



**Salama, Ashraf M. and MacLean, Laura (2017) Integrating Appreciative Inquiry (AI) into architectural pedagogy : an assessment experiment of three retrofitted buildings in the city of Glasgow. *Frontiers of Architectural Research*. ISSN 2095-2635 , <http://dx.doi.org/10.1016/j.foar.2017.02.001>**

This version is available at <http://strathprints.strath.ac.uk/60442/>

**Strathprints** is designed to allow users to access the research output of the University of Strathclyde. Unless otherwise explicitly stated on the manuscript, Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Please check the manuscript for details of any other licences that may have been applied. You may not engage in further distribution of the material for any profitmaking activities or any commercial gain. You may freely distribute both the url (<http://strathprints.strath.ac.uk/>) and the content of this paper for research or private study, educational, or not-for-profit purposes without prior permission or charge.

Any correspondence concerning this service should be sent to the Strathprints administrator: [strathprints@strath.ac.uk](mailto:strathprints@strath.ac.uk)

The Strathprints institutional repository (<http://strathprints.strath.ac.uk>) is a digital archive of University of Strathclyde research outputs. It has been developed to disseminate open access research outputs, expose data about those outputs, and enable the management and persistent access to Strathclyde's intellectual output.

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

Frontiers of Architectural Research

[www.elsevier.com/locate/foar](http://www.elsevier.com/locate/foar)SOUTHEAST  
UNIVERSITY

## RESEARCH ARTICLE

# Integrating Appreciative Inquiry (AI) into architectural pedagogy: An assessment experiment of three retrofitted buildings in the city of Glasgow

Ashraf M. Salama\*, Laura Maclean

*Department of Architecture, University of Strathclyde, Glasgow G1 1XJ, UK*

Received 21 May 2016; received in revised form 13 January 2017; accepted 10 February 2017

**KEYWORDS**

Architectural pedagogy;  
Appreciative Inquiry (AI);  
Experiential learning;  
Inquiry-based learning;  
Assessment;  
Glasgow

**Abstract**

Recently there has been a growing trend to encourage learning outside the classrooms, so-called 'universities without walls.' To this end, mechanisms for learning beyond the boundaries of classroom settings can provide enhanced and challenging learning opportunities. This paper introduces Appreciative Inquiry (AI) as a mechanism that integrates various forms of inquiry into learning. AI is operationalized as a Walking Tour assessment project which was introduced as part of the class *Cultural and Behavioural Factors in Architecture and Urbanism* delivered at the Department of Architecture, University of Strathclyde - Glasgow where thirty-two Master of Architecture students were enrolled. The Walking Tour assessment involved the exploration of 6 factors that delineate key design characteristics in three retrofitted buildings in Glasgow: Theatre Royal, Reid Building, and The Lighthouse. Working in groups, students assessed factors that included context, massing, interface, wayfinding, socio-spatial, and comfort. Findings reveal that students were able to focus on critical issues that go beyond those adopted in traditional teaching practices while accentuating the value of introducing AI and utilizing the built environment as an educational medium. Conclusions are drawn to emphasize the need for structured learning experiences that enable making judgments about building qualities while effectively interrogating various characteristics.

© 2017 The Authors. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

\*Correspondence to: Office JW 302c, Level 3, James Weir Building | 75 Montrose Street, Glasgow G1 1XJ, UK. Tel.: +44 141 548 3995.  
E-mail addresses: [ashraf.salama@strath.ac.uk](mailto:ashraf.salama@strath.ac.uk), [asalama@gmail.com](mailto:asalama@gmail.com) (A.M. Salama), [laura.maclean@strath.ac.uk](mailto:laura.maclean@strath.ac.uk) (L. Maclean).  
Peer review under responsibility of Southeast University.

<http://dx.doi.org/10.1016/j.foar.2017.02.001>

2095-2635/© 2017 The Authors. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please cite this article as: Salama, A.M., Maclean, L., Integrating Appreciative Inquiry (AI) into architectural pedagogy: An assessment experiment of three retrofitted buildings in.... Frontiers of Architectural Research (2017), <http://dx.doi.org/10.1016/j.foar.2017.02.001>

## 1. Introduction: contextualizing Appreciative Inquiry (AI)

Advancing a learning environment that cultivates exploration and critical thinking are becoming a priority in higher education institutions. Inquiry based learning (IBL) and research led teaching continue to be viewed as approaches integral to emerging pedagogies in architecture and urbanism. In order to take full advantage of the unique opportunities these approaches may offer, this paper argues for the need to strengthen professional education through exposing students to various forms of research processes. It proposes such an exposure to primary source materials leading to the production and reproduction of different types of knowledge in order to complement traditional teaching practices that emphasize secondary sources information and the consumption of knowledge.

Building on the *ethos* of the University of Strathclyde as “a place of useful learning” in its contemporary interpretation the paper elucidates a paradigm of Appreciative Inquiry (AI) as it relates to architecture and urbanism. Recent literature emphasizes that AI is based on the premise that human systems are made and imagined by those who live and work within them (Cooperrider, 2000; Hammond, 1998; Watkins and Mohr, 2001). AI harnesses the drive and imagination of individuals, groups, and institutions (Cockell and McArthur-Blair, 2013). Contrary to problem-solving techniques where the primary focus is on what is wrong or broken, AI focuses attention on what works well in the physical environment and how it can be enhanced.

Deciphering the principles upon which AI is founded, the paper identifies inquiry-based, active, and experiential learning as response mechanisms that complement traditional lecture format where offering students ready-made interpretations about the built environment is an inherited practice. The paper demonstrates the implementation of one of these mechanisms in an *option class* taught by the first author and in which the second author was a student, in the Spring Semester 2015, at the Department of Architecture, University of Strathclyde - Glasgow where thirty two Master of Architecture students were enrolled: AB966/AB988: *Cultural and Behavioural Factors in Architecture and Urbanism*. For structuring purposes, the case of the *option class* is outlined together with its key learning outcomes and the implementation of AI is analysed within an approach to learning beyond the boundaries of classroom settings.

While the class offers a number of mechanisms, the focus in this paper is on assessing three retrofitted buildings that formed part of a research project conducted by the students as a form of AI. Primarily, the project builds on the fact that Glasgow's contemporary architecture scene is thriving, with World-renowned architects and celebrated buildings emerging across the city. It also follows that the city has seen a trend towards building renovation and restoration as part of retrofitting and building extension efforts to provide an opportunity to protect and conserve the architectural merit of existing buildings, which over time have lost their ability to meet the needs of users due to emerging needs and changes in use or programmatic requirements. In essence this is enabling the city to retain

its meaningful architectural qualities, thus preserving its character and culture. Retrofitted buildings are predominantly important in cities such as Glasgow, whose heritage and identity are strongly linked with a specific architectural approach. In Glasgow, it is the distinct ‘Glasgow Style’, which was formed by a number of 19th and 20th century architects and designers, such as Alexander Thomson and Charles Rennie Mackintosh. Consequently, much of these buildings have been protected and retrofitted, such as Mackintosh's School of Art, and the Glasgow Herald Building, which are both still in use today.

Adopting and implementing AI in the form of in and off class exercises in different contexts reveal that structured actions and experiences help students to be in control over their learning while invigorating their understanding of the body of knowledge delivered in a typical lecture format (Salama, 2012a). Combined, active and experiential learning mechanisms offer architecture students multiple learning opportunities. It is noted that the perspective of the first author who taught the class and that of the second author who experienced the learning process are integrated to offer the overall crux of the argument as well as the concluding reflections. By and large, while not exclusive the results accentuate the value of introducing AI while utilizing the built environment as an educational medium. Students' feedback reveals that through the implementation of these mechanisms the majority has developed a deeper understanding of the relationship (a) between the two widely held conceptions of the built environment; the conceptual/subjective and the physical/objective, (b) between people and the settings they use, and (c) between spatial and sustainable design factors from a socio-behavioural perspective. In essence, they were able to focus on critical issues that go beyond those adopted in traditional teaching practices.

