



Northumbria University Architecture Portfolios

A THEATRE FOR THE 21ST CENTURY

TYNE THEATRE AND OPERA HOUSE

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northumbria.ac.uk/xxxxxxxxx

1. Project Details

Principal Researcher	Kelly MacKinnon
Title	Tyne Theatre + Opera House Feasibility Report
Output type	Design Proposition
Venue	Tyne Theatre + Opera House, Westgate Road, Newcastle upon Tyne
Curator	Kelly MacKinnon Tyne Theatre + Opera House Preservation Trust
Function	Heritage Buildings and Historic Environments
Location	Westgate Road, Newcastle upon Tyne, England
Client	Tyne Theatre Preservation Trust
Practical completion	2015-2019
Funding source	Tyne Theatre Preservation Trust HLF UNN
Budget	£34,500 - £62,000
Area	Tyne Theatre + Opera House & surrounding area
Size	5500m2
Collaborators	Tyne Theatre + Opera House Preservation Trust
Support/acknowledgements	Tyne Theatre + Opera House Preservation Trust
URL	www.northumbriaarchitecture.com/research

In 2016, Associate Professor Kelly MacKinnon (from Northumbria University) was asked to help the Tyne Theatre in Newcastle upon Tyne to develop a feasibility report to modernise the theatre ensuring it met with current regulations for accessibility and fire prevention. From a modest renovation and accessibility project, the design grew into an ambitious re-imagining of the building as a theatre for the 21st Century, with modern performative spaces and a heritage hub to serve a broader demographic. In addition, the final proposal builds upon the buildings' historical narrative transforming the building into an important cultural destination within the North East.

A theatre for the 21st Century is a body of work that centres upon the Tyne Theatre and Opera House through engaged research praxis on an architecture masterplan and feasibility study as a significant methodology for the sustained protection of a heritage asset. The research was curated by Northumbria University who established a Design Research Partnership with the Tyne Theatre and Opera House Preservation Trust. This became a vehicle for co-design working with various stakeholders individually and collectively resulting in alternative uses for the theatre and essentially future proofing the rapidly dilapidated heritage asset. Historic England have placed the theatre on the "Heritage at Risk" register with the Theatres Trust and on the 'Theatres at Risk' register, whilst acknowledging its national significance by stating that the auditorium is 'undoubtedly one of the finest of its date in Britain'.

The Tyne Theatre and Opera House is a Grade 1 listed Victorian building with an active role in Newcastle's cultural life and unique historical features. The building's Preservation Trust invited researchers and students to develop proposals for the redevelopment of the site. The team investigated the building structure, features and history and consulted some 70 stakeholders (theatre goers and voluntary staff) on their lived experience of the venue through interviews and questionnaires. The approximately 20 proposals thus generated were then further developed and refined through an ongoing iterative process and dialogue with the client; the schemes produced were presented to users for feedback through an exhibition within the building.

The final proposal was presented to the Tyne Opera House and Theatre Preservation Trust directorate, Newcastle City Councillors and conservation planners, and English Heritage.

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05 Statement of Impact + Significance

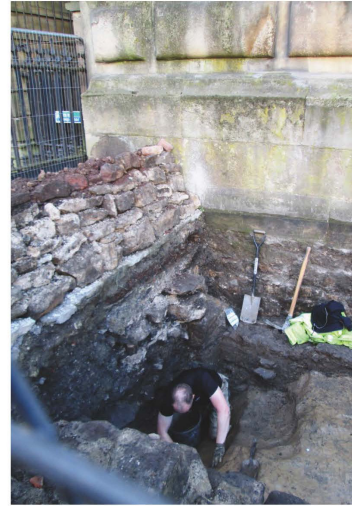
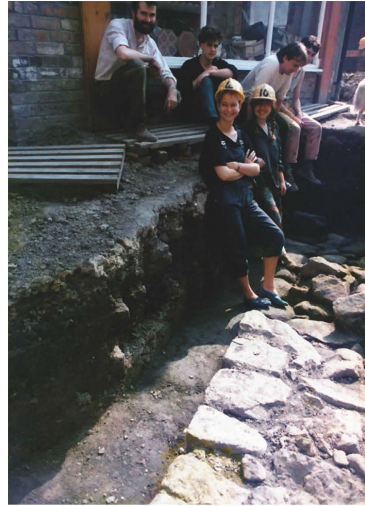
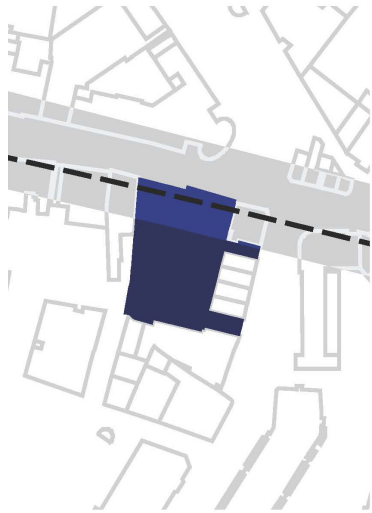


Fig. 01_Diagram illustrating the North side of the Tyne Theatre being located within the Hadrian's Wall corridor - the estimated path of Hadrian's wall runs directly beneath the building

Fig. 02 + 03_ Remains found of the wall outside the Mining Institute and Newcastle Arts Centre on Westgate Road. Although these have been significant discoveries, in these two instances the wall has been recovered and are no longer visible to the public

1. The curated exhibition contributes an original contribution to knowledge with regards to the approach to conservation design and the future of performance and theatre for the 21st Century.

2. The project demonstrates the impact of novel methods in the context of working with a scheduled ancient monument Grade 1 listed building to support deeper consultation leading to an improved design proposal.

3. This research makes an innovative contribution to existing approaches of working with historically significant buildings. In doing so, the research provides a new framework of methods and processes that moves away from current model of conservation work in architectural practice

4. Despite the complexities to the project, Newcastle City Council Planning endorsed the scheme and deemed it a blueprint in conservation design work. The summative contemporary proposal was one that was deemed to be a blueprint for developers working within the historic zone of the city, where end users and statutory organisations (including the conservation officer) worked collectively to produce a design proposition for the 21st Century, its community and context.

5. This research project was presented to the Tyne Theatre + Opera House Preservation Trust Directorate, local councillors and conservation planners for Newcastle City Council and involved consultations with English Heritage. The outcomes of this project is informing a multimillion pound funding bid to the Heritage Lottery, funding will restore the existing historic building whilst regenerating it for the 21st Century.

1. Statement of Rigour

This project has involved extensive practice and praxis-based activities, as well as more traditional research methods to realise the development and answer the four research questions and realise the summative design of the theatre and it's contemporary extension.

1. The design team have engaged in primary research activities by visiting a number of cultural facilities; including theatres and some award winning heritage building retrofits. This was to research how they inserted contemporary interventions into a historic building fabric alongside attempting to capture the spirit of the building.

2. We have used participatory and user-appraisal research methods, including interviews and design workshops with the client body and end users to gain their insights. This activity was an incredibly useful process helping the design team to produce a sensitive, imaginative and exciting scheme for the users and staff alike.

3. A comprehensive literature review was carried out (see table right) into three areas:

- Theatre Planning + Spatial Design
- Place-making
- Conservation and design

4. A thorough design process using drawings, photographs, laser scans, drone footage, making, painting, model making and computer modelling were used to arrive at a high quality design that satisfies the client ambition and programme brief.

5. Extensive computer modelling was used to provide client group and visitors quality 3D VR and augmented reality for improved functionality and insight and for high quality graphic material and production drawings to be built from.

Key Author / Reference (See reference section for detail)	Subject related
-Fair (2018)	Modern playhouses, spatial
-Ham (1972)	experiences.
-Kelleher (2007)	Contemporary theatres in Europe.
-Klanten (2010)	Audience participation.
-Rufford (2015)	
-Strong, Longman (1999)	
-Strongman (2007)	
- Bake (2005)	Value of history for Placemaking
- Berleant (2003)	Place-making and the city Heritage
- Woronkovicz (2015)	Identity and Place Placemaking and
- Bosman (2011)	Planning Theory Place Identity and
- Cillers et al (2014)	Agency
- Landry (2000)	Place Attachment
- Maikusen (2010)	Components of Placemaking
- Coates and Friedman (1984) -	Tourism and Place
Hall-Lew (2014)	Aesthetics and Place
- Harney (2006)	Community Driven Placemaking
- Pierce et al (2011)	Governance and Placemaking Place-
- Hou and Rios (2003)	making and Planning Theory Place
- Kent (2018)	and Leisure
- Lew (2007)	Place, Identity and Agency
- MacCannell (2007)	Placemaking as Activism
- Main (2015)	Place attachment
- Martin (2003)	Components of Placemaking
- Mazo (2014)	Placemaking and Economic
- Othman et al (2013)	Development
- Silbeberg (2013)	
- Wyckott (2015)	
-Stone et al (2004)	Remodelling existing buildings Form
- Stone et al (2018)	and Structure in Interior Architecture
- Williamson (2010)	Development and Design
- Williamson (2010)	of Heritage Sensitive Sites:
	Strategies for Listed Buildings and
	Conservation Areas
	Development and Design
	of Heritage Sensitive Sites:
	Strategies for Listed Buildings and
	Conservation Areas

Statement of Originality

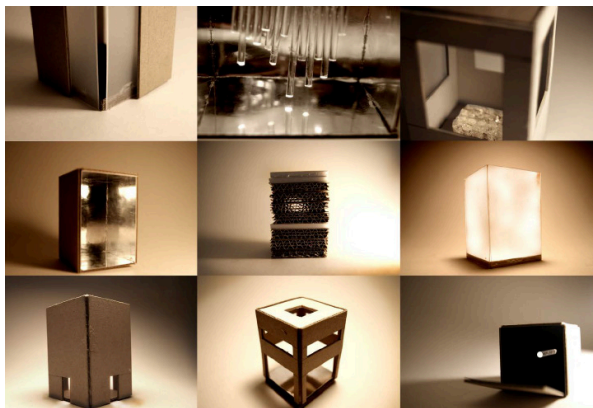


Fig. 4 _Ground Penetrating Radar (GPR) in use

Fig. 5 _Illustrations carried out in research and briefing workshop

Fig.6 _Model making and testing as part of the design process

1. The adoption of a bottom up co-design and participatory research process; this multi-layered and comprehensive approach used co-design workshops to explore concepts of creative place making and creative re-use of historically significant buildings. trips were organised to several multi-award winning buildings that utilise creative reuse of heritage buildings, in Newcastle and further afield.

2. Originality was seen throughout this project in the holistic use of computer software; from laser scanning and drone footage in surveying the building in pre-design stages to 3D Virtual environments and Augmented reality. Virtual and augmented techniques were reasonably well developed in the UK but had not been used in co-design or as an immersive communication tool.

3. The use of 3D scanning of historic interiors and archaeology as well as Ground Penetrating Radars in establishing Roman remains of international importance and incorporating these discoveries into the design and 3D model.

