

VALUES-BASED ARCHITECTURE AS A REGENERATIVE APPROACH TO THE HUMAN – ENVIRONMENT RELATIONSHIP

A.E. WILLIAMS & P.O. WILLIAMS
Soft Loud House Architects, Australia

ABSTRACT

Soft Loud House Architects have been developing a methodology for values-based architecture for nearly two decades. This regenerative design approach develops the vision of a sustainable place for the client to dwell within, coherent with their goals, needs and values, engaging them in the design process to realise that vision. Central considerations to this process are the client's identity, what they find meaningful, and their relationship to place; all of which inform emotional and spiritual wellbeing. Values-based architecture contrasts with the published and awarded realm of architecture in Australia, which prioritises aesthetics and technology over environmental sustainability. This paper explores the relationship between values and the spaces we create, discussing two completed projects; the Cockatoo House and the Underground House, to illustrate how values-based architecture can enrich the client's quality of life by aligning their values with their actions, so that the designed environment becomes a coherent part of their identity.

Keywords: Disconnection, modernity, regenerative architecture, sustainability, sustainable design, values, values-based architecture.

1 VALUES

Values rest at the heart of identity. They underpin the how and why of what we organically and authentically regard as something that is deserving of importance or worth. Values guide us in how we individually and communally make sense of our world, and influence how we create meaning and respond to the complexities of our environment. Values are communicated to ourselves and others through the way we dress, the car we drive, the food we eat, and in the endless particulars of how we live, including the choices we make when we design and build homes.

Our values are formed by events or experiences within our family, culture and environment, yet are also limited by these things. Anne Marie Wallis, in *Ontological Designing – Laying the Ground* says, 'we design our world, while our world acts back on us and designs us' [1]. Architecture creates not only environments for people to inhabit, but also the values we use to define ourselves as a culture, and can therefore be viewed as a significant or political act by modifying how we relate to the world – influencing the experiences we have physically, emotionally and spiritually.

Prioritising certain values over others adjusts the choices we make. Values are often assumed to be fixed and immutable, however Mark Manson in *The Subtle Art of Not Giving a F*ck* argues the opposite. Manson writes that we can adjust our priorities and change any 'shitty values' we may have into new ones that offer more meaning and a renewed purpose for being alive [2]. Adapting our choices to align with our values is not always easy according to Patrick Lencioni in the *Harvard Business Review*, they demand constant vigilance and fortitude and at times can limit us, or even leave us open to criticism [3].

Sarah Williams Goldhagen in *Welcome to Your World* describes how post-industrial environments that are increasingly urban and non-natural can act on us to make us sick, insular

and depressed [4], damaging our relationships with each other and the natural world. By our continued creation of such environments, we increasingly become desensitised to our disconnection and ‘eventually deem it to be normative’ [5]. In *City Futures in the Age of a Changing Climate*, Tony Fry captures the growing sense of grief in the global community, lamenting the increasing structural unsustainability between the ‘made world’ and the biophysical world [6]. From our short sightedness, we have created an environment that is rapidly becoming uninhabitable and which promotes values that further disconnect us from nature.

The use of labels such as ‘eco’ and ‘sustainable’ applied to a small proportion of architectural projects responds to the awareness of our fragile environment and the overconsumption of resources. Much of the developing world’s population still lives well within the planet’s capacity, while according to the Global Footprint Network, Australians require 4–5 worlds worth of resources to continue to live as we do [7]. Anthony Parker, in a recent article in *Architect Victoria* describes how the role of the architect has become an ‘upmarket advisor on lifestyle consumptions, displaying hauteur and sanctimony as virtues, with the primary concern regarding the built environment being their profile within it’ [8]. This seems a depressing but accurate portrayal of the diminishing relevance of the role of architects to create a more than skin-deep sustainable future. In many cases the use of ‘eco’ or ‘sustainable’ as prefixes and descriptions implies certain values, in an attempt to capture the interest of consumers who care about ethics and sustainability. Unfortunately, the commodification of these words in the pursuit of profit has, in many cases, hollowed out the implied meaning and values of these terms so that they have become not much more than a style or aesthetic choice, poisoning the cultural well [9]. In *The Paradoxes Of Sustainable Architecture*, Simon Guy and Steven Moore suggest that sustainable architecture has become narrowly concerned with energy efficiency because it is easily measurable [10]. Deeper issues including the lack of social justice in supply chains, the toxicity of materials and finishes, resource depletion, increasingly sedentary lifestyles and indoor air quality are some of the qualitative elements of sustainability that are harder to measure, and therefore largely remain unexamined. Australians live in some of the largest houses in the world [11] and often find it difficult to balance their expectations with a realistic assessment of their needs, struggling to take actions that respond to the awareness of their environmental impact.

