# How Can Adaptive Reuse Create a Living Bridge Between Humanity and The Built Environment?

A dissertation submitted in partial fulfilment of the requirements for the degree of Bachelor of Design (Hons)

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# Table of Contents

# List of Figures

# Introduction

Much of the built environment in the modern world generates a feeling of disconnection, often overlooking the importance of forming relationships with humanity (Heatherwick, 2023).

To counteract this, it can be more beneficial to the overall environment if architecture is seen as a 'living' force that encourages stimulating, sustainable interactions with humanity, and the practice of adaptive reuse can be investigated as a method to accomplish this.

The first chapter of this dissertation will identify the negative influence of Modernist design methods on today's architecture, which preach form, simplicity, and function as the defining principles of architecture (Rowe, 2011). This chapter will then go on to discuss Postmodernism, expressing how if buildings were to incorporate considerations of context and complexity, they could form bonds between people and their built environment by representing unique human identity, as advocated by architect Robert Venturi (1977). Following this, the theory of Posthumanism will be explored to provide insight into how buildings can contribute to strengthening relationships between humanity and the wider surrounding environment, introducing the concept of decentring the human as a superior being to everything else and seeing all beings as equal (Gladden, 2018, p.19).

In chapter two, the practice of adaptive reuse will be defined. The relevance of combining both old and new elements will be described, explaining how this forms a bond to past identity while also providing for the current needs of humanity. The incorporation of new elements represents the advancement of humanity, which is also important in fully depicting the evolution and complexity of human life (Melis, 2010). To finish, the environmental benefits of remodelling buildings will be outlined, stating how it prolongs the lifespan of buildings, minimising waste and energy consumption (University College of Estate Management, 2023).

Finally, chapter three will aim to combine the findings up until this point, beginning by utilising the hypothesis of regenerative design to expand on Posthuman principles of whole system thinking and relate them to adaptive reuse. This will aim to express how adaptive reuse can be viewed as a living system that can positively impact humanity and the environment (Garden on the Wall, 2024), hence acting as a living bridge to connection. Following this, it will be described how adaptive reuse recognises the importance of place in order to connect to human identity (Rezende, n.d.), further showing how reuse principles of incorporating the past and present context can connect humanity to buildings and enhance sustainable and progressive ways of living, through the representation of human and natural evolution (Reed, 2007). This chapter will also present case studies to illustrate examples of remodelling buildings, highlighting how they layer old and new to create complex entities that generate connections.

# Chapter 1: A Living Built Environment

This chapter will begin by investigating the relationship between humanity and the built environment by first establishing the role of the Modernist Movement in the backdrop to our current relationship with the built environment. Ways in which this relationship can be improved will then be identified, discussing the influence of context as a tool to form interconnections between the built environment and humanity, and the benefits of a shift to a unified, integrated living system which includes humans, nature, and architecture.

## 1.1: The Legacy of Modernism

Modernism revolved primarily around the principles of simplicity and minimalism, rejecting ornamentation and aiming to focus on the functionality of buildings (Fletcher, 2021, p.178), which created a detached environment that goes against human nature (Salingaros, 2013).
These ideas are still visible in the current landscape, and therefore, it is important to recognise how we can learn from them in order to move towards enhancing positive relationships with the structure's humanity exists in.

It can be said that Modernist design connects back to developments such as the Industrial Revolution of the mid-1700s to the mid-1800s when the advancement of technology and increased use of iron resulted in more structurally sound and developed buildings. Despite this, the appearance of the buildings was not changed, continuing to follow traditional proportions and visual styles. In the early 1920s, these concepts evolved and were built upon to form what is known as the Modernist Movement, seeing the rise of architects such as Walter Gropius, Louis Sullivan and Le Corbusier, who emphasised a focus on function as the key element of design (ARTiculations, 2018). The efficient, functional design found within Modernist planning strategies turned out to be a popular solution to the issue of poverty during the 1930s and further grew in popularity after the Second World War to accommodate the need for order in the post-war society

(Rowe, 2011). As a result, the 1950s saw the construction of many large tower blocks, which led to Modernism truly beginning to influence people's everyday lives, garnering support alongside much criticism (ARTiculations, 2018). Many still saw Modernist concepts as too radical, a key issue being that it "could not adequately comprehend and cater for the social dynamics of family and community, and as a result, many modernist buildings were pulled down in the seventies." (Rowe, 2011).

An example of such a building is the 1950s Pruitt-Igoe housing complex designed by Minoru Yamasaki, as seen in Figure 1. The reasons for the downfall of this building exemplify the dark side of Modernist architecture. The design consisted of 33 monotonous apartment blocks, which "quickly became notorious for their crime, squalor and social dysfunction." (Bond, 2022). A reason for this may have been the large open gaps between the high-rise blocks, which disrupted the sense of community (Bond, 2022).

Figure 1: Pruitt-Igoe Housing Complex

This is but one example of how people and humanity were not a key consideration in many Modernist designs and exemplifies how Modernist design led to people feeling isolated and imprisoned (Pash Classics Blog, 2023). These feelings can be traced back to how the surrounding landscape was not considered, with rigid structures generating

disconnection and lost identity (Bond, 2022). Such considerations are paramount, which designer Thomas Heatherwick is a passionate advocate for.

