THESIS BOOK

ADAPTIVE REUSE OF INDUSTRIAL BUILDINGS:

ANALYSIS OF FOUR TYPOLOGIES OF ADAPTIVE REUSE

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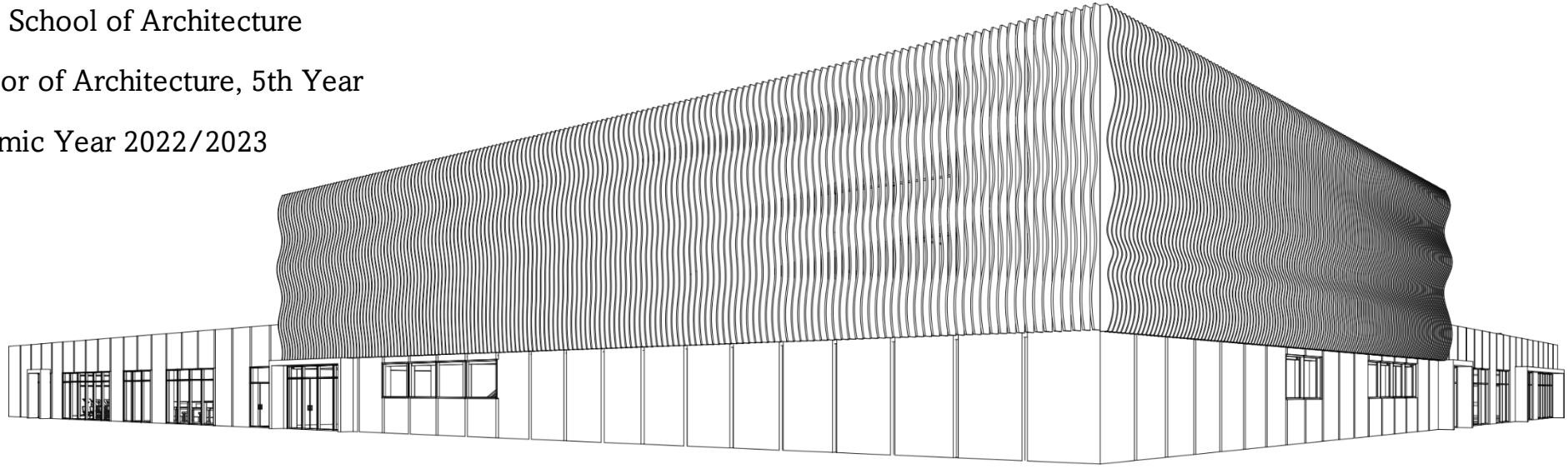

Acknowledgements

This thesis is without doubt the sum of more than its parts and would and could not exist without the support of those around me.

I'd like to thank Sima Rouholamin. Who helped me with my final year in a new group and college and has inspired this thesis.

Also, to all of the tutors and lecturers I have encountered over the year, especially Calbhac O'Carroll and Johanna Cleary who have guided and pushed me throughout this project and final year.

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Finally, to my parents for supporting myself and the thesis as much as you did. I couldn't have produced this work without any of you.

" I feel this is very important for us to have serene buildings because our civilization is chaotic as it is, you see; our whole machine age has brought about a chaos that has to be somehow counterbalanced. "

Minoru Yamasaki

Contents:

The Introduction

This thesis booklet is a reflective investigation of an industrial building's adaptive reuse options on the Dublin Industrial Estate. It explores the consideration of four different options for the adaptive reuse of this industrial structure: preservation, refurbishment, conversion, and demolition. This thoughtful research attempts to go through the complications of reusing industrial structures, taking into account the specific environment of the Dublin Industrial Estate as well as the changing demands of the twenty-first century.

Adaptive reuse has evolved as a significant tool in urban planning and design, providing a sustainable and innovative method for restoring old structures. In the face of rising urbanization and the pressing need for environmental protection, adaptive reuse of industrial buildings gives a compelling chance of reusing old facilities rather than surrendering to demolition and new construction. This project aims to critically analyse the options for adaptive reuse of the industrial construction available in the Dublin Industrial Estate and to assess their viability, advantages, and problems.

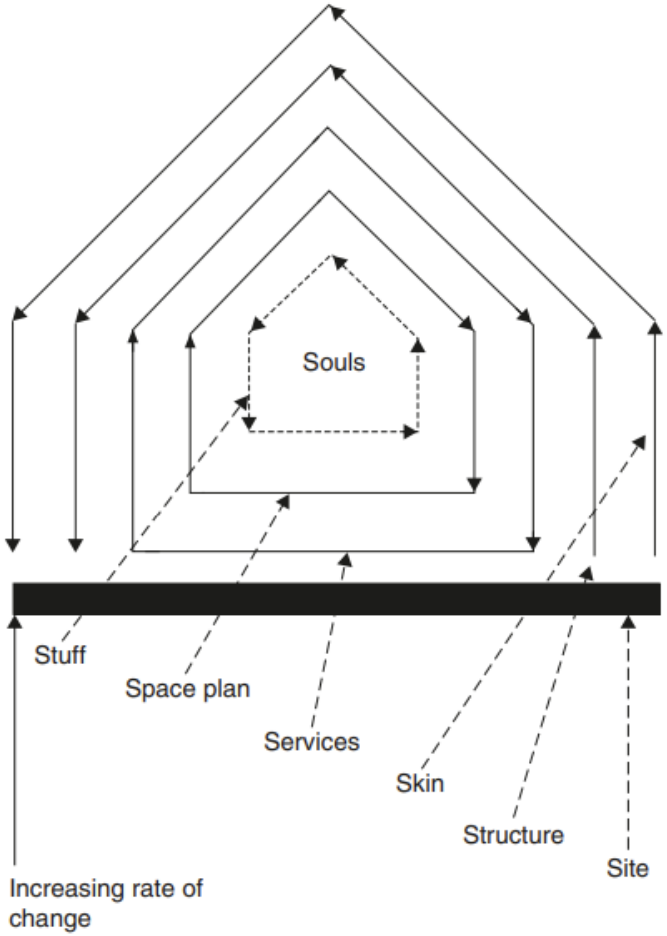
[Fig.1 Creative Adaptive Reuse Projects]

The Setting

The Options

The first option to be looked at is preservation, which places a focus on keeping the building's historical and architectural components. This strategy acknowledges the site's industrial legacy while revitalizing the building by keeping its original characteristics and features. The second option, a refurbishment, focuses on modernizing the current structure to improve its use and sustainability. By addressing concerns like energy efficiency, accessibility, and safety, this approach aims to maximize the building's performance. Conversion, which involves renovating the industrial facility for a different purpose or function, is the third alternative being considered. With this strategy, the space may be creatively altered to fit the changing demands of the neighbourhood and the market. The option of demolishing the industrial building will then be considered, taking into account the conditions in which it would be regarded unsuitable for adaptive reuse as well as the advantages and disadvantages of starting over.

This project seeks to add to the larger conversation on sustainable urban development and the preservation of industrial history by focusing on these possibilities and their implications within the Dublin Industrial Estate. It is a call to action to investigate creative and considerate strategies for the adaptive reuse of industrial structures, recognizing their importance as palpable memories of our industrial past while paving the way for a more robust and sustainable future.

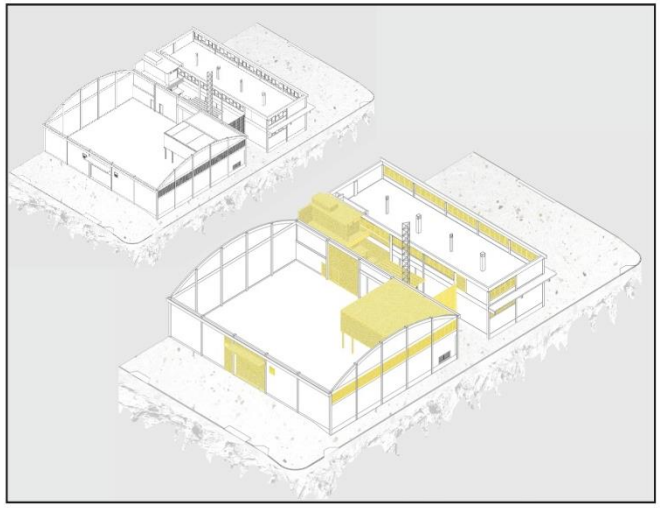


[Fig. 2. Shearing layers of change (Brand, 1994)]

PRESERVATION

CONVERSION

REFURBISHMENT



DEMOLITION

[Fig.3 Thesis Objectives/Precedent]

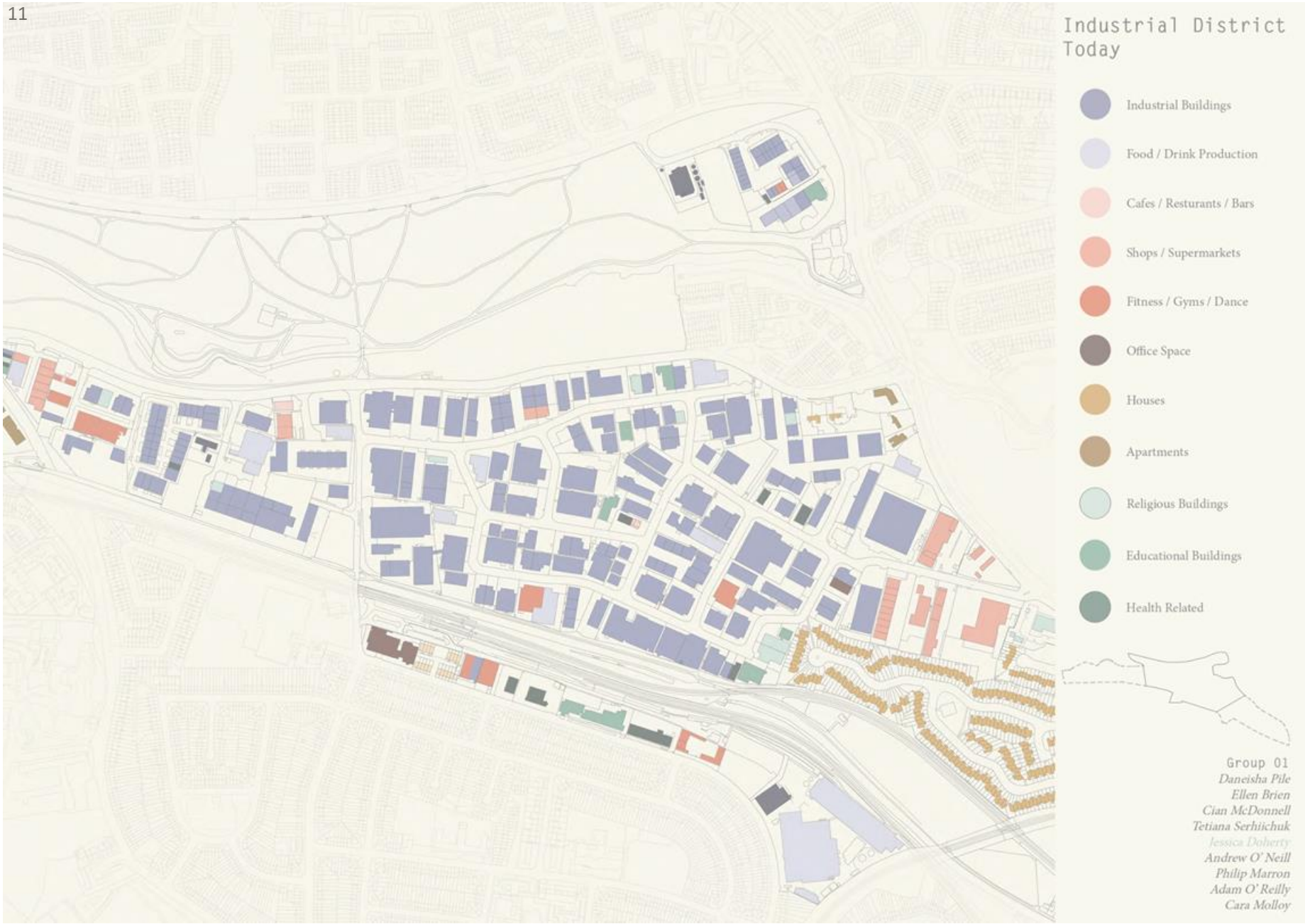
Dublin Industrial Estate

Ireland's Dublin Industrial Estate offers an exciting possibility for the adaptive reuse of its industrial structures. These massive structures, which were initially intended for manufacturing and industrial uses, have a great deal of potential for modification and repurposing by shifting societal and economic demands.

The estate's prime location, substantial infrastructure, and pre-existing industrial structures offer a strong platform for initiatives including adaptive reuse. These structures may be creatively repurposed to create cutting-edge workplaces like tech hubs, creative studios, coworking spaces, or research & development facilities. The estate may promote entrepreneurship, draw startups, and aid the expansion of knowledge-based enterprises by reusing old buildings.

Additionally, adaptive reuse encourages sustainability by lowering environmental effects and the need for new buildings. These structures' sustainability profiles can be improved by retrofitting them with energy-efficient technologies and adopting green design concepts. With their strong structure and distinctive architecture, the industrial buildings that already exist on the Dublin Industrial Estate provide a fascinating canvas for efforts in adaptive reuse. These buildings may be renovated to support the estate's and the greater Dublin area's economic, social, and environmental sustainability via careful planning, community involvement, and creative vision.

