

2. Paradigm Shift: Boyd and the Fenner House

Designed for the ANU Professor of Microbiology, Frank Fenner—‘the most highly decorated and awarded Australian scientist of the 20th and 21st century’¹—his wife, Bobbie, and their two children, the ‘binuclear’-planned Fenner House was Boyd’s first commission in Canberra, and the second house that he designed for these clients.² The first design was for a site in Hotham Crescent, Deakin, but it proved to be too expensive and was abandoned. The second design—for a much larger site that the Fenners acquired on the corner of Monaro Crescent and Torres Street, Red Hill—was built during 1953 and 1954 by Karl Schreiner for the contract sum of £8500.³

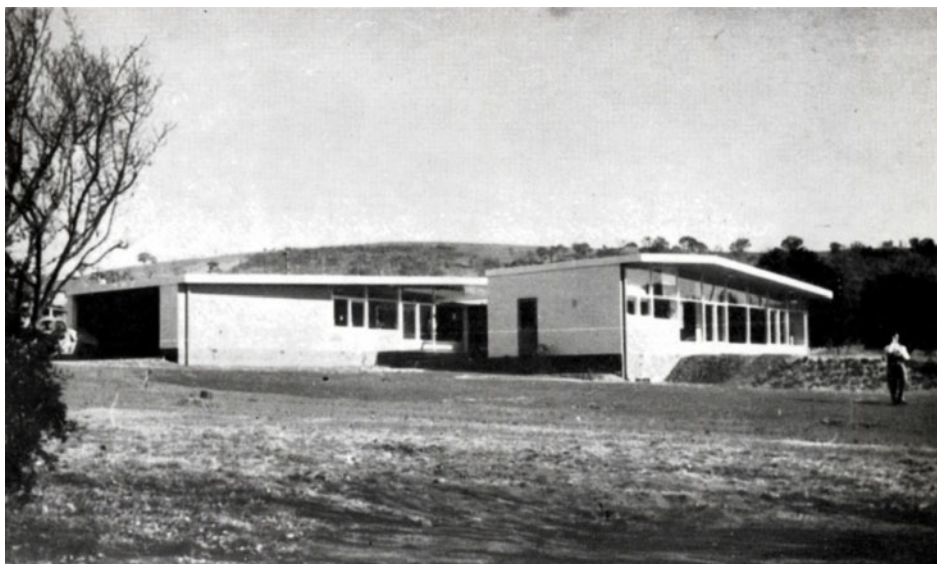


Figure 2.1 Fenner House, view from north-east

Photograph: from ‘House at Red Hill, Canberra’, *Architecture and Arts* 13 (August 1954)

1 Ann Moyal, ‘Preface’, in Frank Fenner, *Nature, Nurture and Chance: The Lives of Frank and Charles Fenner* (Canberra: ANU E Press, 2006), vii.

2 Fenner initially engaged Boyd in 1950 to design a house for the Hotham Crescent site. In 1952–53, Boyd modified the design to suit his client’s new site in Torres Street, Red Hill. Boyd’s other early Canberra house, for Manning and Dymphna Clark, was designed in 1952 and completed in late 1953.

3 Regarding the first design, Fenner recalled: ‘The builders in Canberra had never seen anything like [it] and did not want to build it so they tendered quotes that were far beyond our reach.’ Only one tender was received, for £25 000. ‘At the time, I was a young professor, it was just out of my [price range] altogether.’ Geoffrey Serle, *Robin Boyd: A Life* (Melbourne: Melbourne University Press, 1995), 133. Frank Fenner, Interview by the author, 18 October 2007. The final figure of £8500 excluded heating.

Everything about this house was different. While most houses in Canberra faced the street, the Fenner House straddled the large corner site diagonally in two completely separate blocks, connected only by a barely visible glass link containing an entrance hall. It was hard enough to distinguish where the 'front' was, let alone the entry. Unfamiliar from every angle, and deliberately eschewing any gesture to known symbols or established reference points of what houses were supposed to contain—front and back, prominent entrance, verandah, street elevation, facade, symmetry, dominant roof-form—the Fenner House, to many, hardly qualified as a house at all. It attracted a lot of attention from neighbours—and some interesting comments. As Fenner recalled, some of them thought that it was 'a farming shed or something like that'.⁴

Those who ventured inside might have been further surprised by the fact that the professor's house was so fundamentally grounded in functionality and rational thought that it was laid out according to what time of day it was. To the right of the entrance hall, a north-facing 'diurnal' block catered for daytime activities: living room, dining room, kitchen and laundry. To the left of the entrance, the south-facing 'nocturnal' block contained a garage, playroom, bedrooms, bathroom and study.

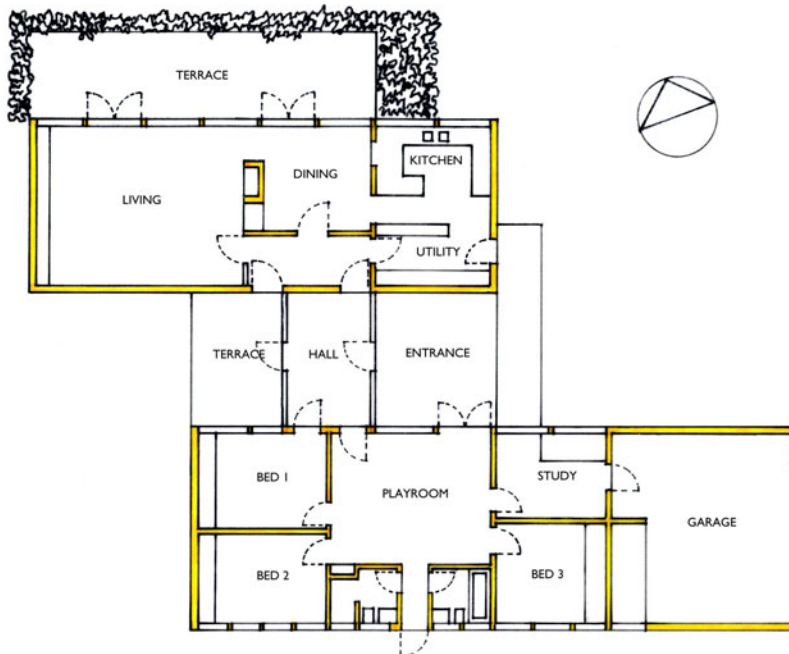


Figure 2.2 Fenner House, floor plan

Image: redrawn by the author from Robin Boyd. Courtesy of the Robin Boyd Foundation

4 Frank Fenner, Interview by the author, 18 October 2007.

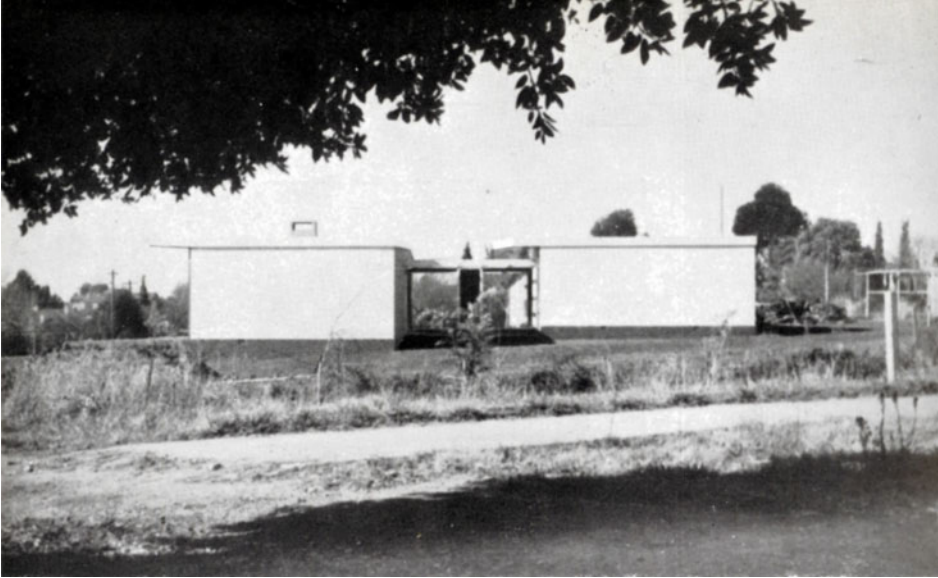


Figure 2.3 Fenner House, view from west. The diurnal block is on the left; the nocturnal block on the right

Photograph: from 'House at Red Hill, Canberra', *Architecture and Arts* 13 (August 1954)

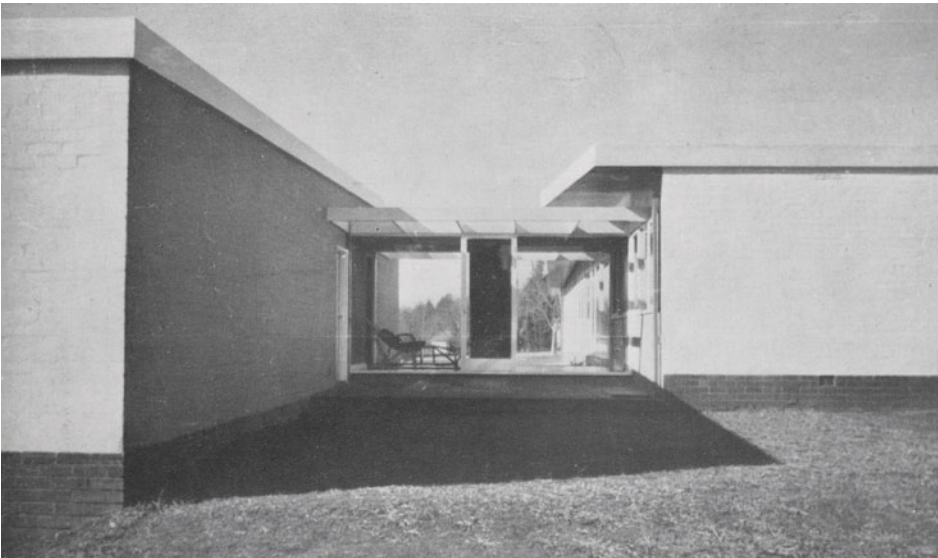


Figure 2.4 Fenner House, view from west

Photograph: from 'House at Red Hill, Canberra', *Architecture and Arts* 13 (August 1954)

In spite of any reservations that the neighbours might have had, the Fenner House was highly regarded by the architectural fraternity. Reported to have

‘contributed much to architectural thinking and contemporary design’, it was awarded the inaugural ACT Chapter Medallion from the Royal Australian Institute of Architects in 1956.⁵



Figure 2.5 Viewing Canberra Medallion on wall of Fenner House, 1956. From left: Karl Schreiner (holding screwdriver), Vicki Fenner, Mrs Schreiner, John Scollay (ACT Chapter, RAlA), Frank Fenner, Marilyn Fenner and Bobbie Fenner. Boyd was in the United States at the time

Photograph: Manuscript Collection, Adolph Basser Library, Australian Academy of Science. Fenner, F. J., FAA (1914–2010), MS 143, Box 3

The story of the Fenner House is chronologically and conceptually linked to Boyd’s seminal 1952 publication, *Australia’s Home*, an analysis of Australian houses in which he was particularly critical of those in Canberra. It is highly likely that, in 1950, when Boyd stood in ‘the lonely valley’ and lamented the ‘kaleidoscope’ of historical styles—‘jazz, Californian bungalow, Spanish Mission and Elizabethan’, all borrowed from Sydney and Melbourne, and the ‘curving avenues of florid, pretentious façades’—he had travelled to Canberra to meet the Fenners and was standing on their house site.⁶ The Fenner House

⁵ *The Canberra Times*, November 1956.

