proposals will seek to rationalise services and reduce redundant components and is beneficial in its removal of hazardous materials from the site, including asbestos.

An important element of the proposals is the requirement to future proof the building services and the project. The objectives to 'reduce carbon footprint and energy costs' and provide a 'functioning and efficient' Town Hall are vital to a sustainable project. Part of this is achieving a 60-year lifespan on all materials and components used in the refurbishment. To achieve this with MEP services, which have a finite lifespan, an element of future proofing has been built into the design. In practice, this means additional space has been built into the boxing-in to allow future services to be installed without the need for additional intrusive works or further loss of fabric. This will avoid the ad-hoc adding of

services that has happened on site over recent years with resultant harm to heritage each time.

Linked to the need to future proof, is the need for system that can be maintained and accessed in the short and long-term. Future care of the building is achieved through the current boxing design that has additional space to allow for easy maintenance access and allows for services to be replaced when required. For example, access is provided to ensure the joints of steel pipework can be inspected or tightened every 6 months, and other components such as ICT racks, control equipment, valves etc. will all require periodic maintenance. In the long-term, replacement will be easier under the proposed system.

Increasing the size of the penetrations is also linked to this need for maintenance and future proofing. A number of smaller openings had been considered but these would have reduced ability to maintain and access the systems. It would also have fire safety implications. The proposed size of the penetration openings is considered the minimum necessary to rationalise existing openings, reduce the need for incremental changes in the future and ultimately to achieve a sustainable design.

04 Can harmful change be mitigated?

Harm has been mitigated in several ways throughout the design process with a full list of the rationalisation of MEP services in appendix C:

- The principles for the level of intervention were agreed with statutory consultees pre-submission which set the standards for the intervention into each type of space. For example, the boxing-in response to a highly significant 'restoration' room such as the Treasurer's suite of rooms is different to that of a smaller, simple office space. These principles continue to be applied as detail is added to the designs.
- The buildability methods associated with the chosen system are a key mitigating factor when considering the harm of the installations. Bespoke and high-quality methods of installation are used throughout this project to avoid harm to significance. In this instance, the boxing and repeatable service units will be

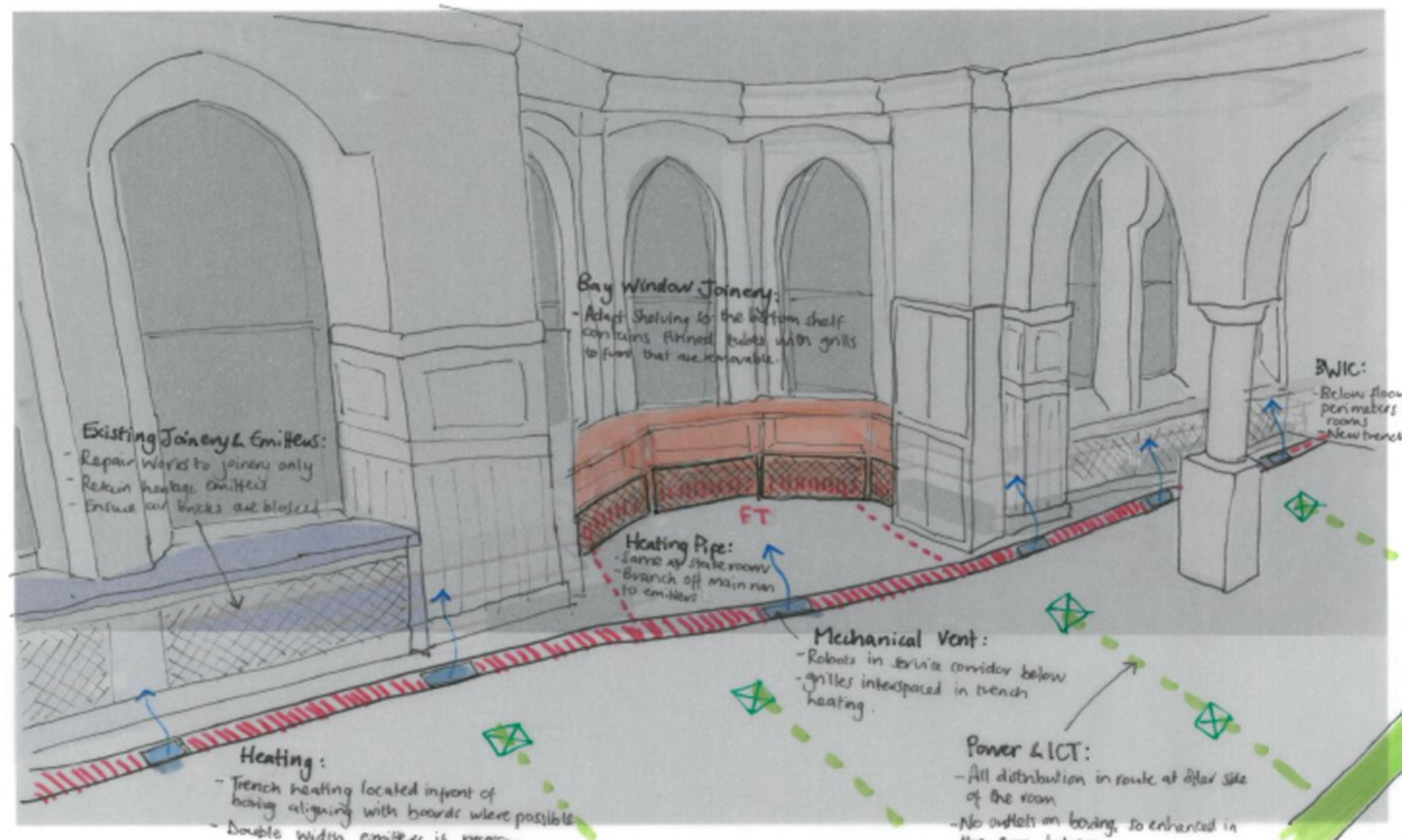


Figure 8 Proposed boxing-in in the Treasurer's suite of rooms where high quality historic boxing is repaired and retained and floor trenches are installed.

manufactured and constructed off-site, to be installed on-site in sections. This reduces the amount of potentially damaging work carried out on site. It also improves workmanship and reduces the amount of labour needed, with 'best value' being another project objective. Finally, there is a health and safety gain from construction off-site as conditions are more controlled and working conditions are preferable. For example, the Unistrut frame can be pre-fabricated off-site, which reduces hot works on-site, rationalises materials being delivered, improves health and safety by reducing labour hours on site, is produced in a controlled environment for better quality and is easier to transport.

- Poor-quality, modern boxing fabric and redundant MEP will be removed from the Town Hall to enhance significance. This also has the benefit of removing hazardous materials such as asbestos from the building. Significance historic fabric that has been damaged by previous installations will be repaired where now visible.
- Identified MEP services of heritage value will be recorded or retained and any high-quality joinery will be retained or adapted. Items of original joinery have been discovered behind later boxing, and this will be incorporated into designs where possible. Following the MEP and soft strip there will be a validation process of which details apply that doesn't impact the servicing strategy from a 'menu' of options for detailing, with any anomalies reviewed in heritage surgeries and agreed with the LPA Conservation Officer.
- Other options have been considered to reduce impact such as the use of trenching and floor penetrations, however, this has been discounted as it would cause greater loss of fabric and have resourcing/health and safety implications. For example, the option to relocate the electrical services within the floor would have reduced quality, reduced maintenance access, required more time on site and cut through historic joists.
- Most existing openings will be reused where possible, although the majority will require enlarging.
- A thoughtful consultation and collaborative design process has been used to reach the current design for the perimeter services which have been refined and rationalised allowing the



Figure 9 The wall penetrations for the existing pipe runs that will be re-used and amended

cladding to be re-worked to align with the aesthetic of the existing joinery, reducing the visual impact within the room. This has included consultation with the Building Operations and

Maintenance Team, the client's Heritage Team, MCC Conservation Officer, the Design Team and supply chain. (A full list of the services rationalisation is included within appendix C)

- A series of mock-up rooms have also been set out, during the intrusive works of removing the modern boxing showing further evidence of historic panelling. The mock-up rooms allow the proposals to be visualised and the impact assessed and full consultation with the LPA authority. The mock-up rooms also allows the assessment of elements of the design such as final materials selection, power outlets and paint colours which will be dealt with as part of the samples approval on another condition.