[Fig.4 Map of Dublin Industrial Estate]

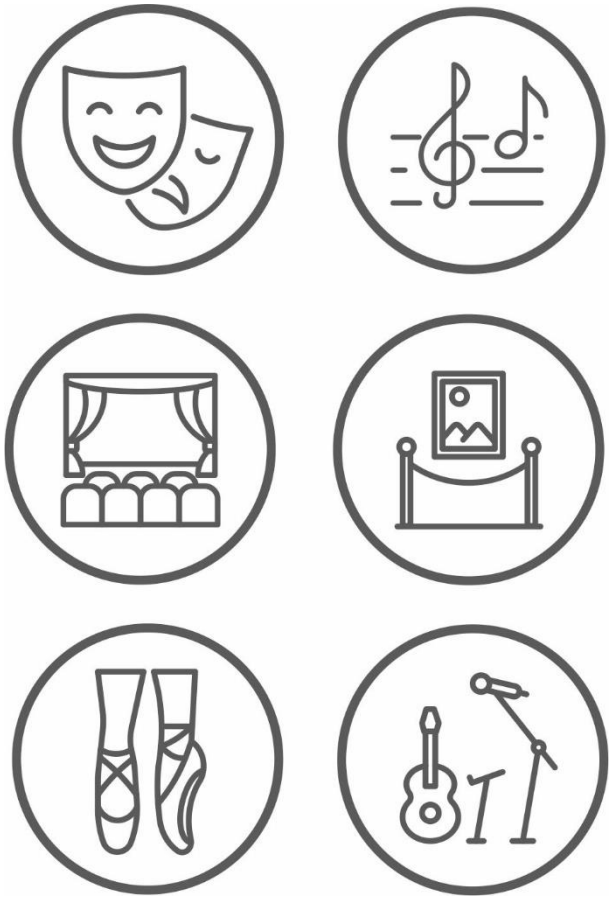


[Fig.5 Types of the Industrial Buildings in Dublin Industrial Estate]

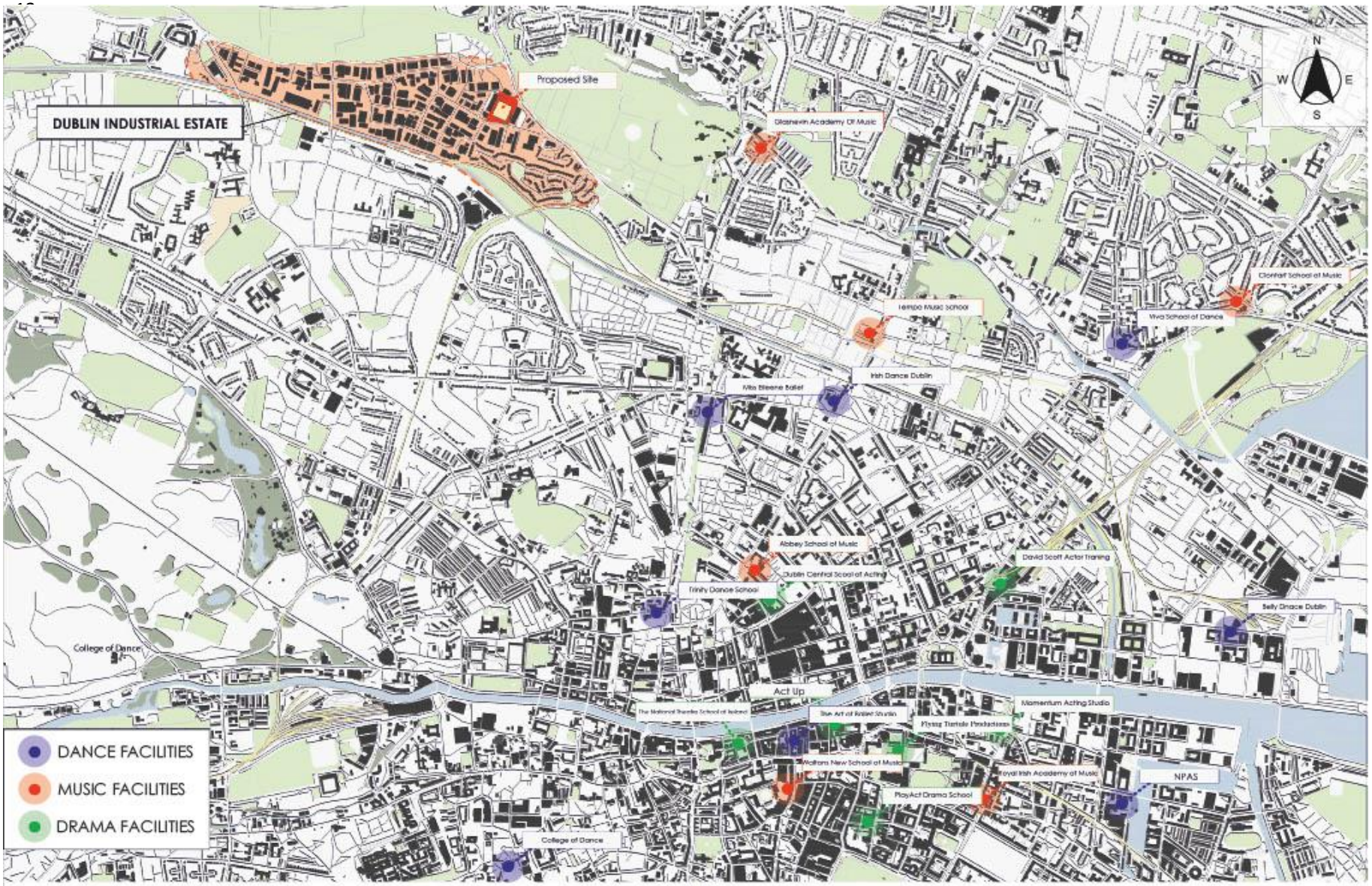
Dublin is renowned for its thriving creative sector and diverse cultural offerings. The permanent infrastructure that supports a variety of cultural endeavours is something Dublin is proud of. A large variety of creative disciplines, including theatre, music, dance, visual arts, and schools of the arts, are served by the city's several permanent performance spaces, which are dispersed across its dynamic environment. These specialized spaces, such as theatres, galleries, and music halls, give national and international artists organized platforms to display their abilities. They support planned and curated artistic expressions and provide stability and continuity for Dublin's booming arts scene.

Dublin is aware of the importance of temporary performance venues in enhancing its artistic community. These locations are essential to the city's creative character because they enable impromptu and lively exhibitions of artistic genius. As performers turn vacant places into spectacular settings, Dublin's streets come to life. However, the lack of arts institutions reduces the chances for aspiring artists to acquire a formal education in the fields of their choice. For those looking for an organized manner to improve their artistic abilities and pursue creative jobs, this presents a challenge. As a result, some aspiring artists might need to look into alternate options or pursue study elsewhere.

For Dublin to continue to foster its thriving creative community and preserve its status as a centre of artistic innovation, efforts to close this gap in schools of the arts and offer more accessible and diversified educational possibilities are essential.



[Fig.6 Picture of Different Types of Art]



MAP OF ART SCHOOL IN DUBLIN

[Fig.7 Map of the Analysis of the Schools of Arts in Dublin]

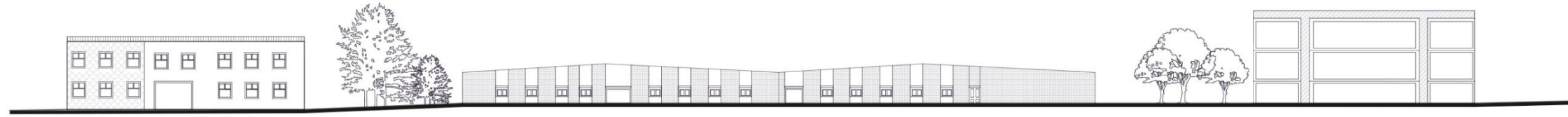
Analysis of the Site Location [Fig 8 Schemes of Site Location]

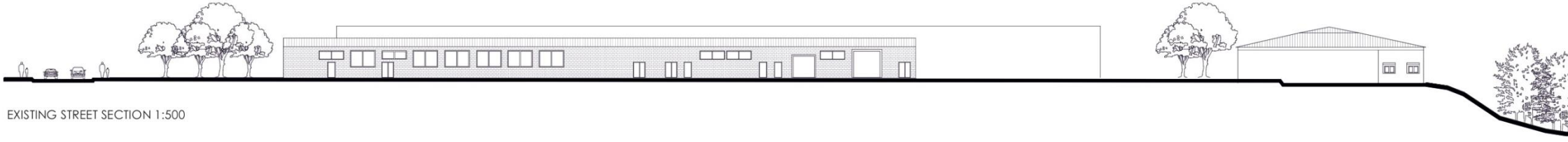
The Site

The site is situated on Slaney Road, which serves as Dublin Industrial Estate's primary entryway. The city centre and the M50 freeway are both equally far from the location. This is a key location for servicing both the city and nationwide areas via the national road network because off-peak drive times are less than 10 minutes. The Port Tunnel and Dublin Airport are both within 20 minutes of the property. With increased retail and wholesale uses in the estate, the area has seen a recent increase in utilization, which supports the location's strength. Among the nearby tenants are Lidl, Woodies DIY, and Chadwick's. The Broombridge Train and Luas Stations are close by.

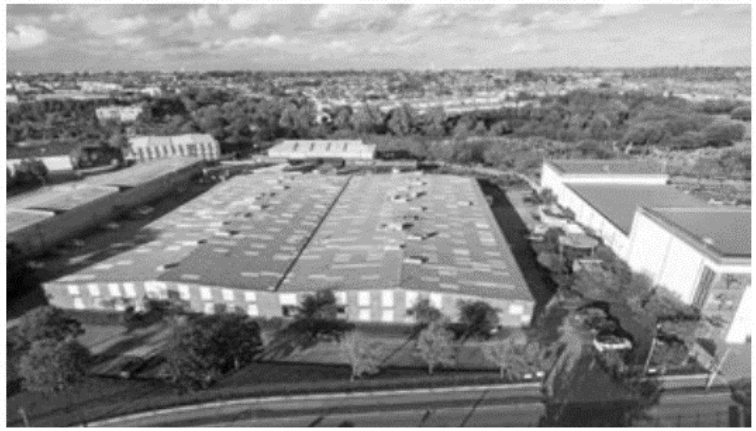
[Fig.9 Site Plan]

[Fig.10 Existing Site Section]





[Fig 11 Photo of the Site]



The Brief

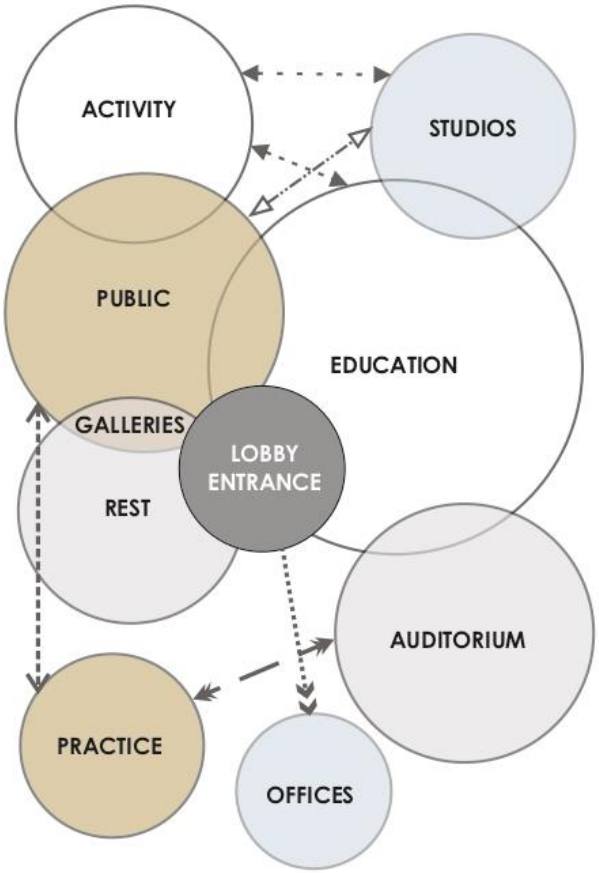
The goal of the project of adaptive reuse of an industrial building for the School of Arts is to turn an old industrial building into a cutting-edge learning environment that supports a variety of artistic disciplines. With a particular focus on theatre education, the project aims to repurpose the industrial structure and give it new life. It does this by creating a separate space for the School of Arts.

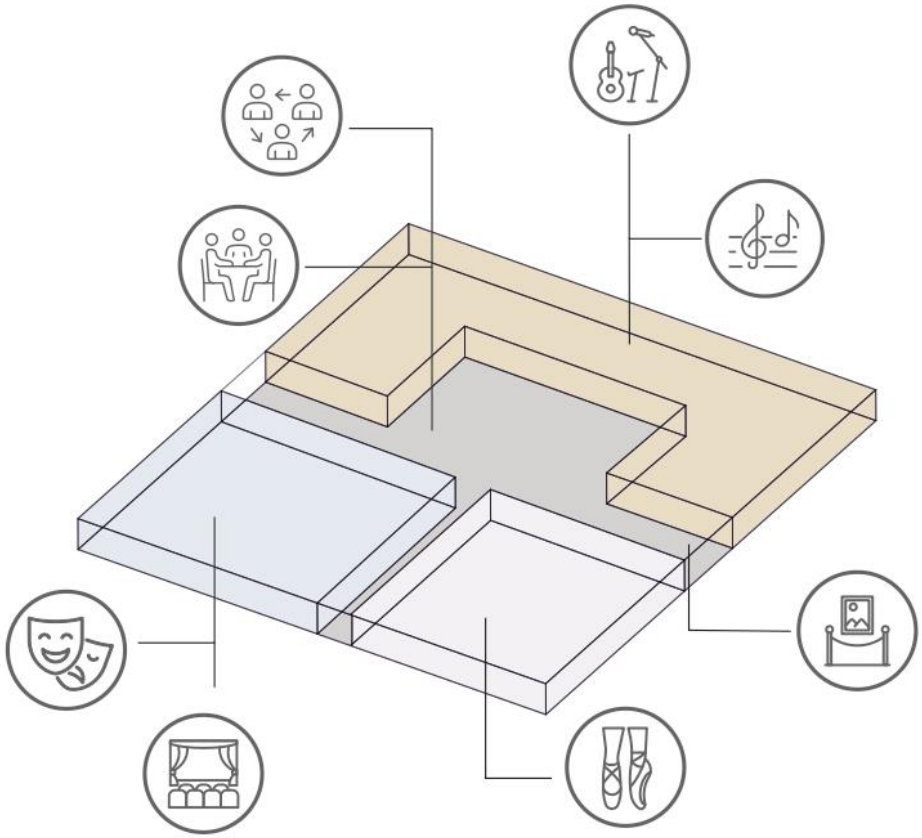
The major goal of the project is to build a contemporary space that encourages artistic expression, collaboration, and innovation among students and professors. Specialized areas for dance, music, and theatre will be included in the converted structure, including dance studios, music practice rooms, drama classrooms, rehearsal spaces, performance halls, administrative offices, and auxiliary facilities. Furthermore, accessibility will be a key consideration, with the building designed to be fully accessible, complying with applicable accessibility standards and regulations.

Additionally, a key feature of the design will be the incorporation of a panel system wall that offers flexibility and adaptability. This innovative wall system will allow for easy reconfiguration of the spaces, enabling the School of Arts to create different layouts and adapt to evolving needs. The panels can be easily moved, added, or removed, providing the flexibility to transform a large rehearsal space into smaller classrooms or vice versa, as well as allowing for various seating arrangements in performance halls.

The School of Arts will be able to adapt the rooms based on certain activities, performances, or teaching requirements due to this panel system wall, which will increase the facility's utility and adaptability. It will enable multidisciplinary cooperation, make transitions between disciplines easier, and foster a vibrant, creative learning environment. The project's goal is to design a space that may change and adapt over time to maintain the building's status as an innovation in Dublin by using this flexible panel system wall.

