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**Round House / Glass House:**  
JH Esmond Dorney at Porter Hill, Hobart

Throughout the mid-twentieth century Modernist ideals influenced residential design in many ways. In particular, experiments with geometry changed the form and function of the domestic dwelling, and this included an interest in polygonal buildings of different types. In the late 1920s Alvar Aalto, Arne Jacobsen and Buckminster Fuller all experimented with round houses. After the Second World War Frank Lloyd Wright, Bruce Goff and John Lautner, as well as lesser-known architects Raymond McGrath, Daniel Liebermann and Don Erickson, also designed round houses in England and the United States. Philip Goad suggests that these projects demarcate a humanist expansion of the Modernist domestic project, with the evolution of organic principles alongside the traditional functionalist principles producing varied domestic outcomes.

In Australia, Roy Grounds and Robin Boyd were well known for their experimentation with geometry during the 1950s, with Grounds designing a series of round houses. However, less is known of the work of Tasmanian-based architect J. H. Esmond Dorney (1906-96), who constructed three houses in 1949, 1955 and 1978 for his own family atop the foundations of the former Fort Nelson gun emplacement, at the busy suburban edge of Hobart. Dorney explored the idea of the Modern house as a functional dwelling connected to its site through his inventive and expressive architecture, which experimented with both geometry and transparency. Dorney's projects, which exemplified functional, humanist and organic ideals, were developed contemporaneously with other examples worldwide. This paper places these projects within a broader international lineage, where rules were broken and experimentalism was embraced.

The Modern movement in architecture attacked classical traditions of composition, proportion and symmetry with unadorned rectilinear forms and a prioritisation of functionality. Australia's foremost Modernist historian Robin Boyd believes that these rules began to be broken with Le Corbusier's chapel of Notre Dame du Haut in Ronchamp (1950-55), which is both anti-functional and purely sculptural.<sup>1</sup> Here, Boyd believes, a modernist interest in curved forms and other geometrical shapes began. However, the exploration of modern round houses reveals that these experiments began in the 1920s-40s. These ideas were extended through key projects directly after the second World War, and continued into the late 1960s-70s. Philip Goad suggests that this period demarcates the humanist expansion of the modernist domestic project, with the evolution of organic principles alongside the traditions of functionalism resulting in a series of experiments with geometry and form.<sup>2</sup> Goad's text *Post War and Polygonal* examines the exploration of geometry in the pursuit of new ideals of context and place in a range of building types.<sup>3</sup> In contrast, this paper focusses on a particular building type and a specific polygonal form, examining the development of the modernist round house. It surveys a range of round houses built between the 1920s-70s to provide an overview of this building type, and to establish a context for understanding the round houses of J. H. Esmond Dorney in Tasmania, built for Dorney's own family atop the foundations of a former gun emplacement on Fort Nelson, Porter Hill on the busy suburban edge of Hobart in 1949, 1966 and 1978. In so doing, it places Dorney's little-known projects within a broader lineage of modernist round houses, establishing the international significance of these projects.

## J. H. Esmond Dorney: Round Houses on Porter Hill, Hobart, Tasmania

Dorney embraced modernist principles of functionalism, combining an interest in organic and humanist ideals to explore the relationship between form and function; orientation and relationship to physical context, principally the landscape; and experimentation with the way technological advances in materials could affect building form. Dorney's Tasmanian round houses were informed by the aesthetics of Streamline Moderne, which characterized his early projects in Melbourne. They also expanded the tactic

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1 Robin Boyd, *The Puzzle of Architecture*, (Melbourne: Melbourne University Press, 1965), 93.

2 Philip Goad, "Post-War and Polygonal: Special Plans for Australian Architecture 1950-70," *Architectural Theory Review*, vol. 15, no. 2 (2010), 174.

3 Goad, "Post-War And Polygonal,," 174.

of creating open plan living spaces gathered around a centralized fireplace that were central to Frank Lloyd Wright's Prairie Houses. However, in contrast to the internalized spaces of Wright's houses, Dorney explored conditions of transparency through and beyond the building, which created specific internal relationships and a strong visual connection between interior of the house and the landscape in which it was located.

