A CONCEPT MADE CONCRETE

Conserving a Brutalist Icon through Architectural Intervention

An explanatory document by Taylor Ryan Bell
"In the last resort what characterises the New Brutalism ... is precisely its brutality, its je-m'en-foutisme, its bloody-mindedness." - Reyner Banham
ABSTRACT

This project aims to prove, through relevant research, that Brutalist buildings such as Robin Hood Gardens are not only important parts of recent history but are also adaptable to modern standards and new functions. It will also prove that architectural intervention, however minimal, is a powerful tool when dealing with aged building stock. Retaining historic buildings contributes to the sociocultural wellbeing of a nation by providing scholars, students and laymen the opportunity to view and study a building that may otherwise be destroyed. Adaptation of aged buildings will help to create cities with a rich tapestry of architectural history, contrasting the old and the new.

Understanding the history of the Brutalist movement and its contribution to architectural development in Europe, the Americas, and New Zealand, is paramount when considering this research document. It will be made clear as to why Robin Hood Gardens is an ideal case study. Due to its design and current predicament, Robin Hood Gardens can be seen as a microcosm of the failure of Brutalist ideology - and a failure of twenty-first century society to identify and protect its architectural treasures.

Although the topic of adaptive reuse has been covered many times before, the solution proposed for Robin Hood Gardens in this document is entirely unique. The findings of this study will help to inform (or reform) the values of individuals involved in the decision-making process of architectural conservation.
# Contents

## Introduction

- Acknowledgements ................................................................. 4
- Background ............................................................................... 5
- Project Outline ......................................................................... 5
- Aims & Objectives .................................................................... 6
- Research Question ..................................................................... 7
- Scope & Limitations ................................................................. 8
- Methodology ............................................................................ 8
- State of Knowledge ................................................................... 9
- Results of Research ................................................................. 10

## Literature & Precedent Survey

- History ...................................................................................... 11
- Reception .................................................................................. 23
- Adaptation ................................................................................ 33
- Selection ................................................................................... 49

## Developed Design

- Analysis .................................................................................... 57
- Inspiration ................................................................................ 65
- Intervention .............................................................................. 69
- Outcome .................................................................................... 87

## Conclusion

- Evaluation ................................................................................ 93
- Future Direction ........................................................................ 93

## Bibliography ............................................................................. 94

## List of figures ........................................................................... 103

## Appendix

- Appendix A .............................................................................. 108
- Appendix B .............................................................................. 109
- Appendix C .............................................................................. 113
- Appendix D .............................................................................. 114
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INTRODUCTION
**BACKGROUND**

Brutalism is a genuinely interesting movement and period of architectural history. The project will involve learning about the underlying theory of the movement to prove that it is an important part of the past that is worth protecting - not just for architectural historians but also for the general population.

Being a relatively young nation, New Zealand has not often had to make the decision of preservation, conservation or demolition but as the country develops it will become a more pertinent issue. The architectural society should feel a responsibility to past architects to ensure that the essence of what they envisioned is safeguarded for future generations to learn from.

The intention of this project is to understand the process in which Brutalist buildings can be adapted or reused whilst still preserving the essence of the architecture, or that which makes Brutalism unique.

**PROJECT OUTLINE**

The project involves the adaptive reuse of Robin Hood Gardens, a social housing estate conceived by Alison and Peter Smithson in Poplar, England. It is currently threatened with demolition despite an outcry from the architectural community. The approach to this project is outlined below:

**Phase One: Background research**
- Understand the conceptual underpinnings of the movement.
- Identify unsuccessful aspects of Brutalism.

**Phase Two: Choosing a building**
- Determine a target range of at-risk Brutalist buildings.
- Select a building and analyse its architectural value.

**Phase Three: Adaptation of the chosen building**
- Research and analyse examples of architectural adaptation.
- Establish a set of design objectives for the chosen building.
- Implement research and analysis to achieve an original outcome.

**Phase Four: Retrospect**
- Conclude how the architecture is enriched, yet preserved in essence.
**Aims & Objectives**

The main objective of this research paper is to prove that Brutalism as a whole is worth preserving. Though it is currently considered somewhat inhospitable, this project will show that by utilising architectural expertise, these Brutalist buildings are able to achieve widespread appreciation.

