

How Effectively do Contemporary Performance Venues in Wales use Architectural Design to Enhance the User Experience for Human Senses and Engagement?

Swansea School of Architecture, Built and Natural Environment.

Course: BSc Architecture

Name: Carys Ellie Davies

Student Number: 2303700

Module: Dissertation

Module Code: ACAA6003

Word Count: 10,895

Date: 1st May 2026

Authors Declaration.

I declare that the work in this dissertation was carried out in accordance with the regulations of the University of Wales, Trinity Saint David. The work is original except where indicated by special references in the text and no part of the dissertation has been submitted for any other degree.

Any views expressed in the dissertation are those of the author and in no way represent those of the University of Wales, Trinity Saint David.

The dissertation has not been presented to any other University for examination either in the United Kingdom or overseas.

I hereby give permission for my work, if accepted, to be available for photocopying and inter-library loan, and for the title and summary to be made available to outside organisations.

Signed:

Carys Ellie Davies

Date:

1st May 2026

Copyright Statement.

The copyright of this dissertation rests with the University of Wales, Trinity Saint David. No information derived from this dissertation shall be published without prior written consent of the University.

Signed:

Carys Ellie Davies

Date:

1st May 2026

Abstract.

This dissertation examines the efficiency of contemporary performance architecture in Wales in mediating user experience, specifically in the context of sensory perception and audience engagement. While the performance is typically the focal point, the built environment serves as a vital framework that dictates how audiences perceive, navigate and remember the experience.

Employing a qualitative mixed-method approach, the research synthesises on-site observational case studies with empirical questionnaire data to evaluate user interaction across four venues: The Sherman theatre, Wales Millennium Centre, Swansea Arena and The Royal Welsh College of Music and Drama. These sites provide a comparative scope of scales and architectural philosophies, ranging from intimate community-focused spaces to large-scale urban landmarks.

The findings reveal that while multisensory elements, primarily acoustics, lighting and visual clarity are fundamental to the user experience, factors such as spatial organisation, accessibility and atmosphere are equally influential. The study identifies a significant tension between large-scale venues, which often prioritise spectacle and capacity to smaller venues that foster intimacy and social connection. Furthermore, noted inconsistencies in inclusive design and the fragmented integration of Welsh cultural identity highlight critical gaps in contemporary architecture.

Ultimately the study concludes that while Welsh performance venues successfully meet functional and technical requirements, they only partially achieve status of fully immersive or culturally responsive environments. The research advocates for a shift toward holistic, user-centred architectural frameworks where sensory inclusivity and cultural context are foundational rather than secondary considerations.

Acknowledgements.

I would like to express sincere gratitude to my dissertation tutor Ian Standen for their guidance, support and valuable feedback throughout the development of this research. Their advice has been instrumental in shaping both direction and depth of this dissertation.

I would also like to thank the staff and organisations associated with the case study venues for providing insight into their spaces. Additionally, I am grateful to all participants who contributed to the questionnaire, offering valuable perspectives on user experience within performance venues.

Finally, I would like to thank my family and friends for their ongoing support and encouragement throughout the completion of this dissertation.

Table of Contents.

TITLE	PAGE NO
Authors Declaration.	2
Copyright Statement.	3
Abstract.	4
Acknowledgements.	5
List of Illustrations.	8
List of Tables.	9
Introduction.	10
Literature Review.	11
Methodology.	13
Case Study Selection.	15
Ethical Considerations.	15
Pilot Study.	16
Table 1: Overview of Architectural Case Studies.	17
Chapter 1: A Historical Overview of Theatre and Performance Architecture in Wales.	18
1.1 Early Performance Traditions in Wales.	18
1.2 The Evolution of Performance Spaces.	20
1.3 Industrialisation and Civic Performance Spaces in Wales.	20
1.4 The Emergence of Purpose-Built Theatres and Audience Experience.	21
1.5 Contemporary Performance Architecture in Wales.	22
Chapter 2: Architecture and the Visual Experience of Performance spaces.	23
2.1 Presence and Identity Location.	23
2.2 Internal Spatial Organisation and Sightlines.	24
2.3 Light, Shadow and Atmosphere.	26
2.4 Materiality and Visual Texture.	27
Chapter 3: Multisensory User Experience and Audience Engagement in Contemporary Performance Spaces.	29
3.1 Acoustic Design and Auditory Experience.	29
3.2 Tactility and Material Experience.	31
3.3 Movement, Circulation and Spatial Experience.	33
3.4 Atmosphere, Emotion and Immersive Experience.	35
3.5 Accessibility, Inclusivity and User Engagement.	36

Chapter 4: Discussion and Findings.	38
4.1 Multisensory Experience and Engagement.	38
4.2 Scale and Spatial Relationship.	39
4.3 Movement, Circulation and Engagement.	39
4.4 Accessibility and Inclusive User Experience.	40
4.5 Atmosphere and Emotional Response.	41
4.6 Cultural Identity and Architectural Expression.	42
4.7 Implications for Architectural Practice, Education and Policy.	43
4.8 Evaluation of Case Studies.	43
Conclusion.	45
Future Developments and Further Research.	46
Reference List.	47
Reference List of Illustrations.	51
Appendix.	52
Appendix A: Pilot Study	52
Appendix B: Questionnaire and Results.	53
Appendix C: Observational Case Study Notes.	54

List of Illustrations.

TITLE	PAGE NO
Figure 1: The Eisteddfod at Caernarvon Castle 1862 (Photograph Credit: Historic UK, 2023).	18
Figure 2: Caerleon Roman Amphitheatre Existing Remains (Photograph Credit: Caerleon Roman Fortress & Baths, 2026).	19
Figure 3: Caerleon Roman Amphitheatre Artists Impression (Photograph Credit: M. Wheeler and V.E.N. Williams, 1970).	19
Figure 4: 'The Palace Theatre in Swansea was built in 1888 and began life as a music hall' (Thomas, 2024). (Photograph Credit: Swansea Council).	22
Figure 5: Wales Millennium Centre (Photograph Credit: M. Barrett, 2005)	24
Figure 6: Swansea Arena (Photograph Credit: J. Newton, 2022)	24
Figure 7: Swansea Arena auditorium (Photograph Credit: Swansea Building Society Arena).	25
Figure 8: Sherman Theatre, Main House auditorium (Photograph Credit: K. McTernan, 2021).	25
Figure 9: Richard Burton Theatre at the RWCMD (Photograph Credit: J. Clark, 2026).	25
Figure 10: Donald Gordon Theatre (Photograph Credit: Wales Millennium Centre).	25
Figure 11: Use of coloured lighting and shadow to enhance atmosphere (Photograph Credit: Author, 2025).	26
Figure 12: Swansea Arena curved suspended decoration (Author, 2025).	27
Figure 13: Bronze Metal Cladding used on the Wales Millennium Centre (Photograph Credit: M. Barrett, 2005).	28
Figure 14: Wales Millennium Centre façade detail, illustrating the use of slate and metal (Photograph Credit: A. Duncan, 2014).	28
Figure 15: A view of the stage at the Ancient Theatre of Epidauros (Photograph Credit: P. Merakos, 2025).	30
Figure 16: Dora Stoutzker Concert Hall using timber to enhance acoustic performance	31
Figure 17: Use of wood in WMC Donald Gordon Theatre (Photograph Credit: Author, 2025).	32
Figure 18: Swansea Arena entrance concourse with staircases leading to different levels (Photograph Credit: Author, 2025).	34
Figure 19: Sherman Theatre entrance into communal area (Photograph Credit: Author, 2025).	34
Figure 20: Wales Millennium Centre suspended staircases and balconies (Photograph Credit: Author, 2025).	35

List of Tables.

TITLE

PAGE NO

Table 1: Overview of Architectural Case Studies.

17

Introduction.

Performance architecture plays a significant role in shaping how audiences experience theatre, music and live events. While performance is often considered the primary focus, the design of the surrounding environment influences how individuals perceive, engage with and remember these experiences. Elements such as lighting, acoustics, materiality and spatial organisation contribute not only to functional performance requirements, but also to the sensory and emotional atmosphere of a venue. Contemporary performance spaces can therefore be understood as active components shaping audience experience.

In Wales, performance has historically been rooted in communal and multisensory traditions, from early bardic practices to the cultural significance of the Eisteddfod. These emphasised shared experience, sound and presence over formal architectural settings. The development of purpose-built theatres and contemporary venues has introduced more controlled environments, where architectural design can intentionally shape audience engagement. This raises questions about how effectively venues balance technical performance, sensory experience and cultural expression.

This dissertation investigates how contemporary performance venues in Wales utilise architectural design to enhance user experience, with a particular focus on sensory perception and audience engagement. It examines how elements such as visibility, lighting, acoustics, spatial organisation and materiality contribute to both functional performance and experiential quality.

The study adopts a phenomenological and interpretivist framework, recognising that architectural experience is subjective and embodied. Theories of multisensory architecture, atmosphere and spatial perception inform the analysis, supporting an understanding of performance venues as environments that engage both physical senses and emotional responses.

By integrating theoretical research, case study observations and user perspectives, this dissertation evaluates whether contemporary performance venues in Wales create engaging, inclusive and meaningful environments, or whether further development is required to fully realise the potential of architecture as a driver of sensory and cultural experience.

Aims and Objectives.

The aim of this research is to evaluate how effectively contemporary performance venues in Wales utilise architectural design to enhance user experience, with a particular focus on sensory perception and audience engagement.

The main objectives are:

- To examine the role of architectural design elements, including spatial organisation, materiality, lighting and visibility, in shaping sensory experience within performance spaces.
- To investigate how architectural design contributes to atmosphere and emotional response.
- To compare a selection of contemporary performance venues in Wales in order to identify architectural strategies that enhance user experience.
- To assess user perceptions through primary research methods, including questionnaires and observational studies.
- To evaluate how effectively performance venues integrate sensory design principles to support accessibility, inclusivity and engagement.
- To critically reflect on whether contemporary performance architecture enhances or limits the multisensory and communal qualities historically associated with performance in Wales.

Literature Review.

The relationship between architecture, sensory perception and audience engagement has been widely explored through phenomenological theory. Pallasmaa (2012) argues that architecture is inherently multisensory, engaging the body through sight, sound, touch and movement. This challenges the dominance of vision in architectural design, suggesting that meaningful spatial experience emerges through embodied interaction. In performance venues, this highlights the importance of designing environments that engage multiple senses to enhance audience connection.

This emphasis on spatial perception is supported by Ching (2015), who identifies spatial organisation and circulation as fundamental in shaping how users understand and navigate space. In performance architecture, the arrangement of seating, stage positioning and circulation routes directly influence visibility, movement and engagement. Similarly, Lynch (1960) introduces the concept of spatial legibility, suggesting that coherent environments improve navigation and user experience, particularly within large or complex venues.

The role of atmosphere is further explored by Böhme (2017), who defines it as a spatial quality emerging from the interaction between environment and perception. Atmosphere is therefore not purely subjective but produced through elements such as light, materiality and spatial composition. However, psychological research by Ehret et al. (2019) suggests that atmospheric experience is not uniform, as individuals respond differently depending on context and personal perception. This introduces complexity in designing for engagement, as spaces must accommodate diverse user responses.

The relationship between theatre and architecture is addressed by Rufford (2015), who argues that performance spaces function as active components of audience experience rather than passive settings. This suggests that spatial design shapes the relationship between performer and audience, reinforcing the idea that engagement is influenced not only by performance but also by the architectural environment.

Despite these contributions, gaps remain in current research. While Pallasmaa (2012) and Böhme (2017) emphasise multisensory experience and atmosphere, their work is largely conceptual and offers limited insight into how these principles are experienced within performance settings. Similarly, theories by Ching (2015) and Lynch (1960) are not specifically applied to performance architecture, where engagement is a focal point. Although Rufford (2015) establishes a link between theatre and architecture, there is limited research exploring how multisensory design influences user experience across different venues.

There is also a lack of research focusing on contemporary performance venues in Wales. Existing studies often treat accessibility as a functional requirement rather than an integrated sensory and experiential component.

In response to these gaps, this study adopts a qualitative, user-centred approach, combining observational case studies with questionnaire data to evaluate how architectural design influences sensory perceptions and audience engagement. By linking theoretical frameworks with lived experience, this research aims to provide a better understanding of how performance architecture can enhance user experience.

Methodology.

This dissertation adopts a qualitative, mixed method approach to evaluate how effectively contemporary performance venues in Wales use architectural design to enhance user experience and audience engagement. Qualitative methodology is appropriate as it enables in-depth exploration of how architectural design is experienced by users, particularly in relation to sensory perception, atmosphere and spatial interaction. As these experiences are subjective and embodied, they are best understood through user-focused and experiential methods. The research combines primary and secondary methods:

Primary Research:

1. Case Studies with Observational Site visits.
2. Visitor Questionnaire.

Secondary Research:

3. Academic Literature.
4. Architectural Reviews.
5. Design Documentation.
6. Historical and Contextual sources.

Primary Research Methods.

1. Case studies with Observational Site Visits.

The research focuses on four performance venues: Swansea Arena, Wales Millennium Centre, The Royal Welsh College of Music and Drama and The Sherman Theatre. These were selected to represent a range of scales, functions and audience types, enabling comparative analysis across different performance environments. Observational site visits provided insight into how spatial organisation, materiality, acoustics and circulation influence user experience. This aligns with phenomenological approaches, which emphasise lived experience in understanding architecture.

2. Visitor/Public Questionnaire.

Distributed online to local residents and venues users, the questionnaire allows participants to reflect on their experiences within performance spaces. It focused on perceptions of visual features, atmosphere, comfort and accessibility, aiming to gain an insight into user feedback across the case study venues. Responses were collected anonymously and on a voluntary basis, in accordance with ethical

guidelines and analysed to identify patterns in user experience across the case studies.

Secondary Research Methods.