05 Options and Design Development

During the development of the proposal various options have been considered to minimise the impact and achieve the optimum outcome for the conservation and servicing of the building.

Options of installing trunking was explored but dismissed due to the visual impact this would have on the spaces. A design of vertical fan mounted systems (which has been used in some spaces in the Town Hall previously) was also deemed too visually intrusive.

As shown in figure 12, designs were developed for installing services within the floor, however, this would have required the removal of original fabric such as floorboards and the cutting of floor joists. This would have resulted in the deviation from the known historic design, the loss of more heritage fabric and a less reversible solution, all of which make it more harmful than the proposed design. The chosen proposal does fit the Unistrut through the floor for stability, however, the impact of this is still significantly less than trenches. Trench services would have also meant access for maintenance would have been difficult and should any additional services be required the system would require significant adaptations potentially adding more intervention into historic fabric.

A suspended floor above the historic floor was also explored, however, this would have meant concealing historic fabric, raising the floor levels and steps into spaces.

The floor trench design did, however, lead to the idea of the panelled frontage aesthetic. This idea, coupled with intrusive investigations undertaken on site where modern boxing was removed to reveal historic panelling, or later but still historic boxing



Figure 10 Example of historic panelled boxing in

with grills, led to the incorporation of these features into the current design.

In areas of very high or high significance and where good quality historic joinery survives, a minimum intervention approach is being undertaken and the boxing will be retained, repaired and adapted with a bespoke solution to retain as much historic fabric as possible.

As per both the client and the term maintenance provider comments the size of the boxing is considered the smallest that allows for the necessary future proofing and maintenance access and it already poses challenges due to the comprises undertaken to minimise heritage impact (see appendix B).

“There are real concerns with the current design that access and maintenance is already going to be a challenge, and leaves little space to work in.” – NG Bailey (maintenance provider)

The approach carefully balances the size of the boxing which is kept to the smallest possible to minimise heritage impact vs the necessary maintenance and future proofing requirements.

The services that are now being installed into the perimeter modules have a greater maintenance requirement than the previous incumbent scheme, there are a greater number of systems encased, therefore these areas will be accessed at a higher frequency level.

By reducing the overall size, more of the outer skin of the module may have to be removed to access difficult to reach services, this would have an adverse effect of the overall aesthetics of the rooms and an increased risk of damage to any panels that could have to be removed during the process. – NG Bailey



Figure 12 Example of historic panelled boxing in, the black skirting influenced the current design