It will be imperative to understand the architectural characteristics of Brutalism that were found to be unsuccessful in the long term. For example, Robin Hood Gardens and Park Hill were both labelled "sink estates." This project will determine the architectural rationale which produced such a response. Historical literature research is important to ascertain this information.

Alternatively, the project will demonstrate that the Brutalist buildings have successful characteristics which hold architectural and historical value. The findings may or may not dictate a new function for the selected building.

In terms of design, the project aims to explore the various architectural techniques employed when adapting or reusing a historical piece of architecture. Looking to the past allows humanity to purposefully move toward the future - this project aims to produce a compelling approach to the conservation of aged architecture.

Most importantly, this project will provide evidence that Brutalist buildings are worthy of conservation by delivering a successful adaptive reuse/repurpose of a Brutalist building previously deemed to be a failure. A successful adaptation will enrich the architecture whilst preserving its essence. This project will change the perceived value of Brutalist architecture of the 50s, 60s and 70s.

**Adaptation may involve (but is not limited to):**

- Applying a new facade.
- Exposing or restricting the original aesthetic.
- Deciding on a new, more appropriate function for the building.
- Spatial redevelopment/enrichment.
- Adding or removing sections of the original building.
- Geometric differentiation of old and new.

The research project will prove to professionals, the value of Brutalism, historic buildings and adaptive reuse. It would be an accomplishment for the project to be published by a conservation society (magazine/journal), locally or internationally. This would assist in disseminating the results of the research project.
RESEARCH QUESTION

How can a critically unsuccessful Brutalist building be adapted or reused to ensure its conservation as a piece of architectural history?

Sub-questions:

- Why was the building considered unsuccessful?
- Who considered the building unsuccessful?
- Why is it important to conserve this particular building?
- Which Brutalist buildings are suited to adaptation?
- What form of adaptive reuse is most appropriate?
- What are the possible new uses for the building?
- What can be learnt from this process?
Scope & Limitations

There are two main limitations involved in this project. The first is related to the accuracy and comprehensiveness of historical data collected via analytical research, the second is related to an age-old debate inherent to any historical object.

To begin with, the project must not attempt to construct a complete history of Brutalism, it must instead strive to analyse the particular events which affected the conception and development of the chosen building. Therefore, some historical events may be deliberately omitted for the clarity of the argument.

The main ethical issue related to this topic is highly subjective and therefore difficult to substantiate. It is the debate of preservation versus conservation versus demolition. Preservationists would argue that a piece of architecture must be preserved exactly as it was conceived whereas a progressive person may argue that every building has an inevitable expiration date and should be demolished in due course. Conservation appeals to both categories, occupying the ethical middle-ground.

While the project may briefly cover the ethics of conservation, it will not defend the value of adaptive reuse (as means of conservation) or justify it as an appropriate approach to historical architecture - this is a separate debate which would only serve to diminish the outcome.

Methodology

To achieve the design portion of the project a staged approach will be used. The system is similar to the NZIA (New Zealand Institute of Architects) project stages guideline. This will allow the design portion to be recorded during the literary research phase. The stages will coincide with the phases defined in the "Project Outline" section:

- **Initial design.** This is the stage where all ideas are put to paper. Any irrational idea may be recorded. It might be useful to annotate sketches, saying what is liked and disliked about each idea.
- **Concept design.** Once the building is chosen it is possible to take a more directed approach to the design. A series of concepts will be developed, informed somewhat by the initial design stage.
- **Developed design.** This stage involves the development of a chosen concept and is perhaps the most critical. A comprehensive outcome will be produced as a result.

Each stage mentioned above will be followed by a self-review, peer-review or formal critique by supervisors to ensure that the project is making adequate and directed progress. It may be pertinent to keep a design timeline showing the progression of the design. This timeline may include sketches, models or CAD printouts. This allows the design to stay focused and simultaneously places it in context. A project sketchbook will be used to record thoughts and ideas which may or may not make their way into the final document.
STATE OF KNOWLEDGE

Whilst the history Brutalism is easily traced via several detailed accounts of modernism (and post-modernism), it is more difficult to ascertain people’s reaction to the movement. It is possible, however, to gauge a general consensus from architects and critics. There is some detail on the aspects in which Brutalist buildings were unsuccessful. A comparison can be made between two housing complexes in England, Robin Hood Gardens (London) and Park Hill (Sheffield), both built in the Brutalist style. While both were initially successful, the residents eventually complained of poor security, lack of insulation and a depressing atmosphere. The buildings became havens for crime and violence. Nowhere is this more apparent than in Glasgow’s Brutalist-style Plean Street Flats or "Towers of Terror" as they have come to be known. The buildings endured riots before being demolished in 2010. Robin Hood Gardens was labelled as "unfit for purpose" by a local MP and is currently facing a similar fate to Plean Street Flats. Conversely, Park Hill underwent a highly successful, award-winning renovation by Hawkins/Brown Architects. There is clearly a social/humanitarian issue coinciding with Brutalism.