3. Academic Literature.

Academic literature was used to provide the theoretical framework of this dissertation research. Key pieces of literature which informed this research explore sensory and phenomenological architecture, performance space design, audience engagement and accessibility which supported the way in which the case study venues are analysed. This literature helps to define concepts such as sensory perception, atmosphere and embodied experience allowing the study to develop further than just descriptive observations. Academic sources are also used to contextualise the research within existing debates, identifying gaps in knowledge (particularly in relation to Welsh performance venues) and support comparison between the design intent and lived user experience.

4. Architectural Reviews.

Architectural reviews are used as a secondary research method to understand the design intent and professional interpretation of the selected performance spaces. Reviews published in architectural journals, professional platforms and practice-led publications provide insight into how architects articulate sensory, visual and experiential experience through the building's materiality, form and spatial organisation. These sources help to contextualise the case studies within contemporary architectural discussions and allow for comparison between intended design outcomes and actual user experience gathered through the primary data. By placing architectural reviews alongside user feedback, the research enables evaluation of how effectively design strategies translate into a meaningful sensory experience within the performance spaces.

5. Design Documentation.

Design documentation is used as secondary research to clarify the original design intentions, functional requirements and contextual objectives of each case study venue. This can include architects' statements, planning documents, venue publications and official websites which provide factual information on the spatial

layout, material choices, acoustic strategies and accessibility measures. Providing an understanding of how the venues were designed to operate and be experienced.

6. Historical and Contextual sources.

Historical and contextual sources are used to situate the selected case studies within the broader development of theatre and performance architecture in Wales. These sources include historical accounts, cultural studies and publications on Welsh industrial history, which provide background on how performance spaces have evolved in response to social, cultural and economic change.

Case Study Selection.

The selected venues represent a range of architectural strategies, from large-scale civic venues to smaller, more intimate performance spaces. This enables comparison of how scale, materiality and spatial organisation influence sensory experience and engagement. All case studies are contemporary or recently redeveloped, ensuring relevance to current architectural practice in Wales.

By embedding the findings throughout the analysis rather than treating them as isolated instances, the research evaluates the architectural effectiveness in a comparative and context-sensitive manner, consistent with the interpretivist and phenomenological approach outlined in the research design.

Ethical Considerations.

As acknowledged in the ethics consideration form, aspects of user experience cannot be meaningfully explored through intrusive methods and are therefore best examined through non-invasive qualitative methods. The research method also supports the ethical commitment to minimising risk to participants, by avoiding physical intervention, deception or psychological stress. The observational case studies are conducted in public settings without recording identifiable information, whereas surveys are voluntary, anonymous and based on informed consent. This approach ensures that participants are not exposed to harm or discomfort. Additionally, it allows participants to reflect on their experiences in their own words and at their own time, reinforcing ethical values of inclusivity and emotional ease.

By prioritising the lived experience of the user, the methodology remains proportionate to the research aims and compliant with General Data Protection Regulations (2018), UWTSD Research Ethics & Integrity Code of Practice guidelines and UWTSD Research Data

Management Policy, while still providing a meaningful insight into how architectural design enhances or limits sensory engagement in contemporary performance venues.

Pilot Study.

A pilot study was conducted to test the effectiveness of the questionnaire prior to wider distribution. This was to ensure that the questionnaire was suitable for capturing user perceptions of performance spaces. The pilot study identified minor issues with question phrasing, particularly where responses could be interpreted in different ways. It was also useful to identify the duration of time spent filling in the form and what questions gained the most insightful responses (refer to appendix A). The questionnaire was refined to improve clarity and ensure that questions were directly aligned with research objectives, improving the reliability and validity of the research. Resulting in meaningful responses relating to user experience within performance venues.

Table 1: Overview of Architectural Case Studies.

Venue and Location.	Architect.	Year.	Capacity (approx.)	Summary of key architectural / cultural features.
Wales Millennium Centre (WMC), Cardiff.	Jonathan Adams, Capita Percy Thomas	2004	Donald Gordan: 1,900	○ A major national cultural venue located in Cardiff Bay. Following earlier proposals for an opera house designed by Zaha Hadid, the recognised scheme by Jonathan Adams integrates multiple performance spaces (Firman, 2012) ○ The centre functions as a national cultural hub, hosting a wide range of performances including opera, theatre dance and music. ○ Use of Welsh slate and copper alongside its bilingual inscription, reinforcing connections to Welsh identity and heritage (Wales Millennium Centre, 2019).
Royal Welsh College of Music and Drama (RWCMD), Cardiff.	BFLS Architects	2011	Dora Stoutzker: 400 Richard Burton: 160	○ £22.5 million redevelopment in 2011 introduced a new concert hall, theatre, rehearsal spaces and exhibition gallery, to enhance the existing performance facilities, now functioning as an educational and public performance venue. Located near Cardiff Castle, the building establishes a strong civic presence, reflecting the institutions reputation and identity (Firman, 2012). ○ Prioritises clarity of spatial organisation, transparency and strong connections between public and performance spaces (ArchDaily, 2011).
Sherman Theatre, Cardiff.	Alex Gordan & Partners Capita Percy Thomas	1973 2012	Main House: 452	○ Originally Cardiff's Theatre for Wales, founded in 1968. Supporting Welsh writers and engaging younger audiences (Sherman Theatre, 2021). ○ Redevelopment of the venue, following funding (£4.6 million) from the Arts Council of Wales (Firman, 2012)
Swansea Building Society Arena.	ACME AFL Architects	2022	3,500	○ Part of a £135 million regeneration scheme, it plays a significant role in revitalising Swansea city centre (Copr Bay, 2022). ○ Features a curved façade, flexible auditorium and illuminated digital exterior, allowing events to extend into the public realm (Williams, 2022).

Chapter 1: A Historical Overview of Theatre and Performance Architecture in Wales.

1.1 Early Performance Traditions in Wales.

Performance in Wales has historically been rooted in shared sensory and communal experience, rather than formal architectural design. From early spoken traditions and music-centred gatherings to purpose-built theatres, performance environments reflect evolving relationships between audience, performer and atmosphere. Welsh artistic traditions developed over centuries, with the Eisteddfod originating in the twelfth century, representing a lasting commitment to poetry and music (Birch, 2025). Welsh bardic traditions grounded in poetry, music and storytelling, positioned performance as central to cultural expression. The bard played a key role preserving oral history and national identity (Wedel, 2017). These performances were typically collective, prioritising sound, language and presence over visual or spatial form, reinforcing the importance of multisensory engagement in early performance environments. This is illustrated in Figure 1 which depicts the Eisteddfod at Caernarfon Castle in 1862, where performance takes place within a temporary structure surrounded by a large audience. The image highlights the communal nature of early Welsh Performance, where engagement is shaped through proximity and shared presence rather than a controlled architectural environment.

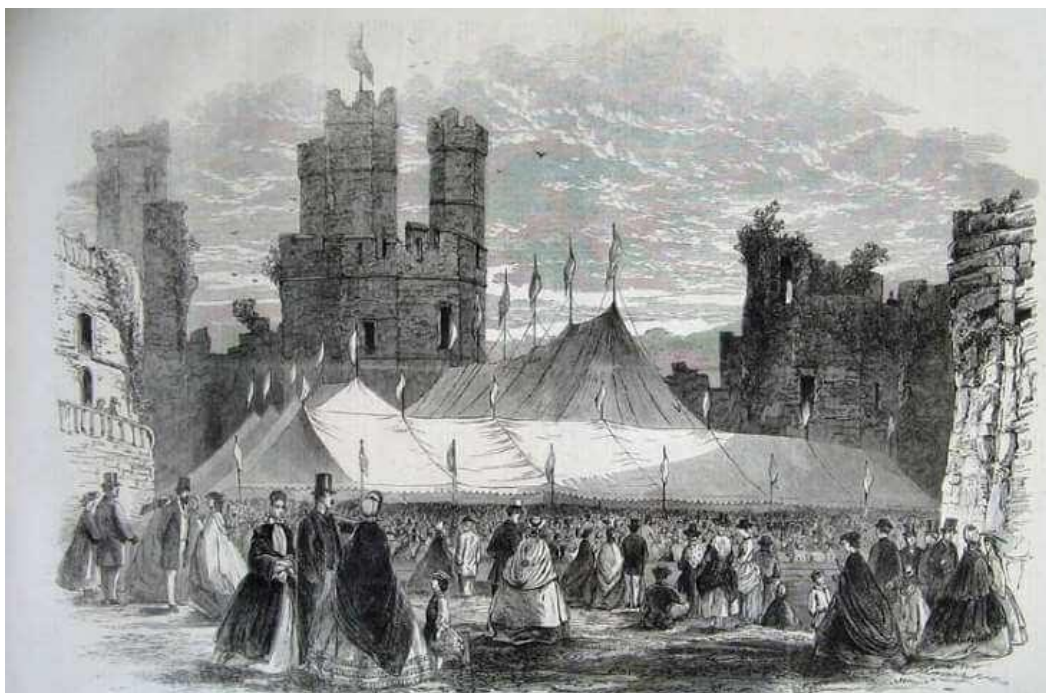


Figure 1: The Eisteddfod at Caernarvon Castle 1862 (Photograph Credit: Historic UK, 2023).

Although records prior to the mid-seventeenth century are limited, they indicate that linguistic differences between Welsh-speaking rural communities and English-speaking urban populations influenced performance practices (Klausner, 2003). As a result, performance developed within distinct cultural and linguistic contexts, shaping audience engagement and reinforcing its communal nature. The earliest known purpose-built performance venue in Wales is the Roman amphitheatre at Caerleon, (CADW, 2024). Its oval form, tiered seating and central area demonstrate early architectural control of sightlines and audience experience, marking a shift towards spatial organisation in performance. Although it predates theatre in a modern sense, it represents a significant example of architecture being used to organise collective performance and visual engagement.



Figure 2: Caerleon Roman Amphitheatre Existing Remains (Photograph Credit: Caerleon Roman Fortress & Baths, 2026).

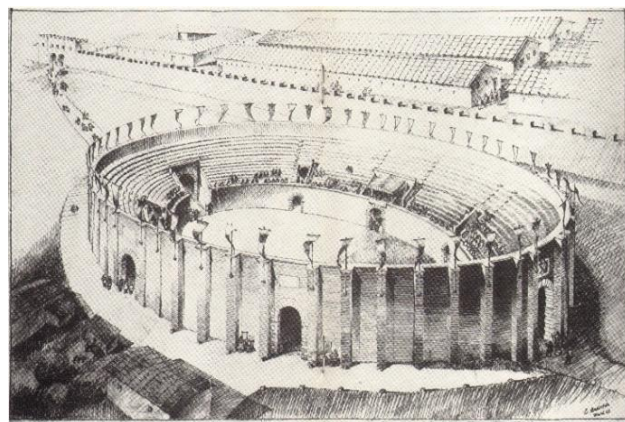


Figure 3: Caerleon Roman Amphitheatre Artists Impression (Photograph Credit: M. Wheeler and V.E.N. Williams, 1970).

As shown in Figures 2 and 3, the Caerleon Roman Amphitheatre demonstrates an early use of architectural form to organise audience experience through controlled sightlines and spatial hierarchy, marking a shift towards performance environments shaped by design and not just social interaction.

The Eisteddfod, meaning a ‘gathering’, further illustrates the importance of communal performance traditions (Canon and Crowcroft, 2015). First recorded in 1176 under Lord Rhys (The National Library of Wales, 2022), it brought together poets, musicians and performers in competitive contexts. These events were held in adaptable spaces such as town halls, castle gardens or open gathering spaces (Klausner, 2003), emphasising participation and atmosphere over architectural control. The Eisteddfod remains central to Welsh cultural identity, establishing performance as a multisensory and collective experience (Johnson, 2023). This provides a framework for evaluating contemporary venues, raising questions as to whether informal, sensory-led environments offer a more immersive experience than controlled conditions of modern performance architecture. In contrast to contemporary

performance venues, these examples demonstrate how early performance traditions relied on social interaction to create engagement.

1.2 The Evolution of Performance Spaces.

The arrival of purpose-built theatres in Wales represents a key moment in which architectural design began to shape sensory experience and audience engagement. While early performance traditions were informal and community based, dedicated theatre buildings introduced more controlled environments focused on visibility, acoustics and audience comfort. Although the Roman amphitheatre in Caerleon represents the earliest purpose-built performance structure in Wales, modern theatres did not emerge until the late eighteenth and nineteenth centuries, reflecting broader patterns of urbanisation and cultural development (Klausner, 2003). As cities such as Cardiff and Swansea expanded, demand grew for venues capable of accommodating larger audiences. In response, theatre design incorporated structured seating, defined stage-audience relationships and improved acoustic conditions. While acoustic design is grounded in scientific understanding of sound behaviour, performance spaces extend beyond just technical requirements, contributing to the overall sensory experience (Barron, 2008). These developments marked a shift towards architecturally controlled environments that shaped how performances were viewed and experienced.

1.3 Industrialisation and Civic Performance Spaces in Wales.

The expansion of industrial towns across the south-west Wales coalfield, including Swansea, was largely driven by the growth of metal industries (Newell and Watts, 1996). This development shaped towns but also civic and performance spaces, reflecting changing patterns of social interaction. As populations increased and communities became more densely organised around industrial labour (BBC Wales History, 2014), demand grew for spaces that could accommodate entertainment and collective gathering. In Wales' valley and coastal communities centred on coal, iron and slate industries, civic identity was expressed through miners' institutes and workers' halls. These buildings functioned as key social and cultural spaces, shaped by the political and social culture of the South Wales coalfields (James, 2007). As a result, architecture played an important role in supporting collective participation and cultural life.

