

<b>Institution:</b> University of Hertfordshire
<b>Unit of Assessment:</b> Panel D (34): Art and Design: History, Practice and Theory
<b>Title of case study:</b> <i>Plenum</i>
<p><b>1. Summary of the impact</b> (indicative maximum 100 words)</p> <p><i>Plenum</i> is an installation conceived by Simeon Nelson in 2010 as a collaborative art–music artwork. It was performed six times between 2010 and 2013 at sound and light festivals in Poland, Estonia and the UK, at the Cambridge Music Festival, and at an Australian contemporary arts venue. Audiences totalling over 240,000 saw the work, with website visitors extending its reach to over 300,000; the Durham Lumiere alone, of which <i>Plenum</i> formed an integral element, created an estimated £4.3 million for the local economy. Festival and arts curators have described <i>Plenum</i> as ‘thought provoking’ and ‘inspiring’.</p>
<p><b>2. Underpinning research</b> (indicative maximum 500 words)</p> <p>Simeon Nelson, professor of sculpture, proposed <i>Plenum</i>, a light and sound installation, in 2010. The work was completed that year in collaboration with composer Rob Godman (Music department) and artist/programmer Nick Rothwell; the entire work underwent substantial revision in 2011.</p> <p><i>Plenum</i>, a computer-generated real-time architectural light projection, was a contributing work to a multi-city series of exhibitions, seminars and lectures, entitled ‘Lux Scientia’, that linked European academics, scientists and artists in a discourse about the relationships between art, science and belief. Informed by Nelson’s conversations with Durham University astrophysicist and theologian Revd Professor David Wilkinson, <i>Plenum</i>’s significance lies in its combination of cosmology and complexity theory, a new scientific paradigm that sees the cosmos as comprehensible at all scales and contexts. People’s engagement with the material world is arguably masked by the limitations of their senses and habits of thinking. The aim of the project was to show the possibility on an underlying order at both micro and macro-cosmic scales.</p> <p>The work takes the form of a projected grid of dots. This is the first instance of the application of the grid, much used in twentieth-century art, to the transformation of structures in science used in a public rather than a gallery context. The originality of the work is its depiction of states of matter at simultaneously very small and very large scales, linking the vast distances between stars with the vast emptiness inside atoms. The drawings for <i>Plenum</i> were based on the illustrations of crystal lattices found in modern physics textbooks. A perfect crystalline grid of dots underpins the work’s projection cycle: random dots begin to appear within the projection, forcing the surrounding dots apart; the top layers of the grid begin to disintegrate into what appears to be a gaseous state, shooting off in seemingly random trajectories. Thus the projection runs a full sequence from a graphic representation of a frozen state of absolute order through increasing entropy to a state of complete chaos.</p> <p>The structure of <i>Plenum</i>’s musical component is shaped by the same algorithm that determined the position of the position and the trajectory of the projected dots. Image and sound came together in a public forum to articulate in visual and sonic form the passage of states of matter and our ability to perceive them.</p> <p><i>Plenum</i> was presented at three festivals in 2011 (in Toruń, Poland; Tallinn, Estonia; and Durham, UK) and twice in 2012 (Cambridge Music Festival and in Australia); its earliest incarnation appeared at Toruń’s Skyway ’10 light festival (2010). The art–science dialogue that lay at the heart of <i>Plenum</i>’s conception continued during the three Lux Scientia festivals (2011), which included symposia held at each event, with contributions from scientists, artists, curators and commissioners. These colloquia drew upon the expertise of cosmologists, psychologists, artists</p>

and musicians to explore some of the ways in which art and science articulated belief, specifically the ways in which the narratives of science and art – each with their own subjective world-views and presuppositions – can collectively contribute to a fuller picture of reality. The discussions culminated in an EU-funded symposium entitled ‘The Future of European Collaboration’ in London.

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

#### Output

Nelson, S., Godman, R. and Rothwell, N. *Plenum*. 2011 (Computer-generated real-time architectural sound and light projection.)

#### Performances

August 2010: Sound and light projection presented on Collegium Maximum Façade, Toruń, Poland. Skyway '10 Festival. This was an early version of *Plenum*, substantially revised in 2011.