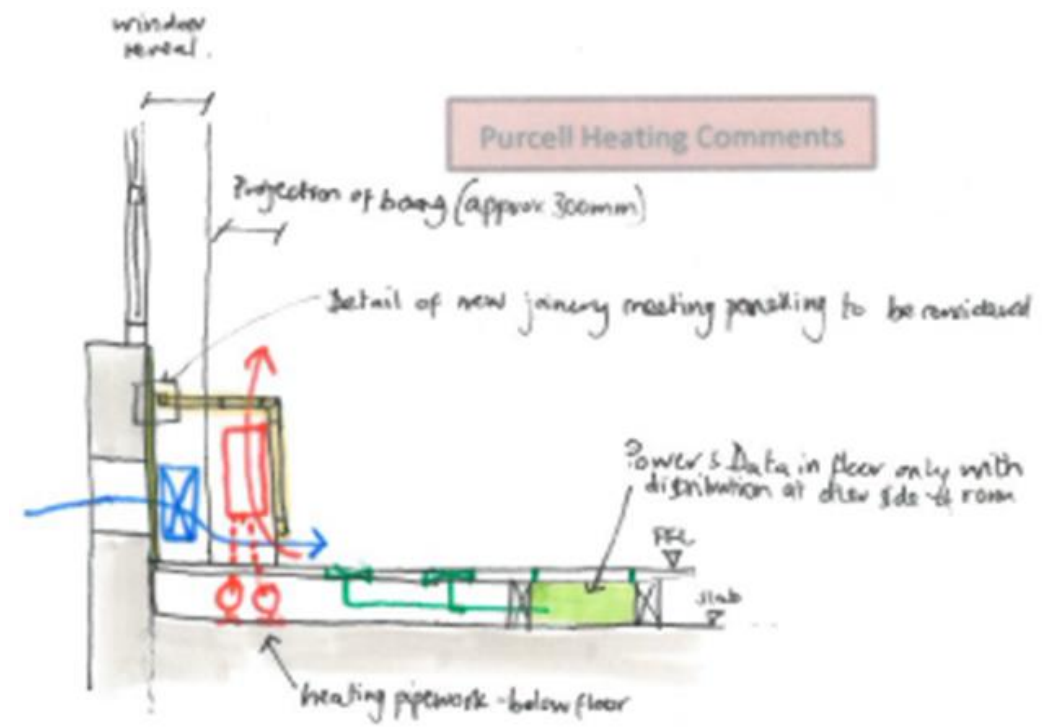
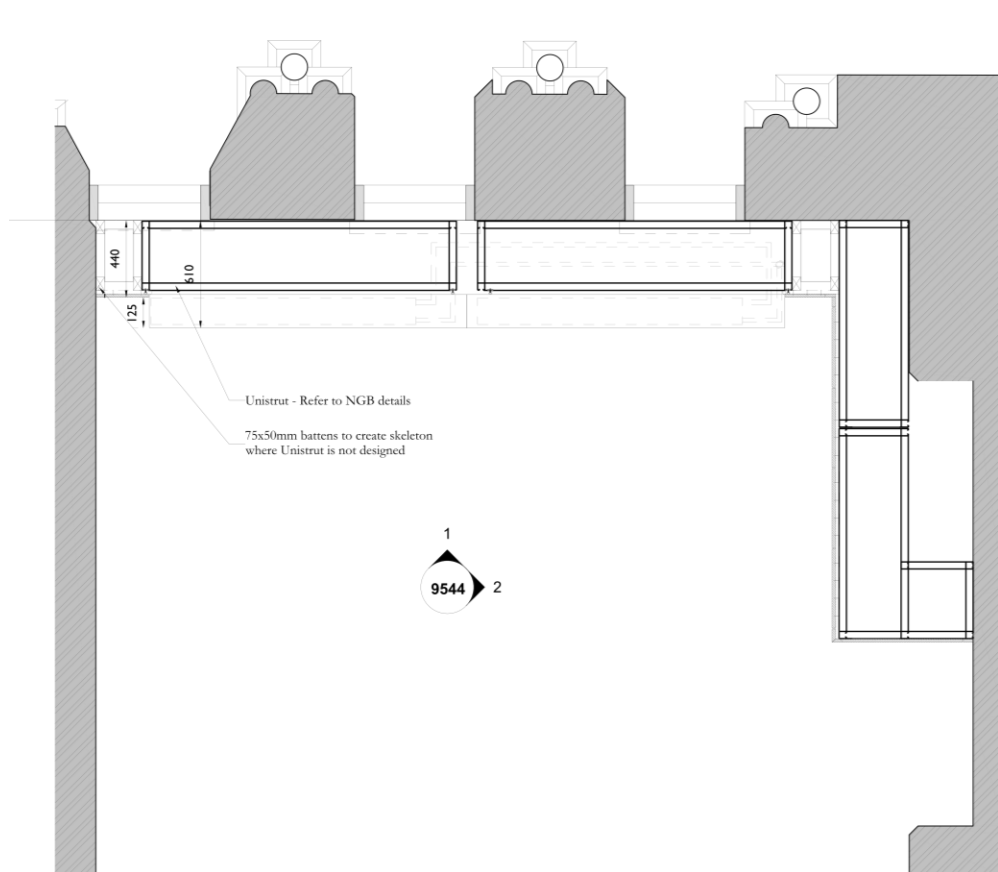
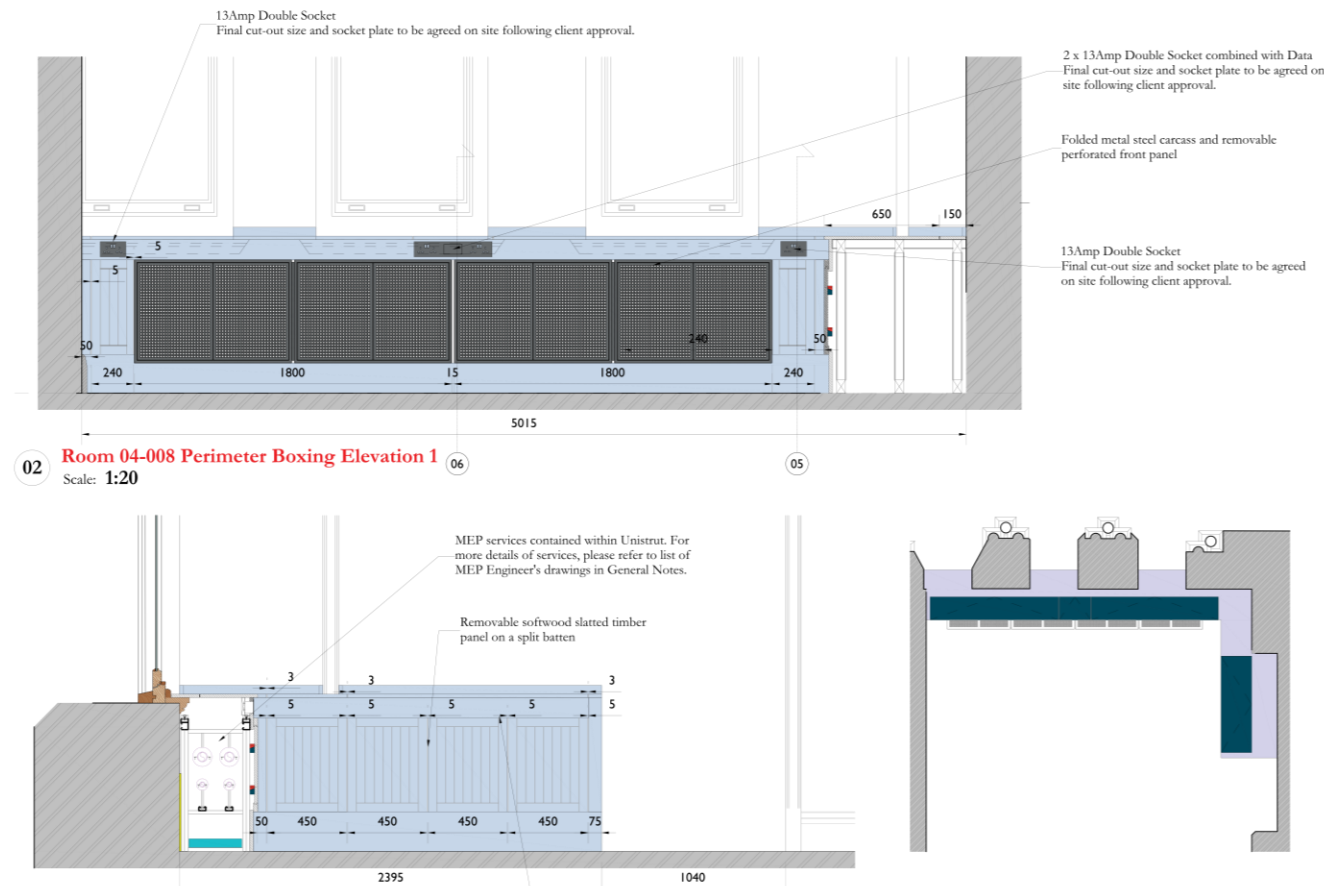


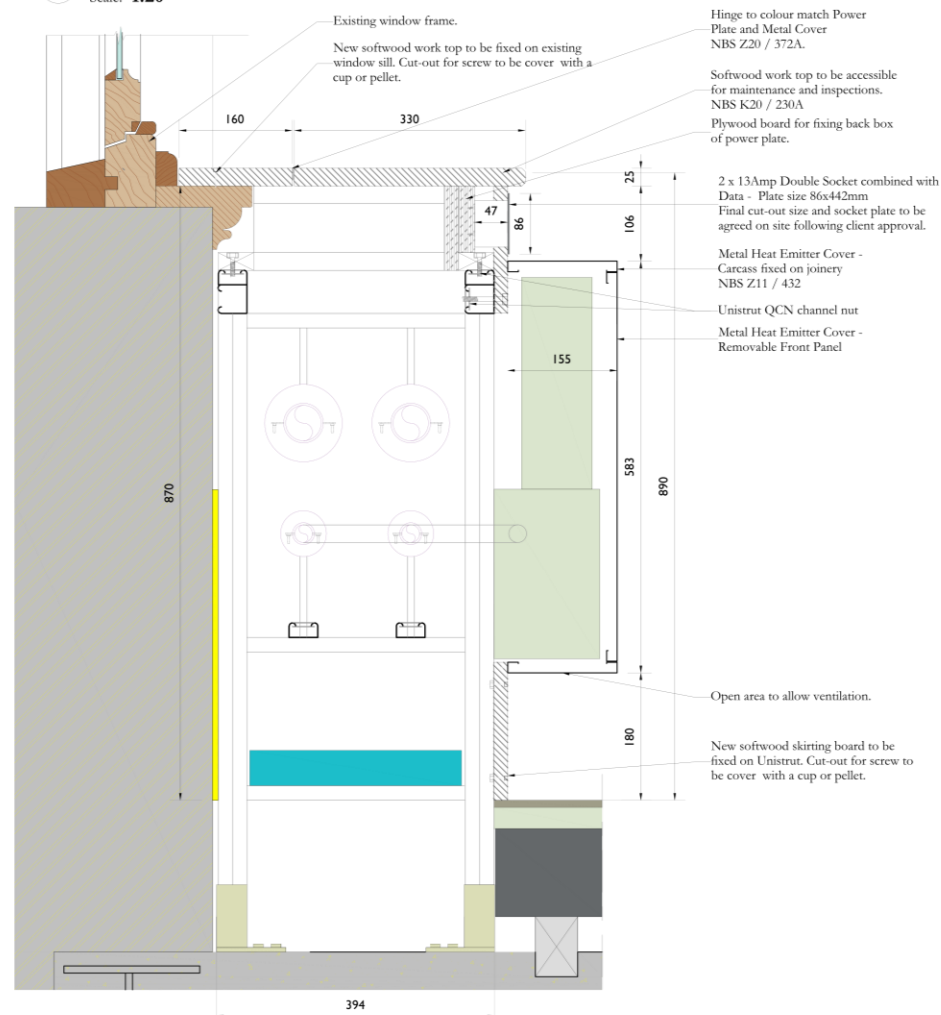
Figure 11 Part of the design development showing services mounted in the floor