Industrialisation also reshaped the relationship between religious and secular performance spaces. Owen (2011) highlights the significance of nonconformist chapels, which became prominent in Welsh towns. As congregations expanded, chapel design evolved to include enclosed, auditorium-like interiors that enhanced speech and encouraged performative preaching. This created similarities with theatrical environments, where architectural design

influenced sound, presence and collective engagement. Overtime, the dominance of chapels declined alongside broader secularisation, as social and cultural activities diversified (Owen, 2001). This shift reflects transition from religious to secular spaces of gathering, where architecture increasingly shaped audience experience. The prominence of chapels was also reflected in their architectural scale, often dominating villages across Wales (Owen, 2011). As Lynch (1960) suggests, such identifiable forms contribute to the creation of environmental image and influence how users perceive and navigate space. However, the limited survival of early chapel interiors (Wooding, 2011) restricts a full understanding of how these environments shaped collective sensory experience. These developments demonstrate an early precedent for architecture shaping collective sensory experience, a principle that continues to inform contemporary performance venues.

1.4 The Emergence of Purpose-Built Theatres and Audience Experience.

The development of purpose-built theatres during the nineteenth century marked a significant shift in how performance was experienced within Welsh society. Unlike earlier communal and adaptable environments, these venues introduced controlled architectural settings where audience experience could be carefully structured through design. The development of this in industrial towns is exemplified by the Palace Theatre in Swansea, constructed in 1888 (Swansea Council, 2024). The Palace Theatre received Grade II listed status in March 1980 and is recognised as one of only two surviving purpose-built former music halls in Britain (Firman, 2012). As one of the earliest surviving theatres in Wales, the building reflects the growing demand for organised entertainment within Wales during the industrial period. This highlights its architectural and cultural significance, illustrating the historical role of performance venues in shaping collective social experiences within industrial Welsh communities.

Figure 4 demonstrates how the Palace Theatre represents a shift towards permanent purpose-built performance architecture, where theatre becomes a defined urban institution that structures audience experience through controlled access and a visual presence within the city. This marks a transition from communal traditions towards more formalised environments, where architecture begins to regulate how audiences engage with performance.



*Figure 4: 'The Palace Theatre in Swansea was built in 1888 and began life as a music hall' (Thomas, 2024).
(Photograph Credit: Swansea Council).*

1.5 Contemporary Performance Architecture in Wales.

The late twentieth and early twenty-first centuries highlights a shift in performance architecture in Wales, where buildings are no longer designed solely to accommodate performance, but to shape cultural identity and support urban regeneration. Firman (2012) identifies a decline in traditional theatre use across South Wales, with 21 venues unused and a further 16 had no longer functioning as performance spaces. This reflects changing patterns of cultural engagement and reduced viability of traditional theatre buildings, prompting new forms of performance architecture aligned with contemporary audience expectations.

This shift is evident in venues such as the Wales Millennium Centre and the Swansea Arena, where architecture contributes to both performance experience and urban identity. These developments build on historical precedents while introducing new approaches to audience engagement, forming a basis for the analysis of multisensory experience in following chapters. Overall, performance in Wales has evolved from informal, community-based environments to increasingly controlled architectural settings. This progression establishes a framework for evaluating whether contemporary venues enhance or limit the sensory and communal qualities associated with earlier performance traditions.

Chapter 2: Architecture and the Visual Experience of Performance spaces.

In architectural performance spaces, visual experience emerges through the interaction of light, material and spatial form, shaping both emotional response and user engagement. Architects utilise elements such as lighting, scale and materiality to create depth, contrast and movement, enhancing spatial perception. As Pallasmaa (2012) argues, architectural experience is fundamentally sensory, while Lynch (1960) highlights the role of visual and spatial cues in shaping how environments are understood. Within performance venues, the built environment forms the first point of contact, making architecture central to shaping initial impressions and expectations. Low (2023) suggests, meaning and attachment to place develops through sensory and social experience, reinforcing the role of architecture in shaping how cultural spaces are perceived. The physical environment, combined with activity, influences how users interpret and assign value to space. In performance architecture, visual and spatial cues guide attention, establish atmosphere and shape audience expectations. Materiality, light and spatial composition therefore operate collectively to shape the overall atmosphere of a venue.

2.1 Presence and Identity Location.

Presence and identity are key to how performance venues are perceived within the urban environment. According to Lynch (1960), environmental images are formed through the interaction between individuals and their surroundings', meaning perception is shaped by both physical form and personal experience. This highlights the importance of clear visual presence and recognisable form in helping users understand and navigate their environment.

In performance architecture, the façade is often the most recognisable element, contributing to urban identity and collective memory (Bajaj, 2022). As the first point of encounter, it establishes expectations and atmosphere prior to entering the performance space. Buildings with strong visual identity can therefore reinforce place recognition and cultural significance (Lynch, 1960) as environmental 'images' are formed through an interaction between the observer and their surroundings. Façade design contributes to this through scale, materiality and form, shaping both visual presence and sensory experience. As Pallasmaa (2012) argues, architecture is experienced through embodied perception, implying the façade forms part of the initial sensory encounter. This emphasises the role of architectural expression in communicating identity and shaping user engagement within a wider cultural context.

These principles are evident in the contrasting façade strategies of the Wales Millennium Centre and Swansea Arena. The Wales Millennium Centre uses metal and slate to reference

maritime and industrial heritage, establishing a strong visual narrative linked to Welsh identity (Wales Millennium Centre, 2019). This aligns with Lynch's (1960) concept of place identity, reinforcing its recognisability as a national cultural landmark. In contrast, the Swansea Arena adopts a more contemporary architectural language defined by its curved form and perforated aluminium façade (ACME, 2022). Its reflective and illuminated surface creates a dynamic visual presence, allowing the building to function as a civic landmark within the Copr Bay regeneration scheme. Rather than relying on obvious symbolic materiality, its identity is expressed through form and visibility.



Figure 5: Wales Millennium Centre (Photograph Credit: M. Barrett, 2005)



Figure 6: Swansea Arena (Photograph Credit: J. Newton, 2022)

As shown in Figures 5 and 6, performance venues in Wales demonstrate contrasting approaches to presence and identity, where architecture can communicate cultural meaning through material and symbolism, or establish identity through form and scale. Both contribute to place-making but can engage visitors in different ways. Swansea Arena is less tied to narrative but instead reflects regeneration. These examples demonstrate how façade design shapes both perception and cultural meaning. In both cases, the façade contributes to the formation of an 'environmental image' (Lynch, 1960) and supports place attachment, reinforcing Low's (2023) argument that meaningful environments foster emotional and social connections.

2.2 Internal Spatial Organisation and Sightlines.

Internal spatial organisation plays a fundamental role in shaping how audiences navigate and engage with performance spaces. As Gruosso et al. (2025) suggest, spatial experience is closely linked to cognitive and perceptual processes, meaning users interpret and move through environments based on architectural cues. The configuration of circulations routes and seating arrangements therefore influences patterns of movement, orientation and interaction within the space.

In performance venues, effective spatial organisation supports intuitive wayfinding and seamless transitions between public and performance areas, contributing to a more

immersive experience. Larger venues such as the Swansea Arena rely on clear circulation and spatial hierarchy to manage high audience capacity, while more intimate venues like the Sherman Theatre prioritise direct spatial relationship between audience and performance. In both cases, internal organisation shapes how users perceive and engage with the environment. Sightlines are equally critical, as visual connection between the audience and performer directly influences engagement. The arrangement of seating, stage positioning and auditorium form determines visibility, affecting how clearly audiences can perceive the performance. This reflects Lynch's (1960) concept of spatial legibility, where clear visual organisation supports orientation, alongside Pallasmaa's (2012) emphasis on sensory perception.



Figure 7: Swansea Arena auditorium (Photograph Credit: Swansea Building Society Arena).



Figure 8: Sherman Theatre, Main House auditorium (Photograph Credit: K. McTernan, 2021).



Figure 9: Richard Burton Theatre at the RWCMD (Photograph Credit: J. Clark, 2026).

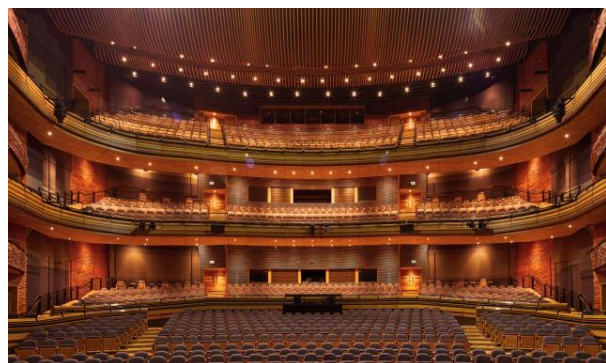


Figure 10: Donald Gordon Theatre (Photograph Credit: Wales Millennium Centre).

The above figures illustrate how spatial scale and seating configuration can influence audience experience. In the Royal Welsh College of Music and Drama and the Sherman Theatre, intimate layouts prioritise proximity and a direct visual connection, enhancing engagement. In contrast, larger venues must balance capacity with visibility. The Donald Gordon Theatre (WMC) demonstrates a particularly effective approach, where the curved tiered seating maintains strong sightlines and sense of focus despite its large scale. By organising the auditorium to preserve visual clarity across the space, it successfully mitigates the potential loss of intimacy associated with larger venues. The Swansea Arena, while also utilising tiered seating, prioritises flexibility and adaptability, which can at times reduce the consistency of visual connection depending on the performance configuration. In

all cases, sightline design remains fundamental in supporting visual clarity and engagement, demonstrating how spatial organisation must respond critically to both scale and function.

2.3 Light, Shadow and Atmosphere.

Light and shadow are key elements in shaping the visual and sensory experience of performance spaces, influencing both atmosphere and audience perception. The manipulation of natural and artificial light creates contrast and depth, guiding attention and enhancing the quality of a space. As Pallasmaa (2012) argues, architectural experience is rooted in sensory perception, with light acting as a primary medium through which space is understood. Similarly, Zumthor (2006) emphasises that atmosphere emerges through the coordination of light, material and spatial composition. Lighting design can alter the character of a space by defining volume, highlighting material texture and influencing visual comfort. It also affects spatial perception, where lighter surfaces can enhance a sense of openness and has been shown to impact mood and wellbeing (Montjoy, 2022). Within performance venues, lighting operates beyond functional requirements to structure experience and transition. The use of controlled lighting conditions can direct movement, highlight architectural features and establish distinct spatial identities. For example, the Wales Millenium Centre utilises dramatic contrasts between the light foyer space and darker auditorium to create a gradual transition from social space to immersive performance environment.

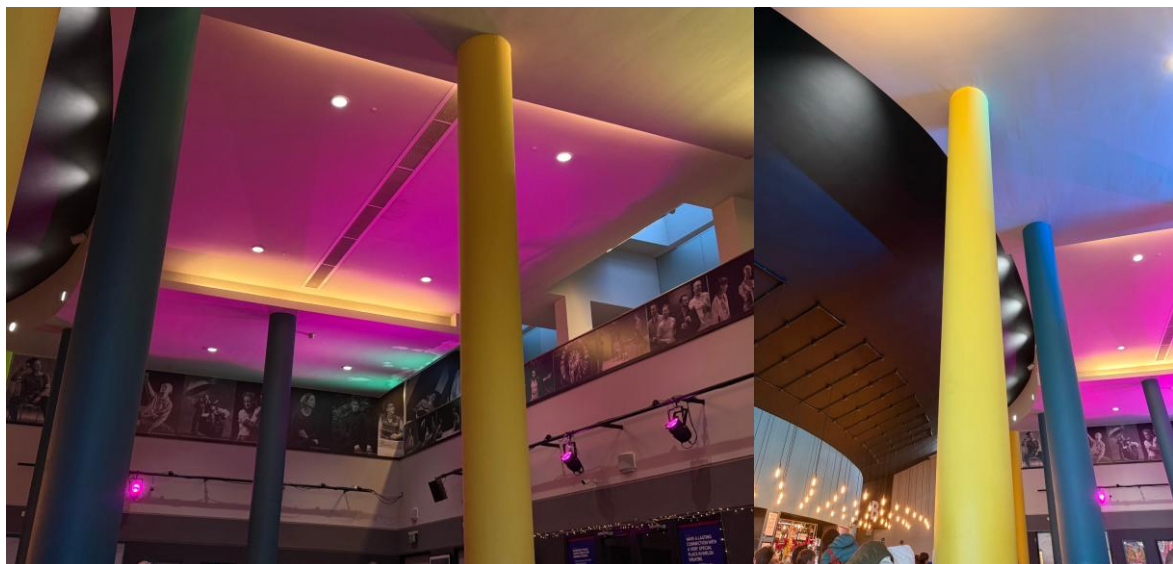


Figure 11: Use of coloured lighting and shadow to enhance atmosphere (Photograph Credit: Author, 2025).

Figure 11 demonstrates how the Sherman Theatre uses coloured artificial lighting to shape atmosphere and spatial perception within the foyer. In this space it enhances spatial depth across the ceilings and columns, producing a layered visual effect which contributes to a sense of vibrancy, reinforcing the theatres role as a social environment. The integration of

theatrical lighting fixtures within the foyer extends the performative atmosphere beyond the auditorium. This can also be seen in Figure 12 where suspended ceiling elements are inspired by ‘balé tutus’ reflecting the light and delicate qualities associated with performance (Kriskadecor, 2024).