4. The research carried out in this project makes an innovative contribution to existing approaches of working with historically significant buildings. In doing so, the research provides a new framework of methods and processes that moves away from current model of conservation work in architectural practice. The exhibition contributes an original contribution to knowledge with regards to the future of performance and theatre design and a new method of working in conservation

The Tyne Theatre & Opera House

The Heritage of the Tyne Theatre

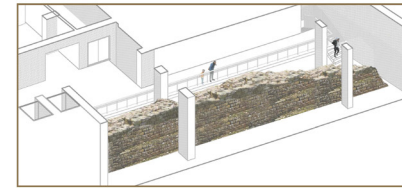
Heritage interpretation



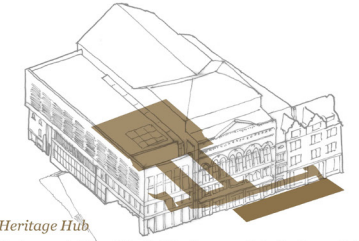
The project will present the immense heritage of the Tyne Theatre and improve public access to the previously hidden or less well known, historically important areas of the building.



The North side of the Tyne Theatre is located within Hadrian's wall corridor - the estimated path of Hadrian's wall runs directly beneath the building. Remains of the wall have been found previously outside the Mining Institute and Newcastle Arts Centre on Westgate Road.



Following the excavation of the basement, the Tyne Theatre and Opera House will be the first place in Newcastle to present the remains of Hadrian's wall in the context of an exhibition.



Heritage Hub
The basement of the existing building becomes a hub of heritage activity. The basement will be excavated to uncover and display the remains of Hadrian's wall. The theatre machinery is on display to the public.

The Future of the Tyne Theatre

Digital technologies



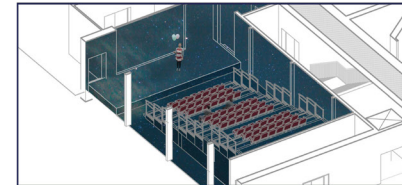
The extension to the existing theatre houses the 'Digital Theatre' which embraces the future of theatre production, utilising digital technologies to draw and captivate new audiences.



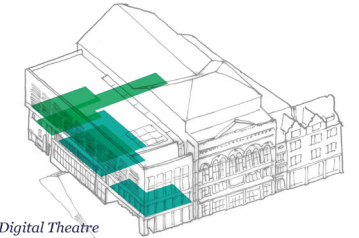
Digital Theatre Performance



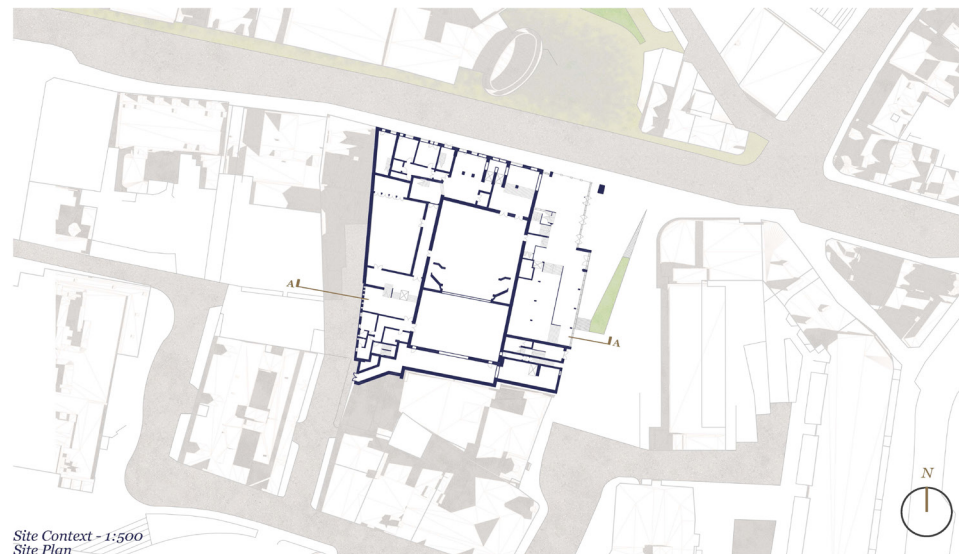
VR and Interactive Displays



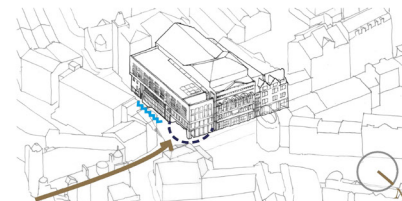
The Digital Auditorium has a 70 seat capacity and is equipped with sound, lighting, digital projection and live streaming facilities.



Digital Theatre
The extension houses the facilities for the Digital Theatre. This includes the Digital Auditorium, a digital training facility, hired studio spaces and a meeting/writing room.



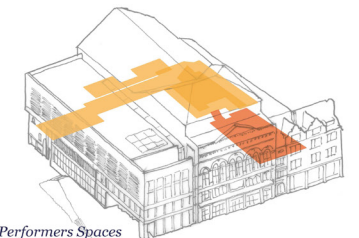
Site Context - 1:500
Site Plan



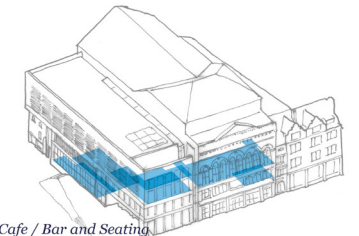
Site Analysis
Initial site analysis identified the need for an active frontage to Thornton Street to draw in custom from Westgate Road. The primary route to the theatre is from the city centre and Central Station to the East of the Theatre.



Facade Grid
The proposed extension references the Tyne Theatre facade. The horizontal banding follows the grid of the existing facade and the vertical elements are emphasised.



Performers Spaces
The performers areas are located in the South/South West section of the existing Theatre. A new rehearsal space has been added.



Cafe / Bar and Seating
A large cafe/bar on the ground floor seats 50 people and can run independently to the Theatre. Further bars and seating on the upper floors serve both the Digital and Tyne Theatre auditorium.

Fig. 7_Presentation Board 1



View from Westgate Road



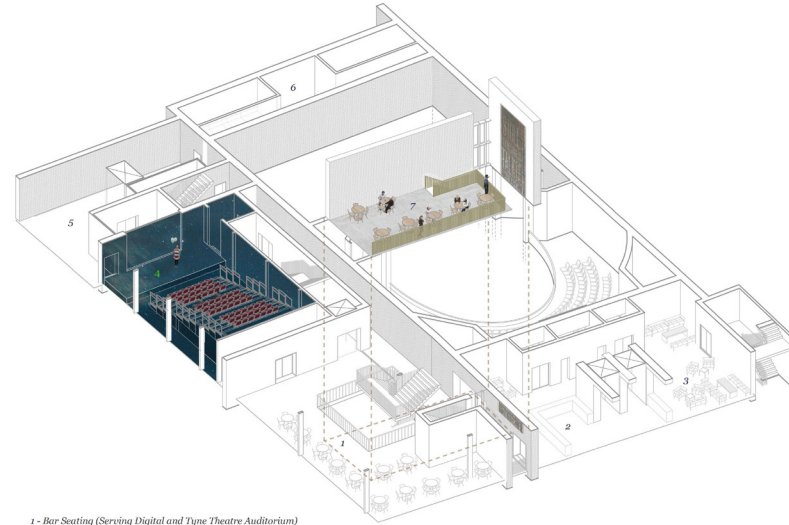
Ground Floor Cafe/Bar



1:200 Westgate Road Elevation

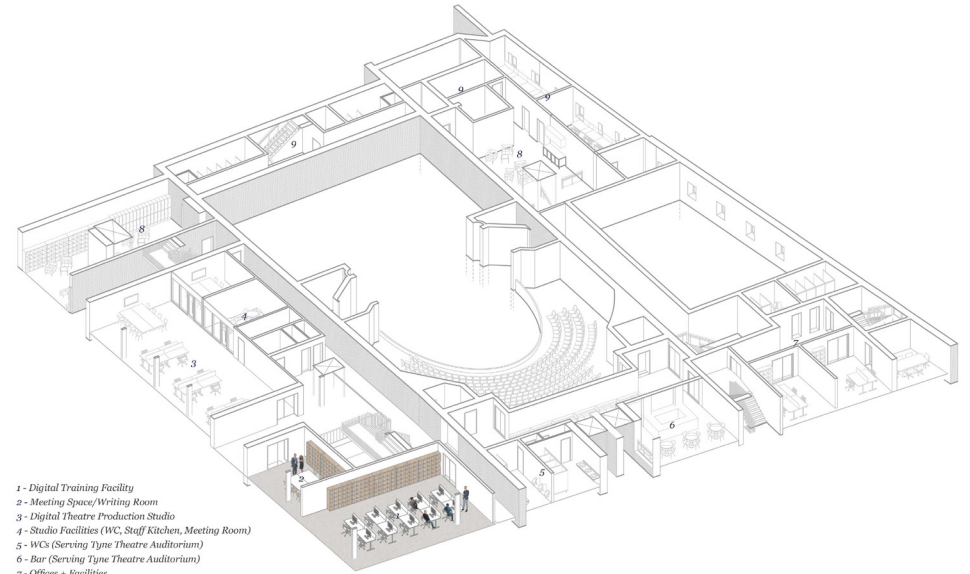


Roof Terrace



- 1 - Bar Seating (Serving Digital and Tyne Theatre Auditorium)
- 2 - Bar (Serving Digital and Tyne Theatre Auditorium)
- 3 - Bar Seating (Serving Tyne Theatre Auditorium)
- 4 - Digital Auditorium
- 5 - Digital Auditorium Backstage
- 6 - Changing Rooms
- 7 - External Terrace

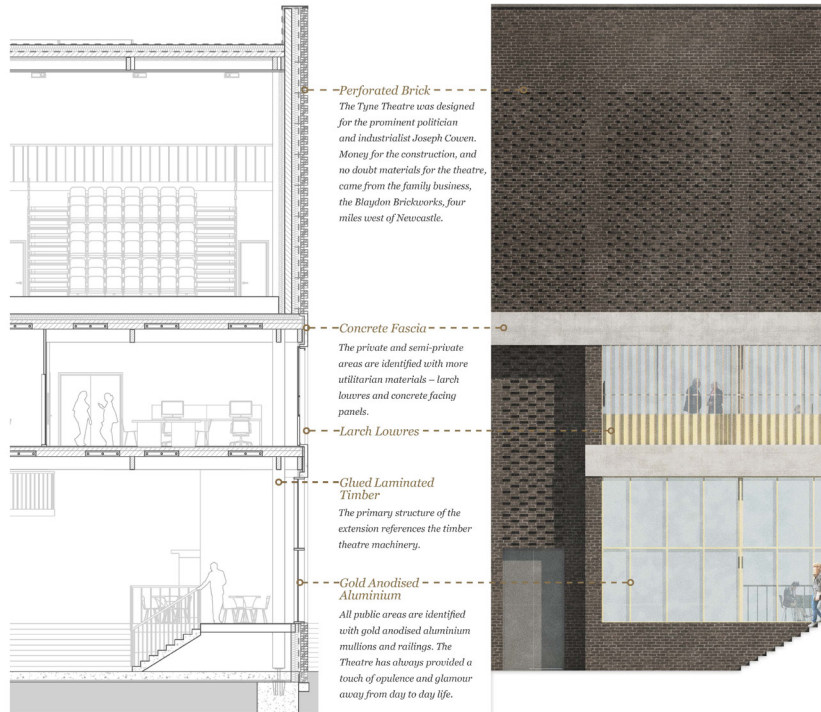
Second Floor +Terrace



- 1 - Digital Training Facility
- 2 - Meeting Space/Writing Room
- 3 - Digital Theatre Production Studio
- 4 - Studio Facilities (WC, Staff Kitchen, Meeting Room)
- 5 - WCs (Serving Tyne Theatre Auditorium)
- 6 - Bar (Serving Tyne Theatre Auditorium)
- 7 - Offices + Facilities
- 8 - Green Room/Performers Lounge
- 9 - Changing Rooms

