Qualitative and Quantitative Traditions in Sustainable Design

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Making architecture that responds to the many sustainable narratives that flow through contemporary society cannot easily reside in defined professional or academic traditions. It does not make for simple theoretical constructs with which to frame design processes. Instead, it follows the same paradoxical and sometimes counterintuitive path as sustainable development does within our wider social and cultural environments.

NOTES


2 The author is a partner in the firm of Brennan and Wilson Architects who specialize in rural and sustainable design in Scotland.


4 Andrew Blowers, “Environmental Policy: Ecological Modernisation or the Risk Society,” *Urban Studies* 34, no. 5 (1997): 845-871. This is an excellent paper that sets out some of the complexities and contradictions to be found in sustainable theory.


challenges that the architectural profession faces in the UK, in dealing with discipline specialization and new construction procurement methods.

7 Simon Guy and Graham Farmer, “Reinterpreting Sustainable Architecture: the Place of Technology,” *Journal of Architectural Education* 54, no. 3 (2001): 140-147. This paper attempted, for the first time, to identify and codify sustainable design typologies.

8 Kiel Moe, “Compelling yet Unreliable Theories of Sustainability,” *Journal of Architectural Education* 60, no. 4 (May 2007): 24-30. This article seeks to question the techno-centric stance of sustainable architecture, with reference to cultural commentators such as Giles Deleuze.


10 Ibid. p. 3.

11 Ibid. p. 163.

12 Ibid. p. 97.


16 Reyner Banham, *The Architecture of the Well-Tempered Environment* (London: Architectural Press, 1969). This was the first book to explain architecture through the
development of building services, and how it affected and molded the emergence of new building typologies.


18 Rachel Carson, *Silent Spring* (London: Hamish Hamilton, 1963). Although seen as a precursor to the key texts that define the environmental movement, it was concerned primarily with the effects of pollution on wildlife.

19 Donella Meadows, Dennis Meadows, Jorgen Randers and William Behrens III, *The Limits to Growth: A Report for the Club of Rome’s Project on the Predicament of Mankind* (London: Earth Island Ltd., 1972). This publication was commissioned by the Club of Rome, and established an early computer simulation that worked through twelve global development scenarios that were modeled over two centuries.

20 Andrew Dobson, *Green Political Thought, 4th ed.* (London: Routledge, 2007). This is a definitive and critical overview of the political ideologies of the green movement.

21 Francis Sandbach, “The Rise and Fall of the Limits to Growth Debate,” *Social Studies of Science* 8, no. 4 (1978): 495–520. This paper makes an excellent recent history of the various strands that constituted the environmental movement.


24 Ibid. p. 504.


28 The Tressour Wood House was designed by the author while working at Gaia Architects in Scotland.


30 Peter Schmid, *Bio-logische Baukonstruktion* (Koln: Rudolf Mueller, 1986). Peter Schmid and others have formulated strategies of “building biology” whereby the design, form, construction and materials of a building were held to have profound consequences for the health and well-being of the building user. Schmid’s book is perhaps the best overview of the theoretical underpinnings and architectural outcomes of this approach.

31 Jürgen Habermas, *The Theory of Communicative Action* (London: Heinemann, 1984). This is the key work by Habermas in relation to this field of inquiry.

32 At a “top down” level, international treaty obligations drafted in respect to addressing climate change are translated into “national outcomes.” In Scotland’s case, this includes the reduction of carbon emissions by 80% by 2050, and specific targets for the construction industry through legislation and statutory standards. Although techno-centric in its operation, the statutory obligations and the commercial imperatives provide a “top down” approach, affecting how building design develops and mutates. In a Scots context, standards for housing have moved from regulating fabric loss to include air-tightness and the use of renewables.

34 Department for Communities and Local Government, *Code for Sustainable Homes: Setting the Standard in Sustainability for New Homes* (Watford: Communities and Local Government Publications, 2008), 65. Credit scores are given if the building has a ratio of internal floor area to footprint of greater than 3:1.


38 The design of the building structure was undertaken by the author while working at Gaia Architects. Construction and fit-out was undertaken by Brennan and Wilson Architects.


40 Ibid.


48 Scotland’s Housing Expo ran in August 2010 in Inverness. It included 40 exemplar dwellings selected by open competition to illustrate and encourage innovation in the housing sector.

49 “Designing for Survival, the President Introduces His Long Life/Loose Fit/Low Energy Study,” *RIBA Journal* (1972). No author cited

50 Ibid.
FIGURE CREDITS

Fig. 1: MIT Museum

Fig. 2, 4 to 10: John Brennan

Fig. 3: Colin Wishart

Fig. 11: Nigel Rigden

Fig. 12: Nick Sharp