⁶ Robin Boyd, *Australia’s Home: Its Origins, Builders and Occupiers* (Melbourne: Melbourne University Press, 1952), 206. Boyd began writing *Australia’s Home* before he and Patricia departed for their overseas study tour in the second half of 1950, completed it after his return to Australia, and published it in 1952. Boyd’s critique of Canberra in *Australia’s Home* is dated 1950, the same year he was first commissioned by Fenner: ‘By 1950 the lonely valley had grown into a city.’

was Boyd's reaction to all that had come before. A riposte to Canberra's existing domestic architecture, it signalled the arrival in the national capital of a new way of thinking about architecture, and a new aesthetic.



Figure 2.6 Fenner House, view from north-west

Photograph: Ben Wrigley, 2012

Members of the Fenner family still live in the house, more than half a century after it was built.⁷ While the interior is virtually the same as it was in the 1950s,⁸ the exterior is now largely screened by trees, providing a vivid contrast with the early photos depicting a white house of simple, bold forms with splashes of primary colours, sitting in an open landscape. The colours have mellowed, trees and bushes have grown, and all that is visible is the garage to Monaro Crescent, an addition to the Torres Street side—which replicates the forms and detailing of the original house—and part of the glazed gable wall above the rampant *Juniperus sabina*. But the house remains incongruous with its neighbours—perhaps more than ever. Many of the original houses in the suburb have been demolished and replaced with large Palladian, Tuscan and Balinese-style, airconditioned mansions with swimming pools, high steel fences, automatic

7 Frank Fenner passed away in 2010. Marilyn Fenner, who grew up in the original house, now lives there with her family.

8 In 2007 the interior of the house was virtually unchanged from when it was first built—right down to the blue Grant Featherstone Contour chair. Fenner seemed proud of the original state of the house, confirming that the only changes were the addition of a microwave oven and compact disc player.

gates and imported chandeliers—the last alone, in some cases, reputedly costing as much as the original Fenner House.⁹ These are a far cry from this genuine attempt by Boyd and the Fenners to find an appropriate postwar house.

A New Type

The simplicity of this work was akin to the simplicity of the farm-building and out-house.

— Robin Boyd, *Australia's Home*¹⁰

As eminent practitioners and writers within their professions, Fenner and Boyd were both conversant with systems of typological classification. Fenner's introduction to typology began while he was a boy at secondary school. His father, Charles—also a scientist—took him to see the rocks at Hallets Cove, where Frank accumulated 'quite a good collection of fossils'. By trading with other collectors, he eventually acquired a Triassic fossil of ginkgo leaves, and claimed to have the best ginkgo tree in Canberra in his garden at Torres Street. Fenner believed that these early interests in the order of the natural world played a large part in the direction of his career.¹¹

The concept of type as a classificatory system is not unique to architecture or to science, but is a device that both have employed, in various manifestations, since the eighteenth century. The introduction of type within architectural discourse can be traced back to scientific classificatory systems, particularly to Georges Buffon's *Histoire Naturelle* of 1749, to Carl Linnaeus's *Species Plantarum* of 1753, and to Jacques Francois Blondel's 1777 *Cours d'Architecture*. All of these were ambitious attempts at global classification of biological phenomena.¹²

9 Mike Power, resident of Vancouver Street, Red Hill, In discussion with the author, 2007.

10 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 119. Boyd was referring to the austerity of postwar Australian houses.

11 Frank Fenner, *Nature, Nurture and Chance: The Lives of Frank and Charles Fenner*, 9–10. Frank Fenner, Interview by Ann Moyal, 8 March 2001, 4 April 2001, Canberra, National Library of Australia, Oral History Section.

12 For Buffon, see George Louis Le Clerc, Count of Buffon, *Natural History of Birds, Fish, Insects and Reptiles*, 6 vols (London: H. D. Symonds, 1808), or *A Natural History of the Globe, and of Man; Beasts, Birds, Fishes, Reptiles and Insects, from the writings of Buffon, Cuvier, Lacepede, and other eminent naturalists. To which are added, Elements of Botany*, Corrected and enlarged by John Wright, 4 vols (London: F. Z. S., T. T. and J. Tegg, 1833). For Linnaeus, see *Species Plantarum*, Facsimile of the first edition, 1753 (London: Ray Society, 1959). For Blondel, see Jacques Francois Blondel, *Cours d'Architecture, Desaint* (Paris, 1777). Blondel's *Cours d'Architecture* is frequently cited as the origin of the modern architectural system of typological classification, but that system was essentially based on genres and appropriate character rather than on morphology. Other important contributions were made by the poet-scientist Goethe, who invented the word 'morphology'—the science of form—and Georges Cuvier. Nineteenth-century German architect and writer Gottfried Semper based his theory of architectural type on animal and plant morphology. His 'prototypical forms'—*Urformen*, *Normalformen*, *Urkeim* and *Urmotiven*—were all taken from Goethe's theories of plant and animal form. Gottfried Semper, *Style in the Technical and Tectonic Arts; or, Practical Aesthetics*, Translated by Harry Francis

More recent examples of architectural classification were contained in Boyd's *Victorian Modern* of 1947, and in *Australia's Home*. In *Victorian Modern*, Boyd teased out and wove together selected strands of twentieth-century domestic architecture that he believed were most appropriate for the Victorian context to form a specific, ideal type. He termed this the 'Victorian Type'. Boyd believed that, subject to local climatic variations, the basic principles underlying the Victorian Type were relevant to all of Australia. Although the existence of such a type has since been questioned, it is useful in understanding Boyd's architectural criticism and practice to examine his intent.¹³ The Victorian Type was essentially a 'long, low, light house [that] spreads over the lot...made up of wings of single room width...One long simple stretch of low roofed house'.¹⁴

In *Australia's Home*, Boyd attempted to classify twentieth-century houses on a national basis, condensing what initially appeared to be 'at least seven hundred varieties' down to five principal house types. These were 'The Primitive Cottage', 'The Bungalow', 'The Asymmetrical Front', 'The L-shape' and 'The Triple-front'.¹⁵ Notably, his Fenner House did not fit any of these categories. It will be established that this house—designed at the same time that Boyd was formulating his typology of Australian domestic architecture—was heavily influenced by his reaction to that research.

Another Australian architect whose houses departed from Boyd's classification was Seidler. Seidler had previously worked for Marcel Breuer in New York, where he had drawn the plans for the Geller House, Breuer's first realised binuclear house. Boyd described Seidler's houses, which were heavily influenced by Breuer, as 'sure, mechanically precise things...square, straight, white and challenging'.¹⁶ The 1948 Rose Seidler House, designed for the architect's mother in Turrumurra (then on the northern fringes of Sydney), was essentially a solid, white object raised above the landscape and 'hollowed out' to accommodate an outdoor deck. The Rose Seidler House owed everything to International Style modernism, and nothing to existing Australian house typology. Seidler's houses demonstrated to Boyd that regionalism, as exemplified by the Victorian Type, was not the only solution for the postwar house in Australia.¹⁷

Mallgrave and Michael Robinson (Los Angeles: Getty Publications, 2004). In a further link to biological classification, Adrian Forty even suggested that the number of types recognised by Semper—four—was influenced by Cuvier's identification of that same number of types within the animal world. Adrian Forty, *Words and Buildings: A Vocabulary of Modern Architecture* (London: Thames and Hudson, 2000), 304–6.

13 Philip Goad, 'Eclectic Synthesis and the Emergence of the So-Called Victorian Type', in *The Modern House in Melbourne 1945–1975* (PhD dissertation, University of Melbourne, 1992), 37.

14 Robin Boyd, *Victorian Modern* (Melbourne: Architectural Students' Society of the Royal Victorian Institute of Architects, 1947), 60, 63, 67.

15 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 7–11.

16 *Ibid.*, 181.

17 For a discussion of Seidler's influence on Victorian architects, see Philip Goad, 'Melbourne, Harry Seidler and the East Coast International Style', in *The Modern House in Melbourne 1945–1975*, 5/66–5/81.

In addition to the morphological system, the other common method of classification within architecture is by function—for instance, ‘house’, ‘school’, ‘farming shed’, ‘factory’ or ‘laboratory’. Much of the discourse around typology has focused on the nexus between the two systems—that is, the extent of correlation between formal types and functional types. It is within that lacuna between morphological classification and functional classification that this analysis of the Fenner House is located.

It is important to note the formal similarities between the Fenner House and its client’s temporary and permanent laboratories at the John Curtin School of Medical Research. All three buildings were essentially ‘H’-shaped, binuclear plans comprising two separate blocks and a connecting link. Fenner described how the temporary John Curtin School facilities ‘were built by juxtaposing two prefabricated wooden buildings and constructing a passage where the adjoining roofs touch’.¹⁸

It appears that houses and laboratories, as quite distinct functional typologies within architectural classification, were in fact never far from each other in Fenner’s mind. When visiting virology laboratories across the United States in 1953, he simultaneously visited many private houses of his colleagues, and made comments in his travel diary about each. In Baltimore, he visited Dave Bodian, whose house was ‘a converted barn, amid trees in the country, but only 8 miles from his labs’. Back in New York, he engaged in a ‘long talk with Rene and Jean about the plans of our lab as well as the house’.¹⁹

Boyd’s colleague in the Small Homes Service in Melbourne, Neil Clerehan—who had assisted Boyd with research for *Victorian Modern*—experimented with a range of plan types in the early years of the service, and designed two modest binuclear houses: the T226 in 1948 and the T280 in 1950. Both of these were published in *The Age*. Another binuclear plan was Seidler’s Hutter House of 1952 in Turrumurra, completed in the same year that Boyd designed the second version of the Fenner House. For Seidler, the binuclear plan had two advantages over a standard plan. First, it was a way of keeping children away from the ‘more delicately furnished adult living quarters’, and second, the disjunction of blocks permitted a more economical bedroom wing, as ‘comparatively little time is spent there’.²⁰ Given Boyd’s interest in Seidler’s houses, the Hutter House would have undoubtedly been a significant influence—an opinion that was shared by Conrad Hamann.²¹

18 Frank Fenner and David Curtis, *The John Curtin School of Medical Research: The First Fifty Years, 1948–2008* (Gundaroo, NSW: Brolga Press, 2001), 22.