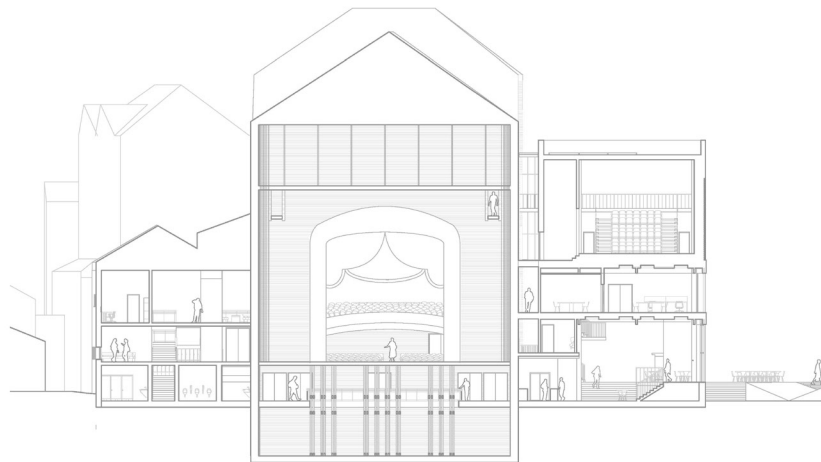
First Floor

Fig. 8_Presentation Board 1



Detail Section of Extension

Elevation of Extension



Section AA

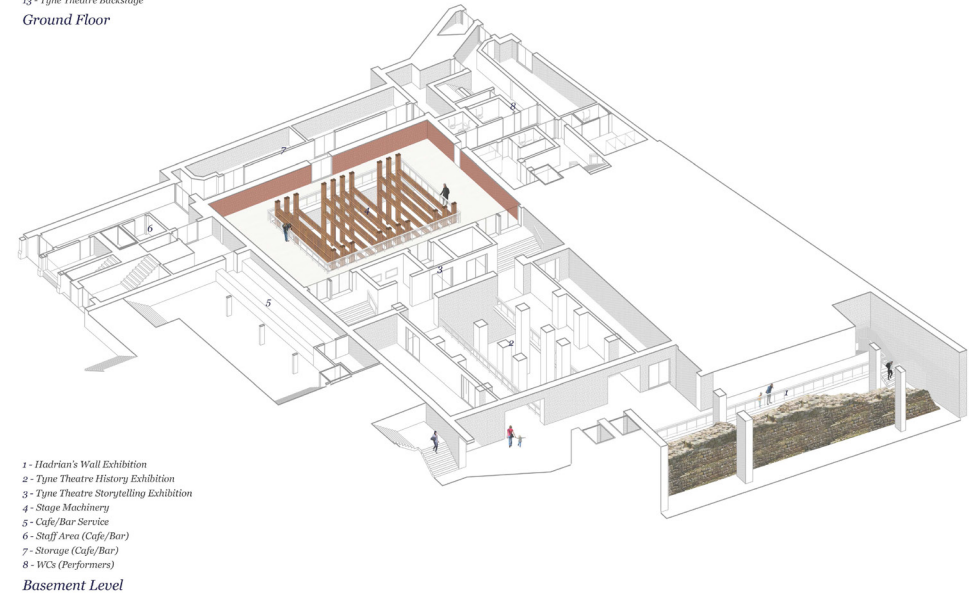
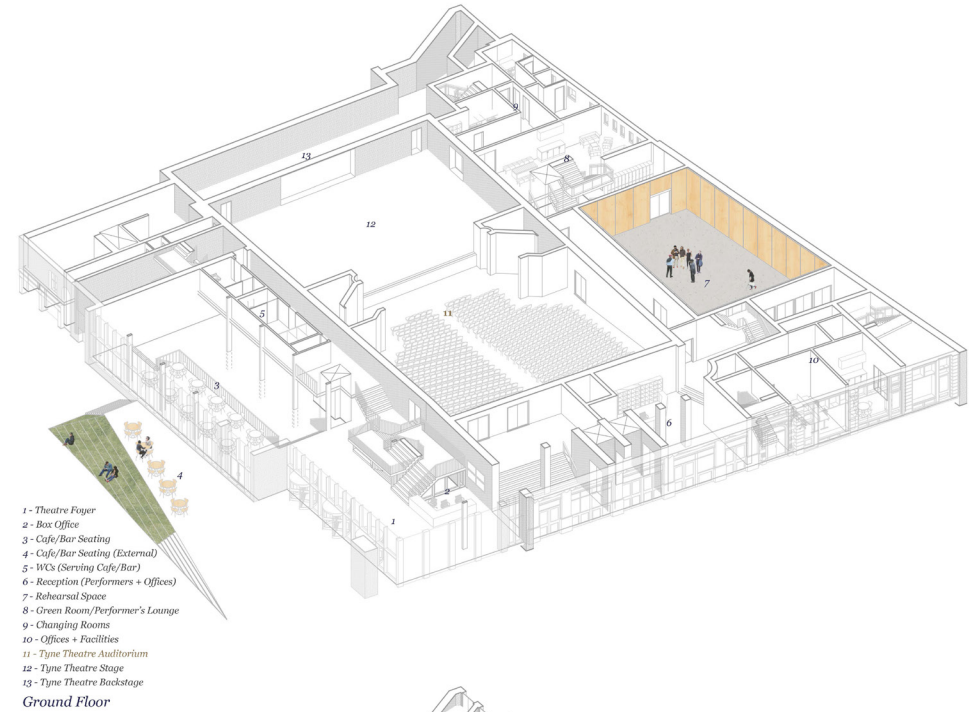


Fig. 9_Presentation Board 3

Site Description



Fig. 10+11 _Tyne Theatre + Opera House Location plan + Site Plan

One of only twenty Grade 1 listed theatres in Great Britain, the Tyne Theatre and Opera House is also one of only ten that date to the Victorian period. The theatre is located on Westgate Road, a historic street in the city centre of Newcastle upon Tyne. A Scheduled Ancient Monument (SAM) Grade 1* listed building of national importance, the theatre is situated on Westgate Road in the heart of the West of Newcastle. The North side of the Tyne Theatre is located within Hadrian's wall which runs directly beneath the building.

The context and rich history to the site was an important generator for the design and is discussed further in the research question section.



Fig. 12-15 _Contextual views around the site of the Tyne Theatre + Opera House

1. Historic Context

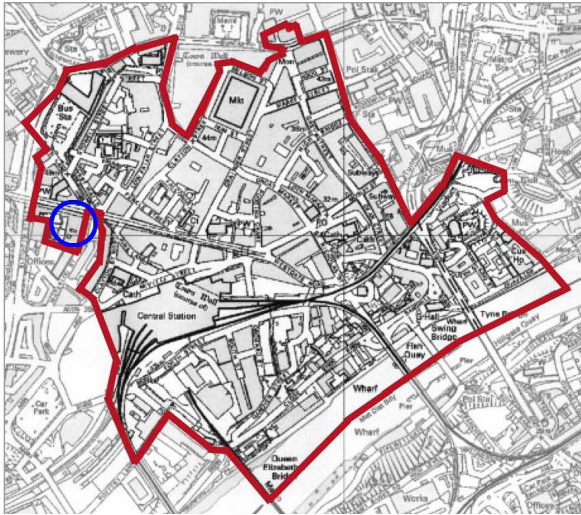


Fig. 16 _ The central Conservation Area boundary indicated by the red line. The Tyne Theatre & Opera House is shown circled in blue
Newcastle City Council



Fig. 17+ 18 _ Images from 1919 showing the transformation of the theatre to Stoll Cinema
Newcastle City Council

The Tyne Theatre & Opera House was designed for Joseph Cowen (1829 – 1900) politician and industrialist, son of Sir Joseph Cowen, a prominent citizen and Member of Parliament for Newcastle upon Tyne in 1867. The theatre opened on 23rd Sep 1867 specialising in pantomime, drama, opera and ballet; aspiring to create an Opera House specialising in opera and sensation drama which was the artistic fashion of that period. The theatre is a historic landmark in the Westgate Road streetscape and maintains a strong presence within the urban landscape of which the theatre is a key part, despite the intensive and continued development of the surrounding urban area.

From its outset, the building is very important for a number of reasons: technological; artistic and creative innovation of the stage machinery; its restoration; the architectural design and artistic quality of the interior and the legacy of the performances. The theatre has hosted a variety of performances including opera, ballet, plays, lecture circuits and public meetings for the community having been used for school children and as a venue for the showing of newsreels during WW II.

It is recognised historically and by today's community as a place of strong social significance. The ongoing importance to the local community is demonstrated by the fact that the building was restored not once, but twice within the space of 9 years through considerable effort by members of the community.

Numerous changes have been carried out to the fabric of the building reflecting periods in style, the type of management and theatre production, as well as changes in society and the use of the building according to social standing. The building is hugely important socially to the community of Newcastle as a theatre, travelling theatre, Stoll Cinema in 1919 and back again to a theatre and events venue in 1974.

Despite class differentiation within the theatre, the theatre has always clearly been a venue that was intended for everyone. It provided a place for social interaction, of 'refuge', and access to a touch of opulence and glamour away from day to day life.

The stage and stage machinery is an element of outstanding significance within the Tyne Theatre & Opera House, contributing greatly to the overall significance of the Theatre. It is a rare example of a largely intact wooden Victorian stage and stage machinery setup that despite a long period of disuse was restored to working order in the 1970s. The stage machinery is one of the most complete sets of Victorian stage machinery extant in Britain today (Simpson & Brown). Being recognised by the Theatres Trust with a three-star rating as 'a very fine theatre of the highest theatrical and architectural quality'. It is also recognised by The Association of Historic Theatres in Europe.

The building has further importance due to the archaeological significance of the site. Prior to the specialist survey that was carried out by the research team at Northumbria, the Tyne Theatre & Opera House site was not recognised as a Scheduled Ancient Monument (SAM). The conservation plan had noted the importance of building, its location in a conservation area and the likely Roman remains around the site. The survey proved invaluable in locating a stretch of Hadrian's' Wall World Heritage Site that up until this point had been thought to be lost / demolished. The important finding of this Scheduled Ancient Monument running underneath the building changed the research project focus significantly whilst adding to the complex layers of history and significance of the site. The commissioned Conservation Plan concluded it to be of *outstanding cultural significance* (Simpson & Brown).

