Retrofitting for Cultural Infrastructure
Future Observatory Cultural Policy Fellowship Report

AUTHORS DSDHA

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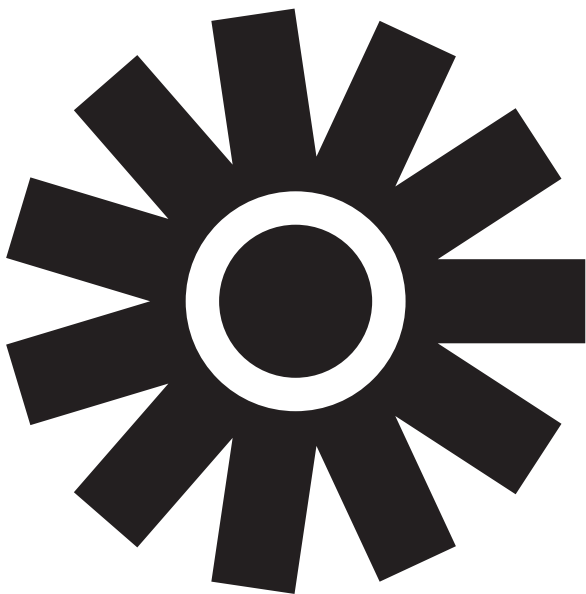
NATIONAL YOUTH THEATRE

1
Abstract

WHY DO WE NEED TO CONSIDER RETROFIT FOR CULTURAL INFRASTRUCTURE?

Cultural and creative industries are essential to the UK's success and the foundation for civic life. Retrofitting, as an approach, framework and strategy for cultural infrastructure can support sustainable development and promotion of the sector's value against multiple environmental, cultural, social and economic pressures.

While new-build technologies are addressing embodied and operational carbon of buildings to meet the Paris Agreement target of becoming zero-carbon by 2050, there are few resources to support the adaptation of the estimated 80% of building stock that will have already been built and occupied by then.

The National Planning Policy Framework features three pillars of sustainable development: economic, social and environmental.[1] Although existing strategies provide an environmental and economic case for retrofit, there is a lack of regulatory incentives for social and cultural impacts to be considered, which are particularly critical for cultural infrastructure. This includes the public benefits of heritage preservation, the need for accessibility improvements and the irreplaceable networks that nurture local skills, talent and sense of belonging.

Retrofit can be broadly defined as the regenerative upgrading of existing spaces. In determining the viability of retrofit for cultural infrastructure – buildings, facilities and public realm - there is a need for the holistic assessment of environmental, cultural and social factors for cultural organisations to make informed strategic decisions.

This report helps articulate the three values of retrofit - environmental, cultural and social - operating within the parameters of economic considerations, which should be considered for the future-proofing of our cultural infrastructure. It aims to bring greater clarity to the retrofit process for cultural organisations as well as recommendations for policy-makers and researchers.

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1   Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework, p.5 and 16:190b, p.55

WHO IS THIS REPORT FOR?

The purpose of this report is twofold: outlining key recommendations for DCMS in supporting cultural retrofit projects across the UK; and providing a practical guide for cultural organisations who are considering the holistic retrofit of existing cultural buildings or alternative premises.

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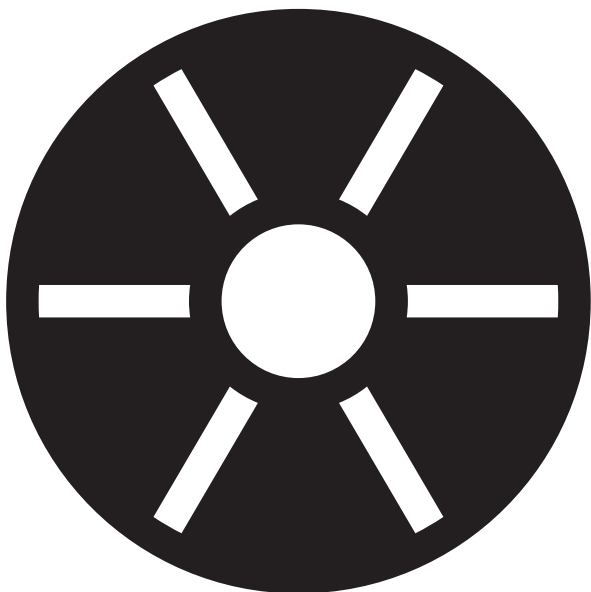→ Thomas Pickering, LSA Student

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Executive Summary

Against the backdrop of the climate emergency, Covid-19 pandemic, Black Lives Matter protests and numerous strikes due to the Cost-of-Living crisis, there is a demand on the UK's cultural infrastructure to provide equitable spaces which are sustainable, heritage-sensitive, accessible and reflect the diverse needs of both their local community and an international population.[2]

To meet the UK's 2050 net zero emissions goal, buildings will need to be decarbonised through energy efficiency improvements, the phasing out of fossil fuel-based heating systems and the integration of smart technologies.[3] Whilst HM Government has declared to support the decarbonisation of the public sector with £1.425bn in grant funding for low-carbon heat and energy efficient retrofits between 2022-25[4], a holistic approach to retrofit is essential to ensure the future-proofing of the nation's cultural heritage assets and prioritisation of making our cultural infrastructure open and accessible to all.

'Retroffiting for Cultural Infrastructure' has been developed through agile engagement with built environment specialists and representatives from HM Government to address both past and emerging challenges associated with retrofit strategies for cultural use. These issues range from broader challenges, such as addressing funding inaccessibility and VAT incentivisation, to more specific intersectional issues, such as establishing regulations on embodied carbon emissions and investing in promoting and disseminating a holistic approach at a local level.

The 'Strategies for Retrofit' framework and value checklist sets out a vision and practical toolkit for retrofit which exceeds existing environmental, cultural and social value minimum standards and guidance, setting the foundation for location-based and context specific strategies for cultural organisations considering a retrofit approach. There is an opportunity for DCMS to learn from the framework, toolkit and resources to help inform future policy and guidance-writing which will support the resilience of the cultural sector.

METHODOLOGY & OUTPUTS

This report reviews current and past policies and guidelines for 'retrofit', identifying gaps and latent opportunities for policy-led solutions.

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2   Aligned with DCMS (2023) DCMS areas of research interest, available at: https://www.gov.uk/government/publications/dcms-areas-of-research-interest/dcms-areas-of-research-interest (accessed 20.03.23)

3   Jones Lang LaSalle (JLL) (2022) Retrofit First, Not Retrofit Only, available at: https://www.londonpropertyalliance.com/retrofit-first-not-retrofit-only/ (accessed 01/03/23), p.10

4   Department for Energy, Security & Net Zero, Powering up Britain: Energy Security Plan, available at: https://www.gov.uk/government/publications/powering-up-britain/powering-up-britain-energy-security-plan (accessed 04/04/23)

Existing approaches to retrofit are also identified through a reflective critique of best-practice case studies which have been employed for adapting cultural infrastructure to: minimise their ongoing carbon consumption; retain heritage features and local networks; and improve the accessibility of cultural spaces for all users.

These case studies, alongside interviews with DCMS, Future Observatory, Historic England, London School of Architecture and built environment-industry specialists have informed the development of the Strategies for Retrofit Framework and Value Checklist output, which can be applied by cultural organisations to a range of forthcoming cultural building typology projects across the UK. This provides an insight into the process by which retrofit design approaches might be considered, and how architectural processes need to evolve to capitalise on these opportunities.

The research culminates in a summary of key policy recommendations for DCMS to further support upcoming cultural infrastructure retrofit projects. The outcomes of this research will help build confidence in the strategies available, and provide evidence of the benefits of investment, to help catalyse the adoption of retrofit by cultural organisations, local authorities, designers and stakeholders.

Subject to further research and testing on live projects, the Strategies for Retrofit Framework could provide a scalable and repeatable model for adoption across the UK within the next 5-10 years. See 'Emerging Issues & Next Steps' for an outline of further research recommendations.

OVERVIEW OF POLICY RECOMMENDATIONS

Taken together, the nine policy recommendations support a holistic approach to retrofitting for cultural infrastructure. Through understanding the unique resilience of the UK's cultural infrastructure, an agile retrofit policy can overcome intersectional issues and support the provision of cultural spaces which generate social and public good. These recommendations fall into three main categories:

1.0 Funding and Incentivisation
1.1 Improve access to and transparency of funding
1.2 Incentivise retrofit

2.0 Regulation and Planning
2.1 Address 'push and pull' relationship between heritage preservation and carbon considerations
2.2 Establish regulations on embodied carbon emissions
2.3 Explore reframing policy interventions to address and capture social and cultural value for retrofit
2.4 Promote retrofit approach at local level, with an emphasis on inclusive engagement and decision-making

*3.0 Strengthening the Cultural Sector
and Co-located Communities*
3.1 Invest in retrofit education
3.2 Promote exchange between organisations
3.3 Reinforce link between culture and local communities

See 'Policy Recommendations' for further detail. Key actions and evidence requirements arising as a result of these policy recommendations can be produced as a part of further research recommendations.

BENEFITS OF INVESTMENT

Environmental value:
→ Contributes to meeting the Paris Agreement target to be zero-carbon by 2050
→ Minimises waste and pollution through supporting a circular-economy
→ Reduces demand on non-renewable resources

Cultural value:
→ Protects, enhances and celebrates cultural heritage
→ Strengthens communities and local partnerships
→ Encourages more dynamic and vibrant public cultural spaces

Social value:
→ Improves spaces and services to reflect the needs of present and future generations, increasing opportunities for all to access, participate in and enjoy cultural infrastructure
→ Establishes greater social connectedness, wellbeing, safety and inclusion
→ Creates local pride in place and sense of belonging

Economic considerations are presented as an overall parameter that affects all three core values, addressed with a focus on project viability in 'Grants and Funding'. Overall economic benefits for retrofit include: providing a cost-effective alternative to newbuild through creating sustainable, accessible and appealing spaces which can attract competitive rents and commercial hires[5]; accessibility improvements which increase opportunities for wider audience ticket sales to cultural events; and supporting the growth and scope of employment opportunities. There is scope to calculate quantifiable economic benefits of retrofit in further research.

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5   Kollewe, J. (2023) Old walls, new life? available at: https://www.theguardian.com/business/2023/mar/11/old-walls-new-life-britains-builders-embrace-the-retrofit-revolution (accessed 13/03/23)

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Defining Terminology
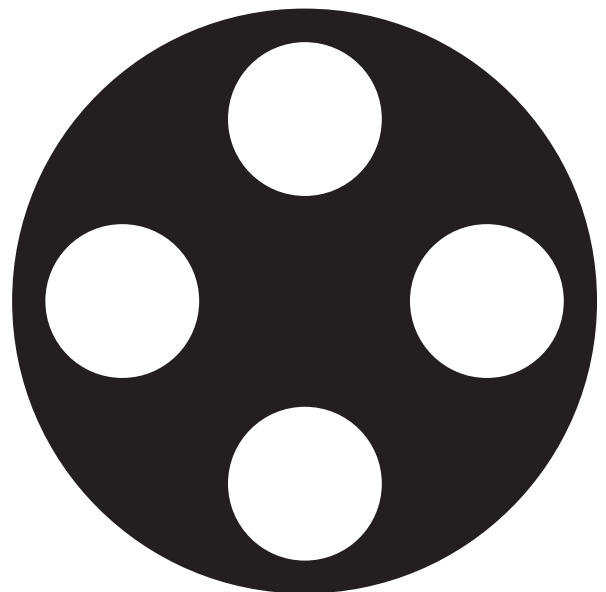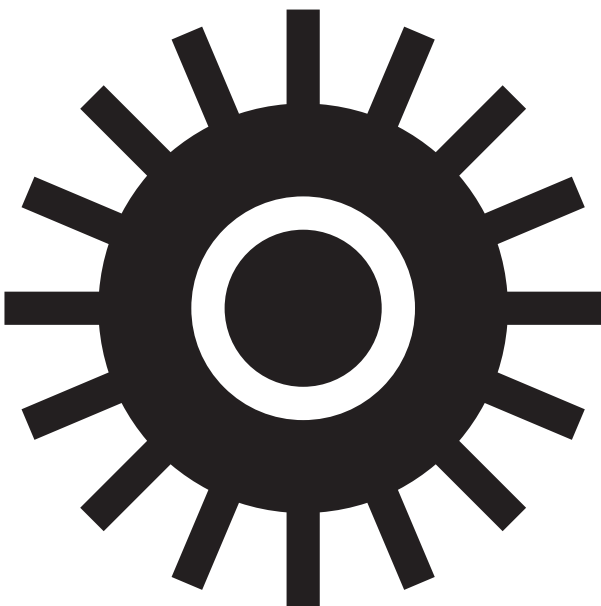
WHAT IS 'RETROFIT'?

Retrofit can be broadly defined as the regenerative upgrading of existing space, systems and technology. Retrofit differs from refurbishment and renovation in its motivation to enhance specifically the environmental performance, but also to build upon and promote the cultural and/or social potential of a space, addressing existing design problems that have a negative impact on building performance, spatial quality or particular demographic groups.

This report presents a lens of three connected value statements through which retrofit can be considered and applied.

Retrofit as Renewal refers to the environmental value of increasing a building's energy efficiency, making it easier to heat and retain heat for longer, replacing fossil fuels with renewable energy and reducing its demand on resources.[6]

Retrofit as Relational refers to the symbiotic relationships between the cultural organisation, its physical building fabric and context and its institutional, cultural and local communities, which can shape its mission and strategic development decisions.

Retrofit as Remediation refers to the social practice of regenerating space as a way to address existing physical and non-physical barriers, reflect upon and reframe collections and practices, and give back to local communities in the context of making organisations and buildings accessible and inclusive for all.[7]

WHAT IS 'CULTURAL INFRASTRUCTURE'?

Cultural Infrastructure[8] refers to the buildings, facilities and places where culture is both consumed (experienced, participated in, showcased, exhibited or sold) and produced (made, usually by artists, performers, makers, manufacturers or digital processes).[9]

The range of Cultural Infrastructure across the UK is vast, often including discrete spaces which provide for both the informal consumption and production of culture. This includes buildings, public space and public infrastructure which have a spatial relationship to cultural activity. Whilst acknowledging the wide scope that Cultural Infrastructure encompasses, this research focusses on interrogating retrofit strategies specifically for buildings which already support, or have the potential to support, cultural activity. There is scope to cover cultural public space and wider infrastructures in further research.