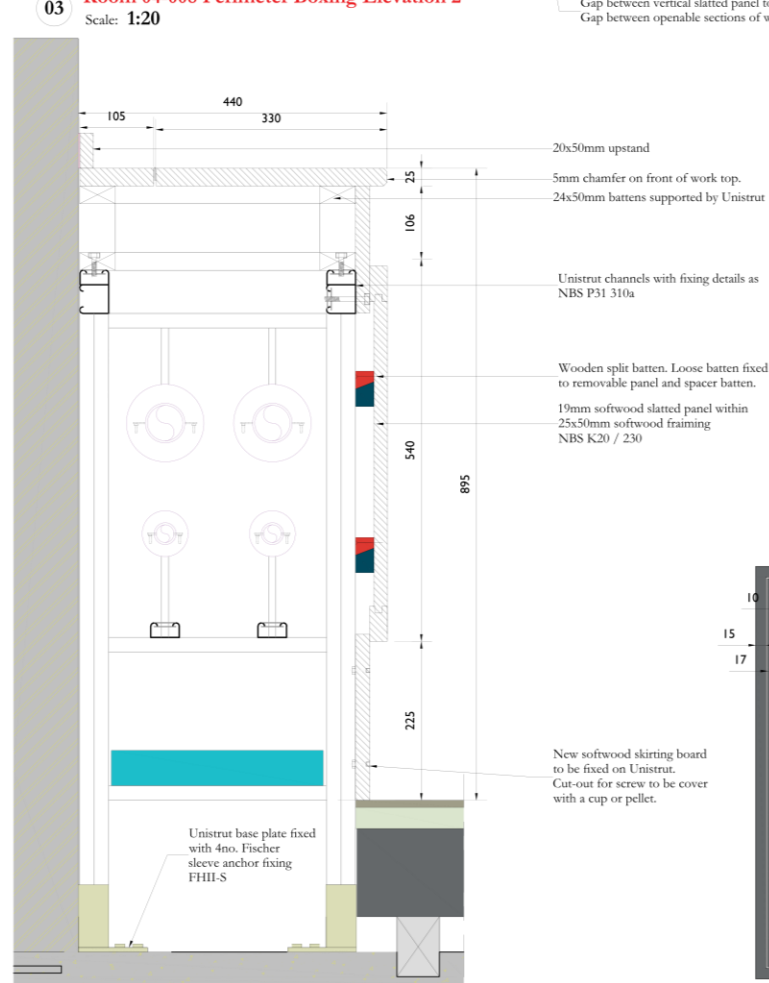
01 Room 04-008 Perimeter Boxing Plan
Scale: 1:20



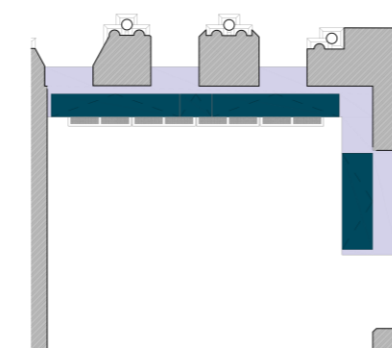
03 Room 04-008 Perimeter Boxing Elevation 2
Scale: 1:20



05 Room 04-008 Perimeter Boxing Section
Scale: 1:5



06 Room 04-008 Perimeter Boxing Section
Scale: 1:5

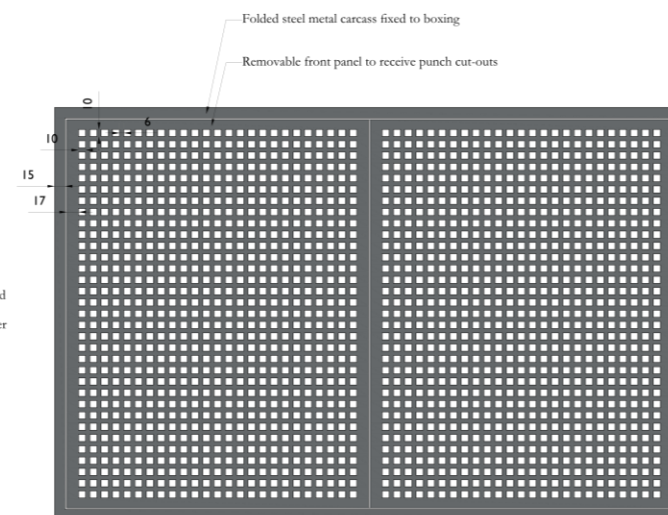


04 Room 04-008 Perimeter Boxing Worktop Plan
Scale: 1:50

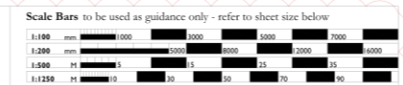
- Fixed part of work top to structure.
- Accessible work top for maintenance/inspection.

FINISH NOTE:

- Softwood Timber Carcass: 20mm thick FSC softwood painted finish - Little Greene Intelligent Eggshell (interior) 2no. coats and primer. Final colours to be agreed on site with Client and Conservation Officer. Opt.1 is for one colour. Opt.2 is for 2no. colours. Provide samples of Grey Moss and Light colour TBC.
- Metal Heat Emitter Cover: 15mm thick folded steel with Vitreous enamel finish coating. Colour Dark Grey to match sockets. Panels to receive punched cut-outs (10mmsq pattern with 6mm solid to achieve 60% free area).



07 Metal Heat Emitter Cover - Elevation
Scale: **1:50**



Notes:
 Drawings are based on survey data and may not accurately represent what is physically present.
 Do not scale from this drawing. All dimensions are to be verified on site before proceeding with the work.
 All dimensions are in millimeters unless noted otherwise.
 Purcell shall be notified in writing of any discrepancies.

GENERAL NOTES:-

- Drawing shows no electrometer hooking only. For drawing OTH-PUR.TH-04-DWG-A-9501 Room 04-008 Existing, Alterations and Proposed Sections for scope of proposed works and reference for details, schedule and specification.
- For structural openings and alterations please refer to Ramboll's drawings.
 - 1. Mock Up Room Structural Details: SHT-ARU-TH-04-DWG-SX-6001.
- For MEP information please refer to Arup's documentation:
 - 1. Mock Up Room Typical High Level Electrical Servicing Strategy OTH-ARU-TH-22-DWG-E-9040;
 - 2. Mock Up Room Typical Low Level Electrical Servicing Strategy OTH-ARU-TH-22-DWG-E-9040;
 - 3. Mock Up Room Typical Landing Services Fire Stopping Details OTH-ARU-TH-22-SK-I-B-6040;
 - 4. Mock Up Room 04-008 Electrical Primary Plant and Distribution OTH-ARU-TH-04-DWG-E-6281;
 - 5. Mock Up Room 04-008 General Power and Structured Wiring OTH-ARU-TH-04-DWG-E-6300;
 - 6. Mock Up Room 04-008 Lighting Layout OTH-ARU-TH-04-DWG-E-6540;
 - 7. Mock Up Room 04-008 Alarm Services OTH-ARU-TH-04-DWG-E-6600;
 - 8. Mock Up Room 04-008 Electronic Security OTH-ARU-TH-04-DWG-E-6740;
 - 9. Mock Up Room 04-008 Mechanical Services OTH-ARU-TH-04-DWG-M-0401;
 - 10. Mock Up Room 04-008 Public Areas Services OTH-ARU-TH-04-DWG-E-6000.
- To be in line with consultation with Paritex NBS specification reference: OTH-PUR.TH-22-SCH-A-9590.
- Drawing based on Revit model which may show discrepancies with existing building. Therefore, all setting out to be verified on site with Aschertorp prior to installation or construction.
- All proprietary products to be used in strict accordance with the manufacturer's specifications and details.