In his book 'Humanise', Heatherwick (2023) attributes many of the detrimental principles we still see today to Swiss-French architect Charles-Édouard Jeanneret, known as Le Corbusier, who can be identified as a frontrunner of the Modernist movement. His utopian views of modern progress played a role in the development of urbanism, such as his proposal of 'Cities in the Sky', which contributed to the development of detached tower blocks (Pash Classics Blog, 2023). A principle of Le Corbusier (1986, p.95) was the well-known view that "a house is a machine for living in", which highlights the Modernist perspective that functionality is above all else, disregarding factors of unique human and environmental identity. Le Corbusier considered a sense of place to be unimportant and alongside other Modernists, failed to realise that "human emotion is a critical function" (Heatherwick, 2023, p.376), which can be highly detrimental to architecture, as is clearly shown in the demise of Pruitt-Igoe.

To conclude, Modernist advancements have played a role in the evolution of the built environment, and provided efficient solutions in desperate times, but Modernism also brought with it a harmful perspective on the structural landscape. As Heatherwick proclaims, Modernism has ruined architecture and has led to boring buildings that "…aren't just a curse on the visual landscape. They're a curse on our mental health. They make us stressed and anxious and scared." (Heatherwick, 2023, p.472). He argues such buildings deprive humans of the stimulation and sensory information they require, disconnecting us from the world around us and are therefore 'not human' (Heatherwick, 2023). To combat this, it could be beneficial to flip this perspective and rather consider the built environment as a living entity, like a human. This can create a connected system that, rather than focusing purely on matters of function as Modernism does, incorporates key elements of culture and community to cultivate an improved way of life for humans.

## 1.2: The Shift from Modernism to a Connected Built Environment

The final phase of this chapter will explore approaches through which the built environment can form stronger connections with humanity and the wider environment by being more receptive to humanity and natural and contextual factors, and by considering buildings as part of a living system in which they are equal to with wider systems.

This chapter will first introduce the Postmodernism movement and how it aimed to counter disruptive Modernist principles, aiming to act as an antidote for the harm it caused, then identifying the values of Posthuman concepts of forming unified whole systems being human and nonhuman entities.

### 1.2.1: Postmodernism

Postmodernism began to form during the decline of Modernism's success and popularity in the 1970s, when it became increasingly elitist and alienating (Royal Institute of British Architects [RIBA], n.d.). As described by Fletcher (2021, p.200) and RIBA (n.d.), it rediscovered elements of classical architecture from the past and applied them to modern forms, presenting a design approach that found a balance between valuable Modernist developments and factors that were neglected, striving to improve the relationship between the built environment and humanity, community and society.

Robert Venturi was a pioneer of Postmodern architecture during the 1970s, proclaiming that "Less is a bore!" (Venturi, 1977, p.17). Venturi (1966, cited by Kahl, 2008, p.56), was certain that there was "something better than the cold and austere straight lines of Modernism", and aimed to introduce ways of incorporating more personality and stimulation into architecture, as well as encouraging human connection to buildings. Kahl (2008) explains how Postmodernism, and particularly Venturi, placed great value on vernacular, hybrid architecture that directly addressed the local public by including

techniques, traditions and styles that responded to context. This view received backlash, but he would not be deterred, believing that humanity yearned for a complex architecture, an architecture that held memories of the past that people could personally relate to (Venturi, 1966, cited in Kahl, 2008, p.57). Throughout his book, Heatherwick (2023) agrees that buildings should represent the unique complexity of human life and nature, rather than being unnaturally lifeless or monotone. As an example, he illustrates the beauty of Casa Milà, a building in Barcelona by Antoni Gaudí, by describing how it is "unapologetically raw, and the tiny randomised chipping marks add yet another layer of complexity that reminds us that this is the work of human hands." (Heatherwick, 2023, pp.24-25).

It is evident that postmodernist design values a connection to the environment, and the ideologies of Posthumanism expand on this by identifying the importance of uniting whole environmental systems and how it lends itself to a way of depicting a connection between the entities of building, nature and humans.

### 1.2.3: Posthumanism

Posthumanism explores the relationship between humanity, the natural environment and also other animate and inanimate entities, seeking to form interconnected systems by blurring and stimulating the boundaries of the traditional humanistic structure, which divides 'human' and 'nonhuman' into separate categories (Lorimer, 2009, p.344). According to Gladden (2018, p.19), Posthumanism is when "a society comes to include members other than 'natural' biological human beings who, in one way or another, contribute to the structures, dynamics, or meaning of the society.". The buildings that encompass the world in which humanity exists can be seen to play a part in the structure and dynamics of the world, affecting the way that humanity lives and functions, as proven in the previous investigation into Modernism. Therefore, if considered within the Posthuman concept, perhaps architecture can be incorporated into a united system with humanity.

Professor of Human Factors and Nature Connectedness Miles Richardson (2014) points out flaws within anthropocentric ways of thinking, expressing that the large reason for the disconnection in today's world can be accredited to the detrimental view that humans are separate from and superior to nature. The article 'Humanity and Nature' (Future Learn, n.d.) agrees that this divide causes harmful ways of thinking in which nonhuman beings are to serve humans, and their value depends on what they can provide us with. This way of thinking justifies the misuse of the world, for example, justifying environmentally damaging actions like cutting down forests, mining and hunting animals to the point of extinction (Ellis, 2023, quoted in Ivan Allen College of Liberal Arts [IAC], 2023). Posthumanism reconsiders this stance, aiming to instead benefit the well-being of whole systems. Researcher, scholar and teacher Zita Hüsing (2023, quoted in IAC, 2023) expresses that Posthumanism "pushes against that idea that the human is key and says, 'No, actually, everything matters.'", which opens humanity to a more complete understanding of the environment, as well as being more environmentally friendly. If such principles are applied to humans and their relationships with other beings, such as the natural and built environment, empathy and increased feelings of concern are extended to all entities (Yaszek, 2023 quoted in IAC, 2023).