## 2. Problematizing Appreciative Inquiry (AI) through inquiry-based, active and experiential learning

Emerging from the fields of organizational behavioural and management, there are a considerable number of definitions that can be found in AI literature exhibiting multiple views. However, theorists view it as “... the art and practice of asking questions that strengthen a system's capacity to apprehend, anticipate, and heighten positive potential” (Cooperrider, 2000). It is also viewed as a form of action research that is visionary in nature and aims to create new ideas and images that aid in developmental change (Cooperrider et al., 2003).

Inquiry-based learning is an instructional method developed during the sixties that continues to characterise current interests in higher education (Bruner, and Ackoff, 1961, 1974). This approach was developed in response to a perceived failure of more traditional forms of instruction and rote learning wherein students were required to simply memorize and reproduce instructional materials. In essence, active and experiential learning are sub-forms of inquiry-based learning (IBL): in this methodology progress is assessed by how well students develop experiential, critical thinking and analytical

skills rather than how much knowledge they have acquired. A number of recent studies challenge university educators to develop integrative teaching approaches that more fully represent transformative pedagogies: educators need to move away from thinking of students as passive listeners and encourage them to become active learners (Salama, 2015). However, despite this being easier said than done, the incorporation of active learning strategies into the daily routine of classroom instruction has now become a necessity (Bonwell, 1999). To this end, the analytical argument focuses on the characteristics of, and the need for, inquiry-based, active, and experiential learning.

The most significant characteristic of active learning is student involvement: students are actively engaged in individual or group activities during the class session, these may include reading, discussing, commenting, and exploring tasks, ideas and theories (Liebman, 1997). Rather than declamatory orator, the instructor takes on the more active role of facilitator and/or mentor and can thus provide students with immediate feedback (Bonwell, 1996). Notably, in active learning sessions students are involved in accessing higher order thinking; this simultaneously involves the analysis, synthesis, and evaluation of a wide spectrum of issues and phenomena. In the context of an active-learning university classroom, students are engaged not only in doing things but also in reflecting and thinking about what they are doing (Dean, 1996). In essence, the pedagogical literature and research findings of the past few decades demonstrate the value and validity of active learning.

Experiential learning has developed into an important paradigm based on the works of John Dewey, Jean Piaget, and David Kolb. They argued that a practical, hands-on experience should be an integral component of any teaching/learning process; this rationale must apply to classroom settings. These arguments vividly echo the famous saying of the Chinese philosopher Confucius, who more than two thousand years ago promoted experiential learning: *'Tell me and I will forget. Show me and I may remember. Involve me and I will understand.'* Therefore, experiential learning, unlike learning in which the learner only reads about, hears about, talks about, or writes about these realities but never comes in contact with as part of the learning process, is first hand learning in which the learner is directly in touch with the realities being studied (Keeton and Tate, 78, 1978; Salama, 2015).

In the context of the discipline of architecture and urban design, there are educators who mistakenly equate experiential learning only with 'off campus' or 'non-classroom' learning, not conceiving how it could be very effectively applied to the classroom setting. For example, instead of providing students with dull lectures about theories of architecture and the work of famous architects, a class in the history of architecture or urban design, or a class in design theories might incorporate periods of student practice on theory exercises and critical thinking problems (Salama, 2012b). Likewise, a class in 'principles of architectural design' or in 'human-environment interactions' might involve critical analysis exercises on how people perceive and comprehend the built environment. Both classes could require field visits to buildings and spaces where students are in close contact with the environment, thus enabling them to better explore aspects of culture, diversity, and people's behaviour, while actively being part

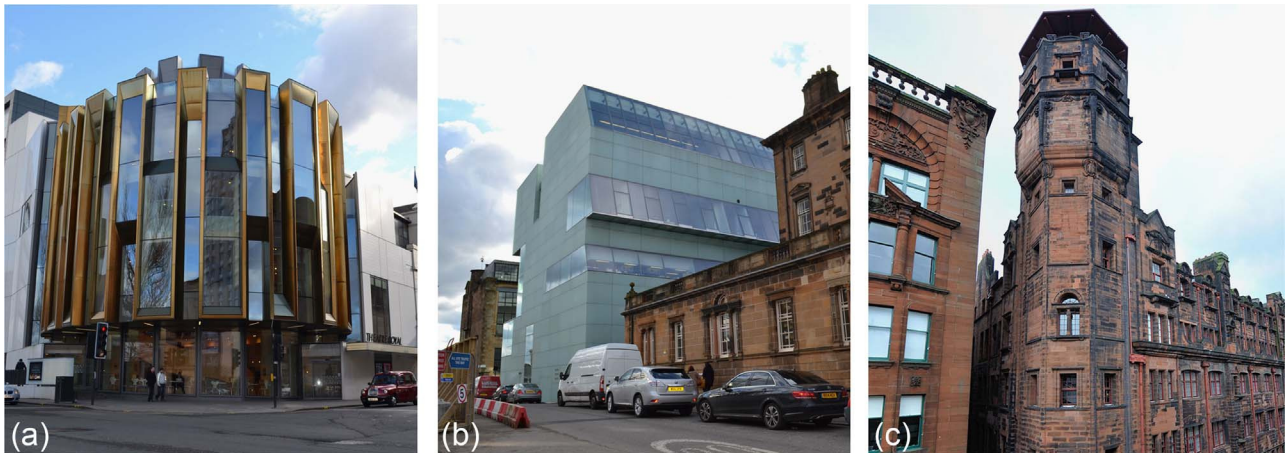
of that environment. Hence, these mechanisms involve an experiential learning component which thus enables students to experience and explore the first-hand problems they examine or discuss in the classroom setting.

Learning through experience involves not merely observing the phenomenon being studied but also doing something with it or to it, for example testing its dynamics or applying a theory to learn more about it and/or achieve desired results. Assessment of environments as a valuable research vehicle that needs to be introduced in lecture courses; this can help establish a solid knowledge base about the built environment which will enable students to have more control over their learning, knowledge acquisition, assimilation, and utilisation in future experiences. Such an approach corresponds with John Habraken's call to legitimise design professions by incorporating learning about the everyday environment (Habraken, 2006).

The previous discussion suggests that active and experiential learning as concepts and instructional strategies are actually two sides of the same coin; both solidly underpin inquiry-based learning. While they may differ in certain terminology, both nevertheless represent interactive learning mechanisms that share similar aims and qualities and both can be part of an AI process. Both increase student motivation by placing strong emphasis on the exploration of attitudes and values, knowledge production and developing critical thinking skills rather than simply focusing on knowledge transmission or knowledge regurgitation.

While including assessment research and active and experiential learning as interactive learning mechanisms that enable the effective comprehension and dissection of the built environment, it is also important to involve architecture and design students in assessment processes that are conducted objectively and systematically: casual interviews or observations may only reveal what is already known, not what has been learnt and internalised. Through experiential learning, students are actively engaged; they learn about the problems and potentials of existing environments and how or whether they meet user needs, enhance and celebrate their activities, and foster desired behaviours and attitudes. Recent work by the first author reveals that although there have been several attempts to incorporate assessment research into architectural pedagogy, it would appear that most have not gone beyond individual attempts of a few committed scholars and educators (Salama, 2015). Thus, we argue that traditional teaching practices do not employ interactive learning mechanisms that effectively address the dialectic relationship between people and their environments to help students better understand and grasp the multifaceted nature of the built environment.