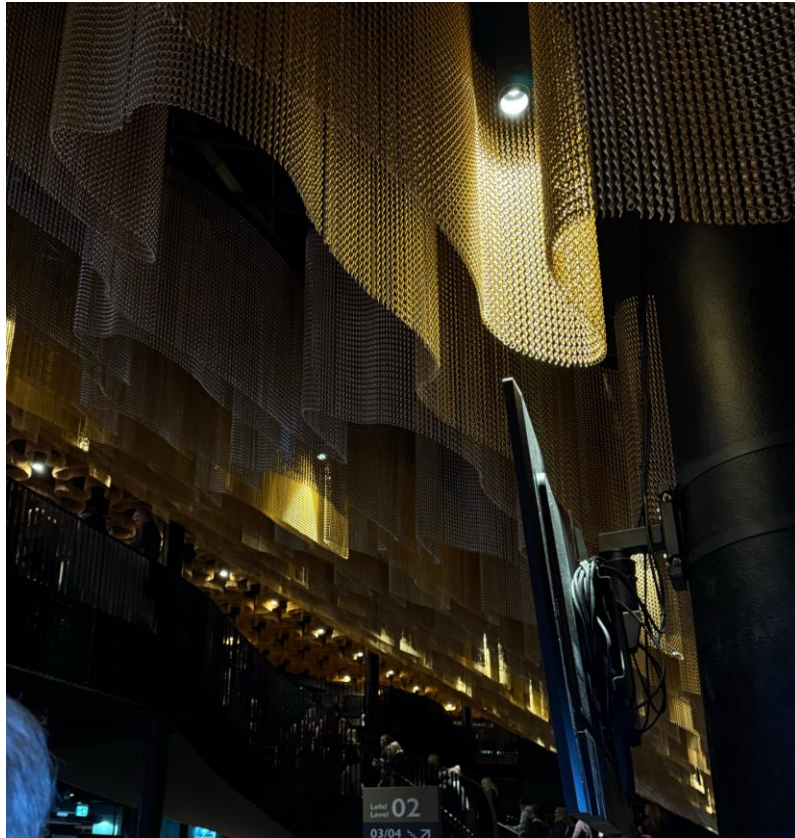


Figure 12: Swansea Arena curved suspended decoration (Author, 2025).

As Gruosso et al. (2025) proposes, environmental conditions such as light influence how users perceive and interact with space. This highlights the role of lighting design in supporting both individual perception and collective experience within performance architecture. Atmosphere within architectural spaces can be understood as more than an individual emotional response, but as a quality produced by the environment itself. As Böhme (2017) suggests, atmosphere emerges through the interaction between spatial conditions and human perception, existing as a shared characteristic of a place rather than just purely subjective experience. Within performance venues, this reinforces the role of lighting and spatial organisation in creating immersive environments that shape audience experience and engagement.

2.4 Materiality and Visual Texture.

Materiality is crucial in shaping visual experience of performance spaces, influencing both the atmosphere and aesthetic perception. The selection of materials, surface finishes and textures contributes to the character and identity of a space, affecting how it is visually

interpreted. As Pallasmaa (2012) suggest, materials are fundamental to architectural experience, communicating meaning through their visual presence and tactile potential. Similarly, Zumthor (2006) emphasises that material qualities such as texture, colour and finish contribute to the overall atmosphere of a space.

In performance venues, materiality is often used to reinforce cultural identity and establish a strong visual narrative. For example, the Wales Millennium Centre utilises slate and metal cladding to reference Welsh industrial heritage, embedding cultural meaning within the architectural fabric of the building (Wales Millenium Centre, 2019).

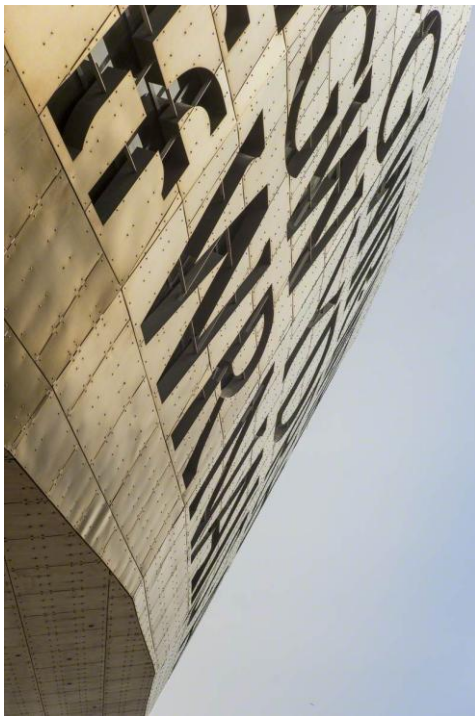


Figure 13: Bronze Metal Cladding used on the Wales Millennium Centre (Photograph Credit: M. Barrett, 2005).

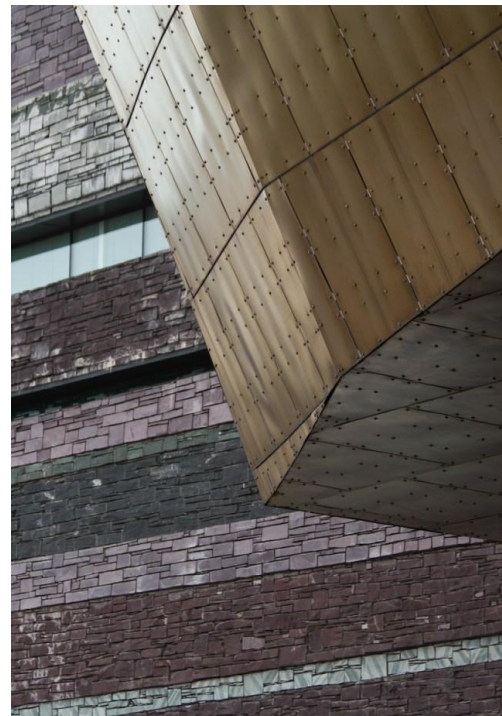


Figure 14: Wales Millennium Centre façade detail, illustrating the use of slate and metal (Photograph Credit: A. Duncan, 2014).

Figures 13 and 14 highlight the material expression and architectural identity of the building, these elements illustrate how materiality can operate beyond aesthetics, contributing to the symbolic narrative and sensory experience. While the façade successfully communicates Welsh identity, its impact relies heavily on visual expression, raising questions about how effectively this narrative is continued within the interior space. As Gruosso et al. (2025) suggests, materiality influences how individuals perceive architectural environments, reinforcing the relationship between visual perception and spatial organisation. Therefore, materiality contributes significantly to the visual richness and identity of performance spaces, supporting the creation of engaging and meaningful environments through considered architectural expression.

Chapter 3: Multisensory User Experience and Audience Engagement in Contemporary Performance Spaces.

The concept of lived space emphasises that architectural environments are experienced through the body and its sensory engagement, rather than as purely physical structures. Lived space reflects everyday spatial experience, shaped by perceptions of comfort and discomfort, proximity and distance, and emotional response (Bowler, 2016). This highlights the importance of embodied perception, where understanding is formed through movement and interaction as well as visual observation. As Pallasmaa (2012) argues, architecture is fundamentally multisensory, engaging both body and mind in the development of spatial experience.

Within performance architecture, this suggests that user experience extends beyond visual aesthetics to encompass sensory and emotional interaction between audience and environment. Elements such as spatial organisation, materiality, acoustics and atmosphere shape how individuals perceive and engage with a venue. This aligns with Bohme's (2017) concept of atmosphere as a quality emerging through the relationship between environment and perception. Contemporary performance spaces can therefore be understood as designed experiential environments, where architectural strategies can shape how the audiences feel and interact with the space. As a result, the effectiveness of performance venues considers not only their visual impact, but their ability to create immersive, multisensory experiences that enhance audience engagement.

3.1 Acoustic Design and Auditory Experience.

Sound plays a fundamental role in shaping user experience within performance spaces, influencing both perception and audience engagement. While visual elements often define first impressions, the auditory environment is central to how performances are understood and remembered. Acoustic design is therefore not only a technical requirement, but a key component of the overall sensory experience.

Acoustic atmospheres are dynamic and ever-changing, shifting in response to occupancy, performance type and spatial conditions (Sioli and Kiourtsoglou, 2022). This highlights the importance of sound in spatial perception, demonstrating that the effectiveness of performance architecture relies not only on visual design, but also on the quality and adaptability of its acoustic environment.

Acoustic performance is shaped architectural factors such as the spatial geometry, volume, material selection and surface treatment, all of which contribute to sound clarity, reverberation and distribution. These principles are evident in both historical and

contemporary design. As illustrated in Figure 15, the Ancient Theatre of Epidauros demonstrates how semi-circular geometry and tiered seating create clear sightlines. Maishanu (2017) highlights how the limestone seating functions as an acoustic filter, absorbing low frequency background noise while enhancing speech clarity. This demonstrates that acoustic design has always been embedded within architectural form, where material and geometry work together to support audience engagement without reliance on technological amplification.



Figure 15: A view of the stage at the Ancient Theatre of Epidauros (Photograph Credit: P. Merakos, 2025).

In contrast, contemporary venues such as the Royal Welsh College of Music and Drama rely on advanced acoustic engineering and sound insulation strategies to achieve similar levels of clarity within enclosed environments. The Dora Stoutzker Concert Hall is designed to achieve high acoustic precision. A key challenge was controlling external noise from nearby roads and internal sound transfer from adjacent spaces (Mara, 2012). Achieving low background noise levels enhances clarity and allows subtle tonal variations, such as vocal nuances, to be perceived. This heightened auditory sensitivity strengthens kinaesthetic empathy between audience and performer, reinforcing a sense of shared experience and emotional connection.

In this context, acoustic design can be understood as a means of reducing distraction and refining the auditory environment, enabling audiences to become more immersed in the performance (Ward, 2016). This aligns with phenomenological approaches to architecture, where sensory experience and embodied perception are central to spatial understanding (Pallasmaa, 2012).



Figure 16: Dora Stoutzker Concert Hall using timber to enhance acoustic performance

(Photograph Credit: Author, 2026).

Figure 16 shows the use of timber panelling across walls and ceilings which demonstrates how materiality is used to enhance sound reflection and diffusion, contributing to acoustic clarity and warmth within the space. Additionally, the curved balcony form and vertical wall panels support the even projection of sound throughout the auditorium, ensuring consistency. The integration of technical equipment within the space reflects the reliance on contemporary acoustic engineering, where design and technology work together to optimise performance conditions. While the hall achieves high acoustic precision, it contrasts with historical precedents by relying on engineered systems rather than architectural form.

3.2 Tactility and Material Experience.

Chapter 2 explored materiality in relation to visual perception and identity, this section considers how materials contribute to the multisensory and embodied experience of performance spaces. While acoustic design shapes how space is heard, materiality influences how space is physically experienced, reinforcing the multisensory nature of performance architecture. Materials can define the physical and sensory qualities of architectural space, shaping how environments are experienced through both visual and tactile interaction. Beyond their functional purpose, materials can also carry cultural meaning and symbolic associations, allowing architecture to communicate identity and narrative through its physical composition (Ashby and Johnson, 2014). As Pallasmaa (2012) argues,

architecture is experienced through the body, with materials contributing to a multisensory understanding of space rather than just visual elements.

Within performance architecture, material choices significantly influence atmosphere and audience engagement by shaping emotional response and spatial perception. The use of contrasting materials can define areas of interaction, guide movement and enhance the immersive quality of a space. For example, the Wales Millennium Centre utilises materials such as slate, copper and timber to establish visual identity, but also to create a layered sensory experience as users move through the building.

The psychological impact of materiality further reinforces its importance within architectural design. Research by Li et al. (2021) demonstrates that exposure to natural materials, particularly timber, can positively influence human wellbeing, contributing to reduced stress levels and increased emotional comfort. It also highlights that the degree of material application is critical, with balanced use producing the most beneficial psychological response. Indicating that materiality can operate as an active contributor to the emotional and psychological experience of space and is not just an aesthetic component. These effects are evident in Figure 17 where the use of timber within interior spaces contributes to a warm and inviting atmosphere, enhancing comfort and anticipation prior to performance.

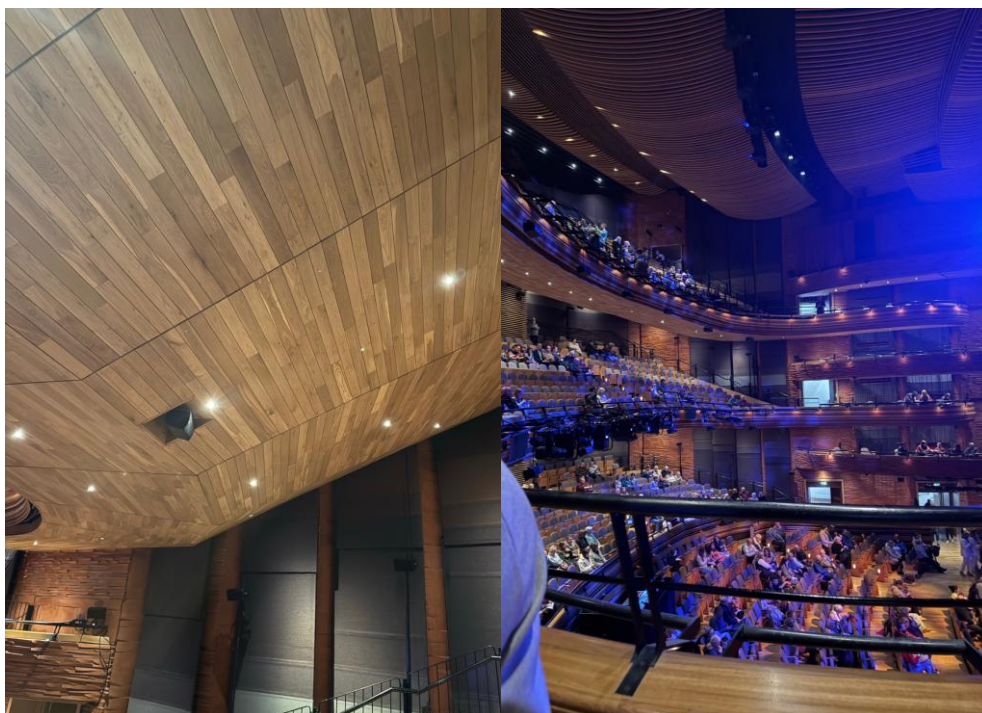


Figure 17: Use of wood in WMC Donald Gordon Theatre (Photograph Credit: Author, 2025).

Whereas, more minimal materiality observed in the Royal Welsh College of Music and Drama, support functional clarity but may result in a less emotionally expressive

environment. This can demonstrate that materiality extends beyond aesthetic consideration, functioning as a key component in shaping how performance spaces are felt and experienced. By engaging both the physical and emotional senses, materials contribute to the creation of immersive environments, reinforcing the connection between user, space and cultural context within performance architecture. Highlighting how materiality can play a crucial role in transforming performance venues into multisensory environments that extend engagement beyond visual perception.