Mock up Room Sample and Sequencing note:
The purpose of the mock up room boxing is to provide a representative sample of the casing for client approval. For this reason there is a requirement for the boxing to be free standing to allow for removal to facilitate the installation of services during the main works.

Unistrut support frame not to be provided as part of mock up rooms. Instead replace Unistrut members with free standing soft wood framework to support casing.

Final Socket and switch specification to be agreed following approval of sample. Allow for options between MK Edge and MK Dimension Range.

Allow cut-out as per drawings however, actual dimensions of final cut-out sizes to be confirmed after client approval following decision on socket and switch range.

06	07/08/2020	NM	MP	Details update for Construction Issue
05	06/12/2019	DH	VT	Construction Issue with Lendlease Comments
04	15/11/2019	DH	VT	Updates for Construction Issue
03	01/11/2019	DH	VT	Details unchanged, drawing status updated
02	24/05/2019	DH	VT	Issued for Tender
01	08/05/2019	DH	VT	Issued for LBC Application
ISSUE	DATE	APPROVED	DRAWN	DESCRIPTION



PROJECT STATUS	RIBA STAGE 4
CLIENT	MANCHESTER CITY COUNCIL
PROJECT	OUR TOWN HALL
DRAWING TITLE	Room 04-008 Perimeter Boxing Detail
SIZE & SCALE	A1: As indicated
DRAWING STATUS	FOR CONSTRUCTION - S4
JOB NUMBER	236959

DRAWING NO. OTH-PUR-TH-04-DWG-A-9544 REV 06

06 Can harm be justified against public benefit?

The proposed perimeter services represent the core element of the Manchester Town Hall services strategy. This is one of 11 key considerations that together, contributed to the final solution for the services. The principles and detail of the perimeter services have been carefully considered as part of the project as a whole and are considered to represent the solution that best meets the project objectives, including conservation of heritage significance. To alter one element of the overall strategy will have wider impacts as demonstrated by figure 13.

The level of heritage impact is assessed as ranging from neutral to minor adverse, depending on location and level of intervention. Greater harm has been avoided through the mitigation measures set out above.

As set out above, the need for the specific proposals has been clearly articulated based on the requirement to rationalise and upgrade the existing redundant services.

There is a need to future proof the replacements in a way that the heritage and wider public benefits of the proposals are sustained. Whilst there are modest reductions that could be achieved by ‘stacking’ the pipework this would mean a reduction in the other benefits of future proofing for future services and the off-site buildability would not be possible and maintenance would become increasingly difficult.

As per the email extracts in appendix B, although the size could potentially be reduced and pipework more closely stacked the maintenance is already a challenge due to the small space and this would mean the removal of larger sections of boxing (and potentially damaging them over time) and it is the maintenance provider’s advice that the boxing and services are already the smallest (and arguably too small) that can achieve the adequate servicing of the building. Arup as MEP lead on the OTH project support this and emphasise –

The boxing-in has been designed to be as slim as possible, whilst ensuring the necessary clearance and access is provided to ensure

the safe operation and maintenance of the equipment housed within. – Tom Waterson (Arup, MEP lead).

It is acknowledged that the size of the Unistrut is not the smallest that could be achieved for the current service requirements, however, the limited reduction in size that could be undertaken would mean costs would increase significantly, it would require on-site installation and it would lack the ability to add additional services in the future without adaptation and potentially further harmful interventions. Therefore, the proposal is considered the best outcome for not just heritage but the 11 key considerations of the service strategy.

The proposal will increase the lifespan of the building and allows for easy access and future maintenance, thereby reducing impact on heritage significance in the future. These needs have led the design development and resulted in a boxing-in system that can be constructed off-site (reducing damage to fabric), has room for future services, and offers an improved and consistent aesthetic across the Town Hall with historic joinery retained where possible.

The benefits of these proposals are outweighed by the neutral to low adverse impact of the interventions.

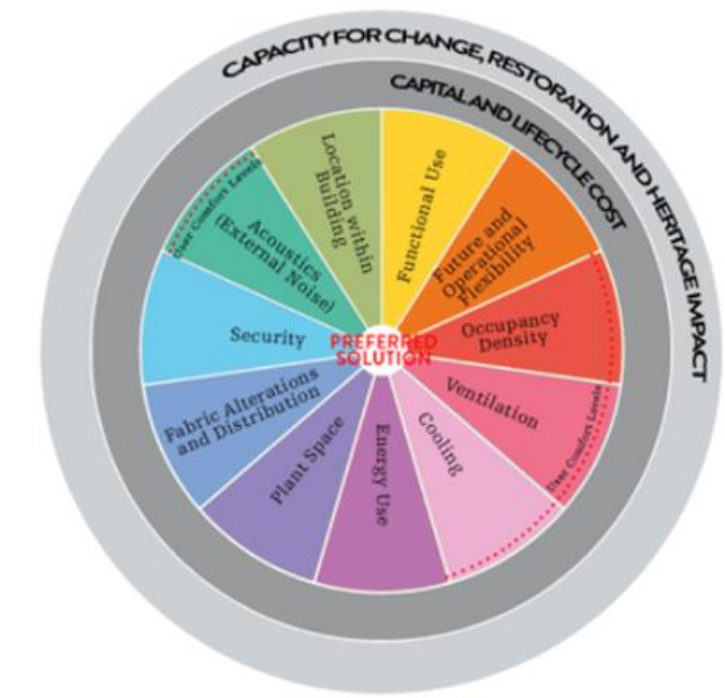


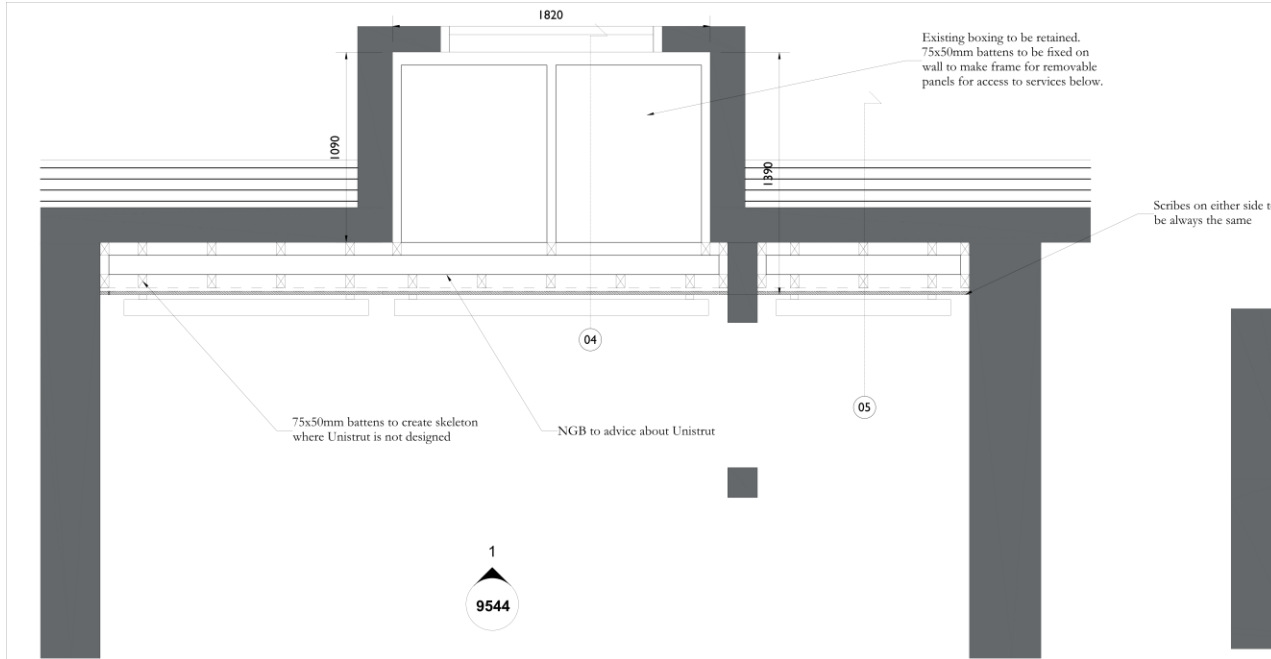
Figure 13 The services strategic approach