Underlying AI relevant aspects of organizational change are important in the context of classroom instruction within a course or a program in architecture. Students are given the opportunity to organize themselves in teams, make selections of environments they see relevant to assess, collaborate effectively in group discussions, and in collectively developing arguments and making qualitative and quantitative judgements about those environments. Addressing these aspects in assessment exercises or projects enables the development of skills that include listening and respecting the views of others, and negotiation and reaching consensus in making judgments about the qualities of an environment



**Fig. 1** Three buildings in Glasgow selected for assessment (Source: L. Maclean). (a) *Theatre Royal*, (b) *Reid Building*, (c) *The Lighthouse*.

(Salama, 2015). These skills are integral to successful professional architects and designers (Hester, 2006).

### 3. Beyond the boundaries of classroom settings

This optional class *AB 966 Cultural and Behavioural Factors in Architecture and Urbanism* is offered to year 5 PgDipl in Advanced Architectural Design and Year 2 MSc in Advanced Architectural Studies, and MSc in Urban Design. Approximately 40% of the students enrolled were from Scotland, 30% from other European countries, and 30% international students. All had their undergraduate degrees in either architecture or urban design.

The class is premised on the view that the built environment is not simply a background against which human actions take place, but it regards it as it reflects and shapes human assumptions, beliefs, feelings, and behaviours. Coupled with typical format of delivery of a series of lectures, the course offers a series of in-class and out of class exercises and assignments that employ active, experiential, and inquiry-based learning as forms of learning from reality; Appreciative Inquiry (AI). The exercises involved group and individual work and varied in time from 10 min in-class exercises in teams of two students, to two-hours collaborative design game of teams of four students, to a structured learning experience out of classroom contemplating settings exercise, and to finally a group research project in the form of a structured assessment, the focus of this study.

#### 3.1. The Walking Tour assessment project as an Appreciative Inquiry (AI) mechanism

To introduce the assessment mechanism, a survey tool was devised; the purpose of which was to develop students' ability to have control over their learning by establishing links between spatial and sustainable design parameters of a building or a group of buildings. The project was conducted through self-guided walking tours. Checklists were provided to offer students a procedure for taking a structured walk through and around a building. The evaluation

strategy in this context was considered to be impressionistic, which increases students' awareness by focusing on specific factors. Students were divided into groups; each of which conducted the exercise utilizing the multiple category building assessment tool. A number of buildings in Glasgow city were selected by the students based on their familiarity with them, ease of access, while satisfying the requirement of being retrofitted buildings or involving a new intervention based on extensive demolition of older buildings on a site. While the class involved the assessment of many buildings as a demonstration of the range of buildings selected, three buildings are selected for analysis (Fig. 1).

A number of key factors were identified underlying six categories based on approaches discussed and adopted in earlier studies for the purpose of assessment or collaborative pre-design activities (Sanoff, 1991, 1999, Salama, 2012b; Wiedmann et al., 2012): context or the building's setting, massing, interface, wayfinding, socio-spatial, and comfort. Checklists were phrased in the form of questions underlying each category. The process included the use of notes, sketches, diagrams, and verbal description. Questions were designed in a generic manner that reflects the essence of each category. Students' attention was drawn to the fact that the list of questions underlying each category was not exclusive and is introduced to help structure and guide their tours for the purpose of the assessment exercise.

Numerical scores were assigned to the questions to represent the degree of appropriateness underlying each factor using a point scale method. Scores were averaged and an overall score for the building was then computed. Students were required to develop a report that would consider the following:

- Description of the building appraised with the support of photographs and illustrations;
- Appraisal of the building using the checklists with numerical scores assigned for each question;
- Analysis of numerical ratings by computation of an average score for each category and for the overall score;
- Writing comments based on students' impressions and understanding of the building.



Fig. 2 Theatre Royal (Source: L. Maclean) (a) external view, (b) entrance, (c) staircase, (d) first floor.

An important feature in the project is that students were required to conduct the Walking Tour as a team but responding to the checklists underlying each factor individually. Additionally, they were engaged in group discussions to reach consensus about the average score given to each factor while debating various qualities of the building. Group report presentations to the entire class were integral to the submission of the assessment outcomes.

#### 4. Overview of the three buildings selected in Glasgow city centre

From a variety of buildings proposed by the students and discussed in class as well as in individual sessions with each student group, the three buildings were identified based on criteria that include ease of access, the main use (cultural or educational) in addition to the retrofit criterion. The identified buildings were analytically investigated by developing an analytical overview about each building underlying two main categories: (a) background and original space, and (b) analytical description and design features.

- Theatre Royal designed by Charles Phipp in 1867 and extended and retrofitted by Page and Park in 2014 (Lloyd, 2015),
- The Glasgow School of Art (GSA) Reid Building, designed by Steven Holl architects in 2012 and opened in 2014 as a replacement to Honeyman Keppie & Mackintosh's Newbery Tower and Foulis Building that were built during the period between 1897 and 1909 (Frearson, 2014), and

- The Lighthouse redesigned by Page and Park in 1999 as a remodelling to the Glasgow Herald Building designed Charles Rennie Mackintosh in 1895 (Blaikie, 2016).

It should be noted that while Theatre Royal and Lighthouse are clear retrofitted cases, the GSA Reid Building is not viewed as a retrofit case, given the extensive demolition of older buildings on site.

#### 4.1. Theatre Royal

##### 4.1.1. Background and original space

The first group of students identified the Theatre Royal as an influential case study of a retrofitted building in Glasgow (SG1, 2015). Designed by Charles Phipps and built in 1867, the Theatre Royal is both Glasgow's oldest theatre, and Britain's largest example of a theatre (Lloyd, 2015). In 1974 Scottish Opera bought the Theatre Royal from Scottish Television and turned the space into Scotland's National Opera House (Olcayto, 2015). Today, the Theatre Royal is home to both Scottish Opera and Scottish Ballet. In order to preserve the Category A-listed Phipps auditorium a series of renovations were previously made. However, none of these renovations successfully solved the daily difficulties that were caused by the overcrowded and dysfunctional Victorian design (Olcayto, 2015). Before the extension, the Theatre Royal flaunted an impressive auditorium, but the building lacked vital public spaces. The Theatre was blemished by poor facilities, and inadequate accessibility, all of which tarnished the overall experience felt by audiences.

For the theatre to overcome these limitations, it became apparent that an extension would be the ideal solution (Fig. 2).

#### 4.1.2. Analytical description and design features

The brief for Page/Park Architects was to design an extension to the Theatre Royal that improves the front-of-house facilities, heightens the visitor experience, and successfully links back to the reputation of the historic Glasgow theatre. In 2011, the architects took advantage of a gap site adjacent to the Theatre, where they designed the extension, which is now regarded as a beacon of new architecture in Glasgow. The extension comprises primarily of stacked foyers, a grand staircase and service spaces, which successfully transformed the perception of the theatre by improving the visitor experience (Building Design, 2011). Page/Park concentrated their attention on key design elements such as interface and wayfinding (Page/Park, 2011). One of the most notable features the architects introduced within the new addition is an extravagant staircase, which improved the intuitive route around the building and enhanced users experience. The front-of-house extension to the Theatre Royal has created a theatrical street corner in Glasgow city centre. This dramatic addition is an exemplar case of retrofitting as selected by the students.