19 Frank Fenner, ‘Collins Trip Book’, 1953, entries for 22 July 1953, 21 August 1953, Fenner, F. J., FAA (1914–2010), MS 143/8, Box 22. This was a reference to Rene and Jean Dubos.

20 Harry Seidler, *Houses, Interiors and Projects* (Sydney: Associated General Publications, 1954), xvi.

21 ‘Seidler’s work...encouraged Boyd immensely, and he gave Seidler considerable prominence in *Australia’s Home*, and directly incorporated the forms of Seidler and his mentor, Marcel Breuer, in some of his own

In terms of architectural typology, the Fenner House is a direct descendant, via the Hutter House, of Breuer's first built version of the binuclear house, the Geller House I in Long Island, New York, of 1944–46. The plans are quite similar: from the two separate blocks for daytime and night-time activities to the open-plan living areas and central play area within the bedroom wing. In final architectural resolution, the Fenner House departed from the Geller House, and reflected Boyd's evolving position within the architectural zeitgeist of the early 1950s, which he described as somewhere between 'the white cubes of the Functionalists and the woody intricacy of Organicism'.²² With its merging of International Style binuclear plan type with less austere, Victorian Type low-pitched roofs, the Fenner House consolidated Boyd's position between those two poles.

But why did Boyd choose the binuclear configuration? Was it more than a coincidence that the Fenner House layout resembled that of the John Curtin School laboratories? It is possible, but highly unlikely, that the plan was an interpretation of Fenner's work environment—the reference is perhaps too obvious for Fenner not to have mentioned it. It is also important to remember that the binuclear plan type was not Boyd's first choice for the Fenner House—the small area of the original Hotham Crescent site precluded that type. For Hotham Crescent, Boyd designed a compact, linear house, sited across the contours to provide two levels of accommodation at one end. When that design proved to be too expensive, and the larger site was acquired, Fenner described Boyd's transition from the first proposal to the binuclear plan as a form of natural evolution:

[W]hat Robin then did was just to shift them like that [places hands on top of one another, and then slides one hand across until they are separate and parallel]. So that instead of the bedroom part, which is the rear block of that house, being the upper level, it just went down.²³

While this was a logical process, it was not an inevitable outcome. A number of permutations were possible by rearranging the building blocks on the new site, and the binuclear arrangement represented only one of those. For Boyd, this was merely one of a number of plan types to try out. In the early 1950s, he was enmeshed in an intensely creative period, referred to as his 'experimental' or 'style-forming' phase. During that time he designed a range of small, low-

architecture.' Conrad Hamann, *Modern Architecture in Melbourne: The Architecture of Grounds, Romberg and Boyd, 1927–1971* (PhD dissertation, Visual Arts Department, Monash University, 1978), 159. See also Robin Boyd, 'A New Eclecticism', *Architectural Review* CX, no. 657 (September 1951): 151–3.

22 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 183.

23 Frank Fenner, Interview by the author, 18 October 2007.

budget houses of varying plan form. Breuer's Geller House I—still only some six years old—and Seidler's more recent Hutter House would both have been on his mind.

Given that Boyd's other house in Canberra, designed about the same time for Manning and Dymphna Clark, was another interpretation of the binuclear model, it would appear that there was more to it than random experimentation. Perhaps there was something about these particular academic clients—or about Canberra—that led Boyd to this plan type. In relation to the clients, the Fenners and the Clarks were both fairly typical postwar 'nuclear' families: two parents with between two and four children.²⁴ Boyd held similar views to Seidler regarding children in the house, believing that the postwar 'elevation of the rights of children' had given them free reign over the house, and that as a result the suitability of the open plan was brought into question. One solution suggested by Boyd was separate zoning of different activities or age groups.²⁵ But most of Boyd's clients were from a similar demographic, and while he often provided separate zones within his houses, he did not design binuclear houses for all of them.

It does not appear that privacy was the key determinant of plan form. Fenner carried out most of his work in the John Curtin School, and had no specific requirement for a completely private study at home (although there was a study in the house). Clark wrote from home and did require a quiet space; however, Boyd provided that by placing the study on a higher level rather than relying on the horizontal segregation provided by the binuclear plan.

The fact that Boyd, after these two commissions, designed no further binuclear houses in Canberra to some extent reinforces the notion that it was simply an experiment that followed Breuer and Seidler houses of the same period. But when all aspects of Boyd's domestic architecture in Canberra are considered, a compelling argument for the use of the binuclear type relates to the influence of Canberra itself. In the early 1950s there was not a lot there. Hindered by postwar restrictions and shortages in regard to building approvals, materials and labour, Canberra was in the doldrums. It consisted of not much more than the meandering Molonglo River, a network of unformed roads and scatterings of houses in a few inner suburbs. Between all of this was a lot of open space crisscrossed with walking tracks. No significant facilities had been completed on the ANU campus, whose new academic arrivals were often met at the airport or the train station by the Registrar, Ross Hohnen. Tall and bespectacled, he would proudly take them on a tour of the new university site, pointing out the location

24 The Fenners had two children, Marilyn and Vicki. When the Clarks moved to Canberra, they brought four of their children to live with them: Sebastian, Katerina, Axel and Andrew.

25 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 149–52.

of proposed future buildings. But many were not impressed; as Stephen Foster and Margaret Varghese wrote, 'it took a fair stretch of the imagination to accept Hohnen's vision of a university in a paddock'.²⁶ In the open landscape of 1950s Canberra there was no density, no sense of urbaneness and little sense of place. In this way it was a totally different environment to both Melbourne—where Boyd and many of the new academic arrivals had been living—and Sydney.



Figure 2.7 Manning Clark House, entrance hall showing ladder to study

Photograph: the author, 2010

Within this open, semi-rural landscape, lacking clear definition and any sense of urban structure, it is possible that Boyd saw the need to place a strong figure—a plan form with clear definition and a strong sense of place. It can also be hypothesised that this distinct plan form was a reaction against what Boyd saw as the mediocrity and sameness of the few predominant house types that existed in Canberra. By importing what was, to Canberra, a 'new' paradigm in terms of house type, he was deliberately proposing an alternative approach

²⁶ Stephen Foster and Margaret Varghese, *The Making of The Australian National University 1946–96* (St Leonards, NSW: Allen & Unwin, 1996), 67, 237, 241.

to residential design for this location, and one that did not—in accordance with his vehement rejection of the superficiality of Canberra’s ‘kaleidoscope’ of historical styles—resort to stylistic borrowing.

Lindsay Pryor’s landscape design reinforced Boyd’s siting. Pryor, a schoolboy friend of Fenner from Adelaide, was Keeper of Parks and Gardens for the Australian Capital Territory, and a graduate of the Australian Forestry School. The Fenner House landscaping represented a clean break from the traditional Canberra garden typology. As front fences were not permitted in Canberra, most houses were bordered by hedges. The Department of the Interior maintained these hedges on the condition that they conformed to the species nominated for that particular street. After consulting Fenner, Pryor decided on a layout that responded to the unique footprint of the house, and—in contrast with the predominant pattern—left the site relatively open to Torres Street. In this way, the eastern and western edges of the site were planted with a variety of trees and shrubs to provide privacy and shelter from winds. A ‘peninsula of trees’ ran out from the north-eastern corner of the house, *Juniperus sabina* was planted to shelter the front terrace, and a broad sweep of lawn to the north of the house extended to the boundary, leaving the major street frontage largely exposed.²⁷

The Aesthetic Imperative

If to be ‘modern’ in post–World War II Australia was to read every international architectural publication that you could lay your hands on, to value creativity and experimentation, and to exhibit a strong interest in contemporary movements in art, music and film, Boyd fitted the bill.²⁸ As a practising architect and prolific writer, he became one of Australia’s leading propagandists for the modern movement during the 1940s and 1950s.²⁹ His own architecture was experimental, adapting concepts from key figures of modernism—such as Le Corbusier—to suit local contexts. Boyd’s first design for the Fenner House—an

27 Frank Fenner, ‘The Garden at 8 Monaro Crescent, Red Hill’, March 1977, Fenner, F. J., FAA (1914–2010), MS 143/8/4H7.

28 It was claimed that the sources of Boyd’s architectural education were seminal writings by McGrath, Pevsner, Bertram, Richards, Mumford, Le Corbusier and Giedion, supplemented with an influx of overseas journals and magazines. Boyd’s interests in the other arts were demonstrated by numerous conversations he shared with his cousin Arthur in his Murrumbidgee studio. For Boyd as a ‘Modern’, see Serle, *Robin Boyd: A Life*, 55–62.

29 *Ibid.*, ‘Preface’.

exploration of vertical space that has been compared with Le Corbusier's two-storey Citrohan living rooms³⁰—was described by his client as being 'unusual at the time', 'revolutionary' and even 'unbuildable'.³¹

That Boyd was a modern architect, and had been modernist in inclination from an early stage in his career, is well established. But what of Fenner? What was his position in regard to modernism? As inaugural Professor of Microbiology, Fenner played a key role in establishing The Australian National University in Canberra in the years immediately after World War II. He was particularly well informed in regard to international developments in modern art, architecture and design. Always observant, Fenner recorded extensive notes and diagrams in his travel diaries.

By late 1952, temporary laboratories were set up in Canberra for the John Curtin School of Medical Research, and Fenner—who was based in Melbourne until the facilities were ready—drove with Bobbie and their two children, Vicki and Marilyn, to the capital in a small convoy of Morris Minor and Ford Prefect. They might have had modest transportation, but this was an important milestone in the establishment of the university—and, as it turned out, in the history of the modern house in Canberra. Fenner had been to Canberra before the war—to study Aboriginal skulls at the Institute of Anatomy³²—but aside from that had no previous connections, and no vested interests, in the city. Arriving with a clean slate, he brought with him a sense of optimism about the future: setting up new laboratories in which to continue his research, building a house for himself and his family, and establishing professional and social connections in a relatively new and rapidly expanding city were all exciting prospects.

