be grounded in a more robust and sophisticated approach to knowledge representation.

The problem of rule induction

An even simpler villa generator than that described by Hersey and Freedman would have just one rule for each known Palladian villa design. Application of this rule would produce the corresponding villa. A random number generator could choose among rules. Such a system would regenerate the given corpus, no more and no less. (It would be like randomly riffling through the pages of the *Four Books*.) What would be wrong with that? Why would nobody write a book about it?

For one thing, it would have no explanatory power. Things get interesting when simple, elegant rules can be shown to cover large numbers of apparently disparate cases. Powerful scientific laws cover large numbers of observations, deep mathematical theorems yield all sorts of interesting results, and we should expect design rules to distil the general principles of an artefact type or style.

Secondly, it would not allow us to generalize from the original corpus of specific design responses to new (perhaps unanticipated) design situations. And generalization of the original Palladian corpus is clearly what Hersey and Freedman had in mind. But there is no intrinsic limit to generalization; you can define 'Palladian' narrowly (as little more than the given corpus) or broadly — to encompass British and American neo-Palladian, post-modern pastiches, and so on. It depends on the purpose for which you are making the generalization.

Hersey and Freedman describe their trial-and-error process for defining rules and exploring their effects on the resultant design, but they have little of interest to say on the very significant problems of rule induction from a corpus; they do not make a convincing case that their own set of rules is particularly cogent and illuminating, and they are fuzzy about the purposes of the generalizations that their rules can make. In the end, they do very little to engage the underlying theoretical issues. They seem content to demonstrate that they can program a piece of software that produces more or less plausible-looking results. That might be acceptable in a student programming project, but surely not in a scholarly monograph.

Fast architecture?

So this work has some serious problems, but it is a telling straw in the wind. Think of it as a practical demonstration of a new architectural marketing strategy. It ushers in the age of the fast architecture franchise — a form of practice that will inevitably find its niche alongside the signature-design boutiques and the big corporate offices. As the cost of computation continues to decline, and as the technology of knowledge-based design systems continues to develop, it will become increasingly feasible to construct systems that rapidly and inexpensively produce fairly convincing projects in fashionable styles. Some architects will figure out that they can effectively use this technology to franchise their characteristic looks, much like Laura Ashley and Ralph Lauren. (The work that results may not be first-rate, but then a Big Mac is not cordon bleu. It will at least be quick, cheap, and adequate.) We will have software-based Mac-Decon's, PoMo Huts, Colonel Planners, and Techno Bells — all with their 'secret' ingredients and recipes. Sooner or later, one of these systems will pass a sort of architectural Turing test: it will get itself published and praised in the *Architectural Review*.

William J. Mitchell

Notes

1. George Stiny and William J. Mitchell, 'The Palladian Grammar', *Environment and Planning B*, 5, 1 (1978), pp. 5–18. George Stiny and William J. Mitchell, 'Counting Palladian Plans', *Environment and Planning B*, 5, 2 (1978), pp. 189–98.
2. For a discussion and bibliography, see William J. Mitchell, *The Logic of Architecture* (Cambridge, Mass., 1990).
3. For recent work on shape-grammar interpreters and related topics, see *Formal Design Methods for Computer-Aided Design*, edited by John S. Gero and Fay Sudweeks, preprints of the IFIP WG 5.2 Workshop on Formal Design Methods for Computer-Aided Design, held at Tallinn, Estonia, 16–19 June 1993 (Key Center for Design Computing, University of Sydney, New South Wales).
4. There is an extensive technical literature on algorithms for exhaustively enumerating possible subdivision of rectangles into smaller rectangles. See J. P. Steadman, *Architectural Morphology* (London, 1983).
5. W. J. Mitchell, J. P. Steadman and R. S. Liggett, 'Synthesis and Optimization of Small Rectangular Floor Plans', *Environment and Planning B*, 3, 1 (1976), pp. 37–70.
6. This approach to the task of assigning 'Palladian' proportions to the rooms in a rectangular floor plan is discussed in detail in William J. Mitchell, *Computer-Aided Architectural Design* (New York, 1977), pp. 472–4.
7. For a survey of the application of knowledge representation techniques in computer-aided design, see R. D. Coyne, M. A. Rosenman, A. D. Radford, M. Balachandran, and J. S. Gero, *Knowledge-Based Design Systems* (Reading, Mass., 1990).