The Architectural profession tends to value creative freedom above everything else, particularly sustainability. In Australia, the Sustainable Architecture Award is given a separate category. Ceridwen Owen and Jennifer Lorrimar–Shanks in *Framing The Field: The Award For Sustainable Architecture* resolve that all ‘good’ architecture should incorporate sustainable principles [12]. This objective has so far eluded implementation by the architectural profession. Many of the other awards are celebrated by submissions that have visual appeal, yet typically have low levels of occupancy, poor insulation, excessive and low-performance glazing, and use materials and construction systems with large amounts of embodied energy. Typically, projects submitted to the Architecture Awards are presented as professional images largely devoid of human representation, and similarly omit any accompanying commentary on consumption, habitat destruction, resource use, toxicity, or any qualitative or quantitative metric relating to sustainability. In Australia, our domestic energy consumption and environmental degradation have been accelerating regardless of the existence of these sustainability awards.

2 REGENERATIVE ARCHITECTURE

Modernity’s rejection of tradition, culminating in a renewed sense of freedom, individuality, and faith in technology that erupted in the 20th century is responsible for much of the resulting disconnection between humans and nature. Marshall Berman’s book titled after Karl Marx’s poetic statement; ‘*All That is Solid Melts into Air*’, describes the heady enthusiasm of

what it is to be modern [13], celebrating the removal of limitations on human achievement. Tony Fry discusses the impact of modernity on other civilisations and cultures including those with ‘far greater life and cultural sustaining power’ than those bringing the modernity [14]. Bob Randall, an Aboriginal elder in the film *Kanyini* reminds us of when Indigenous people were ‘big’, i.e. concerned with more than self, and related to everything and everyone [15]. This was a time when Indigenous people interacted with the other big things before they became ‘diminished’ by White-Australian culture [16], and before our separation from and power over nature left us disconnected and disempowered.

Regenerative architecture addresses the question of why our human-environment relationship needs to be repaired. Williams Goldhagen illustrates our current predicament using terms and descriptions such as ‘environmental beggary’, and ‘the sorry places we live’, to describe the toxic and harmful post-industrial built environments that humans have created [17]. Architecture has historically, and continues to be integral to the creation of our human environments, which act back on us and shape who we are and what we experience. As Alberto Pérez Gomez describes in *Attunement: Architectural Meaning After the Crisis of Modern Science*, ‘when most fully realized, architecture offers the gift of psychosomatic completeness, true health and well-being for the social body, a space of appearance consonant with its actions and habits’ [18]. When our values, needs and goals are met by the environments we live in, we are able to repair our human-environment relationships and experience a sense of coherence and wholeness.

Regenerative architecture approaches design from whole systems thinking, where humans are acknowledged as being equally in and of the environment. In the words of Bill Reed, ‘whole systems thinking recognizes that the entirety is interconnected, and moves us beyond mechanics into a world activated by complex interrelationships – natural systems, human social systems, and the conscious forces behind their actions’ [19]. Instead of merely aiming for sustainable design, characterised by Bill Reed as ‘being less bad’ [20], regenerative architecture describes a process where the ‘other’ or stakeholders who do not usually have a voice, (i.e. animals, plants, Indigenous peoples, minority groups) are invited to equally participate in the conversation. In understanding the way that space affects us in an embodied sense, Williams Goldhagen proposes that we can create ‘enriched environments... informed by what we know and are learning about how people experience the places they inhabit’ [21].