Furthermore, by utilising the Posthuman method to imagine humanity as being at one with nature, the importance of representing the natural occurrence of evolution and individual identity in the modern world can be highlighted. Academic Jason Ellis, (2023, quoted in IAC, 2023) utilises Charles Darwin's teachings of the continuous evolution of humans to show how humanity, like all other living organisms, must adjust to specific environments, becoming unique according to place and situation. Our social structures and frameworks should accommodate and encourage this diversity (Ellis, 2023, quoted in IAC, 2023), and this extends to the structure of the built environment. Therefore, to form unified, holistic systems, buildings should reflect this uniqueness and evolution of humanity.

Geographer Jamie Lorimer (2009, p.345) points out that there are many varying forces and material qualities that create these links between different entities. These material

links can differ and change according to context and are multi-faceted due to the relationships between humans, organisms, and material objects being complex (Brisini and Simmons, 2016, p.191). This complexity, as shown in the discussion of evolution and uniqueness, is due to humans having individual qualities and identities, meaning that there are many different aspects of individual human existence that can connect to animate and inanimate systems. Posthuman ideas of equality within integrated systems can exist alongside such factors of unique identity and connection (Lorimer, 2009, p.345). This balance is important because although the Posthuman concepts of unity introduce interesting and valuable ideas that open humanity up to being more interconnected with other beings and structures, such as buildings, it is important to recognise the distinctive identity of 'the human' (Lorimer, 2009, p.345). Incorporating both this identity and varying culture and Posthuman ideologies of interconnected systems into the architecture can allow people to be united with the built environment as well as connect more personally to it. As pointed out by Lorimer (2009, p.353), "Posthumanism and humanism remain thoroughly interwoven; even as the Human (sing) leaves, critically reflexive humans (pl.) are not going to disappear anytime soon.", meaning if the human-centred approach where the singular 'Human' is superior does relinquish and develop into an intertwined system where entities are equal, the presence of humanity as a diverse group of individuals will remain.

**To conclude** this first chapter, it is evident that although Modernist design principles contributed to the development of the built environment, their methods did not account for the human need for connection, and didn't represent the individuality of human identity, therefore creating a feeling of detachment. Postmodernism and Posthumanism express the importance of considering the wider environmental systems to achieve reconnection. Postmodernism advocates for how people would benefit from complex, vernacular design and the incorporation of contextual and cultural elements into architecture. Posthumanism also identifies that it can be highly beneficial to move away from anthropocentrism and rather consider a 'whole system', which unifies human and nonhuman entities, like humanity, the built environment, and nature.

Holistic system thinking can improve relationships, fostering enhanced empathy and consideration for all beings, subsequently improving the sustainability and connectedness of the wider environment. It also recognises how humans are complex and unique, and that the surrounding environment should support this. Additionally, postmodernism introduced a method of considering both Modernist developments and classical forms within design, which leads to the discussion of adaptive reuse and how it employed methods to incorporate this.

# Chapter 2: What is Adaptive Reuse?

Adaptive reuse is a strategy that has been used throughout history to regenerate buildings for both practical and symbolic reasons (Lanz and Pendlebury, 2022, p.441). It was originally employed in ancient times due to limited building materials and the high expense of construction, an example of this being the many Roman Basilicas that were repurposed to create Christian churches (Iskowitz, 2024). However, the emergence and development of the reuse we see in the current landscape began to take shape in the 1970s, and a factor that certainly contributed to this call for repurposing buildings is the Modernist Movement with its methods of 'clean-sweep' planning which disregarded matters such as context and culture in the built environment (Lanz and Pendlebury, 2022, p.441). Adaptive reuse seeks to tackle this perspective by promoting heritage preservation and carbon reduction initiatives, as well as aiming to respond to demands for consideration of conservation and environmental factors in our built environment (Lanz and Pendlebury, 2022, p.441). Reuse promotes longevity within the built environment by reusing existing structures, prolonging their life, which is certainly necessary in the current climate as "... the average life of a commercial building in the UK is just forty years." (Heatherwick, 2003, p.472).

## 2.2: The Practice of Adaptive Reuse

There is an important distinction to be made between the different methods of building conservation and identifying the purpose of reuse as compared to other restorative practices. Established authors and academics on the topic of adaptive reuse, Graeme Brooker and Sally Stone (2004, p.11) distinguish four categories of building adaptation: preservation, restoration, renovation and remodelling. The first three listed lean towards maintaining the original state of a building, preserving or renovating it to make it suitable and safe to use in the modern era, but avoiding major changes. However, remodelling, also known as adaptive reuse, as completely altering the building (Brooker and Stone, 2004, p.11). Remodelling can entirely change the previous function of a building, and this is very relevant in the modern age, as our environmental and social needs for the

present and for the future are constantly changing (Melis, 2010, introduction), it is not enough to simply preserve historical buildings for their appearance and replace them with new constructions when they are no longer viable, as past and present are both important and should both be represented. This is expressed by Plevoets and Van Cleempoel (2019, p.1), who explain that a divide between development and heritage conservation would result in much of the built environment becoming a "museum frozen in the past" with an inability to develop.