Fenner sought to incorporate a number of modernist ideas and concepts into his house. A principal source of influence was the overseas study tour that he undertook in 1953. Fenner flew from Kingsford Smith Airport in Sydney to San Francisco on 23 May 1953, just a few days after signing the contract documents with Schreiner for his Red Hill house. Often flying by Comet, and carrying a suitcase filled with presents including stuffed koalas and books on wallabies, Fenner proceeded to visit the laboratories 'of almost every virologist in the United States'.³³ Throughout the trip, he was frequently invited back to spend the evening, or to stay overnight, with colleagues and their families. Fenner was methodical and thorough. Each evening he recorded in his travel

30 Hamann, *Modern Architecture in Melbourne: The Architecture of Grounds, Romberg and Boyd, 1927–1971*, 169–70.

31 Fenner, *Nature, Nurture and Chance: The Lives of Frank and Charles Fenner*, 60; Letter to Geoffrey Serle, 17 June 1994, Fenner, F. J., FAA (1914–2010), MS 143/8/4H5, Box 3.

32 As a medical student from 1934 to 1938, Fenner received a scholarship that allowed him to research Aboriginal skulls held in the Institute of Anatomy in Canberra. He stayed in Beauchamp House (now Ian Potter House, Australian Academy of Science), which was located opposite the institute.

33 Fenner, *Nature, Nurture and Chance: The Lives of Frank and Charles Fenner*, 64–5.

diary details of after-dinner conversations, the houses they had occurred in, the names of the family members, and the presents he had given them. His notes indicate that after a period of 'shop' talk about infectious diseases and antibodies, conversation would invariably turn to contemporary house design.

In Berkeley, he stayed a few days with Bill Reeves from the University of California, and noted that his house was in a 'very pleasant spot in hills. Fine view of San Fran and Berkeley at night.' In Denver, he visited 'Gardiner's house', which was 'contemporary style, very low ceiling, 2 storey but looks like one... sliding doors also used effectively'. In New Jersey, he stayed a few days with a gynaecologist friend, Grogan O'Connell, and his wife, Janet, who had just built a contemporary house in Alpine. Fenner was impressed by the O'Connells' house, and made a number of diary notes and sketches. He described the house as 'modern and attractive, in 2 acres of thick woodland, so that no other house can be seen nearby'. He took several photos of the house, and even made notes of '[f]eatures of the house that we might copy' for his own house. These included details of recessed heaters, light fittings and bathroom cupboards and mirrors. He was particularly interested in a glass-topped, steel-framed table on the terrace that he sketched on two separate occasions, noting that it '[l]ooks the type of thing we could get made at the workshop'.³⁴

By 1953, there was evidence of the beginning of a postwar recovery in architecture in North America and Europe, heralded by the completion of a number of seminal modernist buildings. One of these in particular aroused Fenner's interest. On his last day in New York, with his BOAC flight to London delayed, he wandered over to the recently completed Lever House. Designed by Gordon Bunshaft of Skidmore, Owings and Merrill, Lever House in 1953 was 'one of the sights of New York'. A tall, prismatic glass tower supported on Le Corbusier-style pilotis rising from a glass podium, it was the forerunner of the commercial skyscraper, the ultimate in big-business architecture, and, at the time, the epitome of the modern urban structure. As Reyner Banham stated, Lever House was the first architectural expression of a new, postwar age—'a monument to an America whose existence could barely be sensed at the time: Eisenhower America, grey-flannel-suit America, with Madison Avenue only a block away'.³⁵ The sleek, modern lines of Lever House, derived from International Style architecture, were emblematic of corporate capitalism. But there was another potential interpretation. The ideologies and values that lay behind its repetitive, graph-paper structural grid—including technological advancement and rationalism—could equally apply to the scientific world.

34 Fenner, 'Collins Trip Book', 1953. The table represented in the sketch is similar to steel-framed tables designed by Jean Prouve and Le Corbusier.

35 Reyner Banham, *Age of the Masters: A Personal View of Modern Architecture* (London: Architectural Press, 1975), 114. Joan Ockman gives a good account of Lever House in 'Mirror Images: Technology, Consumption, and the Representation of Gender in American Architecture Since World War II', in *The Sex of Architecture* (New York: Harry Abrams, 1996), 191–210.

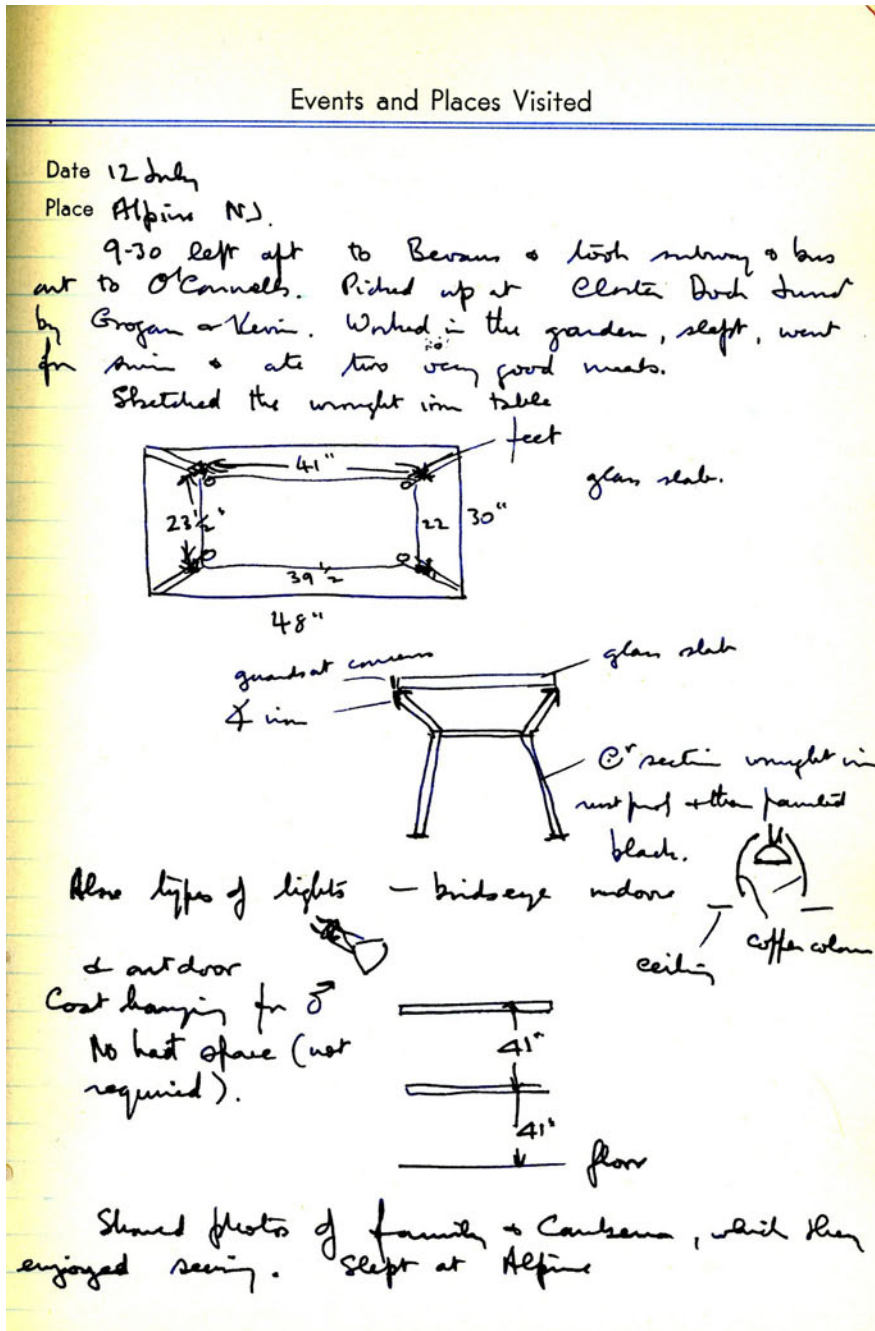


Figure 2.8 Frank Fenner, diary entry for 12 July, 1953

Image: Fenner, 'Collins' Trip Book, 1953. Manuscript Collection, Adolph Basser Library, Australian Academy of Science. Fenner, F. J., FAA (1914–2010), MS 143, Box 22. Courtesy of Marilyn Fenner