Questioning the values we prioritise is an important role of regenerative architecture. Permaculturist David Holmgren in *Retrosuburbia*, writes about how the act of simple suburban food production can be a grass-roots approach to planning a resilient future [22] and literally plants the seeds for cultural re-evaluation. This represents a growing shift from the measurable towards the qualitative, and from the intellectual to the embodied. Alain De Botton in *The Architecture of Happiness* proposes changing our focus from the visual properties of architecture to understanding the values promoted by architecture, as a way of probing the values we choose to live by [23]. Finally, regenerative architecture reflects back to us Manson’s question of legacy; ‘how will the world be different and better when you’re gone?’ [24].

3 VALUES-BASED ARCHITECTURE

Values-based architecture is one approach towards regenerative architecture. In a previous paper, *Towards a Methodology for Values-Based Architecture*, the values-based design process was defined as being ‘based on a conscious awareness of who we are, how we understand the world, and what we value’ [25]. Central to its structure is the development of a detailed design brief, underpinned by the clients’ goals, needs and values that are prioritised in order to bring presence to what they care about most.

Values-based architecture invites clients to develop meaningful constraints through naming and questioning their values. This is especially useful in instances where their desires contradict their values. Barry Schwartz in *The Paradox of Choice: Why Less is More* discusses the emotional cost of having too much choice and suggests that setting ‘voluntary constraints on our freedom’ allows us to focus on what we care about most, distinguishing between experiencing genuine pleasure, and the comfort of habit [26]. For example, a client who values sustainability might experience a deeper sense of fulfilment by choosing to limit the size of their home and thereby reducing the environmental cost in regard to the consumption of materials and energy.

A goal describes a principle, aim or a dream that is practical, physical, emotional or spiritual. Goals differ from one client to another, and can also differentiate participants within a client group. The development and documentation of individual or shared goals provides a solid foundation and clear direction for the design response. One example of a goal might be to create a home that is carbon positive, generating more energy than it consumes.

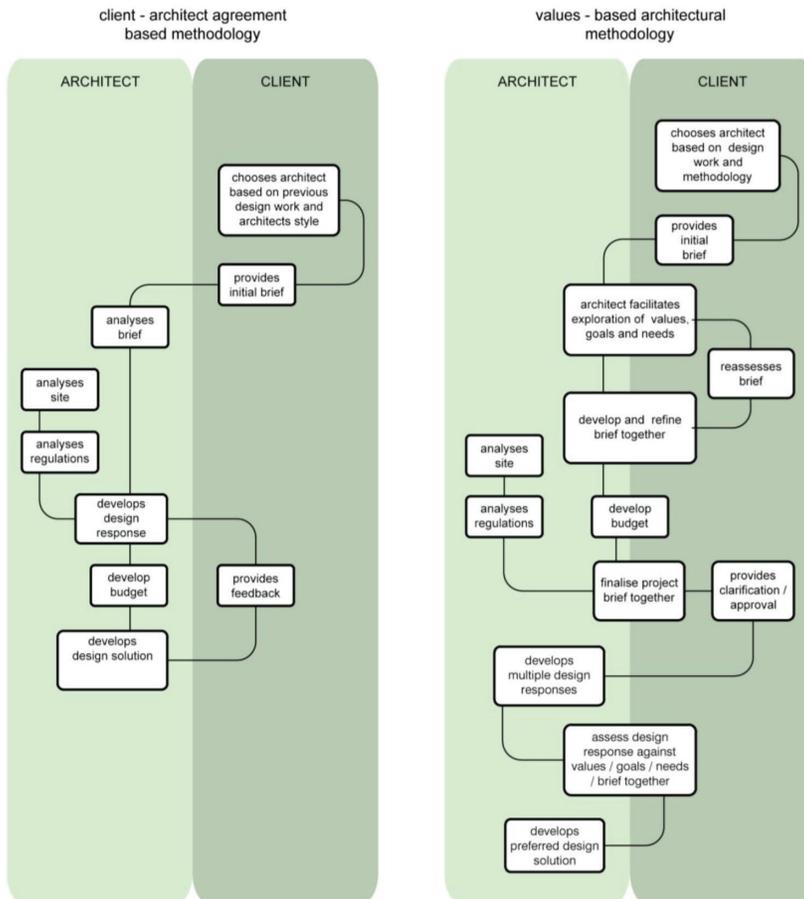


Figure 1: Comparison of client-architect agreement based methodology [31] with values-based methodology.