## 4.2. The Glasgow School of Art - Reid Building

### 4.2.1. Background and original space

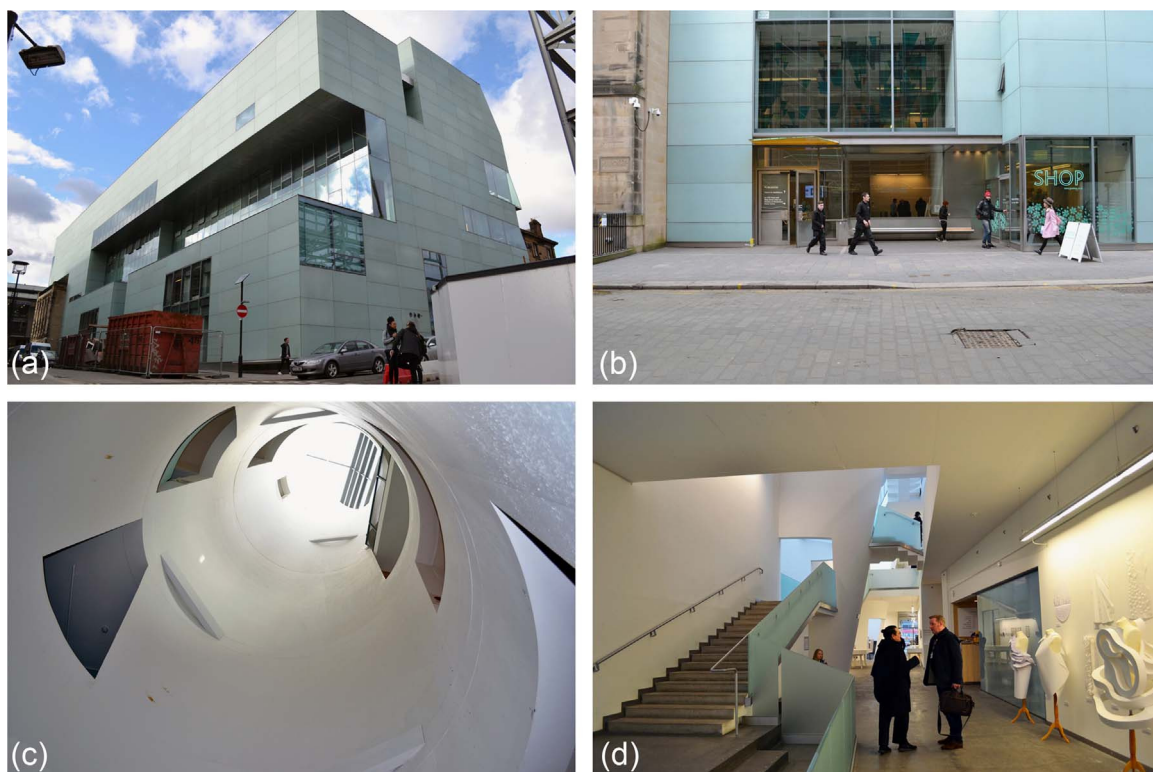
The second building selected by the students as a case study is the Glasgow School of Art Reid Building (SG2, 2015) which

was designed as a replacement to Keppie Henderson and Partners Newbery Tower and Foulis Building (Frearson, 2014). This firm later became Honeyman Keppie and Mackintosh and was the practice responsible for every purpose-designed building within the Glasgow School of Art estate (Brown, 2011). Before its demolition, the Newbery Tower was a post-war Brutalist style structure that housed the universities vertically stacked studio spaces (Brown, 2011). The Reid Building is now home to these studio spaces, as well as office, exhibition and circulation space.

The Reid Building is situated across the lane from the well-known Charles Rennie Mackintosh building. The Mac is one of Glasgow's most famous buildings, with Mackintosh considered as one of Britain's most influential architects (LeVan, 2015). The heritage of this site, therefore, made it a particularly significant location for Steven Holl architects to consider in their design (Fig. 3).

### 4.2.2. Analytical description and design features

The Reid Building was designed following an Estates Review, which determined that nine separate buildings in the Garnethill estate were not fit for purpose (Frearson, 2014). The design aims to address the Mac both internally and externally. It is clad in a light translucent material, which contrasts the heavy masonry of Mac. This decision to juxtapose the Mackintosh building was intentional and aimed to forge a symbolic relationship in which each structure heightens the integral qualities of the other. The use of dramatic lighting and shading in the Reid was inspired by the neighbouring Mackintosh's building, where it plays with lighting in different volumes (Holl Architects, 2014).



**Fig. 3** The Glasgow School of Art Reid Building (Source: L. Maclean) (a) external view, (b) entrance, (c) driven void, (d) ground floor.

The Reid Building captures light through the introduction of light shafts. These 'driven voids' push light down through all levels of the building and connect the internal building with the external through views of the sky (Frearson, 2014). A further design decision within the Reid building was the circulation strategy. This involved the introduction of stepped ramps that link all major spaces. These ramps create informal gathering spaces and exhibition spaces throughout the building, as well as create an open journey for occupants. This, therefore, means that the Reid Building is connected horizontally through the circulation, vertically through the distribution of light, and externally through its relationship with the Mackintosh Building. The building is the latest interesting example of a retrofitted building in Glasgow for the students to explore and evaluate.

### 4.3. The Lighthouse

#### 4.3.1. Background and original space

The final project selected for assessment is the Lighthouse (SG3, 2015), a renovation of the Glasgow Herald Building, a structure that holds significant cultural heritage in Glasgow since it was the first major public building that Mackintosh remodelled (Welsh, 2010). Despite its heritage, the Herald Building sat derelict for twelve years prior to being retrofitted in 1999. Before its renovation, the building served as a newspaper fabrication point, with the lower floors producing newspapers, and upper floors housing the commercial and editorial offices. The building was altered a number of times over the 20th century and resulted in very few original period furnishings remaining by the time of its transformation into the Lighthouse (Fig. 4), thus making the

preservation of those that remained of prime importance (Blaikie, 2016).

#### 4.3.2. Analytical description and design features

The Lighthouse is located on a narrow lane in Glasgow's city centre. Page/Park architects recognised that retrofitting a building in such an awkward location made the project initially challenging. Consequently, they worked closely with Historic Scotland on the protection and extension of the Herald Building, using their expertise to preserve the A-listed structure. The brief required a change of use, from a warehouse, to Glasgow's centre for architecture and design known as 'Architecture+Design Scotland.' Although this transformation was significant, Page/Park managed to retain a number of important aesthetic elements, including the water tower façade. Notably, one of the most interesting features the building enjoys is the suspended spiral staircase, which was added to the existing tower (Page/Park, 2009). The staircase brings a hint of creative sensitivity to the stone structure, making a playful environment for people to visit. The staircase links visitors to the rooftop, giving an extended view out over Glasgow. This third example of a retrofitted building was selected and assessed by the students due to its significance both in the past and in the present.

