

## Impact case study (REF3b)

<b>Institution: The Glasgow School of Art</b>
<b>Unit of Assessment: 34 Art and Design: History, Practice and Theory</b>
<b>Title of case study: British Empire Exhibition 1938: a permanent display at a heritage centre</b>
<b>1. Summary of the impact</b> (indicative maximum 100 words)

A permanent museum display has been set up at House for an Art Lover, Bellahouston Park, Glasgow as a direct result of the AHRC-funded “British Empire Exhibition” project undertaken at the Digital Design Studio. The display includes workstations with project outputs such as 3D interactive virtual models of the non-extant architecture of the 1938 Exhibition (which itself was situated in Bellahouston Park), large format images of the architecture, interviews and interpretation, the full digitised project archive, and a selection of the physical project archive materials (a collection which was significantly enhanced by multiple donations from members of the public thanks to engaging and effective project publicity). The display has contributed intellectually, artistically, and economically to the House’s assets.

<b>2. Underpinning research</b> (indicative maximum 500 words)
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At the time the underpinning research was undertaken 3D reconstructions of non-extant structures was an academic technique still in its burgeoning stages. Models tended to be metrically accurate without particular consideration to the aesthetics of user engagement, and the process of their production itself raised many research questions (later address in the London Charter, 2009: <http://www.londoncharter.org/>). This research gathered a large archive of source data to produce an unusually large dataset (>100 buildings placed in surrounding topography) and combined with this structural data the artistic expertise to make the scene photo-realistic and visually immersive for users. This, coupled with rigorous record-keeping on the process of creating the 3D scene including highlighting uncertainties and decision-making, allowed the research to make a significant contribution to a relatively new academic field.

From its creation in 1997, the Digital Design Studio (DDS) was co-located with House for an Art Lover (HAL) in Bellahouston Park, Glasgow. The research underpinning the creation of the permanent display at HAL was initiated by Ian Johnston, then Head of Academic Programmes at DDS. His academic background focussed on the industrial history of Glasgow, including the decline of the maritime industry. The last Exhibition of the British Empire was held in Bellahouston Park in 1938, a mirror for the industry of the time and a significant cultural event that was overshadowed and intellectually unresolved due to the imminence of WW2. Mutual interest in the history of Bellahouston and Glasgow’s industrial heritage led to a developing relationship between DDS and HAL, who invested £10k in pilot projects to visualise in 3D some of the architecture of the 1938 Empire Exhibition, followed up by two further investments of £5k each. The knowledge produced by these pilot projects was promising in both creating a new understanding of the architecture of the Exhibition itself, and also in the research questions surrounding the process of visualising reconstructions of heritage objects.

In 2004, a joint research post between DDS and the Mackintosh Environmental Architecture Research Unit (MEARU) also at Glasgow School of Art was filled by Douglas Pritchard, who had experience of developing 3D virtual cities. Departmental recruitment at this time also included skilled 3D modellers and animators, in order to achieve a critical mass of expertise in 3D visualisation. Of particular note is the prominence of artists and animators in the development of DDS’ modelling and visualisation methodology, a technical approach which was relatively unusual at the time.

Using expertise at DDS and HAL, including that of HAL board members James Cosgrove and David Leslie, Emeritus Professor of Architecture Andy McMillan (who met some of the architects who had been directly involved in creating the Empire Exhibition), and architectural interpreter Neil Baxter as a steering committee, Johnston prepared a bid to conduct research into the British Empire Exhibition of 1938 and in particular, to produce accurate 3D models of the (non-extant) buildings that formed the Exhibition. The bid was successful and in December 2005, the AHRC awarded the Digital Design Studio £146k for the research (AID:119421). The success of the project, was in no small part due to the development (by PI Johnston) of an academically rigorous methodology for the reconstruction of buildings from complex, varied and incomplete historical

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sources. This methodology comprised an interdisciplinary team of modellers, artists, and animators alongside robust academic verification of modelling decisions by a steering committee of experts, and became the core of the developing DDS visualisation methodology which contributed strongly to our growing credibility as a world leader in this area.

