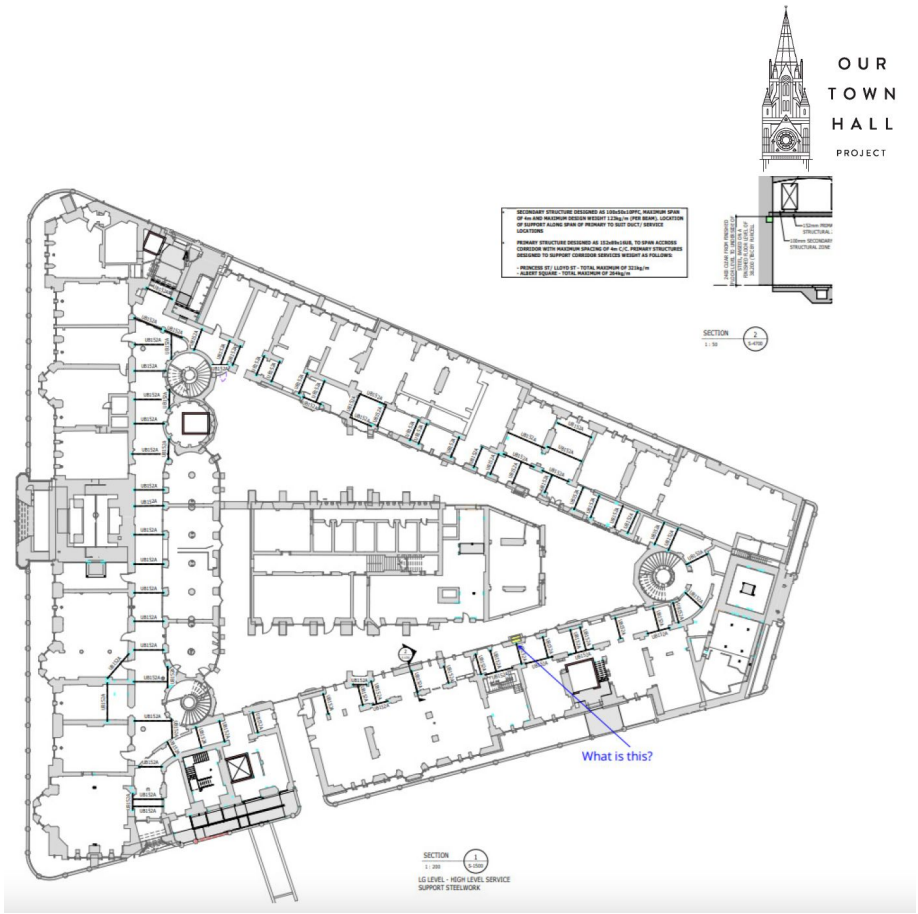


Our Town Hall

Same-site reuse in historic public town hall

About *- Lendlease employed the FCRBE project in becoming a testbed opportunity to disseminate material reuse across the company portfolio. It aims to shape a reuse strategy to indoctrinate widespread reuse practices, future proof existing reclaimed material stock and regulate material circularity between its building projects.*

Challenges *- Lendlease highlighted that contractor resistance and uncompromising programming were prevalent challenges that impact the regular use of reclaimed materials across their building portfolio. It was, therefore keen to explore suitable reclamation pathways for identified materials and with the support of the dealer network and FCRBE toolkit, look to same-site and inter-site reuse wherever possible.*

Materials involved *- brick, steel, timber*

MANCHESTER - UK - 2021
Project Size : XL - Type of procurement : Public
Interreg FCRBE partner : SALVO - Project Owner : Manchester City Council - Project Manager : Lendlease

◄ ***Our Town Hall under restoration 2021***

Lendlease is a global property management company specialising in multinational construction, property and infrastructure development with an extensive portfolio in large scale commercial development. In 2016, the company was appointed as the management contractor for the £330 million Manchester 'Our Town Hall' (OTH) restoration project.

Despite its commitment to responding to climate change and administering measures to reduce carbon footprint, the company felt it has sometimes overlooked reuse as a fundamental opportunity within its building projects and would therefore use the Our Town Hall project as a testbed opportunity to stimulate reuse practices across its company portfolio.

WHAT IT'S ABOUT

The volume of material extracted and replaced during the OTH renovation was twofold and despite efforts to wholly preserve the integrity and heritage of the building, the reuse of materials in publicly accessible areas stimulated material EoL, safety and restorative cost concerns. Lendlease were, therefore, keen to explore suitable reclamation pathways for identified materials with the support of the dealer network and look to same-site and inter-site reuse wherever possible.

OTH was designed by architect Alfred Waterhouse and opened in 1877. It is one of Manchester's much-loved central city landmarks and is now the ceremonial headquarters of the Manchester City Council authority.

OBJECTIVES

With the support of the FCRBE Coordinator, tailored assistance was issued within the OTH framework in the following:

- Support Lendlease in identifying the main reclamation dealers in Manchester, Greater Manchester and North West England
- Equip Lendlease with the knowledge, tools and tailored assistance to conduct an in-depth building audit to identifying materials with reuse potential
- Access valuable resources for material extraction, integration and same-site reuse
- Learn to navigate the futuREuse UK & Ireland directory
- Intermediary between Lendlease and the reclamation trade, offering guidance and support on reclaimed materials

An example of various reclaimed timber, allocated for same-site reuse.

RECLAMATION PATHWAYS

Through the course of the pilot project, multiple reclamation pathways were closely monitored under the following modus operandi: Same-site reuse, where extracted material was cleaned and reinstalled into its original or a new location within the Manchester Town Hall building; site-to-site reuse identified the opportunity for reclaimed materials extracted from Manchester Town Hall to be cleaned and reused between multiple sites under the possession of Manchester City Council; and the dealer network pathway directed any unused reclaimed material to reclamation dealers located in the North West of England.