3.3 Movement, Circulation and Spatial Experience.

Movement and circulation are fundamental elements to spatial experience within performance architecture, shaping how users navigate, perceive and engage with the built environment. Rather than being passive occupants, individuals experience architecture through movement, with circulation routes guiding orientation, anticipation and interaction. Transitions between entrance, foyer and performance spaces contribute to a sensory journey, influencing how audiences interpret and respond to their surroundings. The effectiveness of this journey is closely linked to the clarity and intuitiveness of spatial organisation. Environments with clear wayfinding can create a sense of comfort and security, allowing users to navigate space with minimal cognitive effort and supporting psychological 'state of flow'. In contrast, disorientating layouts or congestion can disrupt this experience, drawing attention to the building rather than the performance.

As Ching (2015) explains, spatial experience is shaped through the arrangement and connection of spaces, where circulation paths establish relationships and guide movement. This reinforces the idea that architecture is experienced sequentially, as a series of interconnected spatial moments. Similarly, Wölfflin and Benjamin suggest that architectural experience is grounded in bodily perception, where spatial understanding emerges through physical engagement rather than purely visual interpretation (Macarthur, 2007). This emphasis on embodied perception is further supported by Gruosso et al. (2025), who argue that individuals navigate environments through spatial cues and memory. In performance venues, clear circulation strategies and spatial hierarchy are therefore essential in supporting intuitive wayfinding and enhancing engagement. Movement clearly facilitates access but also structures the flow of experience, from arrival to immersion within the performance space.

These principles can be observed across the case studies. Larger venues such as the Swansea Arena rely on open concourse spaces, multiple access points and visual connectivity to manage high volumes of users, supporting functional movement. In contrast,

the Sherman Theatre prioritises direct spatial relationships, where shorter circulation routes enhance immediacy and connection to the performance.

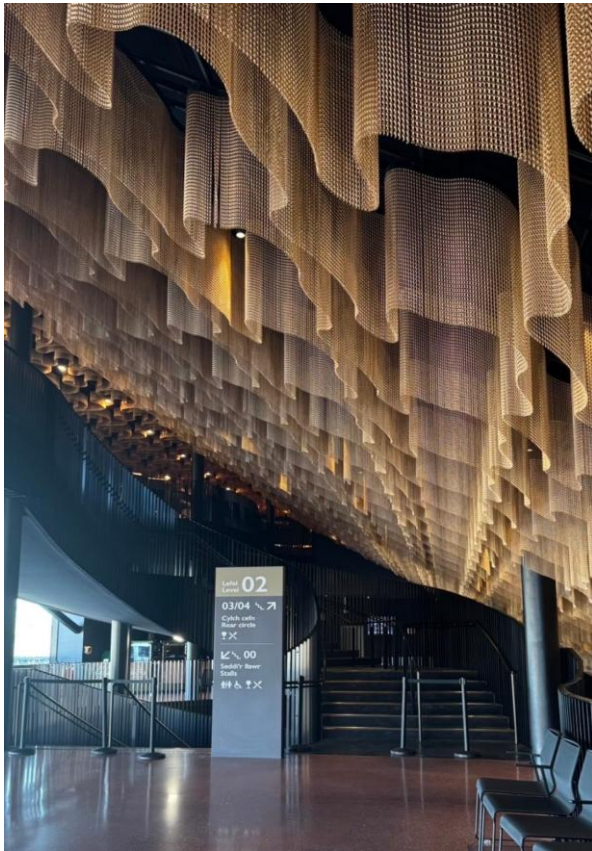


Figure 18: Swansea Arena entrance concourse with staircases leading to different levels (Photograph Credit: Author, 2025).



Figure 19: Sherman Theatre entrance into communal area (Photograph Credit: Author, 2025).

Figure 18 demonstrates how movement is directed vertically through the use of staircases and clear signage, supported by an expressive ceiling that guides the eye and reinforces directional flow. Whereas, Figure 19 highlights a more informal circulation environment where seating, lighting and visual displays create a social and transitional space, encouraging users to pause, gather and interact, reflecting the role of circulation areas as functional and experiential zones as part of the sensory journey.

Circulation can also be understood through the concept of 'prospect-refuge' theory (Manolakelli, 2025), where environments balance openness and enclosure. In performance venues, prospect is achieved through clear sightlines and open circulation spaces, while refuge is provided through enclosed seating areas or quiet spaces within foyers, offering a sense of comfort. Elements of mystery, created through layered spatial sequences, can further encourage exploration and anticipation. As a result, successful circulation design extends beyond efficiency, shaping how users move and engage with performance environments. By structuring spatial experience, architecture can support immersion and reinforce the transition between everyday spaces and performance. This demonstrates that

circulation is not just functional, but a critical component in shaping multisensory engagement within performance architecture.

3.4 Atmosphere, Emotion and Immersive Experience.

Atmosphere within architectural spaces can be understood as a quality that emerges through the interaction between spatial conditions and human perception (Böhme, 2017). Rather than being a fixed, atmosphere is produced through elements such as light, materiality and sound, which can collectively shape how space is experienced. However, atmosphere does not generate a uniform emotional response. Psychological research identifies a distinction perceived atmosphere and individual emotional reaction, which varies depending on personal interpretation (Ehret et al. 2019, cited in Pritzen et al. 2024). This highlights the complexity of designing for engagement within performance architecture. While architectural design can shape the conditions in which atmosphere emerges, user experience remains subjective. As a result, successful performance spaces must accommodate diverse responses while maintaining a coherent and immersive environment.

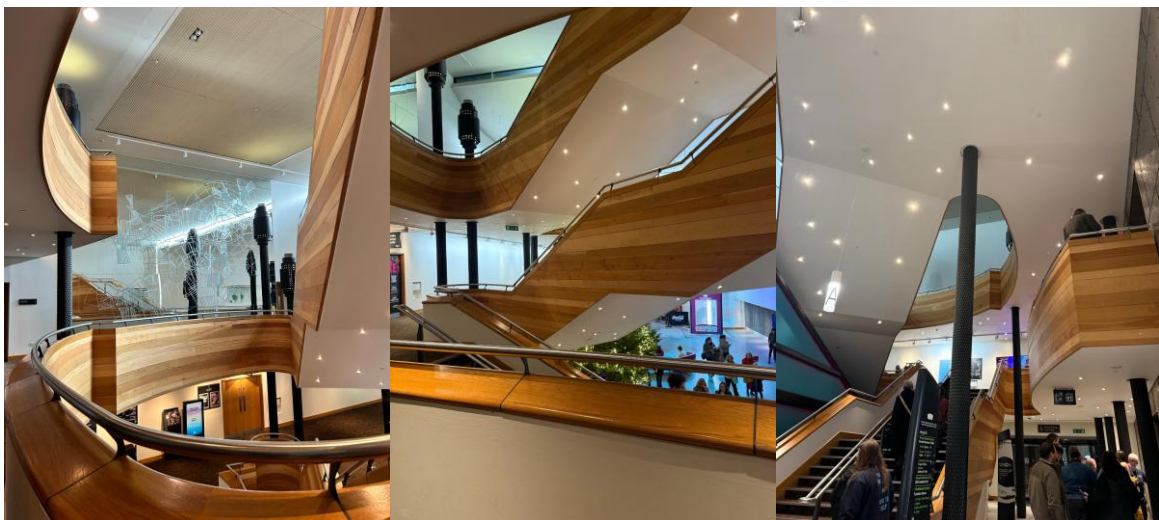


Figure 20: Wales Millennium Centre suspended staircases and balconies (Photograph Credit: Author, 2025).

Figure 20 demonstrates how architectural design can produce a rich atmospheric experience through the integration of spatial sequencing, materiality and symbolic form. The auditorium is organised across five levels, accessed via suspended staircases that connect to perimeter balconies (World Construction Network, 2024). This layered arrangement enhances the experiential journey, allowing users to engage with the space progressively as they move towards the performance environment.

Materiality plays a central role in shaping this atmosphere. Locally sourced Welsh materials were used to reinforce regional identity while minimising processing and maintenance (Sir Robert McAlpine, 2025). Reclaimed slate from Welsh quarries forms the façade, arranged in layered compositions that reflect the natural form of the material, strengthening connections

to landscape and heritage. Internally, the use of Welsh hardwood enhances visual and tactile qualities, while dark columns with 'fern-like' fossil patterns introduce symbolic references to nature evoking a forest-like atmosphere (World Construction Network, 2024). The effectiveness of regional identity is therefore not only a result of materiality but also how it is perceived by its users (Mangold, 2026). While the use of Welsh materials provides physical expression of identity, they are understood as 'Welsh' because they align with users' prior knowledge and cultural associations. As a result, the success of the venue in enhancing sensory engagement depends on the ability to reinforce these expectations into a coherent spatial experience.

These elements align with Böhme's (2017) concept of atmosphere as an emergent spatial quality, while also reflecting Low's (2023) argument that meaning is constructed through the relationship between people and their environment. Through the integration of material, form and symbolism, the building creates an environment that extends beyond the functional requirements to shape emotional and sensory engagement. Overall, this demonstrates that the effectiveness of performance architecture lies not only in the physical design, but in its ability to construct immersive atmospheric environments that support anticipation and a sense of place. This reinforces the role of atmosphere as a mediating layer between architectural form and audience experience, bridging physical space and emotional response.

3.5 Accessibility, Inclusivity and User Engagement.

Accessibility and inclusivity are critical considerations in the design of contemporary performance spaces, directly influencing how effectively users are able to engage with the built environment. While architectural design can enhance sensory experience and atmosphere, it must also ensure that spaces are accessible and usable for a diverse range of individuals, including those with varying physical sensory or cognitive needs. As Low (2023) suggests, the meaning and experience associated with space are shaped through social interaction and individual perception, highlighting that not all users experience environments in the same way. Inclusive design within public environments plays a vital role in enabling safe and accessible movement, ensuring that all users, particularly those with disabilities, can engage with and navigate spaces (Koesoemawati, 2025). This highlights the importance of clear wayfinding, step-free access and well-designed circulation routes within performance venues, where movement between public and performance spaces forms a key part of the overall user experience.

In this context, user engagement is not solely determined by the aesthetic or sensory qualities of a space, but also by how inclusive and accessible it is. Factors such as seating

arrangements, visibility, lighting and acoustic environments all contribute to how individuals perceive and interact with performance spaces. For example, the Swansea Arena incorporates large scale circulation routes and step-free access to accommodate high volumes of users, supporting inclusivity within a contemporary performance setting. In contrast, more intimate venues such as the Sherman Theatre and the Richard Burton Theatre (RWCMD) prioritise proximity and spatial intimacy, which may enhance engagement but require a more considered approach to ensure accessibility is achieved for all users.

This can demonstrate that effective performance architecture must balance immersive design with inclusive accessibility, ensuring that sensory experience and engagement are not limited to a particular group but are available to all users. Therefore, this raises important questions about the extent to which contemporary performance venues successfully achieve inclusive engagement across diverse user groups.

Chapter 4: Discussion and Findings.

This chapter discusses the key findings, evaluating how effectively contemporary performance venues in Wales use architectural design to enhance user experience and audience engagement. Drawing on case study analysis and primary research, it synthesises findings across multisensory experience, spatial organisation, atmosphere, accessibility and cultural identity.

Quantitative findings from the questionnaire highlight the importance of architectural design in shaping user engagement. A significant majority of respondents (95%) identified clear views of the stage as the most important factor influencing their experience, emphasising the role of sightlines in performance spaces. Lighting and atmosphere were also highly valued, selected by 85% of participants, demonstrating the importance of multisensory design in creating an immersive and engaging environment.

In addition, 75% of respondents identified ease of movement and wayfinding as key contributors to engagement, suggesting that spatial organisation and circulation play an important role in shaping how users navigate and interact with performance spaces. These findings indicate that user experience is not determined by a single design element, but by the integration of visual clarity, sensory atmosphere and functional accessibility.

4.1 Multisensory Experience and Engagement.

Findings from site visits indicate that multisensory design is fundamental in shaping user experience across performance venues. Elements such as lighting, sound and materiality were consistently observed to influence audience engagement. For example, at the Sherman Theatre, dynamic lighting and close proximity to the stage created an immersive atmosphere, encouraging active audience participation. Similarly, at the Wales Millennium Centre, advanced lighting and sound design contributed to a dramatic and visually engaging environment.

Questionnaire findings reinforce this, with participants consistently identifying lighting and acoustics as key contributors to a memorable experience. One respondent noted that “immersive lighting, good acoustics and clear sightlines” enhance connection to the performance, while 90% identified sight and hearing as the primary senses influencing their experience. Although visual and auditory elements were prioritised, observations suggest that engagement is shaped by a broader sensory experience, including materiality and atmosphere, reinforcing the idea that architectural design operates beyond what users may consciously identify. One participant suggested that minimal interior design can enhance engagement by avoiding distraction, highlighting a tension between architectural expression and performance focus. Suggesting that effective design may not always require visual

complexity. These findings align with Pallasmaa's (2012) argument that architectural experience is fundamentally multisensory, as well as Ching's (2015) emphasis on spatial clarity in shaping perception. Overall, effective performance venues are those which integrate sensory design to support audience engagement.

4.2 Scale and Spatial Relationship.

While multisensory design shapes engagement, spatial scale also significantly influences how audiences experience and connect with performance. Findings indicate that larger venues such as the Swansea Arena provide clear sightlines and strong acoustic performance, yet the increased distance between audience and performers can reduce the sense of personal connection. In contrast, smaller venues such as the Sherman Theatre and the Royal Welsh College of Music and Drama create a more intimate experience, where proximity to the stage enhances stronger emotional and physical engagement.