The project exceeded expectation in terms of both public engagement and outputs [5]. The main output from the project was a 3D scene accurately replicating the entire Exhibition as it was originally arranged in Bellahouston Park, comprising 104 principal buildings and structures, and a vast number of auxiliary features such as statues, fountains, and vegetation. Other important outputs were the aggregation and digitisation of an archive of related cultural assets and video interviews recording opinions of experts in the fields of architecture and architectural history as well as the recollections of members of the public who attended the Exhibition in 1938. Project outputs are still available (in low resolution) on the website [3].

Of particular note was the massive public engagement with this research due to early and effective project publicity and press [4]. The archives on which the 3D scene was based were significantly enhanced by public contributions of memorabilia, and interviews with members of the public for first-hand memories of the Exhibition were added to the project outputs [3]. The project also exceeded expectations with regard to the final 3D visualisation which served as a breakthrough of what was possible with historical, non-existing subject matter [1][2] and directly enabled two follow-on research projects [6] as well as the permanent display at HAL that is the subject of this case study.

#### 3. References to the research (indicative maximum of six references)

- [1] Ian Johnston (Ed.) (2008) *Glasgow's Greatest Exhibition: Recreating the 1938 Empire Exhibition* (RIAS, Edinburgh)
- [2] Johnston, I. & Pritchard, Douglas (2007) "Recreating the 1938 British Empire Exhibition" in *Proceedings of IEEE VAST 2007: 8<sup>th</sup> International Symposium on Virtual Reality, Archaeology and Cultural Heritage*, (Archaeolingua, Budapest) pp. 85-89.
- [3] <http://www.empireexhibition1938.co.uk/> presents the outputs of the research, including a brief description of the innovative rigorous visualisation workflow used on the project.
- [4] The British Empire Exhibition project generated huge public interest with coverage from the BBC (Dec 2007), The Herald (Jan 2006), the Evening Times (May 2007, Dec 2007), and Building Design (May 2008).
- [5] The research was commended for intellectual rigour in its AHRC assessment, the knowledge exchange between modellers and advisory panel being specifically mentioned as a strength. The assessors also noted that the project "*links technical and substantive concerns in an intriguing way, offering a model for other studies*". (AHRC Evaluation: AID:119421).
- [6] The project led directly to two further AHRC grants: a small grant under the Knowledge Catalyst Scheme: "Marketing the 1938 British Empire Exhibition" (AID: AH/F500203/1) which developed a book, teaching materials, postcards and souvenirs to be sold at HAL, and delivering a well-attended conference on the previous project and its outputs; and a large grant (£140k) under the AHRC Digital Equipment and Database Enhancement for Impact scheme entitled "Enhancing Engagement with 3D Heritage Data through Semantic Annotation" (AID: AH/H036881/1).

#### 4. Details of the impact (indicative maximum 750 words)

##### Public access to a display of Glasgow's forgotten history

House for an Art Lover is a cultural attraction and tourist destination. It hosts regular art, design and architecture related events in its purpose built studios and seminar rooms. The permanent display resulting from the above research was designed by the project team in conjunction with the board of HAL. At the project's end, an interactive scene, animated flythroughs, high resolution images (accessed through workstations), and a selection of the physical archive collected during the project were exhibited in a dedicated Interpretation Room in the main House. HAL recently refurbished the original stables and dovecote buildings and turned this into an educational and informative area to showcase the history of Bellahouston and surrounding areas to park and House visitors. The digital model and archive of the British Empire Exhibition (along with a newly commissioned animation using the original data [12]) is now located in this self-contained Heritage

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Centre (which is free of charge) along with information about shipbuilding on the Clyde and the social and industrial heritage of the area surrounding the park [9]. The display and archive (both physical and digital) now forms an important part of HAL's permanent assets and is included in their ongoing press, publicity, and marketing strategies. Its benefit is not only to educate visitors about the history of Bellahouston but to give them the opportunity to explore the site as it looked in 1938 in an immersive manner, and crucially, to also demonstrate the possibilities of 3D visualisation as a methodology for learning and engagement in a heritage-centre setting.

A launch event at the culmination of the original research attracted around 50 delegates to HAL to investigate the exhibition further.