[Fig.12 Schemes of the Program]



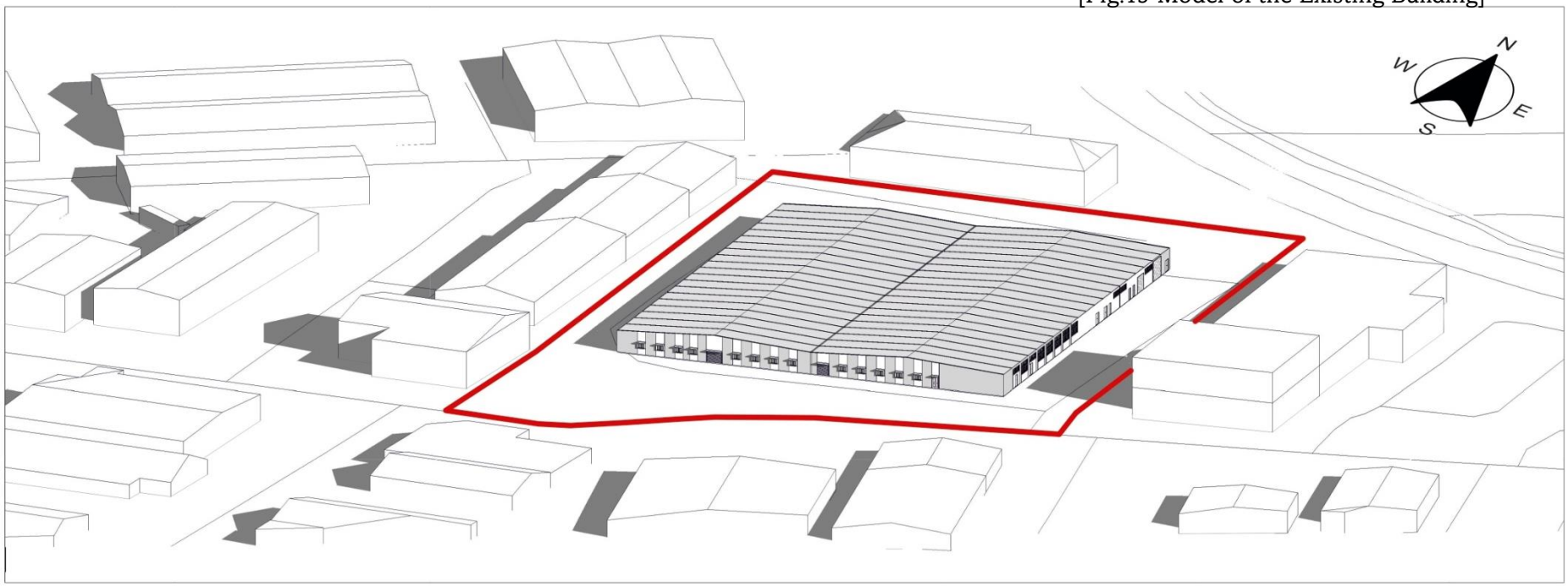


The Strategy

The Existing Building

The property encompasses a detached single-story industrial building situated on an expansive site spanning approximately 1.55 hectares. The site includes a rear yard measuring 0.36 hectares. The structure of the building is a two-bay steel portal frame with concrete block infill walls that reach a height of roughly 3.9 meters at the eaves. The building's floor is made of dustproof concrete, while the roof is built using a double-skin concrete design with translucent roof illumination.

[Fig.13 Model of the Existing Building]



Preservation

Maintaining a place in its current state is preservation. It is based on the supposition that all historic elements, materials, etc. will be preserved and retained in their original condition for as long as it is practicable to maintain or repair them. Preservation places significance on a building's original design as well as its use-related history and past residents, and it presupposes that all traces of these people will be kept with the building's original appearance. Making choices on materials and methodology for preserving an object comes with additional levels of criteria.

Why should we preserve buildings?

- It helps to create a feeling of place and continuity by preserving the historic, architectural, and aesthetic character and heritage of a community or location. Communities need to preserve their identities as suburban sprawl and roadside development make more and more areas resemble one another. A neighbourhood can be defined, and its history hinted at with the help of even one or two spectacular historic buildings. The impact is substantially higher if entire neighbourhoods or rural areas can be saved. A sense of history can help people feel prouder about their town and understand its present.
- It uses resources effectively. By restoring and reusing old structures rather than demolishing them and erecting brand-new ones, historic preservation conserves resources, lowers waste, and saves money. The carbon footprint of a building can be significantly reduced by reusing an existing historic structure rather than demolishing it and creating a new one.
- It can highlight a community's uniqueness and give it more personality or charm. Older structures, neighbourhoods, and landscapes should be preserved since they can influence how a town looks and may even draw tourists. These features may also serve as a source of local pride and inspire subsequent renovations if they are unusual or historically noteworthy.
- It can draw investment and alter the character of a region or community that is losing its appeal. A new residential or commercial development could centre on a renovated structure or area. A place that has been brought back to its former glory might attract tourists and create jobs for locals.

Preservation

This scheme entailed preserving a property while modifying its design to house its current use as an exhibition gallery. The former power plant in Czeladz, was constructed between 1902 and 1908 in the Saturn coal mine complex. It was designed by Josef Pius Dziekonski. It was an independent facility located on the outskirts of the city. It was connected to a hospital, as well as residential and utility buildings. The conversion of the power plant into an art gallery and a venue for events related to the city's and industry's heritage is the result of regeneration efforts. It is a fully developed example of this approach.

The power plant had a complete refurbishment as part of the building's 2013 adaption, retaining the structure of the original facility, including its internal components. During the adaptation, the building's exterior form was kept intact by planning legislation. The construction of a new staircase, using materials that adhered to the historic building's aesthetic tradition, was necessary to comply with fire safety. The interiors still had the original machines from the early 20th century, including an electric generator, converters, a control panel, plumbing, technological components, and an operational overhead crane.

These components now serve as the gallery's backdrop while also being technical exhibitions in themselves. In addition to influencing visitors' experience of the space these historically significant interior features also influence how people move through the space. This former power plant has evolved into a fascinating setting for the display of artwork.

[Fig.14 "Elektrownia" (Power Plant) Contemporary Art Gallery in Czeladz, photo by Michal Pieczka.]

Refurbishment

Cleaning, replacing equipment, and retrofitting are all aspects of refurbishing a facility. Its goal is to increase the structure's sustainability and energy effectiveness. Refurbishment and renovation are closely related since they all work to return a structure to its previous condition.
Which advantages could refurbishment give us?

- Modern work and leisure lifestyle advancements have resulted in a greater proportion of structures becoming obsolete and unnecessary. As a result, there are a lot of buildings that are perfect for renovation projects or even conversion to suit new applications.
- The fact that most buildings are soundly constructed and physically solid seems to be a determining factor in favour of renovation. Although the saying "you should never judge a book by its cover" is well-known, many times a book with a poor cover is never opened. However, in other cases when the structures are thoroughly inspected, the prospective purchasers and developers are dealing with well-built and structurally sound structures. These structures in turn offer the ideal framework for renovation.
- One of the key benefits of refurbishing a building instead of starting from scratch is that it is achievable in much less time. It will usually take a lot longer to complete an entire demolition and construction of a structure than it would to simply repair it.
  This might not always be the case; for instance, if the building needs structural work and/or is unstable, it might turn out that new construction would be preferable because rehabilitating a structure of this nature would be highly time-consuming and expensive. In general, it is thought that a refurbishment job typically takes between 50% and 75% less time to complete than a demolition and new-build project.
- The implications, issues, and concerns associated with global warming are continuously being discussed. The experts continuously advise us that to reduce our rate of depleting our energy resources and slow down global warming, we must reuse, replace, and recycle our current resources much more than we already do. This is due to the world's enormous energy consumption.
  When a building is recycled, a significant amount of energy is saved by choosing refurbishment over demolishing and rebuilding the structure because there is no need to remove raw materials and transform them into a new building.

Refurbishment

This former factory in Orzesze, Poland dates to the 19th century. During the communist era, it was occupied by the ZREMB machine manufacturing plant. Once the plant shut down the factory structures deteriorated. NT Industry, a Danish manufacturer of transportation equipment, took on the project to refurbish the building as its company's new headquarters. The facility has a prominent position in the city and was a significant undertaking.

The former factory structures were modified for new production and office uses. This scheme is distinguished chiefly by its effort to minimise any interference with the original building's structure. The distinctive brickwork has been cleaned and repaired, the terrazzo on the staircases was updated, and the original timber windows in the canteen were repaired. While researching the project, there was an opportunity for the architects to interact with past workers and learn about the site's history. During this process, they also discovered original furniture fittings including an antique drawing board and pieces of machinery including an overhead crane. These pieces of historic installations were retained.

The entire facility was fully insulated and connected to a district heating system. Buildings were fitted-out with contemporary fixtures and new materials, such as the Corten steel sheeting used in the watchtower enclosure. These have been added to complement the original finishes used. In keeping with the concept of zero waste, the client, NT Industry, supplied all the Corten cladding for the facades from material obtained from its waste manufacturing material.

[Fig. 15 NT Industry Polish Headquarters, Poland.]

Conversion

The term "conversion" can refer to a change of function or use from a building's current use, regardless of what that use may be. For instance, a church may be transformed into apartments, a garage could become an office, a lighthouse could become a residence, and so on. Building conversions may necessitate very radical interventions, not only in terms of layout, materials, and sometimes apertures opened or closed in the building fabric, but also potentially significant structural changes. All of this will necessitate a detailed understanding of how structures operate and how they might be modified economically to provide the desired functional and aesthetic outcomes.

What difficulties are associated with converting industrial buildings?

- Projects for industrial conversion typically face one of the biggest challenges from zoning regulations. Large office buildings, shopping centres, and big-box retailers all require commercial zoning that covers regular business use and traffic. However, many cities and towns have separate, designated industrial regions for a variety of reasons. The higher noise concessions, bigger lots, deeper setbacks, and permits for more traffic in industrial zones set them apart. As a result, it could be challenging to persuade a Planning Authority to rezone an industrial building for residential or retail use.

- Industrial buildings in densely populated regions with limited access to office space and rising rental costs are ideal conversion targets. Depending on the intended use for the property in the future, the location will have an impact on its potential growth and future value. The closeness to important transportation hubs and thoroughfares will be critical to identify if the existing operations primarily rely on shipping or transit. Alternatively, for assets that might be converted into office space, residential real estate communities may not be located in proximity to help employee recruitment efforts.

Conversion

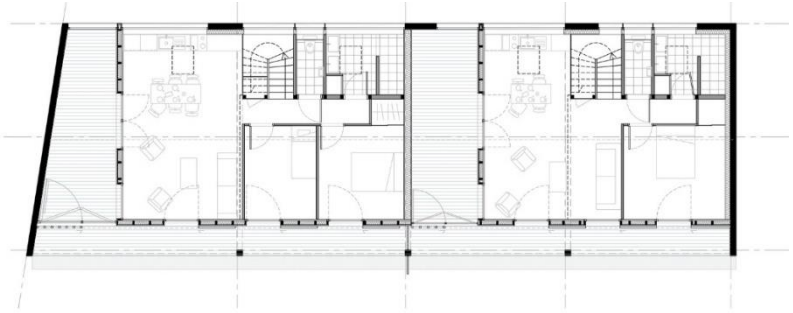
Haddock Architecture was involved with the conversion of a single-oriented derelict building into two semi-detached houses in France. These are in Chantepie, in the south-eastern suburbs of Rennes. The chequered history of the area had resulted in this area of land being transformed from farmland to suburban-type residential use. The former farm outbuildings in the vicinity have adapted well to being converted for use as dwellings.

The shed had been previously converted from agricultural use into a semi-industrial craft shed in the 1980s. The form and structure of the original farm building had almost entirely vanished under miscellaneous extensions and metal cladding during the conversion to a craft shed.

The more recent conversion has stripped back all superfluous additions to allow the original form and structure to be expressed. This has been cleverly adapted to retail all original elements while inserting the new use. As the building is single-oriented that was very challenging to ensure adequate daylight to the entire depth of the building. This has been achieved through the insertion of 'winter gardens' of an equivalent depth to the building. Light enters the winter gardens through the roof, which is made of an environmentally controlled construction of panels and polycarbonate ensuring the comfort of the residents.

The interventions that are part of the residential conversion and remodelling are clearly expressed by the architects. The main facade's sashes, window frames, and slatted windows provide a dynamic architectural image.

[Fig.16 The dwelling, Rennes, France.]



Demolition

Demolition involves destroying, dismantling, or removing something. Building demolition is the process of tearing down a building using planned, controlled demolition techniques when it has served its purpose or reached the end of its useful life. Before beginning the demolition process, safety and preventative measures must be taken into consideration due to the numerous risks and problems that demolition work typically entails.

What are the risks of demolition?

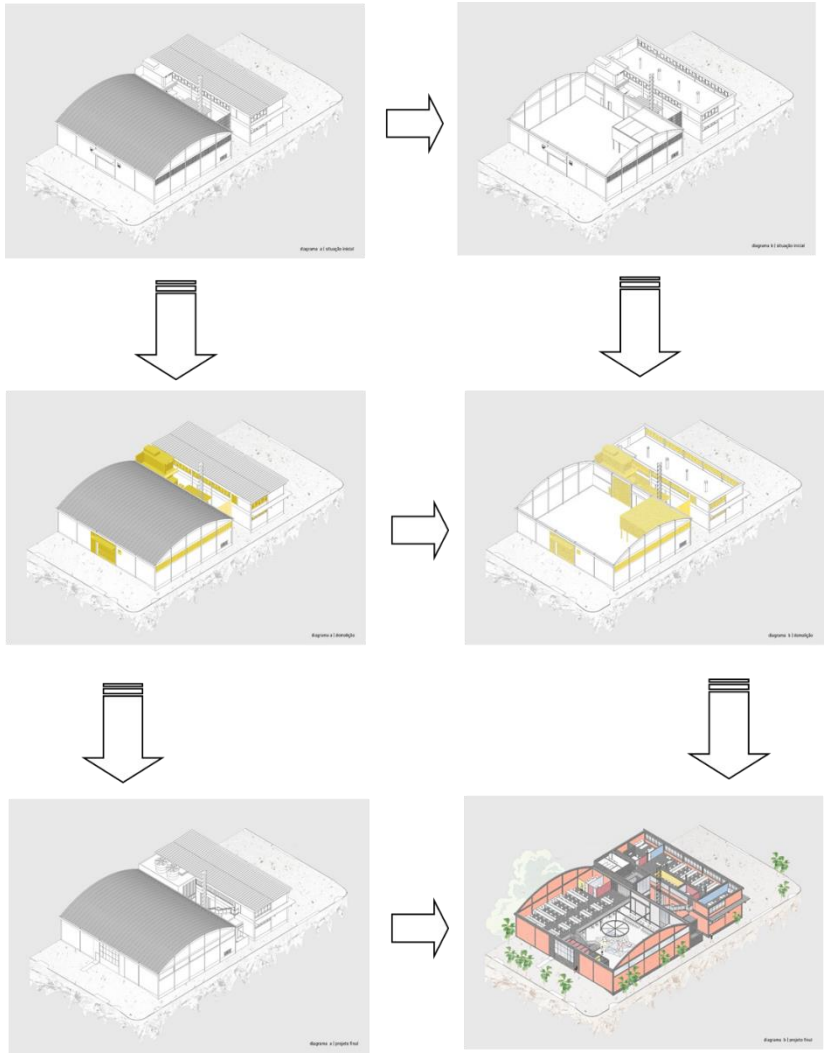
- Before its harmful cancerous and lung-damaging properties were understood, asbestos was frequently utilized in construction. As a result, asbestos fibres are still present in many buildings. Asbestos fibres pose a health risk when released into the air during demolition. If there is asbestos in a property, it must be carefully removed by licensed specialists. The history and location of a building can often be utilized to determine whether asbestos is present in a structure.
- Hazardous chemicals are occasionally a risk during home demolition, though this is typically not an issue. There could be dangerous subsurface tanks or pipes if the building is near a manufacturing facility or an industrial neighbourhood. Although improbable, it is also possible that a property's previous use entailed the use of chemicals.

