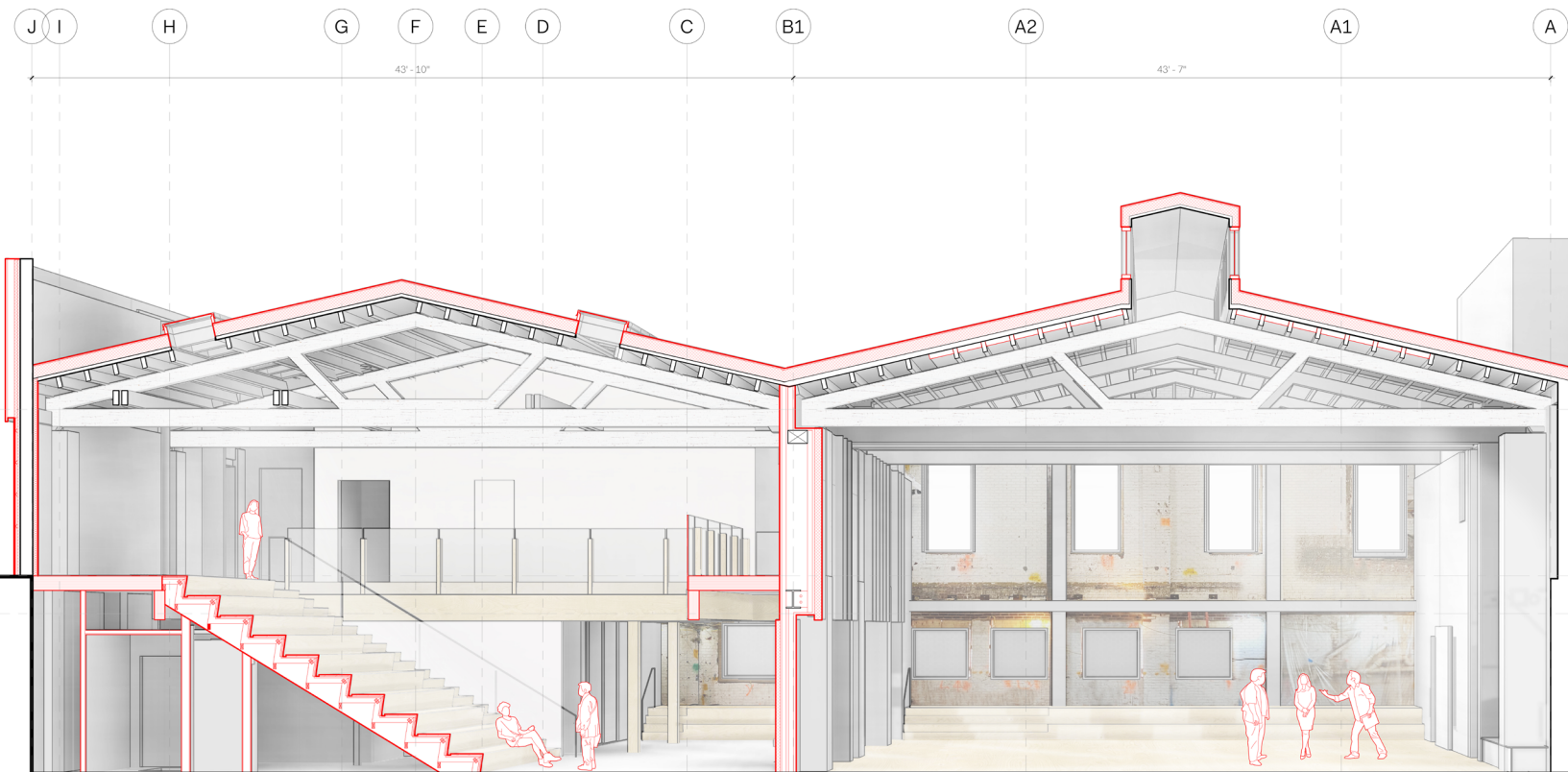


# Sustainable Theatrical Space

Measures to consider when renovating an existing, or even creating new, Theatrical Space. Examples taken from the renovation of Mercury Store in the Gowanus Neighborhood of Brooklyn.



# Adaptive Reuse

Re-using an existing building is always more sustainable than tearing one down.

This particular building near the Gowanus Canal in Brooklyn had three previous lives. Initially built in the early 1900's, it was a metal foundry for many years. When industrial production migrated out of New York City, it became a warehouse and storage space. Prior to Mercury Store's purchase of the building, it was being rented as artist studios and office space.