Questionnaire responses highlight this complexity, with participants describing the Swansea Arena as both "grand and surprisingly intimate". This suggests that although large-scale venues prioritise spectacle and capacity, architectural strategies such as seating configuration and sightline design can create intimacy. Therefore, spatial scale operates as a balance between spectacle and connection, aligning with Ching's (2015) concept of spatial relationships and Lynch's (1960) idea of spatial legibility. This highlights a key design challenge in performance architecture, achieving intimacy within large-scale auditoriums.

4.3 Movement, Circulation and Engagement.

In addition to scale, movement and circulation are critical in shaping user experience within performance venues. Observations indicate that circulation design directly influences how audiences navigate and engage with the space. At larger venues such as the Swansea Arena and the Wales Millennium Centre, crowding at entry points and circulation routes created congestion that disrupted the overall experience. In contrast, smaller venues such as the Sherman Theatre and the Royal Welsh College of Music and Drama allowed for smoother and more intuitive movement, supporting clearer transitions between spaces. This suggests that scale and circulation are closely linked, where larger venues require more considered spatial organisation to maintain efficiency and comfort.

Questionnaire responses reinforce this, with one participant highlighting that the Swansea Arena entrance felt constrained, with "hardly any room to go from one side of the venue to the other" due to the positioning of the main concourse staircase. This demonstrates how the design of circulation spaces can negatively impact first impressions and user flow. In contrast, the arenas standing floor layout was described as creating an "energetic, immersive atmosphere" through open space and proximity to the stage. This indicates that

circulation can be functional and experiential, encouraging movement and collective participation within the audience. This aligns with Chin's emphasis on spatial organisation and Pallasmaa's (2012) concept of embodied experience. Highlighting that circulation as part of the overall experiential journey, rather than just a functional requirement.

4.4 Accessibility and Inclusive User Experience.

Accessibility and inclusive design were identified as critical factors influencing user experience within performance venues. Observations revealed that design decisions can significantly impact usability. At the Swansea Arena, limited toilet provision on upper levels caused long queues that disrupted the interval experience. Similarly, at the Royal Welsh College of Music and Drama, balcony sightlines and seating comfort affected visual engagement.

In contrast, responses relating to the Wales Millennium Centre highlight the impact of well-considered inclusive design. One participant described the space as "calming" and "ideal for wheelchair users" with "plenty of room" and comfortable seating, suggesting that accessibility contributes to physical usability and emotional experience, reinforcing the connection between inclusivity and atmosphere. However, accessibility was not consistent across all venues. Feedback relating to the Sherman Theatre identified significant shortcomings, with wheelchair users positioned "right on the front... under a speaker", resulting in poor visibility and discomfort. This contrast indicates that accessibility is sometimes treated as an addition rather than integrated into spatial design.

Findings also highlight that accessibility extends beyond physical provision to include sensory and cognitive needs. Participants noted issues such as long performance durations without breaks and a lack of sensory spaces, indicating "accessible" performances often fail to accommodate diverse needs. Therefore, inclusive design must address a wider range of user requirements in order to support meaningful engagement. Challenges relating to auditory accessibility were also identified, with one participant stating that "people with a hearing loss struggle even when things like the loop system and headphones are in place". While a technical manager at the Swansea Arena confirmed that hearing support systems are available, this highlights a gap between provision and user experience.

These findings demonstrate that accessibility should be embedded within the design process rather than treated as a secondary feature, aligning with Low's (2023) emphasis on user-centred spatial experience. This highlights a key limitation of current design approaches, where compliance with accessibility standards does not necessarily result in inclusive user experience.

4.5 Atmosphere and Emotional Response.

The emotional atmosphere of performance venues was found to vary significantly, shaped by both architectural design and audience interaction. Observations indicate that the Sherman Theatre created a lively and energetic environment, particularly during performances involving younger audiences, where proximity to the stage encouraged active participation. In contrast the Wales Millennium Centre generated a more theatrical and immersive atmosphere through large-scale set and spatial design compared to the other case studies.

Questionnaire responses highlight the role of architectural design in shaping first impressions and anticipation. Participants described the Wales Millennium Centre as “modern and impressive”, with one noting that it “draws you in” prior to the performance. This emphasises the importance of transitional spaces, particularly foyers, in establishing atmosphere. Another suggested that it was an “interestingly designed venue... creates a precedent for the performance”, reinforcing the idea that architecture actively contributes to the overall experience rather than simply housing it. However, some users reported that internal navigation felt “a bit confusing”, suggesting that spatial clarity remains essential in supporting cohesive experience.

Responses relating to the Swansea Arena demonstrate the complexity of atmosphere, with some participants describing it as “grand and surprisingly intimate” or “immersive”, while others perceived it as “lack-lustre”, suggesting that the atmosphere was driven more by crowd interaction rather than by the architectural design. This highlights a key distinction between atmosphere generated through design rather than through social dynamics. This variation may also reflect the limitations of relying on technical performance alone to shape user experience. The venue is designed to achieve high acoustic standards through reverberation and sound distribution, but these objectives do not necessarily result in a consistent subjective experience. As identified by Habibi’s (2025) research, perceptions of sound and atmosphere vary between individuals, making it difficult to define universally ‘ideal’ environment. As a result, even where technical performance is achieved, the overall experience may still feel ‘lacking’, highlighting the importance of considering perceptual aspects of design. Therefore, atmosphere is a subjective and variable experience shaped by both spatial conditions and user perception, aligning with Böhme’s (2017) concept of atmosphere as an emergent quality and Ehret et al.’s (2019) argument that emotional responses are not uniform. This emphasises a key limitation in architectural design, where atmosphere cannot be fully controlled but instead should be facilitated.

4.6 Cultural Identity and Architectural Expression.

Analysis of the case studies shows varying approaches to the expression of cultural identity within contemporary performance architecture in Wales. The Wales Millennium Centre demonstrates a strong architectural presence, where materiality, scale and atmospheric design contribute to a sense of cultural significance. Observations of warm timber finishes, dramatic spatial volume and controlled lighting suggest an environment that extends beyond functional performance, creating a symbolic and immersive space. The building is also recognised for its strong external identity, reinforced through inscription and material expression.

However, questionnaire responses indicate that this experience is not always achieved internally. One participant noted that the building “nails this externally... but it falls flat as soon as you walk inside”, highlighting a disconnect between exterior identity and the internal experience. This suggests that while architectural identity can be effectively communicated through its external form, it must also be reinforced with interior spaces to create a cohesive user experience. This may indicate a lack of continuity between the building’s visual expression and its internal spatial atmosphere, where the transition from exterior to interior weakens the overall sensory impact. As Çalışkan and Aytakin (2025) argue, performance spaces should actively shape interaction between users and environment. Where this continuity is not maintained, the interior may function as a passive setting rather than an active extension of the building’s identity.

In contrast, the Swansea Arena reflects a more contemporary and commercially driven approach. While the gold-coloured façade references Swansea’s industrial heritage, the interior is largely defined by flexibility and functionality, limiting the integration of effective cultural identity. This suggests that although cultural references are present, they are not always fully integrated into the experience of the venue. Similarly, smaller venues such as the Sherman Theatre and the Royal Welsh College of Music and Drama prioritise simplicity and functional clarity. While this supports focus and engagement, it can result in a more neutral architectural expression with limited references to cultural identity. Questionnaire responses reinforce these observations, with participants describing many venues as “generic” and lacking a strong sense of place. This highlights a concern between functional design and the expression of Welsh materials, landscape and heritage. Participants identified opportunities for improvement through the use of local materials, storytelling and stronger connections to community and context, as well as developments of more “grassroots” venues to support cultural identity.

Overall, contemporary performance venues in Wales demonstrate a balance between functional requirements and cultural representation, though identity is not fully integrated. This aligns with Low's (2023) view that space is socially constructed, suggesting that architecture can either reinforce or weaken cultural identity depending on how it is designed. This indicates that cultural identity in performance architecture is often applied symbolically rather than experientially.

4.7 Implications for Architectural Practice, Education and Policy.

The findings highlight a need for development in how architectural design is approached within both practice and education. While the performance venues studied demonstrate strong technical capabilities, inconsistencies remain in how user experience, accessibility and sensory engagement are integrated.

Within architectural education, there is often an emphasis on visual representation and conceptual design. However, the findings suggest a greater focus is needed on multisensory and user-centred approaches. While sight and sound were identified as dominant (90%), movement, comfort and atmosphere were also critical in shaping engagement. This indicates a need to strengthen phenomenological and experiential design teaching, encouraging students to consider how spaces are felt as well as seen.

In practice, this suggests that architects should adopt more interdisciplinary design processes, working with theatre practitioners, acoustic engineers, accessibility specialists and end users. This would allow design decisions to move beyond compliance towards genuinely inclusive and engaging environments.

The findings also raise questions regarding current accessibility regulations. While policies such as The Equality Act 2010 and Part M of Wales' Building Regulations establish minimum standards, the research suggests that compliance does not necessarily result in positive user experience. For example, hearing support systems were reported as ineffective, and wheelchair access, although provided, was sometimes poorly integrated. This highlights a gap between regulation and lived experience. Future policy could therefore place greater emphasis on qualitative user experience, including post-occupancy evaluation and expanded guidance on sensory and cognitive accessibility. This would support a shift from minimum compliance to meaningful inclusion. This suggests that future architectural practice must move beyond regulatory compliance towards experience-led design.

4.8 Evaluation of Case Studies.

Across the four case studies, effectiveness varied in relation to how successfully architectural design enhanced user experience. The Wales Millennium Centre can be

considered the most successful overall, integrating multisensory design, cultural identity, accessibility and aesthetics. The venue balances large-scale performance requirements with user comfort, with positive feedback highlighting its accessibility, auditorium quality and the ability to create anticipation. However, issues relating to internal spatial clarity and the disconnect between exterior identity and interior experience indicate areas for improvement.

The Sherman Theatre was highly effective in creating intimacy and engagement through spatial proximity, although significant accessibility issues suggest that inclusivity is not consistently achieved. The Royal Welsh College of Music and Drama demonstrated strengths in acoustic quality and intimacy, but limitations in seating comfort and sightlines highlight inconsistencies in spatial design. In contrast, the Swansea Arena performs well in terms of capacity, acoustics and flexibility, but its scale can reduce audience connection and issues with circulation and internal character limit its immersive potential.

Overall, no single venues achieve complete success across all design criteria. Smaller venues offer stronger intimacy and engagement, while larger venues prioritise capacity and performance. The most effective performance architecture therefore should balance all of these qualities. This reinforces the need integrated design strategies that address both experiential quality and functional performance.

Conclusion.

This dissertation aimed to evaluate how effectively contemporary performance venues in Wales utilise architectural design to enhance user experience, with a focus on human sensory perception and audience engagement. Through a combination of case study analysis, observational research and questionnaire responses, the study has demonstrated that architectural design plays a fundamental role in shaping how performance spaces are perceived navigated and experienced.

The findings suggest that effective performance architecture is multisensory, with sight and hearing emerging as the most influential elements in shaping the audience experience. Clear sightlines, high quality acoustics and considered lighting were consistently identified as essential components of a successful performance environment. The research also demonstrates that user experience can extend beyond these senses. Elements such as movement, spatial organisation, materiality and atmosphere contribute to a more complex and embodied experience, often on a subconscious level.

A key finding of this study is the importance of spatial relationships, particularly the balance between scale and intimacy. Smaller venues such as the Sherman Theatre and the Royal Welsh College of Music and Drama foster strong audience engagement through proximity and immediacy, while larger spaces such as the Swansea Arena prioritise spectacle and capacity, sometimes at the expense personal connection. The Wales Millennium Centre demonstrates the most effective balance between these conditions, combining large scale spatial design with strong atmospheric and sensory qualities, although some inconsistencies remain in internal spatial design and user navigation.

The research also highlights that circulation and accessibility are critical but often overlooked aspects of architectural design. While all venues demonstrate a level of compliance with accessibility regulations, user feedback indicates there to be significant gaps between provision and experience. Issues such as poor placement of accessible seating, ineffective hearing support systems and inadequate circulation spaces indicate that accessibility is not always fully integrated into the design process. The responses also indicate that current accessibility regulations in Wales are standardised and do not go far enough to support hidden disabilities like sensory or cognitive disorders. This reinforces the need for a more user-centred approach, where accessibility is embedded from the start rather than an additional requirement.

In relation to atmosphere and emotional response, the findings demonstrate that architectural design can influence anticipation, immersion and engagement. However, atmosphere is not solely determined by physical design but also shaped by audience

interaction and individual perception. Highlighting the subjective nature of user experience, suggesting that successful performance environments must be flexible enough to accommodate a range of responses while still creating a cohesive spatial identity.

Overall, this research concludes that contemporary performance venues in Wales are partially effective in using architectural design to enhance user experience and audience engagement. While strengths exist in key areas like acoustics, lighting and spatial design, limitations remain in relation to accessibility, circulation and the integration of sensory and cultural design strategies. The findings emphasise that performance architecture should not be solely as a functional container for events, but as an active contributor to the experience of performance. By prioritising user experience, inclusivity and cultural context, future performance venues have the potential to develop beyond technical efficiency and create spaces that are not only functionally effective, but also meaningful, engaging and reflective of the communities they serve.

Future Developments and Further Research.

While this research provides insight into how architectural design shapes user experience within contemporary performance venues in Wales, several limitations highlight opportunities for further investigation. The study is based on a limited number of case studies and a relatively small questionnaire sample. Future research could expand this by including a wider range of venues across different regions and performance types, allowing for broader comparison. In addition, the research focuses user perception at a single point in time. Longitudinal studies or post-occupancy evaluations could provide deeper insight into how user experience evolves across repeated visits and varying performance conditions.

The findings also raise further questions. While larger-scale venues such as the Swansea Arena demonstrate strong technical performance, future research could explore how architectural strategies might better achieve intimacy and emotional connection within larger auditoriums. Similarly, the gap identified between accessibility provision and user experience suggests a need for further investigation into how inclusive design can be more effectively implemented in practice.