Compliance

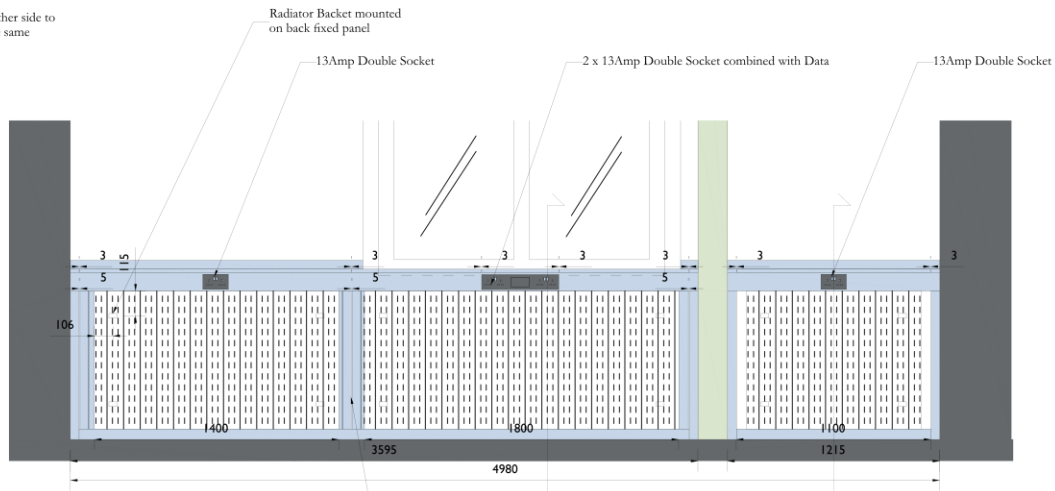
This heritage impact assessment has been produced in line with the methodology for assessing impact as set out in the Heritage Assessment and Engagement Strategy for Our Town Hall (OTH-PUR-XX-XXRPT-A-0007). It complies with the legislation and guidance of the Planning (Listed Buildings and Conservation Areas) Act 1990, the Manchester Town Hall Heritage Management Plan (2015), National Planning Policy Framework (2018) and the associated Planning Policy Guidance (2014), British Standard 7913 (2013) and Historic England’s Conservation Principles (2008). In line with legislation, this impact assessment demonstrates ‘special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest (Act, 1990, sections 16 & 66). The clear and convincing justification for elements of harm, and weighing of such harm against the public benefits of the proposal (including heritage benefits) is in direct reference to the requirements in paragraphs 194 and 196 of the National Planning Policy Framework.



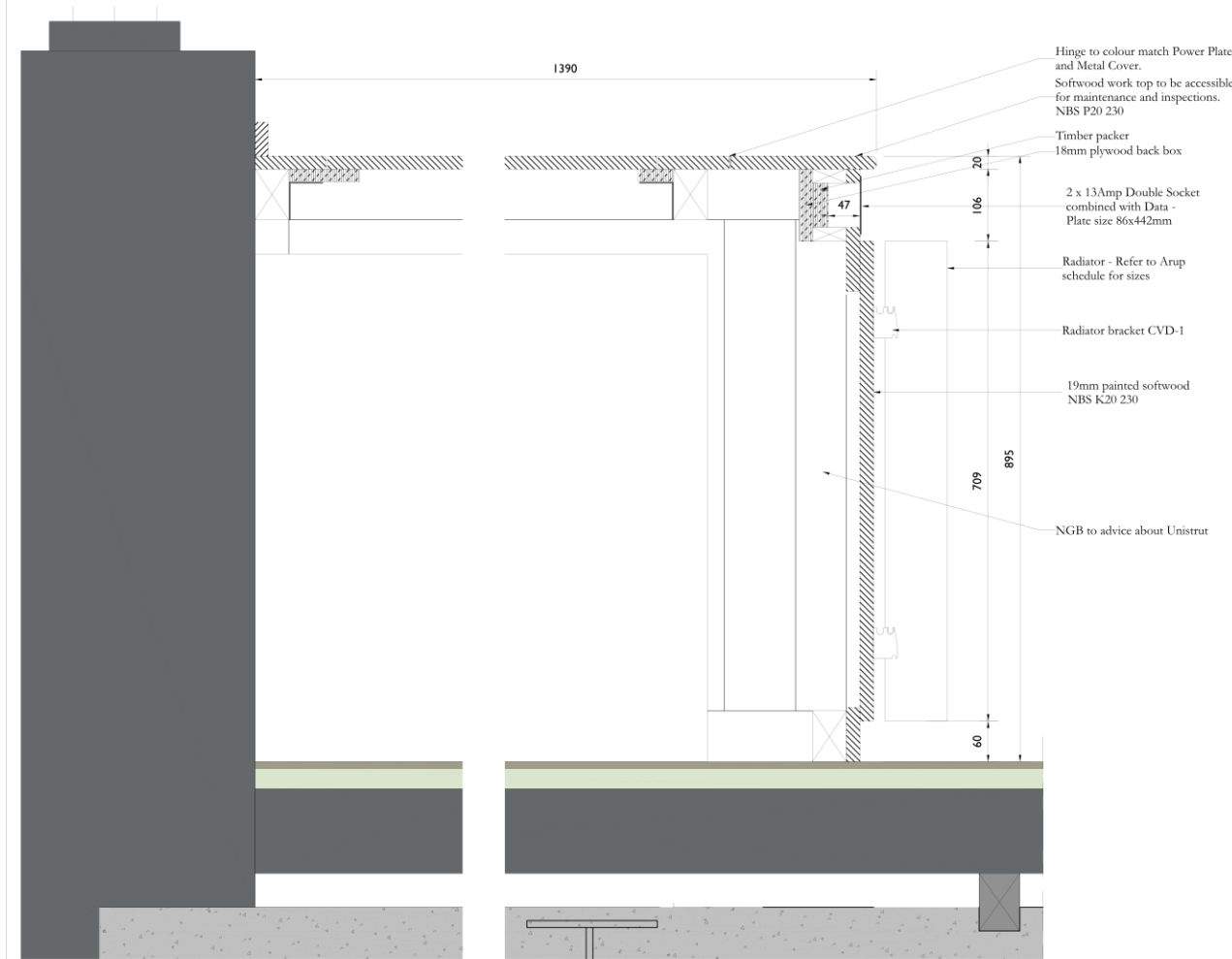
Figure 14 Example of high-quality perimeter boxing to be retained and adapted in GF-008