## 5. Discussion of the outcomes of the ai assessment experience Discussion of the outcomes of the AI assessment exercise

The implementation of the Walking Tour assessment procedure conducted as an appreciative inquiry mechanism

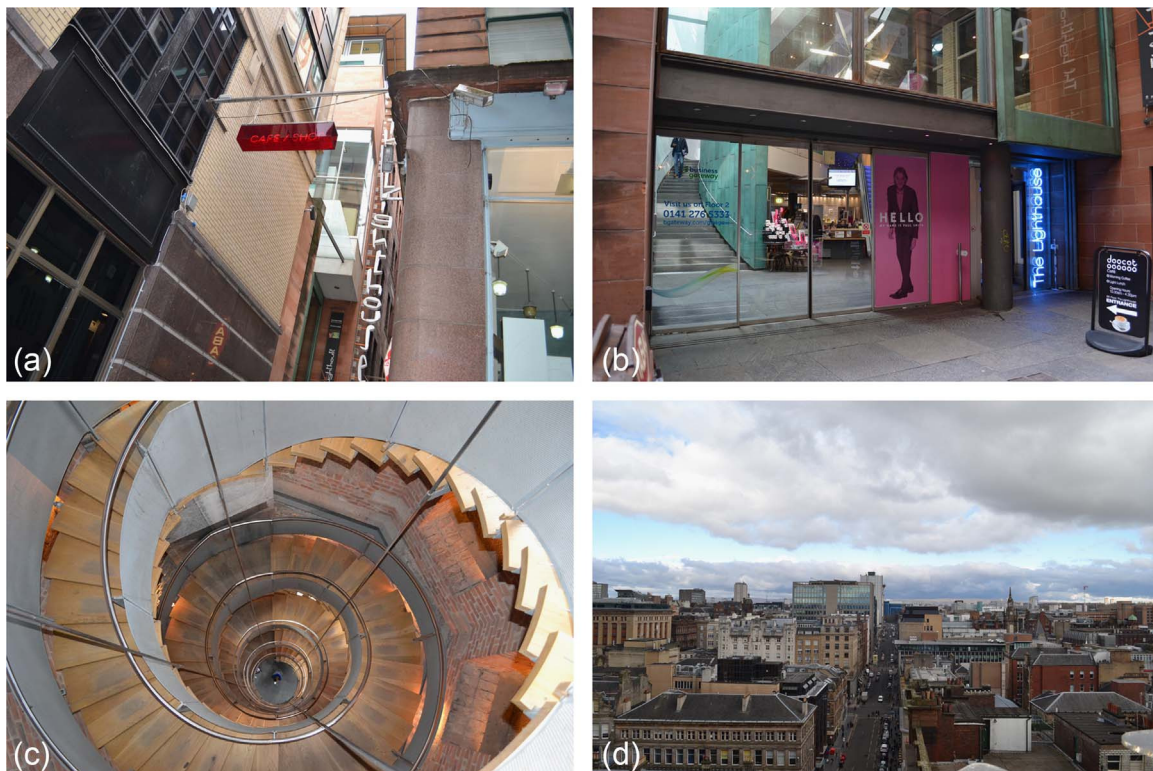


Fig. 4 The Lighthouse (Source: L. Maclean), (a) external, (b) entrance, (c) staircase, (d) first floor.



revealed interesting outcomes with respect to the six factors assessed. Each group carried out the tours on a weekday and a weekend, as well as during the day and the evening, resulting in four visits in total. Additionally, for maintaining a sufficient level of objectivity each student in a group scored the factors individually then in a group discussion the group collectively agreed in average scores. This has also enabled ensuring equal level of contribution and effort performed by each student. Results generated by the three student groups offered in depth understandings of various sustainable and spatial design qualities.

### 5.1. Context

The first factor focused on how the building is located in relation to the surrounding context and within its neighbourhood. Aspects evaluated included attributes such as: character, size, visual features, materials and relationship of the building to its surrounding urban environment (Table 1). The first students group used the tool to evaluate how well the Theatre Royal reacts to these parameters. The team scored the building 4.1 out of 5; on the basis that although the extension is large in scale and contrasts with adjacent buildings, its theatrical nature creates a dramatic structure, which they felt appropriate. The second student used the same set of criteria to evaluate the Reid Building. The overall impression with respect to its positioning in the context, is similar throughout the evaluations by the students individually. The information gathered illustrates that there is a consensus that the building is too large on the site, and ignores its immediate context. However, on a more positive note, it was stated that the buildings use fits in well with surrounding campus buildings and that the relationship between public and private is, on the whole, good resulting in the team scoring the building 3.1 out of 5. On the other

hand the third students group used these criteria to assess the way in which the Lighthouse suits its context. The Lighthouse is positioned in the middle of the narrow Mitchell Lane within the commercial area of Buchanan Street. From the students' collective assessment the intention of the Lighthouse retrofit was to introduce a transparent infill to complement well integrated into the fabric. Furthermore, the large amount of glazing allows for the dark lane to be partly illuminated by the lights inside the Lighthouse. The building scored well in this factor; however, students raised key critical issues including that the full façade is not visible, and entrance is initially unclear due to the buildings setting within the laneway.

### 5.2. Massing

The second factor addressed in the study is massing. This placed emphasis on how the assembly of the building components provides its form, how it creates a sense of variety and interest, and how it produces an understanding of the buildings meaning (Table 2). The students group evaluating the Theatre Royal scored the scheme highly in regards to massing, receiving 4.6 out of 5. The students felt that the Theatre façade reads as two clear parts; the ground floor of the extension which is light glass, and the upper floors which are clad in heavy gold. As an object, the building identifies different uses through material and form thereby generating a dramatic effect reflecting its internal function. Secondly, the Reid Building scored 3.1 out of 5 where students of the group agreed that the subdivision of the building was clear and sensible, therefore easy to distinguish from street level, however, one student member viewed the facades grouping confusing, without a strong hierarchy. Nevertheless, the team collectively agreed that the entry to the building is clear and visible due to the sub-

**Table 1** Assessment scores of the 'Context' factor in the three buildings.

<b>Factor 1 - Context:</b> Buildings are usually located in a context that represents the setting. The context is exemplified by several visual attributes such as character, size, visual features, materials, and relationship of the building to the urban environment. The context is simply the building's setting (Complete the response for each question shown below and assign a score from the choices by asking yourself how well the building suits the context) Score: highly inappropriate - 1 2 3 4 5 - highly appropriate	<b>Theatre Royal</b>	<b>The Reid Building</b>	<b>The Lighthouse</b>
1) How does the building suit the pattern of the surrounding streets?	2.4	4.25	4
2) How does the scale of the building suit the site it sits upon?	4.4	2.75	4.2
3) How does the scale of the building suit the scale of the surrounding buildings?	4.6	1.75	4.6
4) How does the scale suit the character of the neighbourhood?	4.2	1.75	4.4
5) Do the public and private areas relate well to one another?	4.8	2.75	3.6
6) Do the land uses adjacent to the building seem to fit harmoniously with the building?	3.2	3	3.4
7) Does the type of building and its intended use fit well with the type and uses of adjacent buildings?	3.8	5	3.8
8) Does the appearance of the building fit in well with the type of buildings surrounding it?	3	1.25	3.8
<b>Average score</b>	<b>4.1</b>	<b>3.1</b>	<b>3.8</b>

**Table 2** Assessment scores of the 'Massing' factor in the three buildings.

<b>Factor 2 - Massing:</b> Buildings are organized in form into some type of massing. Massing of the parts gives both form and meaning as well as variety to the building while expressing what happens inside and the variety of use. (Complete the response for each question and assign a score from the choices shown below by concentrating on the subdivisions of the building's form and deciding on the appropriateness of the designer's choice of massing) Score: highly inappropriate - 1 2 3 4 5 - highly appropriate	<b>Theatre Royal</b>	<b>The Building</b>	<b>Reid</b>	<b>The Lighthouse</b>
1) Concentrate on the subdivision of the building's parts as viewed from the outside. Do the parts integrate well with each other and form an effective and pleasing appearance?	4.6	2.75		4.2
2) Do the subdivided parts of the building appear to have a specific function? Is the function of each part easy to identify?	19	2.75		3
3) Is it clear what various subdivisions of the building might mean to visitors? Would a visitor know where to go on entering the building?	4.6	2.75		3.2
4) Are the various parts of the building planned carefully in relation to one another and to the characteristics of the site?	4.2	1.75		3.6
5) Is there sufficient relationship between the parts of the building for it to appear as one unified structure?	4.4	5		3.6
6) Does enough variation exist in the structural parts and massing to provide interest and variety?	4.8	2.75		4.8
<b>Average score</b>	<b>4.6</b>	<b>3.1</b>		<b>3.7</b>

division of the façade. The third group felt their scheme, the Lighthouse, harmoniously use three materials throughout, which subdivide the building to create interest and variety. The group felt that the external massing of the building successfully sits in the existing context, and members of the team agreed that the massing made the buildings use clear, resulting in a score of 3.7 out of 5.