August 2011: Sound and light projection presented on Church of the Holy Spirit, Toruń, Poland. **Lux Scientia**, Skyway '11 Festival.

September 2011: Sound and light projection presented on Tallinna Raekoda, Tallinn, Estonia. **Lux Scientia**, Valgus Festival

November 2011: Sound and light projection presented on St Oswald's Church, Durham. **Lux Scientia**, Lumiere (produced by Artichoke Trust)

June–July 2012: Gallery presentation, Kick Arts, Centre of Contemporary Arts, Cairns, Australia.

November 2012: Sound and light projection presented on King's College Chapel, Cambridge, Cambridge Music Festival.

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

#### Reach

*Plenum* was presented on six occasions in Europe and Australia between 2010 and 2012. As a site-specific public work, each time it was projected onto different buildings and surfaces the configuration of the space created a unique visual experience. Festival and event curators confirm that, over the six performances, the installation was experienced by over 240,000 people; if website visitors are included, this rises to well over 300,000.

The organisers of the Lux Scientia festivals – at Toruń (Poland), Tallinn (Estonia) and Durham – reported that a total of 240,000 visitors attended the three festivals, which also generated over 500 press, online and TV/radio features. The festivals' combined reach was further extended by 125,980 website visitors and 2,294 views of the Lux Scientia micro-site. The UK curatorial team, the Artichoke Trust, drew 150,000 visitors to the Durham Lumiere alone, significantly more than the other two light festivals combined. Durham County Council estimated that the Lumiere generated £4.3 million for the local economy.

Figures are unavailable for the Skyway '10 festival appearance (Poland, 2010), but two other *Plenum* performances saw audiences of just over 2,000 each: KickArts Contemporary Arts in Cairns, Australia reported 2,100 visitors over June and July 2012; while the Cambridge Music Festival (November 2012) attracted an audience of around 2,500 over the two-night projection onto King's College Chapel. Again, the work's online presence extended the audience, with almost 3,300 Youtube views (in aggregate) of six videos of *Plenum* posted at various times between early 2011 and July 2013.

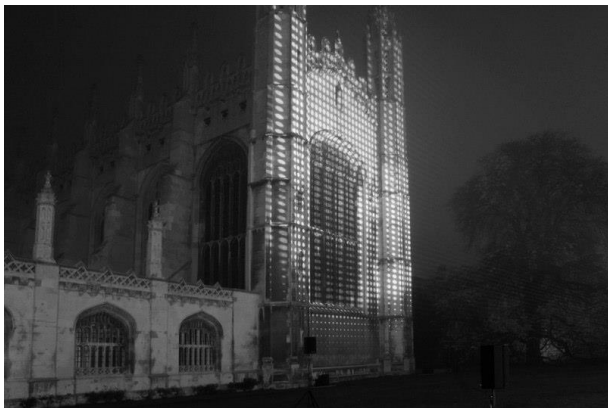
## Significance

Festival curators have commented on *Plenum's* significance and its reception by audiences. Mário Caeiro (Toruñ), who commissioned the original 2010 work, described *Plenum* as 'thought provoking and exciting', noting in particular that it had:

the capacity to manifest most complex facts as proposed by scientific knowledge through both sensorial and artistic language . . . in a way which isn't didactic in the worst sense, but truly aesthetic . . . the work explores the urban form in an idiosyncratic and unexpected way . . . after some minutes, the whole ecosystem of the artwork becomes patent, [and] it was frequent to see people absolutely fascinated with the processes.

After the 2012 Cambridge Music Festival, during which King's College served over two nights as the venue for the light and music projection, the festival's director said of the installation's visual aspect:

It shows how art can be inspired by science and how science is fundamentally beautiful, both visually and intellectually. It makes a nonsense of the supposed 'boundary' between the arts and sciences and it is important that both artists and scientists work to break this down – especially in Cambridge, a city renowned for its culture but also for its 'technology cluster' which is sometimes perceived not to engage with local people.



This particular performance created press interest from sources as diverse as *Gramophone*, technology publication *Cabume*, the BBC, and student newspapers *Varsity* and *The Cambridge Student*. The latter reported that 'many King's students appeared to enjoy the show, despite not seeming to know what it was about', and included humorous impressions alongside more considered observations of the artwork: 'One third year medic described the show as, "impressive, weirdly hypnotic and seriously atmospheric in the fog" . . . Another third year medic said she felt she "was going to be abducted if she stared at it too long".'