Demolition

This site is located on the busy Sertório Avenue in Rio Grande do Sul, Brazil. It originally contained a storage warehouse linked to a two-story building along its main street frontage. It was decided that the building between the two main volumes should be demolished following the initial survey of the buildings. As a result, a new central structure was built directly connecting the two buildings. This now houses the new main entrance, which was moved from the main avenue to the quieter side street. A retrofit design was required as a result.

The structure, which currently employs about 100 people, can accommodate up to 235 people in its three separate elements. Due to the significant increase in staff numbers brought on by the building's new use, the new construction also houses toilets, services, and plant rooms. It was decided to paint the new-build interventions in the colour black as a contrast to the high-quality brick walls of the retained structures.

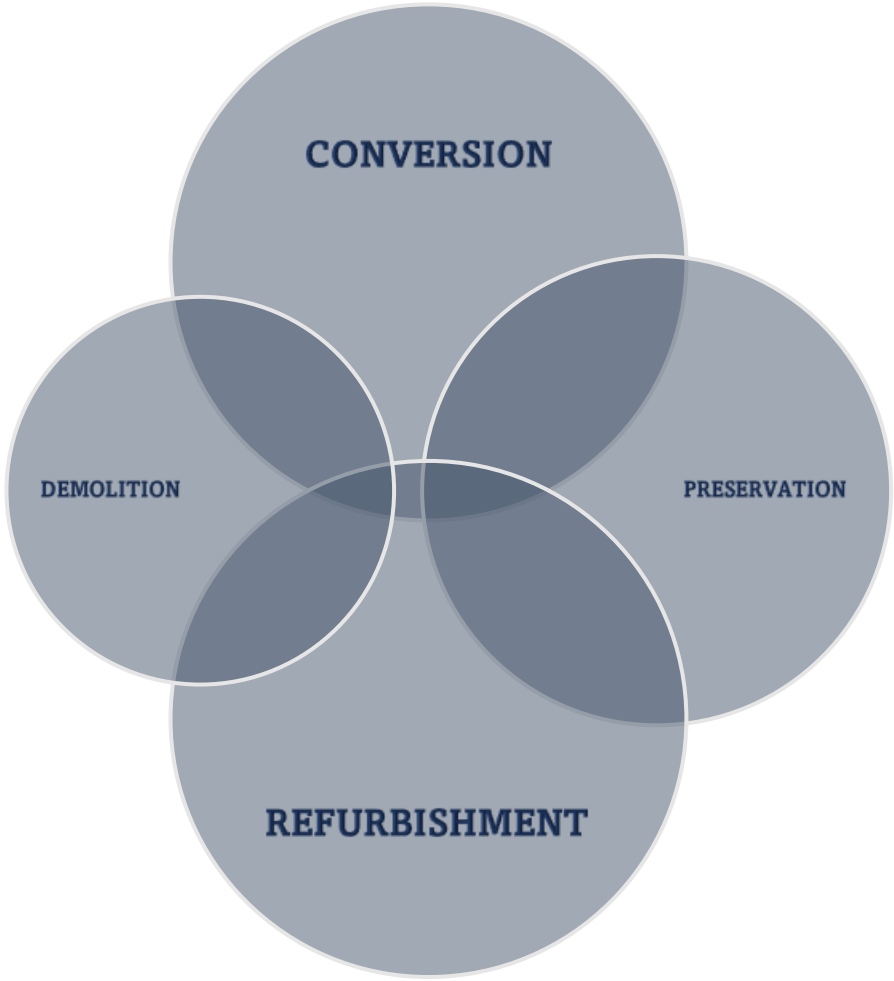
A large multifunctional space in the middle of the warehouse is now available for special and leisure events, as well as providing closed meeting rooms, casual meeting tables, a kitchen, technical sections, and workstations. The warehouse, with a mezzanine consisting of a metallic framework, was designed to expand the space available for workstations. The new central construction established a link between this mezzanine and the second floor of the existing building. The building will be available for future development, which will cover the kitchen and workstation facilities in the bottom portion of the warehouse plan.



[Fig.17 . Process of the demolition parts of the building and the proposed new one. and Thyssenkrupp GSS Rio Grande do Sul, Brazi]

The Strategy

Testing four adaptive reuse strategies has been the main focus of the thesis. I drew to a detached, 6,000 square meter industrial building with one storey. In this study, my goal is to find out if architectural concepts can be used to preserve, refurbish, convert, or even demolish a structure. Preservation, renovation, and conversion were the three key topics I concentrated on. Nevertheless, it is best to steer clear of demolition wherever feasible. For preservation, we must choose what to strategically keep and what may be removed to improve the building's architecture. The renovation produced a visual representation of how the old and the new might coexist. The building's future life should also be extended by the addition.



Preservation of the Existing Building

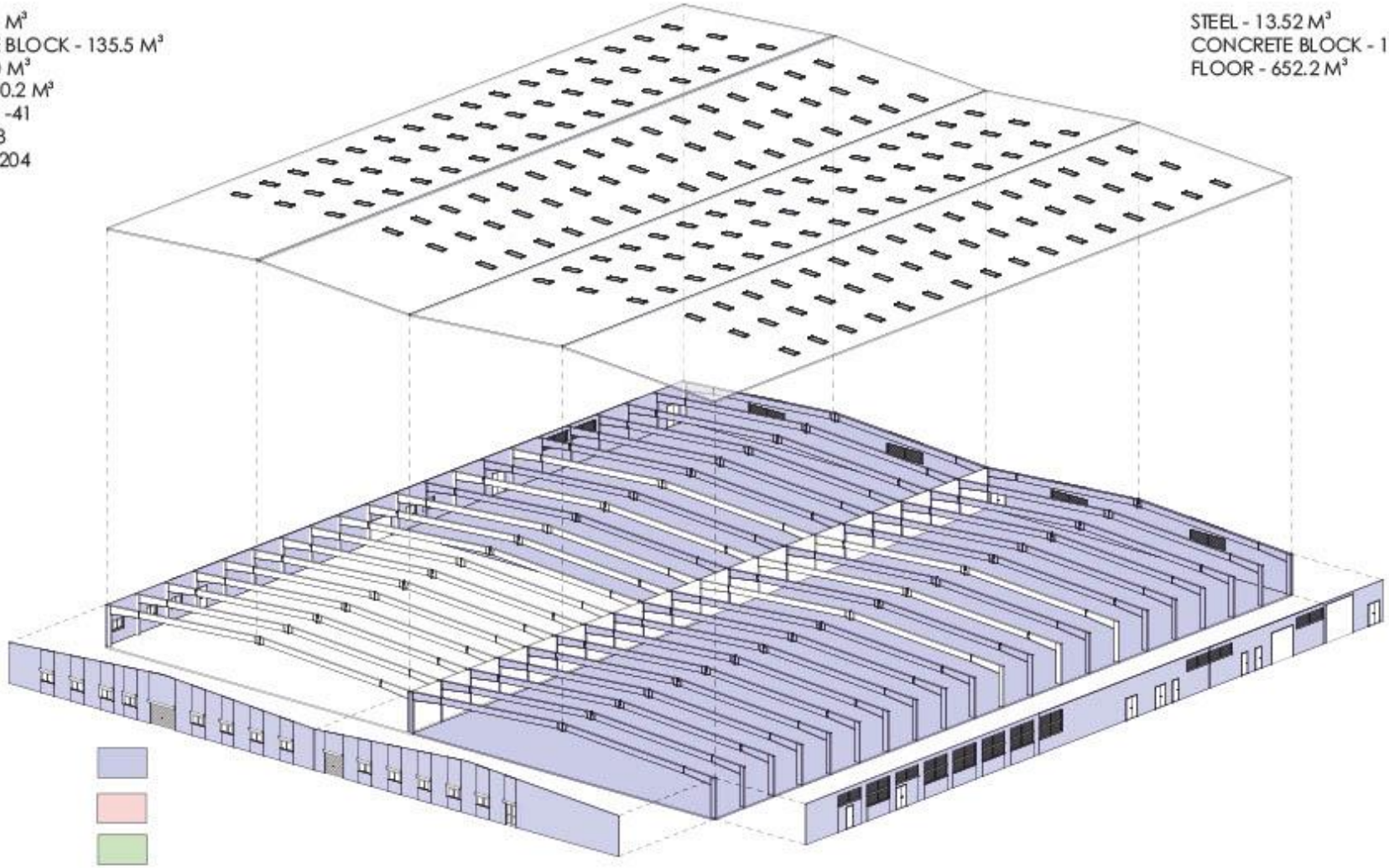
The existing walls and structure will be carefully preserved in the adaptive reuse project for the industrial building to establish the School of Arts. Recognizing the building's historical and architectural significance, efforts will be made to preserve and improve its original characteristics while maintaining structural integrity and safety. Original walls and structural elements will be conserved and incorporated into the new design wherever possible. This method not only preserves the history of the structure but also lends character and distinctiveness to the altered area.

TOTAL ON SITE MATERIAL

STEEL - 18.6 M^3
CONCRETE BLOCK - 135.5 M^3
ROOF - 880 M^3
FLOOR - 870.2 M^3
WINDOWS -41
DOORS - 18
SKYLIGHT - 204

KEPT MATERIAL

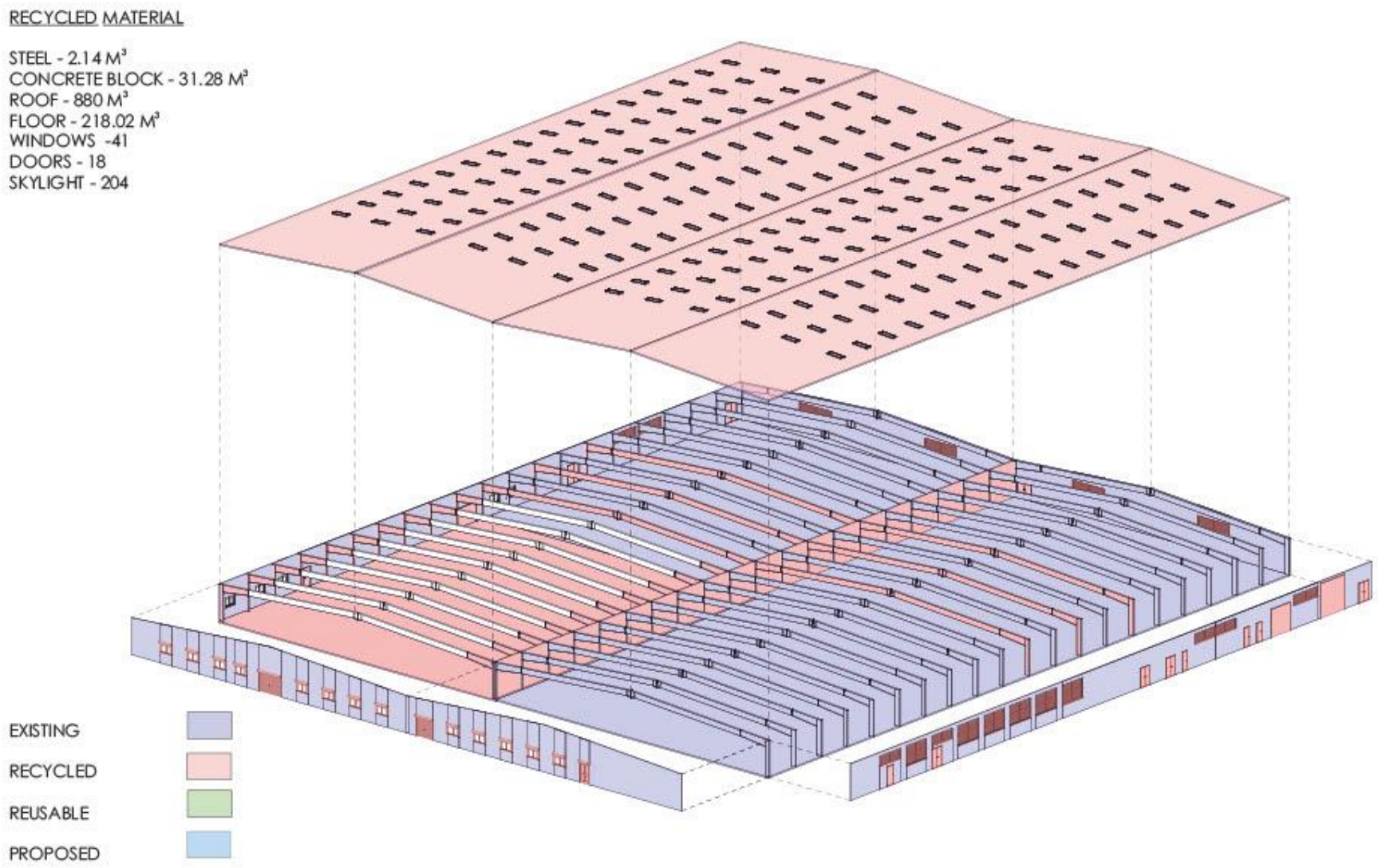
STEEL - 13.52 M^3
CONCRETE BLOCK - 104.2 M^3
FLOOR - 652.2 M^3



EXISTING
RECYCLED
REUSABLE
PROPOSED

EXISTING BUILDING.

[Fig.18 Preservation]

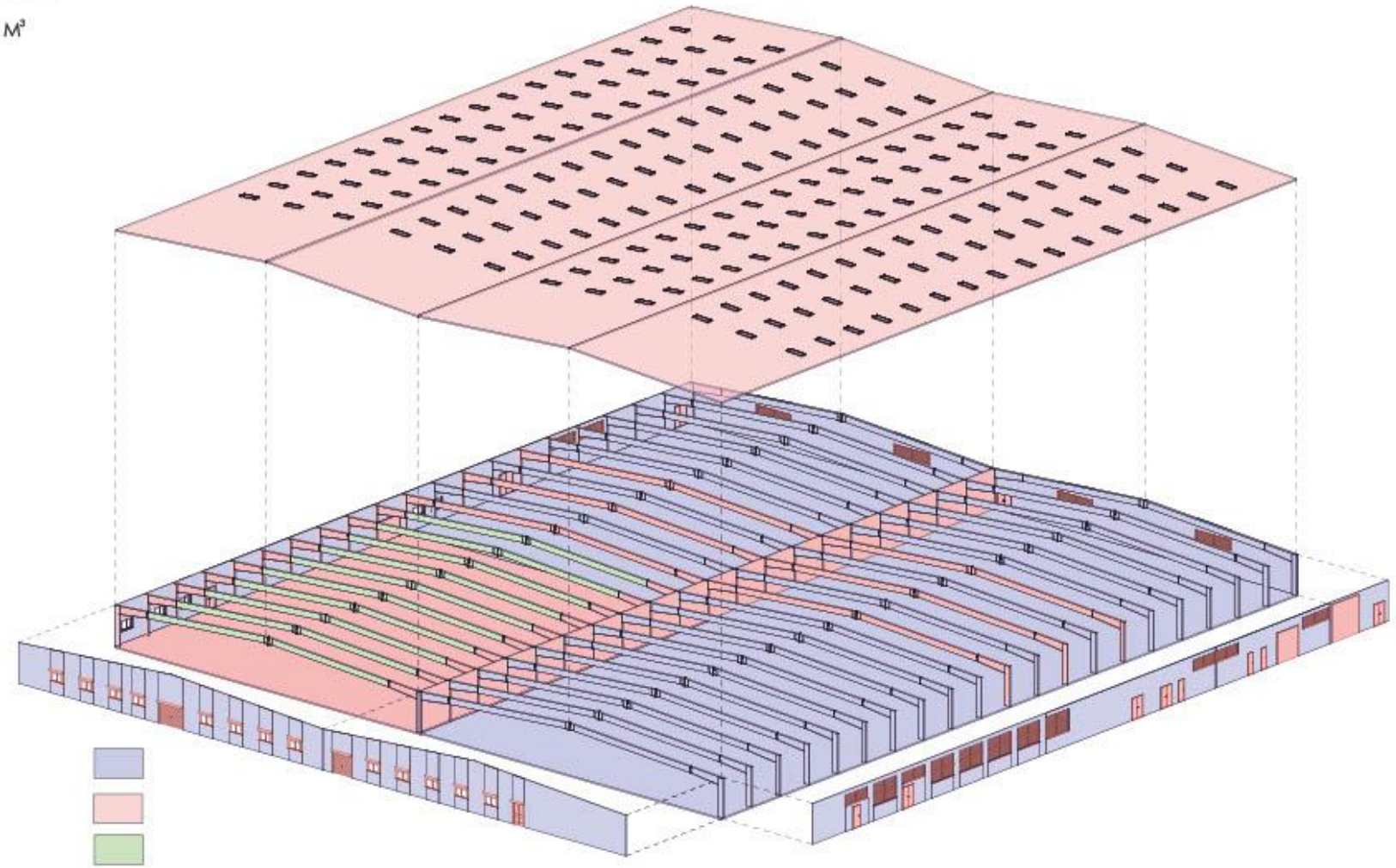


EXISTING BUILDING.