01 Research Context

Establishing the design position and research questions

The PI (MacKinnon) was approached by the Tyne Theatre Preservation Trust initially to develop a feasibility report to modernise the theatre ensuring it met with current regulations for accessibility and fire prevention; reviewing circulation strategies for the theatre, reconfiguring the bar area and redesigning the entrance and reception space. From a modest renovation and accessibility project, the design grew into an ambitious re-imagining of the building as a theatre for the 21st Century, with a large extension to house modern performative spaces, digital training and theatre production and a heritage interpretation element running through the existing theatre to serve a broader demographic. From this initial discussion the design team began to formulate an approach and develop a number of research questions. These questions were further developed through a literature review and some primary research (to be discussed in the next section on the research questions and methodology) and went on to develop a more ambitious and modern programme for the theatre.

Initial data collection and establishing the brief In developing a design approach for the project, a short interview with the Preservation Trust directorate was convened. In structuring a pre-design interview we asked a series of questions regarding their motivations, future aspirations and the functional requirements of the theatre. This approach proved to be very valuable and enabled the design team to gather some useful qualitative information. The client was keen that the theatre retained its own identity and has product differentiation to that of other theatres and entertainment venues in the city, in particular the Theatre Royal on Grey Street.

It was clear the client was passionate about the theatre and it was a well-loved community asset, however they needed help and support from the design team in future-proofing the building for the 21st Century and to visualise the project spatially.

The questions that structured the interview were as follows:

1. What is the motivation behind the project?
2. Who is the theatre audience made up of?
3. What are the strengths and weaknesses to the theatre?
4. What is the future of theatre?
5. What does modern theatre require spatially?
6. Would we be able to work with building users?

The motivation for the project

The Tyne Theatre operating company was set up in 2015 to oversee the building - The Tyne Theatre + Opera House Preservation Trust. The Trust's motivations were clearly expressed in the website they had created. The trust is committed to restoring the theatre to its former glory and raising the necessary funds to ensure that its heritage is sustained for future generations.

A Community Audience

The Tyne Theatre and Opera House has always been known as a community theatre with close connections to Elswick and the West end of Newcastle. It has historically had various adaptations from opera house, theatre, cinema and comedy club to name but a few.

01 Research Context

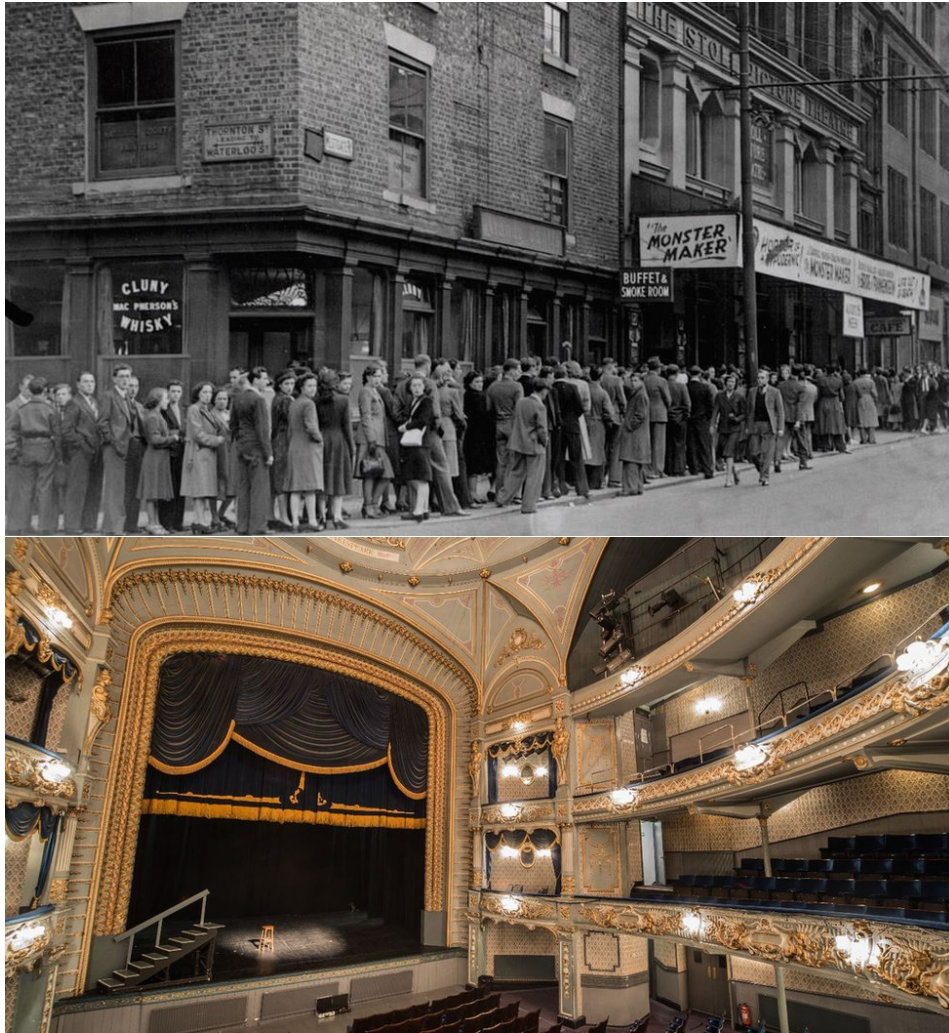


Fig. 19_Images from 1944 showing the local community queuing to watch a film in the Stoll Cinema

Fig. 20_Interior view of the theatre stage and seating

A Community Audience

However, it has become clear that this was not answering the overall problem the theatre had; it had lost touch with its community and failed to recognise what its younger audience were looking for in entertainment. Once surrounded by housing on the bustling Westgate Road, the theatre was a popular venue for social outings. No longer sited in the hub of a community; the theatre has rapidly lost its audience, fallen into disrepair and subsequently put on several 'at risk' national registers.

Theatre Strength and Weaknesses

The conservation plan had already established that the building needed protecting and was 'at risk'. The building itself has become physically dilapidated, too small, too energy inefficient and technically obsolete. The facilities were under threat and unless the theatre addressed some major changes there was potential the building could be demolished or refurbished into apartments.

The building was of huge historical significance not only regionally, but nationally. One of only twenty Grade 1 listed theatres in Great Britain, the Tyne Theatre and Opera House is also one of only ten that date to the Victorian period. A Scheduled Ancient Monument (SAM) Grade 1* listed building of national importance. The research team considered the brief and began to formulate an approach and develop a number of research questions. Alongside Hadrian's wall, it was likely that archaeological remains from Roman, Medieval and Post-Medieval dates still exist within the un-excavated parts of the theatre and these needs to be considered as part of any future proposals. These research questions were further developed through a literature review and some primary and secondary research (to be discussed in section 03 (research questions and methodology).

01 Research Context

Working Groups

The client agreed that different unique performance spaces were vital to the programme to attract a wider and more modern audience who were used to digital advancements in entertainment. They agreed to a number of workshops to be instigated with users and employees to discuss the emerging themes. It was agreed that the design team would work with the client and working groups to understand how best to remodel the existing fabric of the theatre, future proofing the building for modern times.

".....you can't be sentimental about them (theatres). If you extrapolate and work with their strengths you can make them exciting, vivid and current again."

Steve Tompkins (Haworth Tompkins)

02 Research Questions

The research questions have been formulated from the discussions with the Preservation Trust and better articulated through undertaking a literature review and engaging in phenomenological research in participation workshops with building users and staff at the Tyne Theatre and Opera House.

1.
What are the requirements of a theatre in the 21st Century to appeal to a modern audience.
2.
How can participatory design at an early stage of the design process generate more ambitious, informed and sensitive outputs to enhance the theatre, as an approach to conservation.
3.
How can a modern architectural intervention co-exist and enhance the theatre as a Grade 1 listed building and Scheduled Ancient Monument as a contemporary approach to conservation.
4.
How can the design proposal preserve and enhance the place-making and historic qualities of the location.

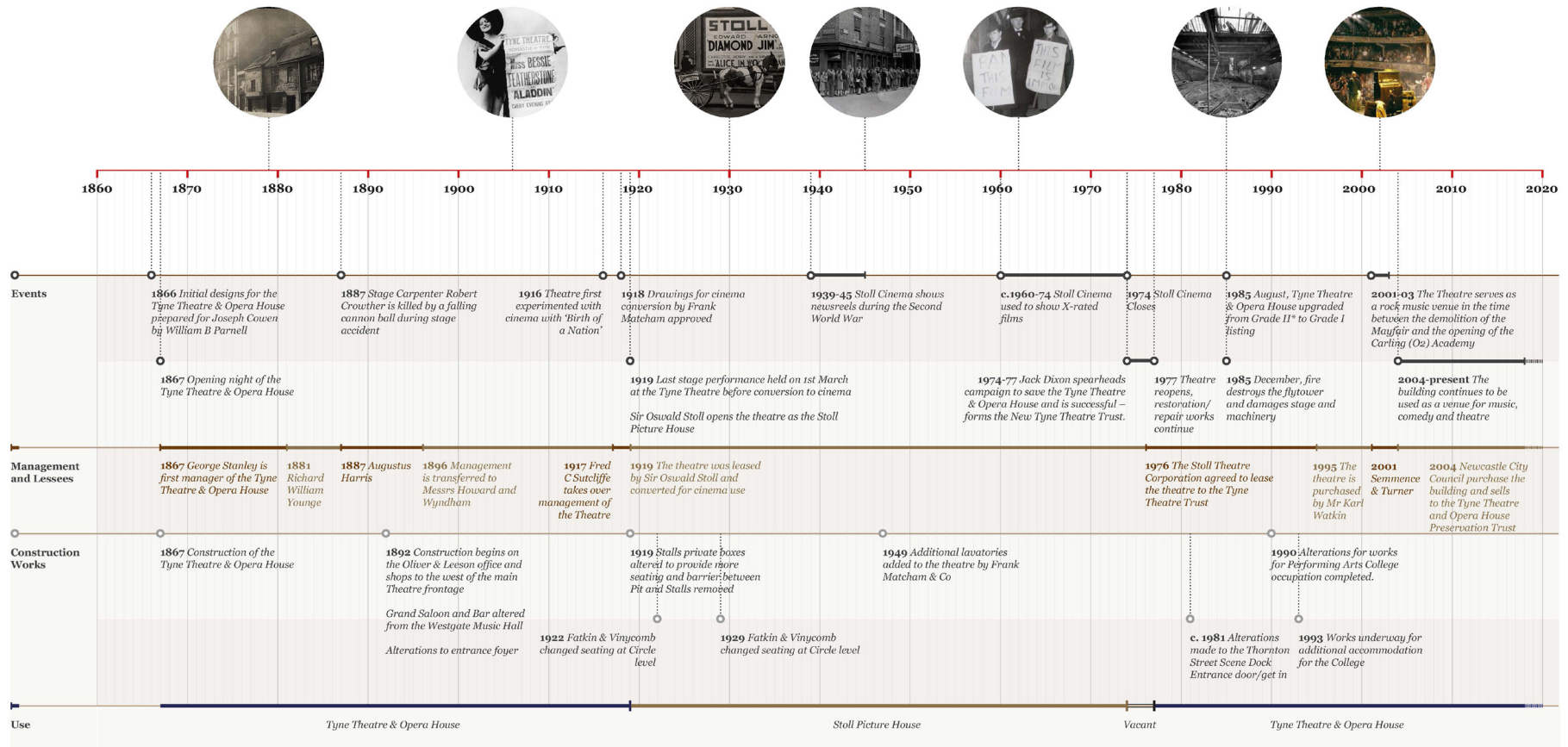


Fig. 21 _Timeline of the Tyne Theatre + Opera House used during research workshops

03 Research Methods

This research project is a case study that utilises mixed methods. The methods have been used in combination to be able to answer the questions that have been derived from the design brief. Research has included public consultation using focus groups, questionnaires, semi-structured interviews and exhibitions of design work. Exhibitions and focus group discussions have included drawings and models (both physical and virtual). The research methods employed include:

1. Inscriptive methods including site analysis and surveys (both digital and analogue) to establish boundaries and threshold, site pathology, conditions and constraints, access, circulation and views (interior, anterior, exterior) of the asset to establish an full understanding of this heritage asset. This included specialist surveying equipment including 3D scanning, drones and ground penetrating radar equipment to fully understand the complexities of this historic building and it's surrounding context. Analysis carried out to establish building heights and preservation of important views across the city

2. Secondary analysis of papers, reports, books, exhibitions and building precedents on topics related to the research questions.

