

Afterword: Before and After Science¹

The processes of design and construction for these houses were grounded as much in the subjectivity of art and creativity as they were in the objectivity of any 'pure' scientific rationality. All of the clients' requests regarding technical and functional aspects were faithfully incorporated into the finished designs. But these requirements did not, in themselves, generate the design of any of the houses; they were simply added to the mix. Each house was based, primarily, on an architectural concept that originated from a variety of sources—overseas examples, a contemporary reworking of traditional designs or the geometry of a road.

Although most of the clients were directly involved in many aspects of their design, all left the formulation of the concept entirely to their architects. This was where the binuclear plan, the one-box square plan, the building blocks, the courtyard plan and the crescent-shaped plan originated. So robust were these sketch concepts that the clients could adjust various aspects to improve functionality—internal circulation, materials and details—without destroying the integrity of the idea.

While Fenner and Zwar believed that functional and environmental considerations were important, they were not the main reasons they rejected accepted architectural styles and adopted Boyd's and Seidler's visions of modernity. The principal reason was the aesthetic imperative: the visual appearance of modern architecture, art and design. What was important to these scientists was that their new houses incorporated forms, materials, details and equipment that represented particular physical attributes of the modern world. Whether or not these related to the functional requirements of a suburban house was often of secondary importance. Fenner's chance encounter with Lever House in New York—details of which he sketched in his diary because he believed they might be appropriate for his Red Hill house—reinforces the importance of this aspect.

Boyd's approach to architectural design was similarly subjective. The 1950s was a highly creative period for him, and his houses contained influences from a wide variety of sources. Breuer's binuclear plan, which he presented in modified form as the Fenner House, was just one of many concepts that he experimented with during that period. In one respect, Boyd's architecture could be termed experimental because of this inclusiveness, but at the same time his approach was the antithesis of the true scientific experiment, where problems are solved through the careful observation of limited interventions on a specific model.

1 *Before and After Science* was the name of British musician Brian Eno's fifth studio album, released in 1977.

Seidler, on the other hand, believed that his version of transplanted European modernism was the only way for architecture to progress, and he worked with a limited architectural vocabulary derived from that single source. While this was seen to be a limitation, it was also his strength: it allowed him to pursue a sustained and incremental modification of that model. In doing so, Seidler avoided some of the dilemmas that obsessed his fellow practitioners: how to design houses that were 'Australian', or 'regional', in style.

Seidler's approach to the Zwar House could be compared with a scientific experiment in which scientists acknowledge and build upon the findings of previous researchers. The importance of the Zwar House, like the experiment, was not related to its status as an original, site-specific object, but its importance as a single increment in the long-term evolution of a house type. Part of a process of refinement in different architectural offices—and on different continents—the modestly proportioned Zwar House reclaimed one of the philosophical cornerstones of modern architecture: the idea that houses should be affordable for clients on average incomes.

These harbingers of a new era, however, contained significant technical flaws. It was as if the enthusiasm for the images and iconography of modernism had overtaken the architects' and builders' abilities to construct them as fully functioning houses. It was not that the brave new world promised by the early post-World War II houses lacked courage. It was more that, in regard to technological performance, some promised more than they delivered.

Grounds was highly sceptical about the existence of an 'age of science'. Architecture, for him, was tied up in the mystery of the creative process. Clients' needs were recorded and adhered to, but the design process was primarily an artistic venture. Grounds believed that the best designs transcended analysis. His substantial connections to scientist-clients—he was the most prolific, and most successful, designer of buildings for scientists in Canberra during the period of this study—were forged through a mutual understanding that architectural design was fundamentally a creative act.

The facts that two of the clients for the Vasey Crescent Group were scientists and that this ambitious attempt at cooperative design was so successful are important. The Vasey Crescent clients dispelled the notion that architectural design must be an individualist statement. They did not buy into the accepted orthodoxy that each house must, like a work of art, reflect originality, a sense of uniqueness or some identifying mark of its designer or owner. What was more important to them was the pursuit of a coordinated, symbiotic form of environmental design in which the houses worked in unison to create architecture whose whole was greater than the sum of its parts. The Vasey Crescent Group was a carefully calculated experiment whose success owed much to the commitment of all

those involved. Grounds and Boyd deserve credit not only for the rigour of the original concepts, but also for their patience and willingness to compromise in order to address the myriad concerns raised by their demanding clients.

As significant as the cooperative efforts behind the Vasey Crescent Group was the fact that the Philip House demonstrated a more accurate understanding of the science of building. While material from the Commonwealth Experimental Building Station had been available for some years, it had not been incorporated accurately into houses such as the Fenner and Zwar houses. While Boyd and Seidler demonstrated an understanding of the general principles involved, they often fell short when it came to the detail. It is possible that when considering issues such as sun angles and thermal properties of materials, Boyd and Seidler followed their own intuition rather than placing their trust in mathematical calculations.