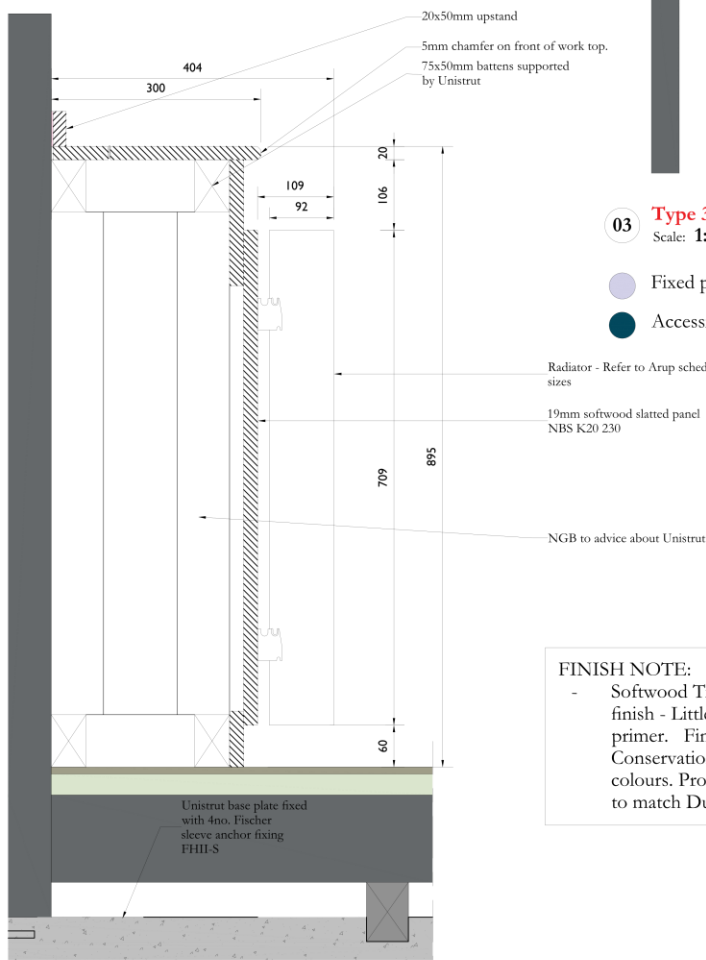
01 **Type 3 - Perimeter Boxing within Eaves - Plan**
Scale: 1:20



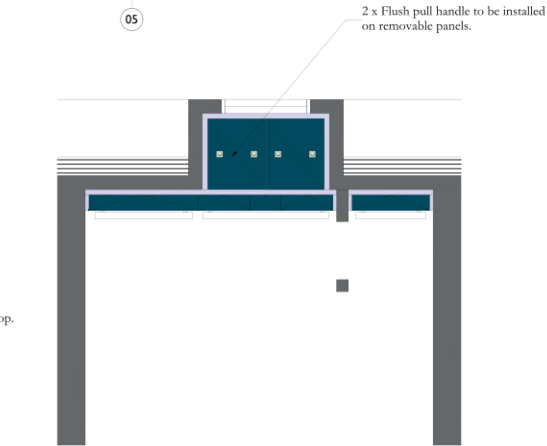
02 **Type 3 - Perimeter Boxing within Eaves - Elevation**
Scale: 1:20



04 **Type 3 - Perimeter Boxing within Eaves - Section**
Scale: 1:5



05 **Type 3 - Perimeter Boxing within Eaves - Section**
Scale: 1:5



03 **Type 3 - Perimeter Boxing within Eaves - Worktop Plan**
Scale: 1:50

- Fixed part of work top to structure.
- Accessible work top for maintenance/inspection.

FINISH NOTE:
- Softwood Timber Carcass: 20mm thick FSC softwood painted finish - Little Greene Intelligent Eggshell (interior) 2no. coats and primer. Final colours to be agreed on site with Client and Conservation Officer. Opt.1 is for one colour. Opt.2 is for 2no. colours. Provide samples of Grey Moss and equivalent LG colour to match Dulux Portland

Scale Bars to be used as guidance only - refer to sheet size below

Scale	1:100	1:200	1:500	1:1000	1:1250
mm	0 1000 2000	0 1000 2000	0 1000 2000	0 1000 2000	0 1000 2000
m	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2

Notes:
Drawings are based on survey data and may not accurately represent what is physically present.
Do not scale from this drawing. All dimensions are to be verified on site before proceeding with the work.
All dimensions are in millimeters unless noted otherwise.
Purcell shall be notified in writing of any discrepancies.

For location of perimeter boxing and indication of types refer to cabinetry plans Refs:
- OTH-PUR-TH-LG-DWG-A-0600
- OTH-PUR-TH-GF-DWG-A-0601
- OTH-PUR-TH-01-DWG-A-0602
- OTH-PUR-TH-02-DWG-A-0603
- OTH-PUR-TH-03-DWG-A-0604
- OTH-PUR-TH-04-DWG-A-0605
- OTH-PUR-TH-05-DWG-A-0606
- OTH-PUR-TH-06-DWG-A-0607
and also to the Schedule:
- OTH-PUR-TH-ZZ-SCH-A-5919

For NBS Specifications refer to the following documents:

K10 - OTH-PUR-TH-ZZ-SPE-A-5926
K20 - OTH-PUR-TH-ZZ-SPE-A-5909
K32 - OTH-PUR-TH-ZZ-SPE-A-5934
P20 - OTH-PUR-TH-ZZ-SPE-A-5921
P31 - OTH-PUR-TH-ZZ-SPE-A-5937
M60 - OTH-PUR-TH-ZZ-SPE-A-5906
Z10 - OTH-PUR-TH-ZZ-SPE-A-5940

NOTE:
These are typical drawings to show the principles of the boxing, specific heat emitter numbers and lengths and socket requirements vary depending on room.
Refer to Arup Schedule
- OTH-ARU-TH-ZZ-SCH-B-0011

ISSUE	DATE	APPROVED	DRAWN	DESCRIPTION
-	17/07/2020	NM	MP	First Issue



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PROJECT STATUS	RIBA STAGE 4
CLIENT	MANCHESTER CITY COUNCIL
PROJECT	OUR TOWN HALL
DRAWING TITLE	Type 3 - Perimeter Boxing within Eaves Details
SIZE & SCALE	A1: As indicated
DRAWING STATUS	FOR TENDER
JOB NUMBER	236959

DRAWING NO. OTH-PUR-TH-ZZ-DWG-A-5922 - REV

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Figure 15 Existing (above) and proposed demonstrating how in a 'dressed' space the boxing does not have an adverse impact (note the design has been further developed since this CGI)



Figure 16 Proposed CGI demonstrating how in a 'dressed' space the boxing does not have an adverse impact on the space (note the design has been further developed since this CGI)

Appendix A -

LBC SUBMISSION: MECHANICAL, ELECTRICAL AND PUBLIC HEALTH
HERITAGE IMPACT ASSESSMENT, AUGUST 2019, OTH-PUR-XX-XX-
RPT-A-0066

WHAT IS THE POTENTIAL IMPACT OF CHANGE?

The principle of perimeter joinery ‘boxing in’ is to be retained and improved, merging heating routes, cooling routes, blown fibre, data and power distribution to notably reduce current visual clutter. These will re-use existing penetrations to the perimeter walls, enlarging these openings with minor structural upgrades to ensure longevity of these penetrations: MINOR ADVERSE

WHAT IS THE NEED FOR CHANGE?