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6   Centre for Sustainable Energy (2022) What is retrofit? Available at: www.cse.org.uk/news/view/2687 (accessed 10/02/23)
7   SA Think Tank (2022-23) Retrofit as Reparation
8   Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework, p.9
9   Greater London Authority (2019) Cultural Infrastructure Plan: A Call to Action, p.10
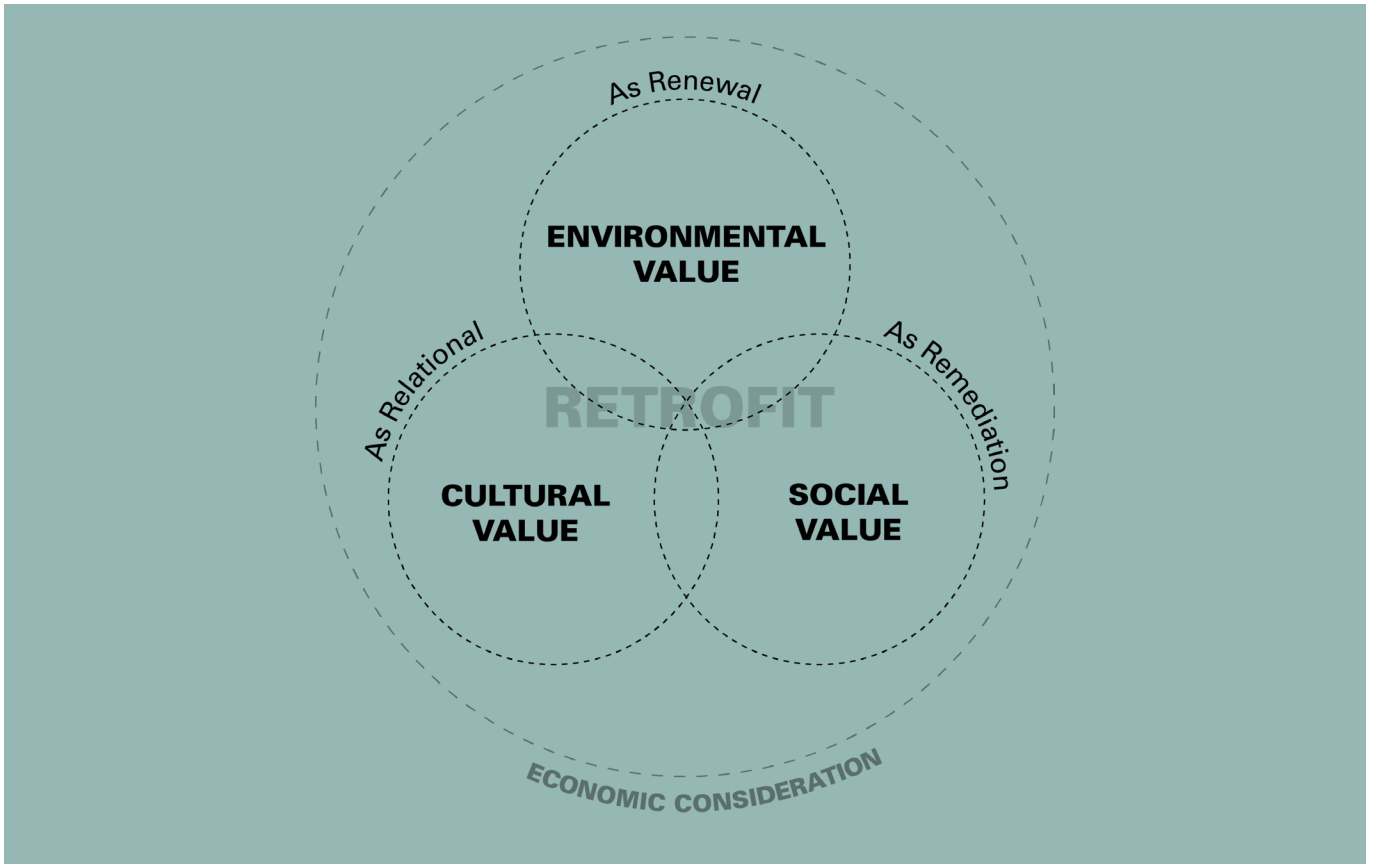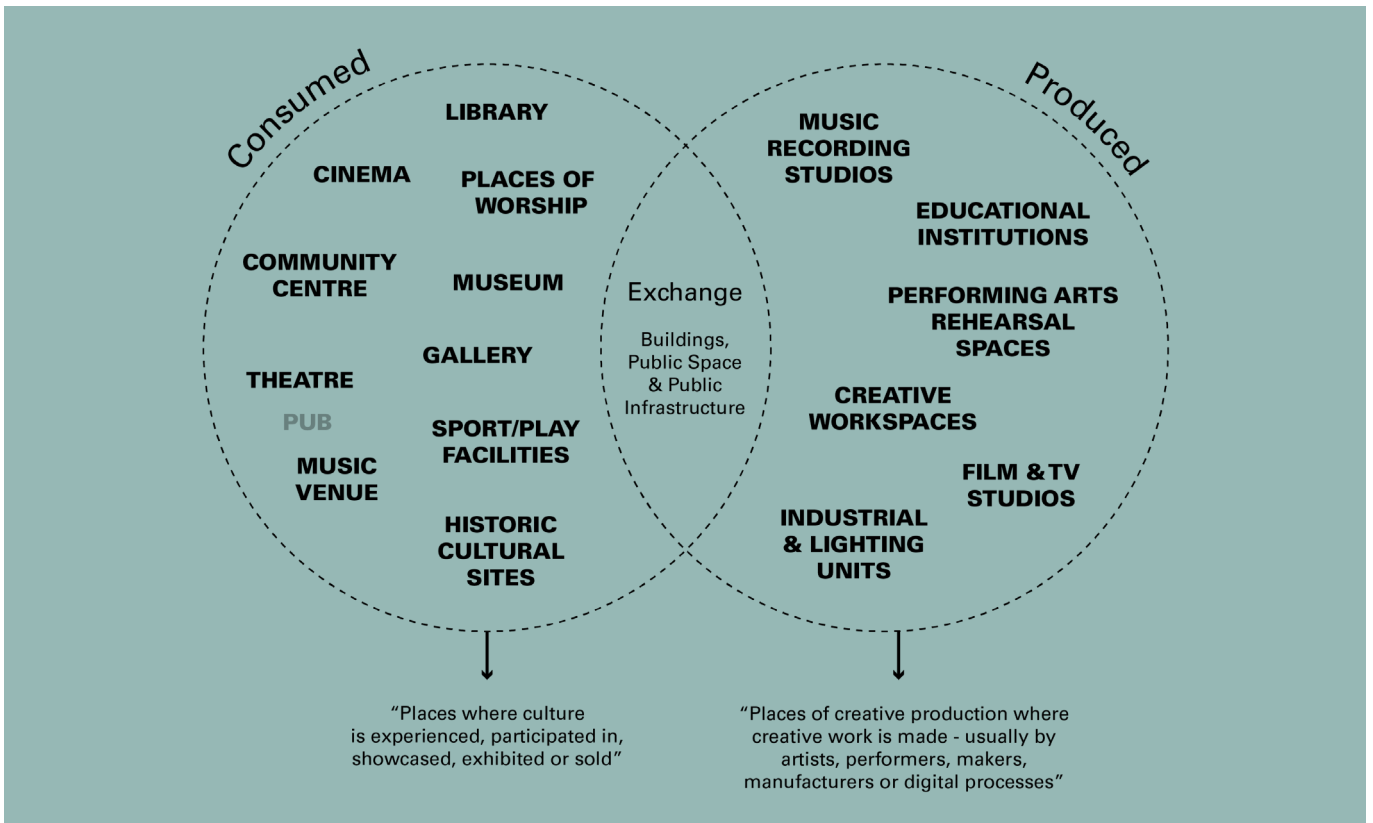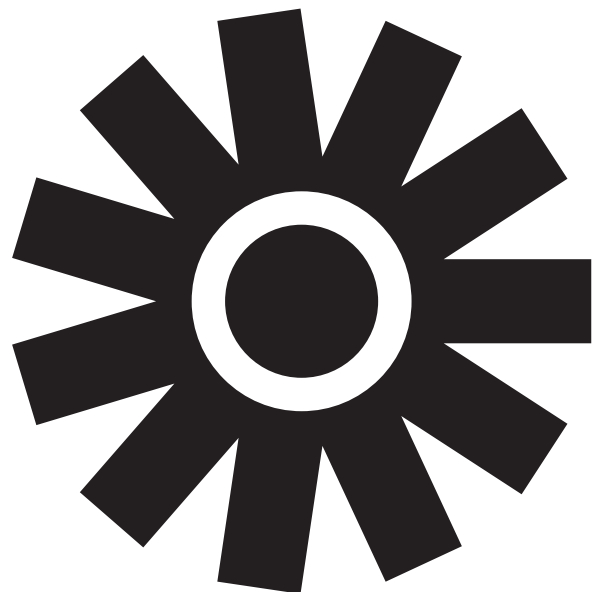
FIGURE 1 'Defining Retrofit' diagram

FIGURE 2 'Defining Cultural Infrastructure' diagram

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Methodology

OVERVIEW OF EXISTING GUIDANCE

As part of this study, a review of the availability of existing literature, policy and guidance for the identified key issues was conducted. The sources are classified by their strategic level, including national law, policy and building regulations, as well as examples of best-practice regional guidance and publications by professional bodies.

The literature highlighted should be referred to for addressing and developing new guidance for the three values of retrofit (environmental, cultural, social) beyond minimum requirements.

GAP ANALYSIS

National, regional and local bodies lack specific guidance in retrofitting for cultural infrastructure. This study has gathered and reviewed relevant resources from specialist, expert and local groups that have produced analysis and recommendations relevant to different aspects of retrofit, which, when referred to collectively, can address the environmental, cultural and social value of retrofitting for cultural infrastructure.

A gap analysis has been produced to allow users of this document to cross reference existing guidance and seek content across different strategic levels where there are gaps. See appendix for full existing guidance references.

CASE STUDIES

Given the timeframe and scope of this research, good-practice retrofit case studies were selected from a range of UK-based cultural buildings which have been shortlisted for the AJ Retrofit Awards over the last five years.

Analysing recently nominated AJ Retrofit Award projects ensured consistency of quality and access to comparable data. Specific projects were selected to ensure a range of cultural building typologies were analysed, focussing on projects which provide spaces of 'exchange' between where culture is both consumed and produced. See appendix for detailed case study library, selection criteria and evidence base.

INTERVIEWS

Having identified key barriers and opportunities of retrofit for cultural infrastructure through guidance and case study analysis, a series of interviews with industry professionals were undertaken, ranging from the Director of Policy and Evidence at Historic England, project managers, historic building consultants and chartered engineers to a research group at the London School of Architecture.

The interviewee's expertise ranged across the environmental, cultural and social retrofit value areas which provided invaluable commentary on case

studies and wider contexts, in turn informing the Strategies for Retrofit Framework, Value Checklist and policy recommendations. See appendix for detailed interview notes.

Organisation	Environmental Value	Cultural Value	Social Value
Government Legislation	Climate Change Act 2008 / Environment Act 2021	Levelling-up & Regeneration Bill	Disability Discrimination Act 1995 / Human Rights Act 1998
Government Appraisal	HM Treasury Green Book 2022 / Supplementary Guidance Documents	*See 'Historic England' Guidance*	
Government Policy	Net Zero Strategy: Build Back Greener / British Energy Security Strategy / Powering Up Britain 2023		
Government Building Regulations	Part F Approved Doc. F / Part L Approved Doc. L / Part O Approved Doc. O		Part M Approved Doc. M / Part K Approved Doc. K
British Standards Institute	BS EN 15978:2011 / PAS 2038:2021 PAS 2080:2016	BS 7913:2015 BS 6576:2005 BS 5250:2011	BS 8300:2001 / PAS 6463:2022
GLA	London Environment Strategy	Cultural Infrastructure Plan	Equality, Diversity & Inclusion Strategy
Statutory Standards & Guidance	**Historic England, Grosvenor, The Crown Estate** 'Heritage and Carbon'	**Historic England,** Creative Industries in Historic Buildings and Environments / **Historic England** 'Energy Efficiency & Historic Buildings'	**Historic England** 'Easy Access to Historic Buildings'
Professional Standards & Guidance	**RIBA** 'Challenge 2030' / **BREEAM** / **LETI** 'Climate Emergency Retrofit Guide', 'Climate Emergency Design Guide', 'Retrofit vs Rebuild'	**Arts Council England** 'Building Excellence in the Cultural Sector' / **Sustainable Traditional Buildings Alliance** 'Planning Responsible Retrofit of Traditional Buildings'	**Arts Council England** 'Building Access' / **RIBA** 'Designing for Accessibility' 'Social Value Toolkit' / **Centre for Accessible Environments (CAE)** 'Inclusive Design Guidance'
Built Environment Professional Network	**Architects Declare** 'Practice Guide' / **UKGBC** 'The Retrofit Playbook'	**Architects Climate Action Network** 'Climate Emergency Conservation Area Toolkit'	

Left axis groupings: National & Regional (Government Legislation through British Standards Institute); Built Environment Industry Specialists (GLA through Built Environment Professional Network)

FIGURE 3 Gap analysis survey of existing and emerging retrofit guidance, conducted March 2023

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Strategies for Retrofit Framework

WHAT IS THE 'STRATEGIES FOR RETROFIT' FRAMEWORK?

The diagram opposite provides a framework of considerations for the development of cultural infrastructure retrofit projects and lays the foundation for further detailed assessment tools beyond this study.

Whilst various retrofit guidance documents are available, they provide disparate approaches which are un-specific to common building typologies for cultural infrastructure. This framework provides a consolidated lens through which cultural organisations can consider the environmental, cultural and social values of retrofit for cultural infrastructure. The following pages review exemplar case studies and detail a best-practice approach for how these strategies might be considered and applied.

The economic considerations of a retrofit project are presented as an overall parameter that affects all three values. In the context of this report, economic considerations are addressed with a focus on project viability (see 'Grants and Funding'), with the scope to calculate quantifiable economic benefits of retrofit in further research.

WHY THIS FRAMEWORK?

This framework has been derived through an in-depth analysis of a range of existing retrofit guidance, cultural infrastructure case studies and interviews with industry experts, as outlined in the methodology. These interviewees all supported the need for a holistic approach to retrofit, incorporating environmental, cultural and social factors.

In addition, these values correspond to those embedded in climate emergency declarations, guidance from professional bodies (e.g. Royal Institute of British Architects), cultural networks and institutions, Arts Council England and Levelling Up for Culture Places changes and initiatives, and Historic England's existing and emerging guidance (see Bibliography). These core values also reflect and contribute to reaching the National Planning Policy Framework objectives for assessing benefits in conserving and enhancing the historic environment.[10]

HOW TO USE THIS FRAMEWORK?

Acknowledging that each existing piece of cultural infrastructure presents a unique set of location-based components, ownership agreements and historical characteristics which present both challenges and opportunities for retrofit[11], this framework is not intended to be a metricised form of

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10 Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework, p.5 and 16:190b, p.55

11 Jones Lang LaSalle (JLL) (2022) Retrofit First, Not Retrofit Only: A focus on the retrofit and redevelopment of 20th century buildings, available at: https://www.londonpropertyalliance.com/retrofit-first-not-retrofit-only/ (accessed 01/03/23)

measurement. Its purpose is to help align and review priorities for cultural organisations, based on an overview of the three principles of retrofit.
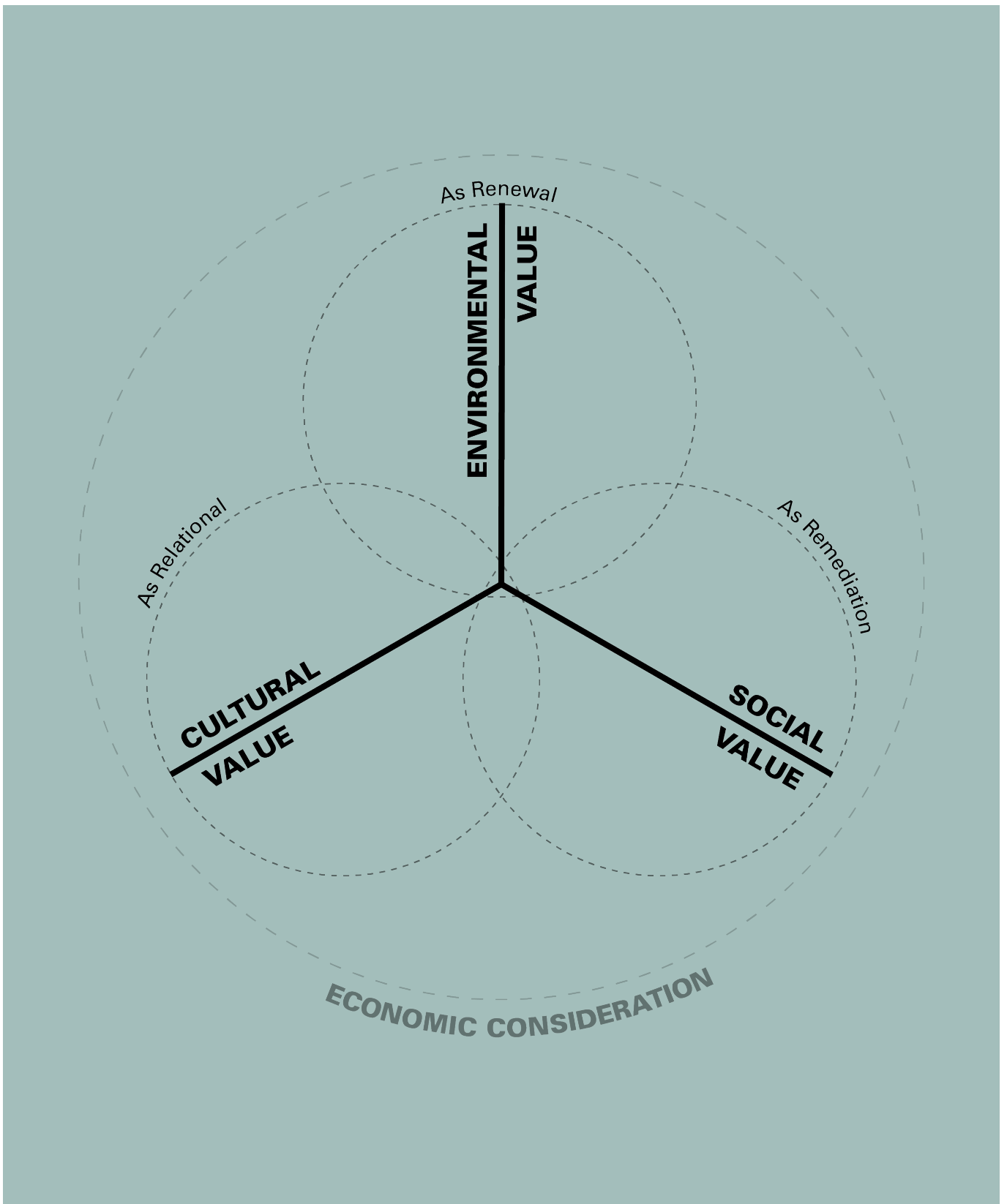

FIGURE 4 **Strategies for Retrofit Framework diagram**

ENVIRONMENTAL VALUE

WHAT IS 'RETROFIT AS RENEWAL'?

'Retrofit as Renewal' refers to the environmental value of increasing a building's energy efficiency, making it easier to heat and retain heat for longer, replacing fossil fuels with renewable energy and reducing its demand on resources.

Repurpose
In western Europe, only 1% of building elements are reused following their first application.[12] A retrofit project aims to reuse and repurpose a space and its materials in order to reduce its environmental impact. This involves processes which favour durability, adaptability and recyclability. Choosing to prolong a building's lifespan through retrofit avoids carbon emissions caused by knocking down and building from scratch.

Reiterate
A retrofit project aims to create a reiterative process where linear systems are transformed into circular processes. The circular economy is based on three principles: eliminate waste and pollution; circulate products and materials at their highest value; and regenerate nature.[13]

Regenerate
A retrofit project aims to give back more than it takes. Regenerative design is based on the idea of creating a space that mimics the restorative aspects found in nature to bring about a positive impact on the overall environment. It differs from sustainable design as it goes beyond purely maintaining an environment to upgrading systems and technology to address its environmental obsolescence.[14]

WHY IS THIS IMPORTANT?

With construction currently generating 40% of global CO_2 emissions[15], and the embodied carbon associated with buildings predicted to make up 50% of built-environment emissions by 2035 (up from 28% now), without action on embodied carbon, the UK's 2050 net zero goal is not achievable.[16]

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12 UK Architects Declare (2021) *Practice Guide 2021*

13 ARUP *Circular Buildings Toolkit*, available at: https://www.arup.com/services/climate-and-sustainability-services/circular-economy-services/circular-buildings-toolkit

14 Ellen MacArthur Foundation, *Regenerate Nature*, available at: https://ellenmacarthurfoundation.org/regenerate-nature

15 IPCC (2018) *October 2018 Report*

16 Kollewe, J. (2023) *Old walls, new life?* available at: https://www.theguardian.com/business/2023/mar/11/old-walls-new-life-britains-builders-embrace-the-retrofit-revolution (accessed 13/03/23)

When deciding whether to retrofit an existing cultural asset, or knock down and build again, there has to be a comparison between the impact of 'operational' carbon (i.e. running a retrofitted building vs a new energy-efficient building), against 'embodied' carbon (i.e. that released by demolition and building anew vs the adaptive reuse of an existing building).

Through re-purposing our existing cultural infrastructure, the option to retrofit can potentially reduce the impact of a buildings embodied and operational carbon significantly.

The case study opposite provides a best-practice example of the environmental value of retrofit.

ASSESSMENT CRITERIA

National Energy, Fabric & System Targets
for Cultural Buildings
LETI's Climate Emergency Retrofit Guide[17] sets out energy, fabric and systems targets for how existing homes can be adapted to meet UK climate targets. The energy criteria (fossil fuel free, energy use intensity, space heating demand, hot water demand and renewable energy) should be used as guiding principles, with best practice targets for cultural building typologies to be developed in further research.