Adaptive reuse is a balance between the act of remodelling antiquated architecture to accommodate changing needs, and the preservation and careful consideration of preexisting elements. This balance, as articulated through the concept of a palimpsest, is vital to reviving old buildings while maintaining a connection to the original context and history.

## 2.1: Palimpsest

Considering adaptive reuse as a depiction of a palimpsest aptly encapsulates some of its key qualities. In his book 'Archispeak', Tom Porter (Porter, 2004, p.135) outlines these correlations between 'palimpsest' and buildings and architecture:

> The term palimpsest is derived from the Greek '*Epalimpsestos'*, meaning 'scraped again'. Along with other disciplines, such as art, music and literature, architecture uses the term as a metaphor to describe the partial erasing and constant overworking of sites and buildings over time. This can involve building over, within, above or alongside the previous or existing structure ... Thus, the 'memory' of the site and its traces of the past are respected and complemented by the new. (Porter, 2004, p.135)

This description identifies key ideas also evident within adaptive reuse; to add new elements and update what was there before. It is an important way of thinking about adaptive reuse because it illustrates how the reuse of a building, while of course introducing alterations and changes, should still exhibit noticeable traces of its previous

form. Porter (2004) discusses how the adaption made to an existing building should carefully respect the old, allowing it to hold on to its poignancy and provide a connection to the building's past life, and through this to humanity's past.

Both the old and new elements hold value, and the relationship between the two should be thoughtfully displayed. Melis (2010, introduction), illustrates that "old forms can mingle with new ones" and that adaptive reuse can strengthen the bond with the past while also demonstrating humanity's progression and advancement. As Melis (2010) explains, humanity as a species is constantly advancing, and to continue to do so successfully it is essential to understand our past. "The present cannot exist without a past and the past cannot have meaning without the present" (Melis, 2010, introduction).

This combination of the differing eras of past and present results in a multi-faceted, complex building. In his influential book 'Complexity and Contradiction in Architecture', Robert Venturi (1966, p.16) explains the importance of embracing these eras that "an architecture of complexity and contradiction has a special obligation toward the whole: its truth must be in its totality or its implications of totality. It must embody the difficult unity of inclusion rather than the easy unity of exclusion". This articulates how each component should be equally represented, finding a balance even if it is challenging. It is indeed a delicate matter to merge elements of old and new, as this should be executed respectfully, aiming to avoid disruption of the heritage of the existing building or location (Othman and Elsaay, 2018, p.1704). A key factor that must be considered thoughtfully when making an adaption to a site is context. Tom Porter (2004, p.37) describes that "'Contextualism' is an approach that respects the setting in terms of its history, topography, memory, route and so on." This should be applied to an adaptive reuse project, as these outlined factors often hold great meaning to local communities or are relevant to the formation of the modern world. This relevance must be acknowledged, ensuring to respect both the relationship between the two varying visual forms of the old and new, as well as physical interaction between the original typography with the intended new function (Plevoets and Van Cleempoel, 2019).

In 1893, Italian architect Camillo Boito published a paper which has since been translated by Cesare Birignani (Boito and Birignani, 2009). This text expressed how the balance between new and old is a delicate matter and introduced a set of guidelines which propose that the method of restoration used in a project should depend on the specific situation of the building. Boito advocates that to respectfully and successfully carry out a reuse project, clear distinctions should be made between the old and new, highlighting the differences (Boito and Birignani, 2009). Brooker and Stone (2004) also give an example of three methods to implement adaptive reuse in an effective way. The first being an 'Intervention', which takes great influence from and becomes one with the existing building, recognising and reactivating the narrative (Brooker and Stone, 2004, p.81). The second method, 'Insertion' refers to inserting an element that confronts the existing structure by being clearly different but also creating interesting dialogues by taking influence from certain original qualities (Brooker and Stone, 2004, p.102). Finally, the third strategy discussed is an 'Installation', which is usually a temporary adaptation, and tends to consist of multiple related objects that are completely independent of the original building (Brooker and Stone, 2004, p.127). The consideration of factors like placement and scale of the objects can enhance the impact of the building.
Each of these methods exemplify how it is important to see old and new components as equally important, and if the place and function is considered when choosing a method to use, both elements can enhance one another allowing for a successful representation of the past and present.

## 2.3: Current Environmental Benefits

It is important to consider sustainable factors, especially in the modern landscape. According to architect Kunlé Adeyemi (2022), the building sector is currently accountable for 40 per cent of the world's annual greenhouse gas emissions. Instead of contributing to environmental decline, architecture should be a part of the solution, and perhaps the practice of adaptive reuse can present a solution, as Bullen (2004, p.1389) states, "Only by treating old buildings as a reusable resource rather than a product we

consume and eventually discard will we start to move towards sustainability of the built environment."

Denton (2023) unveils that in 2022, England recorded around 250,000 uninhabited buildings, with the potential to reach up to 650,000. This proves that a staggering number of buildings sit empty and unused, many with the potential to become something new, yet the Government rather aims to construct around 300,000 new builds per year (Denton, 2022), thus wasting old buildings. Salmon (2004, quoted by Bullen, 2004, p.1388) contends this, summarising that "The industry is great at knocking down buildings and pushing up new ones whereas real sustainability is achieved by optimizing the use of the existing stock and minimizing churn rate". New builds, especially when a previous building has been torn down to allow for new construction, utilise more energy (University College of Estate Management, 2023), and require more new natural resources than a reuse project, which employs the practice of recycling, making adaptive reuse more environmentally sensitive (Brooker and Stone, 2008).