**Pig City Model Farm: A Handbook on Architecture and Agriculture**
by Rob Kovitz
Princeton Architectural Press, 1992
$19.95
0-9696169-0-2

Pig City Farm started as a thesis, with the first submission stating 'I want to profess the implausibility of making a single sustained and systematic design argument. The unitary building project is not the reason for architecture, but its affect. It is an affect which is becoming less possible, less appropriate, and less defensible. It is a kind of utopia.' It is therefore likely that the most
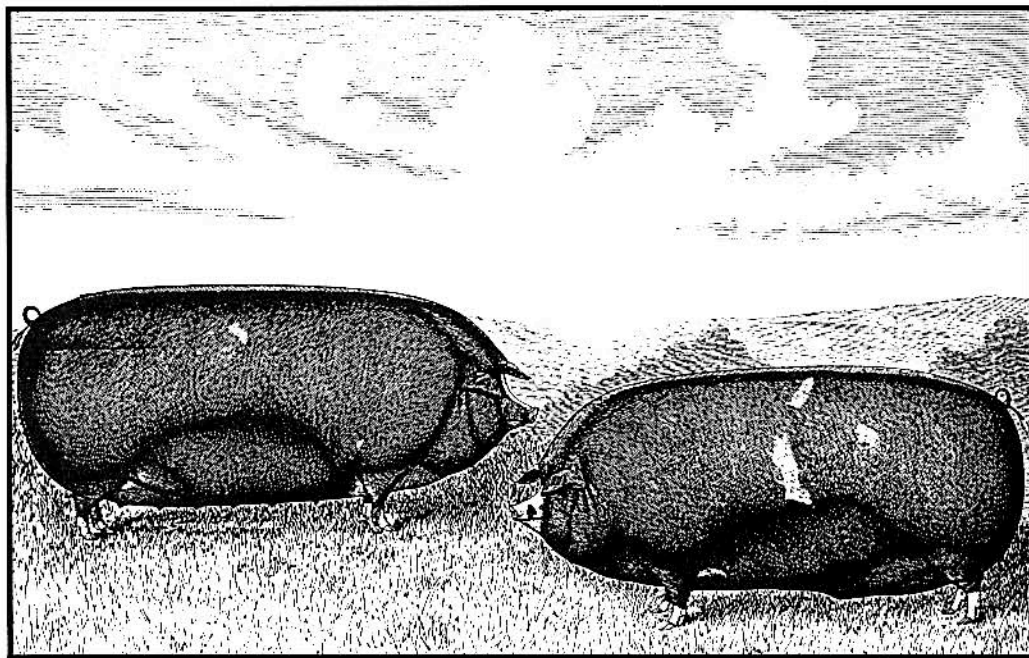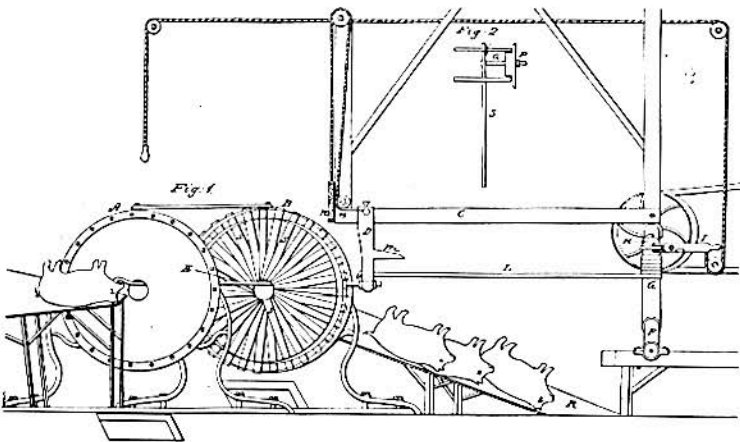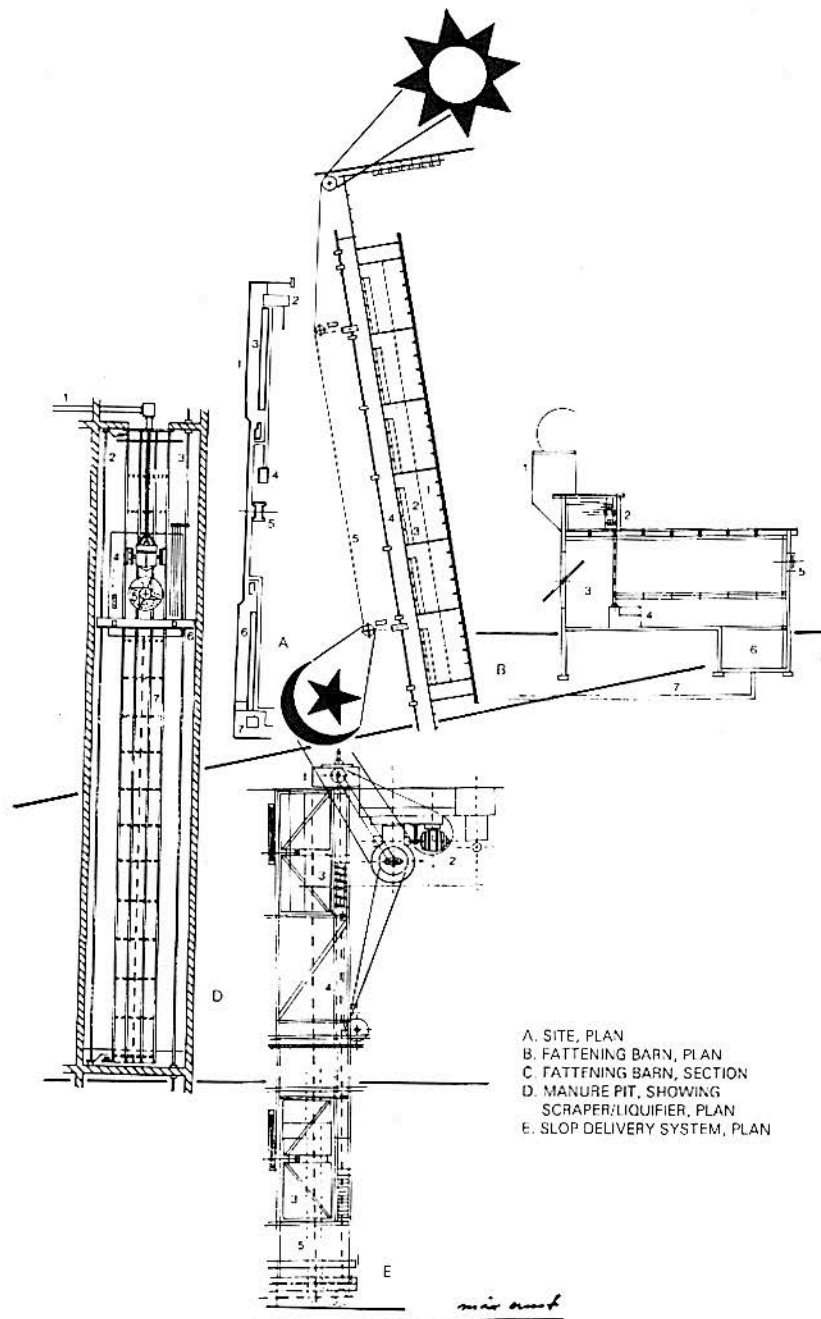