Needs are different to goals, though can be categorised similarly. Physical needs relate to sensations, such as our need for shelter from the cold or wet. Eckhart Tolle in *A New Earth* writes that an emotional need or ‘a feeling is a thought about a sensation’ [27]. Feeling safe or held, are examples of emotional needs and as such, are important perceptual experiences that Pérez Gomez describes as ‘intertwined with place, setting the tone for cognition, action and thought’ [28]. The word ‘feeling’ could be exchanged with ‘thinking’ to acknowledge the cognitive processes involved, but it still would not fully describe the embodied meaning of an event or experience. Needing somewhere to wash or a place to sleep is a very different requirement from a place that ‘reminds us who we are’ [29]. Abraham Maslow’s Hierarchy of Needs [30] offers another way to understand and rank needs, for example; a place to wash or sleep is a physiological need, which must be addressed before fulfilling higher spiritual needs such as what we would like to know about ourselves. These deeper enquiries regarding goals, needs and values, and the interaction between them are all woven into the design brief (Fig. 1). In the case of a client who values a ‘connection to nature’ for example, the brief would then guide the architects design response towards maximising views, bringing plants into the home, and recommending the use of natural materials and finishes.

This paper explores how the places that we create have the ability to shape us, make us conscious of and reinforce certain human and cultural values through the experiences afforded by those places. Two completed projects that engaged in a values-based design process with Soft Loud House Architects are the Cockatoo House and the Underground House. Both clients prioritised the values of sustainable living and created examples of sustainable architecture for others to learn from.

4 COCKATOO HOUSE

The Cockatoo House was a small project completed in 2014, situated within a country town in a forested rural region approximately one-hour east of Melbourne. The client, Kerry, was inspired to create a home of value and meaning and demonstrate the principles of sustainable design to herself and the wider community, particularly around the issue of scale. Some of the enduring aims for the project were to build a very small but high quality home for herself and her dogs, one that would last many generations (an unusual goal in Australia), and that deepened her relationship with her environment helping her to maximise her self-sufficiency and reduce her environmental impact (Fig. 2).

Kerry identified her goals and needs as: fun, growth, meaning, sustainability, permaculture, justice and spiritual fulfilment. Soft Loud House Architects asked Kerry to personally define any common terms used in relation to her project, elaborating on ‘sustainability’ as being ‘fundamental to process – sustainability in use of resources, materials, functionality, design approaches/solutions’ [32]. As the project developed, her goals became reinforced through various financial, practical and emotional challenges inherent in the building process. From these challenges opportunities arose, inspiring Kerry to reprioritise her goals. Her interactions with this process and its consequent influences back on her choices strengthened the importance of her wish to share the story of her design and building process with others.

It was more difficult to refine Kerry’s values into simple concepts that could be used in the design process, as there were a large number of detailed themes identified. The project team refined her list into the things that Kerry most wanted to be reminded about by being in her home; welcome, warmth, hope, future, safety, life and respect. Her definitions of these terms described the wish for a home that was connected to nature, grounded, made from natural



Figure 2: Kerry with her dogs in the compact living space. (photo Ben Wrigley)

materials and helped her maintain a sense of self. Kerry wanted to create a home that was more self-sufficient and offered opportunities to reduce her environmental impact. In addition to designing a beautiful, efficient and compact home of 55 square metres, the project team proposed a north-facing sunroom that initially was omitted from the scope of works due to concerns about the budget. As the project progressed, Kerry realised how the sunroom would provide an essential response to her values, capturing warmth and sunlight for use in heating, drying food and washing and to extend her small house with a light-filled living space that was connected to nature (Fig. 3).

The values-based architectural process inspired Kerry to grow personally, calling her actions into closer alignment with her values. Initially Kerry planned to owner-build (self-build) her house in order to have more control over the construction. As the project progressed, she became more open to the ideas and creative input of others, resulting in her seeking and welcoming contributions from artists and craftspeople that included mosaic and rendered artwork and an innovative kitchen design.

In the post occupancy evaluation, Kerry described the design process as being transformational [33], feeling that it had helped develop her self awareness, increase her self confidence around decision-making, and contributed to creating a meaningful home. Kerry described the design and building of her house as a positive experience, and one that fulfilled her design brief, allowing a deeper self-enquiry as to the reasons behind some of the choices made. As a direct consequence of undertaking this design process, Kerry has now become active in a wider community conversation regarding tiny houses and sustainable building, using her own home as an example.