Context-Specific Retrofit Approach
Cultural organisations should adopt a context-specific approach to meet national targets, which respond to the building's existing parameters (size, listed constraints, operating hours etc.) To determine the demand in-use, an organisation should start by monitoring their current energy and heating loads. An appropriately-sized system can then be applied, which will prevent inefficient and wasteful operation of an over-specified system.

Associated Policy Recommendations
2.1 Address 'push and pull' relationship between heritage preservation and carbon considerations
2.2 Establish regulations on embodied carbon emissions

See 'Policy Recommendations' for further detail.

CURRENT AND EMERGING GUIDANCE BEYOND MINIMUM STANDARDS

'Net Zero Strategy: Build Back Greener', HM Government, 2021
'Climate Emergency Retrofit Guide: How existing homes can be adapted to meet UK climate targets', LETI, 2023

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17 London Energy Transformation Initiative (LETI) is a network of over 1,000 built environment professionals working together to put the UK on the path to a zero carbon future. LETI (2021) *LETI's Climate Emergency Retrofit Guide*

'Retrofit vs rebuild: Unpicking the carbon argument', LETI, 2023
'Retrofit First, Not Retrofit Only: A focus on the retrofit and redevelopment of 20th century buildings', London Property Alliance, 2022
'Circular Buildings Toolkit', Arup [https://ce-toolkit.dhub.arup.com/framework]
'STBA Guidance Wheel', Sustainable Traditional Buildings Alliance [https://stbauk.org/guidance-wheel/]
'UK Architects Declare Climate and Biodiversity Emergency: Practice Guide 2021', UK Architects Declare, 2021

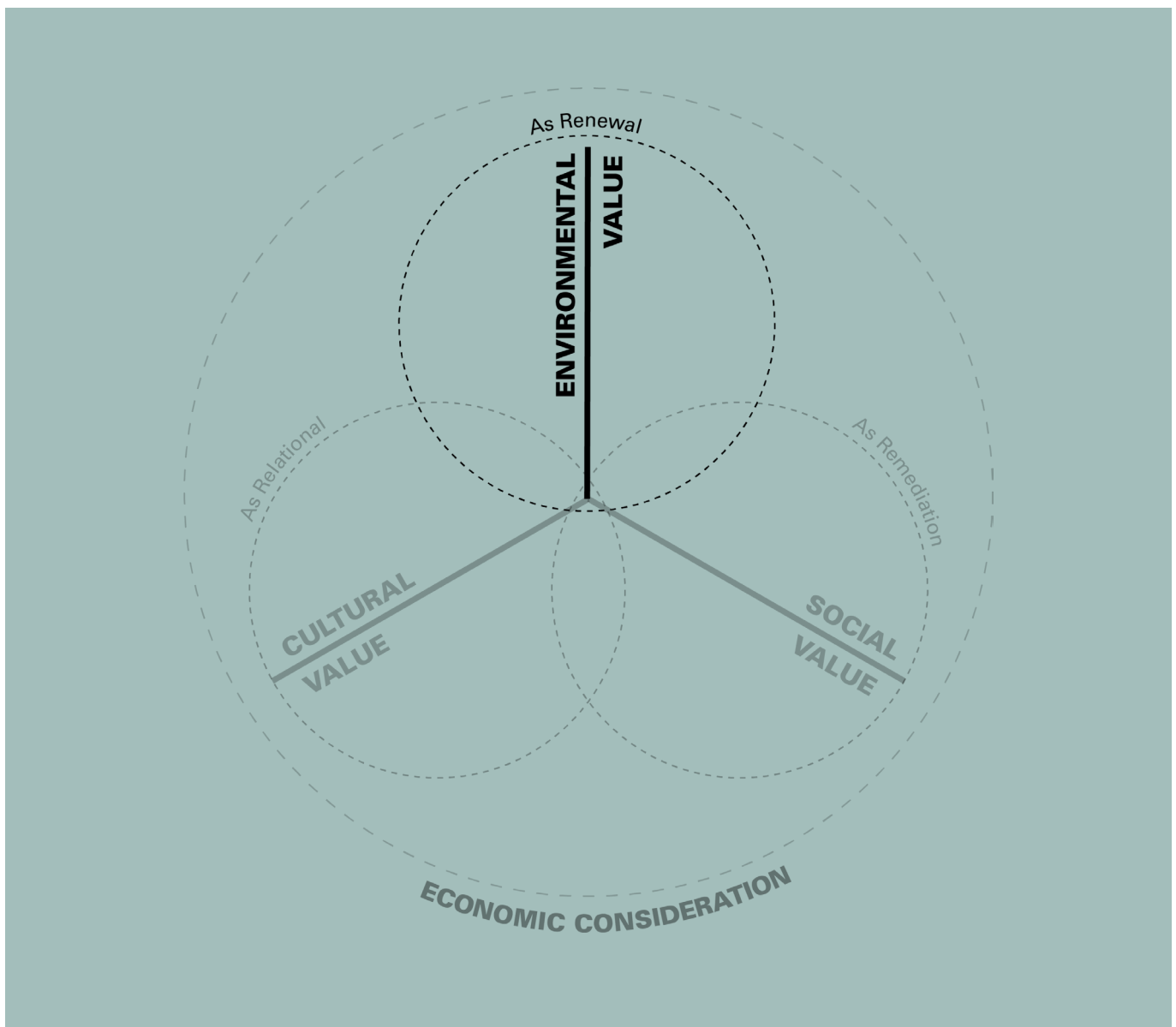See Appendix for glossary of key terms, detailed case studies and full guidance references.

FIGURE 5   Strategies for Retrofit Framework, Environmental Value diagram

CASE STUDY 1: TY PAWB, WREXHAM

IMAGES: JAMES MORRIS

Architect: Featherstone Young
Typology: Gallery, Arts workshop
Original Construction: 1992
Retrofit Construction: 2018
Cost: £4.3m
Approx. cost/m²: £1,160/m²
Size: 3,705m²
Original use: Car park, market
Funding: Welsh government,
                     Arts Fund Reimagine Grant
Driver for retrofit: Environmental, Cultural

Ty Pawb is a mixed-use space combining a council-run art gallery with an existing indoor market, in a 1990s multi-storey car park. New facilities include art galleries, market stalls, performance space, a learning centre, cafes and bars.

The space is a creative retrofit of a previously undesirable building typology and style, characteristics which make it a usual target for demolition. Although the change in use makes operational carbon comparisons difficult, the retrofit reduces overall embodied carbon and acts as a best practice example of adaptive reuse.

CULTURAL VALUE

WHAT IS 'RETROFIT AS RELATIONAL'?

'Retrofit as Relational' underscores that retrofit processes and propositions are contingent upon relationships to an existing building, site context and associated institutional and community networks. Recognising, identifying and nurturing such relationships are intrinsic activities of a successful project, which, on one hand can leverage latent spatial potentials and funding opportunities, and on the other, safeguard the legacy of the project via a greater sense of ownership, belonging and stewardship of the space. Building upon its conceptual origin in art, as defined by Nicolas Bourriaud as practices that "take as their theoretical and practical point of departure the whole of human relations and their social context, rather than an independent and private space", a relational approach constantly negotiates with the past and future of the organisation's cultural milieu to inform strategic design decisions.

Celebrating Context

The process of retrofit begins with a thorough understanding of the context to which the project is 'fitted'. In cases where listed buildings and conservation areas are involved, statutory parameters have legal, strategic and design implications on the project, be it the preservation of heritage features, or public realm enhancements beyond the immediate site boundary. A Conservation Management Plan (CMP) should set out priorities for conservation and opportunities for change.

Strengthening Communities

The project of retrofit should always be understood as both a physical and strategic process of reflecting on local and institutional ecologies, responding to paradigm shifts and carrying forth cultural change. In retrofitting, a cultural institution also recalibrates its role for local communities and cultural networks, which may demand public participation and governance rethinking (e.g. introducing young trustees).

Building Partnerships

Institutional and cross-sectoral partnerships are often critical to the business case and viability of a retrofit project. In framing the retrofit project as an asset to the wider community and cultural network, organisations can promote a greater sense of belonging, demonstrate public benefit, and in some cases, secure crucial funding based on its strategic impact.

WHY IS THIS IMPORTANT?

Each retrofit project demands the question – what a cultural building or infrastructure is today – to inform both the strategic direction of an organisation and the corresponding design brief. The process of retrofit is twofold – reflective of history and heritage, and a creative process in its own right, where broader questions about cultural values are at stake.

The case study opposite provides a best-practice example of the cultural value of retrofit.

ASSESSMENT CRITERIA

Historic England provides extensive guidance for owners of historic buildings on complying with building regulations in England. It also highlights where there is specific advice about historic buildings in the approved documents.[18]

There is an increased focus on cultural and social value in the assessment criteria for local and major grant approvals; effective co-

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18 Historic England (2023) *Buildings Regulations, Approved Documents and Historic Buildings*, available at: https://historicengland.org.uk/advice/technical-advice/building-regulations/ (accessed 12.03.23)

design methodologies are becoming more relevant for funders that target participation criteria and accessibility priorities. Cultural organisations should demonstrate the wider public benefit of retrofit specific to funding criteria objectives, from creating accessible learning programmes[19], to diverse arts access and investment in young people[20], to collaborative and co-design methodologies.[21]

ASSOCIATED POLICY RECOMMENDATIONS

2.1 Address 'push and pull' relationship between heritage preservation and carbon considerations
2.3 Explore reframing policy interventions to address and capture social and cultural value for retrofit

See 'Policy Recommendations' for further detail.

CURRENT AND EMERGING GUIDANCE BEYOND MINIMUM STANDARDS

'Building Excellence in the Cultural Sector: A guide for client organisations', Arts Council England, 2021
'Heritage and Carbon: Addressing the skills gap', Historic England, Grosvenor, 2023
'Heritage and Carbon: How historic buildings can help tackle the climate crisis', Historic England, Donald Insall Associates, Grosvenor, 2017
'Climate Emergency Conservation Area Toolkit', Architects Climate Action Network, 2023
'Energy Efficiency and Historic Buildings', Historic England, 2018
'Planning repsonsible retrofit of traditional buildings', Sustainable Traditional Buildings Alliance, 2015

See Appendix for glossary of key terms, detailed case studies and full guidance references.

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19 Clore Duffield Foundation, *Clore Learning Spaces*, available at: https://www.cloreduffield.org.uk/clore-learning-spaces (accessed 24.03.23)

20 Paul Hamlyn Foundation, *Our work in the UK,* available at: https://www.phf.org.uk/our-work-in-the-uk/ (accessed 24.03.23)

21 Esmée Fairbairn Foundation, *Social Investment,* available at: https://esmeefairbairn.org.uk/our-support/social-investment/ (accessed 24.03.23)
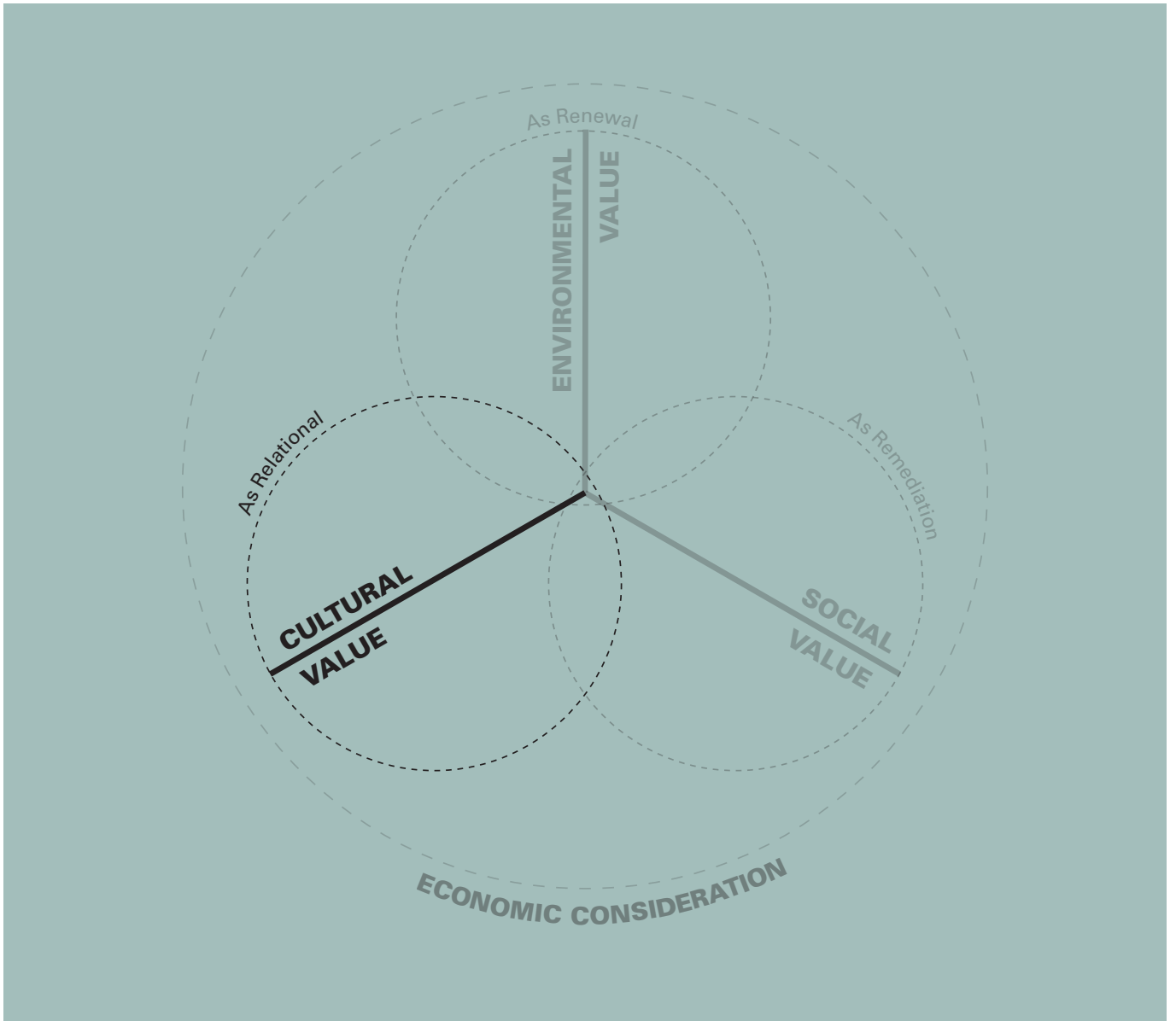
FIGURE 6   Strategies for Retrofit Framework, Cultural Value diagram

CASE STUDY 2: ROYAL ACADEMY OF MUSIC, LONDON

Architect:	Ritchie Studio
Typology:	Music venue, Rehearsal space
Original Construction:	1911
Retrofit Construction:	2018
Cost:	£30m
Approx cost/m²:	£9,497
Size:	3,159m²
Funding:	Privately funded
Driver for retrofit:	Cultural

IMAGES: ADAM SCOTT

The Royal Academy of Music (RAM) is a Grade II-listed Edwardian building in the Regent's Park Conservation Area, making it a challenging site for retrofit. The new design includes a 309-seat theatre, 100-seat recital room, percussion studios, jazz room, audiovisual control room and refurbished practice and dressing rooms.

The RAM is an example of where retrofit is vital for preserving cultural heritage, through retaining a building and location it has called home for more than 110 years, whilst preserving its world-class status with modern facilities.

SOCIAL VALUE

WHAT IS 'RETROFIT AS REMEDIATION'?

Retrofit as Remediation refers to retrofit processes which make buildings accessible and inclusive for all, particularly marginalised groups. [22]

A Spectrum of Experiences
Accessibility is a spectrum, with the lower end being an unsafe and unpleasant user experience and the upper end creating an equitable experience for all users. This spectrum impacts the level of participation and enjoyment of disabled people in the built environment.

Diversity
As well as physical accessibility, it is important to consider all protected

22 London School of Architecture Think Tank (2022-23) *Retrofit as Reparation*

characteristics[23] and our national diversity, including; race, ethnicity, faith, disability, age, gender, sexuality, class, economic disadvantage and any physical, social and institutional barriers that prevent people from creating, participating in or enjoying culture.[24] Retrofit can be used as an opportunity to create accessible places for all, addressing the long history of exclusion and exploitation embedded within the UK's cultural heritage.[25]

Co-design
Co-design is an important tool in helping to redistribute power to historically marginalised groups. By engaging with a diverse group of people, location-specific issues and opportunities can be identified which may not be included in existing guidance documents.[26]

The case study opposite provides a best-practice example of the social value of retrofit.

WHY IS THIS IMPORTANT?

The UK's cultural infrastructure is closely linked with the nation's heritage, which can present inbuilt accessibility issues. Inaccessible spaces can cause both physical and psychological harm,[27] either by physically endangering people or by preventing them from participating, causing isolation and disenfranchisement. With the UK's growing ageing population, loneliness epidemic and the emerging movement of decolonisation of arts, culture and education systems, there is an increasing awareness of the importance of creating inclusionary cultural infrastructure.

Organisations are held to legal requirements to make reasonable adjustments for disabled people as outlined in the Equalities Act 2010; retrofit presents an opportunity to not only comply with this, but present a best-practice approach to providing accessible spaces beyond the minimum standards. With disabled people making up 18% of the UK's population[28], retrofitting for accessibility can improve the long-term financial resilience of cultural institutions through increasing opportunities for wider audience ticket sales and cultural project commercial hires.[29]

23 HM Government (2010) *Equality Act 2010*
24 Arts Council England (2021) *Building Access*, p.3
25 Perry, V (2022) *A Bittersweet Heritage*, Hurst: London
26 'DCMS is committed to ensuring equality of access to and participation in the services that DCMS sectors provide.' DCMS (2023) *DCMS areas of research interest*, available at: https://www.gov.uk/government/publications/dcms-areas-of-research-interest/dcms-areas-of-research-interest (accessed 20.03.23)
27 Greater London Authority (2022) *Safety in Public Space: Women, Girls and Gender Diverse People*
28 Office for National Statistics (ONS) (2023) *Disability, England and Wales: Census 2021*, available at: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/bulletins/disabilityenglandandwales/census2021 (accessed 28/03/23)
29 Access improvements to Shoreditch Town Hall predicted an increase net income from ticket sales by 48% per annum, and double commercial event hire income. Arts Council England (2021) *Building Access*, p.11

ASSESSMENT CRITERIA

Part M sets out minimum required accessibility standards and the BS 8300 and PAS 6463 provide additional guidance on design for disabled and neurodiverse people. However, it is advisable to carry out an access audit to gain a true understanding of the accessibility and disabled user experience of a specific space. It is also useful to engage in co-design processes to identify site-specific issues and opportunities that might not be discussed within existing guidance. The Strategies for Retrofit Toolkit on the following pages provides a checklist of initial considerations, including for accessibility and diversity.