Dorney's experimentation with transparency and the erosion of the spatial definition between internal and external coincided with similar explorations by Mies van der Rohe (Farnsworth House, 1945-51) and Philip Johnson (Glass House in New Canaan, Connecticut, 1945-49). In these projects the traditional hierarchy of rooms and the sense of enclosure between inside and outside was eroded; external walls were completely glazed and rooms were separated by partitions, built-in furniture, and the strategic positioning of services.



Fig. 1. Round Houses of Esmond Dorney - drawings by Joel Seadon.

Dorney's first round house, which was constructed in 1949, became a testing ground for future projects, both on Porter Hill and a range of other sites. It was essentially a single open-planned room with a radius of just 5.5m stretching from the central point of the gun emplacement, which formed a sunken 'conversation pit', with the space compartmentalised by alcoves forming the kitchen, bedroom and bathroom. An expansive fixed glass facade captured a 360-degree panorama, from the dramatic view south towards the D'Entrecasteaux Channel to the close proximity of the adjacent bushland. A delicate external steel structure supported a thin white roof, providing a contrast to the solidity of the concrete gun emplacement below. As the family grew, a rectangular extension was added to the west of the round house in 1955, and the former observation post in the middle of the fort was converted to a bedroom.

In 1966, Dorney built a second round house on the northern gun emplacement. Like the 1949 house, this building was centred around a 'conversation pit', but it expanded beyond the strictures of the circular geometry to incorporate peripheral spaces that housed a kitchen and bedrooms, all radiating from a central, round living space. The house extended over three levels; it included a small office placed concentrically over the core, which was accessed by a ladder; and a bedroom, laundry and bathroom below the main floor level. The bedrooms were oriented to the southeast, facing the more intimate views to Bruny Island and across the immediate landscape of Porter Hill, and the living spaces opened to north to the expansive view of the Derwent River. In 1970 the former observation post between the gun emplacements was converted into a small flat.

Unfortunately the 1966 house was destroyed by bushfire in 1978, and later that year Dorney constructed a third round house in its place. A centralized round living space once again anchored the house; two

radial wings housed the kitchen to the north, and the bedrooms and bathrooms to the south. In this house Dorney continued to explore conditions of transparency, exposure, enclosure and geometry, but this project was more modest in size as Dorney was already 72 years old. A second fire in 1998 destroyed the original 1949 round house, and today only the 1978 house and the 1970 flat remain.

## Exploring the Lineage and Context of Dorney's Round House

A survey of round houses shows that this typology spans between ancient and modern traditions. Whereas technological advances prompted new experiments with glass, structure and transparency, the round plan has a long history in the built environment. In Western culture it is documented to have appeared in Athens in 50 BC, with the Tower of the Winds, a machine for telling the time, in which the rounded form addressed functional demands. Religious architecture has also had a long interest in the circular form, with faceted round baptisteries first appearing in 440 BC Rome with the Lantern Baptistery. The round communal baptistery developed as a means of curbing the potential evils that might arise through the practice of private baptism. Similarly, five round houses in the Cornish village of Veryan, clustered around a church, are said to be built in 1760 in order to keep the devil out, with no corners in which the devil could hide. The Hakka walled villages in China contained a large communal round house for multi-family living, beginning in the 17th century. Round forms again appeared in the enlightenment philosopher Jeremy Bentham's Panopticon in 1787, which embraced principles of control and order to allow maximum surveillance in institutional buildings.<sup>4</sup>

Modernist round houses differentiated from these early examples by responding to the specific cultural needs and desires of the 20<sup>th</sup> century. They can be traced back to the late 1920s, with speculative propositions by Alvar Aalto (1928) and Arne Jacobsen and Flemming Lassen (1929), developed in parallel with Buckminster Fuller's Dymaxion House (1929). These early round houses embodied nascent modernist ideologies of future-oriented design, which aspired to free architecture from classical influence. This led to an interest in the 1930s in Streamline Moderne machine and Streamliner influences, which produced curved building forms including rounded houses, such as Raymond McGrath's St Ann's Hill House (1936). The best-known examples of Modern round houses were constructed after the Second World War, notably through buildings designed by Frank Lloyd Wright and Bruce Goff in the United States. An array of overlapping ideas underpins these projects; in particular, both Wright and Goff scorned modern homes. Goff described the majority as "boxes with little holes", and his exploration of circular geometry was based on an interest in the circle as "an informal, gathering-around, friendly form".<sup>5</sup> Wright also believed that building for humane purposes should be sympathetic to the ground on which it lies.<sup>6</sup> These ideas were explored by John Lautner, who was apprenticed to Wright at Taliesin in the 1930s, and by Don Erikson

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4 Goad, "Post-War and Polygonal", 167.