**To conclude**, adaptive reuse is relevant and valuable as it has the ability to provide the built environment with factors of connection that Modernism overlooked. As expressed by the term 'palimpsest', reuse is a balanced combination of past and present, which means it has the capacity to represent the vital connection to the past and cultural identity, while also accommodating to present-day human requirements. The consideration of context is key when remodelling a historical building, as context can hold great significance through ties to history and place. There must be a respectful balance between the differing visual and functional aspects, considering the relationship between original and new functions. This marks old and new as equally important as well as showcasing human and environmental evolution. Representing evolution also ties in with Posthuman ideas of how our surrounding structures should accommodate the diverse evolution of individual entities, celebrating uniqueness and unity. Lastly, this chapter points out the sustainability of adaptive reuse, as it revives old buildings and materials within them rather than wasting them and uses less energy during construction. Afterall, it is important to consider the impact the built

environment has on the natural environment. If damage to the planet is lessened, the world progresses closer to a unified system, benefiting all entities within.

# Chapter 3: Adaptive Reuse as a Living Bridge

Iskowitz (2024) identifies adaptive reuse as “breathing new life into old structures”. This aptly depicts the interconnection between the practice of adaptive reuse and a living being. This final chapter will explore how the methods of adaptive reuse can be seen to forge living connections and enhance the human experience, also outlining how the built environment can reconnect to a wider system, strengthening and unifying its relationship with nature and humanity.

Additionally, existing examples of adaptive reuse will be identified to illustrate and help visualise how this approach has contributed to reconnecting built spaces to the environment around them and, in turn, reconnecting us to our built environment through considering concepts of buildings as ‘living beings’.

## 3.1: Adaptive Reuse as Sustainable and Regenerative Design

Adaptive reuse can express regenerative design, which is an approach that shifts how humanity thinks about the world around us and views buildings as living systems that can evolve and actively contribute to the well-being of ecological and social systems (Garden on the Wall, 2024). In his book ‘Designing Regenerative Cultures’, Daniel Wahl (2016, p.47) supports this by stating that “A regenerative culture will emerge out of finding and living new ways of relating to self, community and to life as a whole.”. This concept is similar to the values within Posthumanism, and applying regenerative ideas to the practice of adaptive reuse allows for more insight into how buildings can be part of a unified living system.

A key concept within regenerative design is recognising the importance of adapting to changing conditions over time and embracing evolution (Garden on the Wall, 2024). Remodelling does this by reviving and updating old buildings, prolonging their lifespan to make them relevant again (Bullen, 2004), which can result in viewing a building as a living system that adapts and changes, like humanity (Garden on the Wall, 2024). The

hypothesis of biophilia describes how this strengthens humanity's relationship with the built environment because, as stated by biologist and naturalist Edward O. Wilson (1984, p.85), who established many of the key theories of biophilic practice, humans have the innate "urge to affiliate with other forms of life".

Reuse also embodies regenerative design and the consideration of a whole united system by supporting local environments and generating positive reactions. This can be accomplished by incorporating literal, physical elements of biophilia into the design (Garden on the Wall, 2024), but connections to people and environment can also be made by incorporating cultural and contextual factors of local settings into buildings, which the practice of remodelling does through retaining elements such as materials or design details that relate to the original setting (Plevoets and Van Cleempoel, 2019).

The framework shown below, see Figure 2, was originally proposed by Reed (2007), and adapted by Wahl (2016, p.46). It illustrates how humanity and the world as we know it can transcend into a regenerative system, by outlining the different stages within the process, from the degenerative view of being sustainable purely to conform to minimum standards, ascending past the practice of sustainability, to regeneration. This framework also points out the results of these varying ways of approaching design; for example, adopting more regenerative views can establish conditions that embrace life.