Same-site reuse

A route to affordability assessed the available options to reuse existing metalwork fixings on-site in place of installing new service fixings. The building's lower ground level contained a crash deck system that formed part of the original bomb shelter and consisted of 30 tonnes of steel posts and metal sheet covers.

Materials reused
Brick - 154 tonnes
Sectional timber - 30 tonnes

Material reclaimed
Various sources of timber - 2 tonnes

OUR TOWN HALL
ROUTE TO AFFORDABILITY
REUSING STEEL SECTIONS

ITEM REF	XX	
NAME	REUSING STEEL SECTIONS	
CLUSTER	MEP/ STRUCTURAL	
DESCRIPTION OF CHANGE		
KEY CHANGES	**OMIT / CHANGE**	**ADD**
	NEW STEEL SECTIONS	SAND BLASTING, CUTTING AND FIRE RATING OF EXISTING STEEL
	REMOVAL OF EXISTING STEEL FROM SITE AND STORAGE	TEMPORARY SITE STORAGE
DESIGN IMPACT	STRUCTURAL	SUSTAINABILITY
		HERITAGE
TARGET SAVING		

Same-site reuse cont'd

The FCRBE coordinator's response to the decision-making process was to employ a reclaimed steel specialist to exchange guidance on the secondary use of sectional steel within the project. Roy Fishwick from ***Cleveland Steel*** was introduced into the project.

Two approaches were challenged here, where the steel frame could be reused in situ to benefit the heritage and sustainability perspective;

Lower ground corridor service supports:
This proposal was to utilise the steel sections currently scoped to be removed from the site instead of purchasing new steel for the site. To do this, the steels would need to be sandblasted, cut to lengths and painted with intumescence. Temporary site (or off-site) storage during the works to the substructure was also available.

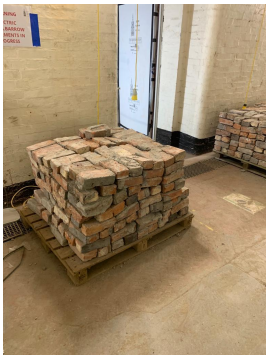
Services support within storage spaces:
The lower ground contains a multitude of fixed heritage assets associated with historic bomb shelters and ventilation systems. There was an opportunity to reuse existing steel frames in situ to suspend local services.

The RSJ steels were produced by The Earl of Dudleys 'Round Oak Works' in the late 1800s, where during the Industrial Revolution, the majority of iron-making in the world was carried out within 32 kilometres of round oak.

Dealer network and same site reuse

Proving to be the most challenging reuse ambition under the OTH framework, a transitional approach took place to define one or more suitable reclamation pathways for the 476,385 bricks located in the low-level building interior. The bricks comprised of 154 tonnes of traditional handmade red brick and common flettons brick.

The traditional handmade red brick was typical for its victorian era with a textured face, pale pink and orange in colour, slightly irregular in shape and measured up to (l) 228 x (w) 108 x (h) 64mm. The common flettons brick had a hard smooth-face, pink-red in colour and measured approximately (l) 215 mm x (w) 102mm x (h) 65mm, however, a proportion of brick was painted white which made visual testing slightly challenging. Both types of brick were set in old lime mortar.



The growth for same site brick reuse was impacted by rigid programming as the brick removal, cleaning and reinstallation exceeded the construction timescales. The pilot coordinator challenged proposals to recycle the brick as hardcore, advocating reuse over recycling to minimise carbon-intensive processes on a brick that had structural integrity.

Furthermore, a strong business case was put forward to prove the viability of reclaiming the bricks and the pilot associate introduced Lendlease to several reclaimed brick specialists in the North West of England to assess the brick stock to offer a purchase value. It was agreed that any unused bricks would be sold back to a local reclamation dealer identified through the futuREuse UK and Ireland 500 directory.

- ***Lendlease auditing existing historic and new brick. The extracted brick was cleaned and sorted ready to be reused.***

The futuREuse UK & Ireland 500 directory was frequently used in order to find suitable purchasers for the reclaimed materials. Several North West dealers were identified and aligned with the Lendlease over the course of the FCRBE project to issue material guidance, direction on reuse potential and capacity to sell material batches to the trade. The combined vision between the construction actors drove the success of reuse within the OTH project. Lendlease employed a highly productive Sustainability Manager who was able to steer the multiple reuse ambitions under the FCRBE framework and engaged in regular contact with the pilot coordinator to fulfil its reuse ambitions.

RESULTS & PROSPECTS

The reuse opportunities identified during the course of the project were plentiful, however, significantly more material could have been circulated if reuse methods were woven into the early stages of planning and procurement. Lendlease recognised the value of a preliminary consultation with a reuse specialist to maximise material resourcefulness and commended the low-risk process of material exchange between the demolition contractor and reclamation dealer.

Flexibility between the reclamation pathways was paramount to the success of reuse within the OTH project because, as it has been established, reclaiming materials is not always a ‘one size fits all’ case. Allowing the capacity to shift between the pathways, and with ease, provides a greater opportunity to foster reuse and make a significant shift to unlocking the whole salvage process.

The construction actors agreed that risk averse barriers could be surpassed with the introduction of internal material testing and preliminary consultation with a reuse specialist.

The pilot coordinator was invited for around the table discussions with the broader Lendlease sustainability team to assess the reuse potential in other projects across their portfolio and engage in the material sourcing workstream specific to reclaimable materials.

- ***futuREuse UK & Ireland 500 directory via www.salvoweb.com***