5 "The Round House", LIFE Magazine, vol. 19, March 1951

6 Frank Lloyd Wright, *The Future of Architecture*, (New York: Horizon Press Inc., 1953), 144.

and Daniel Liebermann who were at Taliesin in the late 1940s, at the time of Wright's experiments with geometry expanded to include round forms.

Wright's influence spread to Australia, via Walter Burley Griffin and Marion Mahoney who worked for Wright. Wrightian ideals underpinned the Griffin's Australian practice, where Dorney worked between 1924 and 1931. During this time the practice designed a series of houses in Castlecrag in Sydney, which provided both internally focussed living spaces and a strong understanding of the local landscape; ideas that would become central to Dorney's own practice. The round house was explored by Australian architects, notably Dorney's friend Roy Grounds, who had travelled in England and France in the late 1930s and had worked in McGrath's office around the time that the Hill House at St Ann was designed, and Edward 'Ted' Ashton, who had worked in Grounds' Melbourne practice.

A survey of modern round houses reveals three recurring plan arrangements, in which the centre of the circle was used variously as circulation, courtyard or central living space. The most common arrangement involved the radial dissection of the circle into portions, with a central circulation core. This produced a form that was centrifugal, or horizon-bound, focussing each of the spaces individually towards the outside. In contrast, a second plan type removed the central core to form a courtyard, creating a centripetal or centrally focussed gathering form. However, if the circle was not complete and the building formed an arc, or if the external walls were transparent, this plan type was simultaneously centrally focussed and horizon-bound. The third plan type was more organic and free flowing, but anchored around a centralised circle, which was generally the key living space. This provided a contrast between an internally focussed core and the centrifugal expansion of the outer edges of the organic form. Dorney's round houses at Porter Hill resemble this plan type with a round conversation pit providing a contrast with the panoramic view offered by the transparent external walls of the living space, and the kitchen and bedrooms also focussing outwards towards the broader landscape. An investigation of other round houses reveals that Dorney's round houses were being developed simultaneously with other projects world-wide.

## Modern Round House Examples

One of the most widely recognized early modern round houses is Buckminster Fuller's Dymaxion House (1929), which interpreted the modernist ideal of a house as a 'machine for living in' quite literally, offering a prototype for mass produced houses or 'dwelling machines' that utilized minimal investment of energy and materials by the employment of scientific and technical means. Fuller employed circular geometry to create a central umbrella-like structure that allowed an economy of materials, creating a single large space divided by curtains or concertina walls. The aluminium façade contained only small plastic windows, which limited visual connections beyond the building. Boyd suggests that the focus on a geometric-structural solution resulted in the over simplification of the domestic space, into which functions were "stuffed in willy-nilly".<sup>7</sup> The arrangement also created an inwardly focussed environment

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<sup>7</sup> Robin Boyd, *The Puzzle of Architecture*, (Melbourne: Melbourne University Press, 1965), 142.

that was devoid of the strong connection to site in terms of both orientation and landscape, which would become central to subsequent Modernist projects.

Two unbuilt projects that appeared through competitions in Scandinavia provided an alternative approach. In 1928 the Finnish architect Alvar Aalto won first prize in both the summer and weekend categories of a design competition organized by *Aitta Magazine*. The summer house, known as the Merry Go Round House, utilized a circular form. A curved linear plan with a sequential progression of rooms culminated in an open-planned living space, which connected directly with a circular courtyard that opened to the mid-morning sun. Australian architect Brit Andresen observes that Aalto's projects were typically centred around a key memorable or poetic room, which in this project was typified by the central courtyard; a sky-lit, stone-floored circular room with a large curtained window overlooking the countryside.<sup>8</sup> The circular courtyard provided an extended threshold between the interior and the landscape, which Andresen suggests references ancient gathering forms that responded to the human desire to be either "centre bound" or "horizon bound". Aalto's round house balanced this duality, with the living space directly connected to a central courtyard that was simultaneously protected by the encircling house and directly connected to the landscape beyond.