[Fig.19 Deconstruction]

REUSED MATERIAL

STEEL - 2.94 M^3



EXISTING BUILDING.

[Fig.20 Reuse]

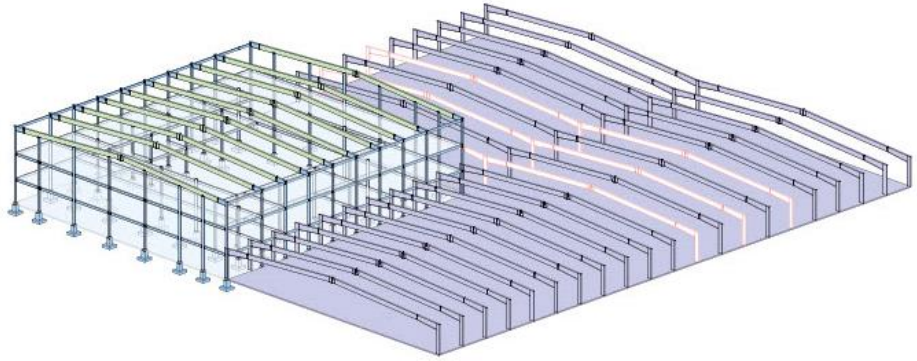
The Refurbishment and Conversion

A critical feature of the School of Arts' adaptive reuse concept is efficiently connecting the old part of the industrial building with a newly constructed theatrical wing. The project intends to seamlessly merge the old and the modern through a rigorous restoration approach, producing a harmonious and useful venue for theatrical performances and artistic instruction.

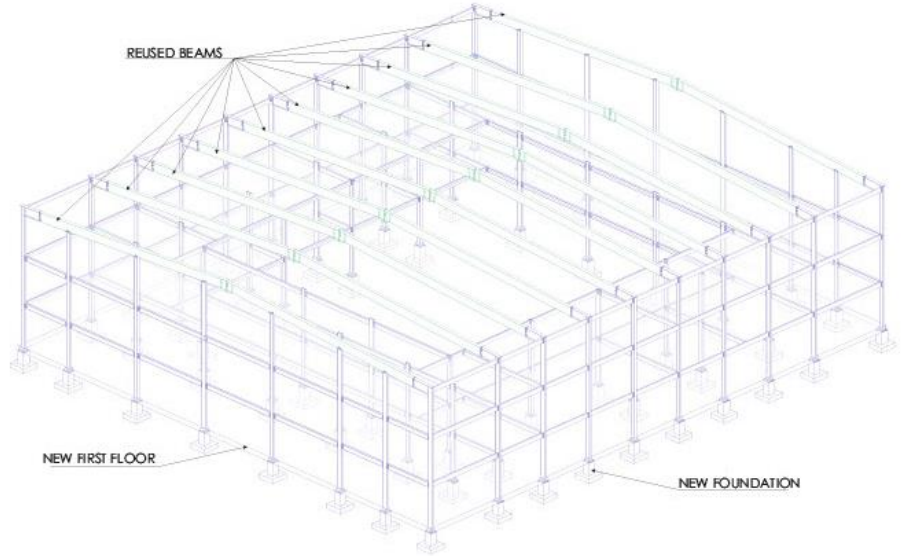
The transition from the old building to the new theatre wing will be carefully designed to guarantee a seamless transition and a unified design. To bridge the gap and create visual linkages between the two portions, architectural features will be used. This may entail creating shared areas, such as lobbies or hallways, which act as transitional zones and visibly connect the old building to the theatrical wing.

Refurbishment techniques will be used to upgrade and improve the current building, bringing it up to standards. Throughout the refurbishment process, sustainability will be a top priority. To reduce environmental impact and enhance operating efficiency, energy-efficient solutions such as the use of sustainable materials, energy-saving lighting systems, and efficient heating, ventilation, and air conditioning (HVAC) systems will be used.

[Fig.21 Proposed]



SCHEME OF EXISTING AND PROPOSED CONSTRUCTION



PROPOSED CONSTRUCTION

The Proposal

The proposed project includes the refurbishment of an existing structure as well as the construction of a new component to accommodate a multifunctional three-story theatre. The theatre, inspired by the renowned Shakespearean playhouses, will include balconies that will provide an immersive experience for the audience. The main novelty, however, is the building's adaptability, which is achieved using a sophisticated panel system.

The refurbishment of the old part of the building aims to preserve its historical relevance while providing modern functioning. Concurrently, essential upgrades will be done to match modern standards. The use of current technology and services will ensure a smooth transition between the old and the new.

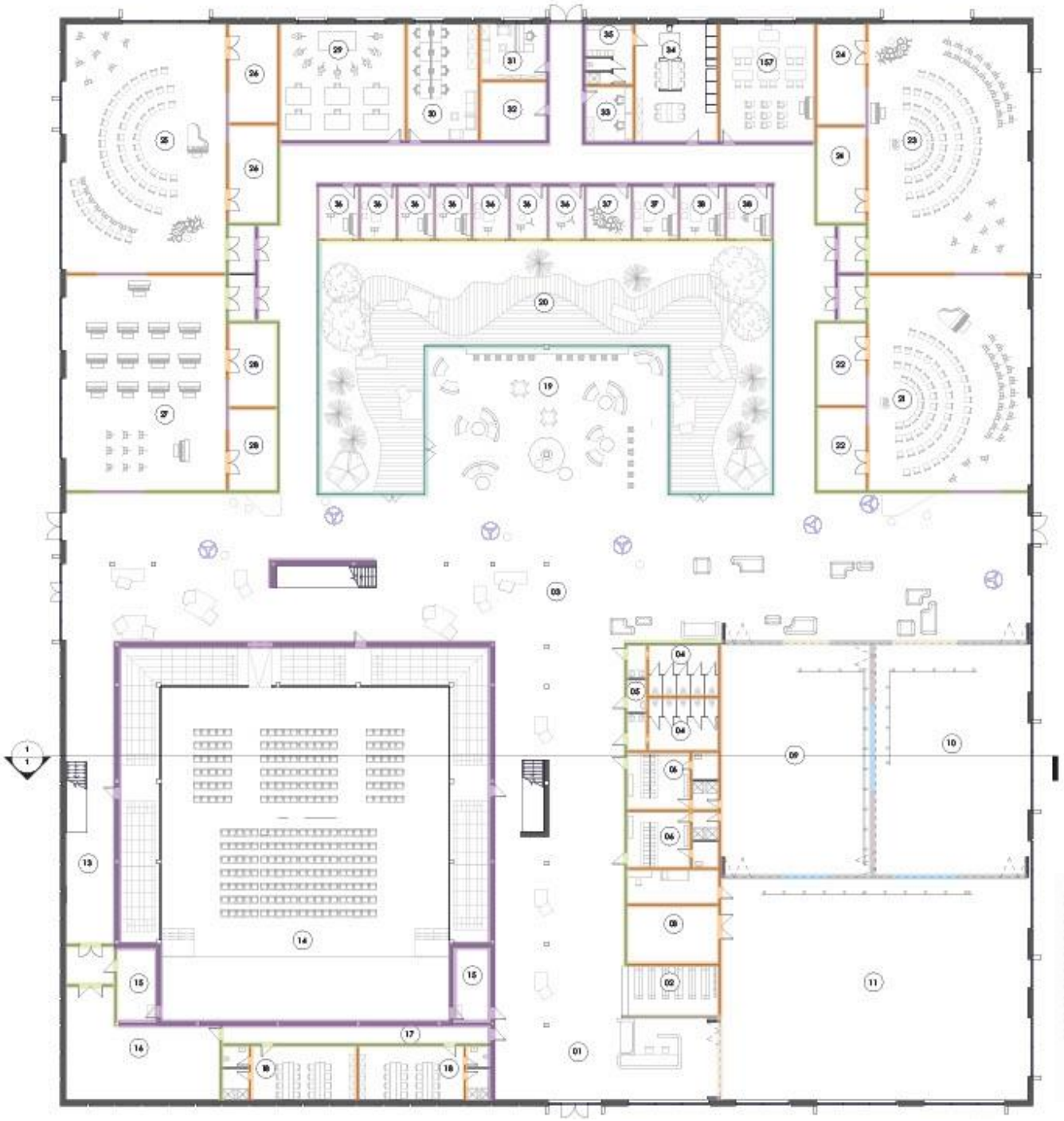
To complement the refurbishment, a new structure will be precisely created to house the theatre. The theatre will incorporate balconies that enhance the immersive experience, drawing inspiration from the fascinating character of Shakespearean playhouses. The revolutionary panel system used throughout the building, however, is the project's main centrepiece.

The movable panel technology will change the design and functionality of the theatre, allowing for easy reconfiguration of the performance spaces. This method will allow for quick and easy reconfiguration of the building, changing it into different layouts and enabling a variety of artistic productions.

The panel system's integration throughout the building extends beyond the theatre and into other areas. This adaptability will allow the entire structure to adjust to changing needs, accommodating a variety of artistic disciplines and activities. Because of the versatility of the panel system, the space remains dynamic and diverse, encouraging creativity, collaboration, and innovation within the School of Arts.

With the refurbishment of the old section and the construction of the new theatre, as well as the application of the unique panel system, this project will not only restore the building's elegance but also establish a cutting-edge cultural centre.

The proposed building will be a symbol of innovation, offering a transformational space that fosters artistic expression and allows for the seamless realization of varied performances. It will draw outstanding artists, engage the local community, and cement Dublin's reputation as a dynamic hub for arts education and cultural enrichment.

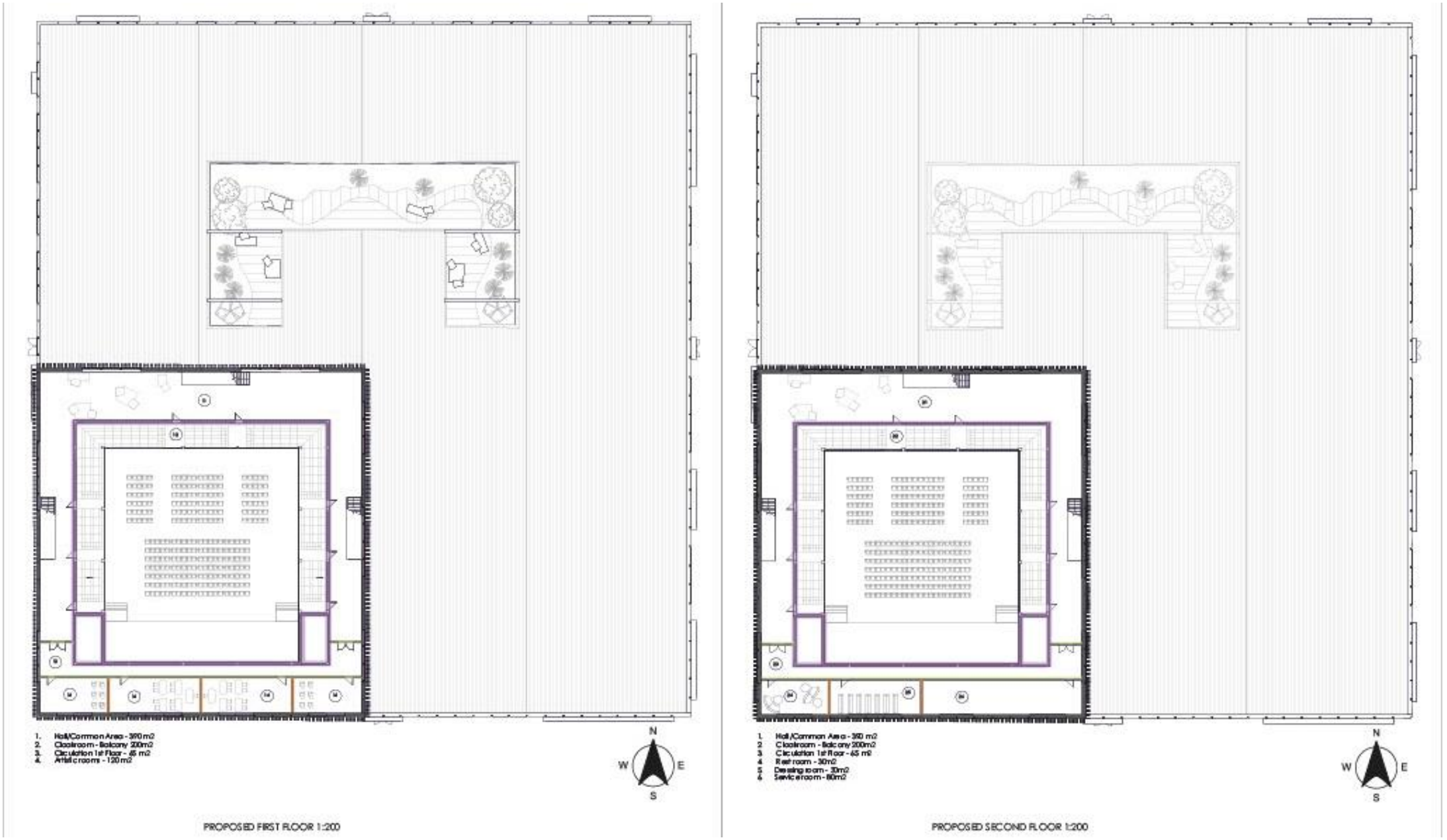


1. Lobby - 100 m2
2. Cloakroom - 20 m2
3. Circulation Gr floor - 1050 m2
4. WC - 45 m2
5. WC (dis) - 6m2
6. Changing rooms (with shower) - 60m2
7. Physiotherapy room - 20m2
8. Storage for dance school - 30m2
9. Dance Rehearsal Studio - 200m2
10. Dance Rehearsal Studio - 200m2
11. Dance Rehearsal Studio -340m2
13. Circulation (theatre) - 80m2
14. Theatre - 740m2
15. Scene Dock - 35m2
16. Storage - 75m2
17. Staging - 20m2
18. Dressing room (with shower) - 85m2
19. Cafe - 200m2
20. Courtyard - 500m2
21. Orchestra Rehearsal Room -200 m2
22. Storage - 45m2
23. Band Rehearsal Room - 240m2
24. Storage - 45m2
25. Choral Rehearsal Room - 240m2
26. Storage - 45m2
27. Electronic Keyboard lab - 200m2
28. Storage - 45m2
29. Ensemble Room - 80m2
30. Offices - 45m2