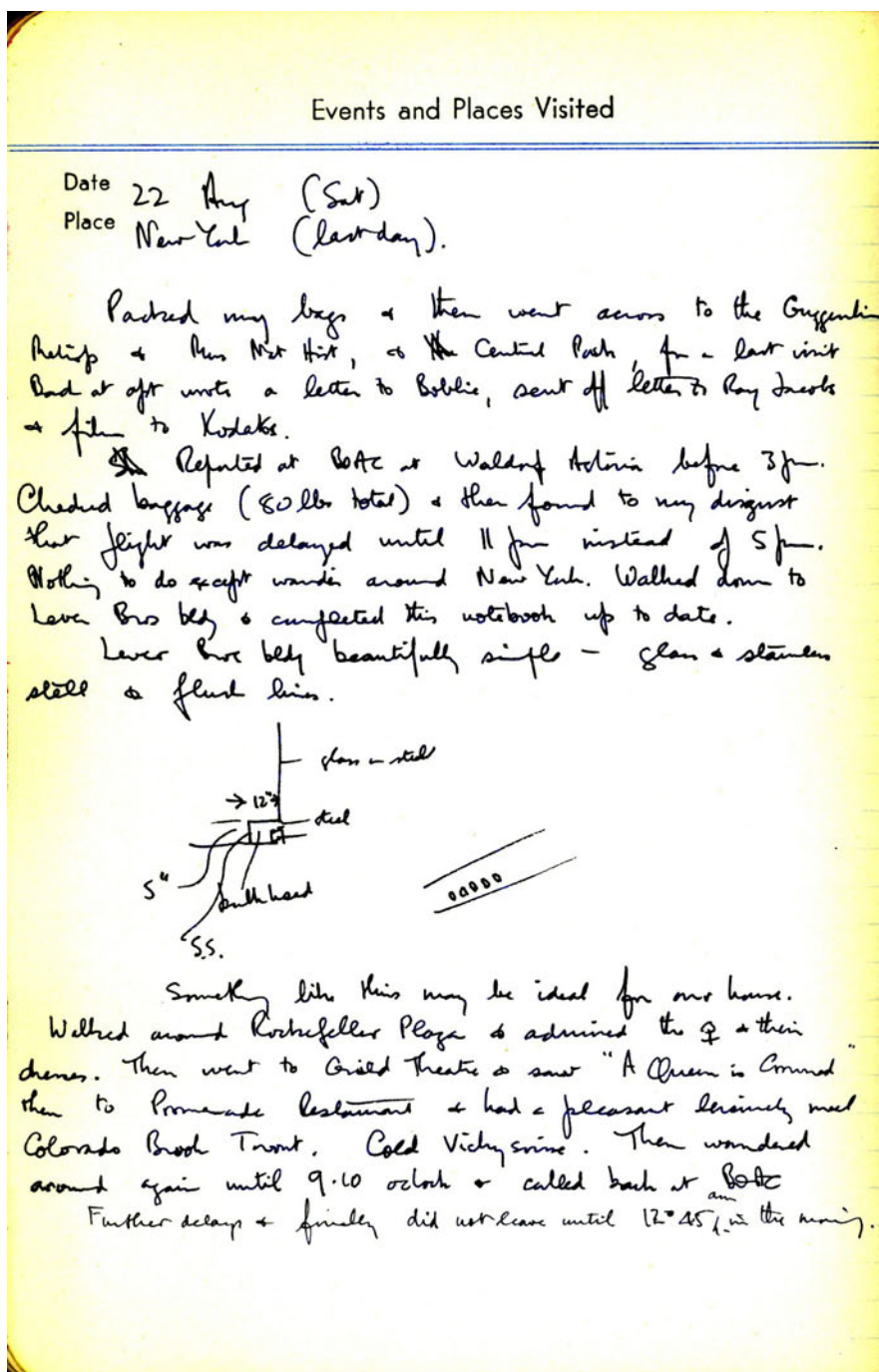


Figure 2.9 Frank Fenner, diary entry for 22 August, 1953

Image: Fenner, 'Collins' Trip Book, 1953. Manuscript Collection, Adolph Basser Library, Australian Academy of Science. Fenner, F. J., FAA (1914–2010), MS 143, Box 22. Courtesy of Marilyn Fenner



Figure 2.10 Lever House, New York

Photograph: J. Alex Langley, from Banham, *Age of the Masters: A Personal View of Modern Architecture*, 113

Lever House impressed Fenner because it was ‘beautifully simple—glass and stainless steel and flush lines’. Not intimidated by any disjunction of scale, function or context between a New York office tower and a Canberra house, he enthusiastically sketched a detail of the building in his travel diary, noting: ‘Something like this might be ideal for our house.’³⁶ While there is no evidence of any influence of Lever House on the Fenner House—and it is not clear if Boyd was ever shown this sketch—it is highly likely that if Fenner did discuss it with him at the time of his return, the architect might not have approved. At that

36 Fenner, ‘Collins Trip Book’, 1953.

stage, Boyd was not fond of Skidmore, Owings and Merrill's architecture, which he believed was too commercial. He began to change his mind three years later, however, when he saw Lever House for himself, and even became something of a disciple of Skidmore, Owings and Merrill when shown around the Chicago office by Bill Hartmann, with whom he proceeded to get drunk over dinner.³⁷ It is testament to Fenner's enthusiasm for modernism that he was one step ahead of his architect on this occasion.

In Paris, Fenner found the Musée de l'Arte Moderne 'a superb new building with a wonderful collection and good display'. After arriving in Rome by train, he was equally impressed by Eugenio Montuori's new Main Railway Station. Standing on the polished floor of the main booking hall, under the curved ribs of the vaulted roof, he looked out through the glazed end wall over the city, and described the building as 'a magnificent and very modern structure with beautiful clean lines and fine materials'.³⁸ In Stockholm, Ragnar Ostberg's earlier Arts and Crafts-style City Hall was appreciated for 'the splendour of the halls, especially the Golden Hall with its mosaics on a gold mosaic background. It is a really impressive building...in position, surroundings, conception, grandeur. Something we might well have somewhere in Australia, but don't.'³⁹

Boyd had written that modern architecture was 'inevitably linked with modern art in the public mind',⁴⁰ and Fenner was no exception to this rule. During this overseas trip, he regularly visited art galleries in every city, often returning for more than one visit. Descriptions of art and architecture share the pages of his travel diary, and through an examination of these it is apparent that he was particularly interested in modernism and abstraction. In New York, he made frequent excursions to the Sol Guggenheim Collection, to Edward Durell Stone's gleaming white Museum of Modern Art, and to the Metropolitan Museum of Art, whose central, sunken court was a favourite lunch venue. He observed modern paintings in private residences and visited art institutions in other cities such as the National Gallery in Washington, DC, the Baltimore Art Museum and the Musée de l'Arte Moderne in Paris. One exhibition at the Guggenheim contained 'several Kandinsky's Mondrian. Some very good Chagall, an attractive Modigliani nude, and interesting Klee and Seurat'; an apartment in New York displayed 'a wonderful lot of modern originals—Picasso, Rouault etc.'; the

37 Serle, *Robin Boyd: A Life*, 168.

38 Assisting Montuori in the design of the Rome Main Railway Station were Leo Calini, Massimo Castellazzi, Achille Pintonello and Annibale Vitellozzi (who went on to design the Palazzetto dello Sport with Pier Luigi Nervi in 1956–57).

39 Fenner, 'Collins Trip Book', 1953.

40 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 95.

National Gallery had ‘Picasso Derain Dufy Vlamincks’ that he had not seen previously ‘in original or reproduction’, while the Baltimore Art Museum was noted for works by Picasso and Rodin.⁴¹

Fenner was the ideal client for an aspiring modernist architect. He clearly appreciated modern art and architecture, was well travelled and visually astute. As a scientist, he would obviously have been comfortable with a rational design methodology: an architectural process that recognised specific problems and proceeded to find solutions in a systematic manner. But as a client, Fenner offered—and expected—more from his architect than a rational design process. Underscoring his detailed diary descriptions was a genuine excitement over the visual and tactile experiences of these new, modern objects. His enthusiasm was not based on any apparent rationality as much as it was on an admiration of simple, elegant design, and an appreciation of the materials, colours and details of modern architecture.

The Fenner House became a successful collaboration between an architect and a client who shared a common interest in modernism. When Grounds, Romberg and Boyd were awarded the ACT Chapter Medallion, *The Canberra Times* reported that the house ‘contributed much to architectural thinking and contemporary design’.⁴² The Fenner House received a four-page spread with colour photographs in the November 1956 edition of *Australian Home Beautiful*. It did not, however, appear on the cover of that edition; television had just arrived in Australia, and the cover displayed an image of a happy family, complete with white poodle, gathered around the latest modernist icon: an upright, timber-veneered Radiola television set, courtesy of Amalgamated Wireless. Boyd, the modern evangelist who had, seven years earlier, placed a mock-up of a television set in his ‘House of Tomorrow’ in Melbourne because the real thing was not available in Australia, had finally been upstaged by the real thing.⁴³

Imitation of Life

The most expert Artists among the ancients...were of [the] Opinion that an Edifice was like an Animal, so that in the Formation of it we ought to imitate Nature.

— Leon Batista Alberti, *Ten Books on Architecture*⁴⁴

41 Fenner, ‘Collins Trip Book’, 1953.

42 *The Canberra Times* (November 1956).

43 *Australian Home Beautiful* (November 1956).

44 Leon Batista Alberti, *Ten Books on Architecture*, 1755, Reprint (London: Alec Tiranti, 1955), book IX, 194.

The key to its success will be the determination to allow the human element to become the dominant factor. The biological principle must be paramount. Man is to be the focus for all design; then it shall be truly functional.

— Walter Gropius, 'Reorientation'⁴⁵

In the new climate beyond the door, a house which better expresses the life and the land may grow more profusely and the scattered seeds spread by creative architects may take abundant root.

— Robin Boyd, *Australia's Home*⁴⁶

Fenner was well informed in regard to the physical environment from an early age, and became increasingly involved in environmental issues throughout his career. Charles was a member of the Field Naturalists Society, and published scientific papers on geology and fieldwork. During the 1930s, he took Frank on overland excursions in an open car across South Australia and Victoria, where he explained 'features of the countryside...geological, botanical, historical, in a fascinating way'.⁴⁷ From 1948 to 1949, Fenner studied at the Rockefeller Institute for Medical Research in New York under Rene Dubos. Dubos was a huge influence; Fenner described how he later became 'an environmental guru' and coined the term 'think globally act locally'.⁴⁸ Later in his career, Fenner became a member of the Scientific Community on Problems of the Environment, foundation Director of the Centre for Resource and Environmental Studies at The Australian National University and Vice-President of the Australian Conservation Foundation.

There are a number of examples of Fenner's awareness of environmental issues in regard to architecture. In 1949, when he and the other founding professors of the John Curtin School met with Florey in Oxford to plan the new Canberra building, Fenner recalled they 'decided on an H-shape...with the main laboratories on the south of each wing, to avoid direct sunlight'.⁴⁹ During his 1953 overseas trip, he made frequent entries in his travel diary describing the details of his surroundings. Flying from London to Paris, he observed '[m]any fruit orchards. Courtyard type farmhouses etc'. While travelling by train down the coast of Italy to Rome, he was '[s]truck by [the] colour of houses in this bright sun, and the manifold measures adopted for keeping out the sun'.⁵⁰

45 Walter Gropius, 'Reorientation', in Gyorgy Kepes, *The New Landscape in Art and Science* (Chicago: Paul Theobald, 1956), 97.

46 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 278.

47 Fenner, *Nature, Nurture and Chance: The Lives of Frank and Charles Fenner*, 9–10.

48 Frank Fenner, Interview by Ann Moyal, 8 March 2001, 4 April 2001, Canberra, NLA Oral History Section.

49 Fenner, *Nature, Nurture and Chance: The Lives of Frank and Charles Fenner*, 55.

50 Fenner, 'Collins Trip Book', 1953.



Figure 2.11 Aerial view of the John Curtin School of Medical Research, The Australian National University, 1957

Photograph: National Archives of Australia. NAA: A1200, L23558

Of all the sciences, it was biology that architects most frequently turned to for analogy. The purpose of the comparison was to facilitate the understanding of new, unknown concepts by connecting them to known ones. Since the eighteenth century, a number of writers have explored the potentialities of biological analogies to inform architectural theory. In the main, these have consisted of the typological analogy, by which specific types are identified with a classificatory system; the ecological analogy, where the appropriateness of a building for its environment is compared with that of plants and animals;⁵¹ the organic analogy, meaning the harmonious relationship of parts to the whole; the anatomical analogy, or relationship between skeleton and structure; and the

51 Fenner recalled a scientific anecdote, regarding the ‘extraordinary specialisation of the location of insects’ in vegetation: ‘The ticks that cause tick typhus in New Guinea were always on the margins of the forest, where you had a bit of savannah, a bit of open country, grass and then trees. And it was when troops got into that sort of country that they got scrub typhus. So I am sure, especially for insects, there are relationships of that kind.’ Frank Fenner, Interview by the author, 18 October 2007.