Fig. 2. 1920s Round Houses, Aalto, Jacobsen and Flemming, Fuller - drawings by Joel Seadon.

A more rigid machine-like round house by Arne Jacobsen and Flemming Lassen was the winning the entry in the Danish Architects Academy's 1929 House of the Future competition. The house, which was temporarily constructed in Copenhagen for the Building and Housing Exposition, derived from Le Corbusier's ideals outlined in *Vers une architecture* (1923), which positioned the house as "a machine for living in."<sup>9</sup> The House of the Future celebrated a preoccupation with technological aspects of the modern lifestyle; it provided parking for a boat, car and gyrocopter, and referenced the ocean liner through its Streamline Moderne style. This machine-like aesthetic was complemented by the humanist layout based on the sun's path and daily ritual, which placed human needs foremost in its functional arrangement. These unbuilt projects by Aalto, Jacobsen and Lassen marked a break from the neo-classical Danish architecture of the 1920s and signified the beginning of the Danish humanist approach to design, ideas that would become central modernist preoccupations.

In the 1930s, Australian-born architect Raymond McGrath designed a round house in Chertsey, England. The Hill House at St Ann's commanded the top of a hill with strong circular forms that embraced the

8 Brit Andresen, "Alvar Aalto & Jorn Utzon: An Architecture of Ancient Gathering Forms," *UME*, vol. 22 (2011): 46.

9 Le Corbusier, trans. Frederick Etchells, *Towards a New Architecture*, (London: John Rodger, 1927), 89.

Streamline Moderne aesthetic. A round living room was prioritised as the central space of the house, and placed in the most privileged location, with the service spaces clustered behind. The curved glazed facade and a Corbusian-style roof terrace provided a panoramic view towards the Surrey countryside.

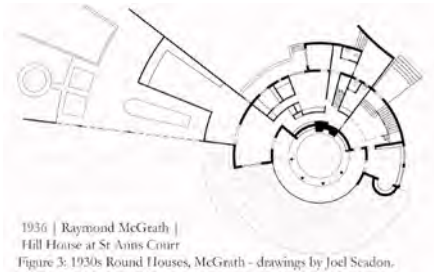


Fig. 3. 1930s Round Houses, McGrath - drawing by Joel Seadon.

Throughout the 1940s-1960s, the exploration of the round house continued as a device for examining modernist ideas, particularly in relation to humanist principles. Boyd notes the influence of texts by Rudolf Wittkower and Eiel Saarinen on the development of these new projects.<sup>10</sup> In *Architectural Principles in the Age of Humanism* (1949), Wittkower drew on the ideas of Leon Battista Alberti, who declared that nature enjoys the round form above all others, which he suggested is proven by creations such as the globe, the stars the trees, animals and their nests.<sup>11</sup> Wittkower also referenced Leonardo da Vinci's c1490 Vitruvian-figure drawing that equates human form with pure geometry. He reiterated da Vinci's proposition that the diagram of the human body with outstretched arms and legs inscribed within a perfect circle and square provides proof of the harmony between man, the world and pure geometry. Similarly, Saarinen's text *Search for Form* (1948) emphasised an organic approach to all areas of the arts as a reaction against the machine agenda and aesthetics of the early 20th century. Saarinen presented a metaphor of a tree to explain the relationship between built form and landscape. He noted that through the growing process the tree must adjust itself in accordance with the demands of its landscape as a whole, and as a consequence the tree's form is shaped by a particular place. It does not belong anywhere else but that place and if it is moved, it must adjust and grow to suit its new location.<sup>12</sup>

Both Goff and Wright's first round houses demonstrate these ideas. Goff's house and studio for artist Ruth Ford and her husband was celebrated in the popular press after it was completed in 1949. It consisted of three circular spaces, the central of which was organised around a copper fireplace. The highly centralised plan wrapped around a fireplace, and featured a sunken floor at the core, which was divided equally into thirds to form a kitchen and a sitting space on the inside, and loggia style terrace outside. The house provided a series of overlapping and informal spaces that were defined by built-in furniture. Transparent external walls to the courtyard dissolved the sense of interiority to create strong connections to the landscape.

<sup>10</sup> Boyd, *The Puzzle of Architecture*, 84-5.