3. Phenomenological research through interviewing end users, volunteers, staff and the Preservation Trust about their lived experience of performative environments. Workshops implemented to explore the architectural, social and cultural value

4. Analogue and digital drawing and modeling to test the design process and it's relationship to the historic fabric and to develop and test design solutions



Fig. 22_ Exterior perspective along Westgate Road illustrating the new extension and public square. Image used in workshops to discuss activating the street and the creation of a new public square

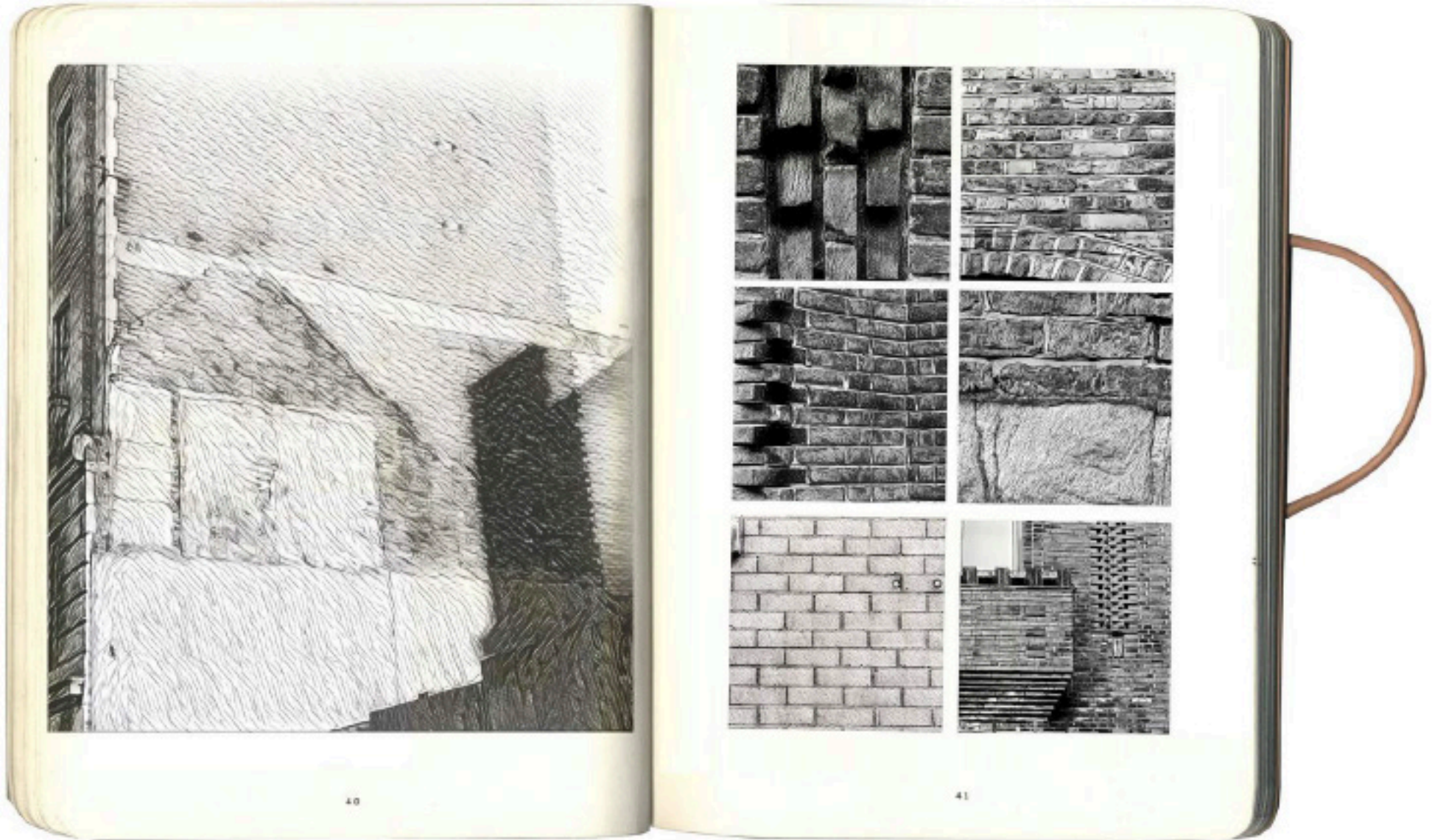


Fig. 23 _Brickwork study as part of the rigorous building survey

Brick coursework and detailing studies of the Tyne Theatre & Opera House taken when considering elevational treatment to the new-brick build extension and possible detailing

04 Research Outcomes

Research Question 1

What are the requirements of a theatre in the 21st Century to appeal to a modern audience.

Methodology

1. Participatory research and co-design activities
2. Secondary data analysis of research (papers, reports and books) including co-design and participatory design

From its outset, the building has been considered very important for a number of reasons: technological; artistically and for its creative innovation due to the stage machinery. Its restoration; the architectural design and artistic quality of the interior and the legacy of the performances by international stars of stage and screen are also deemed important. The theatre has hosted a variety of performances and important figures including Oscar Wilde in 1885. It remains an important pantomime venue, and more recently to broaden its appeal it has hosted singers and comedians. The theatre has always welcomed various types of performers into its stage.

Theatre has continued to evolve in Britain and at times it has been a 'spiritual and social x-ray of its time'. The first buildings used for theatrical performance in Britain were amphitheatres introduced by the Romans, who copied theatres from ancient Greece. These were semi-circular structures, constructed of wood initially and later stone. They were open air with banked seating surrounding a raised stage. Medieval theatre was presented on elaborate temporary stages inside great halls, barns or in open courtyards of galleried inns. It was from these that the Elizabethan timber framed open air theatres took their form, such as the Globe in London. They were often multi-sided buildings, with a covered platform stage against one side. In the 18th Century companies of players began to travel on regular circuits between market towns, they set up their own theatres called playhouses, which were similar in shape and size to Theatre Royal building in main cities across the country.

Tyne Theatre+ Opera House

The Tyne Theatre & Opera House is a Grade I* listed building of national importance. One of twenty Grade 1 listed theatres in Great Britain, the theatre is also one of only ten that date to the Victorian period. The North part of the building is located within the boundary of the Hadrian's Wall World Heritage Site and is in the vicinity of a Scheduled Ancient Monument.

In 1976, the Theatres Trust Act was passed, founding a new organisation, Theatres Trust, tasked with protecting theatres. In 1994 the National Lottery was created which has been beneficial for theatres. Its proceeds fund restoration, refurbishment and redevelopment of theatres. Although this is good news for funding, it still does not tackle the question of theatre meeting the requirements of a more modern society.

It is clear that a new method of engaging the public to theatre is required. Modern times suggest that the engagement of actors and the public needs to be immersive, reminiscing back to a Shakespearean time when the public engaged with the actors and theatre. Cinemas have had success showing productions from the National Theatre live on stage through digital format. How can theatre differentiate from this? This was an important element of the brief discussed during workshops (further discussed in Question 2). The client group agreed that a more immersive experience was required with props, back-drop, VR technology to appeal to a more modern audience who are more technically advanced and demanding.

04 Research Outcomes

Research Question 1

What are the requirements of a theatre in the 21st Century to appeal to a modern audience.



Audiences are now much more technologically advanced, with smart phones, tablets, home VR kits and it is now common place to have more than one television screen in a home all competing with theatre. This has helped some venues remain viable during COVID. The design team discussed with the client how the theatre can become more immersive and reach to a wider more modern audience. The client was keen for the Tyne Theatre to have it's own identity within the city. Discussions continued through a series of workshops (detailed in Question 2) on how could the theatre evolve and adapt its offering for a more modern technological audience. The workshops and consultation events also looked to develop the brief could adapt and establish the feel of the new building.

Live storytelling is at the heart of theatre and human beings creating and experiencing a story together in a room is not going to change, but how theatre is delivered is an area the design team researched further.

PLATFORM shift+

The design team looked at the work of PLATFORM shift+ which is a project funded by the European Commission exploring innovative approaches to theatre production and engagement with young people. Through the numerous research initiatives of the programme, PLATFORM shift + has identified the urgent need to engage with digital technology in order to understand target audiences. Their research agrees that young people are digital natives who move naturally between real and virtual worlds. Theatre must respond to this new reality to sustain and grow existing audiences and build new audiences for the future.

Brief Development

With the agreement that digital technologies are key to engaging and involving the next generation of theatre goers and performers. The design team developed the brief to include an extension to house digital performance and technology. The extension to the Tyne Theatre & Opera house was proposed to house the Digital Theatre. This will explore innovative approaches to theatre production, addressing the modern challenge of producing theatre for young people in the digital age.

The accommodation brief was adapted to include the following:

Existing Stage + Theatre

Theatre space to be sensitively upgraded; new seating installed

Circulation to be reconsidered to include level access where possible

Digital Auditorium

60-80 seat capacity (approx. 250m²)

Equipped with sound, lighting and digital projection

Sound proofed space for performance, conference, community and social events

Available for private and corporate hire

Digital / media suite for creative arts & animation projects

Digital training facilities for theatre majors

Digital activity space for schools and youths

Fig. 24_VR and interactive display examples

Fig. 25_Projection Mapping example

04 Research Outcomes

Research Question 1

What are the requirements of a theatre in the 21st Century to appeal to a modern audience.



Fig. 26+27_Digital Theatre Studios
Immersive theatre and projection examples

Digital Training and Theatre Production

Studio space for in-house theatre production - for permanent lease or hire

Flexible space for meetings, conferences, writing sessions and seminars

Training facility and computer lab - for taught sessions

Rehearsal space

Appropriate accommodation for school visits, youth groups and community activities

Final Design

The final design was always to engage the public and community with the building. This was carried out by opening up the transparency of the new extension to the street edges and square. Leading from the new public square and foyer space, the public circulation route through the building allows the life of the workshops and back of house spaces to be seen, giving an insight to the scale and sophistication of the new production capacity within the digital theatre. The digital theatre is flexible in design and has the ability to open out to the street engaging with the local community. The new part of the building compliments the more formal traditional theatre whilst refreshing the building and the theatre offering for the 21st Century.