Physical visits to House for an Art Lover increased after the launch of the permanent display. (HAL's visitor tracking shows 12.8k in 2006, 12.9k in 2007, 13.5 in 2008, 15.8k in 2009 [7])

There was considerable public interest in the Empire Exhibition project and the resulting permanent display making a significant impact both locally and nationally with the public actively engaging both during the project (e.g. contributing archive materials) and after the display was set up (e.g. creating youtube mash-ups of the animated flythroughs), inspiring public debate and memory-sharing about the exhibition [14][15] and feeding into ongoing events on the history of Bellahouston Park (e.g. "Empire Exhibition Glasgow 1938

An architectural exploration - 75 years on" 4/12/2013, Glasgow City Heritage Trust, est. 120 delegates). This was noted in the AHRC assessment as was the project's "impressive" interaction with museums and the public [5].

Three years after the project launch, the Empire Exhibition website was still averaging around 1700 unique visits each month, peaking at 2369 visits (56,000 hits) in September 2009. The website directs users towards the physical display at HAL [3].

**Economic impact for House for an Art Lover and DDS**

A further grant from the AHRC entitled "Marketing the 1938 British Empire Exhibition" [6] allowed HAL and Johnston to commission a designer to create souvenirs specific to the Empire Exhibition such as postcards, brooches, magnets, and printed materials [8] to sell in the HAL gift shop. As of May 2013, HAL has sold 2,352 Empire Exhibition items (directly generated from the follow-up research) for an income of £6,189 [7]. The research may also have contributed indirectly to e.g. cafe sales.

Content from the underpinning research has also been included in other souvenir products produced by HAL [10][11] and the success of the display in the Heritage Centre encouraged HAL to commission further animations from DDS in 2012 [12].

As a direct result of collaboration on the Empire Exhibition project, HAL provides 2 scholarships per year to GSA postgraduate students (one specifically for a DDS student (£2,000), one for a student from any department (£1,500)) [13].

**Resources for researchers outside academia**

In addition to the public display, all research files from the project were also deposited with HAL and physical and digital files can be accessed by appointment. This provides a valuable resource for future research into the Empire Exhibition and the history of Bellahouston Park by local historians and cultural heritage experts.

The follow-up grant from the AHRC also funded a one-off conference about the Empire Exhibition at HAL which was well attended by a range of delegates including architects, historians, academics, and interested members of the public.

**5. Sources to corroborate the impact (indicative maximum of 10 references)**

- [7] House for an Art Lover – Garry Sanderson provided the HAL visitor and sales statistics above.
- [8] Ian Johnston (Ed.) (2008) *Glasgow's Greatest Exhibition: Recreating the 1938 Empire Exhibition* (RIAS, Edinburgh) (product of AHRC Knowledge Catalyst grant, sold by HAL: [http://www.houseforanartlover.co.uk/shop/books\\_and\\_prints/245\\_glasgow\\_s\\_greatest\\_exhibition\\_the\\_empire\\_exhibition](http://www.houseforanartlover.co.uk/shop/books_and_prints/245_glasgow_s_greatest_exhibition_the_empire_exhibition))
- [9] House for an Art Lover Heritage Centre: [http://www.houseforanartlover.co.uk/studio\\_pavilion\\_heritage\\_centre/house\\_for\\_art\\_lover\\_heritage\\_centre](http://www.houseforanartlover.co.uk/studio_pavilion_heritage_centre/house_for_art_lover_heritage_centre)
- [10] *Bellahouston, Govan and Glasgow: A Heritage* (souvenir booklet sold by HAL)
- [11] *Bellahouston: Artworks in the Park* (souvenir booklet sold by HAL)

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- [12] Commissioned animation – a new flythrough for the permanent exhibition created in 2012 by animators at the DDS, using the original data from the first research project. This is currently playing in the Heritage Centre at HAL.
- [13] HAL Scholarships to GSA: <http://www.gsa.ac.uk/life/funding-finance/scholarships/>
- [14] The British Empire Exhibition project generated huge local public interest with coverage from the BBC (Dec 2007: [http://news.bbc.co.uk/1/hi/scotland/glasgow\\_and\\_west/7129450.stm](http://news.bbc.co.uk/1/hi/scotland/glasgow_and_west/7129450.stm)), BBC History Learning Resource (May 2013: <http://www.bbc.co.uk/history/0/22517894>), The Herald (Jan 2006), the Evening Times (May 2007, Dec 2007), and Building Design (May 2008)
- [15] Public engagement debate/memory sharing on social media: e.g. *"I never thought I would get such an insight into the Exhibition until I saw the GSOA reconstruction which enabled me to look into the past!"* <http://www.youtube.com/watch?v=MYWKGvdD3w4>