### 5.3. Interface

The third factor explored as part of the Walking Tour assessment procedure is the building's interface. For this factor, the focus was to assess how the building succeeds in separating the private inside and the public outside aspects. This interface is a critical point in the building, where the internal and external spaces meet (Table 3). Participants evaluating the Theatre Royal scored the scheme collectively 4.1 out of 5 for this factor. The team agreed that the building's external façade offered a clear indication that it is an important cultural building. There are two public entrances into the building, both of which are regarded as underwhelming externally due to their scale and position within the facade, but that do reach an elegant internal space and are met by the feature staircase. The exterior materiality expresses a sense of individuality and lavishness, two important features that connect the buildings function and interior together. The second students group unanimously agreed that the Reid Building's accessibility was clearly defined; however, they felt the entrance appeared as a minor element due to its small scale in comparison to the height of the building and the mass, while creating intense human traffic around the doorway at exhibition times. Inside, the reception is double height and minimalist. It is for this combination of reasons that the Reid

Building scored 3.1 out of 5, less the Theatre Royal. The third student group collectively agreed that the retrofit of the Lighthouse succeeded in this factor therefore the building scored somewhat higher: 3.9 out of 5. The main space reached upon arrival is designed to provide the experience of a continuation to the lane, which is reinforced by the use of a variety of materials and surfaces. Masonry and glass allow the users on approach to understand the public and private division of the building, further strengthened by exposed steel construction dividing up the façade. The interface therefore is an extension of the lane and its character. Although all these elements were strong, it was collectively felt that the doorway itself let the interface down, as it was indistinct and small in size.

### 5.4. Wayfinding

Wayfinding is the fourth factor examined as part of the Walking Tour appreciative inquiry experience. The focus for this factor is on peoples' ability to discern routes, traffic patterns or passageways in and around a building (Table 4). The Theatre Royal students group scored it 4.2 out of 5 for wayfinding. They felt circulation through the building was an interesting experience, created by the centrally located staircase that ribbons across all levels of the building. The surface of the staircase is coloured in red, unfolding through the centre metaphorically as a red carpet. The Reid Building students group felt that the external circulation was interesting as it creates transparency and visual dynamics. However three team members agreed that the internal circulation was ambiguous and confusing due to the lack of signage, therefore the average score for this factor was only 3.1 out of 5. The team identified the entrance as an area susceptible to overcrowding, and they felt that more

**Table 3** Assessment scores of the 'Interface' factor in the three buildings.

<b>Factor 3 - Interface:</b> A building is essentially an enclosure that separates an interior private space for the exterior public space. The interface is the crucial meeting place where the inside of the building connects with the outside. (Complete the response for each question shown below and assign a score from the choices by deciding on how well the building satisfies the requirements for a successful interface design) Score: highly inappropriate - 1 2 3 4 5 - highly appropriate	<b>Theatre Royal</b>	<b>The Building</b>	<b>Reid</b>	<b>The Lighthouse</b>
1) How clearly or effectively does the exterior of the building indicate its interior function(s)?	3.8	3.25		4.2
2) How effectively does the inside of the building connect with the outside of the building? Are the connections appropriate and functional?	4	3.75		4
3) Are the exits and entrances easily accessible?	4.2	2.75		3.4
4) Are the various openings related to thoughtful planning of the interior? (Consider entry of light, view, privacy, noise, heat, glare, atmosphere, etc.)	5	3.75		4
5) Are the exits appropriate from a safety point of view?	4	3		3
6) When you move from the exterior of the building to the interior by means of the main entrance, is the experience pleasant, interesting, or special in any way?	4.6	3.5		4.2
7) Are the clues to what is public and what is private space clear to the visitor?	4.2	2.5		4.2
8) Have the designers, in your opinion, handled the problem of interface well in their design of this building?	4.8	2.5		4.6
<b>Average score</b>	<b>4.1</b>	<b>3.1</b>		<b>3.9</b>

**Table 4** Assessment scores of the 'Wayfinding' factor in the three buildings.

<b>Factor 4 - Wayfinding:</b> Wayfinding is the ability for people to know their whereabouts, discern routes, traffic patterns or passageways in and around the building. (Complete the response for each question shown below and assign a score from the choices by asking yourself how appropriate is wayfinding in linking the building to its surroundings and how functional is the signage system if exists) Score: highly inappropriate - 1 2 3 4 5 - highly appropriate	<b>Theatre Royal</b>	<b>The Building</b>	<b>Reid</b>	<b>The Lighthouse</b>
1) Are sufficient routes, pathways, streets and passageways provided to and around the building?	4	4.75		3.8
2) How effectively do the routes link the building to the surrounding building or structures?	4	3.25		4.2
3) What are the flow patterns of traffic or people? Are there busy periods, quiet periods, one-way flows, regular movement patterns, traffic jams? Are the routes arranged to consider these factors?	3.8	3		4.2
4) How effective are the nodes (meeting points) for traffic around the building and what happens there?	3	2.5		3.8
5) Do all the routes make sense? Are they understandable and convenient?	4.4	3		3.4
6) Are all the circulation routes within the building easily understood by newcomers, visitors, service people?	4.8	2.25		3.4
7) How well are the interior circulation routes marked? Are the markings clear and easily understood?	4.6	2.75		3.2
<b>Average score</b>	<b>4.2</b>	<b>3.1</b>		<b>3.8</b>

signage would help alleviate congestion at the entry as it could encourage people to their destination more directly. The Lighthouse students group utilizing the same set of criteria to assess the wayfinding factor in the building has developed a consensus among the team members and agreed a cumulative score of 3.8 out of 5. This was due to the number of possible routes that can be taken around the building on arrival, with three forms of circulation visible. While the multiple route choices could cause confusion to new visitors, the reception is clearly located to deal with such situations. There are small nodes on each floor that provide intimate gathering and moments of rest and reflection, which create an enjoyable wayfinding experience.

### 5.5. Socio-Spatial

Factor 5 assessed by the students focuses on how the physical attributes of the building accommodate the diversity of human needs and in part explore the dialectic relationship between users and their surroundings (Table 5). The student group assessing the Theatre Royal successfully responded to the socio-spatial demands of a public building, confirming that it meets the demands of diverse users. This is achieved through the introduction of many spaces for public gathering spaces that vary in area and size and are fostered by moveable seats and adaptable furnishing. Following this, the Reid Building student group felt that the building's ability to allow users to personalize their spaces was satisfactory; with flexible furniture allowing movement to encourage social encounters. Secondly the team found the ability to adapt walls with artwork clustered and out of place in a minimalist building, resulting in the team scoring 3.2 out of 5. The third student group stated that due to the variety of exhibitions which take place in the Lighthouse, it is essential that the spaces be adaptable to allow for spatial definition of exhibition areas on a regular basis. On each floor, there are large open gallery

spaces, and smaller pocket spaces for quieter moments and potential social interaction. The design involves visual transparency in the sense each space is situated off the central atrium, which allows visibility throughout the building and further encourages interaction between levels visually. The team felt that as a public building, the Lighthouse meets users needs well and moving through the building is a pleasant exploratory journey, resulting in them scoring the building 3.9 out of 5 for this factor.