The installation's Australian curator reacted positively to the work's seamless blending of visuals and music:

The combination of the sounds and the visual made that I felt I was WITHIN the work; there were no boundaries between sound, visual and myself, it was an experience of being entirely "present", all "thought" becoming "non-thought" . . . I found the work utterly inspiring.

## Longevity

*Plenum* is now migrating from public art to concert-hall performance, in which the visuals will be projected inside the buildings rather than onto exteriors. In this form, it has been booked for three separate music festival appearances during 2013/14: the Huddersfield Contemporary Music Festival (November 2013), Frome Festival (July 2014) and Kings Place Festival, London (January 2014). This shift demonstrates that *Plenum* has succeeded as a customisable piece, capable of presentation in a wide range of environments and able to reach different audiences.

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

### Report

'Lux Scientia: A European Collaboration', 2012. Vital Statistics from the three European Light Festivals, compiled by Helen Marriage and Nicky Webb (Lumiere, Durham); Przemysław Draheim (Skyway Festival, Toruń); and Indrek Leht (Valgusfestival, Tallinn), 12pp.

### Selected Media Coverage

'Durham Lumiere festival "attracts over 150,000"', BBC News Tyne & Wear, 21 November 2011. <[www.bbc.co.uk/news/uk-england-tyne-15826943](http://www.bbc.co.uk/news/uk-england-tyne-15826943)>

'Durham's Lumiere festival of light "brought in £4.3m"', BBC News Tyne & Wear, 11 April 2012. <[www.bbc.co.uk/news/uk-england-tyne-17674458](http://www.bbc.co.uk/news/uk-england-tyne-17674458)>

Bara Golonova, 'The creation of the universe at King's', *Varsity*, 23 November 2012. <[www.Varsity.co.uk/culture/5325](http://www.Varsity.co.uk/culture/5325)>

Anthie Karavaggelis, "'Plenum" light show illuminates Kings Chapel, but is too "artsy fartsy" for some', *The Cambridge Student*, 22 Nov 2012, p. 9. Available from TCS downloads page (Michaelmas Issue 9 2012): <[www.tcs.cam.ac.uk/download/](http://www.tcs.cam.ac.uk/download/)>

'King's College Chapel illuminated for Cambridge festival', BBC News Cambridgeshire, 16 November 2012. <[www.bbc.co.uk/news/uk-england-cambridgeshire-20359362](http://www.bbc.co.uk/news/uk-england-cambridgeshire-20359362)>

Justin Lee, 'Joining the dots – Technology and music meet at Cambridge Music Festival', *Cabume* <[www.cabume.co.uk/blog/joining-the-dots-technology-and-music-meet-at-cambridge-music-festival.html](http://www.cabume.co.uk/blog/joining-the-dots-technology-and-music-meet-at-cambridge-music-festival.html)>

### Artist Interviews

Interview with Simeon Nelson, BBC Newcastle. Sound file available at <<http://2011.lumiere-festival.com/programme/installations/plenum/>>

Report on the Durham Lumiere, including an interview with Simeon Nelson, BBC Arabic News (report in or dubbed into Arabic): <[www.youtube.com/watch?gl=US&v=NwqlQcY\\_bMg](http://www.youtube.com/watch?gl=US&v=NwqlQcY_bMg)>

### Video

Several videos of *Plenum* are available on Youtube (including viewing statistics):

Toruń Skyway 11 (2011): <[www.youtube.com/watch?v=rCsirsXCEPU](http://www.youtube.com/watch?v=rCsirsXCEPU)>

Durham Lumiere (2011): <[www.youtube.com/watch?v=YkGaUd3D\\_bQ](http://www.youtube.com/watch?v=YkGaUd3D_bQ)>

Toruń Skyway 10 (2010): <[www.youtube.com/watch?v=cysjxHzCoh0](http://www.youtube.com/watch?v=cysjxHzCoh0)>

### Institutional Corroboration

Contact details are supplied separately for representatives of the Toruń Skyway Festival, Cambridge Music Festival and KickArts Contemporary Arts, who provided comments and visitor statistics cited in section 4.