Poland China Pigs
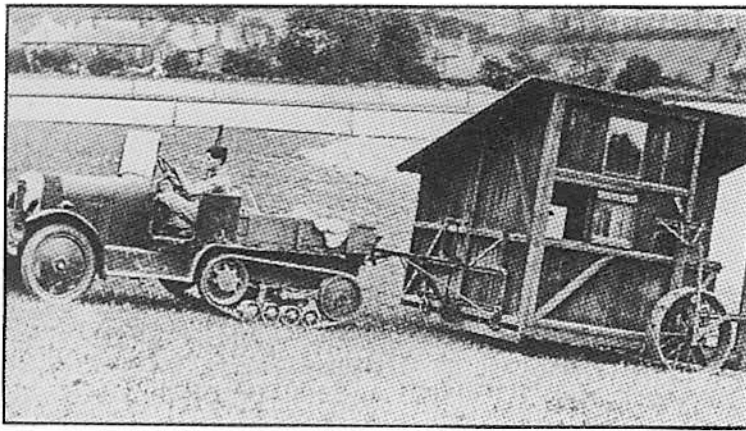
Portable pig house

Feeding hogs without waste, 1756

Hog-cleaning machine, 1864

A. SITE, PLAN
B. FATTENING BARN, PLAN
C. FATTENING BARN, SECTION
D. MANURE PIT, SHOWING
SCRAPER/LIQUIFIER, PLAN
E. SLOP DELIVERY SYSTEM, PLAN