Darwinian analogy of evolutionary trial and error.⁵² But the drawing of analogies between architecture and biology is an exercise to be treated with prudence: as architect and writer Philip Steadman warned, buildings are not organisms like plants or animals, but remain 'inert physical objects'.⁵³ Architectural historian Peter Collins argued that the strongest analogical link to architecture was the influence of environment on design—a concept he believed came from Darwinism. But the concept of natural selection was taking the analogy too far, as 'after all, in architecture it is not only the Fittest which Survive'.⁵⁴

Consideration of the formative influence of the environment on design and of the subsequent scientific analysis of building form derives from the notion of biotechnical determinism. Architectural commentator Alan Colquhoun considered this to be an underlying principle of the modern movement, and traced its origins to nineteenth-century cultural-evolutionism philosophy, particularly that of Herbert Spencer. As Colquhoun explained: 'Form was merely the result of a logical process by which the operational needs and the operational techniques were brought together. Ultimately these would fuse in a kind of biological extension of life, and function and technology would become totally transparent.'⁵⁵

There was evidence of this way of thinking in Australian architectural discourse in the immediate postwar years. Anticipating an unprecedented demand for new houses, and faced with a serious lack of funds and building materials, a series of government and private initiatives encouraged designers and builders to construct more-efficient houses. What was required were pragmatic, scientific-based methods of analysis to improve the ways in which buildings related to their environment. Consideration of the effects of the Australian sun and climate was nothing new—this had been a common topic within architectural discourse since the late nineteenth century—but what was different was the process. No longer left to conjecture, the strategies were to be founded on solid, quantifiable research.⁵⁶

52 Blondel's *Cours d'Architecture* is frequently cited as the origin of the modern architectural system of typological classification. Nineteenth-century German architect and writer Gottfried Semper based his theory of architectural type on animal and plant morphology. A more recent example is Philip Steadman's *The Evolution of Designs: Biological Analogy in Architecture and the Applied Arts* (Cambridge: Cambridge University Press, 1979).

53 Steadman, *The Evolution of Designs: Biological Analogy in Architecture and the Applied Arts*, 6.

54 Collins, 'The Biological Analogy', *Architectural Review* 126 (December 1959): 305. This was published in 1959 to coincide with the centenary of Charles Darwin's *The Origin of Species*.

55 Alan Colquhoun, 'Typology and Design Method', *Perspecta* 12 (1969): 72, cited by Steadman, *The Evolution of Designs: Biological Analogy in Architecture and the Applied Arts*, 1.

56 For instance, in *Sub-Tropical Housing*, Viennese immigrant architect Karl Langer emphasised the need for mathematical calculations in regard to the dimensions of eaves overhangs. Karl Langer, *Sub-Tropical Housing* (Brisbane: University of Queensland Press, May 1944). *Architecture* published details of the 'Heliodon', an instrument devised by the English Building Research Station to replicate, in model form, the motion of the Sun. Working with models of proposed houses, the Heliodon could demonstrate the precise amount—and duration—of sun penetration into a building. *Architecture* (January–March 1945): 137–42. Australia's

But in some instances this belief in determinism—of the potential for scientific analysis to improve the relationship between a house, its occupants and the prevailing climate—extended beyond the considered, incremental modification of building form and veered into pure conjecture. It was this type of naive faith in biotechnical determinism that lay behind Breuer's conception of his binuclear house. Published in John Entenza's *Californian Arts & Architecture* in December 1943, it was, like the John Curtin School of Medical Research building, a 'H'-shaped building comprising two separate wings and a connecting link. One wing was for 'every day's living', while the other was for 'concentration, work and sleeping'. Predicting a model of postwar, suburban lifestyle that would never eventuate, Breuer promoted his house as a form of technological, protective cocoon for his male client: the postwar man would return to a house that was 'heated, protected, insulated, mechanized'. As he would need to enter his 'mechanized world', or place of work, only 'three or four days a week', he would be spending more time in the house and would 'more than ever appreciate his privacy'.⁵⁷

While with the benefit of hindsight, Breuer's projections about postwar work patterns proved to be incorrect, his binuclear plan was inextricably linked to biology. The first connection was semantic: 'binuclear' was a biological term meaning a cell comprising two nuclei, while the second connection related to the splitting of the plan into two separate blocks. In a criticism of open planning that, quite unintentionally, reinforced the binuclear configuration, English biologist and geneticist Conrad Waddington compared the practice of combining different functions in the one general space—kitchen, dining, sleeping—with the form of highly evolved animals. The animals, he pointed

Commonwealth Experimental Building Station (CEBS), set up to research construction materials and methods, particularly in relation to house design and thermal comfort, published a series of bulletins titled *Notes on the Science of Building*. An important publication by the station was R. O. Phillips' *Sunshine and Shade in Australasia*, in which sun angles in relation to time and geographic location were mathematically determined. To this publication, Phillips appended details of his own Australian version of the Heliodon, which he named the 'Solarscope'. R. O. Phillips, *Sunshine and Shade in Australasia* (Sydney: Commonwealth Experimental Building Station, 1951), Technical Study 23 (D.D.23). Walter Bunning's *Homes in the Sun* included a plea for appropriate planning in relation to solar orientation, and provided plans of 'Suntrap' and 'Solar' houses as exemplars. Walter Bunning, *Homes in the Sun: The Past, Present and Future of Australian Housing* (Sydney: W. J. Nesbitt, 1945). Along with J. W. Drysdale's *Designing Houses for Australian Climates*, this made the Commonwealth Experimental Building Station's information more accessible to the general public. The CSIRO provided further scientific-based analysis by publishing reports such as *Thermal Conductivities of Building Materials* and *The Design and Construction of Solar Water Heaters*. J. R. Barnes, *Thermal Conductivities of Building Materials* (Melbourne: CSIRO Division of Building Research, March 1946), Report No. R. 2; R. N. Morse, *The Design and Construction of Solar Water Heaters* (Melbourne: CSIRO Central Experimental Workshops, April 1954), Report No. E. D. 1. Popular periodicals such as *Australian Home Beautiful* began to cover similar themes, publishing articles such as 'What is a Solar House?', 'For Sydney's Sun' (January 1950), 'Enjoy Our Climate at Home' (August 1950), 'Sited for Sunshine' (March 1951), 'Houseful of Sunshine' (September 1951), 'Comfort or Convention' (February 1952), 'Cool in Summer—Winter Sun Trap' (September 1952), and 'An Asset in the Sunless South' (February 1953). All of these addressed the issue of appropriate design for Australian climates. 'What is a Solar House?' *Home Builders Annual* (1946): 20, 21, 64.

57 *California Arts & Architecture* (December 1943).

out, 'divided themselves into separate blocks, each of which does something to function, liver, kidney, intestine, muscles, brain'. To Waddington, the open plan—comprising various functions within the same block—was 'not sound biology'. In contrast, the binuclear plan—divided into separate blocks—was.⁵⁸

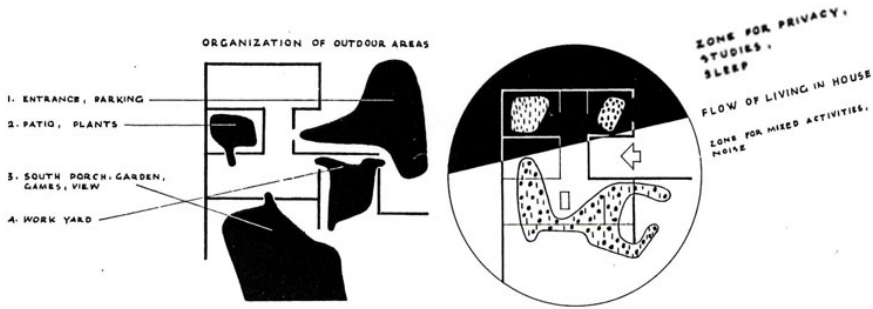


Figure 2.12 Marcel Breuer, 'binuclear' house proposal, 1943

Image: from Blake, *Marcel Breuer: Sun and Shadow, the Philosophy of an Architect*, 149

If Breuer was unwavering in his acceptance of technological progress, Boyd was circumspect. In the first edition of Australia's *Architecture and Arts* magazine, Boyd applauded the pragmatism of science, stating: 'eventually science will answer all the problems. I don't mean just in architecture—I mean in everything.'⁵⁹ But he remained wary of some aspects of scientific discourse. When Ernest Titterton, Professor of Nuclear Physics at The Australian National University, delivered an address to the Australian Architectural Convention in Melbourne titled 'Modern Warfare and Australian Cities', Boyd accused him of making the advent of the first '[a]tom bomb sound like a great humanitarian venture'.⁶⁰ He was also sceptical about some of the research by the Commonwealth Experimental Building Station, claiming that it 'seemed to justify some of this unscientific sympathy of popular buildings'.⁶¹

Boyd, like many Australian architects before him, believed that careful consideration of the Australian climate, in particular the sun, was one of the critical factors that needed to be addressed to improve the quality of Australian houses, whose ability to cope with extremes of temperature he found wanting. He was critical of the lack of insulation and heating in houses in the southern states, and the lack of cooling and sun shading in those in the north.⁶² He

58 Conrad Waddington, 'Biological Form and Pattern', [Talk given to the Architectural Association, London, 1958], *Architectural Association Journal* LXXIV, no. 825 (September–October 1958).

59 *Architecture and Arts* 1, no. 1 (July 1952): 15.

60 Serle, *Robin Boyd: A Life*, 114.

61 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 200.