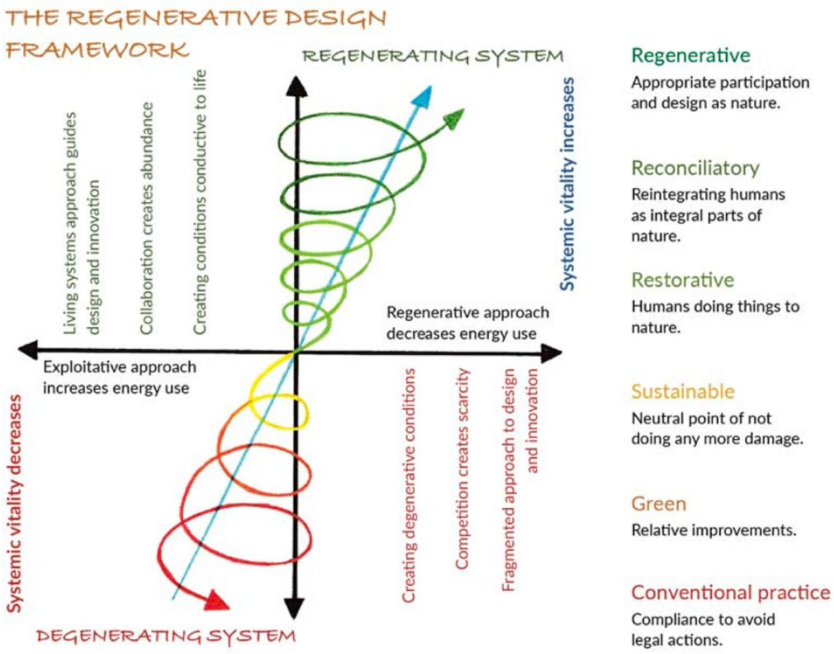


Figure 2: *Designing Regenerative Cultures*

Bill Reed (2007, p.674) states that "...instead of doing *less damage to* the environment, it is necessary to learn how one can *participate with* the environment by using the health of ecological systems as a basis for design." This outlines how we can learn from the regenerative nature of natural systems and further defines sustainability as a progression towards realising that everything, including architecture, society and nature, is part of an integrated system of connections, all contributing to the overall progression of life (Reed, 2007, quoted by Wahl, 2016, p.45). Adaptive reuse contributes to this because if buildings take on characteristics of adaptable living systems which accommodate the changing needs of humanity and nature, while recognising unique contextual factors, they can become part of a living system that, as stated by Garden on the Wall (2024), would "create spaces that improve environmental quality... and foster human well-being". Reed (2007, p.674) also emphasises the importance of efficiency in order to progress from sustainability to regeneration, for example, avoiding excessive use of resources. Adaptive reuse is an example of how this can translate into the built environment, as it reuses existing buildings and materials. Therefore, adaptive reuse can represent a sustainable and symbiotic relationship between the built environment, humanity and nature.

## 3.2: Contextual Connections

To expand on how adaptive reuse forges connections between humanity, the built environment and nature, the significance of place can be investigated. As described by Rezende (n.d.), "Meaningful places reinforce identity and cultural heritage while enhancing the understanding and navigation of the built environment.". This exemplifies how important the consideration of context is in terms of a place, as places hold great meaning, both containing connections to the past and lessons for the present and future.

Kahl (2008) explains how Robert Venturi also placed an emphasis on architecture being unique according to its particular location. According to Kahl, (2008, p.55), Venturi determined that the culture of different communities varies from place to place, and

architecture should embody this by working in harmony with local culture and employing a symbolism that adheres to native building styles. Venturi (1966, cited in Kahl, 2008, p.57) expressed the importance of this, stating that people yearn for a symbolism that they can understand and relate to, and want to connect to echoes of nostalgia within the buildings they live and exist in. The teachings of Aldo Rossi, a leading neo-rationalist renowned for examining architecture's relationship with collective memory, add to this concept of symbolism further, by identifying what he calls ‘urban types’ or ‘permanence’s’ (Rossi, 2024, cited in History and Theory of Architecture, 2024). This refers to forms that are the base of architecture which persist despite changes, and therefore, like traditional symbolism, are meaningful because they hold the memory of our origins. As articulated by History and Theory of Architecture (2024, 3:40);

> Aldo Rossi’s work challenges us to see architecture not just as a functional practice, but as a vessel of memory and history. His exploration of architectural types and urban permanence’s invites us to consider how spaces can connect the past with the present, creating a dialogue that continues to shape our cities and our collective experience.
> (History and Theory of Architecture, 2024, 3:40)

The concepts introduced by Venturi and Rossi can be applied to adaptive reuse through how it preserves and showcases original elements of historic buildings. These elements can be seen to combine the symbolism of traditional styles with the concept of unchanging forms, representing both local culture and holding memory. This incorporation of symbolistic forms is important since, along with maintaining the integrity of a historical structure, they represent the memory of social and environmental cultural origins, which amplifies humanity’s feeling of attachment to the built environment because they can identify with it (Rezende, n.d.).

Adaptive reuse can also enhance this connection by incorporating original building materials as historical elements. As architect Tosin Oshinowo (2023) proclaims, materials hold memory. Oshinowo (2023) was the curator of the 2023 Sharjah Architecture Triennial, which presented a collection of installations that embodied the

importance of context and tradition while recognising the conditions of modernism. Architect Sumaya Dabbagh (2024), founder of Dabbagh Architects, took part in the Triennial. Within her practice, the principles of establishing identity and bonds to place are key, and in an interview with ArchDaily, Dabbagh (2024), expresses how this pertains to materials. She explains that humanity's culture, heritage and memory are rooted in the materials of the land and sea around us, and if architecture acknowledges and utilises the power of materials, it has the ability to reconnect communities to their sense of identity.

Applying this to adaptive reuse, shows that along with being sustainable, the method of recycling original materials within buildings connects us to our past identities and culture. Like the materials in the earth around us hold memories of the past, the materials of long-standing historic buildings are a vessel of memory and identity.

The relevance of place can be expanded on through the discussion of genius loci. This term originates from Roman culture and refers to the spirits that guarded a place. Within architecture today, genius loci endeavours to illustrate how a place has 'spirit' which represents the intangible narrative of a place (Where Is The North, n.d.). Christian Norberg-Schulz (1980, cited in Plevoets and Van Cleempoel, 2019) identifies genius loci to be more than the atmosphere of a place, but that it also represents how architecture has a duty to honour the unique identity of the place it is situated in. Reed (2007, p.678) contends that to progress towards a unified, regenerative system through design, the unique character of the specific place where one wishes to design must be understood. This shows how buildings should harmonise with the environment, rather than disrupt it.