Fig. 28_Research and briefing workshop with a mixture of Northumbria University students and volunteers from the Tyne Theatre & Opera House

04 Research Outcomes

Research Question 2

How can participatory design at an early stage of the design process generate more ambitious, personalised outputs and allow complex, multifaceted projects to be addressed in an imaginative way.

Methodology

Participatory research and co-design activities

Secondary data analysis of research (papers, reports and books) including co-design and participatory design

This research question concerns how best to engage a client group and particularly end users in the remodelling of an ancient scheduled monument through promoting creativity in a supportive environment, in order to make the co-design process feel beneficial and rewarding.

Co-designing with User Group Participatory design research has increasingly acknowledged the value of user insights. Co-design has emerged as a valid and appropriate design method (Stalberg, Sandberg, 2013; Soderback & Larsson, 2016). It began to be used as a method in Scandinavia in the early 1970s. Co-design is often used as an umbrella term for participatory, co-creation and open design processes. It reflects a fundamental change in the traditional designer-client relationship. The co-design approach enables a wide range of people to make a creative contribution in the formulation and solution of a problem.

This approach goes beyond consultation by building and deepening equal collaboration between the client, end users and the design team. A key benefit of co-design is that users, as 'experts' of their own experience, become central to the design process. The role facilitator by the design team provided ways for people to engage with each other as well as providing ways to communicate, be creative, share insights and test out new ideas.

Firstly, some participatory research was carried out through interviewing end users, volunteers, staff and the Preservation Trust about their lived experience of performative environments. This went on to inform the design workshops where emerging themes were explored looking into the architectural, social and cultural value of the theatre.

04 Research Outcomes

Research Question 2



Fig. 29+30_Co-Design workshops carried out by the design team

Co-Design Workshops

A wide range of tools and techniques were used to support the co-design process. These involved drawings, computer and physical to develop and test solutions. Participants were encouraged to create visual storyboards and user journeys which benefited the resulting spatial design of the project. The team consulted with 10 stakeholders (theatre goers and voluntary staff) on their lived experience of the venue through questionnaires and interviews over several two-hour long workshops. We used precedents such as Haworth Tompkins Young Vic in London and the National Theatre in London to discuss programme and how existing buildings can be adapted.

Emerging themes from the two workshops included a greater ambition for the theatre; a second digital auditorium, a space for digital training and theatre production. Also, the addition of a historic interpretation element to the project celebrating the Roman remains and the timber stage under-croft.

The immediate benefits of employing a co-design approach included:

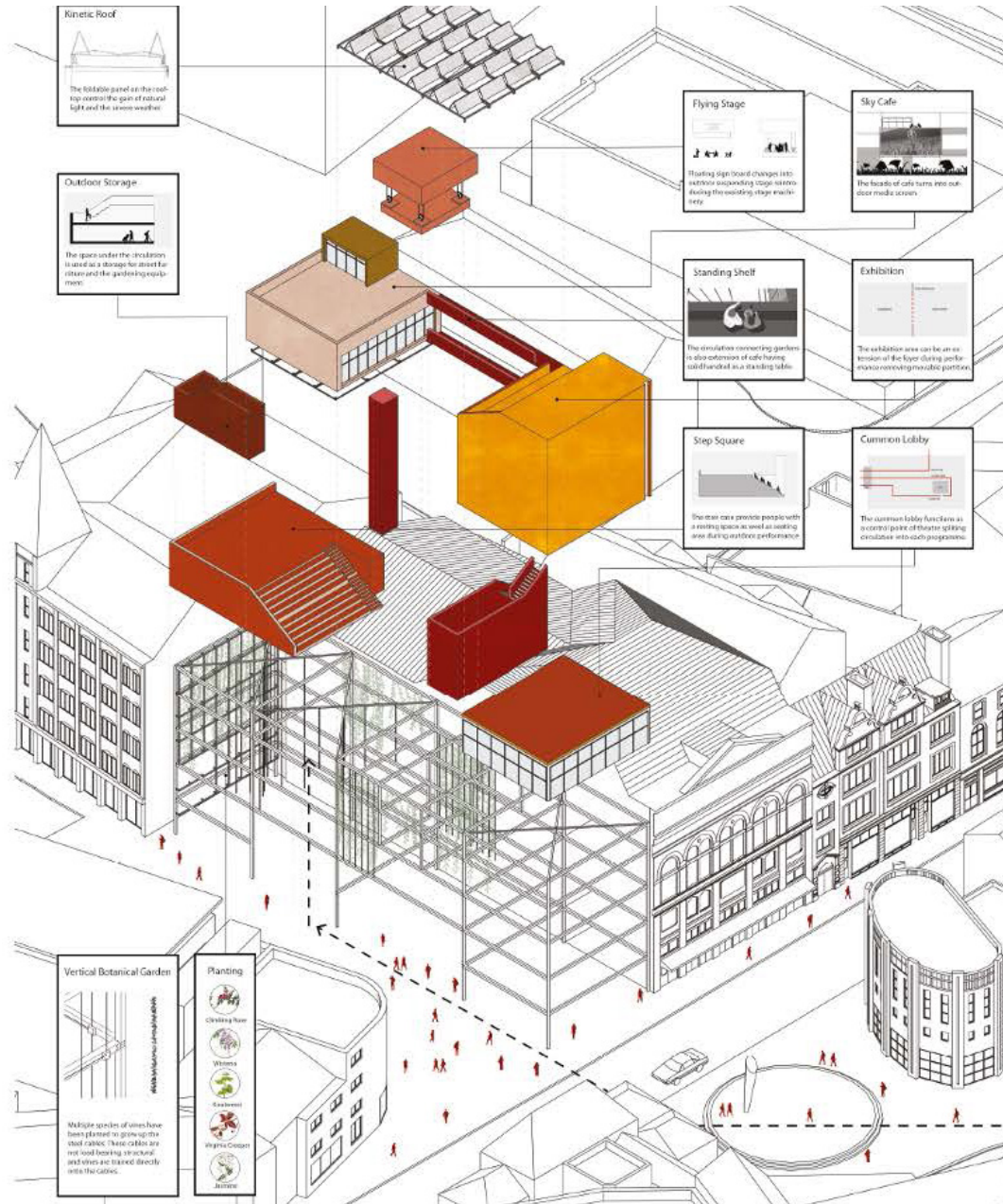
- Generation of better ideas with a high degree of originality
- Improved knowledge of customer or user needs
Immediate validation of ideas or concepts
More efficient decision making
- Better cooperation between different groups and across discipline

The longer-term benefits included:

- Higher degrees of satisfaction of, and loyalty from, customers and users
- Increased levels of support and enthusiasm for innovation and change in the project

04 Research Outcomes

Research Question 2



Workshop Insights

The workshops and pre-design interviews gathered a large amount of qualitative information which became very useful. It provided some valuable insights in helping determine the client ambition for the project. Emerging themes were as follows:

- The theatre needed a clear identity, there was a agreed opinion that the identity had got confused in recent years
- Collectively there was a desire to reconnect to the community of all ages
- People were interested in a new flexible performance space that could be adapted for lectures and community events
- There was a fear that the history of the building would disappear as the people who knew the building grew older. there was an interest in retaining these memories and celebrating the uniqueness features of the theatre. It was agreed that the Roman remains could become part of this heritage trail / exhibition.

This research makes a innovative contribution to existing approaches of working with historically significant buildings. In doing so, the research provides a new framework of methods and processes that moves away from current model of conservation work in architectural practice.

Fig. 31_Perspective drawing used to discuss street activation, new public square and possible materiality options

04 Research Outcomes

Research Question 3

How to design a modern architectural intervention which will co-exist and enhance the theatre as a Grade 1* listed building as a contemporary approach to conservation.

Methodology

Inscriptive methods including: site analysis and detailed surveys to establish site measurements and the physical and environmental conditions of the site.

Drawing, computer and physical model making to develop and test design solutions. These methods were also used to communicate to the workshops participants to enable them to understand our design proposals.

Participatory research and briefing through interviewing users and staff of the building. Analysing their experience and views of the building, theatres and performative spaces.

Drawing, computer and physical model to develop and test solutions. These methods were also used to communicate to the participants to enable them to understand our design proposals.

Co-design of the new facilities with various stake-holders involved with the project including client group, end users, public servants and conservation officers.

Buildings outlast civilisations, they evolve and they are changed. Throughout history buildings have been adapted for new uses; the Roman Arena in Nimes, France became a small fortified town in the Middle Ages; the Baths of Diocletian in Rome were converted into a church by Michaelangelo (Santa Maria degli Angeli) and Sir John Soane remodelled a pair of town houses in London at the start of the 19th Century to house his families extensive collection of art and artefacts. The Civic Amenities Act in 1967 encouraged authorities to designate conservation areas in cities and towns. Today, planning authorities are keen to preserve the cultural heritage of a place, often valuing the old and picturesque over modern and contemporary.

Design Approach

It was important to the design team to have a detailed understanding of the original building before any proposal was made. A thorough analysis was carried out of existing site conditions, local and site context, structure and the history of the building. The uncovering of this analysis determined the strategies for the subsequent redesign of the building and the insertion of a new extension. It was important to produce a sensitive scheme that respected it's context, its materiality, the street, the spirit of the place and the complex layering of history on and around the site. One of the clear aims was that the new facility was distinct and 'of it's time' whilst complimenting it's host. The insertion of a new element whilst remodelling of the existing building was always going to be an important balance to get correct. The existing theatre is a strong powerful building with a clear architectural language, the design team took the approach that the extension should be sufficiently strong to sit easily alongside it; a counterbalance but a modern approach. The two components would be speaking equally loudly albeit in two different architectural languages.

04 Research Outcomes

Research Question 3

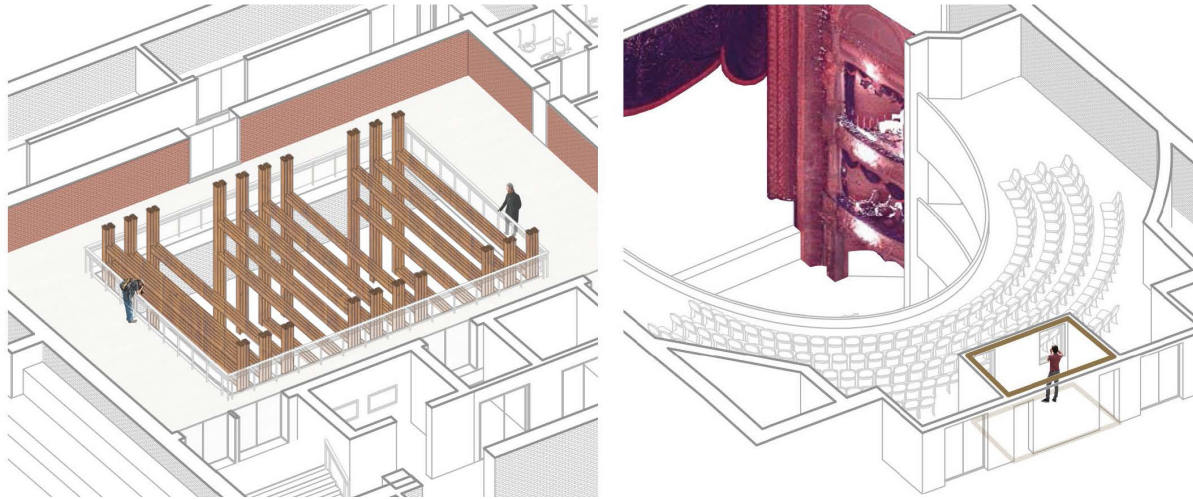


Fig. 32+33_Stage Undercroft and Auditorium

The stage machinery and theatre auditorium are on display to the public. The projection box, a remnant from the days of the Stoll Picture House, is used as a viewing box for visitors to see the Grade I listed auditorium.