Figure 3: North-facing sunroom capturing warmth and sunlight. (photo Ben Wrigley)

5 UNDERGROUND HOUSE

The Underground House was conceived in response to the loss of a family home in the Black Saturday Bushfires of 2009 (Fig. 4). Situated in Steels Creek, adjacent to the Kinglake National Park one hour northeast of Melbourne, the project took place on the very same property the bushfire had destroyed, where the clients, Amanda and Edd had lived and farmed for over 30 years. Additionally, Amanda and Edd lost many of their animals, the entire infrastructure of their working farm and their bed-and-breakfast accommodation business. While attempting to save their home and animals, they were lucky to be alive after fighting the fires that swept through their property. Their wider community also suffered catastrophic losses; of human lives, homes, farms, animals and businesses. Peter Stanley in *Black Saturday at Steels Creek* describes the terror of the fire; ‘the sound of roaring in the distance persuaded them the threat had arrived’ [34]. ‘The embers came over... it was like bombs’ [35]. For those not having had the experience of such traumatic events, it is difficult to understand the physical, emotional, financial and spiritual impediments faced by victims of the bushfires in the process of rebuilding their homes and lives.

In many rural parts of Australia, bushfire is a regular and inescapable reality. The Eucalypt forests that define many parts of Australia are perfectly adapted for fire, with many plant species requiring fire for seed germination, maintenance and regeneration. Bill Gammage in *The Biggest Estate on Earth: How Aboriginies Made Australia* writes that prior to white settlement Indigenous people harnessed fire as a tool to make the landscape productive, provide them with food and building materials, and maintain environmental balance [36]. Since 1788, much of the human-built environment created in Australia has been based on a European model of agriculture and settlement not adapted to survive or evolve with fire prone environments, the consequence being that fire is a regular and unnecessarily catastrophic occurrence.



Figure 4: The original home destroyed in the bushfires. (Photo Alvyn Williams)

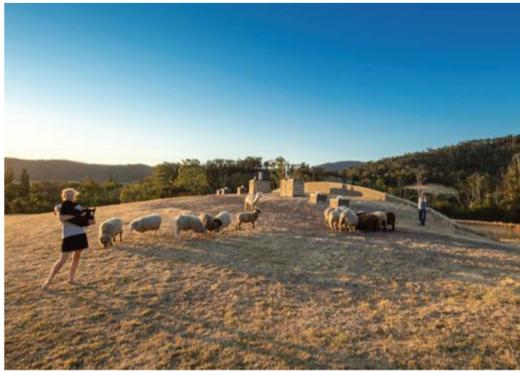


Figure 5: Sheep grazing on the roof of the new house. (Photo Ben Wrigley)

Amanda and Edd wanted to rebuild a home that would not only resist fire as required by the Australian Standard *AS3959 Construction of Buildings in Bushfire-Prone Areas* [37], but also exceed it. While many people in their community rapidly replaced timber-framed housing identical to that lost in the fire, Amanda and Edd wanted to ‘rebuild properly, not quickly’ [38]. They wanted to build a home that they felt safe in with the knowledge that bushfires would likely affect the property again in their lifetimes, and to also provide an example for the community of a type of building better adapted to this environment (Fig. 5).

Fire resistance and safety were therefore the most important goals for the project, though other goals included; the recycling of design elements and salvaging of building materials from the former home, minimising home maintenance and energy consumption, providing a warm and welcoming focus for the extended family, providing a safe home to grow old in, and demonstrating to others how to live comfortably and safely in this environment. Soft Loud House Architects approached the television series *Grand Designs Australia*, who were inspired to help Amanda and Edd share the story of their unique response to rebuilding in a fire prone area, which facilitated their wish for their design and building process to be educational to the broader community (Fig. 6).

