UCL Environment Institute

Heritage and Climate Change: Protection at any cost?

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UCL Environment Institute event organised by the Institute of Archaeology with Oxford Brookes University

"By taking a narrow and rigid view of what makes a building or development sustainable, opportunities may well be missed to adapt and enhance what is already there." John Brown, Arup

The event, introduced and chaired by **Tim Marshall**, (Oxford Brookes University), sought to develop a reflective dialogue between those concerned with heritage protection and the planning system. We are in a changing context which is exhibiting a number of potential tensions: the continued embedding of the climate change agenda but the pressures for supporting economic growth in the wake of the financial crises of 2008 onwards; the reforms to the planning system which encompass elements of localism but also centralised control; and cultural attitudes towards built heritage encompassing demands for improvements to meet contemporary needs but also attachment to tradition. These are being played out in relation to a number of key policy issues, including: retrofitting buildings for energy efficiency; the enhanced scope for marine planning; and concerns over food security and also energy security.

Elizabeth Wilson (Oxford Brookes University) introduced the theme of time as a central dimension of sustainability. This is also, of course, relevant to planning as an activity centrally concerned with futures thinking. Sometimes such futures thinking is utopian in character, some more focussed on potential dystopias. But this is not just about envisioning the future; it is also about understanding that many of the decisions currently made about the built environment will have long lasting impacts and some of today's new development may become tomorrow's heritage. Similarly some of previous years' (decades', centuries', millennia's) artefacts are now valued heritage within today's built environment; other has less community value except as evidence of the past. Infrastructure often has considerable longevity; housing has had to last a long time due to low construction rates; but some buildings will be faced by ready redevelopment for reasons of economic profitability from redevelopment, a lack of attachment to or use for the buildings or simple physical collapse.

How does the planning system cope with time? A 2004 study by OBU looked across different sectors and found that the vast majority were looking only up to 5 years ahead. As might be expected, the utilities have the longest horizon when planning; agriculture was mainly operating on only an annual basis. Our society's conceptualisation of time, the past and the future is socially constructed. Different societies see time differently. Different groups within a society work with different times

scales: journalists on the daily deadline; teachers on a school year; politicians on the electoral cycle; and geologists on huge timescales of many millennia. Climate change is also pushing us to think on different timescales, looking back and forwards. The IPCC reports seek to understand patterns of climate change over thousands of years up to the present and, within a probabilistic frame, the future. We have to grapple with considerable uncertainties over these future patterns.

Considering the interface between climate change and heritage involves engagement with mitigation and adaptation. Climate change impacts will cover: rain penetration, flooding (coastal, fluvial, urban run-off), erosion and subsidence, drought and drying out of soils, overheating and fires, wind damage, seasonal shifts. Buildings of all ages will need to be assessed in the light of these changes. But the mitigation agenda will also put specific burdens on the built environment of different ages and valued in different ways.

This can be challenging to think through. Futures thinking can help with this. UK Climate Impacts Programme (UKCIP) created scenarios in 2001 based on two axes of autonomy/interdependence and community/consumerism. This suggests four worlds: national enterprise; local stewardship; world markets; and global sustainability. Planning and attitudes to heritage will differ in each case with greater conservation emphasis, say, under local stewardship and global sustainability. And there may be a dystopian future looming if planning for significant climate change does not occur. We may be heading for at least 4^0 C warming which could provide a radically different context.

Joe Flatman (UCL) identified some problems with current governance regime for heritage. We have a reactive planning system but a proactive heritage system that looks to protect aspects of 'significance'. There is a confused 'environmental' management regime with a split between the cultural and natural environments. Other cleavages are between the terrestrial and marine regimes and between local, national and European planning regimes, with the absence now of a regional tier. There is considerable fragmentation in local heritage planning with English Heritage under-resourced to provide continuity.

There are a range of possibilities for heritage protection under climate change conditions given the threat that it poses to existing valued features:

- Do nothing
- Managed retreat
- Hold the line by protecting slightly more sites
- Advance the line by protecting many more sites

One way of conceptualising this is to consider the concept of 'heritage offsets' so that some value for the existing historical built environment is incorporated into planning for climate change futures, e.g. for energy efficiency or renewable energy. This would require explicit consideration of the value of heritage conservation vis-à-vis preparation for climate change impacts and implementing the mitigation agenda.