ASSOCIATED POLICY RECOMMENDATIONS

2.3 Explore reframing policy interventions to address and capture social and cultural value for retrofit
2.4 Promote retrofit approach at local level, with an emphasis on inclusive engagement and decision-making
3.3 Reinforce link between culture and local communities

See 'Policy Recommendations' for further detail.

CURRENT AND EMERGING GUIDANCE BEYOND MINIMUM STANDARDS

'Building Excellence in the Cultural Sector: A guide for client organisations', Arts Council England, 2021
'Building Access: A good practice guide for arts and cultural organisations', Arts Council England, 2021
'Designing for Accessibility: an essential guide for public buildings', Centre for Accessible Environments & RIBA Enterprises, 2012
'The Architecture of Disability: Buildings, Cities, and Landscapes beyond Access', David Gissen, 2022
'Inclusive Design Guidance', Centre for Accessible Environments

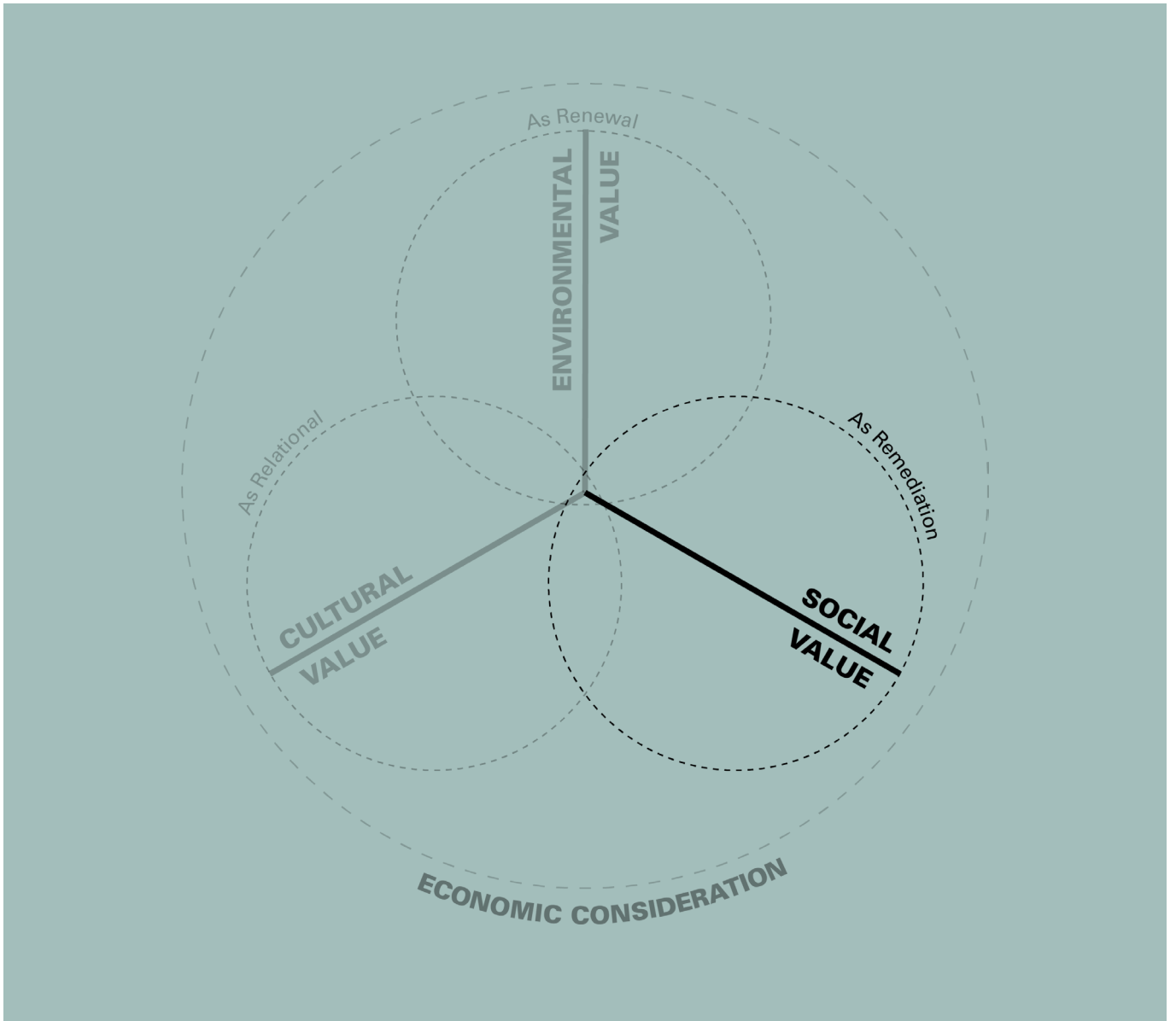See Appendix for glossary of key terms, detailed case studies and full guidance references.

FIGURE 7   Strategies for Retrofit Framework, Social Value diagram

CASE STUDY 3: NATIONAL YOUTH THEATRE, LONDON

IMAGES: JIM STEPHENSON

|	
Architect:	DSDHA
Typology:	Theatre, Education, Rehearsal space
Original Construction:	1872
Retrofit Construction:	2021
Cost:	£2.45m
Approx. cost/m²:	£1,106/m²
Size:	2,260m²
Original use:	Music hall
Funding:	GLA, charities
Driver for retrofit:	Social, Cultural

NYT was retrofitted in 2021 to meet the increasing demand for its workshops and training facilities, along with improved visibility and inclusivity. This included creating a 250-seat theatre from an existing workshop space and enhancing NYT's front door on the street, improving accessibility and making a welcoming cultural beacon on a busy road.

The building's increased visibility and openness breaks down barriers for entry and specific elements, such as a Changing Places Toilet, demonstrating a high level of physical accessibility.

6
Strategies for Retrofit
Toolkit & Resources
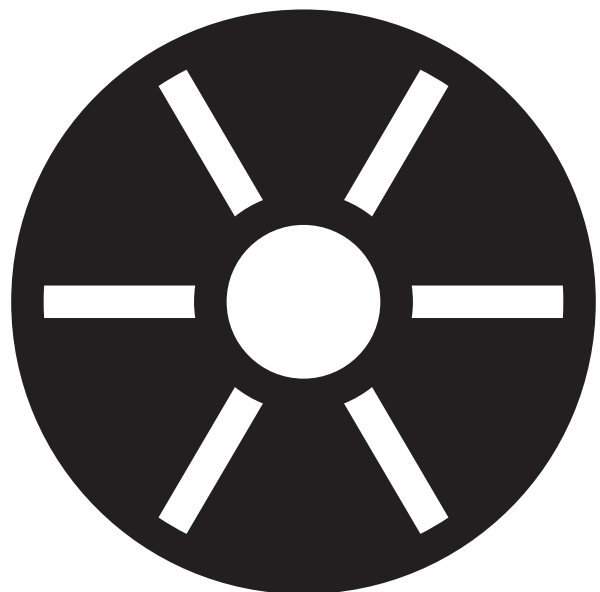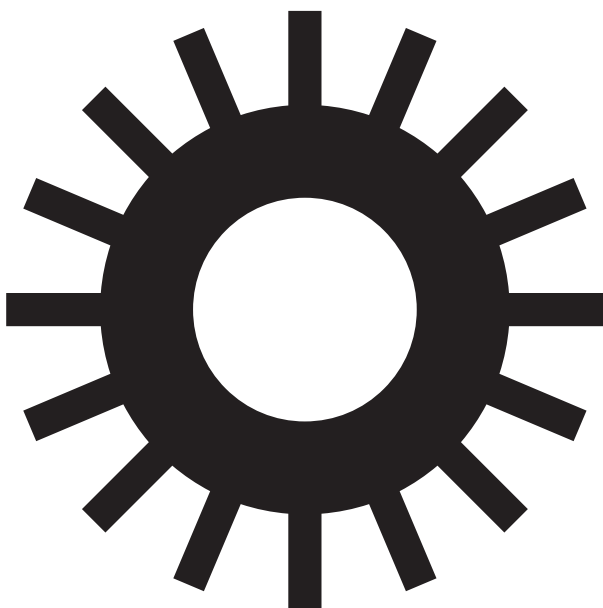
ABOUT THIS TOOLKIT

Acknowledging the inherent tension that can arise between the three retrofit values, for example improving a building's energy performance (environmental) whilst preserving its heritage features (cultural), this toolkit provides a high-level practical value checklist for cultural organisations to assess the motivation of their retrofit projects, ensuring consistency of approach in addressing all three retrofit values across a variety of cultural institutions.

The toolkit has been developed through an in-depth analysis of a range of existing retrofit guidance, exemplar cultural infrastructure case studies and interviews with industry experts. The application of this toolkit requires further research (see 'Emerging Issues & Next Steps'), with additional in-depth assessment tools for the three values referenced throughout, detailed in the footnote below.

HOW TO USE THIS TOOLKIT?

This toolkit is not intended to be a metricised form of measurement, but offers over-arching prompts and questions to be considered on a case-by-case basis within the unique contextual challenges and opportunities of each piece of cultural infrastructure.[30] The checklist and radar chart should be used by cultural organisations as an indicative tool to make strategic decisions about potential retrofit projects, plotting the degree in which a project responds to each of the three retrofit values.

The suggested approach is to target the highest ambition for each value, which in turn can reinforce each other. The toolkit provides an opportunity for the conventionally neglected values (cultural and social) to support the case for retrofit where environmental gains may not be evidently significant.

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30 See the STBA 'Guidance Wheel' for specific options of retrofit based on the benefits and concerns around technical, heritage and energy issues [https://stbauk.org/guidance-wheel/]. See the NBS 'Inclusive Design and the RIBA Plan of Work' for inclusive design principles to be considered at each stage in the RIBA Plan of Work [https://www.thenbs.com/knowledge/inclusive-design-and-the-riba-plan-of-work]. See the LETI 'Retrofit Process' for an environmental RIBA Plan of Work framework [LETI (2023) *Climate Emergency Retrofit Guide*, p.92-104]
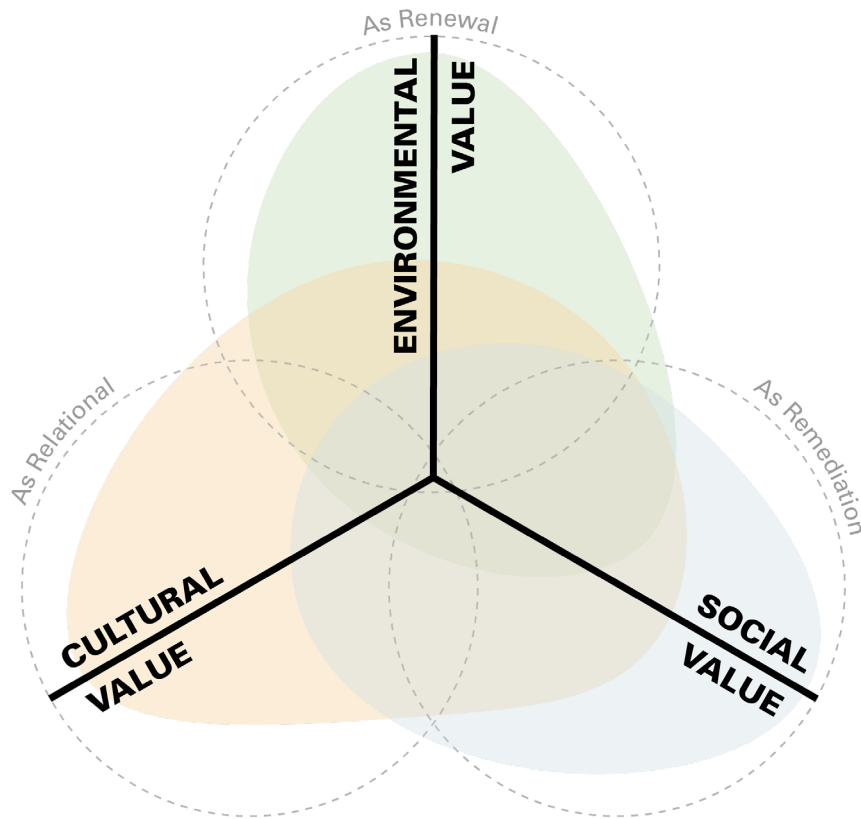
FIGURE 8   Strategies for Retrofit Toolkit and Resources diagram

VALUE CHECKLIST

ENVIRONMENTAL VALUE

How can this space improve its environmental value and sustainability performance?

Identify
→ How does the building currently operate? What are the operational requirements?
→ Is there metering data available for both unregulated and regulated loads?
→ What is the exposure of the building to wind-driven rain?
→ What are the spatial limitations? (e.g. air sourced heat pumps require more space than gas boilers)
→ Are there areas which are acoustic-sensitive?

Analyse
→ How well does the building perform energy wise?
→ What is the life expectancy of existing services? (Weigh up the balance between embodied carbon vs energy saved via new retrofitted-elements)
→ Has a whole life carbon assessment (WLCA) been undertaken?
→ Has an assessment of a range of options to deliver net zero carbon (comparing the likely cost, impact and benefit of each approach) been developed?

CULTURAL VALUE

How can this space nurture relationships with the existing building fabric, site context and associated institutional and community networks?

Identify

→ What is the heritage value of the building? Does its development need to consider listed, listed features or conservation area requirements?
→ What is the existing condition/state of repair of the building?
→ What existing local and cultural networks does the organisation have? Is there an existing programme of internal and public events?

Analyse

→ Has a Conservation Management Plan been agreed, balancing priorities for heritage preservation and opportunities for change?
→ How can a strategy for temporary relocation be developed to ensure minimal disruption of activities during retrofit works? Has a public participation programme been developed?
→ Are there opportunities for increasing diversity and inclusion in the organisation's governance?

SOCIAL VALUE

How can this space better meet the needs of a diverse range of users, including our national diversity and all protected characteristics; disability, age, gender reassignment, marriage and partnerships, maternity, race, religion or belief, sex and sexual orientation?

Identify

→ What are the existing access barriers and opportunities, including key travel routes to and around the site? (e.g. accessible public transport, safe active travel routes, blue badge parking bays, step-free access, clear wayfinding)
→ Is there inclusive provision of facilities? (e.g. Changing Places and gender-neutral toilets / baby changing facilities)
→ Is there accessible digital and printed information available?
→ Is the format/programme of activities accessible? (e.g. BSL, captions and hearing loops; Audio Description and touch tours; relaxed performances and quiet hours)
→ Have all protected characteristics under the Equality Act 2010, and there specific needs, been considered?

Analyse

→ Have access audits, access plans and access strategies been undertaken and implemented?[31]
→ Has a representative and inclusive co-design process been undertaken?

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31 Centre for Accessible Environments (2012) Designing for Accessibility: an essential guide for public buildings, RIBA Publishing, p.12

'LEARNING FROM' AND LEGACY

How can there be an iterative cycle of knowledge exchange and learning to inform future projects?

→ Are there lessons learnt from relevant case-studies or similar projects?
→ Has a post-occupancy evaluation been undertaken to monitor how the building performs (such as energy-use, engagement programme, access audits and thermal/acoustic/visual comfort)?
→ Have there been adequate provisions made for the different timescales required for developing, nurturing and future-proofing each value over time?

GRANTS AND FUNDING

The retrofit approach has taken central stage in the context of the climate emergency, but the economic viability of retrofit projects for cultural buildings and infrastructure is still subjected to significant challenges in the evolving policy, taxation and funding context. The government's Levelling-Up agenda and the devolution of Arts Council England funding pose new opportunities and challenges for organisations nationwide, whilst the emerging place-led approaches by public and private funders have necessitated new partnerships and will further encourage closer collaborations between the public and third sectors.

KEY ISSUES:

→ Ownership: Most funds are conditional upon the applicant's ownership of a freehold or leasehold. In cases where the site/building is publicly owned, the lease can sometimes be negotiated in exchange for the retrofit works and upkeep.
→ Arts Council England: ACE's annual budget is modest compared to other European countries and most organisations (NPOs non-NPOs) cannot rely on ACE funding for long-term financial viability or capital projects.
→ Capital funding challenges: Arts funding by trusts is usually tied to public presentation (e.g. exhibitions, performances) and operational costs due to investment considerations.
→ Partnerships: Cross-institutional and public-third sector partnerships are critical in addressing funding gaps and leveraging place-led funding.
→ Ethics and values: The three values – environmental, cultural and social – should be integrated into financial planning to ensure ethical sponsorship.

The adjacent summary collates potential funding channels for retrofit projects of different size, scale, and level of intervention (i.e. light-touch vs wholesale).

SMALL FUNDS

GRASSROOTS FUNDRAISING
Organisations may fundraise all or part of the costs from patrons. However, it is harder to raise large sums of money for capital works and challenging for organisations located in or serving more disadvantaged communities.

SECTION 106 AND CIL (ENGLAND AND WALES)
Historically, Section 106 funding from large-scale developments can be leveraged to support local infrastructure, but increasingly CIL can be a channel to seek funding for capital works or the design process (e.g. co-design) of retrofit projects.

SUPPORT FROM THIRD SECTOR & BUSINESSES
Whilst trusts and foundations may not explicitly fund capital works, cultural organisations can prove impact of retrofit works in relation education, youth outreach, disadvantaged groups and other relevant objectives. Cultural organisations may also target businesses with aligned values for funding support or in-kind donations.

MEDIUM FUNDS

AT NATIONAL AND REGIONAL LEVEL
Grants are available through non-governmental bodies. Examples are Arts Council England (ACE) via different channels such as Place-based Partnership Fund, Cultural Investment Fund, City of Culture, National Lottery Project Grants etc.)