By this point, much of the building was in a state of disrepair. The space was compartmentalized into dark rooms and corridors, and the roof was in need of substantial repair. Yet the original beauty of this brick and heavy timber structure still shone through.







CO Adaptive set out to restore the character of the original building, exposing and honoring the beautiful wood trusses and articulating the double A-frame, while adapting the building to meet the new programmatic requirements of a theatrical studio space.



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## Material Reuse

Whenever materials and elements are removed from a space, it is important to consider whether they have any useful life left in them. Could they be re-purposed to serve a new function or donated for reuse? Keeping raw materials in use for as long as possible, and avoiding transportation to landfill, is the ultimate goal.

Collaboration with the entire construction team is essential to the repurposing of materials. The Construction Manager on the project, [Yorke Construction](#), navigated the additional complexity that comes with planning for re-use of materials.





In our project, several existing materials were re-purposed to become the primary characteristics for the building. The existing structural timber that was removed to create our double height space were salvaged. The construction team cut the wood joists down on site and transformed them into guardrail posts framing the dramatic Entry Hall stair. The weathered finish and layers of paint were sealed with a clear coat, allowing the history of the building to shine through.



Acoustic separation and absorption is critical in this big, open space of the Large Studio. The existing joists were used as separation elements between the micro-perforated acoustic panels, adding. Using re-purposed material here allowed us to add rhythm and texture to the large wall in the main studio.







We carefully salvaged the existing industrial fire doors, to be used within the new layout.

At the beginning of the project, we measured and documented the existing doors and then designed key spaces around them. The same strategy could be used for doors, or other architectural elements, saved from the building or from architectural salvage resellers.







## Continued Life

Selecting new materials for a project is also an opportunity to consider present and future re-use. For example, it is better to select hardwood flooring over engineered wood flooring which only has a finish on the top layer. Hardwood flooring can be refinished almost indefinitely or, if removed from the space, can be re-purposed into new wood products. Additionally, there are numerous manufacturers that offer reclaimed and recycled materials for use in your projects.

Any removed lumber that did not have a direct use in our project was given to Sawkill - a wood flooring and paneling company located in Brooklyn that specializes in locally sourced reclaimed wood.





## Mass Timber

To accomplish the owners vision and our design goals, the building needed to maintain its heavy timber construction classification. For this reason, we decided to use CLT (Cross Laminated Timber) for the new floor plates that were inserted on the east side of the building.

CLT is an interesting material for many reasons, including its inherent carbon sequestering qualities and its beautiful exposed wood finish. As compared to more standard structural systems like concrete or steel, Mass Timber has much lower embodied carbon, and since it does not need to be covered with drywall to maintain its fire rating, it saves on additional material.





Working with CLT allowed us to have large column spans and an therefore and open layout that worked well with our programmatic requirements. The systems are exposed on the underside of the beautiful exposed wood, lending warmth to the lower spaces. Working with this material required careful planning of all the sprinkler runs, HVAC ductwork and electrical conduit, but resulted in a very honest and clean expression of the infrastructure within the building. The CLT sandwich is exposed with our atrium railing design, such that the build-up is read when sitting on the bleachers or walking down the stairs.





## Resiliency and Demountability

Our project sits in a low-lying area near the Gowanus, where the city's sewer system is often overwhelmed. The team decided that the theatrical dance floor on the lower level should be demountable, allowing for it to be removed during future storm events. Each panel can be removed and stacked in a protected space, avoiding water damage caused by flooding.

[Hudson Scenic](#) - who are well versed in building sets for Broadway - developed the demountable design and fabricated it for installation in the space.

The idea creates a potential template for more sustainable scenic design. Designing with demountability also means that the system could be relocated to a new space in the future. Additionally, materials can easily be separated, recycled and reused in the future.





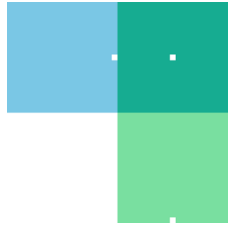
# Lighting

Daylighting was prioritized throughout all spaces in the building, enabling the sun's energy to offset the use of artificial lighting.

All lighting throughout the space was designed to be LED, with maximum flexibility in mind. Vacancy sensors are integral to the system, ensuring that when spaces are not used, lighting is automatically shut off.







# Please Reach Out With Questions!

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## Project Team:

Client: Mercury Store

Construction Manager: Yorke Construction Corporation

Demountable Floor: Hudson Scenic

Acoustic and Stage Engineering: Charcoal Blue

Structural Engineer: A Degree of Freedom Structural Engineers

MEP Engineer: ABS Engineering

Lighting Consultant: SDA Lighting

Wayfinding Consultant: Two Twelve