<sup>11</sup> Rudolf Wittkower, *Architectural Principles in the Age of Humanism*, (West Sussex: John Wiley & Sons, 1949), 16

<sup>12</sup> Eiel Saarinen, *Search for Form: a Fundamental Approach to Art*, (London: Kennikat Press, 1948), 134.



Wright's round houses expanded his earlier geometric experiments beyond explorations with hexagons, squares, triangles, and parallelograms to include circular forms in a series of projects: the Herbert Jacob's House II (1948); a semi-circular residence for Curtis Meyer in 1948; and a round house in Arizona for his son, David Wright (1950-52). The Herbert Jacob's House II was arranged in an arc around a south facing courtyard in order to take advantage of the sun's movement throughout the day, and the glazed wall to the courtyard maximised the connection between inside and out.<sup>13</sup>

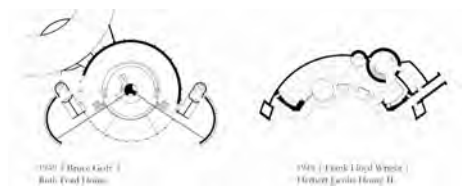


Fig. 4. 1940s Round Houses, Goff, Wright - drawings by Joel Seadon.

The round core of the house was completed by the landscaping, as this firmly located the building within its site. The circular plan deconstructed the compartmentalized box to redefine interior relationships, and the entire ground floor was idealized as one large room that was delineated by partitions and other furnishings, rather than walls.

Lautner also designed a series of round houses that employed geometrical arrangements for different ends, each creating interesting relationships to site, including: the David Shusett House (1951); the Chemosphere (1960); and the Ernest S. and Mildred Lautner House (1958). Lautner's most celebrated project, the Arthur Elrod House (1968) in Palm Springs, was positioned around series of large boulders that were incorporated into the house, creating an ambiguity between the interior of the house and the landscape and expansive view beyond. The main living space was centred on a circular space, with a second circular space inscribed into the landscape beyond. In contrast, Lautner's house for Wayne Zimmerman (1968) was more modest in scale, and it demonstrates interesting similarities to Dorney's Porter Hill houses. It employs an open planned arrangement that balanced the duality of the centrifugal and centripetal relationships, shifting the focus the house inwards and outwards. The house consists of two levels, with the main living space on the top and a pool on the lower floor. The house overlooks a valley, with glazing wrapping the northern facade. A built-in bench seat under the northern facade windows turns the occupant's back to the view and focuses towards the central seating and oculus above. This space forms the key memorable room; a centrally bound space highlighted by a skylight.

In Australia the development of the Modernist round house paralleled international examples, and engaged with similar concerns. In 1953, Roy Grounds, who had worked for McGrath in England in the 1930s, and was a personal friend of Dorney's, also began to explore circular forms. Grounds was particularly interested the pure geometry of the circle. In his own house in Toorak, Melbourne, he created a circular courtyard within a square box, testing the spatial relationships between pure forms of the circle and square. The courtyard was open to the sky, and this provided the main outlook for all the domestic spaces.

13 Harold Allen Brooks, "Wright and the Destruction of the Box," in *Writings on Wright*, ed. Harold Allen Brooks (Cambridge, Mass.: MIT Press), 176.

Grounds also designed two round houses, which employed a rigorous application of geometry. In contrast to his own house, which was centrally focussed, Henty House (1952) in Frankston, outside of Melbourne, focuses outward to the view of the ocean, creating spaces that are horizon bound. Grounds' preoccupation with neo-Platonic geometry is visible in the almost perfectly circular plan form, which is segmented to create a linear sequence of rooms curved around a central stair and concentric corridor. One of the segments is projected beyond the line of the main circle in order to maximise the views, but generally the purity of the round form is maintained.

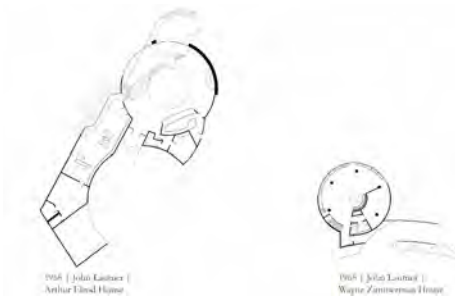


Fig. 5. 1960s Round Houses, Lautner - drawings by Joel Seadon.