The preparation of a masterplan for Amanda and Edd was informed by their long history of farming experience on the property, and awareness of the environmental risks. Valuable buildings were located away from vegetated areas, and a large dam shielded the house from



Figure 6: Environmental science students engaged in discussions in the house. (Photo Amanda Williams)



Figure 7: Arches constructed from bricks recycled from the original home. (Photo Ben Wrigley)

potential fires by creating a large and easily defendable space. The project team proposed an earth-sheltered house to provide stable thermal performance, enhancing fire safety and lowering maintenance. By orienting the house to the sun, combined with its large thermal mass and enhanced insulation, the house maintains a year-round stable temperature range of 21–24 degrees Celsius with very little additional energy input. Amanda and Edd’s core values included; education, sustainability, family, integration of buildings with the farm environment, security and identity. In response to this, the house produces its own water, treats its own effluent, and is extremely low maintenance through the use of durable materials. It has one façade exposed to the environment and all spaces easily accessible on one level. Arched openings throughout the house were made from bricks recycled from the burnt house, and reflected the same forms Amanda and Edd had experienced in the houses they grew up in, and the curved earth-sheltered roof was similarly designed to echo the sweep of the surrounding hills (Fig. 7). A practical brick-paved floor also created a sense of continuity with the home that had been lost, which had used similar materials. The new house facilitates a self-sufficient life, with sheep grazing grass on the roof, energy generated from wood and sunlight collected

on the farm, and home grown vegetables, meat, milk and cheese produced, traded and consumed.

The farm had always been used as a teaching environment for secondary and permaculture design students, related to environmental science and agricultural education. However, during the construction process, Amanda and Edd began to realise the potential for the house to add another dimension to the sustainable living practices they were already teaching. The project is now used as an example of an integrated permaculture-based home, agricultural and educational environment, producing food, income and creating a place for people to learn from and connect with each other and nature.

Amanda and Edd describe their new home as the warmest and lightest house they have ever had, and a joy to live in. Their story of regeneration after crisis is reflected in the house design, providing a thriving example of how we can adapt our buildings and lives to better suit the Australian environment. Their powerful story has been recognised on *Grand Designs Australia* [39] and by Moira Fahy in her film *Afterburn: In The Tigers Jaws* [40].

6 CONCLUSION

The values-based architectural design process allows meaningful constraints for decision-making to be created, guiding the development of new environments, habits and ways of being more aligned with the client's goals, needs and values. This process invites clients to distil and prioritise the things they care about most and contribute to a larger cultural conversation about the type of world they wish to create. This design methodology reflects a deep interest that Soft Loud House Architects have in the development of cultural sustainability. These two projects are examples of how a values-based architectural design process can give clients the tools to repair and strengthen relationships with themselves, others and their environment whereby they are empowered to live an enriched life, informed by what they care about most, planting the seeds for a life of coherence and wholeness.

REFERENCES

- [1] Willis, A.M., Ontological designing. *Design Philosophy Papers* 1, **4(2)**, pp. 69–92, 2006. <https://doi.org/10.2752/144871306x13966268131514>
- [2] Manson, M., *The Subtle Art of Not Giving a F*ck: A Counterintuitive Approach to Living a Good Life*. Harper Collins: New York, p. 151, 2016.
- [3] Lencioni, P.M., Make your values mean something. *Harvard Business Review* 1, **80(7)**, pp. 113–7, July 2002.
- [4] Goldhagen, S.W., *Welcome To Your World: How the Built Environment Shapes Our Lives*. Harper: New York, pp. 4–41, 2017.
- [5] Goldhagen, S.W., *Welcome to Your World: How the Built Environment Shapes Our Lives*. Harper: New York, p. 40, 2017.
- [6] Fry, T., *City Futures in the Age of a Changing Climate*. Routledge: London, p. 22, 2014.
- [7] Network, G.F., *Ecological Footprint Explorer, Global Footprint Network*, Oakland / Geneva, <https://data.footprintnetwork.org/#/> (accessed 3 July 2018).
- [8] Parker, A., Fishbowling. *Architect Victoria*, p. 07, Summer 2018.
- [9] Lencioni, P.M., Make your values mean something. *Harvard Business Review* 1, **80(7)** pp. 113–7, July 2002.
- [10] Guy, S. & Moore, S., Introduction: the paradoxes of sustainable architecture. *Sustainable Architectures*, Routledge: London, pp. 1–2, pp. 15–26, 2005.
- [11] James, C. & Felsman, R., Australian home size hits 20-year low: commSec home size trends report. *CommSec Economic Insight*. November 17, 2017