AT LOCAL LEVEL
Grants are available through strategic bodies and offices of mayors. Examples are High Streets Heritage Action Zone (Historic England) and Good Growth By Design fund (GLA). In cases where sites/buildings are publicly owned, organisations can seek to negotiate a rent-free period on the condition of capital works and upkeep.

LARGE FUNDS

NATIONAL LOTTERY HERITAGE FUND (NLHF)
NATIONAL LOTTERY COMMUNITY FUND (NLCF)
NLHF is available across a range of scales from £3,000 to millions of pounds. It focusses on heritage preservation, local area enhancements, diversity and inclusion, and skills-building. NLCF offers large grants (£10,000+) with a focus on community projects, empowering young people, climate action and social change.

PRIVATE SPONSORS
Organisations may find individuals or organisations to fund capital works, whether in full or in part, or for significant elements of the project. Developing a culture of philanthropy is critical for successful campaigns and relationship-building.

SUPPORT FROM TRUSTS AND FOUNDATIONS

SUPPORT FROM TRUSTS AND FOUNDATIONS

FUNDING CASE STUDY 1

SURREY DOCKS FARM, LONDON

Type:	Community centre
Retrofit:	2020
Cost:	£860,000
Cost per m^2:	£2,700
Size:	200m^2
Funding:	Grants, Section 106

FUNDING CASE STUDY 2

NATIONAL YOUTH THEATRE, LONDON

Type:	Theatre and rehearsal spaces
Retrofit:	2021
Cost:	£2.45m
Cost per m^2:	£1,106
Size:	2,260m^2
Funding:	GLA, ACE, private funders

FUNDING CASE STUDY 3

KRESEN KERNOW, CORNWALL

Type:	Library, museum & archive
Retrofit:	2019
Cost:	£16.5m
Cost per m^2:	£3,410
Size:	4,840 m^2
Funding:	National Lottery Heritage

7
Policy Recommendations
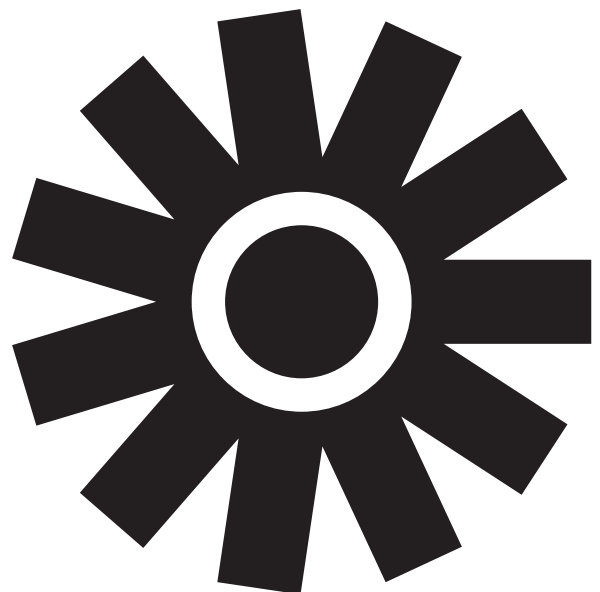
SUMMARY

Taken together, the nine recommendations support a holistic approach to retrofitting for cultural infrastructure. Through understanding the unique resilience of the UK's cultural infrastructure, an agile retrofit policy can overcome intersectional issues and support the provision of cultural spaces which generate social and public good.

These recommendations have been informed and developed throughout the research period, produced directly as a result of the gap analysis review of existing policy and guidance, reflective critique of best-practice case studies, interviews with built environment-industry specialists and development of the Strategies for Retrofit framework and toolkit. The diagram opposite details the retrofit value evidence-base each policy recommendation is directly informed by.

These recommendations will support a wider range and scale of cultural organisations to consider a retrofit approach. Retrofit, when operating in a sustainable and responsible manner, has the potential to transform and future-proof our cultural infrastructure into equitable spaces which reflect the diverse needs of both their local community and an international population.

Key actions and evidence requirements arising as a result of these policy recommendations can be produced as a part of further research recommendations.

The recommendations fall into three main categories:

1.0 Funding and Incentivisation
1.1 Improve access to and transparency of funding
1.2 Incentivise retrofit

2.0 Regulation and Planning
2.1 Address 'push and pull' relationship between heritage preservation and carbon considerations
2.2 Establish regulations on embodied carbon emissions
2.3 Explore reframing policy interventions to address and capture social and cultural value for retrofit
2.4 Promote retrofit approach at local level, with an emphasis on inclusive engagement and decision-making

3.0 Strengthening the Cultural Sector and Co-located Communities
3.1 Invest in retrofit education
3.2 Promote exchange between organisations
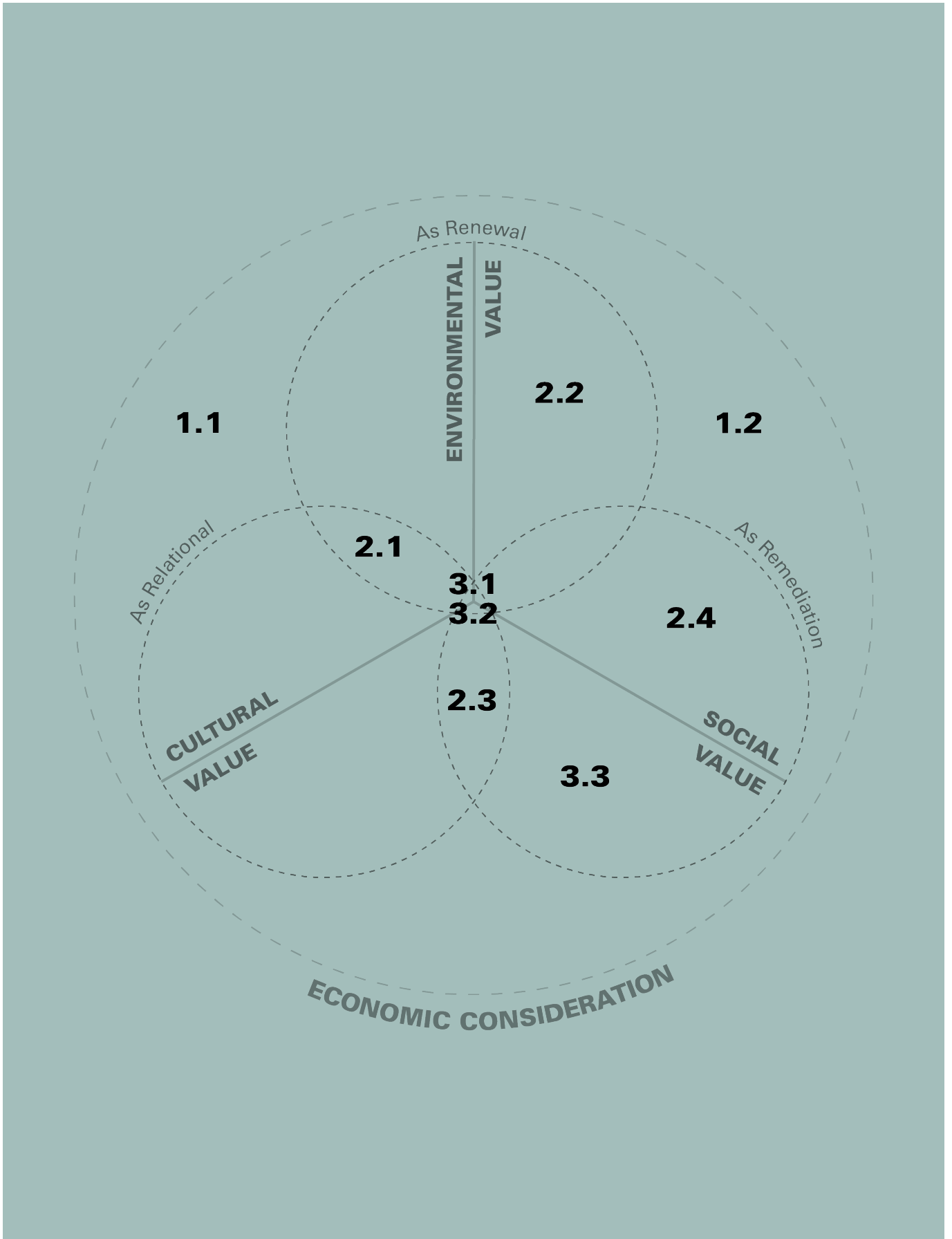3.3 Reinforce link between culture and local communities

FIGURE 9   Strategies for Retrofit Framework diagram

1. FUNDING AND INCENTIVISATION

1.1 Improve access to and transparency of funding: The viability of retrofit projects for cultural buildings and infrastructure depends largely on the availability of funding streams and leasehold conditions. Currently, the majority of cultural organisations are dependent on a combination of public and third sector funding, the applications to which require significant time and resource. There is scope to streamline the process by creating a centralised grants/fund register, consolidating those that support capital works for cultural infrastructure. In parallel, the transparency of awarded public funds at national and local levels will improve the accountability of retrofit processes and help organisations identify similar case studies for strategic planning.

1.2 Incentivise retrofit: DCMS is working with Historic England to explore tax incentives for repairs and maintenance which will have direct impact on the viability of retrofit projects. The incentivisation of retrofit for cultural infrastructure will help shift the typical preference for demolition due to cost constraints, to more sustainable approaches.

2. REGULATION AND PLANNING

2.1 Address "push and pull" relationship between heritage preservation and carbon considerations: Support dialogue between Historic England and Department for Levelling Up, Housing & Communities and the development of future guidance (e.g. in National Model Design Code) in addressing tensions in conservation and planning processes.

2.2 Establish regulations on embodied carbon emissions: Introduce requirements in planning policy and building regulations for the assessment, reporting and reduction of embodied carbon emissions, such as establishing thresholds values for embodied carbon.

2.3 Explore reframing policy interventions to address and capture social and cultural value for retrofit: Retrofit should be considered with a more holistic lens to address not just the environmental impact of development, but also long-term social and cultural value quantitatively and qualitatively, which are often overlooked in funding criteria and economic viability assessments.

2.4 Promote retrofit approach at local level, with an emphasis on inclusive engagement and decision-making: Increasing retrofit literacy in local planning authorities (LPAs) will support officers in identifying retrofit opportunities at scale, based on area-wide assessments and knowledge of local cultural networks, which in turn will help identify opportunities and support for smaller organisations. Inclusive engagement (e.g. via co-design) and decision-making should be promoted to ensure that the three values - environmental, cultural and social - are considered with reference to local priorities and context.

3. STRENGTHENING THE CULTURAL SECTOR AND CO-LOCATED COMMUNITIES

3.1 Invest in retrofit education: Support further research and the consolidation of retrofit knowledge (including methodologies, case studies, post occupancy evaluations) as a centralised interdisciplinary resource for cultural organisations, funders, architects, heritage consultants, engineers and other associated disciplines and stakeholders. Support professional charterships (e.g. RIBA, RICS), local authorities and Historic England in championing professional development and learning in retrofit and heritage conservation across planning, architecture and related professions to upskill workforce and inform planning decisions.

3.2 Promote exchange between organisations: Support the development of a platform for cultural organisations, especially smaller organisations for peer-to-peer exchange and critical-friend support for fundraising, commissioning, design, delivery and post occupancy evaluation.

3.3 Reinforce link between culture and local communities: Support the development and delivery of area-wide initiatives and programmes that nurture or strengthen local networks and relationships between cultural infrastructure and co-located communities (e.g. Borough of Culture) and promote legacy-building to support organisations in building the case for retrofit based on their local and network-wide impact.

FURTHER INFORMATION AND REFERENCES:
1.1   See 'Strategies for Retrofit: Toolkit & Resources', 'Strategies for Retrofit: Framework' Cultural Value and Gardiner & Theobald interview notes in Appendix

1.2   See 'Strategies for Retrofit: Toolkit & Resources' and Historic England interview notes in Appendix   2.1 See 'Strategies for Retrofit: Framework' Environmental & Cultural Value and CC|BE, Donald Insall and Historic England interview notes in Appendix

2.1   See 'Strategies for Retrofit: Framework' Environmental & Cultural Value and CC|BE, Donald Insall and Historic England interview notes in Appendix

2.2   See 'Strategies for Retrofit: Framework' Environmental Value and CC|BE interview notes in Appendix

2.3   See 'Strategies for Retrofit: Framework' Cultural & Social Value and Donald Insall, Historic England and London School of Architecture interview notes in Appendix

2.4   See 'Strategies for Retrofit: Framework' Cultural & Social Value and CC|BE, Historic England and London School of Architecture interview notes in Appendix

3.1   See 'Strategies for Retrofit: Framework' Cultural Value and Donald Insall and Historic England interview notes in Appendix

3.2   See CC|BE and London School of Architecture interview notes in Appendix

8
Emerging Issues
& Next Steps
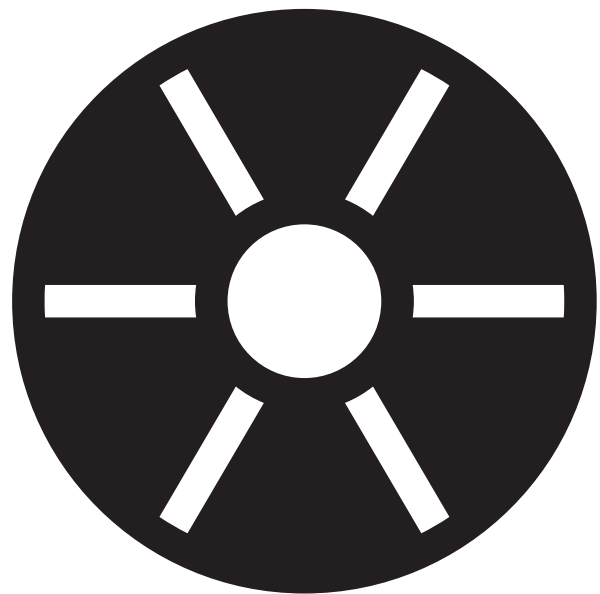
This report could form the first phase of a larger programme of work which will further support and guide the design sector, cultural organisations and wider DCMS policy in testing, trialling and evaluating best practice retrofit approaches for cultural infrastructure.

PHASE 1

RETROFIT FRAMEWORK & RECOMMENDATIONS

This report draws on existing guidance and key literature to describe the principles, and gaps, within retrofit and cultural infrastructure provision. It provides a framework of retrofit strategies and policy recommendations which can be applied to forthcoming projects across the UK, for a range of cultural infrastructure typologies.

PHASE 2

TESTING THE RETROFIT FRAMEWORK & ASSESSMENT TOOL DEVELOPMENT

Each of the three core values within the Strategies for Retrofit Framework (environmental, cultural and social) will be used as an assessment tool for past, ongoing and upcoming cultural infrastructure projects across the UK. Comparative studies will be undertaken to understand where the UK sits internationally and outline what best practice for retrofit looks like globally.[32]

A strong evidence base on how well the framework and value checklist performs will be provided through extensive performance and participation data analysis. The framework will be refined into a revised set of specific assessment criteria and key actions which will inform detailed design guidance and policy recommendations in Phase 3.

PHASE 3

**DESIGN GUIDANCE & FURTHER RECOMMENDATIONS**

Learning from earlier phases, we will draw together best practice design guidance from cultural infrastructure projects across different regions and devolved nations to support analyst and policy advisors in catalysing the adoption of retrofit for cultural infrastructure by local authorities, designers, cultural organisations, and stakeholders. This will outline evidence for the benefits of investment, including: economic (revenue and creation of jobs), environmental (achieving climate targets), cultural (heritage preservation) and social (accessibility, wellbeing and creation of pride of place).[1]

This phase will support DCMS' future planning in highlighting long-term trends in the challenges and opportunities that could arise with retrofit projects in the coming years.

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32 Aligned with DCMS (2023) *DCMS areas of research interest*, available at: https://www.gov.uk/government/publications/dcms-areas-of-research-interest/dcms-areas-of-research-interest (accessed 20.03.23)

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Appendix
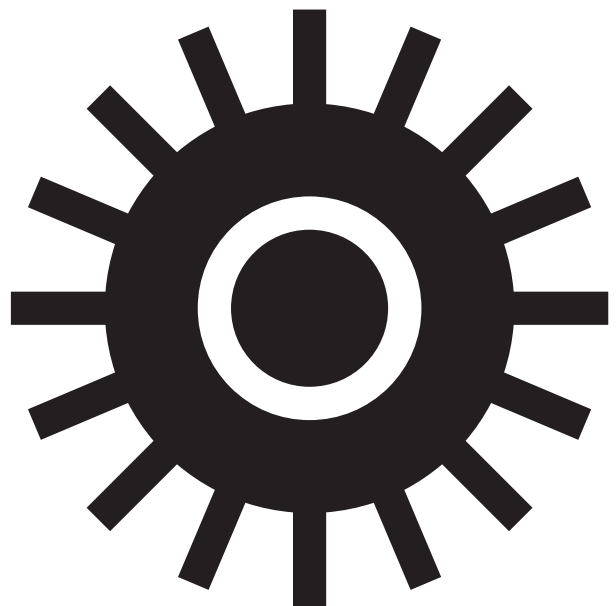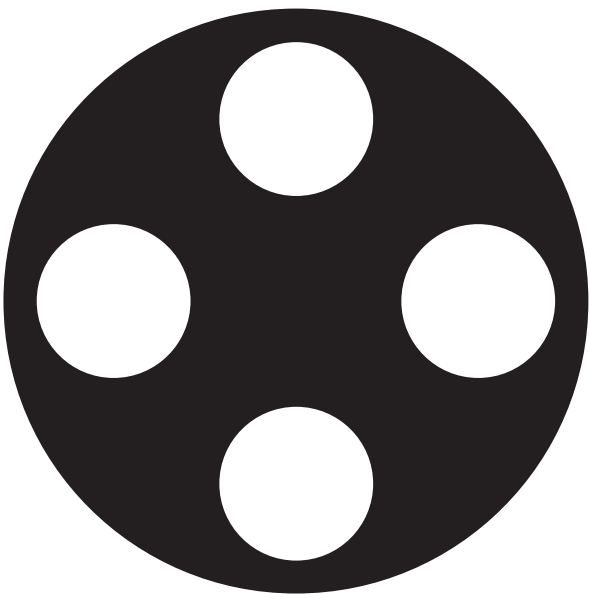
GLOSSARY

ACCESSIBILITY
The consideration and centring of the needs of a wide and diverse range of people with different impairments, disabilities and backgrounds in the design and use of space. It is an ongoing practice that recognises the difficulties and differences in people's varied requirements and responds through continual learning, monitoring, adaptation and repair.