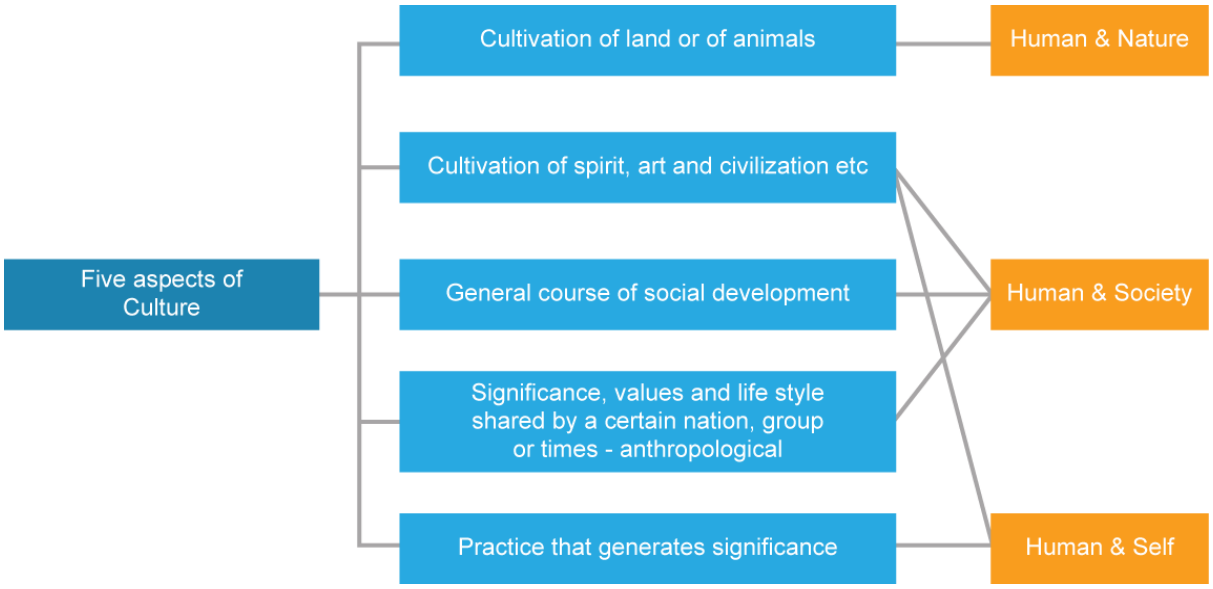
Changes that will be needed include: improved holistic management; improved significance mapping of historic sites; and improved communication across professional barriers. Joe argued that the culture of heritage planning needs to change and that the climate change agenda is just a driver for this change.

John Brown (Arup) talked of the relationship between commercial development and heritage. The uncertainty over the future of PPS5 is problematic. But there are a number of measures that can be used such as supplementary planning documents or plan policies for specific assets. Account need to be taken of the positive role of the historic environment in delivering wider sustainability objectives. Best practice can be publicised though Local Development Framework Annual Monitoring Reviews and improved standards can be encouraged through, for example, design and conservation award schemes.

There is a need to cover all the threats that climate change may impose, including for example the change in vegetation that will affect historic parks. Changes in the marine environment will affect off-coast assets substantially. Increased extremes of wetting and drying may heighten the risk of ground subsidence and accelerated decay of stonework, while more frequent intense rainfall can increase increased erosion of archaeological sites and flooding in historic settlements; the latter has an impact on insurance of historic buildings. Changes in hydrology may put buried archaeological remains, including well-preserved wetland archaeology, at risk. Historic buildings, collections and designed landscapes may also be at risk from new distributions of pests.

There is the potential to generate a business case for commercial clients that allows heritage to be protected. Strategic advice at a high level can alter the context for such clients. There is also the potential to work with local communities under the Big Society umbrella. The essence is generating behaviour change within the commercial sector.

Most new legislation and regulations are aimed at new build not heritage assets. Building Regulations incorporates a 30 year timescale. EIA, BREEAM, etc. also do not have this historical perspective. Arup's SPeAR tool seeks to incorporate cultural heritage. One important aspect is to map values associated with the historic environment. Using Pocock's analysis of values can provide a useful framework, which can be operationalised in conjunction with community involvement:



(source: Arup)

Discussion in the afternoon considered significance, quantification, mitigation and adaptation, management and leadership across four areas:

- Retrofitting buildings
- Retrofitting places
- Renewable energy projects
- Land and coastal management issues

Defining **significance** of heritage assets is a key component of conservation planning. Climate change means that such significance could be judged in relation to future changes as well as the past, i.e. assets may become rarer due to climate change. However rarity is not the only criteria of significance. PPS5 definition is tautological but is defined in more detail in supporting material and international charters. Such a term is defined through practice (the practice of heritage practitioners) but may be lacking coherence or clarity for those outside this area of practice.