In 1958 Grounds completed the second round house, which also examined his interest in humanism and neo-Platonic geometry. The Moorilla Round House for the Alcorso family in Hobart is a pure circular form, with no extrusions - just a small recess for the front entrance. Both of Ground's round houses are similar to Arne Jacobsen's Leo Henriksen 1959 house, with movement centralised around the core, and the circular geometry broken into quadrants to create a series of outwardly focussed rooms that exploit panoramic views.

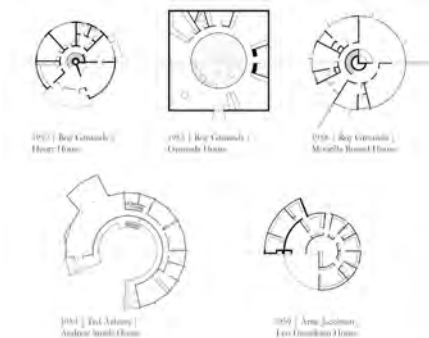


Fig. 6. 1950s Round Houses, Grounds, Ashton, Jacobsen - drawings by Joel Seadon.

In 1954, Edward 'Ted' Ashton, who had worked in Ground's Melbourne office, designed the Smith house in Launceston, in the north of Tasmania. A linear plan wrapped around a circular courtyard, which opened the centre of the house to the light and view, rather than a central circulation core. The circular form provides an interesting sense of layering that is amplified by the transparency of the external walls to the courtyard and long horizontal windows in some of the spaces, particularly the main bedroom opposite the living room, and

this produces a strong connection between the indoor spaces and the outdoor courtyard and back through to the inside.

## Conclusion

While Dorney's houses clearly sit within a lineage of other Modernist projects, they offer a very specific response to the round house typology. Dorney created organic forms that were derived from the radial logic of the circle, but which provided strong contrast with the strict geometric patterns that were central to other projects. The 1966 and 1978 houses are bound to a central core, but not restricted by the purity of a circular geometry. The iconic external form was balanced by specific humanist intentions: the kitchen is a part of the living space; and gathering and interaction is prioritised through the centralisation of the house on the round 'conversation pit'.

Dorney's round houses eroded traditional relationships between functional activities, and also between inside and outside, which created very specific relationships to landscape. The response to both the natural landscape and the ruins of the fort reflects a relationship to Saarinen's tree analogy; which suggests that the shape of a tree is in direct relationship with the landscape.<sup>14</sup> Esmond's son, Paddy Dorney observes that "the fort was there because of the hill and the house is there because of the gun emplacement."<sup>15</sup> In building on top of the ruins Dorney heightens the sense of place, engaging with both the landscape and the fragments of the fort. In all three houses the round gun emplacement was utilized to create a central gathering space, with built-in seating that focussed the occupant towards the central hearth, while providing for more expansive views beyond. This produced spaces that were simultaneously centre-bound and horizon-bound, creating a dynamic relationship between the domestic interior and the landscape beyond.

Like Johnson and van der Rohe, Dorney used transparency to create intimacy between the occupant and the environment, but in contrast to Johnson's Glass House, where the landscape is designed to complement the house, Dorney's round houses are designed to fit the site.<sup>16</sup> The sequence of movement towards, into and through the buildings was orchestrated to heighten the experience of the site. The dynamic relationship between inside and outside was further exploited in the 1978 house, where lights placed at the base of the perimeter columns heightened the reflectivity. In the evening the interior could be lit solely by lights at the edge of the space, and this created a series of reflections of the outside within the building's interior.

From this study further questions about the relationship between Dorney and his contemporaries arise. In particular, the sharing of ideas between Dorney and Grounds, and the relationship between Grounds and McGrath warrants further investigation, which will assist in further illuminating the significance of these projects within the lineage of the modern round house typology.

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14 J. Sergeant, et al., "AD Profiles 16: Bruce Goff," *Architectural Design* 48 n. 10 (1978), 133.

15 Paddy Dorney, Personal interview, 8 March 2013.

16 Paul Goldberger, "Philip Johnson's Eminent, Elegant, Practical World," in *Philip Johnson: The Glass House*, ed. David Whitney & Jeffrey Kipnis (New York: Pantheon Books, 1975), 60.