Model Pig Farm, by Max Ernst, Cologne, 1920. Rejected by the Cubist Section d'Or exhibition, Paris. Given to the Museum of Modern Art, New York, by Tristan Tzara.

appropriate definition of thesis in this instance is an unproved statement put forward as a premise in an argument. And it is in the making of this 'argument' that one strength of this book lies.

Various games played with the twin scenarios of the production of pig meat and the accumulation of architecture are at times woven together and at other times held apart for comparisons as to their similarities and dependencies. Cruelty and complicity are implied, while the author's conviction that these comparisons are significant is moving, if not wholly convincing.

The argument, the theme and indeed the whole story is made by a brilliant selection of quotations, abstracts, diagrams and photographs, presented with an ordered generosity. The book is a graphical delight. Its size and the thickness and texture of the paper make it pleasing to handle, while the generous layout enables the reader to make copious notes at the appropriate spot. Significantly, the pages are not numbered.

The comparative simplicity of the chosen 'academic' task allows Kovitz to suggest labyrinthine comparisons not only with society but with man's duplicity of purpose. This is achieved with a masterly control of the collected material, its

faithful reproduction and meticulous indexing. Such order and clarity enables the reader continually to examine, if not question, his own attitude, through time and rereading, to a range of moral, ethical and political conditions and situations. I personally found the author's superior attitude to man's insensitivity rather jarring. He has humour but little generosity.

The recognition of the physical similarity of pig to man is a secondary tool used for the selection of the material, particularly the graphic. The felicity of Kovitz's selections is highlighted in his use of just two quotations for the entire

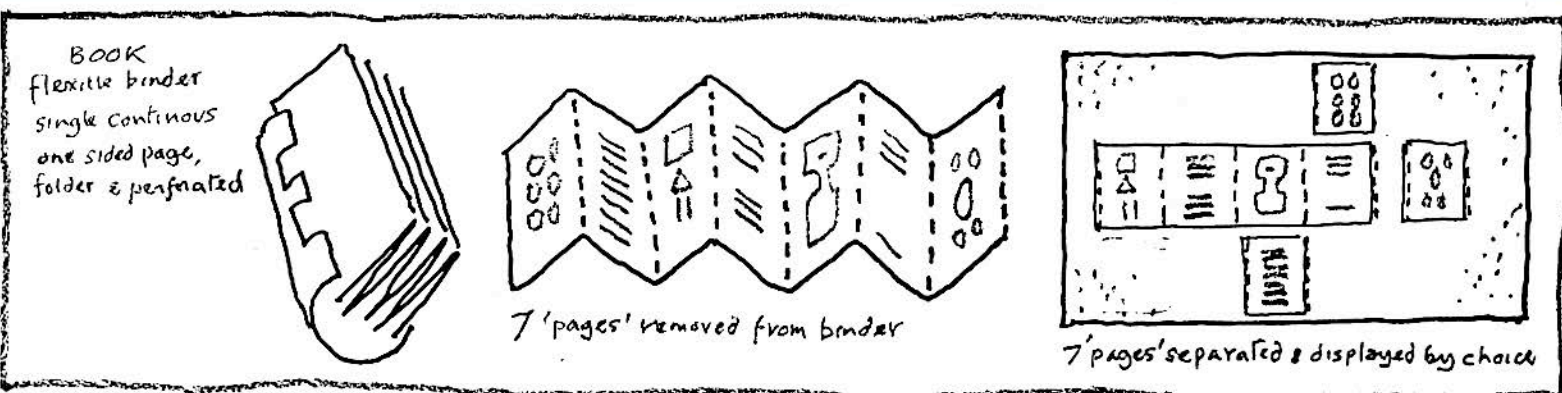Another strength of this book, and I think the most important, lies in its open-ended form with respect to both argument and 'evidence'. Architectural theses should not merely explore a chosen field of theory or research, but in so doing should also provoke the reader to examine his attitude to or extend his knowledge of the subject.

