

Panoramic Architectural Art: Real-Digital Interaction as a Catalyst

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Abstract. *This paper describes an integrated cross-disciplinary project in which digital technologies have been used as a vehicle to bring together material, educators and students from a variety of backgrounds. A significant piece of new art, commissioned for the Capital of Culture year (2008) in Liverpool, has been the centre-piece and catalyst for the project.*

Keywords: *Art: Interactive: Education.*

Outline

This paper describes the production of a City Panorama by an internationally recognized artist, Ben Johnson, (Castle and Margolius, 2003; Anon., 2007) and how the development and production of that Panorama has been used as a vehicle for interaction between Art and Architecture, between the University and children in Schools, and between academics and practitioners.

We report on how the Panorama has been used to achieve a wide range of objectives including the provision of a focus for getting schoolchildren involved and enthusiastic about issues in Art and Architecture. In addition we show how a combination of a physical display of the artwork and techniques used to produce it in parallel with a carefully structured digital interactive representation has been very effective in achieving a range of aims.

The Project

The City of Liverpool commissioned a piece of art from an artist who is well known for his paintings of architecture and cities, notably panoramas of Hong Kong, Zurich and Jerusalem. The painting is a Panorama of the City and done in his particular graphic style, to be displayed in the main historic Art Gallery in the city during 2008. The painting was completed in-situ at the Walker Gallery in Liverpool between January and March 2008, with a formal unveiling of the Panorama and the full collection of other Ben Johnson Panoramas at the gallery in May 2008.

The Panorama began as a 3d digital model that was then used as the basis for creating a 2D representation (Figure1). This in turn was used as the digital source for driving a CNC cutter that cut a template (or stencil) for each object or element in the scene. The stencil for each color that made up an object was laid in place, in order, on the painting and the correct color sprayed. It is a long and time consuming process.

Figure 1
The Interactive Panorama shows the growth of the painting from the line drawing shown here (derived from the 3D model view)



We recorded the process and created an Interactive Panorama that will be displayed as a piece of interactive art in a gallery adjacent to the display of the Panorama itself. The interactive painting has a 'layer' hidden behind the main painting, that shows the process that the artist went through to create key parts of the painting.

The Interactive Panorama has additional 'layers' of information that ties in information on Architecture, work by local artists and work by schools and colleges. In short, the Panorama was used as a catalyst for related activities, and the Interactive Panorama was envisaged as a portal through which these additional layers could be accessed.

An important accomplishment of this project was the communication and cooperation between the different parties involved: the University School of Architecture, an internationally acclaimed artist, National Museums Liverpool and local Schools and

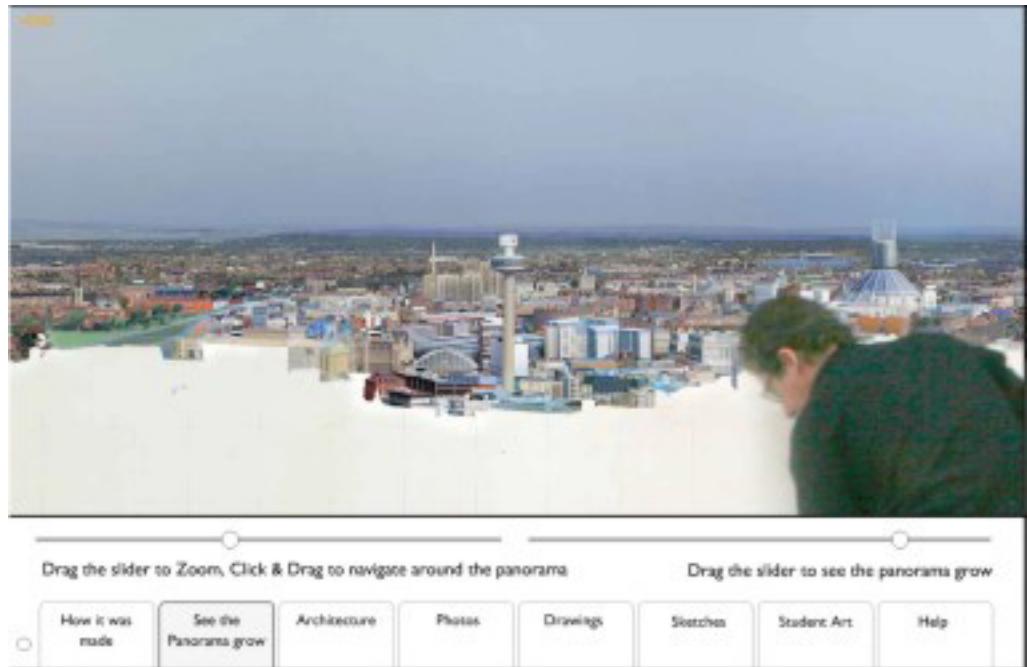
Colleges. We have accomplished this through what Anders (2005 and 2007) refers to a 'Mixed Reality'. The normally static painting has become the interface to a variety of digital representations of buildings and locations represented in the scene portrayed in the painting.

