

TITLE

Entropy and Performance

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KEYWORDS

Entropy; Environment; Performance; Integrated Paradigm

ABSTRACT

This paper and the accompanying exhibit of drawings and film, will build on previous CA2RE presentations that looked at the relationship between tacit and explicit knowledge in the discipline of architecture by presenting a current research project that has measured and mapped environmental data and social experience in a modern Irish school building from the late nineteen seventies, and will present design propositions about how this building could be conserved and protected into the future while addressing the technical flaws that are currently contributing to its decline;- Completed in time for the Iranian oil crisis of 1979, and predicated on an almost unlimited supply of electricity by burning turf from the surrounding boglands, Birr School struggles with the changed environmental context of reduced fossil fuel consumption in the current century. Recognised as an exemplar of modern architecture, the building has been awarded funding by the Getty Foundation under its *Keeping it Modern* conservation initiative to support the development of a conservation management plan.

The research goes beyond mere conservation to analyse the relationship between environmental performance of the school fabric and the social experience of students who learn there. The data gathered includes quantitative analysis of heat loss, phpp analysis, air-quality measurement, daylight measurement, etc. and overlays these on qualitative data provided by students into their social and somatic experiences of the spaces. In examining the correlation between these data sets, the research seeks to test a hypothesis about the lived experience of a mat-building being conducive to social wellbeing. This hypothesis argues that thermally textured environments are necessary to stimulate learning and that the standard comfort conditions anticipated by contemporary building regulations may not be appropriate for schools.

The last part of the research is propositional in nature as it makes design proposals for ways to address the environmental failings of the building while still preserving the qualitative experience of the spaces. The project draws on design precedents such as Hunstanton School by the Smithsons, and the Free University of Berlin by Candillis, Josic, and Woods, as well as theoretical ideas from sources as diverse as Gottfried Semper and Inaki Abalos. The architectural propositions also build on other design projects within my practice, where the roof has emerged as an important locus of design, and it will extrapolate these to suggest ways that the school can continue to perform for decades to come.