The readers of such a thesis are likely to be in sympathy with, or at least to have prior interest in or intelligence of, the subject, the proposition, the particular research. It will encourage, enlarge, bore, satisfy or reassure those like minds, and take its place, large or small, in man's collective knowledge, in form retrievable. But what if it is an intelligent carpet-bag of opinions, views, comparisons, open-ended discussions and doubts? Then the importance of identifying with its intentions, appetites or enquiries is soon replaced by the reader's using the piece with constructive greed as another tool with which to turn his own mind.

Thus do I approach the real importance, to me, of this book. It's not Engels, or the social delineation of the Chinese revolution, or the brilliance of Charles Fourier that draws me. It's its 'containment', in physical form, of a mix of ideas and images that I imagine I have part seen or thought of before, somewhere. Now they are captive and can be used, to my order and at my own frequency. This book can be devoured, as if a pig. I like it very much and suggest that a further edition be prepared thus for the delectation of others.

Cedric Price

BOOK
flexible binder
single continuous
one sided page,
folder & perforated

7 'pages' removed from binder

7 'pages' separated & displayed by choice

Hans Poelzig: Reflections on His Life and Work
by Julius Posener
Architectural History Foundation /
MIT Press, 1992
287 pp., £44.95
0-262-16127-3

Perhaps the greatest tribute to Poelzig in this loving portrait by his pupil is Julius Posener's recollection of him as a teacher:

There are teachers who believe they are the only ones who can put their students on the straight and narrow. They see themselves as masters and philosophers. They are advocates of a particular doctrine. Mies, Perret, Tessenow, to mention but a few, were teachers of this kind. Poelzig, however, had no doctrine to offer to those who came to him and he most certainly did not want them to model themselves on him. If a student ever mentioned a building of his, Poelzig would say: 'But we are not talking about the Capitol Cinema.' It is possible to speak of the 'Mies School' or the 'Tessenow School', but there was no Poelzig School.

Poelzig was different from the start. Born in 1869 — the same year as Lutyens — he was the son of Countess Poelzig and an unknown 'coachman' (possibly English). He thus belonged to a generation who had to cope with the bewildering succession of technical advances and catastrophic events which have moulded modern architecture. His early buildings in Silesia were affected by both the Jugendstil and the ideas of the Arts and Crafts movement, and his last works exemplify the reductionist aesthetic of official modernism. He gets a walk-on part in Pevsner's *Pioneers of Modern Design* with illustrations of the chemical factory at Luban and the office building in Breslau. But he is best known as an 'Expressionist' — a convenient label for any nonconformist of his generation.

During the Great War and after, Poelzig produced drawings of wildly inventive and sculptural unexecuted projects, such as the House of Friendship in Constantinople and the Salzburg Festival Theatre, and he succeeded in building the Grosses Schauspielhaus in Berlin, its great domed auditorium dripping with stalactites. Posener says he was initially asked to write this book about Poelzig as an 'Expressionist architect' but found himself anxious to qualify that generalization: 'it is a different kind of Expressionism from that of Bruno Taut or Erich Mendelsohn. Here, no new world is conjured up, neither Taut's world of fellowship nor Mendelsohn's world of new forms of construction. What is new in Poelzig's work refers to architecture, which is an art, not a philosophy.'

This is the appeal of Poelzig: he was a real architect, a thinking architect — not a theoretician or poseur — who delighted in form and in construction. The famous chemical factory, to judge by those familiar early photographs, revelled in the essential nature of brickwork. Poelzig liked masonry arches, and his later industrial buildings are as rational and as sensuous as anything by H. H. Richardson. But although he designed a number of factories he did not fall into the trap of believing that modern architecture must be led by technology. 'As it advances, technology is obviously striving more and more to get rid of material and consequently of form', Poelzig wrote in 1931. 'There is therefore no point in trying to attach artistic significance to technical forms.'

This book quotes extensively from Poelzig's writings. Much of their continuing relevance is a result of his remaining detached from and critical of the avant-garde. Referring to Mies, he asked, 'What is the point of getting rid of ornament if one transforms the whole building into a single ornament?' Poelzig was determined not to surrender to technology alone, nor to acquiesce in any sterile standardization. He continued to defend the role of the architect as artist — or, rather, as master-builder.

We want to capture for our work something that will not astonish for just a short time, not something that