Italian architect Carlo Scarpa embodies this in his remodelling of the 'Querini Stampalia Foundation' in the 1960s (Brooker and Stone, 2008), as seen in Figure 3 and 4. Situated in Venice, the city on water, Scarpa updated this 16th-century Venetian palazzo by using the environmental context as a basis for design, creating a connection to its surroundings by incorporating elements of water. Water is visible in the open courtyard, where it flows through structural features, as seen in Figure 3. Scarpa also

added steel gates, Figure 4, which open to the canal allowing water to flood in during high tide. The gates can be accessed from within, further enhancing the relationship to the setting (Brooker and Stone, 2008).

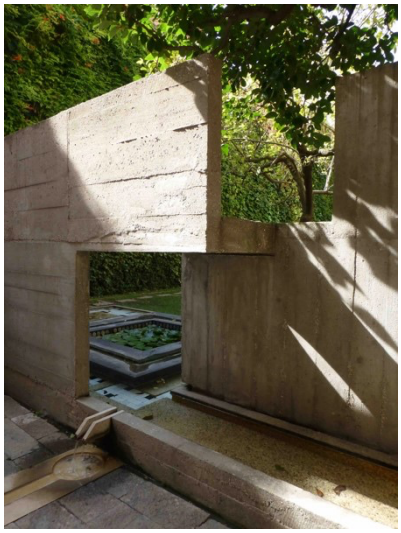

Figure 3: Scarpa Exterior Water Feature

Figure 4: Scarpa Interior and Gates

As seen in Figure 4, Scarpa merged the forms of the original building with aspects of modern design relevant to the present day, which recognises and incorporates the, as Reed (2007) termed it, overall 'story of the place'. This collective 'story' provides a distinct cultural narrative that represents both the historical and current evolutionary patterns between humanity and the ecosystem. It is important to consider both of these aspects, as the collective health of a living environment cannot be improved if the unique inner workings and needs of places are not taken into account. Preserving this 'story' also enables humanity to understand the function of a living system in a certain place, proposing a framework that can be learned from for humanity to co-evolve and exist alongside the environment rather than separate from it. (Reed, 2007, pp.679-680)

As the article by Where Is The North (n.d.) explains, "Places stand as a witness to all the human activities that have transpired over the ages.". Adaptive reuse features this evidence of the different stages of humanity within a place, combining both meaningful historical elements and representing the development and advancement of humanity and the environment depicts the evolution of natural systems. This further forges connections between humans and remodelled structures because the representation

of this evolution likens buildings to living systems, like humanity and nature (Garden on the Wall, 2024), and, as expressed through biophilia, humanity is always subconsciously searching for a connection with other 'life' (Wilson, 1984).

Furthermore, merging the different eras of past and present makes buildings more complex, and, as Robert Venturi (1977) describes, architecture should embrace the complexity of contrasting components. This will, in turn, make the built environment more appealing to humanity, which will add to the longevity of the built environment because, as Heatherwick says, boring buildings are "much more likely to be demolished." (Heatherwick, 2023, p.472).

A case study to further visualise how old and new elements exist alongside one another to form a system that improves inter-entity relationships is the 'Tate Modern', a former 1940s Bankside Power Station turned art gallery in London, designed by architects Herzoeg & de Meuron (Jones, 2013).

From 1981 to 2000, the Bankside Power Station sat derelict, and the intervention of the 'Tate Modern' in 2000 added new life to both the building and its surrounding environment of a previously secluded and neglected industrial area, as seen in Figures 5 and 6 (Jones, 2013). The well-being of the setting was enhanced, as stated by the architects, "The impact it has had on urban design and the development of the South Bank and Southwark has been as substantial as its influence on the city's artistic, cultural and social life." (Mack, 2020, quoted in Herzog & de Meuron, n.d.).

The remodelling was carefully considered, with the masonry of the exterior primarily maintaining its original form, forever reminiscent of the historical relevance and function. The most notable adaptation is the light beam along the roof, the glass of the simplistic geometric form distinguishing from the old and accommodating the intended new use (Jones, 2013), as seen in Figure 5.

Likewise, the interior, pictured in Figure 6, considered the new function but mainly harmonised with the original form and context; Jones (2013) giving the example of the

unfinished wood floors and cast-iron grills, which echoed the geometry and visual style of the original. The interior also incorporated symbolism and form relevant to the surrounding urban environment, rooting it to its setting.

Figure 5: The Tate Modern Exterior

Figure 6: The Tate Modern Interior

The former oil tanks that are attached to the main building were also later reimagined, as seen in Figures 7 and 8. Herzog & de Meuron approached the exterior slightly more radically than the previous remodel of the power station, introducing a new trapezoidal form with a brick façade that both echoes the main building and stands out against the surroundings, which can be seen in Figure 5. Though the original structure of the tanks was not physically included, their unique form and raw aesthetic were both embraced and contrasted within the building, recognising the significance of context. (Mack, 2020, quoted in Herzog & de Meuron, n.d.)