62 'Lack of Comfort Deplored in Modern Homes', *The Canberra Times* (16 January 1953). This article was based on a paper Boyd had delivered to the Australian and New Zealand Association for the Advancement of

applauded Walter Butler's 'revolutionary suggestion' of 1902 that recommended northern orientation for all rooms, and 'an eave of calculated width which would shade the glass only in summer'.⁶³ Boyd was supportive of Bunning's *Homes in the Sun*, describing its author as 'the best known architectural publicist in the country'.⁶⁴ Central to Boyd's position on sun and climate was an appeal to cease fighting against 'the un-English qualities of Australia's climate', and to learn to live with it.⁶⁵ While the notion of identifying a particular 'Australian' architecture was controversial at the time—and not an idea that Boyd readily subscribed to—he nevertheless believed that the requirements of the 'modern Australian' were different from those of inhabitants of other countries. It was important to address those specific needs—to 'let these differences rule shapes, forms and details in one's building'.⁶⁶

It was the way in which Boyd allowed the 'difference' of the bright Canberra sunlight to generate specific forms and details that most clearly expressed his ideology, and resulted in the most striking visual aspect of the Fenner House. The north faces of the two rectangular blocks are glazed full height throughout their entire length. Regularly spaced, white-painted mullions extend from floor to roof soffit, broken by a continuous horizontal transom at door head height. The overall effect of these glazed walls is reminiscent of a school classroom or laboratory building from the same period, where the same criteria—maximum admission of northern light—applied. This aspect of the Fenner House is similar to other Boyd houses, including the north-facing glazed wall of the 1952 Darbyshire House in Templestowe, Melbourne.

For Boyd, the glazed wall was impervious in two directions: 'a transparent wall which dissolved the barrier between indoors and outdoors.' As well as admitting 'light, air and view', it also worked in the opposite direction—projecting 'the enclosed space into the open' and extending 'the spatial experience within the room'.⁶⁷ In relation to the transmission of light and view, this aspect of the Fenner House worked well, but was less successful for thermal comfort. In keeping with building practice at the time, the entire walls were single glazed, which contributed to high internal temperature fluctuations. In contrast with the glazed northern walls, the eastern and western walls, and the southern wall of the diurnal block, were constructed of solid brickwork with a painted finish. The original colours specified by Boyd were a further method by which he controlled the amount—and quality—of light that entered the interior. Most

Science (ANZAAS) conference in Melbourne the previous day.

63 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 60. Butler designed buildings in the Federation Arts and Crafts style in Melbourne, including the 1912 Mission to Seamen in Flinders Street.

64 Ibid., 191.

65 Ibid., 93.

66 Robin Boyd, August 1962, NLA Oral History Program.

67 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 170–1.

walls were painted white, but surfaces capable of reflecting the intense Canberra light to the interior were painted grey.⁶⁸ By adjusting the exterior wall treatment to address the comfort level of the occupants, Boyd clad the Fenner House in a responsive skin.

The roof of the Fenner House was a further physical expression of the moderation of sunlight. A clean, low-pitched gable roof, edged by a continuous fascia line (the gutters and downpipes were concealed), it adjusted in relation to the need for sun protection as it swept around each block. Flush on the south, east and west facades, the roof cantilevered over the north facades to form a deep eaves overhang. The way in which this house admitted the low winter sun, while excluding the majority of summer sun, was an important aspect of Boyd's design. According to the client, Boyd had similarly insisted on wide eaves to the north for the earlier Hotham Crescent proposal.⁶⁹



Figure 2.13 Fenner House, view from north-east

Photograph: Ben Wrigley, 2012

There was, however, a problem with this aspect of the design: the house admitted too much morning sun. Soon after they moved in, Fenner wrote to Boyd, complaining:

68 Elinor Ward, 'This House is Canberra's Medallion Winner', *Australian Home Beautiful* (November 1956): 41.

69 'He was extremely keen on a feature of this house which was unusual in the time: that you'd have wide eaves which would keep the sun out in the summer and let it in [during] the winter.' Fenner believed that Boyd, in this way, was advanced in his thinking. Frank Fenner, Interview by the author, 18 October 2007.

The sun through the upper glass of the kitchen at breakfast (before the eaves cut out some—the house faces far enough east to get early east sunlight) is very trying. We were thinking of bamboo blinds or some sort of obstruction to the sun on the upper fixed panes but would like to have your views on this.⁷⁰



Figure 2.14 Fenner House, kitchen

Photograph: Ben Wrigley, 2012

The two separate blocks of the Fenner House, and the additive nature of the plan, created a large footprint, which gave the house a significantly high proportion of external surface area in relation to overall volume. While that high ratio of external surface was an optimum condition for the ingress of heat and light—at times when that was desirable—the opposite applied in regard to heat loss. The additional outer surface area of walls and roof provided more opportunities for loss of heat, via conduction, to the atmosphere. In turn, this created heating and cooling problems, and higher operating costs than that of a standard, more compact, plan form.

Two environmental influences—neither of which was anticipated by Boyd—came into effect after the Fenner House was completed. The cumulative effect of these led to the Fenners experiencing great anxiety and considerable tension with

70 Fenner to Boyd, 14 April 1954, 'Fenner House Canberra', Grounds, Romberg and Boyd Records 1927–1979, Manuscript Collection, State Library of Victoria, MS 13363, Box 43/16(a). There is no record of Boyd's reply to this request.

their architect. The first was caused by alternating expansion and contraction of the timber roof sub-frame during Canberra's extreme temperature fluctuations. This caused the Malthoid roofing to stretch and buckle, which eventually created tears in the material and numerous leaks inside the house. The failure of the Malthoid roof was not uncommon—almost all such roofs by Boyd and Grounds suffered the same fate—but the process was accelerated by the high temperature fluctuations between day and night experienced in Canberra's inland, high-altitude location.⁷¹ The cause of the other problem was of a biological nature, but not in the broad sense that has previously been alluded to: this was very specific. To achieve the clean, continuous line of the fascia running around the edge of the roof, Boyd had concealed box gutters within the roof. But these were not designed with correct overflow safeguards, and when the outlets became blocked with leaves from nearby trees, they flooded with water and formed a further source of water penetration into the interior of the house.

At this stage in his career, Boyd had limited knowledge of construction and detailing. While he had many projects under way, the rapid acceleration of his practice had provided minimal post-occupancy feedback—but that would come. His partner Frederick Romberg was known for his attention to detailing. Romberg considered Boyd's house designs at that period to be 'outstanding', but 'a little suspect' in construction.⁷² When Boyd travelled to the United States in August 1956—missing the celebration for the award of the Canberra Medallion—he left behind a number of houses at various stages of construction. Problems soon arose, including leaking roofs and chimneys that smoked inside the rooms. Complaints were directed to his partners, who did not let these go by without comment to Boyd. Boyd later complained that his sleep was interrupted by nightmares of 'Dr. Roche, Mrs. Ednie, and the little man from Lemon Street, North Balwyn, shaking their poor, rain-soaked heads at me and disappearing in billows of smoke'.⁷³ While there was no apparition of the Fenners in his dreams, they had in fact notified the architect that their house leaked as far back as June 1955.⁷⁴

71 Graemme Gunn, a former Grounds, Romberg and Boyd employee, attributed the problems of Malthoid roofs to excessive 'expansion and contraction of wood subframes in the extremes of Australian temperature'. Hamann, *Modern Architecture in Melbourne: The Architecture of Grounds, Romberg and Boyd, 1927–1971*, footnote, 165.

72 Serle, *Robin Boyd: A Life*, 130–1. 'Some contemporaries were eventually to consider that in many respects Romberg was the best architect of the three, especially as a technician and an "administrator" of a building' (p. 143).

73 Hamann, *Modern Architecture in Melbourne: The Architecture of Grounds, Romberg and Boyd, 1927–1971*, 206–8. Dr Roche was a Canberra client to whom Fenner had recommended Boyd's services in June 1954. Fenner to Boyd, 10 June 1954, 'Fenner House Canberra', Grounds, Romberg and Boyd Records 1927–1979, MS 13363, Box 43/16(a).

74 Letter from Frank Fenner to Robin Boyd, 23 June 1955, 'Fenner House Canberra', Grounds, Romberg and Boyd Records 1927–1979, MS 13363, Box 43/16(a).

Over a four-year period, the Fenners did the best they could to treat the symptoms. But by late 1958, after a series of particularly heavy downpours, they ran out of patience. Fenner made an impassioned plea to his architect to address the cause, writing:

[W]e have never had a year (indeed hardly a month) in which there were not leaks somewhere... We have decided that the only thing to do is to re-roof the house with something that will not leak... There is no such guarantee and we're up for the whole price of re-roofing—unless you are willing to make a contribution towards it.

Stating that he and Bobbie appreciated 'many aspects of the design of this house', he regretted that 'its complete failure to exclude water makes it impossible for us to leave it even for a week, lest the floor and carpets somewhere else are ruined by water'. At this point, the Fenners were prepared to walk away from their award-winning house:

Bobbie would like to sell it and live in a rented house because she can no longer put up with dishes and towels all around the floor when it rains; but we can't even sell it with the roof as it is.

Yours sincerely,

Frank.

p. s. Since beginning this letter a new leak has developed in the Drawing-room, so that we now have three dishes on the floor of the family room and one on the cabinet in the drawing room.⁷⁵

A further effect of the ingress of moisture was that timbers began to rot, particularly in the frame of the glazed connecting link. Fenner sent samples of the affected timber to the Division of Forest Products at the CSIRO in Melbourne for analysis. Receiving confirmation that the rot was a fungal infection associated with excessive dampness, he forwarded the information to Boyd for his attention.⁷⁶

In 1960, Boyd engaged Bischoff to act as his representative in Canberra. Bischoff arranged for the Malthoid roof to be replaced with a previously unavailable Swiss-designed aluminium foil, and reported to Boyd: 'Mrs. Fenner reports no leaks recently so here's hoping.' This solution, however, also failed. In July 1961, Grounds, Romberg and Boyd wrote to the roofing company complaining of new

75 Letter from Fenner to Robin Boyd, 1 December 1958, 'Fenner House Canberra', Grounds, Romberg and Boyd Records 1927–1979, MS 13363, Box 43/16(a).

76 Fenner to Division of Forest Products, CSIRO, Melbourne, 21 May 1958, 'Fenner House Canberra', Grounds, Romberg and Boyd Records 1927–1979, MS 13363, Box 43/16(a).

leaks.⁷⁷ The roofs to both blocks were eventually re-roofed with continuous steel roof sheeting, which finally solved the problem, but at significant cost. Hamann claimed that each time the roof was replaced, the cost was almost equivalent to the total original building fee.⁷⁸

Riposte

By omitting any consideration of the role of women in his analysis of the 'post-war man', Breuer's methodology was flawed. His whole concept that the functional requirements of a house could be considered purely from the male occupant's needs was deficient, as were many of the reasons for his subsequent advocacy of the binuclear plan type. The Fenner House, as a descendant of that type, retains within its layout atavistic evidence of those same assumptions.