- [12] Owen, C. & Lorrimar-Shanks, J., Framing the field: the award for sustainable architecture. *InArts*, Multidisciplinary Digital Publishing Institute. pp. 4–2, 34–48, 2015.
- [13] Berman, M., *All That is Solid Melts Into Air: The Experience of Modernity*. Verso: New York, pp. 87–98, 1983.
- [14] Fry, T., *City Futures In The Age of a Changing Climate*. Routledge: London, p. 24, 2014.
- [15] Randall, B., Sand hill road pictures, Hogan, M., *Kanyini*. Hopscotch Entertainment: Roadshow Entertainment, 2006.
- [16] Randall, B., Sand hill road pictures, Hogan, M., *Kanyini*. Hopscotch Entertainment: Roadshow Entertainment, 2006.
- [17] Goldhagen, S.W., *Welcome to Your World: How the Built Environment Shapes our Lives*. Harper: New York, pp. 4–41, 2017.
- [18] Pérez-Gómez, A., *Attunement: Architectural Meaning After the crisis of Modern Science*. MIT Press: Cambridge MA, p. 7, 2016.
- [19] Reed, B., Shifting from ‘sustainability’ to regeneration. *Building Research & Information*, **35(6)**, pp. 674–680, November 1, 2007.
- [20] Reed, B., Shifting from ‘sustainability’ to regeneration. *Building Research & Information*, **35(6)**, pp. 674–680, November 1, 2007.
- [21] Goldhagen, S.W., *Welcome to Your World: How the Built Environment Shapes our Lives*. Harper: New York, p. 292, 2017.
- [22] Holmgren, D., *Retrosurbia: The Downshiffters Guide to a Resilient Future*, Melliodora Publishing: Hepburn Springs, p. 10, 2018.
- [23] De Botton, A., *The Architecture of Happiness*. Vintage: New York, p. 73, 2008.
- [24] Manson, M., *The Subtle Art of Not Giving a F*ck: A Counterintuitive Approach to Living a Good Life*. Harper Collins: New York, p. 205, 2016.
- [25] Williams, A., Towards a methodology for values-based architecture. *Eco-Architecture VI: Harmonisation between Architecture and Nature*. pp. 1–9, 2016
- [26] Schwartz, B., *The Paradox of Choice: Why Less is More*. Ecco: New York, p. 5, 2004.
- [27] Tolle, E., *A New Earth: Awakening to Your Life’s Purpose*. Penguin Books: New York, pp. 81–82, 2006.
- [28] Pérez-Gómez, A., *Attunement: Architectural Meaning After the Crisis of Modern Science*. MIT Press: Cambridge MA, p. 27, 2016.
- [29] De Botton, A., *The Architecture of Happiness*. Vintage: New York, p. 48, 2008.
- [30] Maslow, A.H., A Theory of human motivation. *Psychological Review*, **50(4)**, 370, July 1943
- [31] Architects, Australian Institute of. *Client Architect Agreement 2009* Australian Institute of Architects, Melbourne, pp. 4–5, 2009.
- [32] Williams, A., *Dawborn Final Brief*, Soft Loud House Architects: Warburton, pp. 4–6 January 2012
- [33] Williams, A., *Dawborn House: Post Occupancy Evaluation*, Soft Loud House Architects: Warburton, October 2016
- [34] Stanley, P., *Black Saturday at Steels Creek*. Scribe Publications: London and Melbourne, pp. 120–21, 2013.
- [35] Stanley, P., *Black Saturday at Steels Creek*. Scribe Publications: London and Melbourne, p. 120, 2013.
- [36] Gammage, B., *The Biggest Estate on Earth: How Aboriginies Made Australia*, pp. 1–4, Allen & Unwin; Sydney, 2011

- [37] Australia, S., *Construction of Buildings in Bush Fire Prone Areas* (AS 3959). Standards Australia: Sydney, 2009.
- [38] Stanley, P., *Black Saturday at Steels Creek*. Scribe Publications: London and Melbourne, p. 156, 2013.
- [39] Lifestyle., *Underground house*, series 2 episode 10, *Grand Designs Australia*, Lifestyle; Sydney 2013.
- [40] Fahy, M., *Afterburn: In the Tigers Jaws*, One Thousand Productions: Adelaide, 2013.