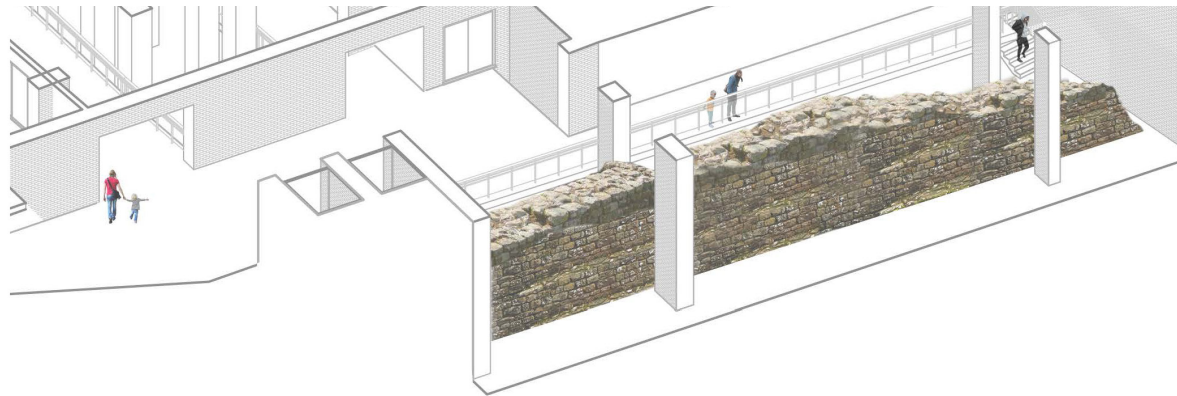


Fig. 34_Hadrian's Wall

Following the excavation of its basement, the Tyne Theatre and Opera House will be the first place in Newcastle to present the remains of Hadrian's wall in the context of an exhibition. This could be a persuasive factor in gaining Heritage Lottery Funding as the site would become a national tourist attraction.

The design approach taken was that the tension and ambiguities in the relationship between the two would strengthen and reinvigorate the existing building allowing it to be looked at afresh, as though new life had been drawn into it.

Survey Process

To engage in any form of design activity an understanding is required of the built fabric and existing spatial hierarchies both internally and externally. Due to the buildings complexities; the auditorium, the unique timber stage structure, cellar and attic space the survey process required specialist equipment including 3D scanning, drones and ground penetrating radar equipment. Through radar technology we found some significant architectural history and Roman remains. The specialist surveys were undertaken by the university who have international expertise in 3D digital surveying; scanning and recording heritage assets including Durham Cathedral, York Minster and Roman Catacombs in Italy.

Heritage Tour

The scans and historical research carried out help define new proposals for the new intervention within the building. The brief expanded to include a heritage interpretation element to the programme; celebrating the unique listed features of the theatre and the Roman remains running underneath the building. This would mean excavating the basement to display and exhibit the remains of Hadrian's Wall as one part of the interpretation proposal. The heritage interpretation would also include a tour underneath the stage and to the projection box on the top floor of the theatre, a reminiscence back to the days when the theatre was used as Stoll Picture House.

04 Research Outcomes

Research Question 3

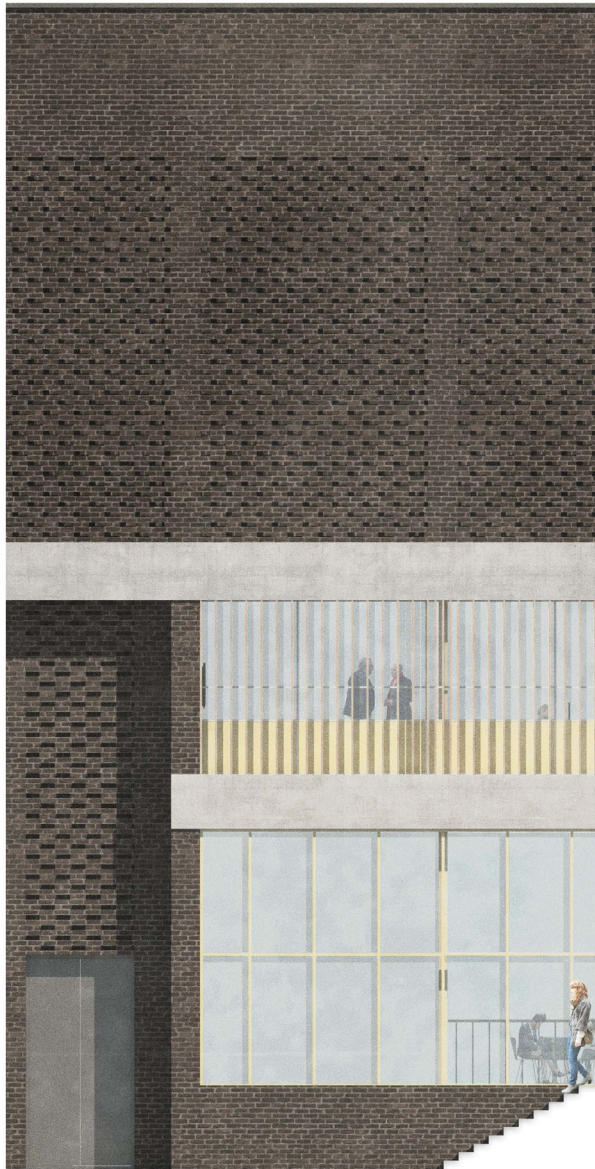


Fig. 35 _Brickwork study to new extension testing out brick perforation and gold contemporary detailing to reference existing theatre

Use of Precedent: aid to the design process

Precedents were used throughout the project as the basis of the investigation, particularly in the co-design workshops. There are a number of different approaches taken to the design of existing buildings and it was important to differentiate these to the client.

Preservation maintains the building in the found state, whether ruinous or not. the building is made safe and any further decay is prevented; the ruined condition is important to the historical understanding of the place.

Restoration is the process of returning the condition of the building to its original state and this involves using materials and techniques of the original period to ensure that the building appears as though it has just been constructed.

Renovation is the process of renewing and updating a building.

Remodelling is the process of wholeheartedly altering a building. The function is the most obvious change, but other alterations may be made to the building itself such as circulation, orientation, the relationship between spaces; additions may be built and other areas may be demolished.

In the case of the Tyne Theatre a number of the methods were proposed in unison; the facade would be restored whilst the existing building was to be renovated with some remodelling proposed. The design strategy was to restore and reveal as much of the original building as possible, then to protect it and lastly insert a new modern layer into the theatre.

Various precedents and case studies were used to illustrate to the client how various approaches had been taken in existing buildings when remodelled. Various themes were discussed in the case studies such as circulation and movement and materiality studies, contrasting old against new. Analysis of precedent became important in justifying the importance of the 'new' addition to the building and any 'new' intervention within the existing building must avoid pastiche and have its own identity. In this way the modern intervention would enhance and successfully co-exist with the listed theatre building.

Learning from successful precedents, the new extension visually and physically opens up to the street; displaying activity from the outside and welcoming people in. Good place making practices are used in the proposal; transforming the engagement with the theatre and the street and surrounding neighbourhood, activating the surrounding public spaces and enlivening the street by creating a public square.

Brick has been chosen as a primary cladding material because of its historic connection with the existing building. The private and semi-private areas are identified with more utilitarian materials; timber louvres and concrete facing panels. The primary structure of the new building is glued laminated timber. The vertical members reference the theatre and stage machinery. All public areas are identified with gold anodised aluminium mullions and railings. The Theatre has always provided a touch of opulence and glamour away from day to day life and the essence of this is carried through in the contemporary detailing of the new extension.



Fig. 36 Westgate Road Elevation

The extension references the existing theatre façade. The grid of the extension references the spacing between the central pilasters of the Tyne Theatre façade. In addition, the horizontal banding follows the grid of the existing façade and the vertical elements are emphasised. Like the Tyne Theatre façade, the extension is visually split into two halves – the 'plinth' and the more intricate upper level



Fig. 37_Heritage Interpretation I Hadrian's Wall on Westgate Road
Illustration depicting points of focus for Hadrian's Wall World Heritage Site along Westgate Road

04 Research Outcomes

Research Question 4

How can the design proposal preserve and enhance the place-making and historic qualities of the location

Methodology

Inscriptive methods including: site analysis and detailed surveys to establish site measurements and the physical and environmental conditions of the site.

Drawing, computer and physical model making to develop and test design solutions. These methods were also used to communicate to the workshops participants to enable them to understand our design proposals.

Participatory research and briefing through in-interviewing users and staff of the building. Analysing their experience and views of the building, theatres and performative spaces.

Drawing, computer and physical model to develop and test solutions. These methods were also used to communicate to the participants to enable them to understand our design proposals.

Co-design of the new facilities with various stake-holders involved with the project including client group, end users, public servants and conservation officers

The research team used three methods in combination to explore the notion of place. The principal method adopted was secondary analysis of text in relation to place, where we refer to the writing on place-making by authors such as, Duany, Trancik, Norberg Schulz, Jan Gehl and Jane Jacobs. We also referred to a number of academic journals concerned with place, From this reading, attitudes were developed as to how best to integrate any extension and alterations to the existing fabric of the Grade 1 listed building. The third methods referred to were used as part of the design process to generate concepts and to test proposals on the site.

Place-making is essential to good cities. Places are for people; they are dynamic environments that grow and transform lived experience (Proshansky 1976). A place represents a bond between people and their landscapes, as a result of them being sociable, accessible and engaging environments to inhabit. People want to visit places, because they have an identity, and offer up things to do; they are comfortable, clean and used (Auge 1992). People can meet up with friends and family. This is formed through a strong and profound relationship between buildings and spaces.

Non-spaces, by way of contrast, have no attachment to human beings. Negative externalities within the environments, such as pollution, noise, speed, anti-social behaviour etc. disrupt peoples' experience of location. They force the public to move on, in search of more amenable locations.

The approach to place

A principal concern of the research project is to respect and enhance the place characteristics of the

theatre, as it contributes to the city and also as a leisure facility. Our strategy aim was to develop a sense of place through:

- developing opportunities for user-interaction (discussed in Q1)
- better connection between the theatre to the street and the city
- maintaining and enhancing the place characteristics that already exist, existing signage etc.

Enhancing place-making for the project

Few areas in the UK can boast such an ancient and diverse architectural heritage as that comprising the urban areas of Newcastle. The Tyne Theatre was built in the Victorian period 1866-67 and although overshadowed by the grander, more conspicuous Theatre Royal on Grey Street the Tyne Theatre actually had at the time of its opening a larger capacity than its competitor in Grey Street. Located close to Newcastle's Assembly Rooms a building used for balls, music and dancing, Westgate Road was seen as one of the smartest parts of town. The theatre has historically had various adaptations from opera house, theatre, cinema and comedy club to name but a few. However, it has become clear that this was not answering the overall problem the theatre had; the theatre had lost touch with its community and failed to recognise what its younger audience were looking for in entertainment. Once surrounded by housing on the bustling Westgate Road, the theatre was a popular venue for social outings. Now no longer sited in the hub of a community; the theatre has rapidly lost its audience, fallen into disrepair and subsequently put on several 'at risk' national registers.