Many Brutalist buildings have already been torn down, especially in Europe and America. Much of Paul Rudolph’s work in America has been destroyed, including his Shoreline Apartments in Buffalo, despite its genuine success. In fact, icons such as the Boston City Hall, Orange County Government Center, Moris A. Mechanic Theater and the Prentice Women’s Hospital are currently hanging in the balance between salvation and demolition. In most situations, it is a legal battle between local government and preservation activists, usually being concluded by economic feasibility. Though the style was strongly disliked in the 20th century, there has been a newfound wave of appreciation for Brutalism.

Debate arises regarding the historical value of Brutalist buildings versus the economic cost of maintaining and repairing the structures. Unfortunately, concrete has a tendency to weather poorly (if not maintained), reflecting its cheap construction value. This is part of the overall issue. As there has been plenty of investigation into historic preservation and alternatively, conservation, the approach to Brutalism must be considered. The most convincing architectural approach to conservation is adaptive-reuse. Adaptive-reuse is a technique which utilizes a building’s spatial potential while simultaneously forming it to a new purpose.


RESULTS OF RESEARCH

The results of this research project prove the architectural value of Brutalist buildings in the twenty-first century. Furthermore, the project demonstrates that it is possible to use architectural intervention to resurrect a negatively stigmatized building. Reusing buildings like Robin Hood Gardens can have many social, cultural and economic benefits. The research shows that adaptive reuse produces new and exciting opportunities for architects and building-users. It also shows that it is possible to adaptively reuse a building while maintaining the building’s history - as long as the adequate steps are undertaken during the design process. In a broader sense, the appropriateness of conservation in architecture is reinforced.

In summary, the research project presents a successful design outcome as per the criteria established via literature and precedent research. The project also achieves the broader goals set out in the "Aims & Objectives" section. All of the necessary research was undertaken and all facets of information relevant to the project were presented accordingly. The information in this document is accurate to the best knowledge of the author.
**History**

Brutalism is a post-modern architectural movement occurring primarily in Europe and America between 1945 and 1975. Buildings of the movement are characterized by forms which are monumental, heavy, asymmetrical and rough. The word "Brutalist" was first written down (in an architectural context) in 1952 by young architectural husband-and-wife duo Alison and Peter Smithson to describe an unbuilt project for a townhouse in Soho, London. They described the building as having a "warehouse aesthetic" where the interior was deliberately left unfinished so as to expose the structure and services of the building. Brutalism would rapidly evolve to mean much more than this. It was the beginning of a movement which would last over 30 years. The Smithsons would continue to pioneer this movement.

Although the duo did not claim the movement until the mid 50s, there are earlier examples of buildings which exhibit Brutalist qualities. Foremost, a link can be traced back to the work of French architect Auguste Perret from 1905 onwards. His architectural work can be seen as a precursor to the movement. Next came the work of one of the great Modern masters; Le Corbusier, who worked for Perret at the beginning of his career. One of Le Corbusier's buildings, the Unité d'habitation (a housing block built in Marseille, France) would become omnipotent in the British architectural scene. The building was completed in 1952. It was, ironically, originally conceived in steel but

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this turned out to be unrealistic due to the post-war economy. So, Le Corbusier made the decision to construct it out of cheaper reinforced concrete. He chose to leave the pattern of the wooden formwork on the concrete instead of giving it a polished finish. Aesthetically and metaphorically, this decision would have a huge impact on architectural development over the next 30 years.