ACCESS STATEMENT
An Access Statement is a description of how inclusive design principles and practice can be incorporated into a particular project or development, and subsequently maintained and managed. An Access Statement is not a static document but a living process which evolves with the scheme, gradually becoming more specific and detailed.

CO-DESIGN
To design collectively, to share power, and exchange knowledge.

CULTURAL INFRASTRUCTURE
Cultural Infrastructure refers to the buildings, structures and places where culture is both consumed (experienced, participated in, showcased, exhibited or sold) and produced (made, usually by artists, performers, makers, manufacturers or digital processes).

DISABILITY-LED
There is no set definition for a disability-led project or organisation. This report defines it as the process of co-designing with disabled people, so that decisions are made with them not for them. This is in line with the disability concept of nothing about us, without us.

DIVERSITY
Diversity in design means diversity of experience, perspective and creativity — otherwise known as diversity of thought — and these can be shaped by multiple factors including race, ethnicity, gender, age, sexual identity, ability/disability and location, among others (Diversity & Inclusion in Design: Why Do They Matter?, 2014).

EQUITY
Designing towards equity is a creative process that addresses discrepancies of agency, access and use between users by centring the power of those historically disadvantaged by systemic inequities.

INCLUSIVE DESIGN
A philosophy that embraces the needs of all potential users.

INTERSECTIONALITY
Coined by Kimberlé Crenshaw in 1989, it is an analytical framework for understanding how social and political identities (such as race, class, and gender) combine to create different modes of discrimination and privilege.

INVISIBLE DISABILITY

A disability that cannot be seen, such as neurodiversity, learning disability, chronic pain/health condition or mental health issues.

LIVED EXPERIENCE

Personal knowledge about the world gained through direct, first-hand involvement in everyday events rather than through representations constructed by other people.

NEURODIVERSE

A person or people with neurological differences, such as autism, Tourette's syndrome, dyslexia, ADHD or PTSD.

REGENERATIVE DESIGN

Regenerative design is based on the idea of creating a space that channels the restorative aspects found in nature to bring about a positive impact on the overall environment. It differs from sustainable design as it goes beyond purely maintaining the status quo and preventing further deterioration.

RETROFIT

Retrofit is the regenerative upgrading of existing space, systems and technology.

REPRESENTATIVE

A representative process is driven by a group of people who represent the diversity (see definition above) of the area or group in question.

SOCIAL JUSTICE

Justice in terms of the distribution of wealth, opportunities, and privileges within a society.

SITUATIONAL

A process which relates to the location, surroundings and character of a place.

VISIBLE DISABILITY

A disability that can be see either due to a physical difference or the use of a mobility aid or disability-related device.

Currently there are many variations in the terminology used to define carbon emissions (operational, embodied, whole life etc.) which leads to confusion amongst stakeholders. The definitions below have been altered and developed as a 'family' of definitions that work together, with the intention of achieving greater consistency across the built environment industry[33]

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33 The definitions are taken from '*Carbon Definitions for the Built Environment, Buildings and Infrastructure*', LETI, WLCN, RIBA, 2021. The Definitions are based on BS EN 15978: 2011 and use the life cycle modular structure. This has been adapted for National Infrastructure definitions as per PAS 2080: 2016.

GREENHOUSE GASES (GHG)

Often referred to as 'carbon emissions' in general usage
'Greenhouse Gases' are constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. For this report we are only addressing the GHGs with Global Warming Potentials assigned by the IPCC, e.g. carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC's), perfluorocarbons (PFC's), and sulphur hexafluoride (SF_6).

WHOLE LIFE CARBON

'Whole Life Carbon' emissions are the sum total of all building-related GHG emissions and removals, both operational and embodied over the life cycle of an asset including its disposal.

EMBODIED CARBON

The 'Embodied Carbon' emissions of an asset are the total GHG emissions and removals associated with materials and construction processes throughout the whole life cycle of an asset.

UPFRONT CARBON

'Upfront Carbon' emissions are the GHG emissions associated with materials and construction processes up to practical completion (RIBA Stage 6).

OPERATIONAL CARBON

'Operational Carbon' are the GHG emissions arising from all energy, water supply and wastewater treatment consumed by an asset in-use, over its life cycle.

NET ZERO CARBON

A 'Net Zero (Whole Life) Carbon' Asset is one where the sum total of all asset-related GHG emissions, both operational and embodied, over an asset's life cycle are minimised, meet local carbon, energy and water targets, and with residual 'offsets', equals zero. All carbon emissions are reduced in line with the Paris Agreement 1.5°C trajectory, with residual emissions offset through carbon removals or avoided emissions.

NET ZERO EMBODIED CARBON

A 'Net Zero Embodied Carbon' asset is one where the sum total of GHG emissions and removals over an asset's life cycle are minimized, meets local carbon targets (e.g.kgCO2e/m2), and with additional 'offsets', equals zero.

NET ZERO UPFRONT CARBON

A 'Net Zero Upfront Carbon' asset is one where the sum total of GHG emissions, excluding 'carbon sequestration' is minimised, meets local carbon targets (e.g.kgCO2e/m2), and with additional 'offsets', equals zero.

NET ZERO OPERATIONAL CARBON

A 'Net Zero Operational Carbon' asset is one where no fossil fuels are used,

all energy/water use has been minimised, meets the local energy/water use target (e.g. kWh/m2/a) and all energy use is generated on- or off- site using renewables that demonstrate additionality. Any residual direct or indirect emissions from energy/water generation and distribution are 'offset'.

CARBON OFFSET

'Carbon offset' means emission reductions or removals achieved by one entity can be used to compensate (offset) emissions from another entity.
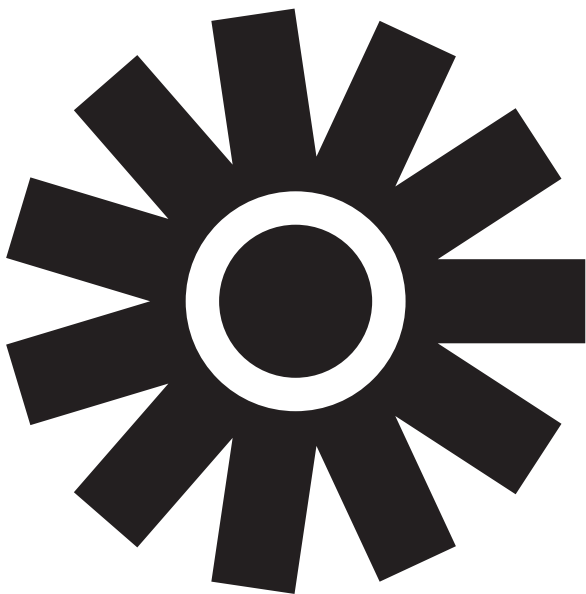
CARBON NEUTRAL

All carbon emissions are balanced with offsets based on carbon removals or avoided emissions.

ABSOLUTE ZERO CARBON

Eliminating all carbon emissions without the use of offsets.

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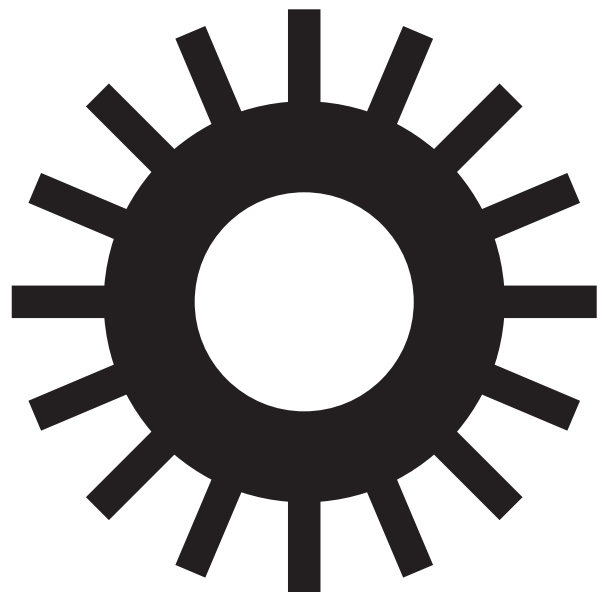
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PAS 2038:2021 RETROFITTING NON-DOMESTIC BUILDINGS
A new specification that sets out requirements on retrofitting non-domestic buildings for improved energy efficiency.

PAS 2035
A specification for 'whole building' retrofit for domestic dwellings. This is an approach to the installation of energy efficiency measures (EEMs) which takes into account the requirement of the entire building, both from a technical standpoint and considering factors like occupancy comfort. To be used in conjunction with PAS 2030:2019, which sets out the standards required for installing EEMs.

PAS 2080:2016 CARBON MANAGEMENT IN INFRASTRUCTURE
Specifies requirements for the management of whole life carbon in infrastructure – defined as the transport, energy, water, waste and communications, sectors – both in the provision of new infrastructure assets and programmes of work and the refurbishment of existing infrastructure.

BS EN 15978:2011 SUSTAINABILITY OF CONSTRUCTION WORKS
Focuses on the calculation method to assess the environmental performance of a building, based on life cycle assessment (LCA) for both new and existing buildings.

Validation & certification systems:

BREEAM
BREEAM is the world's leading science-based suite of validation and certification systems for sustainable built environment, improving asset performance at every stage, from design through construction, to use and refurbishment.

ROYAL INSTITUTE OF CHARTERED SURVEYORS (RICS)
RICS develops and enforces leading international standards, protecting consumers and businesses by ensuring the utmost level of professionalism is employed across the built and natural environment

CULTURAL VALUE

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Existing standards:

BS 7913:2015 GUIDE TO THE CONSERVATION OF HISTORIC BUILDINGS
Provides background information on the principles and practice of the conservation of historic buildings and sites when setting conservation policy, management strategy, procedures and implementation.

BS 6576:2005+A1:2012 CODE OF PRACTICE FOR DIAGNOSING RISING DAMP IN WALLS AND BUILDINGS AND INSTALLATION OF DAMP-PROOF COURSES
Gives recommendations for the procedures to be used in diagnosing and treating rising damp in walls of existing buildings.

BS 5250:2011+A1:2016 CODE OF PRACTICE FOR CONTROL OF CONDENSATION IN BUILDINGS
Gives recommendations and guidance on avoiding problems with high moisture levels and condensation in buildings. Recommendations given are based on forms of construction commonly adopted in the UK.

SOCIAL VALUE

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Existing standards:

BS 8300-1:2018 & BS 8300-2:2018 DESIGN OF AN ACCESSIBLE AND INCLUSIVE BUILT ENVIRONMENT

A best practice guide that provides more detailed recommendations for achieving access, covering more areas than the Approved Documents, including signage, furniture, lighting, décor, specialist equipment, management and maintenance.

PAS 6463:2022 DESIGN FOR THE MIND – NEURODIVERSITY AND THE BUILT ENVIRONMENT

Guidance on the design of the built environment to include the needs of people who experience sensory or neurological processing differences. It covers buildings and external spaces for public and commercial use, and residential accommodation for independent or supported living.

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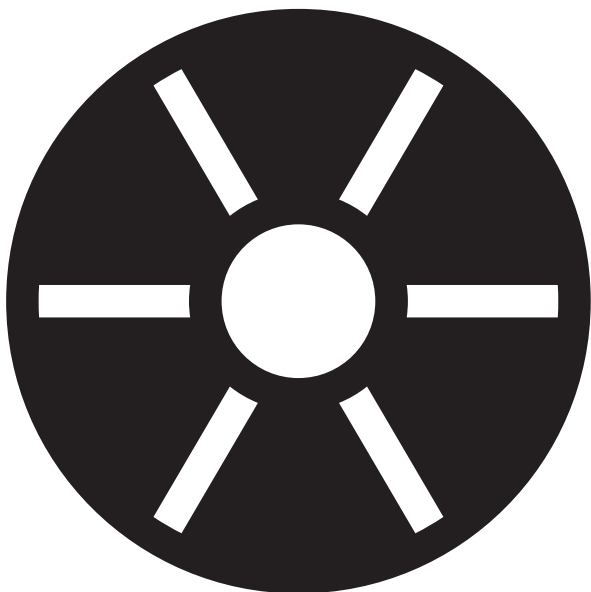
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13
Case Studies

SELECTION CRITERIA

Given the timeframe and scope of this research, good-practice retrofit case studies were selected from a range of UK-based cultural buildings which have been shortlisted for the AJ Retrofit Awards over the last five years.

Analysing recently nominated AJ Retrofit Award projects ensured consistency of quality and access to comparable data. Specific projects were selected to ensure a range of cultural building typologies were analysed, focussing on projects which provide spaces of 'exchange' between where culture is both consumed and produced (below).

Further research could identify international best-practices to inform recommendations and cover more comprehensively, the full range of typologies associated with cultural infrastructure.
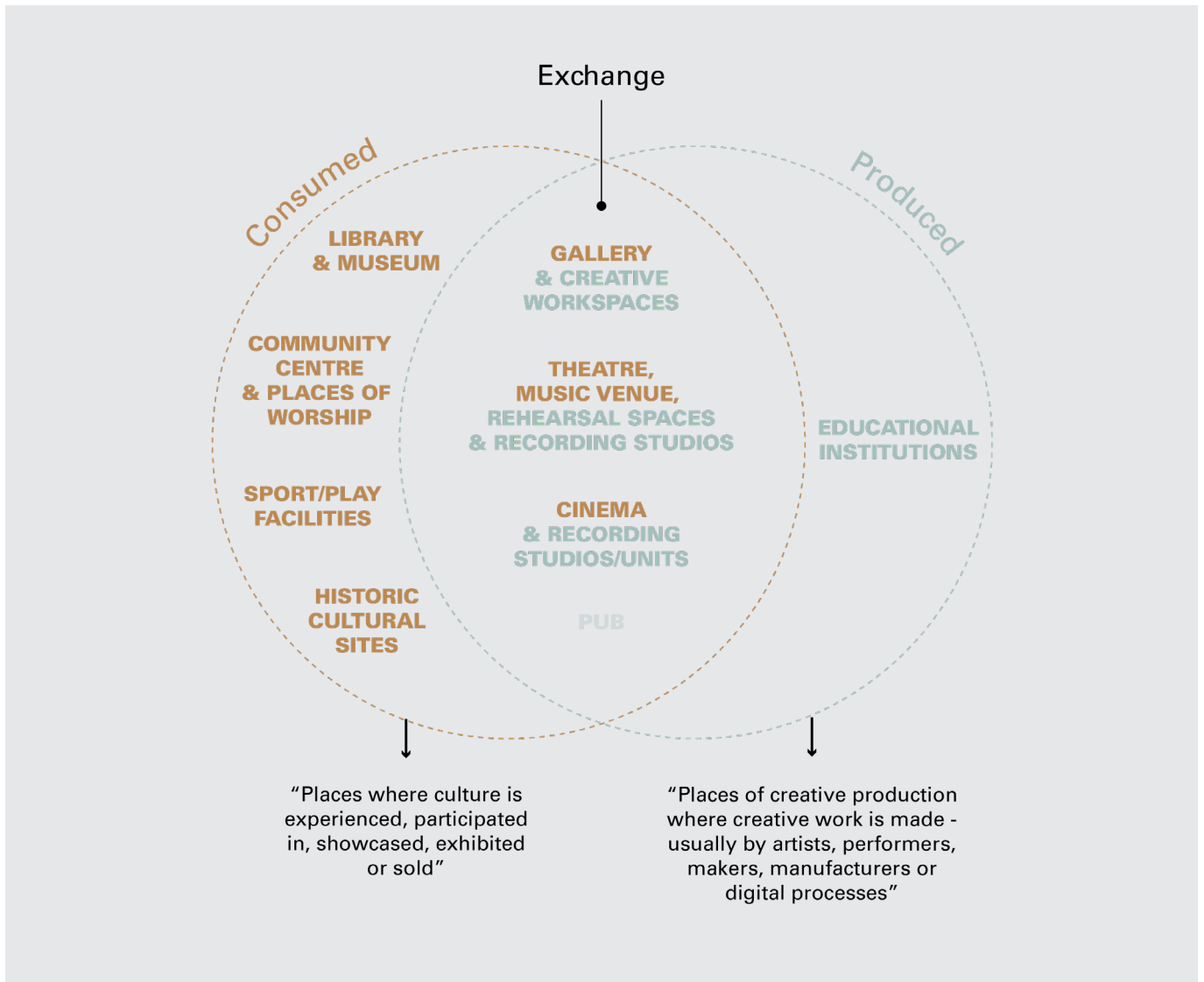

FIGURE 10   'Cultural Infrastructure: Case Study Selection Criteria' diagram

SHORTLISTED PROJECTS FOR THE AJ RETROFIT AWARDS FROM 2017-22. ITALIC TYPE INDICATES CASE STUDIES WHICH WERE SELECTED FOR THIS RESEARCH

2022 - CULTURAL AND RELIGION
Winner - National Youth Theatre - DSDHA
Crafts Council Gallery - AOC
Manchester Jewish Museum - Citizens Design Bureau
Theatre Royal Drury Lane - Haworth Tompkins
Studio Voltaire - Matheson Whiteley
Barbican Cinemas - RUFFARCHITECTS
Contact Theatre - Sheppard Robson
Museum of the Home - Wright & Wright Architects

2021 - CULTURAL OR RELIGIOUS BUILDING
Under £5 million
Winner - Surrey Docks Farm - Pup Architects
Watt Institution - Collective Architecture
Hornsey Library - Curl la Tourelle Head Architecture
Grand Junction at St. Mary Magdalene's, Paddington - Dow Jones Architects
Science Museum Smith Centre - HAT Projects
Gairloch Museum - LDN
Clancarty Lodge and Sands End Arts and Community Centre - Mae
Áras Uí Chonghaile, James Connolly Visitor Centre - McGurk Architects