There is an interesting parallel with the natural environment, where there is a shift from emphasis on designated species and habitats, often protected on the basis of rarity, towards an ecosystems approach that emphasises the functioning and health of broader ecosystems. The question was raised as to whether there was a parallel in the built environment.

While the assumption is that older buildings have less functionality than more modern ones (i.e. they become obsolescent), this may be challenged. Older styles of construction may be more effective in conditions of heat stress. Also older places may have greater functionality in terms of social movement, urban use and local economic development (the "heritage benefit"). There may be a nostalgia/memory dimension and/or some inherited functional relationship to the built environment; aesthetics also are pertinent.

On **quantification**, there are major gaps in data available to support knowledge of historic assets. But it could also be argued that an objective database is elusive given the social judgements (who's significance?) and values involved. Transparency in making judgements and support for informed decision-making is vital. There is potential for linking in to the ongoing work on defining and measuring well-being (see ONS and NEF).

It is important to gather the information that is available in a systematic way and to identify what is not known. Some element of aggregate quantification can support planning work. It is also important where it can identify the value of less-visible aspects of the built environment. To be useful any database or register (such as Historic Environment Records) needs to be regularly reassessed. Expanding such data does raise privacy and cost issues.

Turning to **mitigation and adaptation**, the main impact will come from other organisations on urban heritage seeking to address the carbon agenda. The costs could be considerable. This may be justified in terms of mitigation but there may be reasons to wait on action for adaptation until more specific evidence is available. Action on the large scale may have major implications: e.g. the National Trust decision not to replant beech trees because of lack of suitability in a future climate.

On mitigation, the Climate Change Act targets are also highly relevant and will drive change. The capacity of the British construction industry to support such change needs to be addressed. Retrofitting for mitigation can also deal with adaptation at the same time.

For reasons of mitigation and adaptation (and also other social pressures) green spaces may become more significant and organisations could plan for this now. This will involve new ways of managing public use of such green space. Urban green infrastructure will be valuable in relation to surface drainage, urban heat island, etc. but this will raise new demands on water management and horticulture also. Resources to support municipal green space management need to be safeguarded and tools for planning gain (such as Community Infrastructure Levy) utilised to their full.

On **management** the impact of localist planning may be considerable. There is national guidance and policy development occurring in areas of adaptation and climate change risk management. However, departmental silos are hindering action and the regulation (e.g. development control) is not sufficiently resourced to ensure high quality decision making where heritage is concerned. Statutory bodies are going to be affected in terms of providing their advice to development control due to financial cuts.

Management is required to ensure that retrofitting can be promoted, financed and not hindered by regulation (timing as well as decisions made). There also needs to be a cultural shift to provide public support for such retrofitting.

Leadership was the final issue discussed. This suggested that there may be a need to regulate building owners and landlords to ensure the key actions around retrofit are taken. Public sector estates also offer a significant opportunity. The insurance industry may be a driver in relation to adaptation, certainly where flooding and subsidence risks are concerned. Key owners may be important targets: National Trust, church bodies, etc. The importance of Climate Change Act targets for 2050 cannot be under-estimated. Win-win options for heritage and carbon reduction need to be identified and a road map over time set out to deliver carbon reductions.

Some key conclusions:

1. To avoid too limited a perspective, a broader and more socially inclusive definition of "significance" is important.
2. However significance will remain highly contestable and a degree of quantification may play a role in giving the concept more authority.
3. Mitigation and adaptation to climate change raises issues of cost and possible trade-offs with heritage concerns which need to be carefully considered in each case, alongside the demonstrated ability to deliver identified solutions.
4. Retrofitting the urban environment is probably the highest priority and needs to be understood, widely supported and action delivered.
5. Applying CCA 2008 carbon targets to a variety of sectors will be a key driver for finding win-win solutions.

Notes by ***Yvonne Rydin,*** Director of UCL Environment Institute
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