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Figure 2: Le Corbusier’s Unité d’habitation in Marseille residence plan and section
The significance of the Unité cannot be understated. Not only did it influence the movement through its formal qualities - the brise soleil, the monumental pilotis, the heavy-weight extrusion of its elements - but also through its ideals. After the Second World War, French architects faced the social dilemma of four million people across France without homes. Naturally, a cheaper housing typology was necessary to combat the issue. Architects of the time had to be tough and realistic towards post-war poverty and crippled industry, thus the Unité was conceived. The building can be seen as an expression of Le Corbusier’s ideas about a “new spirit of the age” which developed from his 1923 manifesto, Vers Une Architecture (translated in English as Toward an Architecture). This new spirit could be characterized by keywords such as primitive, aggressive, sensual and defensive. The Unité represents the culmination of Le Corbusier’s research into housing and communal living. It is inspired by the monastic way of life, with the individual and the collective; each inhabitant is afforded privacy but also has the option to be a part of communal activities, should they choose. It must be noted that these characteristics were influenced by regressive tendencies caused by mass-trauma in the post-war world. The Wars took their toll on society and indeed architects. Many architects were put to work during the war, strengthening basements, tunnels and subways. Some architects were even mobilized. Le Corbusier himself designed munitions factories and air raid shelters for the war effort. The standardization and normalization of construction during the war had an unprecedented impact on the mass housing projects of the 1950s, ’60s and ’70s.

On a visible scale, the Unité exhibits the sculptural qualities afforded to concrete construction. Critics have called the building a “bunker” - the local residents even called the building the “lunatic asylum” during its time of construction. Well-known critics of the building include Frank Lloyd Wright and Lewis Mumford. Their arguments are skilfully combated by architectural historian Charles Jencks who experienced the building in modern use and thoroughly enjoyed it. Opinions aside, the building inarguably shows complex formal articulation, presenting itself as a ship-like monolith. Le Corbusier used the anthropomorphic metaphor of the “the boxer” to justify the building’s crude aesthetic in contrast to the finesse of its detail. Although the building was controversial at the time, Le Corbusier went on to design four more Unités in Nantes, Berlin, Firminy and Briey; a testament to the building’s impact.

In the 1950s, British architects were exhibiting similar restlessness. Britain was damaged by the Blitz and on the verge of bankruptcy. There was a desire for a new, exciting and unifying architectural typology that would be realistic in the post-war world. It would take a young, daring, avant-garde group of architects to lift Britain back to its former glory; including the aforementioned Smithsons. Alison and Peter Smithson met while studying at Durham University and married in

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9 Ibid., 251.
10 Ibid., 245.
12 Jencks, Le Corbusier: And the Continual Revolution in Architecture, 245.
14 Jencks, Le Corbusier: And the Continual Revolution in Architecture, 246.
16 Jencks, Le Corbusier: And the Continual Revolution in Architecture, 250.
17 Ibid., 254.
1949. Soon after, they both joined the London County Council working in the architectural department. This became a breeding ground for young architects. The couple established their own partnership in 1950 when they won a competition to design the Smithdon High School in Hunstanton, Norfolk (commonly referred to as "Hunstanton School"). Construction of the school began in 1952 and was completed in 1954.

Hunstanton can be seen as a catalyst for the Smithson's later work and would be used to sway the public's perception of Brutalism. The building was admitted to have been heavily influenced by Modern architect Ludwig Mies van der Rohe. It is suggested that the Smithsons borrowed from this style because they felt it supported their ideas about material equality, exposed structure and services, and minimal finishing. A quote from Nigel Whitely, though not specifically referring to Hunstanton, perfectly summarizes the building: "a sophisticated stylization of pop culture as well as the rough poetry of Art Brut." Art Brut is loosely translated as "raw art". It is an art form which is related to architecture autre; post-war anti-formal and anti-classical tendencies in art and architecture. The Smithsons felt that it was "necessary to create an architecture of reality," and their reality was a post-war working-class society. The Hunstanton project was widely disseminated, being published in several architectural magazines in England and abroad. With this notoriety came much confusion and controversy. Modernist architect Philip Johnson applauded the Smithson's "elegance" while other critics feared that the Brutalist ethic implemented in Hunstanton would be used to defend architectural atrocities. In any case, the Smithson's ruthless consistency, logic and attention to detail was acknowledged by many architects. Unfortunately the building had ergonomic issues. The large panels of glass meant that the building overheated in the summer and froze in the winter. Despite these shortcomings, the building would go on to receive Grade II heritage listing for its significance and contribution to British architecture.