[Fig.22 Proposed Plan Ground Floor]

31. If room - 20m2
32. Service room - 22m2
33. Instrument repair - 14m2
34. Kitchenette - 52m2
35. Changing room (staff) - 18m2
36. Practice room (for 2) -x7- 70m2
37. Practice room (for 4 – 8) -x2- 22m2
38. Practice room (for 6 – 10) -x2- 25m2
39. Seminar room - 60m2

N
W
E
S



[Fig.23 Proposed First and Second Floor Plan]

[Fig.24 Render of Exterior]

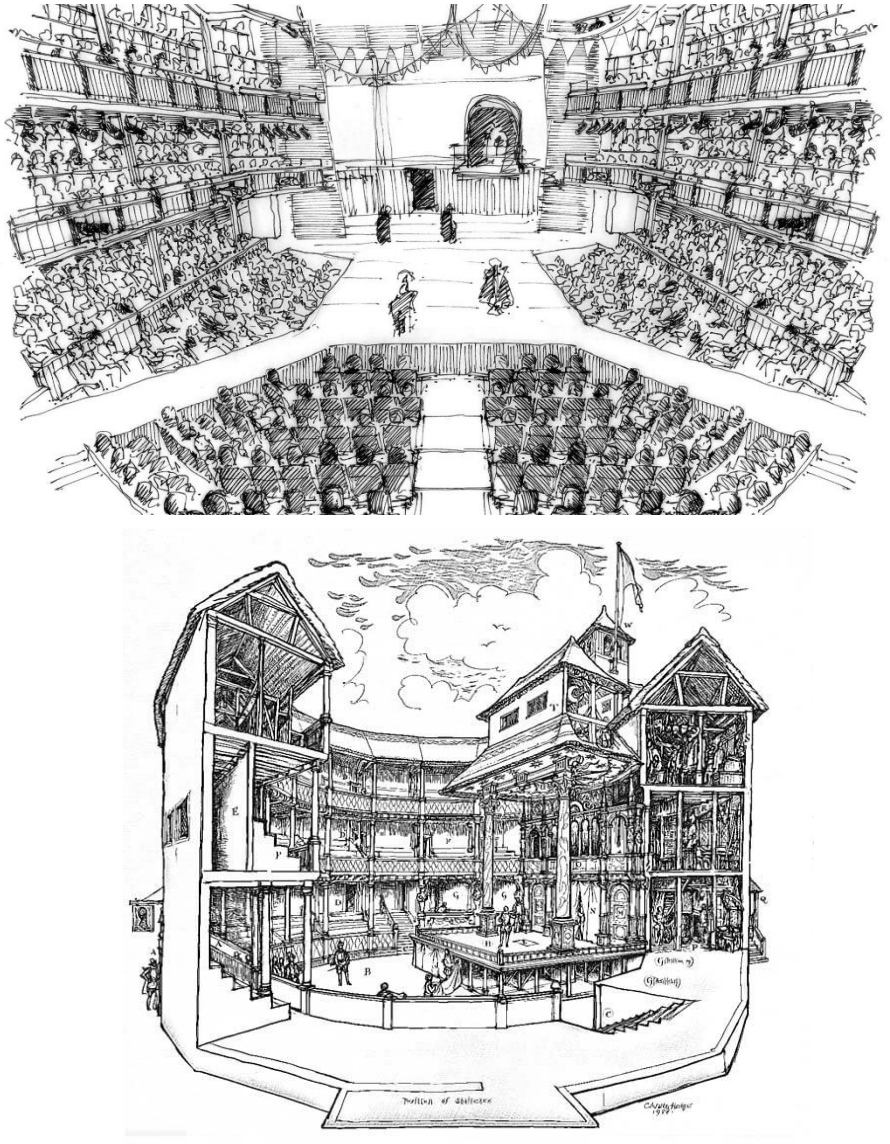
The Theatre

The Theatre project represents a forward-thinking effort to reimagine the core of Shakespearean theatre in a modern environment. This modern rendition, inspired by legendary playhouses of the past, will include balconies that enhance the audience's immersive experience. The essential novelty, however, is in the adaptable architecture, which allows the space to be used in a variety of ways, adjusting to the varying needs of performances and events.

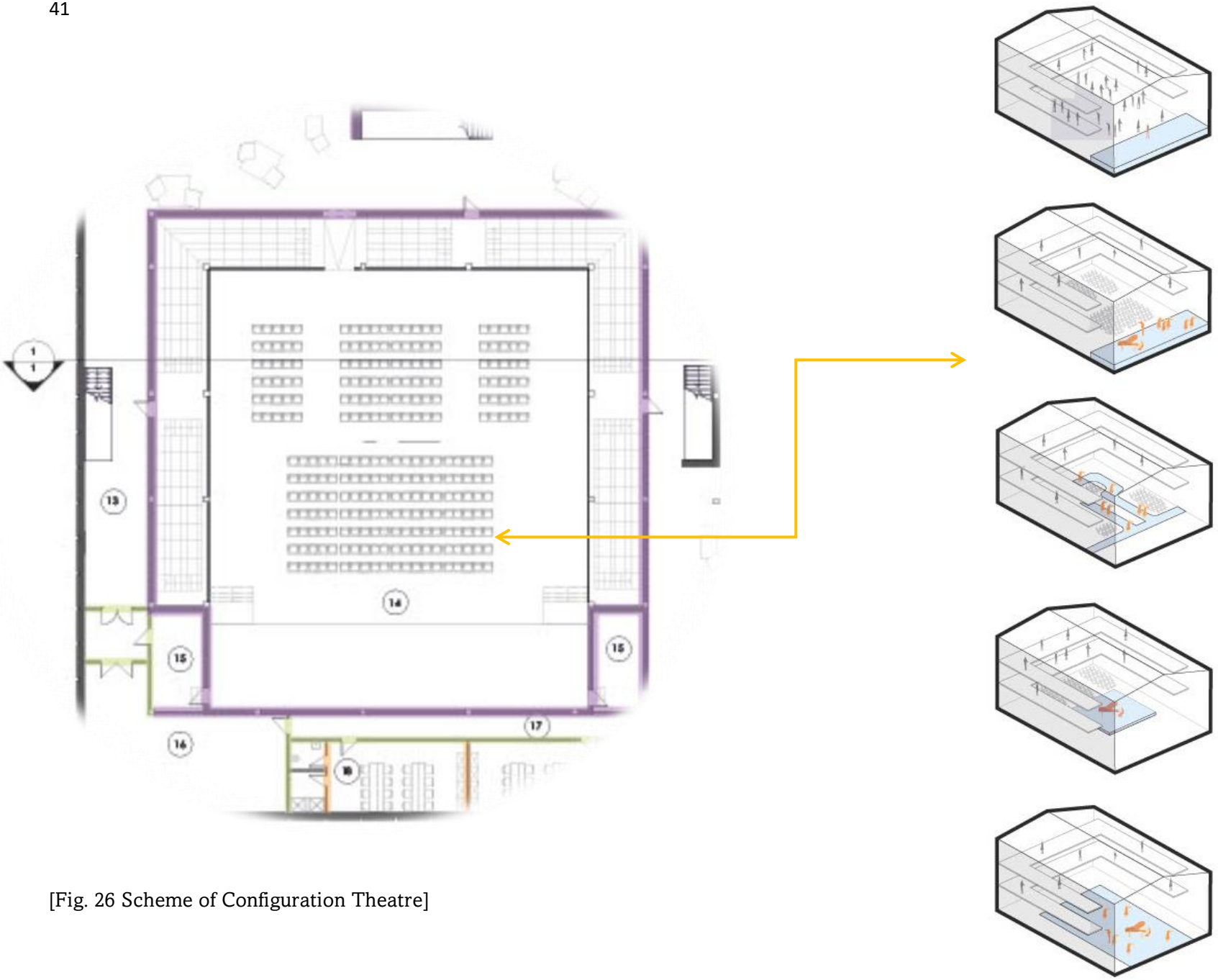
The aim to establish a theatre that pays tribute to Shakespearean traditions while embracing the challenges of modern theatre performances is at the heart of this project. Balconies will be used to create a close and intimate connection between the performers and the audience, mimicking the enthralling atmosphere of the past. This architectural component will improve sightlines and provide a more immersive experience for theatregoers.

What characterizes this initiative is its dedication to adaptability. The area will be meticulously built to accommodate a wide range of artistic disciplines and performance needs. The theatre will provide diverse configurations that can be easily modified to meet the individual needs of each performance thanks to innovative architectural solutions and cutting-edge technology.

The theatre will integrate movable seating arrangements, adjustable stage configurations, and adaptable acoustics using a modular and adaptable approach. The space's transforming character will allow for seamless transitions between different shows, allowing for a wide spectrum of artistic expressions and improving the overall theatrical experience.



[Fig.25 Precedents of the Shakespearean Theatre]



[Fig. 26 Scheme of Configuration Theatre]

The Panel System

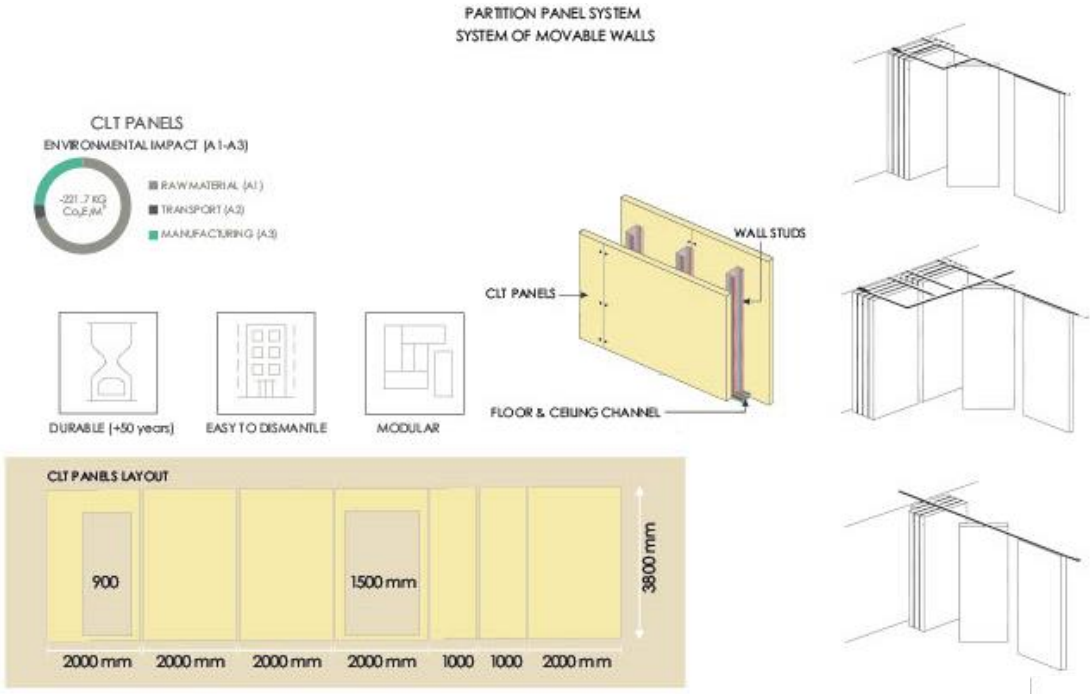
In my project, the use of flexible panel technologies will be critical in increasing the adaptability and flexibility of the space. Two types of panels will be used, each with its own set of advantages that contribute to the overall functionality and beauty of the design.

The first type of panel system will be made up of Cross-Laminated Timber (CLT) panels. These 1- and 2-meter-long CLT panels will be strategically mounted on metal studs around the area. CLT panels are known for their structural strength, durability, and sustainability. They will serve as a stable foundation for the inside walls while also contributing to the overall aesthetic appeal. CLT panels will create a warm and inviting ambience while infusing the space with the inherent beauty of timber.

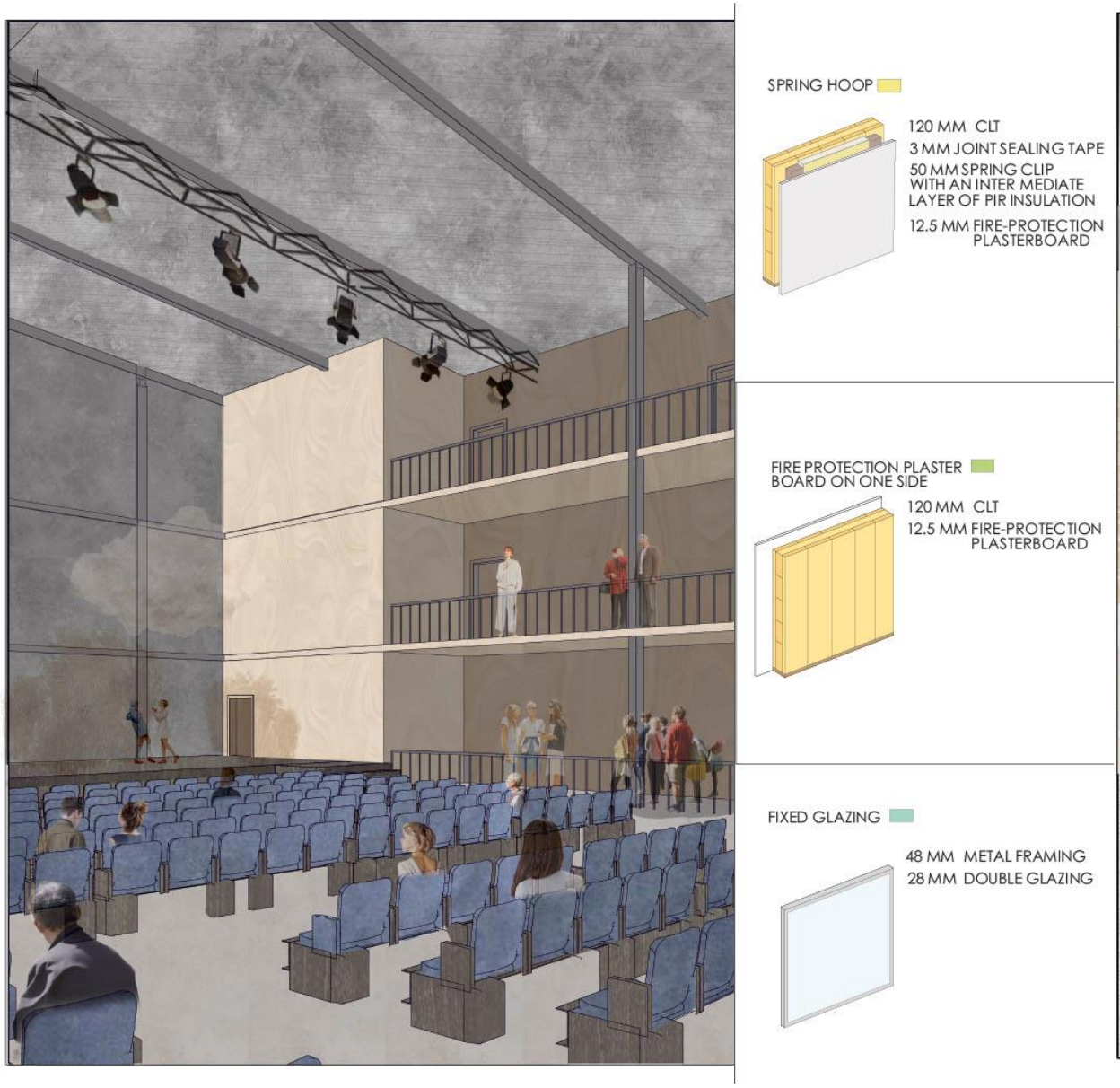
The second type of panel system will have movable panels in a variety of materials and finishes. These panels will be highly adaptable, allowing for dynamic reconfigurations of the area as needed. Solid panels can be used to make temporary walls or partitions, allowing for the quick and easy separation of a large space into smaller regions for various uses. Frosted glass panels will add an elegant touch while retaining visual transparency and privacy. Panels with mirror surfaces will also increase the appearance of space.