From a practical perspective, future performance venues should adopt more integrated and user-centered design approaches, where sensory experience, accessibility and cultural identity are considered from the early stages of design. This may be supported through collaboration with specialists and engagement with users and local communities, ensuring that performance spaces are both inclusive and contextually responsive. This highlights the need for future research to move beyond theoretical discussion towards evaluating live user experience in practice.

Reference List.

ACME (2022) *Swansea Arena*. Available at: <https://acme.ac/blogs/projects/swansea-arena> (Accessed: 20th January 2026).

ArchDaily (2011) *Royal Welsh College of Music & Drama / BFLS*. Available at: <https://www.archdaily.com/178785/royal-welsh-college-of-music-drama-bfls> (Accessed: 20th January 2026).

Ashby, M. and Johnson, K. (2014) *Materials and design: the art and science of material selection in product design*. Third Edition. Elsevier Science; Butterworth-Heinemann.

Bajaj, S. (2022) *The role of a façade in Architecture*. Available at: <https://www.re-thinkingthefuture.com/rtf-fresh-perspectives/a2869-the-role-of-a-facade-in-architecture/> (Accessed: 4th February 2026).

Barron, M. (2008) 'Raising the roof: Michael Barron explores how physics, psychology and fashion have influenced concert hall acoustics', *Nature Publishing Group*, 453(7197), pp. 859-860. Available at: <https://doi.org/10.1038/453859a>

BBC Wales History (2014) *Guide to Welsh history: The industrial revolution*. Available at: https://www.bbc.co.uk/wales/history/sites/themes/guide/ch15_part2_industrial_revolution.shtml (Accessed: 31st March 2026).

Birch, J. (2025) *The Vital Role of Arts and Culture in Wales: A tapestry of Identity and Expression*. Available at: <https://www.theeditwales.com/theedit-articles/the-vital-role-of-arts-and-culture-in-wales-> (Accessed: 31st March 2026).

Böhme, G. (2017) *Atmospheric Architectures: the aesthetics of felt spaces*. Bloomsbury Academic.

Bowler, L.M. (2016) *Theatre Architecture as embodied space: A phenomenology of theatre buildings in performance*. Theses Dissertation. LMU Munich: Faculty of History and the Arts. Available at: https://edoc.ub.uni-muenchen.de/20310/7/Bowler_Lisa_Marie.pdf (Accessed: 31st March 2026).

CADW (2024) *Caerleon Roman Amphitheatre*. Available at: <https://cadw.gov.wales/visit/places-to-visit/caerleon-roman-amphitheatre> (Accessed: 22nd January 2026).

Çalışkan, E.B. and Aytekin, C.K (2025) 'New Approaches to Performance Space Design: Problem-based Learning Method in Architectural Design Studio', *Journal of Design Studio*, 7(2), pp. 289-304. Available at: <https://doi.org/10.46474/jds.1761699>

Cannon, J. and Crowcroft, R. (2015) *A Dictionary of British History*. Third Edition. Oxford University Press.

Ching, F.D.K. (2015) *Architecture: form, space, and order*. Fourth Edition. John Wiley & Sons.

Copr Bay (2022) *Official opening for Swansea's £135m Copr Bay destination*. Available at: <https://coprbayswansea.com/official-opening-for-swanseas-135m-copr-bay-destination/> (Accessed: 20th January 2026).

Copr Bay (2022) *Rob Brydon hails Swansea Arena as 'huge cultural boost' for city*. Available at: <https://coprbayswansea.com/rob-brydon-hails-swansea-arena-as-huge-cultural-boost-for-city/> (Accessed: 20th January 2026).

Firman, R. (2012) *The Theatres and Performance buildings of South Wales*. AuthorHouse.

Gruosso, S., Del Signore, M. and Di Cinzio, A. (2025) 'The extended mind of public space: how urban design shapes human experience.', *Frontiers in Built Environment*, article 11:1504549. Available at: <https://www.frontiersin.org/journals/built-environment/articles/10.3389/fbuil.2025.1504549/full>

Habibi, S. (2025) 'Optimizing acoustic design for dual-function concert and speech halls', *Scientific Reports*, 15(1), pp. 1-21. Available at: <https://doi.org/10.1038/s41598-025-96139-8>

James, R. (2007) 'A Very Profitable Enterprise': South Wales Miners' Institute Cinemas in the 1930s', *Historical journal of film, radio and television*, 27(1), pp-27-61. Available at: <https://doi.org/10.1080/01439680601177114>

Johnson, B. (2023) *The National Eisteddfod of Wales*. Available at: <https://www.historic-uk.com/HistoryUK/HistoryofWales/The-National-Eisteddfod-of-Wales/> (Accessed: 22nd January 2026).

Klausner, D. N. (2003) 'Plays and Performing in Early Modern South Wales', *Early Theatre*, 6(2), pp. 57-72. Available at: <https://doi.org/10.12745/et.6.2.656>

Koesoemawati, D.J. et al. (2025) 'Redefining pedestrian accessibility through inclusive design and community engagement', *Urbani izziv*, 36(1), pp. 119-134. Available at: <https://doi.org/10.5379/urbani-izziv-en-2025-36-01-03>

Kriskadecor (2024) *Swansea Arena – Decorative Ceiling*. Available at: <https://kriskadecor.com/en/project/swansea-arena/> (Accessed: 30th April 2026).

- Li, J., Wu, J., Lam, F., Zhang, C., Kang, J. and Xu, H. (2021) 'Effect of the degree of wood use on the visual psychological response of wooden indoor spaces', *Wood Science and Technology*. 55, pp. 1485-1508. Available at: <https://doi.org/10.1007/s00226-021-01320-7>
- Low, S. (2023) *Why public space matters*. Oxford University Press.
- Lynch, K. (1960) *The Image of the city*. MIT Press.
- Macarthur, J. (2007) 'Movement and tactility: Benjamin and Wölfflin on imitation in architecture', *Journal of Architecture (London, England)*, 12(5), pp.477-487. Available at: <https://doi.org/10.1080/13602360701722475>
- Maishanu, K. (2017) 'Auditorium Acoustics from Past to Present', *Int. Journal of Engineering Research and Application*, 7(1), pp.15-23. Available at: https://www.ijera.com/papers/Vol7_issue1/Part-1/D0701011523.pdf
- Mangold, W. (2026) 'Atmosphere in interior design: perception, expectation, and the crafting of experience', *Interiors*, pp. 1-20. Available at: <https://doi.org/10.1080/20419112.2026.2628312>
- Manolakelli, A. (2023). *Prospect-Refuge Theory*. Available at : <https://www.archpsych.co.uk/post/prospect-refuge-theory> (Accessed: 27th April 2026).
- Mara, F. (2012) *Sound Resolution: BFLS and Arup skilfully tackled tricky questions of acoustic design in their extension to the Royal Welsh College of Music and Drama*. Available at: <https://www.architectsjournal.co.uk/archive/sound-resolution> (Accessed: 14th April 2026).
- Montjoy, V. (2022) *When light tells a buildings story: what is architectural lighting?* Available at: <https://www.archdaily.com/990976/when-light-tells-a-buildings-story-what-is-architectural-lighting> (Accessed: 31st March 2026)
- Newell, E. and Watts, S. (1996) 'The Environmental Impact of Industrialisation in South Wales in the Nineteenth Century: 'Copper Smoke' and the Llanelli Copper Company', *Environment and History*, 2(3), pp. 309-336. Available at: <https://www.jstor.org/stable/20723019>
- Owen, D. H. (2012) *The Chapels of Wales*. Seren.
- Pallasmaa, J. (2012) *The eyes of the skin: architecture and the senses*. Third edition. Wiley.
- Pritzen, A., Aeschbach, V.M.-J., Ehret, S. and Thomaschke, R. (2024) 'Feel the atmosphere: a qualitative study on spatial experiences in contemporary Muße architecture', *Journal of Urban Design*, 29(1), pp. 122-141. Available at: <https://doi.org/10.1080/13574809.2023.2203855>

Sherman Theatre (2021) *Sherman Story Timeline*. Available at: <https://www.shermantheatre.co.uk/about-us/sherman-story-timeline/> (Accessed: 20th January 2026).

Sioli, A. and Kiourtsoglou, E. (2022) *The Sound of Architecture: acoustic atmospheres in place*. Nova Science Publishers, Inc.

Swansea Council (2024) Historic Swansea Palace Theatre building reopens. Available at: <https://www.swansea.gov.uk/article/33255/Historic-Swansea-Palace-Theatre-building-reopens> (Accessed: 31st March 2026).

The National Library of Wales (2022) *History of the National Eisteddfod*. Available at: <https://www.library.wales/discover-learn/education/learning-resources/the-national-eisteddfod-of-wales/history-of-the-national-eisteddfod> (Accessed: 22nd January 2026).

Wales Millenium Centre / Canolfan Mileniwm Cymru (2019) *The Story of Our Building: Wales Millennium Centre, Cardiff*. Available at: <https://www.youtube.com/watch?v=5gMaF-xQx5I> (Accessed: 13th March 2026).

Ward, M.C. (2016) 'The Soundscape of the Cinema Theatre: Acoustical Design, Embodiment, and Film Theatres as Vehicles for Aural Absorption', *Music, Sound and the Moving Image*, 10(2), pp. 135-165. Available at: <https://doi.org/10.3828/msmi.2016.8>

Wedel, V. (2017) 'Bardic Traditions: Cymru (Wales)', *Harptime*, 16(61), pp. 3-5 June. Available at: https://www.academia.edu/40871688/Bardic_Traditions_Cymru_Wales (Accessed: 31st March 2026).

Williams, F. (2022) *ACME completes gold-coloured arena in Swansea*. Available at: <https://www.architectsjournal.co.uk/buildings/acme-completes-gold-coloured-arena-in-swansea> (Accessed: 31st March 2026).

Wooding, J. and Yates, N. (2011) *A guide to the Churches and Chapels of Wales*. University of Wales Press.

World Construction Network (2024). *Wales Millenium Centre (WMC), Cardiff, Wales*. Available at: <https://www.worldconstructionnetwork.com/projects/wales-millennium-centre/?cf-view> (Accessed: 10th March 2026).

Zumthor, P. (2006) *Atmospheres: Architectural Environments. Surrounding Objects*. Birkhäuser

Reference List of Illustrations.

Barret, M. (2005) Wales Millennium Centre Façade. Available at:

<https://artuk.org/discover/artworks/wales-millennium-centre-facade-301984> (Accessed: 30th April 2026).

Caerleon Roman Fortress & Baths (2026) About Caerleon Roman Fortress & Baths.

Available at: <https://www.visitwales.com/attraction/historic-site/caerleon-roman-fortress-baths-532041> (Accessed: 30th April 2026).

Clark, J. (2026) Richard Burton Theatre. Available at: <https://www.rwcmd.ac.uk/our-campus/richard-burton-theatre> (Accessed: 30th April 2026).

Duncan, A (2014) Buildings Materials – Bronze and Slate. Available at:

<https://stillwalks.com/building-materials-bronze-and-slate/> (Accessed: 30th April 2026).

Historic UK (2023) The National Eisteddfod of Wales. Available at: <https://www.historic-uk.com/HistoryUK/HistoryofWales/The-National-Eisteddfod-of-Wales/> (Accessed: 30th April 2026).

McTernan, K. (2021) Main House. Available at: <https://www.shermantheatre.co.uk/hire/main-house/> (Accessed: 30th April 2026).

Merakos, P. (2025) Theatre Villages & Beaches. Available at: <https://www.greece-is.com/things-to-do-in-epidaurus/> (Accessed: 30th April 2026).

Newton, J. (2022) Swansea Arena Building News. Available at: <https://www.e-architect.com/wales/swansea-arena-building> (Accessed: 30th April 2026).

Swansea Arena (n.d.) Seating Plan at Swansea Arena. Available at: <https://www.swansea-arena.co.uk/visitors/seating-plan> (Accessed: 30th April 2026).

Thomas, A. (2024) Theatre from 1800s that hosted Chaplin to reopen. Available at: <https://www.bbc.co.uk/news/articles/c4ngdvq99k8o> (Accessed: 30th April 2026).

Wales Millennium Centre (n.d.) Wales Millennium Centre Tours (English). Available at: <https://www.wmc.org.uk/en/whats-on/2026/tours-english> (Accessed: 30th April 2026).

Wheeler, M. and Williams, V.E.N. (1970) Caerleon Roman Amphitheatre Official Guidebook. Available at: <https://archive.org/details/caerleon-roman-amphitheatre-official-guidebook/page/10/mode/1up> (Accessed: 30th April 2026).

Appendix.