Involving schools and colleges

A key layer of activity that we added to the Interactive Panorama was 'Your Art'. This project presented the opportunity to get children and students in Local schools and Colleges involved in the project, with a view to generating greater enthusiasm and focus for interests in Art and Architecture. So, rather than the Panorama becoming simply a passive object, it became a focus for student art related to buildings in the City.

The work for this aspect of the Interactive

Figure 2
A still view from the sequence
in the 'See the Panorama
grow' layer(beta version)



Panorama was coordinated by the Centre for Architecture and Visual Arts. The work produced was, in many cases integrated with the normal curriculum, but the additional interest and focus on the Panorama has proven to be particularly effective.

Because of the local publicity relating to Liverpool being European Capital of Culture for 2008, and the fact that a well know artist was to paint a Panorama of Liverpool, Art educators in local schools and colleges had a stimulating focus for themed work related to the Panorama. In one case a local College was able to fit the artwork that was to be integrated with the Interactive Panorama, with the current Art curriculum. Thus the task of creating different representations of the same building, by using different representation and rendering techniques not only satisfied our intentions but also satisfied the curriculum requirements for the students involved.

Added to this the buildings chosen for

representation by the groups of students were chosen from the book by Hughes (1999) describing the important pieces of architecture in the city. Hence the students involved were each learning about the architecture in their city as well as developing and practicing their artistic skills.

Architecture and culture layers: research group collaboration

Our CAAD research group liaised with two other research groups in the school that have worked on media related to the city. These liaisons provided further information and digital representations that made significant contributions to the Interactive Panorama.

The Centre for Architecture and Visual Arts (CAVA) coordinated the collection of structured artwork by the pupils and students at the contributing

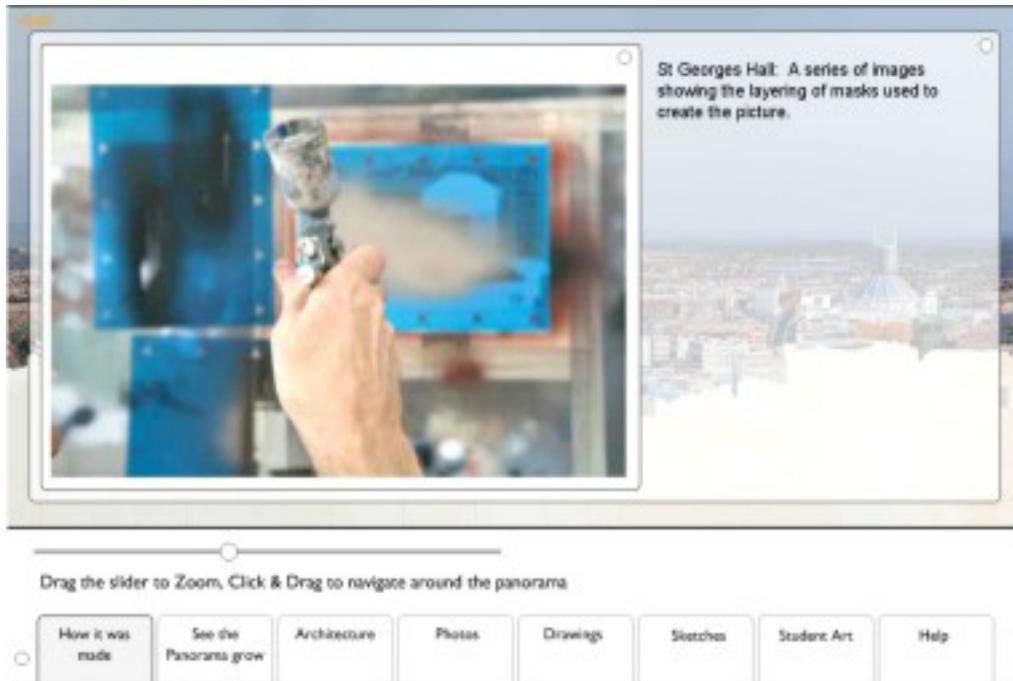


Figure 3
A still view from the sequence in the 'How it was made' layer (beta version)

schools and colleges. In addition the research group sourced artwork by other artists who have painted Panoramas or buildings in Liverpool. These images were used in the 'Your Art' layer of the Interactive Panorama. Additionally a range of historic and recent photographs were located by the group to contribute to the 'What's Where' and 'What's Changed layers (see Fig. 4).