The moveable panel system's adaptability will enable for seamless transformations of the area to accommodate varied activities and events. The arrangement can be easily adjusted to accommodate different performance sets, workshops, exhibitions, or collaborative workspaces by simply moving or changing panels. This adaptability guarantees that the environment remains dynamic and sensitive to changing needs, encouraging creativity and innovation. The use of CLT panels and moveable panels in a variety of materials and finishes will result in a perfect blend of beauty and practicality.

[Fig.27 Proposed Section]



[Fig.28 Proposed System of Panels]



SPRING HOOP

120 MM CLT
3 MM JOINT SEALING TAPE
50 MM SPRING CLIP
WITH AN INTER MEDIATE
LAYER OF PIR INSULATION
12.5 MM FIRE-PROTECTION
PLASTERBOARD

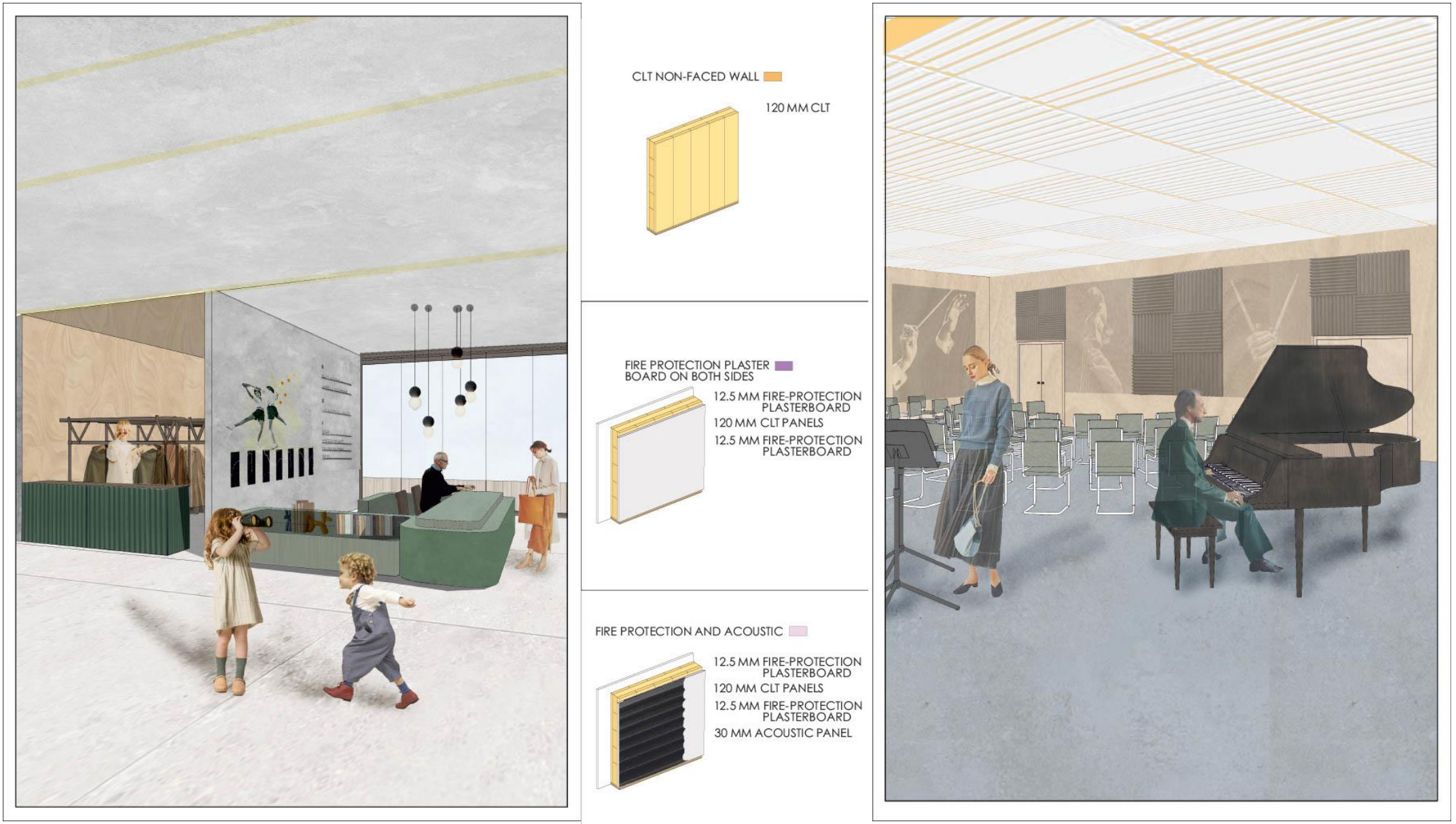
FIRE PROTECTION PLASTER
BOARD ON ONE SIDE

120 MM CLT
12.5 MM FIRE-PROTECTION
PLASTERBOARD

FIXED GLAZING

48 MM METAL FRAMING
28 MM DOUBLE GLAZING

[Fig 29 Interior Sketches]



[Fig.30 Interior Sketches]

[Fig.31 Interior Render]

[Fig.32 Interior Render]

The Proposed Site Plan

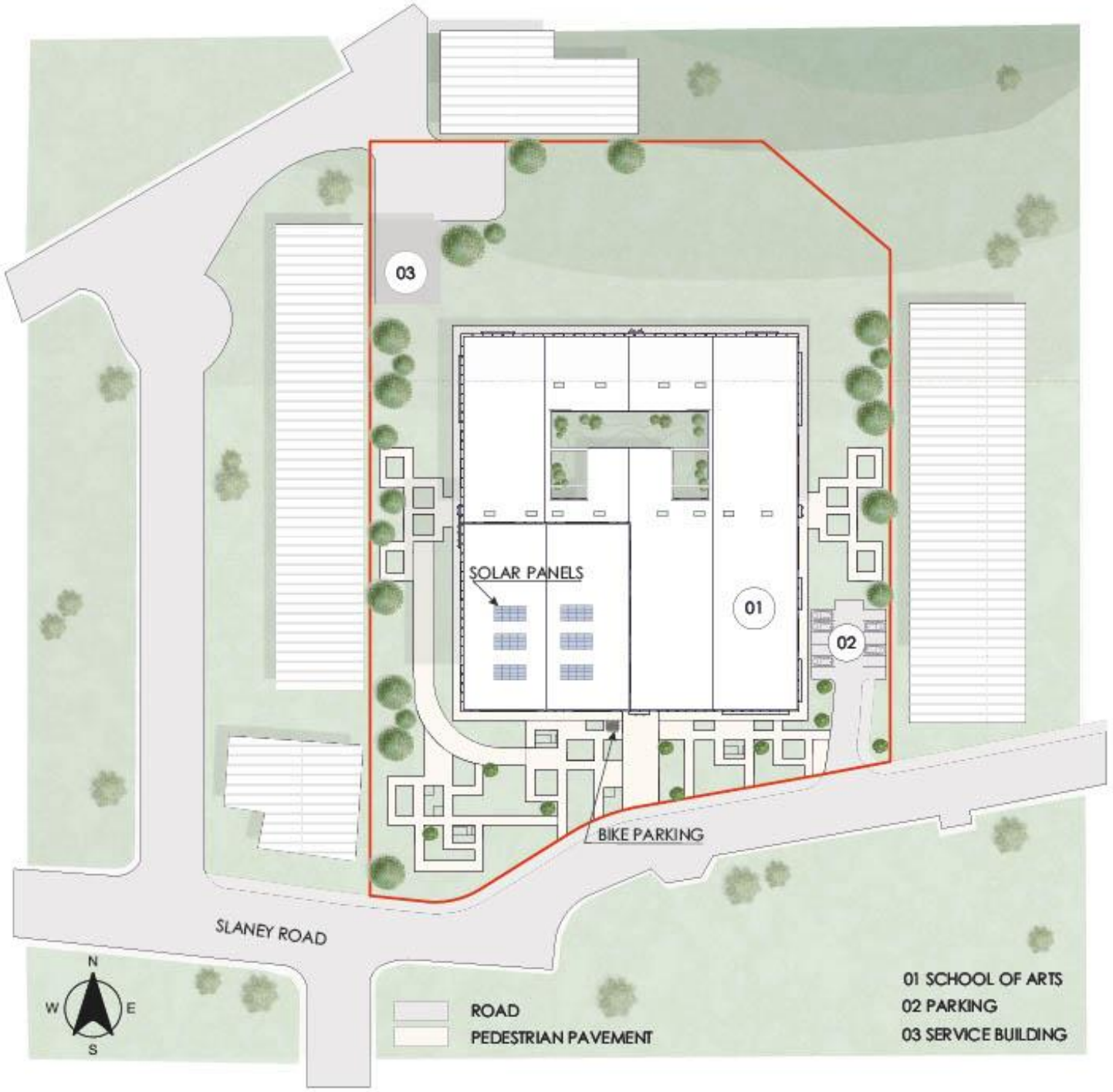
The proposed project's site plan focuses on providing a welcoming and pedestrian-friendly environment that promotes sociability, community participation, and accessibility. The landscape design considers the needs of the users, providing a variety of amenities to enhance their experience while emphasizing inclusion and sustainability.

Pedestrian areas are crucial to the site concept, providing students, employees, and visitors with safe and convenient walkways. The layout takes into account optimal circulation around the site, connecting various structures and functional areas. Well-designed walkways with flora and seating components create an enticing environment for strolls and promote social interaction among users.

The site concept also includes designated gathering and socialising areas. These outdoor spaces are ideal for casual gatherings, artistic collaborations, or simply enjoying the surrounding natural surroundings. Plazas, open lawns, and courtyard spaces that are thoughtfully constructed provide flexibility for a variety of activities, building a feeling of community and establishing active social hubs within the property.

In terms of accessibility, the site plan incorporates allocated parking places for those with impairments, ensuring equitable access to the amenities. These parking facilities will be strategically placed near the main entrances, reducing travel distances for persons with mobility issues. Additionally, bicycle parking facilities are included in the site plan to promote sustainable mobility options, encouraging users to pedal to the site and minimizing dependency on cars.

To improve the site's functionality, a service building will be built in the backyard. This distinct structure will house necessary amenities like maintenance rooms, storage areas, and technical facilities. The service building's dedicated entrance and efficient layout will make operations easier while not interfering with the primary functioning areas. Its location in the backyard ensures a well-organized site while reducing aesthetic influence on the main public spaces.



[Fig.33 Proposed Site Plan]

The SUDS Proposed Plan

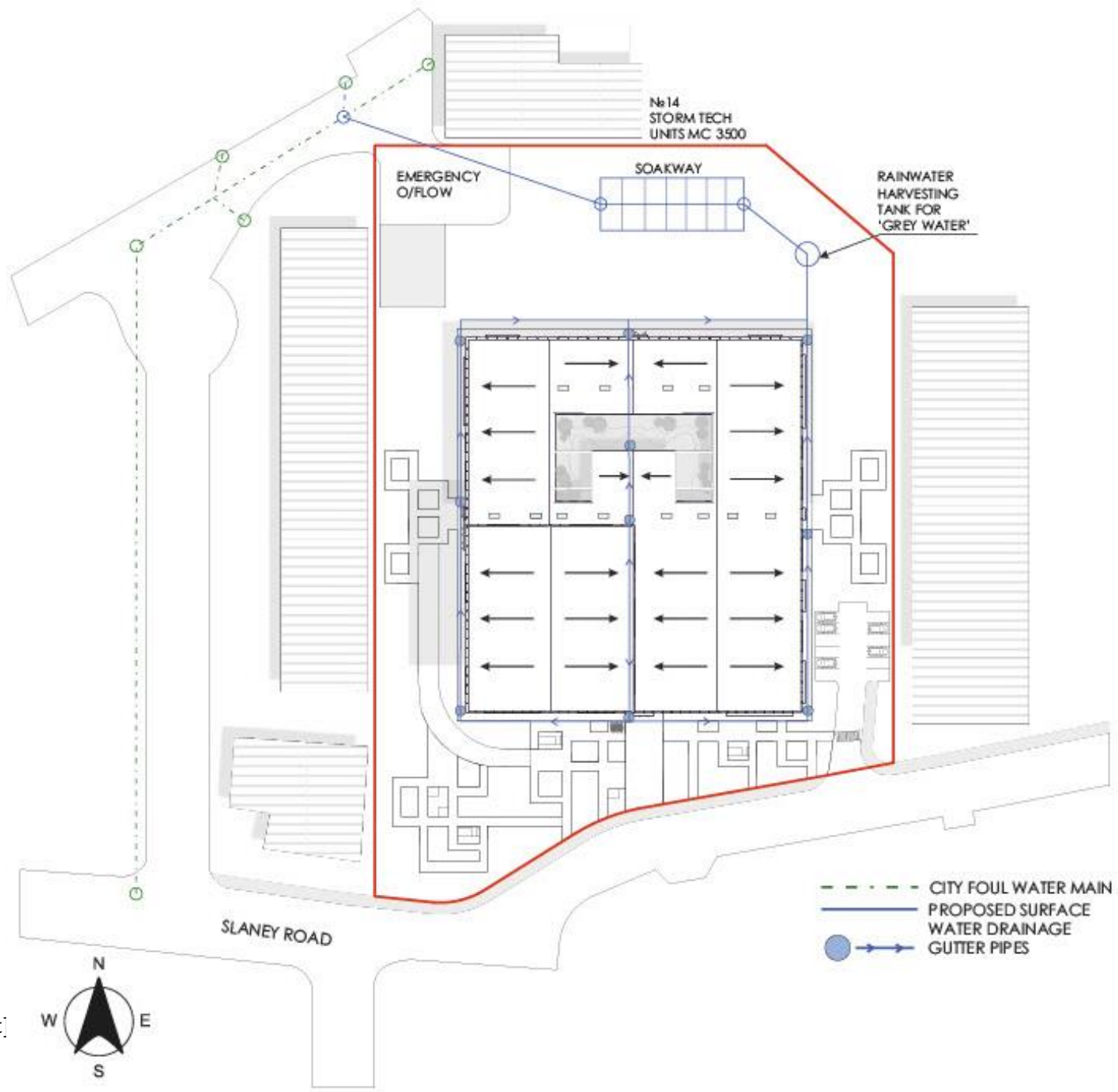
The proposed site plan includes an innovative Sustainable Urban Drainage System (SUDS) to manage precipitation effectively while minimizing the impact on local drainage infrastructure. This innovative strategy attempts to maximize the value of rainwater as a resource while assuring proper disposal in a sustainable and environmentally aware manner.