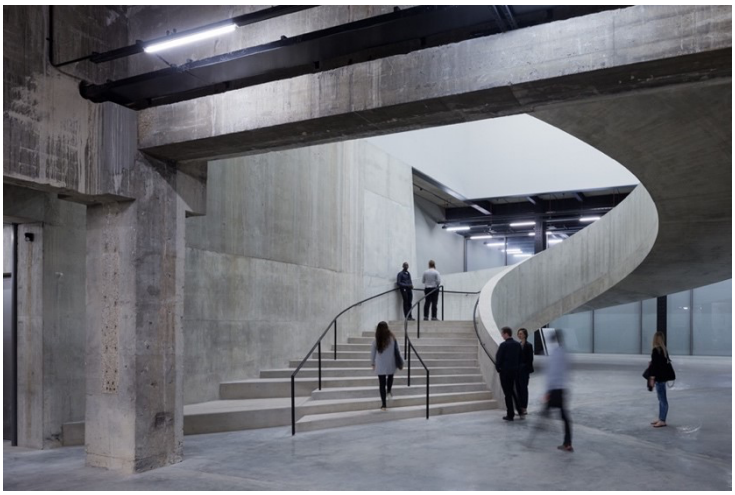

Figure 7: The Tate Modern Extension Interior

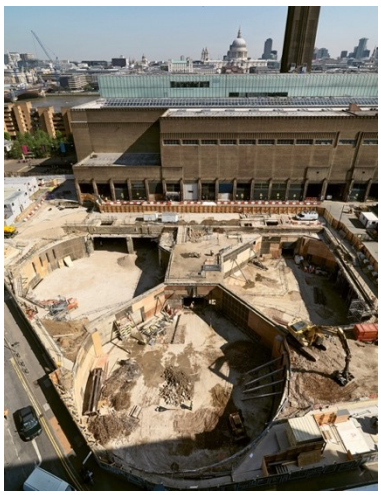

Figure 8: The Tate Modern Extension Site

Overall, consideration of place, material and symbolistic forms resulted in a multilayered, interesting, yet balanced architecture. The ‘Tate Modern’ exemplifies how contrasting phases of old and new can depict human and environmental evolution. This both creates a unique complexity, while also representing a living system.

**To conclude**, adaptive reuse can go beyond sustainability by becoming part of a connected system with other entities and the environment, by showing how the evolution found in natural systems and organisms, including nature and humanity, can also be seen in adaptive reuse and its regenerative properties. Ultimately, a holistic system like this breaks down disparities and differences between separate entities, in this case, humanity, buildings, and nature, so that they can support one another by recognising and accommodating each other’s unique needs. It is described that by maintaining old historical features and incorporating forms that are unique to a certain context, adaptive reuse can connect humanity to the cultural identity of the past. Remodelling combines these existing features that hold memory with new elements that represent modern development, which strengthens bonds between humanity, buildings and the environment by depicting the evolution of living systems in that place.

# Conclusion

To conclude, this dissertation has illustrated how adaptive reuse can be seen to reconnect humanity to the built environment. The necessity for this reconnection was outlined by conveying the principles of Modernism, which saw functionality as the main purpose of a building. This disconnected humanity and buildings by rejecting unique human identity and the surrounding landscape (Heatherwick, 2023).

Posthumanism gives an insight into how humanity can connect to the built environment by blurring the boundaries between human and nonhuman, expressing that all entities matter equally (Hüsing, 2023, quoted in IAC, 2023). This way of thinking can include humanity, the environment and buildings in a holistic system, which improves relationships and incites feelings of empathy for other entities (Yaszek, 2023 quoted in IAC, 2023; Hüsing, 2023, quoted in IAC, 2023). Adaptive reuse is part of such united systems through its representation of regenerative design (Garden on the Wall, 2024). Remodelling is sustainable as it revives old buildings (Bullen, 2004), but it also goes beyond this by supporting and enhancing the well-being of a holistic system. Adaptive reuse embraces the flexibility of evolution through how it adapts to accommodate current needs, taking into consideration the impact of the design on a particular system (Garden on the Wall, 2024). As a depiction of regenerative design, adaptive reuse also considers a whole united system and fosters a positive impact on the environment by taking into account the context, incorporating it within the design and supporting it rather than disregarding it.

Postmodern architects such as Robert Venturi emphasised this need for a complex architecture and vernacular design that people could personally relate to (Venturi, 1966, cited in Kahl, 2008, p.57), and, as stated by Norberg-Schultz (1980, cited in Plevoets and Van Cleempoel, 2019), architecture has a duty to recognise the individual identity of its setting. Adaptive reuse does this by considering context, specifically in relation to place. Place holds great meaning, containing both connections to the past and providing lessons for the present (Rezende, n.d.).

The teachings of Venturi (1966, cited in Kahl, 2008) and Rossi (2024, cited in History and Theory of Architecture, 2024) show that adaptive reuse has the ability to connect people to their past and to the historical culture of a place, by retaining symbolism and form that are relevant to a certain setting. Materials also hold memory, and therefore by reusing the original materials of buildings, along with being sustainable, the act of remodelling also bonds humanity to the built environment (Dabbagh, 2024). As illustrated through the concept of 'palimpsest', adaptive reuse represents a connection to the past but also displays humanity's advancement and development by combining old and new elements (Melis, 2010). This connects buildings to humans by representing their patterns of evolution.

Therefore, by employing the practice of adaptive reuse, the built environment can be considered as part of a united system with the environment and humanity, which strengthens the relationships between these entities. Within this unified system, adaptive reuse forges connections to the cultural identity of humanity, as well as accommodating our present needs, forming a living bridge between humanity and the built environment.

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