### 5.6. Comfort

The final factor identified in the Walking Tour assessment process is comfort (Table 6). It places emphasis on the environmental conditions within the building that affect human needs and wants. The Theatre Royal scored highly receiving 4 out of 5 for this factor. The student group felt that despite the building's large scale, it manages to suit an appropriate thermal comfort for a function of this type. The group felt that the lighting strategy was successful throughout the building; with generous glazing creating an abundance of natural light, an aspect that many public buildings in the city fail to achieve. The central atrium does allow noise to travel, however in this design the team felt that this creates an exciting busy environment, which reflects the function of the building. Conversely, the student group assessing the Reid Building felt that due to the high ceilings and large volumes of space within the main public areas, it is difficult to adjust thermal comfort levels to suit individual preferences, resulting in a score of 3 out of 5. The group did feel that lighting is successfully diverse, depending on the requirements of the space, however felt the acoustic insulation of the building is lacking. Noise flows through the building's 'driven voids' that amplifies sound from the ground to the top floor. The final team felt that the open nature of the Lighthouse instigated lower levels of thermal comfort resulting in a score of 3.5 out of 5. Lighting in the

**Table 5** Assessment scores of the 'Socio-Spatial' factor in the three buildings.

<b>Factor 5 - Socio-Spatial:</b> The socio-spatial dimension addresses the ability of the physical environment to accommodate diverse human needs. (Complete the response for each question shown below and assign a score from the choices by asking yourself how well the spaces perform) Score: highly inappropriate - 1 2 3 4 5 - highly appropriate	<b>Theatre Royal</b>	<b>The Building</b>	<b>Reid</b>	<b>The Lighthouse</b>
1) How well does the building suit the user's ability to personalize their space?	3.8	3.25		3.6
2) How well does the major space function in relation to other spatial requirements?	4.2	3.5		4
3) Does the major space allow for needed privacy, or individual pursuits?	3.4	3		3.2
4) How well does the building arrangement allow for needed casual contact among its different types of users	4.4	3.75		4.6
5) Does the building arrangement allow for a centralized area of information exchange?	4	3.5		4.4
6) Do the common areas allow ease of entry for passers-by or visitors?	4.6	3.5		4.4
7) How appropriate is the location and accessibility of the major space?	4.6	3.5		4.6
8) How well does the building serve as a tool that achieves its objective?	4.8	3.25		4.4
<b>Average score</b>	<b>3.9</b>	<b>3.2</b>		<b>3.9</b>

**Table 6** Assessment scores of the 'Comfort' factor in the three buildings.

<b>Factor 6 - Comfort:</b> The environmental conditions affecting human comfort including temperature, ventilation, noise, lighting, etc. as well as they way in which they are controlled (Complete the response for each question and assign a score from the choices shown below by concentrating on environmental conditions related to human comfort) Score: highly inappropriate - 1 2 3 4 5 - highly appropriate	<b>Theatre Royal</b>	<b>The Building</b>	<b>Reid</b>	<b>The Lighthouse</b>
1) How do the major spaces in the building suit an individual's thermal comfort?	4.2	3		3
2) How suitable is the ability to adjust thermal comfort on an individual basis?	2.2	1.25		1.8
3) How appropriate is the light level in the building's support spaces?	4.4	3.75		4.4
4) How appropriate is the light level in a typical space during the day?	4.4	4		4.6
5) How appropriate is the light level in a typical space during the night?	4.4	4		3.8
6) How appropriate is the perceived noise level in a typical space?	4.4	2.5		4
<b>Average score</b>	<b>4</b>	<b>3</b>		<b>3.5</b>

majority of gallery spaces is artificial, and allows a high level of control. In contrast, the main gathering space is naturally lit with a large amount of glazing on the roof and entrance façade. The open circulation space does bring the issue of noise, which creates interest in the building, as they give an idea of other activities being carried out at any one time.

## 6. Concluding reflections

The rationale for introducing AI was twofold: The first is that architecture students are typically encouraged to engage in site visits and walkthroughs in a building or city spaces in order to observe different phenomena. Yet, these visits and exercises are not necessarily structured in any form of rigorous investigation or critical inquiry. The second is that AI is utilized in this initiative as a form of an assessment experience in order focus attention on what works well in the physical environment and the way in which it can be enhanced. The findings of conducting the 'Walking Tour' assessment project clearly show that by the end of the project and through the submission of assessment reports and presentations to the class, most students were not only able to interrogate various qualities of the buildings they have assessed but also make sound judgments about the built environment and give reasons for these. Some of the student reflective statements included the following:

- *"Despite that we disagreed at times, we were able through a consensus discussion process, to understand the essence of each factor and impacts of one factor on our perception of others."*
- *"The exercise enables us to develop text from numbers and visual materials."*
- *"We were actively and deeply engaged in an action field research process that contributed to our collective assessment scores about the building."* and
- *"We learned that assessment is not about 'black and white' judgements and that there is a range of*

*judgements that should manifest in any assessment or inquiry process."*

While the statements truly reflect the actual benefits of implementing AI as part of an assessment process, one shortcoming was the inability of a few students to provide appropriate follow-up commentary where they could not express their concerns verbally. Students, however, reported that checklists and survey tools for investigating the built environment helped them to know what to look for in the building and to understand relationships between different factors. The checklists also helped them to determine the impact of one factor as opposed to others.

The perspectives of the two authors were integrated to offer the general core argument and the reasoning behind it; their views were complementary in nature. The first author as a pedagogue who taught the class views that there needs to be clear and effective mechanisms for comprehending the built environment through exposing students to primary sources of information and to collaborative and structured assessment processes. The second author who experienced the learning process emphasizes that this type of assessment experiments offered students opportunities that go beyond the routine site visits or disorganized fieldwork. Notably, the second author argues that her earlier learning experience has not included mechanisms by which tools for information gathering were clear and structured in such a rigorous manner while prepared prior to conducting the site or assessment visits.

A considerable portion of students' education in architecture and design is based on 'experience,' 'making' and 'active engagement.' Students are encouraged to study the existing built environment and attempt to explain it through theories or typologies, by always looking at and even referring to outstanding examples. However, underlying these approaches are hidden assumptions about the built environment and the people associated with it. It is in this grey area, in this vague and often inchoate relationship wherein lies the 'lesson' to be learnt. Hence, the incorporation of structured learning experiments similar to the

Walking Tour assessment project could effectively produce a more profound learning and foster the establishment of links between the existing dynamic environments, the concepts and theories that supposedly explain them, and the resulting learning outcomes. Accordingly, the contribution of AI lies in the fact that the inherent, subjective, and hard to verify conceptual understanding of the built environment can be refined and harmonised by the structured, documented interpretation performed in a systematic manner in that promotes critical thinking and reflection. The success of this experiment has enabled its inclusion as part of the University's portal for sharing practice in effective learning and teaching (SPELT, 2015).

Architectural pedagogy can certainly apply the appreciative inquiry paradigm to classroom settings. Nonetheless, the scope of this paper is limited to lecture-based courses. In classroom settings, students can be involved in a process of identifying positive aspects in specific environments or building types. They can also perform various research assignments and present results of assessment studies about successes and merits of those environments; these can then be debated and discussed by their classmates. Assessment studies typically aim at revealing problems; however, using them to learn from successes represents a radical shift in the way in which assessment is pursued.