A rainwater harvesting tank designed to collect and store rainwater runoff from the site is at the heart of the SUDS plan. This tank acts as a reservoir, collecting and storing rainwater for later use. The collected rainwater, often known as greywater, can be reused for non-potable purposes such as irrigation, toilet flushing, and cleaning.

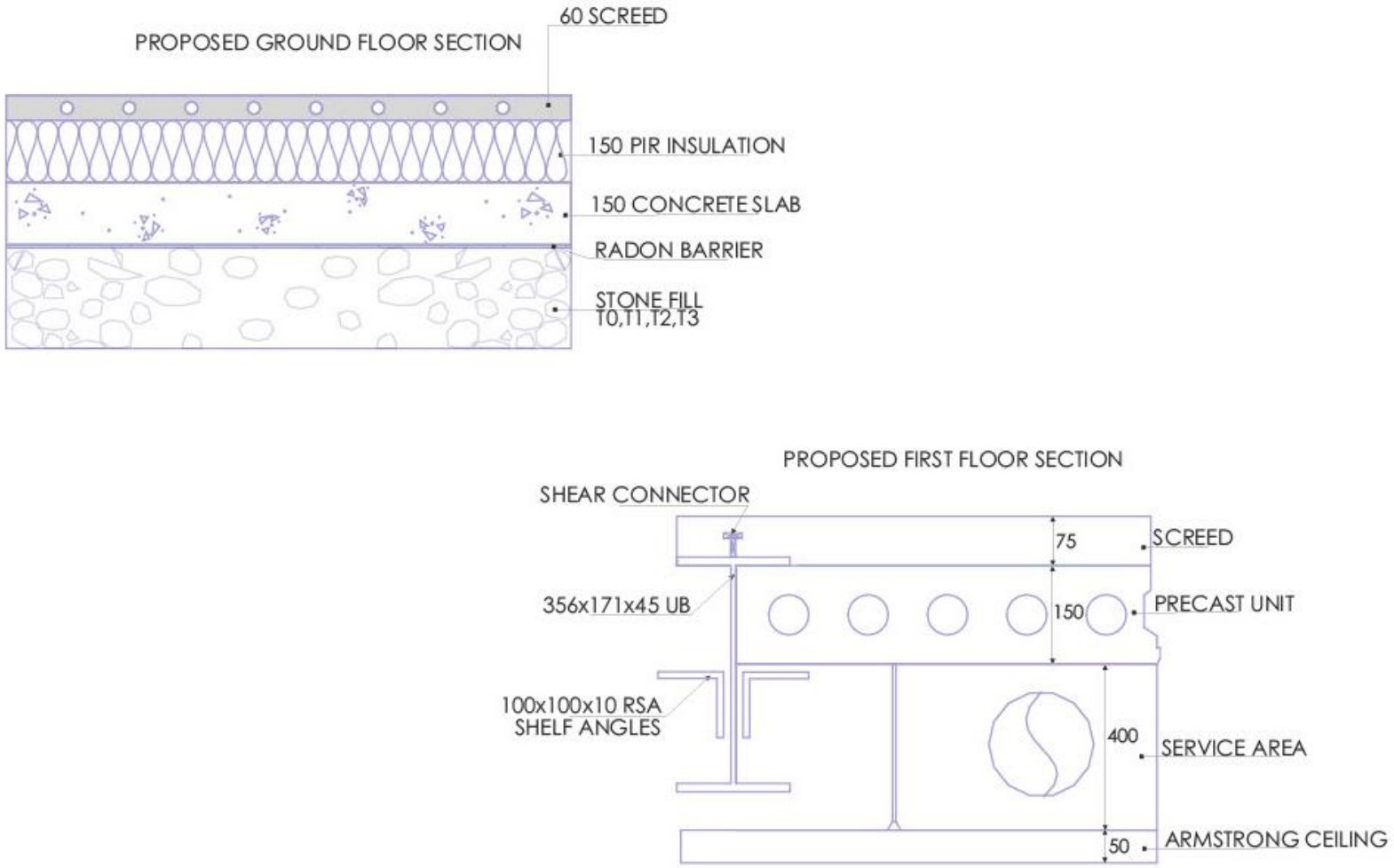
A soakaway system is built into the site layout to aid in the penetration of rainfall into the earth. The soakaway allows rainwater to gradually percolate into the underlying soil, recharging the groundwater table. This sustainable drainage method aids in flood mitigation, surface water runoff reduction, and natural groundwater recharge.

In the case of severe rain or when the soakaway's capacity is surpassed, an emergency overflow system is built into the design. This overflow system guarantees that any surplus rainwater is routed securely and efficiently to the city's filthy water main, which is located in the backyard. The location contributes to the overall drainage network while relieving the pressure on the local drainage system during high rainfall by linking to existing city infrastructure.

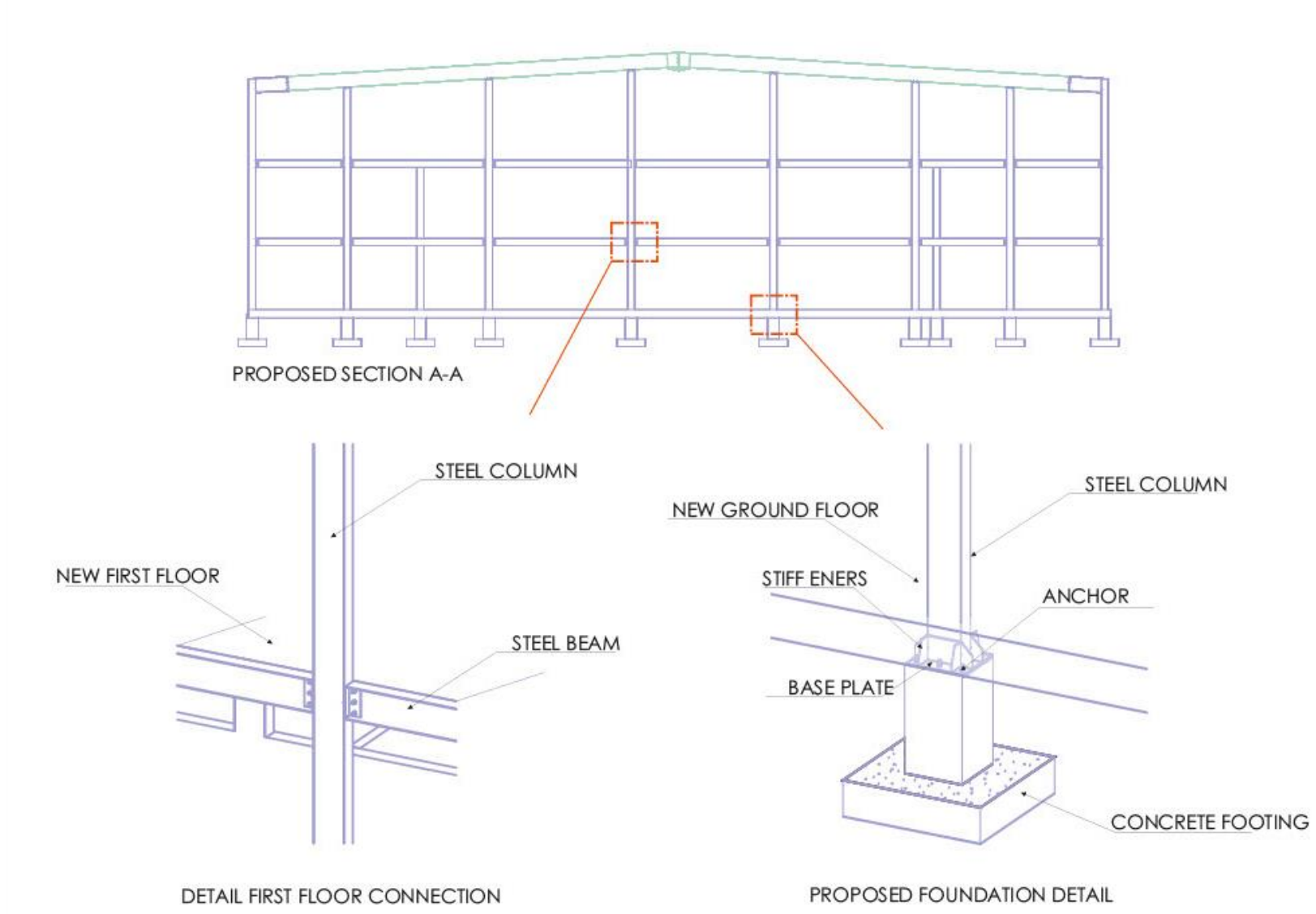
The site's implementation of the SUDS plan not only indicates a commitment to sustainable practices but also provides actual benefits. Rainwater collection conserves valuable freshwater resources, reduces demand on the public water supply, and promotes water management self-sufficiency. The soakaway system reduces the risk of surface water floods and promotes groundwater replenishment, increasing the site's resistance to the effects of climate change.



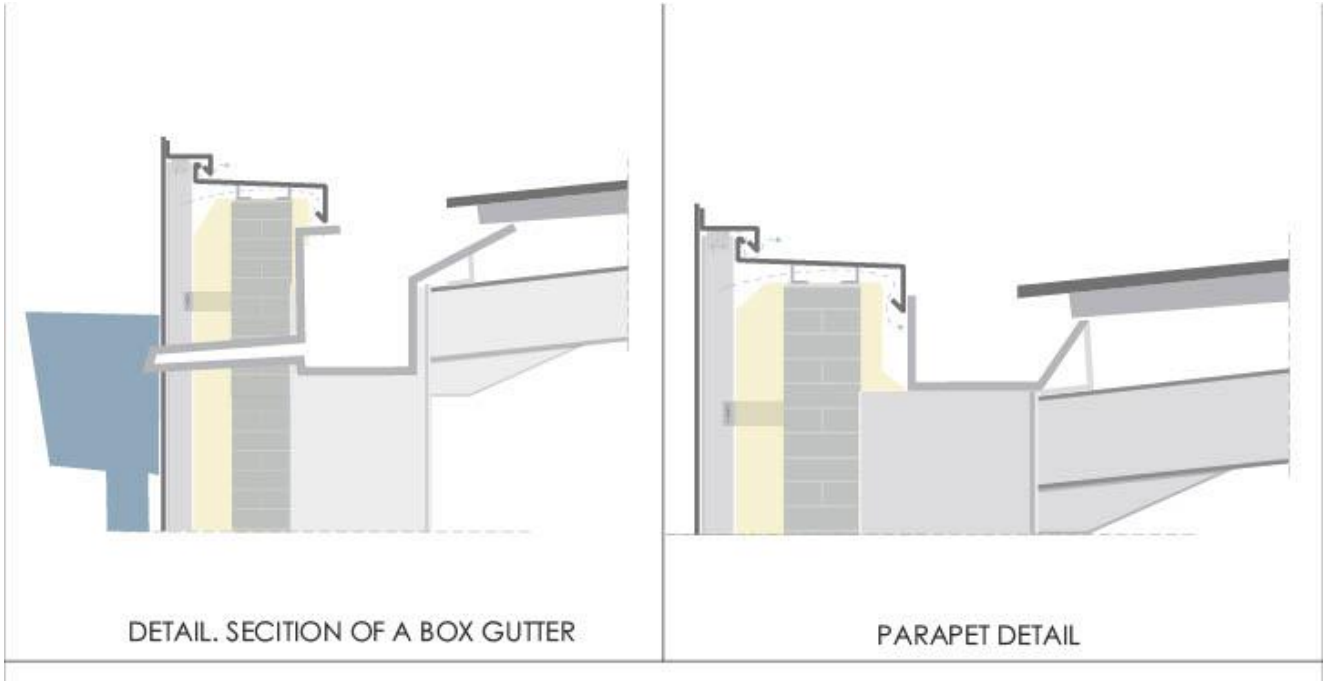
[Fig.34 Potential SUDS Scheme Option Layout]



[Fig. 35 Proposed Floor Details]



[Fig.36 Proposed Detail]



[Fig 37 Proposed Roof Detail]

Conclusion

The investigation provides an in-depth examination of four types of adaptive reuse options that provide vital insights into prolonging the useful life of buildings. This study intends to create new applications for such structures by taking into account essential aspects that influence the process and result in the transformation of industrial buildings, such as their outside look, inner character, and internal space quality.

The most typical strategy for adaptive reuse is to keep the building's structural shape while changing the internal layout. Furthermore, the paper explores the possibility of expanding an existing structure by adding supplemental spaces, which can open up opportunities for other adaptive reuse strategies. These typologies provide a valuable framework for describing and organizing existing alterations, as well as directing future implementation decisions. According to the study, implementing adaptive reuse options for post-industrial buildings not only raises their worth but also promotes visitor attendance by making the structure itself an enticing destination. In rare circumstances, repurposing a building might even result in its legal protection because it highlights cultural significance. Reusing facilities display resilience and sustainability from both an environmental and social standpoint, allowing for the preservation of historical associations as well as the enrichment of cultural identity.

Finally, this study provides useful insights into the various possibilities afforded by adaptive reuse, underlining the need of maintaining and adapting industrial structures. This study promotes sustainable practices, stimulates cultural preservation, and develops innovation by taking into account the elements that determine the success of adaptive reuse initiatives.

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Appendix

List of Figures

[Fig.1 Creative Adaptive Reuse Projects]

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[Fig. 2. Shearing layers of change (Brand, 1994)]

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[Fig.3 Thesis Objectives/Precedent]

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[Fig.4 Map of Dublin Industrial Estate]

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Authors Group 1 from 9 Studio Module.

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Authors Own, Tetiana Serhiichuk 2023.

[Fig.9 Site Plan]

Retrieved from http://s3-eu-west-1.amazonaws.com/mediamaster-s3eu/e/3/e33140ac8bedcc407a5608f46b3d807c.pdf

[Fig.10 Existing Site Section]

Authors Own, Tetiana Serhiichuk 2023.

[Fig 11 Photo of the Site]

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Authors Own, Tetiana Serhiichuk 2023.

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[Fig.14 "Elektrownia" (Power Plant) Contemporary Art Gallery in Czeladz, photo by Michal Pieczka.]

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[Fig.17 . Process of the demolition parts of the building and the proposed new one. and Thyssenkrupp GSS Rio Grande do Sul, Brazi]

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[Fig.18 Preservation]

Authors Own, Tetiana Serhiichuk 2023.

[Fig.19 Deconstruction]

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[Fig. 26 Scheme of Configuration Theatre]

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[Fig.36 Proposed Detail]

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[Fig 37 Proposed Roof Detail]

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