CULTURAL OR RELIGIOUS BUILDING
£5 million and Over
Winner - The Malthouse - King's School Canterbury - Tim Ronalds Architects
Fairfield Halls, Croydon - MICA Architects
Edinburgh Printmakers - Page\Park Architects
St George's Bristol - Patel Taylor
Kresen Kernow - Purcell

2019 - CULTURAL BUILDING UNDER £5 MILLION
Winner - Ty Pawb - Featherstone Young
Collective on Calton Hill - Collective Architecture
V&A Photography Centre - David Kohn Architects
Site Gallery - DRDH Architects
The D-Day Story - Hampshire County Council
National Waterways Museum Gloucester - Nissen Richards Studio

CULTURAL BUILDING OVER £5 MILLION
Winner - Royal Academy of Arts Masterplan - David Chipperfield Architects
Alexandra Palace East Wing Regeneration Project - Feilden Clegg Bradley Studios
Pitzhanger Manor and Gallery - Jestico + Whiles and Julian Harrap Architects
St Albans Museum & Gallery - John McAslan + Partners
Japan House, London - Wonderwall and Marchini Curran Associates
Bloomsbury Theatre - Nicholas Hare Architects

2018 - RETROFIT OF THE YEAR

Winner - Royal Academy of Music - Ritchie Studio (formerly Ian Ritchie Architects)

CULTURAL BUILDINGS

Winner - The Garden Museum - Dow Jones Architects
One Paved Court - Allies and Morrison
V&A Members' Room - Carmody Groarke
Paisley: The Secret Collection Collective Architecture
Whitehall Museum - Curl la Tourelle Head Architecture
Kettle's Yard - Jamie Fobert Architects
The Sir Joseph Hotung Gallery of China and South Asia, British Museum- Nissen Richards Studio

2017 - CULTURAL BUILDING OF THE YEAR

Winner - The Design Museum - OMA, Allies and Morrison, John Pawson
Highly commended - The Bush Theatre Haworth Tompkins
Bearsden Burgh Hall - Anderson Bell Christie
National Army Museum - BDP
Storyhouse Chester - Bennetts Associates
11 Princelet Street 'The Studio' - Chris Dyson Architects
University of Winchester Chapel Design - Engine Architects
Henry Moore Studios and Gardens - Hugh Broughton Architects
Velehrad London - Inglis Badrashi Loddo
Kelvin Hall Refurbishment - Page\Park Architects

CASE STUDIES

NATIONAL YOUTH THEATRE

Type: Theatre and rehearsal space

Architect:	DSDHA
Location:	London
Planning authority:	LB Islington
Original:	1872
Retrofit:	2021
Cost:	£2.45m
Approx cost/m²:	£1,106
Size:	2,260m²
Original use:	Music hall
Funding:	GLA, charities
Driver/s for retrofit:	Social, Cultural

Context:
→ Originally a Victorian music hall, the National Youth Theatre (NYT) is located on the traffic-dominated Holloway Road.
→ The existing building needed modernising to be made more accessible and provide an improved entrance, which was blocked by a car park.

Drivers for retrofit:

→ Improve the existing condition and create new facilities, while retaining location and links to the local community.

→ Make the building more accessible and open to the street.

→ The retrofit includes a new theatre and community studio, built to high industry standards, resulting in spaces being rented out to provide additional income.

Challenges, opportunities & anticipated outcomes:

→ By retrofitting the existing building, NYT has remained embedded in the local community, whilst providing more and better facilities, helping to provide additional income and future proof the organisation.

→ NYT reduced its yearly carbon emissions by 32% to 54.4 kgCO2/m2 per annum.

Source: https://www.dsdha.co.uk/projects/5dc2f6eb99c7d0000d8a623d/ National-Youth-Theatre

IMAGES   Jim Stephenson

ROYAL ACADEMY OF MUSIC

Type: Music venue and rehearsal space

Architect:	Ritchie Studio
Location:	London
Planning authority:	City of Westminster
Original:	1912
Retrofit:	2018
Cost:	£30m
Approx cost/m²:	£9,497
Size:	3,159m²
Original use:	Royal Academy of Music
Funding:	Privately funded
Driver/s for retrofit:	Cultural

Context:

→ A Grade II listed Edwardian building purpose built for the Academy, located in the Regent's park conservation area.

→ The existing facilities were out of date and limiting the productions the Royal Academy of Music (RAM) was able to host.

Drivers for Retrofit:
→ Upgrading facilities to retain the Academy's world-renowned status.
→ Retaining the location and building it has called home for more than 110 years.
→ The retrofit focussed on modernising and increasing capacity in the theatre, creating a new recital room, and improving and creating practice, AV and dressing rooms.

Challenges, opportunities & anticipated outcomes:
→ The retrofit has sympathetically added and improved a heritage building, bringing it up to modern requirements.
→ Private funding enabled the retrofit approach.
→ The RAM retrofit has used low u-value materials to improve efficiency.

Source: https://www.ritchie.studio/projects/ram/

IMAGES   Adam Scott

EDINBURGH PRINTMAKERS

Type: Gallery, arts and workshop space

Architect:	Page/Park
Location:	Edinburgh
Planning authority:	City of Edinburgh Council
Original:	1800s
Retrofit:	2019
Cost:	£12.3m
Approx cost/m^2:	£4,598
Space:	2,675m^2
Original use:	Factory offices
Funding:	National Lottery Heritage in Scotland, Scottish Government, other regional funds, charitable trusts
Driver/s for retrofit:	Cultural, Social

Context:
→ The relocation of an established arts organisation to a Victorian Rubber Factory.

Drivers for Retrofit:
→ The building was owned by the council and given to the organisation to preserve the 160 year old building whilst creating a locally and nationally significant arts space.
→ Key measures focused on opening up the layout to create large workshops, increasing visibility with the street and making the space accessible.

Challenges, opportunities & anticipated outcomes:
→ Unlike the previous case studies, Edinburgh Printmakers re-located to a new site which involved the preservation of an existing heritage building.
→ New sustainability measures mean the centre now has a 192kW heat load.

Sources: https://pagepark.co.uk/project/architecture/edinburgh-printmakers/ https://www.architectsjournal.co.uk/buildings/pagepark-turns-former-welly-factory-into-printmakers

IMAGES   Jim Stephenson

TY PAWB

Type: Gallery, arts and workshop space

Architect:	Featherstone Young
Location:	Wrexham
Planning authority:	Wrexham County Borough Council
Original:	1992
Retrofit:	2018
Cost:	£4.3m
Approx cost/m²:	£1,160
Size:	3,705m²
Original use:	Carpark, market
Funding:	Welsh government, Arts Council
Driver/s for retrofit:	Environmental, Cultural

Context:
→ The creation of a new multi-use arts and culture space, including the relocation of a council run art gallery.
→ The building was a purpose-built covered market and multi-storey car park built in the 1990s.

Drivers for Retrofit:
→ The building has combined two council spaces and brings new life to an undesirable 1990s precast concrete building.
→ The design combines arts, culture, community and market spaces.
→ The space is broken up by opening up the deep floorplate and creating flexible 'baggy' spaces.

Challenges, opportunities & anticipated outcomes:
→ The new space brings together local cultural assets with community spaces, whilst revitalising an under-used existing building.
→ Ty Pawb has carbon emissions of 81.8kg/m2/year.

Source: https://www.ajbuildingslibrary.co.uk/projects/display/id/8253
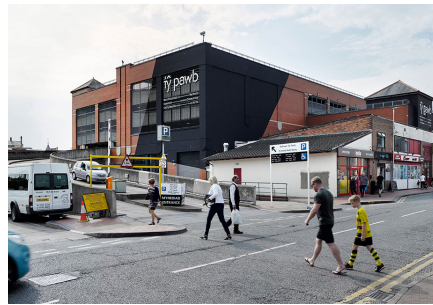
IMAGES   James Morris

KRESEN KERNOW

Type: Library, museum and archive

Architect:	Purcell
Location:	Redruth, Cornwall
Planning authority:	Cornwall Council
Original:	1800s
Retrofit:	2019
Cost:	£16.5m
Approx cost/m²:	£3,410
Size:	4,840 m²
Original use:	Industrial
Funding:	Grants include; National Lottery and Heritage Fund
Driver/s for retrofit:	Cultural

Context:
→ The transformation of a series of derelict Victorian industrial buildings to create a new library and archive for Cornish heritage.

Drivers for Retrofit:
→ This was a distinctly heritage driven project, preserving and restoring the heritage building within the UNESCO 'Cornish Mining' World Heritage Site.
→ Key measures focused on stabilising the historic structure, adding new 'strong rooms' for archival storage and creating flexible community focused spaces.

Challenges, opportunities & anticipated outcomes:
→ The new space provides a hub for preserving and learning about local and regional culture, accessible to all, whilst revitalising a heritage building in a globally recognised heritage area.
→ Kresen Kernow has a whole envelope U-value of 0.44W/m2K.

Source: https://www.purcelluk.com/projects/kresen-kernow/
https://www.ribaj.com/buildings/regional-awards-2020-shortlist-south-west-purcell-museum-kresen-kernow

IMAGES   Phil Boorman

SURREY DOCKS FARM

Type: Community centre

Architect:	PUP
Location:	London
Planning authority:	LB Southark
Original:	1980s
Retrofit:	2020
Cost:	£860,000
Approx cost/m²:	£2,700
Size:	200m²
Original use:	Farm building
Funding:	Grants, Section 106
Driver/s for retrofit:	Cultural, Social

Context:
→ Surrey Docks Farm took over the site in Rotherhithe in 1986, and comprises of a series of mostly single-storey farm buildings.
→ The space needed an updated education space, kitchen, offices and toilets.

Drivers for Retrofit:
→ Retrofit was the only viable option for this organisation due to the specific space requirements of the farm and integral connections to the local community
→ The new updated space can be rented out, providing a new income stream for the charity.

Challenges, opportunities & anticipated outcomes:
→ The retrofitted space provides updated facilities and a new glazed orangery, while preserving the character of the site and the organisation's close links with the local community.
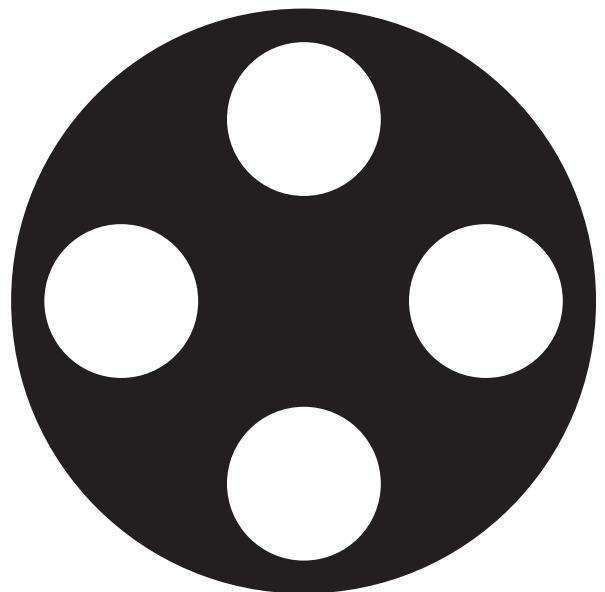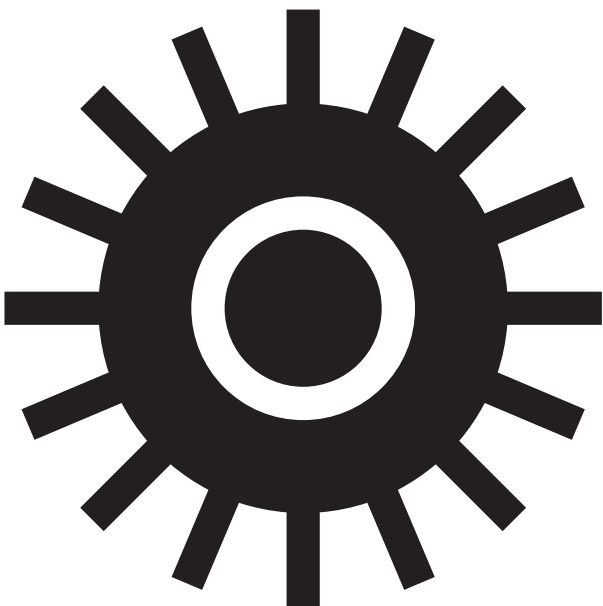→ The retrofitted building at Surrey Docks Farm now has embodied carbon of 53 tonnes CO2 e.

Source: https://www.architectsjournal.co.uk/buildings/holding-on-to-arcadia-pup-at-surrey-docks-farm
*https://www.puparchitects.com/projects/surrey-docks-farm_*
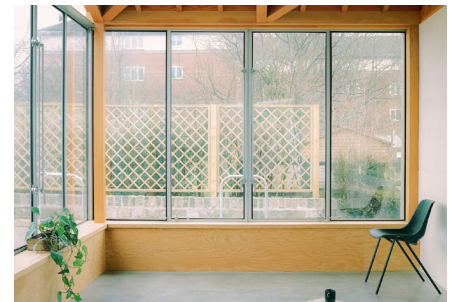
IMAGES Simone Bossi

Interviews

INTERVIEW PROCESS

Analysis of the case studies identified key barriers and opportunities of retrofit for cultural infrastructure. These findings informed a series of interviews with industry professionals were undertaken, ranging from the Director of Policy and Evidence at Historic England, project managers, historic building consultants and chartered engineers to a research group at the London School of Architecture.

The interviewee's expertise ranged across the environmental, cultural and social retrofit value areas which provided invaluable commentary on case studies and wider contexts, in turn informing the Strategies for Retrofit Framework, Value Checklist and policy recommendations.
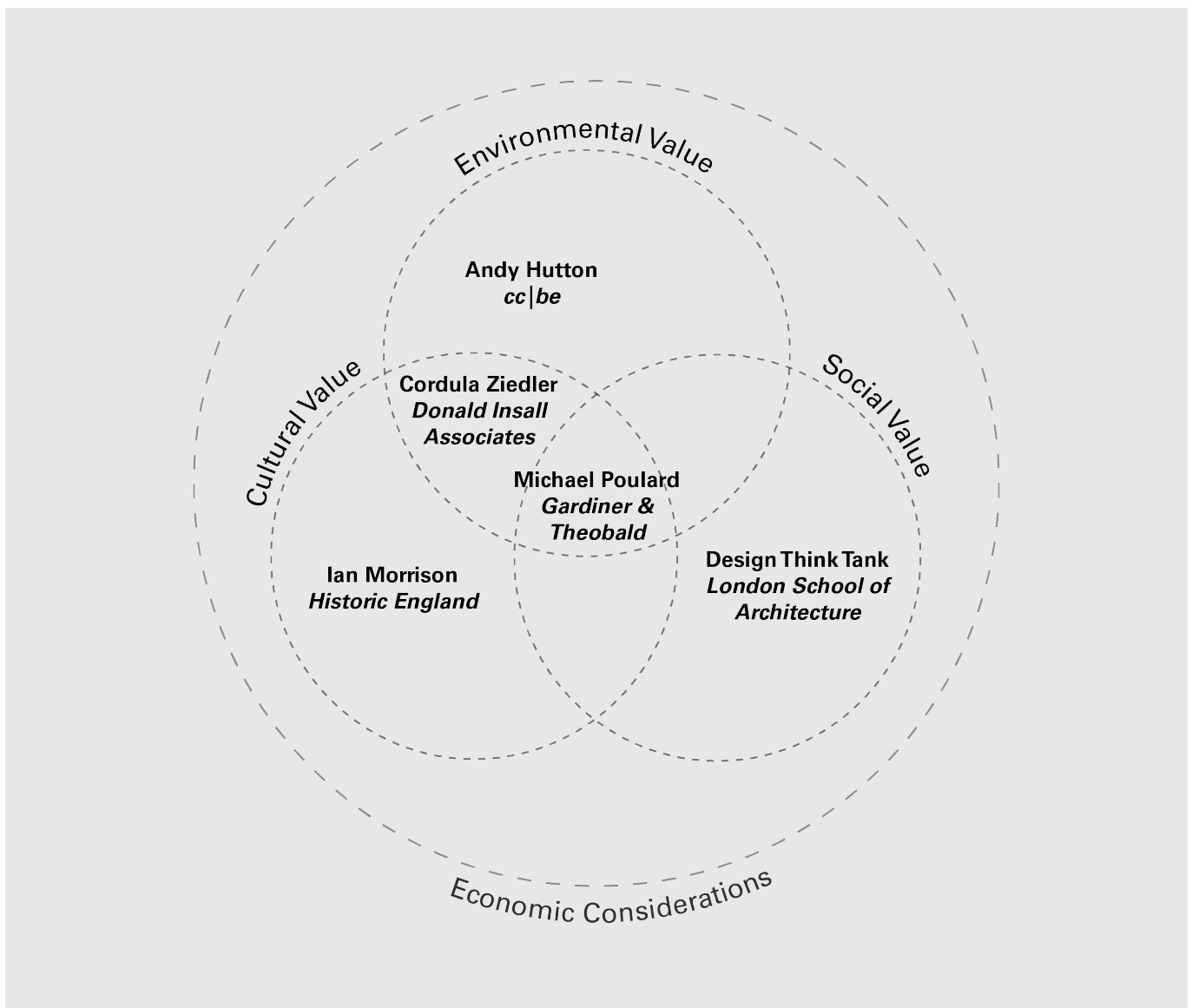

FIGURE 11 'Interview Selection Criteria' diagram

**LONDON SCHOOL OF ARCHITECTURE
DESIGN THINK TANK: RETROFIT AS REPARATION**

Tutors: Carly Dickson (RAWE Project), Jordan Whitewood-Neal (Dis/Collective) and Mei-Yee Man Oram (Arup)

Students: Amy Hickery, Amelia Cavner, Thomas Pickering, Rana Al-Kolaibi, Georgia Allen

Retrofit as Reparation is a masters-level student research project from the London School of Architecture (LSA) in the academic year 2022/23. The research looked at the retrofit of cultural spaces for the improved accessibility of disabled and older people, particularly focussing on Hackney and the Arcola Theatre.