Like many within the Town Hall project, this historic office space is intended to be kept in its historic use. The MEP requirements for office use have developed considerably since the Victorian era and in order to facilitate this positive use of the space, reasonable distribution of water, power, ventilation and ICT are necessary. Manchester Town Hall must meet reasonable expectations for services to remain in not only its optimum viable use, but any sustainable use. While not without harm, these works are vital to the public use and long-term conservation of the building in line with the key objectives of the Our Town Hall project outlined above.

CAN HARMFUL CHANGE BE MITIGATED?

Great care has been taken to minimise harm to the significance of the Town Hall as part of the design development process. Detailed design has sought to minimise harm through the following measures:

- Maintaining historic office spaces in their original intended use
- Removal of harmful cumulative modern MEP fixtures and restoration of affected historic fabric

- Establishing the minimum necessary MEP requirements through detailed analysis of need specific to the building uses and sustainable use

- Avoiding the need to raise the existing floor level

- Re-use/reinterpretation of original design features (e.g. Waterhouse’s ventilation masonry)

- Removal of earlier proposed vertical fan mounted systems alongside windows due to associated adverse heritage impact

- Minimising the size of necessary openings

- Where openings are deemed necessary, coordinating these to minimise visual and physical intrusion

- Future-proofing interventions through design to prevent the need for future cumulative additions (e.g. openings to jack arches)

- Improving the fire stopping between compartments

- Avoiding the installation of surface trunking

- Clustering riser locations to minimise historic fabric disturbance

- Limiting the interference with joists by routing cabling in the direction of joists

CAN HARM BE JUSTIFIED AGAINST PUBLIC BENEFIT?

The public benefits of such work both in heritage terms and wider public benefits are considerable. There is some impact to this room as a result of the proposed MEP interventions. Cumulative impact is also relevant as this approach is broadly representative of historic office space alterations throughout the town hall. However, the heritage impact of these works have been minimised through great care of detailed design. The remaining harm is outweighed by the heritage benefits associated with both removing harmful piecemeal modern attempts to resolve MEP issues and the fundamental benefit of keeping the Town Hall in its optimum viable use. Wider public benefits include the provision of reasonable services to facilitate public interest offices, as well as health benefits associated with providing a sufficiently serviced space.

CUMULATIVE IMPACT – Major Beneficial

Appendix B – Email extract re-boxing in sizing

The design of the perimeter boxing in solutions have been developed by Arup as the building services engineer and Purcell as the architect / heritage consultant in collaboration with MCC as the building owner / operator and Engie as the current (and potentially future) building maintainer. The perimeter boxing-in acts as a methodology for providing 21st century servicing needs in to a 19th century building in a manner which has minimal heritage impact and is reversible. The boxing-in has been designed to be as slim as possible, whilst ensuring the necessary clearance and access is provided to ensure the safe operation and maintenance of the equipment housed within. The perimeter boxing-in also provides a future-proof ‘conduit’ to allow modifications and enhancements to be made to the services installation over its design life without impacting the heritage building fabric – such examples might include integrating additional ICT or audio-visual cabling and accessories.

Services typically housed within the perimeter boxing-in include:

- ICT cabling and patch panels
- ICT active equipment such as network switches
- Audio-visual cabling
- Natural ventilation and where necessary mechanical ventilation installations
- Heating and where necessary cooling installations
- Wireless transmitters for wireless electronic security installations
- Wireless transmitters for wireless building management system devices
- Power and data outlets at an accessible height
- Pipework installations
- Cabling and containment installations.

Tom Waterson (MEP Lead) Arup

Principal Electrical Engineer | Building Engineering

MEng(Hons) CEng MIET

I have been in discussion with a number of parties relating to this matter I can respond as follows.

In relation to the size of the boxing in detailing for the perimeter modules, we advise that we do not decrease the size of the units, this decision has been made in conjunction with NGB project team members , Lendlease and MCC facilities maintenance team members following on from a site demonstration which was recorded and uploaded onto Aconex highlighting the complexities of the maintenance of the systems encased in the perimeter boxing in detail.

Maintainability and future proofing of these spaces is key to the success of this design, especially with the number of maintainable items that need be sited inside these boxing in modules, we need to protect the asset moving forward to minimise the number of interaction points required to the final fixed structure.

Please bear in mind that the services that are now being installed into the perimeter modules are have a greater maintenance requirement that the previous incumbent scheme, there are a greater number of systems encased, therefore these areas will be accessed at a higher frequency level.

By reducing the overall size, more of the outer skin of the module may have to be removed to access difficult to reach services, this would have an adverse effect of the overall aesthetics of the rooms and an increased risk of damage to any panels that could have to be removed during the process.

In relation to future proofing any reduction in the overall dimensions would leave no room for expansion or change which again would lead to possible costs in the future for any changes that may happen.

Regards

Darren O’Connor CQP MCQI

Quality / Planning Lead

Engineering

Client responses –

Just to confirm that I completely agree and support your comments.

FM and our engineering team have been consulted on the design for the perimeter boxing in. There are real concerns with the current design that access and maintenance is already going to be a challenge, and leaves little space to work in.

Unless the engineering team is able to access these services effectively, it can only be to the detriment of the building as a whole. This is a solution that needs to last for the next 50 years, and work day to day in maintenance and repairs situations.

We understand there are constraints in this heritage building, but the FM team needs sufficient space to look after it properly. The current solution we accept as a pragmatic compromise, which leaves little room for maneuver, and one that we understand is due to the heritage environment.

Many thanks,

Carl

Our Town Hall Project has adopted Soft Landings to create a golden thread linking the Design, Construct and Operational stages to ensure the OTH Building will be operationally ready from day one of occupation. The following extracts are taken from the OTH Project Management Contractor Specification, which emphasise the OTH Projects commitment to linking the design, construction and operational stages to enhance the quality of the OTH operational life and the longevity of the OTH.

- Beginning with the end in mind

- Setting and retaining a one team culture (across design, construction and operational teams) of honesty, sharing risks and innovation
- Focusing on the delivery of an operational building on day one.
- Engendering a mind-set within the design team and supply chain to always consider end use and operational outcomes of designs and installations as well as design quality and aesthetics.
- The delivery of robust engineering systems that facilitate efficient operation, management and maintenance.
- Inception and Briefing. Development of soft landings outcomes and targets, fixing decisions, use of lessons learnt from previous Projects to help inform the brief;*
- Design Development and review: Collaborative development of design with input from key stakeholders. Reality check on the design with respect to usability, life cycle costings, operation and maintenance.
- Construction and Pre-handover. Ensure technical/facilities staff are fully familiar with the building and its systems and that the building is operationally ready.
- Stage 4 & 5: Aftercare. The Aftercare Team will provide information and support to occupiers.....and to ensure the occupiers and facilities managers understand how to control and efficiently use its building.

During the pre-construction period, the Management Contractor will collaborate with the Employer to establish a Building Operational Team (BOT) to consist of key players from the Project Team and the Employer’s operational team, including, but not limited to the Building Services Coordinator, the consultant engineer, the supervising commissioning engineer, the Employer’s Lead Engineer and members of the operational team. The remit of BOT will be to review operational practices, including developing an understanding of design intent for a range of installations including;

- Heritage assets (environmental conditions during the Works and upon completion)

- Building Services within areas of Heritage value
- Building fabric and finishes
- Consideration of end use and operational outcomes to include:
- Access and maintenance (requirements and strategies)
- The relationship between constructors and maintainers
- Engage with the stakeholders to share its knowledge and value its input
- Develop a culture of innovation and collaboration to share Project knowledge
- Commitment to planning for building readiness

Liam Brady

Senior Client Project Manager

Our Town Hall Project

Growth and Neighbourhoods

Manchester City Council