Appendix A: Pilot Study

Timestamp	How often do you attend live performance? For example - theatre, music, dance etc.	What type of performance space do you visit most often?	How would you describe the atmosphere of a performance space you best visited? Please specify the venue - did that (intensity, mood, innovative, calming or stimulating etc.)	What are the main gaps or areas for improvement in Wales' performance/cultural sector?	The design of the space enhance my overall experience of the performance/work	I feel comfortable and relaxed within the space.	The lighting, colour and materials contribute to the atmosphere.	The acoustics or sound quality help me connect with a performance.	I notice how the space affects my emotions and attention.	When you think about your experience in a performance space, which venue stand out most? (Tick as many that apply)	Did the space encourage you to feel involved or connected to the performance/experience (other than simply watching it)?	How inclusive or accessible is the venue? For example, its layout, comfort, visibility, acoustics.	Please provide any further comments on accessibility.	What changes could inspire and excite you and other people to visit performance/experience/cultural venues in the area more often.	Which venue are you attending today?	Please specify the event or performance you are attending in the venue?	Where are you seated or standing within the space?	How would you describe the physical atmosphere of the space (light, noise, how does the space feel around you)?	Which sensory or design features stand out most to you in this venue? (Tick as many that apply)	Please provide any further comments on the sensory or design features in the venue.	If you have visited other or different venues, how does this compare in terms of sensory experience?	Is there anything about this venue design that enhances or detracts from your experience?	Would you like to share any other feedback described how this space makes you feel?	
11/13/2025 11:32:27	Multiple times a month	Outdoor or a site-specific space	great heritage centre	proving local artists for stage	3	5	5	5	4	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics)	Yes, very much	3	none	green economy	exhibition	exhibition	exhibition	Spatially/primarily to the stage			social			
11/13/2025 11:36:28	Regularly	Outdoor or a site-specific space	multisensory arena (dark, noisy, electric)		4	4	4	4	4	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Movement/body awareness (the layout, proximity to performers, circulation)	Not really.	3	seawater arena	green economy conference	Back	inclusive and busy	inclusive and busy	Light or visual design - Materials or textures (walls, flooring, seating).			It's a shared building, mostly for existing design and space			
11/13/2025 11:43:50	A few times a year	Outdoor or a site-specific space	Grand but distant from the act (Cardiff castle)	More hotel	5	3	4	5	3	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Sound (environmental or atmospheric sounds), Movement/body awareness (the layout, proximity to performers, circulation)	Not really.	3		Talking and immersive sensory experience	Seawater arena	Conference	Open forum	Professional event type but		Very modern and sleek to some degree	The dark walls focus attention to the work			
11/13/2025 11:50:33	A few times a year	Traditional theatre	Cardiff Bay venue - lively and innovative, spacious	More theatre buildings to use	4	5	5	5	3	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics)	Fairly involved or connected	4	New buildings/phase or new developments	Seawater arena	Seawater Green event	Stand	Very noisy, busy, lots of people, not much space but well typed out		The old grand theatre in Cardiff - much less modern, mostly more historical less spectacle	The Seawater small space to walk around	Imagined			
11/13/2025 11:52:03	A few times a year	Contemporary/Modern performance venue	Malgwyn Arena - quite intimate and close	More venues that are better known	4	4	3	4	4	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics)	Yes, very much.	4	More events for all demographics	Seawater arena	Conference			Light or visual design - Materials or textures (walls, flooring, seating)			Immersed			
11/13/2025 11:52:39	Regularly	Community or temporary venue	Innovative	More diversity	4	4	4	4	4	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Movement/body awareness (the layout, proximity to performers, circulation)	Fairly involved or connected	4	No further comment	Seawater arena	Conference	Back	Comfortable	Light or visual design - Sound/structure, Spatial layout/proximity to the stage.	No further comment	About the same	None	Comfortable		
11/13/2025 11:55:47	Once a month	Contemporary/Modern performance venue	Comfortable seating, temperature, good sight lines and really good acoustics	Accessibility and range of noise the sound level of venue	5	5	5	5	5	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Touch (seating, temperature, texture or materials)	Yes, very much.	3		Seawater convention	For the Region Green	Front/rear stage	Really works well	Spatially/primarily to the stage						
11/13/2025 11:56:50	Regularly	Contemporary/Modern performance venue	Grand. It was at the Seawater arena	Cost and ease of transport	4	4	5	5	4	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Touch (seating, temperature, texture or materials)	Fairly involved or connected	4	I have no special need and don't notice and I'm involved. Tables for women to offer a problem	Cost	Seawater arena	Green economy	Dark and busy	Light or visual design - Sound/structure.	Have included the palace theatre. The original architecture is very well preserved and made the atmosphere great					
11/13/2025 12:19:43	Regularly	Contemporary/Modern performance venue	None	Better advertisement, schools talk more out in curriculum	3	1	4	4	4	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics)	Fairly involved or connected	3	NA	Advertisement	Seawater arena	Green conference	Main arena, standing exhibition	Comfortable	Light or visual design - Materials or textures (walls, flooring, seating), High ceilings	NA	Looks more modern	No	Comfortable	
11/13/2025 12:31:21	A few times a year	Contemporary/Modern performance venue	New theatre Cardiff - vibrant, classic, flexible, very comfortable, the space right and good for the venue	Not many schools for arts	3	4	5	5	4	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Touch (seating, temperature, texture or materials), Movement/body awareness (the layout, proximity to performers, circulation)	Fairly involved or connected	4	NA	Seawater arena	Green Conference	Front/rear stage	None. It's light and airy	Light or visual design - Materials or textures (walls, flooring, seating)	This is definitely more crisp. All the venues or other theatres are why people are drawn to them in the first place	None is bouncing a bit	Open			
11/13/2025 13:02:14	A few times a year	Traditional theatre	Cardiff collection - active - vibrant	All theatres must be looked at in advance, nothing you can just walk into at any given time	5	5	5	5	5	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Movement/body awareness (the layout, proximity to performers, circulation)	Yes, very much.	4	All theatres have been there for a bit of years and people are so nostalgic and don't only want to see the new stuff. The new stuff is always nice when it comes along but the old stuff is what you want to see. The lights and sound aren't as good as they used to be. The stage is a bit small and the seating is a bit uncomfortable.	Allow the public to hear some music and feel the space to connect with the venue.	Seawater arena	Green conference	Back	Very warm, in the temperature arena	Sound/acoustics, Materials or textures (walls, flooring, seating)	A little too dark	A little too claustrophobic	Very nice entrance	Art	
11/13/2025 13:03:16	Regularly	Contemporary/Modern performance venue	Grand and innovative	Wales needs more larger venues for the arts to attract the need for travel outside of Wales	5	5	5	5	5	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Movement/body awareness (the layout, proximity to performers, circulation)	Fairly involved or connected	4	NA	Seawater arena	The Green Economy conference and exhibition	Front/rear stage	A little grand but welcoming	Light or visual design - Materials or textures (walls, flooring, seating), Spatial layout/proximity to the stage.	The venue and cost of the venue is a bit better and makes it more comfortable to other venues	The dark and bright colour design of the space attracts my experience	None	Open		
11/13/2025 13:04:05	Regularly	Contemporary/Modern performance venue	Small, intimate and cozy	NA	1	1	1	1	1	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Movement/body awareness (the layout, proximity to performers, circulation)	Fairly involved or connected	4	NA	Seawater arena	Green economy 2025	Front/rear stage	Vibrant, active and social	Light or visual design - Materials or textures (walls, flooring, seating), Auditory environment and interaction.	NA	More open and Accessible	NA	Intelligent and unique		
11/13/2025 13:12:19	A few times a year	Contemporary/Modern performance venue	Grand, dark with bright lights, very impressive. Acoustics for really good sound and music events	Larger theatres for larger scale performances to visit.	5	3	4	5	5	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Movement/body awareness (the layout, proximity to performers, circulation)	Fairly involved or connected	4	There was a good amount of accessibility for all audiences, but in the end it was a bit hard to see in the house	Seawater arena	Green exhibition	Walking around everywhere happy	Good open, vibrant and comfortable	Light or visual design - Spatial layout/proximity to the stage.	The lighting and patterns with a lot to the experience	It's a bit better and makes the best more comfortable to walk around and see the work	The setting enhances the experience because the light and shadows in the setting	Comfortable		
11/13/2025 13:13:40	Multiple times a month	Traditional theatre	Seawater Arena. Great space for the event, the music, but the lights and the sound is poor	Wales is missing a venue of 10 to 20k people. Like the crop Mary theater	5	5	5	5	5	Sight (lighting, colour, visual composition), Hearing (music, sound, acoustics), Movement/body awareness (the layout, proximity to performers, circulation)	Fairly involved or connected	4	Nothing right now would be helpful	Seawater arena	The Green Conference	General admission	Moderately busy	The lighting is poor. Both general and admission	Somehow great but facilities are not quite there	The low lighting	Glorious			

Appendix B: Questionnaire and Results.

[illegible]

Appendix C: Observational Case Study Notes.

Category.	Observation.
Venue & Context.	Sherman Theatre, 10/12/25, 10.30am. Performance: Alice: Return to Wonderland.
Initial impressions.	Busy, vibrant, chaotic but warm and inviting atmosphere.
Visual / Spatial.	Clear sightlines across all seating; intimate layout with direct stage visibility. Minimal visual distractions, entry lighting creating a moody atmosphere.
Acoustic.	Sound fills the space effectively, occasional quiet speech. Minor background noise from audience during quieter moments.
Materiality.	Carpeted flooring, cushioned seating; two-tone timber cladding; red curtain, dark ceiling/walls focusing attention on stage.
Proximity.	Close proximity between audience and performers, enhancing intimacy.
Atmosphere.	Comfortable temperature; lively audience (school groups), high energy and engagement.
Audience Engagement.	Strong visual and physical engagement, leaning forward, clapping, laughing, singing, dancing. Some minor distractions (toilet breaks, noise).
Performance Interaction.	Performers enter through audience, increasing immersion and sense of participation.
Sensory – Visual.	Dynamic lighting, LED stage floor, full seating enhances atmosphere.
Sensory – Sound.	Immersive soundscape, strong musical presence, occasional low speech clarity.
Sensory – Touch	Soft seating, warm, comfortable material environment.
Sensory – Movement	Audience encouraged to engage physically (clapping, reacting, following action).
Emotional Tone.	Joyful, exciting, playful and highly engaging environment.

Category.	Observation.
Venue & Context.	Wales Millennium Centre, Donald Gordan Theatre, 16/12/25, 7.00pm. Performance: Mary Poppins.
Initial impressions.	Modern, spacious and welcoming, circulation slightly confusing with multiple staircases.
Visual / Spatial.	Strong sightlines across multiple levels, seating arranged around stage. Minor distractions from emergency lighting. Dramatic lighting enhances mood and focus.
Acoustic.	Clear, immersive sound, speech and music reach entire audience with no noticeable echo.
Materiality.	Soft seating, timber finishes create warmth, dark elements draw focus to stage. Clean, high-quality interior.
Proximity.	More distant audience-performer relationship, however, spectacle (e.g. flying performer) enhances engagement.
Atmosphere.	Comfortable auditorium, lively, engaged audience. Slight detachment at times due to scale, improved by dynamic staging and lighting.
Audience Engagement.	High engagement, clapping, singing, cheering, standing ovation. Limited distraction outside interval.
Performance Interaction.	Advanced, interactive set design, movement through space enhances immersion.
Sensory – Visual.	Dramatic lighting shifts, bold colours, large spatial volume reinforces spectacle and grandeur.
Sensory – Sound.	Balanced soundscape, music establishes atmosphere, no background noise.
Sensory – Touch	Warm materials (timber, carpet), comfortable seating, high-quality finish.
Sensory – Movement	Limited physical movement, engagement mainly through clapping and response, scale restricts full immersion.
Emotional Tone.	Varied, joyful, vibrant and creative, with moments of calm and emotional depth.

Category.	Observation.
Venue & Context.	Swansea Arena, 17/01/26, 7.00pm. Performance: Mamma Mia!
Initial impressions.	Busy and welcoming, entrance level crowded with some clear signage.
Visual / Spatial.	Clear sightlines, modular seating increases distance from stage, reducing intimacy. Minimal distraction due to dark interior, minor impact from emergency lighting.
Lighting.	Primarily stage-focused, limited integration with audience creates initial disconnect. Increased interaction towards end improves immersion.
Acoustic.	Clear, evenly distributed sound, no echo. Background audience noise noticeable during quieter moments.
Materiality.	Red and black finishes create a modern but less warm atmosphere; seating moderately comfortable but limited space reduces comfort.
Proximity.	Distant relationship between audience and performers, acoustic quality compensates but does not fully resolve disconnect.
Atmosphere.	Initially open and less immersive, atmosphere improves through performance, lighting and audience interaction.
Audience Engagement.	Mixed engagement, increased participation (singing, dancing, clapping) towards finale. Some distraction from talking and early departures.
Performance Interaction.	Simple modular set supports narrative but lacks strong spatial integration with audience.
Sensory – Visual.	High contrast lighting emphasises stage, darker surroundings reduce distraction but limit immersion.
Sensory – Sound.	Strong, immersive sound; audience noise occasionally disruptive.
Sensory – Touch	Soft seating but constrained spacing, predominantly hard material palette reduces comfort.
Sensory – Movement	Encourages movement during key moments, engagement increases through sound and performance rather than spatial design.
Emotional Tone.	Initially neutral, becomes lively and energetic through performance rather than architecture.
Functional issues.	Significant congestion at toilets; insufficient provision disrupts interval and negatively impacts user experience.

Category.	Observation.
Venue & Context.	Royal Welsh College of Music and Drama, Richard Burton Theatre, 12/04/26, 6.30pm. Performance: Matilda Jr.
Initial impressions.	Bright, open and welcoming entrance, strong visual connection to surrounding greenery, dominant façade.
Visual / Spatial.	Intimate auditorium with generally clear sightlines, however, balcony seating creates obstructed views, requiring users to lean forward. Minor visibility into stage wings disrupts immersion.
Lighting.	Effective use of stage lighting enhances engagement, small scale allows lighting to envelop audience more than larger venues.
Acoustic.	Clear, well-distributed sound, amplification supports speech clarity, particularly for younger performers.
Materiality.	Simple, functional material palette, clean and comfortable but lacks strong visual identity or richness.
Proximity.	Very close audience-performer relationship, enhances intimacy and emotional connection.
Atmosphere.	Warm, supportive and community-focused, smaller scale encourages early and active audience engagement.
Audience Engagement.	High engagement, clapping, cheering, emotional connection, some movement linked to performance context (e.g. parents).
Performance Interaction.	Strong connection due to proximity, space supports educational and developmental performance use.
Sensory – Visual.	Dark tones and controlled lighting focus attention on stage, minimal distraction.
Sensory – Sound.	Clear and immersive, supports performer confidence and audience understanding.
Sensory – Touch	Soft seating, consistent material texture (purple accents), generally comfortable.
Sensory – Movement	Limited movement, some physical adjustment (leaning) due to sightline issues.
Emotional Tone.	Intimate, engaging and supportive, slight frustration due to seating discomfort.
Key Limitations.	Balcony sightlines and seating design reduce comfort and visual clarity despite strong spatial intimacy.