Discussion Summary:
→ Accessibility is a spectrum.
→ Part M does not currently cover requirements which support the access to and use of buildings for all disabilities and protected characteristics.
→ There is a social justice demand for accessible culture in the participation of disabled people in society.
→ Small-scale cultural organisations face more specific challenges when retrofitting, especially for improving accessibility.
→ Operational requirements are as important as the building fabric when it comes to accessibility.
→ Thorough spatial audits and a representative co-design process is required in holistic retrofit approaches.
→ Designing for adaptability in retrofit is key to future-proofing cultural infrastructure.
Interview: 20th March 2023

**CORDULA ZEIDLER
DONALD INSALL ASSOCIATES**

Cordula Zeidler is a Historic Building Consultant at Donald Insall Associates, and has been a member of the Institute of Historic Building Conservation for most of her career. She previously worked as a conservation officer at Islington Council and an advisor for the Twentieth Century Society.

Discussion Summary:
→ Guidance which refers to holistic retrofit approaches are currently dispersed and hard to find.
→ There is a need for more best-practice case studies as an evidence base for heritage-driven retrofit.
→ A retrofit strategy should be determined by location-specific analysis and approach.
→ Thorough auditing is imperative to identify which parts of a building are listed.
→ Heritage-driven retrofit approaches are often approached cautiously in regard to climate targets.

→ Building fabric issues, such as condensation and cold-bridging, can arise in retrofit projects where there is a lack of skilled professional involvement.
→ The National Planning Policy Framework (NPPF) could incentivise retrofit by declaring it a 'public benefit'.
→ There would be benefit in learning from alternative international approaches to retrofit.

Interview: 21st March 2023

ANDY HUTTON
CC|BE

Andy Hutton is a Chartered Engineer with over 25 years experience, now working on highly sustainable projects across a number of sectors, particularly specialising in cultural projects and historic buildings.

Discussion Summary:
→ There is a need for a holistic approach to retrofit.
→ Targets for yearly energy consumption and carbon emissions should be set for cultural building typologies. A specific retrofit strategy can then be set on a context-specific basis.
→ A whole-building, rather than a piecemeal, approach is the most effective strategy for retrofit projects.
→ Funding issues often dissuade retrofit approaches, such as the costs associated with temporary closure and VAT charges.
→ Post-occupancy evaluation should be made mandatory, this will aid in determining energy and heat loads to inform an effective retrofit approach.
→ There is currently a disparity between different local authority's retrofit priorities between heritage preservation and net zero targets.

Interview: 22nd March 2023

MICHAEL POULARD
GARDINER & THEOBALD

Michael Poulard is an experienced project manager and partner at Gardiner & Theobald. His particular focus areas are strategic client advice and project team formation in the private and third sectors.

Discussion Summary:
→ The ownership status of a property determines the viability of a retrofit approach.
→ Funding is often tied to lease lengths; many funding opportunities rely on an organisation holding a registered and assignable lease for the duration of the project, plus a further 'n' years following project completion.
→ If legal ownership is not appropriate for the organisation, retrofit incentives for landlords could be supported.

→ VAT exemptions could be considered to further incentivise retrofit projects.

Interview: 24th March 2023

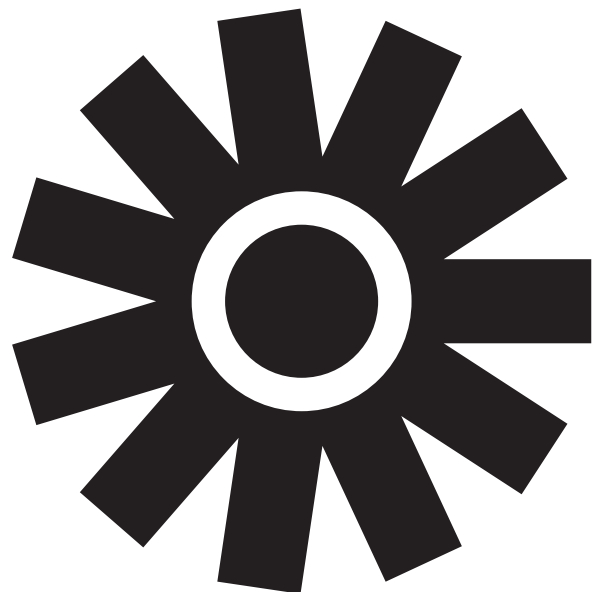**IAN MORRISON**
HISTORIC ENGLAND

Ian Morrison is the Director of Policy and Evidence at Historic England. Originally trained in archeology, he has worked in heritage for over 35 years, including the Heritage Lottery Fund and the Architectural Heritage Fund.

Discussion Summary:
→ There is a need for a holistic approach to retrofit, balancing climate targets and conservation priorities.
→ There is a need for more best-practice case studies as an evidence base for effective retrofit.
→ Retrofit projects require a context-specific approach which identifies the unique challenges and opportunities of a location to minimise disruption.
→ There is a lack of consistency in planning advice and consent across local authorities. This would benefit from a knowledge exchange/training initiative and increasing capacity in conservation officers across local authorities.
→ The shortage of skilled professionals in retrofit, particularly in design, construction and planning, is problematic.
→ Historic England and government departments are reviewing existing planning policy to make it simpler to get planning consent for retrofit.
→ Providing retrofit at scale could be considered through area-based schemes which respond directly to supply and demand (e.g. Heritage Action Zones)
→ Historic England is developing ideas for fiscal incentives to encourage effective maintenance, a prerequisite before undertaking effective retrofit.

Interview: 4th April 2023

Value Checklist Test

Whilst the application of this checklist requires further research and testing, the scoring matrix opposite provides an indicative summary for how each retrofit value could be assessed at RIBA Stage 0 (assessing motivations for retrofit and informing brief writing) and RIBA Stage 7 (evaluating the success of retrofit and driving post occupancy evaluation).

The outcome is a preliminary visualisation and scoring criteria, which could be used as a starting point for further development. For further guidance see 'Value Checklist' footnotes on and retrofit value bibliographies on .

ENVIRONMENTAL VALUE
How can this space improve its environmental value and sustainability performance?

Identify
→ How does the building currently operate? What are the operational requirements?
→ Is there metering data available for both unregulated and regulated loads?
→ What is the exposure of the building to wind-driven rain?
→ What are the spatial limitations? (e.g. air sourced heat pumps require more space than gas boilers)
→ Are there areas which are acoustic-sensitive?

Analyse
→ How well does the building perform energy wise?
→ What is the life expectancy of existing services? (Weigh up the balance between embodied carbon vs energy saved via new retrofitted-elements)
→ Has a whole life carbon assessment (WLCA) been undertaken?
→ Has an assessment of a range of options to deliver net zero carbon (comparing the likely cost, impact and benefit of each approach) been developed?

CULTURAL VALUE
How can this space nurture relationships with the existing building fabric, site context and associated institutional and community networks?

Identify
→ What is the heritage value of the building? Does its development need to consider listed, listed features or conservation area requirements?
→ What is the existing condition/state of repair of the building?
→ What existing local and cultural networks does the organisation have? Is there an existing programme of internal and public events?

Analyse
→ Has a Conservation Management Plan been agreed, balancing priorities for heritage preservation and opportunities for change?
→ How can a strategy for temporary relocation be developed to ensure minimal disruption of activities during retrofit works? Has a public participation programme been developed?

→ Are there opportunities for increasing diversity and inclusion in the organisation's governance?

SOCIAL VALUE
How can this space better meet the needs of a diverse range of users, including our national diversity and all protected characteristics; disability, age, gender reassignment, marriage and partnerships, maternity, race, religion or belief, sex and sexual orientation?

Identify
→ What are the existing access barriers and opportunities, including key travel routes to and around the site? (e.g. accessible public transport, safe active travel routes, blue badge parking bays, step-free access, clear wayfinding)
→ Is there inclusive provision of facilities? (e.g. Changing Places and gender-neutral toilets / baby changing facilities)
→ Is there accessible digital and printed information available?
→ Is the format/programme of activities accessible? (e.g. BSL, captions and hearing loops; Audio Description and touch tours; relaxed performances and quiet hours)
→ Have all protected characteristics under the Equality Act 2010, and there specific needs, been considered?

Analyse
→ Have access audits, access plans and access strategies been undertaken and implemented?[34]
→ Has a representative and inclusive co-design process been undertaken?

'LEARNING FROM' AND LEGACY
How can there be an iterative cycle of knowledge exchange and learning to inform future projects?

→ Are there lessons learnt from relevant case-studies or similar projects?
→ Has a post-occupancy evaluation been undertaken to monitor how the building performs (such as energy-use, engagement programme, access audits and thermal/acoustic/visual comfort)?
→ Have there been adequate provisions made for the different timescales required for developing, nurturing and future-proofing each value over time?

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34 Centre for Accessible Environments (2012) Designing for Accessibility: an essential guide for public buildings, RIBA Publishing, p.12
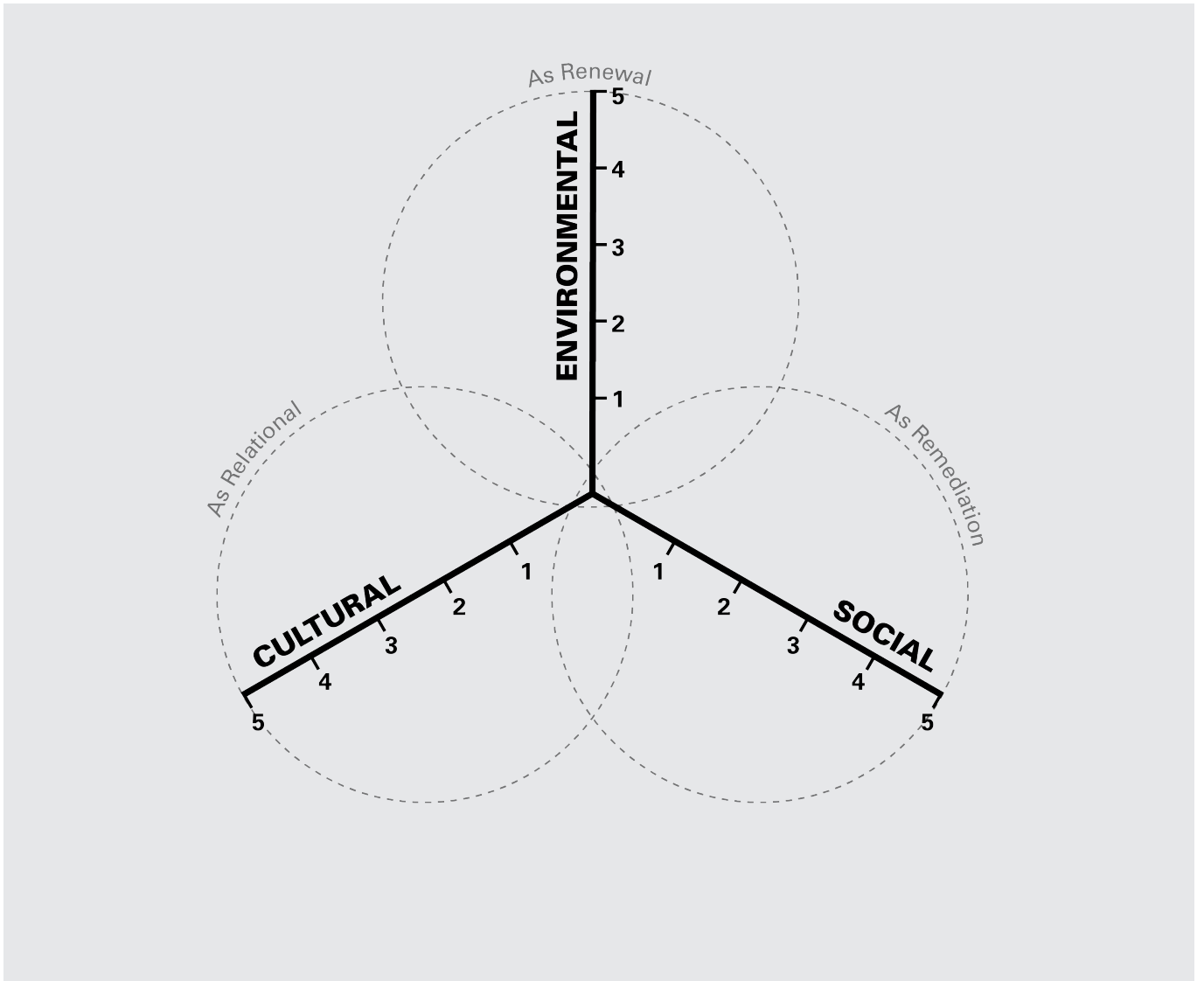
FIGURE 12   **Appendix Value Checklist diagram**

1 = Strongly disagree   2 = diagree   3 = neither agree or disagree   4 = agree   5 = strongly agree

INDICATIVE SCORING - RIBA STAGE 0

ENVIRONMENTAL VALUE:
→ Is the existing building designed or operated with sustainability in mind?

| 1 | 2 | 3 | 4 | 5 |

→ Is improving how the building performs sustainably a driver for retrofit?

| 1 | 2 | 3 | 4 | 5 |

→ **CULTURAL VALUE:**
Is continuing community connections a driver for retrofit?

| 1 | 2 | 3 | 4 | 5 |

→ Are there listed elements or specific heritage considerations to take into account?

| 1 | 2 | 3 | 4 | 5 |

SOCIAL VALUE:
→ Is improving accessibility a driver for retrofit?

| 1 | 2 | 3 | 4 | 5 |

→ Is the existing building accessible to all?

| 1 | 2 | 3 | 4 | 5 |

INDICATIVE SCORING - RIBA STAGE 7

ENVIRONMENTAL VALUE:
→ Has the retrofit improved the whole life carbon?

| 1 | 2 | 3 | 4 | 5 |

→ Has there been a significant improvement in the operational carbon?

| 1 | 2 | 3 | 4 | 5 |

CULTURAL VALUE:
→ Has the retrofit retained or improved existing community connections?

| 1 | 2 | 3 | 4 | 5 |

→ If relevant, has the retrofit process retained heritage fabric?

| 1 | 2 | 3 | 4 | 5 |

SOCIAL VALUE:
→ Has the retrofit improved physical accessibility?[35]

| 1 | 2 | 3 | 4 | 5 |

→ Has the retrofit improved cultural or psychological accessibility?[36]

| 1 | 2 | 3 | 4 | 5 |

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35 Physical accessibility refers to the physical barriers which prevent participation in cultural activity.

36 Cultural or psychological accessibility refers to any social and institutional barriers that prevent people from creating, participating in or enjoying cultural activity.

NATIONAL YOUTH THEATRE TRIAL

To demonstrate how the value checklist could be applied, below is an example of how it could have been used on the National Youth Theatre (NYT), one of the research case studies.

This assessment has been undertaken retrospectively for both RIBA Stage 0 and Stage 7 and should be used as an indicative example of application, rather than a best practice approach. Further references, development and testing is required before the Value Checklist and Indicative Scoring Matrix can be applied to live projects.

INDICATIVE SCORING - RIBA STAGE 0

ENVIRONMENTAL VALUE:

→ Is the existing building designed or operated with sustainability in mind?

    1   2   3   4   (5)

→ Is improving how the building performs sustainably a driver for retrofit?

    1   2   3   4   (5)

CULTURAL VALUE:

Is continuing community connections a driver for retrofit?

    1   2   3   4   (5)

Are there listed elements or specific heritage considerations to take into account?
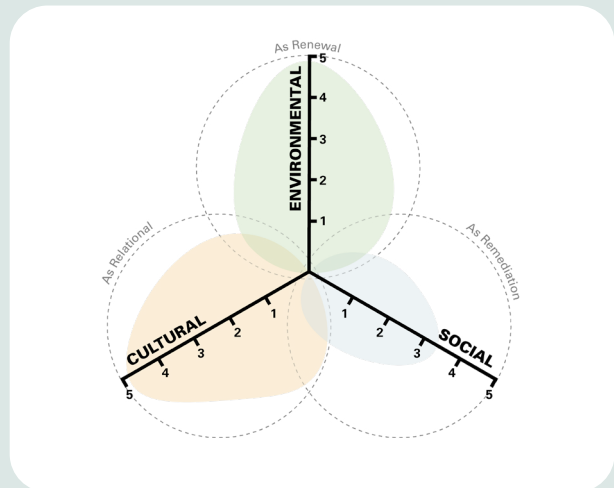
    1   2   3   4   (5)

SOCIAL VALUE:

Is improving accessibility a driver for retrofit?

    1   2   3   4   (5)

Is the existing building accessible to all?

    1   (2)   3   4   5

INDICATIVE SCORING - RIBA STAGE 7

ENVIRONMENTAL VALUE:

→ Has the retrofit improved the whole life carbon?

    1   2   3   4   (5)

→ Has there been a significant improvement in the operational carbon?

    1   2   3   4   (5)

CULTURAL VALUE:

→ Has the retrofit retained or improved existing community connections?

    1   2   3   4   (5)

→ If relevant, has the retrofit process retained heritage fabric?
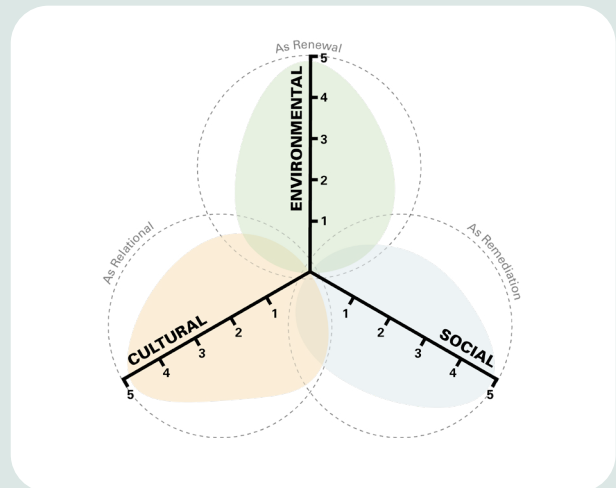
    1   2   3   4   (5)

SOCIAL VALUE:

→ Has the retrofit improved physical accessibility?

    1   2   3   4   (5)

→ Has the retrofit improved cultural or psychological accessibility?

    1   2   3   4   (5)

1 = STRONGLY DISAGREE   2 = DISAGREE   3 = NEITHER AGREE NOR DISAGREE   4 = AGREE   5 = STRONGLY AGREE

FUTURE
OBSERVATORY