04 Research Outcomes

Research Question 4

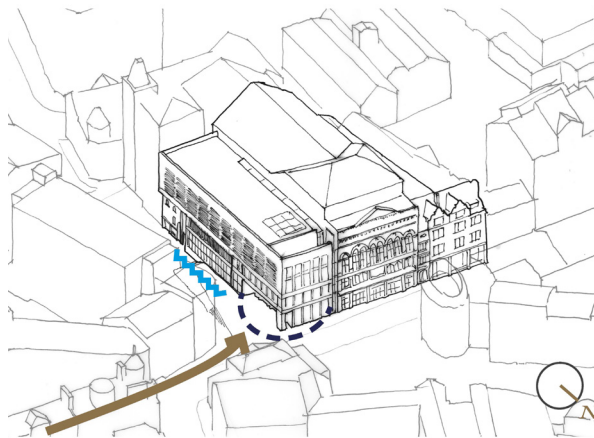
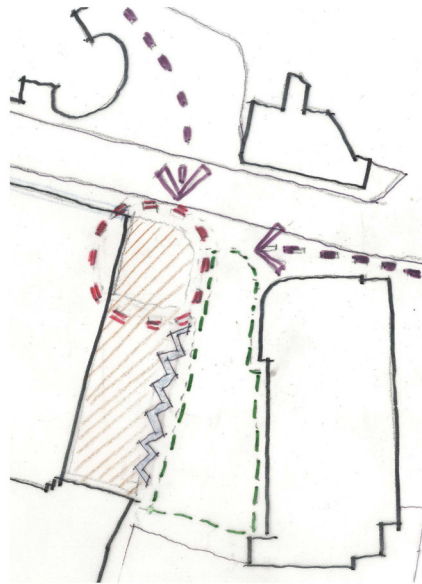


Fig 38+39 _Sketches used to discuss the theatre extension opening to the street and visual sight lines of the theatre

Trancik (1986) argues that a locality only becomes a place when it is given contextual meaning i.e. when it is derived from cultural or regional identity; when it become an extension of the community. The building has lost it's role within an established community, with weakened place identity.

The design team regarded the existing building as a narrative, a story to be discovered and retold and, through a process of uncovering, clarification and interpretation will reveal and reactivate the place. West-gate Road now has a varied typology of buildings from bars, offices and charity buildings and has lost its identity within the city as a social destination.

A fundamental strategy for the scheme was to develop a master plan for the building and to re-establish routes in the city to the building. This was implemented by extending the building footprint significantly with a new side extension. The extension would hold a performance space and bar area, opening the side elevation out onto a public plaza. Activities could therefore spill out onto the square, especially in the summer months. Special events and performances could enliven the plaza. The new modern proposal to the Theatre and the public plaza would be part of a master planning route from the castle keep through to central station. The strategy also responded to the brief which asked for the building to become a destination venue not just for theatre. The buildings that often fail to establish place-making qualities are not active on the ground floor (Duany 2013). Instead, they form a barrier with no potential to animate associated external spaces such as a street or a plaza. Visual and physical accessibility is essential for a place to develop, both through buildings and the space between them.

The proposals looked at the building being in use during the day alongside the evenings. Even when closed, the building still enables people to see the activity of what is on inside. A building occupies a specific place. It has its own identity and a distinct relationship with its surroundings, involving not just its immediate neighbours but also things more remote. The perception, the character and scale of a particular building or place can be influenced by its context. This is just a small element within a huge collage of different points and references.

To further enhance the place-making qualities, the research team proposed

- integrate a public square
- rooftop view and Stoll Cinema signage
- view back of house of theatre through circulation
- activate building to the street
- vary transparency of building to allow visibility

Learning from successful precedents, the new extension visually and physically opens up to the street; displaying activity from the outside and welcoming people in. Good place making practices used in the proposal transform the engagement with the theatre and the street and surrounding neighbourhood, activating the surrounding public spaces and enliven the street by creating a public square. This new public viewing route allows the life of the new digital workshops, foyer and cafe spaces to be seen giving an insight to the scale and sophistication of the Tyne Theatre's production capacity.

04 Research Outcomes

Research Question 4



Fig 40_Celebratory 'Night-time' Mode
External and internal lighting brings the theatre and Westgate Road to life at night, engaging with the street and celebrating performance

Environmental Design

The new building is designed along passive low energy principles; combining high insulation levels, natural ventilation, solar shading and orientation to reduce the buildings carbon footprint.

Co-design Input

The Preservation Trust and workshop attendees were generally forward thinking and aspirational as a group. There was a collaborative desire for the new theatre to be contemporary and 'of it's time'. This aspiration was largely echoed by the Newcastle City Council conservation officer who was insistent that the new works were to be contemporary and of high quality enabling the future building to make an enduring contribution to the architectural heritage of the city. a series of workshops. This important co-design work resulted in the creation of a design strategy and master plan for the building; involving a process that moves away from the current model of conservation work in architectural practice.

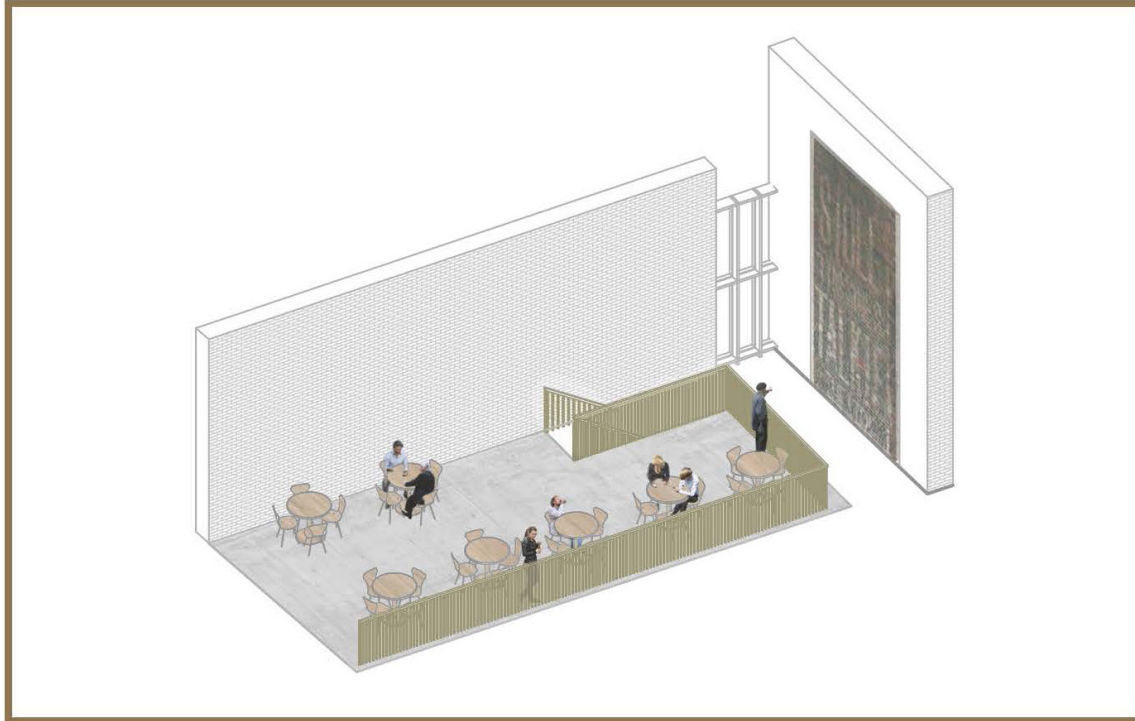


Fig 41+42_Illustrative drawing of Stoll picture sign and the roof garden created with views to the City Walls and Westgate Road. It provides a platform to display the historically significant Stoll Picture sign to the public

Bibliography + References

Books

- Abercrombie, Stanley, *A Philosophy of Interior Design* (1990)
- Atlee, James and Le Feuvre, Lisa, *the Space Between*, (2003)
- Boyer, M Christine, *The City of Collective Memory; It's Historical Imagery and Architectural Entertainments* (1994)
- Buzas, Stefan and Carmel, Arthur, *Carlo Scarpa, Museo Cannoviano, Possagno* (2002)
- Catacuzino, Sherban, *Old Buildings - New Uses* (1989)
- Cullen, Gordon, *The Concise Townscape*
- Fair, Alastair, *Modern Playhouses: an architectural history of Britain's new theatres 1945-1985*
- Kelleher, Joe, Ridout, Nicholas, *Contemporary theatres in Europe : a critical companion* (2006)
- Klanten, Robert, Feireiss, Lukas; *Staging space : scenic interiors and spatial experiences* (2010)
- Kurtich, John, Eakin, Garret, *Interior Architecture*, (1993)
- Lynch, Kevin, *the Image of the City* (1960)
- Powell, Kenneth., *Architecture Reborn* (1999)
- Robert, Phillipe, *Adaptations: New uses for Old Buildings* (1989)
- Rowe, Colin, Koetter, Fred, *Collage City*, (1978)
- Rowe, Colin, Koetter, Fred, *In Detail. Interior spaces. Space. Light. Materials.* (2002)

- Rufford, Juliet, *Theatre and Architecture* (2015)
- Schultz, Christian Norberg, *Genius Loci: Towards a Phenomenology of Architecture*
- Stone, Sally, Booker, Graham, *Rereadings 1* (2008)
- Stone, Sally, Booker, Graham, *Rereadings 2* (2018)
- Strongman, Cathy, *New London architecture 2 by Ken Powell 1947* (2007)
- Various contributors. *Old and New Architecture: Design Relationship* (1980)
- Watkin, David, *A History of Western Architecture* (2000)
- Williamson, Kenneth, *Development and Design of Heritage Sensitive Sites: Strategies for Listed Buildings and Conservation Areas* (2010)

Periodicals

- Art and Design Profile* no 30 'Installation Art' (1993) *El Croquis* 47, *Architekurburo*
- El Croquis* 62/63, *Spanish Architecture* 1993
- El Croquis* 78, *Steven Holl* (1986-96)

Articles

- Bellosillo, Javier, *Restoration and Conversion of the Monastery of Santa Maria La Real, Najera* (1988)
- Cappezutto, Rita, *Confronting the Architecture of Evil*, (2002)
- Field, Marcus, *A Dramatically Different Theatre, independent on Sunday*, *Sunday Review* (2000)
- Long, Kieran, *A Bit of Rough*, *Building Design*, 2000
- McKean, John, *Space and Society*, *Architects journal*, (2003)
- Mecozzi, Daniela, *Fear of the Future*, *Frame*, (2001)
- Mulhearn, Deborah, *Club Class*, *Architects' Journal* (2002)
- Philips, Alan, *Tyneside Renaissance; The Baltic Art Factory*, *Architecture Today* (2002)
- Riva, Umberto, *On Interior Design*, *Abitare*, (1995)
- Scott, Chris, *Colour the world*, *Frame*, (2001)