The built environment is variant, diverse, and complex: its buildings and spaces, whether planned, designed, analysed, represented, built, lived in, experienced, perceived, and studied, are integral components of this organic and fluid environment. The built environment and its structures need to be re-defined not only as objects for learning but also academic and/or scientific objects. Additionally, in order for an object to be taught and learnt, its components should be adapted to specific pedagogic and cognitive orientation to introduce and resolve issues about specific bodies of knowledge. The incorporation of responsive learning mechanisms into architectural pedagogy represents a new edge and learning paradigm in architecture. Such a paradigm integrates the real and the hypothetical, the process and the product, the objective and the subjective, and ultimately the behaviour and the dynamics of the phenomena future designers and architects are exposed to. In this respect, introducing and implementing tools that utilise and explore the built environment of Glasgow, its buildings and spaces as a teaching tool and open textbook inculcates students with the ability to become critical thinkers, active learners, and eventually, knowledge producers.

## References

- Ackoff, R., 1974. *Redesigning the Future: A Systems Approach to Societal Problems*. John Wiley & Sons, New York.
- Building Design, 2011. Designs for the redevelopment of Glasgow's grade A listed Theatre Royal have been submitted for publication for planning approval by Page Park Architects. (<http://www.bdonline.co.uk/-park/1000243.subject>).
- Blaikie, G., 2016. The Lighthouse Glasgow. Glasgow Herald Building. (<http://www.scotcities.com/mackintosh/lighthouse.htm>) (accessed 01.03.16).
- Bonwell, C., 1996. Building a supportive climate for active listening. *Natl. Teach. Learn. Forum* 6 (1), 4-7.
- Bonwell, C., 1999. Active learning: creating excitement in the classroom. In: *Proceedings of the Active Learning Workshop*. Great Mountain Falls, CO: Charles Bonwell.
- Brown, R., 2011. Newbery Tower, Glasgow School of Art. (<http://www.c20society.org.uk/botm/newbery-tower-glasgow-school-of-art/>) (accessed Jan 2016).
- Bruner, J.S., 1961. *The Act of Discovery*, 31. *Harvard Educational Review*, 21-32.
- Cockell, J., McArthur-Blair, J., 2013. *Appreciative Inquiry in Higher Education: A Transformative Force*. John Wiley & Sons, New York, NY.
- Cooperrider, D., 2000. *An Appreciative Inquiry: Rethinking Human Organization: Toward a Positive Theory of Change*. Stipes Publishing, Champaign, IL, 42.
- Cooperrider, David L., Whitney, Diana, Stavros, Jacqueline M., 2003. *Appreciative Inquiry Handbook: The First in a Series of AI Workbooks for Leaders of Change*. Lakeshore Communications, Canada, XVII-XIX.
- Dean, E., 1996. Teaching the proof process: a model for discovery learning. *Coll. Teach.* 44 (2), 139-144.
- Frearson, A., 2014. Steven Holl Completes Extension to Mackintosh's Glasgow School of Art. (<http://www.dezeen.com/2014/03/06/glasgow-school-of-art-reid-building-steven-holl/>) (accessed 9.01.16).
- Habraken, J., 2006. Questions that will not go away: some remarks on long-term trends in architecture and their impact on architectural education. *Open House Int.* 32 (2), 12-19.
- Hammond, S., 1998. *The Thin Book of Appreciative Inquiry*. The Thin Book Publishing, Bend, OR.
- Hester, R., 2006. *Design for Ecological Democracy*. MIT Press, Cambridge, MA.
- Holl, Steven Architects, 2014. Reid Building, The Glasgow School of Art. (<http://www.stevenholl.com/projects/glasgow-school-of-art>) (accessed 10.01.16).
- Keeton, M., Tate, P. (Eds.), 1978. *Learning by Experience*. CA: Jossey Bass Publishers, San Francisco.
- LeVan, S., 2015. From Mackintosh to Saint-Donatien, Can We Really Afford to Set History on Fire? (<http://www.archdaily.com/769747/from-mackintosh-to-saint-donatien-can-we-really-afford-to-set-history-on-fire>) (accessed 10.12.16).
- Liebman, J., 1997. *Promote Active Learning During Lectures*. Lionheart Publishing Inc., Atlanta, GA. (<http://education.forum.informs.org/active.htm>) (accessed 09.05.14).
- Lloyd, A., 2015. The Theatre Royal, 282 Hope Street. Cowcaddens, Glasgow (<http://www.arthurlloyd.co.uk/Glasgow/TRHope.htm>) (accessed 10.01.16).
- Page/Park, 2011. Theatre Royal, Glasgow. (<http://pagepark.co.uk/projects/cog/arts-and-culture/project/theatre-royal-glasgow>) (accessed 09.01.16).
- Page/Park, 2009. The Lighthouse. (<http://pagepark.co.uk/projects/the-lighthouse-glasgow>) (accessed 01.03.16).
- Olcayto, R., 2015. Theatre Royal by Page/Park Architects. *Architects Journal*. (<http://www.architectsjournal.co.uk/8683743.article>) (accessed 10.01.16).
- Salama, A.M., 2012a. Evaluation research and inquiry based learning (IBL) in architecture and urbanism: consumption versus production of knowledge. In: Mallory-Hill, S., Preiser, W., Watson, C. (Eds.), *Enhancing Building Performance*. John Wiley and Sons, New York, NY.
- Salama, A.M., 2012b. Evaluation research as a mechanism for critical inquiry and knowledge construction in architectural and urban education. *FORMakademisk* 5 (2), 1-12.
- Salama, A.M., 2015. *Spatial Design Education: New Directions for Pedagogy in Architecture and Beyond* #ucation: new directions for pedagogy in architecture and beyond (new edition by Routledge). Ashgate Publishing Ltd, Surrey.
- Sanoff, H., 1991. *Visual Research Methods in Design*. Van Nostrand Reinhold, New York, NY.

- Sanoff, H., 1999. *Community Participation Methods in Design and Planning*. John Wiley & Sons, New York, NY.
- Students Group 1 Report (SG1), Stewart, T., MacGregor, F., Paton, C., Kennedy, R., Whitehouse, S., 2015. Assessment of Socio-Behavioural/Spatial Aspects of Buildings: Theatre Royal. Department of Architecture, University of Strathclyde, Glasgow, UK.
- Students Group 2 Report: (SG2), Bakkejord, K., Halliday, C., Kijam, J. M., Mencinskaite, E., 2015. Assessment of Socio-Behavioural/Spatial Aspects of Buildings: Reid Building. Department of Architecture, University of Strathclyde, Glasgow, UK.
- Students Group 3 Report (SG3), Dunaway, H., Reynolds, K., Myers, L., Maclean, L., Grigor, B., 2015. Assessment of Socio-Behavioural/Spatial Aspects of Buildings: The Lighthouse. Department of Architecture, University of Strathclyde, Glasgow, UK.
- SPELT, 2015. Integrating the Appreciative Inquiry (AI) paradigm into a lecture-based class in architecture. Sharing Practice in Effective Learning and Teaching (SPELT). University of Strathclyde, Glasgow, UK (<http://spelt.strath.ac.uk/display/SPELT/Integrating+the+Appreciative+Inquiry+%28AI%29+Paradigm+into+a+Lecture-Based+Class+in+Architecture>) (accessed 11.04.16).
- Watkins, J.M., Mohr, B.J., 2001. *Appreciative Inquiry: Change at the Speed of Imagination*. Jossey Bass Publishers, San Francisco, CA.
- Welsh, A., 2010. Glasgow Herald Building (<http://www.glasgowarchitecture.co.uk/glasgow-herald>) (accessed 08.03.16).
- Wiedmann, F., Salama, A.M., Thierstein, A., 2012. A framework for investigating urban qualities in emerging knowledge economies: the case of Doha. *Archnet-IJAR: Int. J. Archit. Res.* 6 (1), 42-56.