When the Fenner House won the Canberra Medallion, the judges claimed that the plan 'has the merit of separating the sleeping accommodation and children's playroom from the general living and entertainment part of the home'.⁷⁹ But there are a number of comments to be made about this separation of functions. The postwar idea that leisure time would increase had resulted in a growing emphasis on the provision of recreation spaces within the home. Many of the Californian Case Study Houses incorporated such spaces. In some of these, a child's playroom was located adjacent to the kitchen, facilitating supervision from the kitchen, while others provided an adult 'hobby' space near the kitchen.⁸⁰ But in the Fenner House the kitchen and playroom were located in separate blocks, making supervision of young children from the kitchen impossible. When the house was first built, Vicki was old enough to play by herself, but Marilyn would have required supervision. The functional ramifications of this were that both children were left unsupervised at times, that the relatively small dining room doubled as a playroom during the day or that Bobbie sought domestic help for either cooking or child minding.⁸¹ A further issue was the location of the study opening directly off the playroom, making this space impractical while the playroom was being used. The decision

77 'Fenner House Canberra', Grounds, Romberg and Boyd Records 1927–1979, MS 13363, Box 43/16(a).

78 Hamann, *Modern Architecture in Melbourne: The Architecture of Grounds, Romberg and Boyd, 1927–1971*, 165.

79 *The Canberra Times* (November 1956).

80 The 'utility' space that Boyd indicated next to the kitchen in the Fenner House was a combined laundry, pantry and storage area, not a hobby space.

81 The first option was highly unlikely, the second was plausible, but impractical, given the dimensions of the dining room, while the third was also possible, but remains unconfirmed. Joachim Driller made a similar observation regarding the separation of kitchen and playroom in the Geller House I. Joachim Driller, *Breuer Houses* (London: Phaidon, 2000), 150.

to place adults' and children's bedrooms in the same wing was practical while the children were young, but not so desirable as they grew older, when separate parents' and children's zones might have been a preferable option.

It has not been possible to give a full account of the role played by Bobbie Fenner in the story of this house. It is most probable that, as a partner in marriage, she played an equal role to Frank in most respects; however, she died in 1995 and left few written records.⁸² On the other hand, Frank, a highly prolific publisher and diarist, left many written accounts of his public and personal lives, and these, plus recorded interviews, form a large part of the documented history of the Fenner House. It is for this reason that the client's perspective has been related through his voice.

The available documentation does reveal, however, that Bobbie was the client contact throughout almost the entire construction phase—a period of six months. Frank departed for overseas study just after the contract documents were signed, leaving Bobbie in charge of 'any problems that might arise' before he returned at the end of October.⁸³ As it turned out, there were plenty. Boyd initially engaged Tom Haseler (who had previously worked with John Eccles on his house) to supervise construction, and attended site infrequently. Bobbie found Haseler, however, to be 'very conservative', and became concerned that he was making many decisions that were in conflict with Boyd's design. She had 'quite an argument' with Boyd about this before she managed to convince him to 'take over supervision himself and come up more frequently'.⁸⁴ During the construction period, there was frequent written correspondence between the Fenners.⁸⁵

The 'sensitive use of colour and texture of materials' was another aspect of the Fenner House that attracted praise from the Canberra Medallion judges.⁸⁶ Elinor Ward was impressed by this feature: 'As always with a Robin Boyd house, the colour is exciting and imaginative.' The bold use of colours throughout the house expressed a sense of playfulness. A deep-blue entrance door appeared to 'float' in the glass link, while the living room had teal-blue ceilings, a light-green wall, and chairs upholstered in plum, blue, lemon and yellow fabric. The dining room

82 The only available documents consist of personal letters that Bobbie wrote to Frank when he was overseas. Unfortunately, these are from an earlier trip; the 1953 letters, written when the house was under construction, are not available.

83 Fenner, *Nature, Nurture and Chance: The Lives of Frank and Charles Fenner*, 61.

84 Tom Haseler, of 56 Arthur Circle, Forrest, was stated to be the supervisor on 14 September 1953. 'Fenner House Canberra', Grounds, Romberg and Boyd Records 1927–1979, MS 13363, Box 43/16(a). 'At first Robin employed a local architect as supervisor, and came up rather infrequently. However, this man was very conservative, and repeatedly made decisions which went against Robin's ideas and our own. Bobbie had quite an argument with Robin about this, but eventually persuaded him to take over supervision himself and come up more frequently.' Fenner to Serle, 17 June 1994, Fenner, F. J., FAA (1914–2010), MS 143/8/4H, Box 3.

85 Fenner, 'Collins Trip Book', 1953.

86 *The Canberra Times* (November 1956).

was painted deep coral, the kitchen had blue cabinets, scarlet benchtops and black linoleum tiles, while the children's bedroom had grey walls and a citron-yellow ceiling.⁸⁷ For stuffy, English-influenced 1950s Canberra—where wall-to-wall floral carpets, pastel-coloured walls, rose-patterned linen upholstery and checked gingham or lace net curtains were *de rigueur*—this represented a quantum leap into the future. Boyd described the colour scheme as 'varied, but not riotous...which can't result in discords', relying on a 'basic grey neutral' background to provide a foil to the brighter colours. Frances Hutchison believed that Bobbie deserved credit for the interior colours, reporting that the colour schemes were 'worked out by Mrs. Fenner using the children's paint boxes'. It is clear that Boyd liaised with Bobbie on the colours: a letter referring to the colour scheme, and to 'linen colour samples from Miss Hardess', was addressed to Bobbie rather than to Frank.⁸⁸

While the significant contributions of women are hidden within the text, the female presence, from Boyd's point of view, has been visible throughout. To him, the Australian house was strictly women's territory, and feminine in gender. This was not based on his own ideals, but on how he perceived male culture. For the sensitive, artistic Boyd, the conventions of 1950s male comradeship—and related fears of being labelled 'effeminate', 'affected' or a 'pansy'—restricted male involvement in domestic matters to the mere solving of practical problems. Those elements of the house that he believed males were permitted to concern themselves with were thus limited to 'parts that were liable to leak or jam', including 'eaves gutters' and 'sliding sashes'. The woman, on the other hand, was given free rein over everything else: 'the plan, the colours, the fabrics, the shapes.'⁸⁹ Boyd's gendered taxonomy of the Australian house revealed two important issues. By building 'male' components, such as gutters and downpipes, within the depth of the roof and wall cavities of the Fenner House, he rendered invisible and inaccessible the very elements that required male attention. And so, when the rainwater system did inevitably fail, for the reasons outlined above, it was almost impossible to rectify.

Boyd's reading of 1950s Australian masculinity needs to be placed in perspective. In a number of articles, he revealed a lack of affinity for what he termed the 'lowbrowism' of the average Australian male—a sentiment that sometimes veered into snobbish distaste. As his biographer, Geoffrey Serle, pointed out, Boyd was 'the very opposite of the good-on-ye-mate backslapper', and in his contempt for 'the mob swilling their beer in squalid pubs' and the 'empty

87 Elinor Ward, 'This House is Canberra's Medallion Winner', *Australian Home Beautiful* (November 1956): 40–2, 45. The chairs included a Grant Featherstone-designed Contour Chair.

88 Boyd to Bobbie Fenner, 29 January 1954, 'Fenner House Canberra', Grounds, Romberg and Boyd Records 1927–1979, MS 13363, Box 43/16(a); Frances Hutchison, 'Medal-Winning House', *Australian House and Garden* (November 1956).

89 Boyd, *Australia's Home: Its Origins, Builders and Occupiers*, 266, 272.

arrogant look of the ockers', he might not have sufficiently appreciated some of the decent qualities of the ordinary Australian man.⁹⁰ The positive side of this was Boyd's own lack of arrogance and his genuine sensitivity to clients' needs—the very characteristics that had led Fenner to Boyd, rather than to Grounds, in the first place.⁹¹

The Fenner House was an incremental part of Boyd's search for the appropriate postwar house—for a house that displayed a genuine response to questions of climate, appropriate materials and human comfort. The Fenner House exemplified Boyd's call for simple, practical plans with open living areas and blocks of single-room width. Sited to maximise northern and southern light, and to provide shelter from prevailing winds, these were to be covered by low-pitched roofs whose overhangs responded to seasonal sun angles.

While Boyd had been highly critical of existing domestic architecture in Canberra, believing it to be pretentious and style driven, he still held a genuine respect for the underlying structure of the city: 'despite all the architectural chauvinism, despite architecture itself, Canberra is beautiful'. This, he believed, was mainly due to a combination of Walter Burley Griffin's street planning and Pryor's planting.⁹²

Within this context it appears that the Fenner House, with its lack of concession to accepted local convention and absence of historical style, became Boyd's riposte to all that had come before. This was Boyd's opportunity to show how houses *could* be built in Canberra. And the success of the Fenner House in this respect was largely due to the binuclear plan. While there were shortcomings in regard to internal relationships and efficiency, the clear logic of the articulated binuclear plan provided Boyd with an opportunity to break the house down into three smaller, easily manipulated elements. Each of these was then adjusted carefully in relation to criteria such as roof pitch, eaves overhang and fenestration, so that each responded to individual requirements, but still remained part of a coherent whole. There were problems with the implementation of some of this. These were due partly to Boyd's relative inexperience, but also to limitations with available technology—for instance, steel roof sheeting was not available in sufficient lengths to provide continuous coverage.

In spite of the significant technical shortcomings, this was a brave house, and one that—in accordance with Boyd's intentions—departed radically from the kaleidoscope of historical, style-based houses that pervaded Canberra suburbs. Fenner's enthusiasm for the project can be detected in a series of letters he wrote to Florey in Oxford in late 1953. Keeping Florey regularly informed of progress

90 Serle, *Robin Boyd: A Life*, 138, 328–9.

91 See Lewis's comments to Fenner regarding the differing personalities of Boyd and Grounds in Chapter 1.

92 Robin Boyd, 'The Functional Neurosis', *Architectural Review* (August 1954).

at the university, Fenner usually concluded his letters with a brief update on progress at his own house. In February 1954, he reported that it was 'going well and the painters are now at work on it. We expect to move in in 2 or 3 weeks. We're very pleased with it and think that it is quite a handsome structure, and will be comfortable too.'⁹³



Figure 2.15 Fenner House, living room

Photograph: Ben Wrigley, 2012



Figure 2.16 Fenner House, dining room

Photograph: Ben Wrigley, 2012

93 Fenner to Florey, Canberra, 4 December 1953, 18 February 1954, 23 April 1954, Fenner, F.J., FAA (1914–2010), MS 143/19/1 A to G, Box 38.