A further set of useful archive material to contribute to another interactive layer behind the painting was located by the City in Film Research Unit at the University. Some 50 year old film of Liverpool had been traced as part of a large on-going research project into filmic representations of Cities. As part of this research a set of films on Liverpool subjects had been traced and these provided additional digital elements for a 'Historic film' interactive layer.

In the actual Panorama the two Liverpool

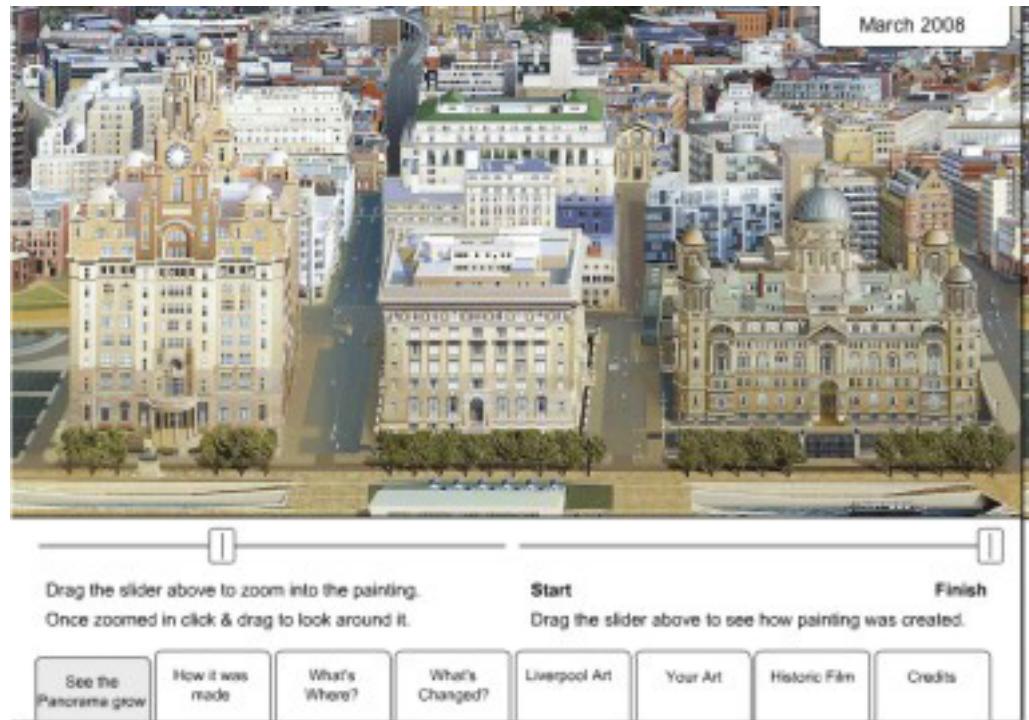
Cathedrals occupy dominant positions and the City in Film group had traced two films showing the construction of the Cathedrals. The addition of these elements completed the 'Historic Film' layer.

Some reflections

The Panorama, as a physical object, has a strong digital heritage, and that by completing the circle back to digital technologies we have been able to exploit it in a variety of useful ways.

Milgram and Kishino (1994) were perhaps the first to use the term 'Mixed Reality' to describe technologies "that involve the merging of real and virtual worlds somewhere along the virtuality continuum which connects completely real environments to completely virtual ones". This project is an example

Figure 4
Zoomed in view of the final
interface showing the in-
conic 'three graces' on the
waterfront



of a first stage in producing Mixed Reality; in this case being used to turn a normally passive piece of art into a dynamic and interactive interface to related digital media. The success of the principle and techniques used has been rewarding on a variety of levels.

The project lies towards the 'Augmented Virtuality' end of the 'Mixed Reality' spectrum (Anders, 2007). A further challenge would be to see if there is potential and advantage in extending this project towards the 'Augmented Reality' end of the spectrum.

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