But it was not Boyd, or Grounds, who could claim credit for the success of the Philip House in relation to environmental design. It was John Philip—a mathematician and environmental scientist—who was most responsible. Therein lies another twist. Philip did not begin his approach to domestic design with scientific calculations. Nor was he seduced—as much as some of his predecessors had been—by the appearance of modern architecture or design. Instead, Philip began his consideration of the kind of house that he wanted to live in with an analysis of existing Australian building types. Both John and Frances Philip saw merit in the ways in which older Australian buildings responded to the local climate. This was the closest that any of the scientist-clients had come to acknowledging the existence of traditional architectural style. While Fenner, Zwar and Frankel all considered the idea of building in anything that resembled a historical style to be abhorrent, the Philips were not so dismissive. But they were not interested in style in terms of aesthetic appearance. The merits that they saw in Australian vernacular buildings were related to how they operated in functional terms. In their search for an appropriate house, the Philips followed scientific methodology by building on established practice and knowledge rather than attempting to design from scratch.

After Grounds presented the Philips with a design solution that was an adept, modernist interpretation of historical precedents, John Philip introduced physics into the process. Backed up with mathematical calculations, he recommended that his architect make significant alterations to the design, including the location of rooms and the dimensions of eaves overhangs. The Philips later helped the Frankels to replan their Campbell house according to functional considerations. By being the principle protagonists for the Vasey Crescent Group, and by contributing so much to the design of their own house and to the Frankel House, John and Frances Philip's contribution to scientists' houses in Canberra was significant.

Like Philip and Frankel, Ben Gascoigne provided his architect, Bischoff, with a list of requirements for his house. Gascoigne's was the most systematic, and the most detailed, of all the briefs, and was formulated upon his experiences of living in environmentally deficient houses in the Australian Capital Territory. Gascoigne specified the way in which the house was to be orientated for sun and light, how it was to provide specific views outwards into the landscape, and how it was to contain suitable spaces for Rosalie Gascoigne to construct and view her artwork.

The idea that subjective qualities of artistic expression and creativity are central to this study became more apparent as the study progressed. While the Gascoigne House was essentially a series of crisp, modern and well-lit spaces for art, the Frankel House itself became the art object. No longer part of a search for a rational, postwar house that followed correct siting and planning procedures to optimise sun, light or view, this house was a perfectly executed, built diagram of a singular artistic gesture.

The connections to art continued long after the original clients vacated the houses. When the Zwar House was first completed, Seidler presented his clients with *Seclusion*, a Josef Albers print, to hang on the wall. More than half a century later, with the Zwar House demolished, *Seclusion*—now displayed in Zwar's townhouse—is the only remaining element of Seidler's integrated vision for a new way of living. After Candida Griffiths helped her mother, Frances, to restore the Philip House, the property was sold. It is now the home of Ron Radford, Director of the National Gallery of Australia. The idea that these houses equate, in some way, with art became unequivocal when Otto and Margaret stipulated that the Frankel House was to be sold after their deaths to purchase a painting.

The nexus between rationality and creativity, and between science, art and architecture, that lies at the core of this book was expertly navigated by Grounds more than 50 years ago when he worked with Oliphant, Frankel and Eccles on the Academy of Science building. Scientists, he decided, knew more about art than artists knew about science.

Grounds' theory is backed up by an intriguing statistic. Of the five scientists whose houses are discussed in the preceding chapters, four were married to artists. Heather Zwar and Margaret Frankel were potters; the latter was also a painter. Frances Philip was a painter whose portraits line the walls of the Academy of Science and The Australian National University. But of all the artist wives it was Rosalie Gascoigne who became the most celebrated. In the later years of her life, due to a number of factors—including Ben's support and the spaces that Bischoff provided for her in her Anstey Street house—Gascoigne came to be regarded as one of Australia's leading contemporary artists.

The above statistic reveals that the scientists whose houses are studied in this book chose partners who complemented their own ways of thinking and working. In life, and in architecture, they chose allies and accomplices whose abilities compensated for their own lack in certain areas. These personal and professional unions formed mutually beneficial partnerships that combined objectivity with subjectivity, and scientific rationality with artistic creativity. The houses that the scientists built for themselves and their families reflect a number of aspects of these dualities. Within their fabric there is evidence of a passion for the modern world, of optimism, and of an underlying rationalism—all of which contributed to the overwhelming idea that the national capital location represented a new beginning, and these clients were building a new world.