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21 Ibid., 123.
Two other projects by the Smithsons which have reached a certain level of infamy are The Economist Building in Piccadilly, London (completed 1965) and the Robin Hood Gardens housing complex in Poplar, East London (completed 1972). The couple would also become renowned for several of their unbuilt projects. Principally, The Golden Lane Estate proposal in 1952. Their competition entries for the Coventry Cathedral and Sheffield University extension were also published and discussed by the architectural community at large.

On a social level, the Smithsons were involved in a handful of groups during their time. The first of which was the MARS Group (or Modern Architecture Research Group). MARS was involved in several radical redevelopment plans for London. The second group that the couple were a part of was the Independent Group, beginning in 1952. The Group’s main contributors were the Smithsons, artist Nigel Henderson and sculptor Eduardo Paolozzi. They were like-minded individuals who marvelled (and studied in detail) the consumerism of American pop culture. The Smithsons were also sympathetic to the Art Brut-style of Paolozzi’s work. The Smithsons would be involved in several famous exhibitions during their time in the Independent Group. These include The Parallel of Life and Art exhibition in 1953 which sought to establish an anti-art aesthetic and This is Tomorrow exhibition in 1956 where the Smithsons held an installation called Patio and Pavilion. While the installation was architecturally sparse, the use of "found" and "poor" materials would set the tone for the Smithsons later work. The couple attended several CIAM (International Congress of Modern Architecture) meetings and were associated with the Team X revolt against the outdated philosophies and manifestos of high modernism within the CIAM group; though it wasn’t until 1956 that they would officially become part of Team X. The historical significance of Team X cannot be understated. Two distinct movements emerged from the group - New Brutalism from the Smithsons and Structuralism from the Dutch members, Aldo van Eyck and Jacob Bakema. The Smithsons continued to attend CIAM meetings until the final gathering in 1959.

23 Ibid.
While some architectural movements are coordinated efforts, Brutalism was not cohesive or single-minded. For some historians, it is possible to trace the formal beginning of the Brutalist movement back to an article published in *Architectural Design* magazine in January of 1955. This article, was called *The New Brutalism*. It was written by Alison and Peter Smithson and it was the first time that the term "New Brutalism" had been published in the mainstream. In the article the Smithsons talk about the movement as a reaction against New Empericism, New Humanism (and British orthodoxy in general) which were prevailing theories in the late modern period. The article called for a re-evaluation of the "advanced" modern buildings of the 1920s and 30s. It spoke with admiration for the Béton Brut of the Unité and for the spirit of Japanese architecture. The Smithsons argued that architecture was not a craft and called for the position of architects in society to be re-assessed. More than anything, the Smithsons boasted the material quality of a building and its ability to create affinity between man and structure.

Another article was published in 1955 regarding Brutalism. This time it was written by Reyner Banham, an architectural critic and writer by trade. The article was published in the *Architectural Review* magazine in December of 1955 under the same title as the Smithson's piece; *The New Brutalism*. Banham's article would have an even greater impact on architects than the Smithson's article as it sought to erase the confusion surrounding Brutalism. Today, this article is one of the most accessible and widely-known pieces of writing regarding Brutalism. It expressed admiration for Le Corbusier's Béton Brut and of the Art Brut of Jean Dubuffet. In the article, Banham talks about how it is difficult to classify a Brutalist building because it is at once a formal idea and a manifesto, meaning that although two buildings look vastly different they could both be considered Brutalist. This disparity is apparent when comparing the two buildings mentioned previously - the Unité and Hunstanton School. These are arguably two of the first Brutalist buildings yet aesthetically and stylistically, they are completely different. It is the ethos which unites them. In an attempt to define this ethos, Banham came up with three criterion: 1. memorability as an image, 2. clear exhibition of structure, and 3. valuation of materials for their inherent qualities 'as found'. As an addendum he states that "In the last resort what characterises the New Brutalism [...] is precisely its brutality, its je-m'en-fouisme, its bloody-mindedness." Banham admits that the first point of his criteria is open to interpretation so he goes on to clarify that an image is something which is visually valuable. For the image to be valuable it must affect the emotions of the viewer. He goes even further to apply this to architecture, saying that for a building to be a "good image" it must be able to be understood by the eye. Writer Alex Potts clarified Banham's third point. He stated that "as found" meant materials which were "exposed, relatively raw, semi-processed [...], deployed in the form in which they arrived on the site." It must be noted that Banham was part of the Independent Group and so shared many of the

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29 Ibid., 238.
31 Ibid., 13.
32 Ibid., 9.
Smithson’s ideas and motivation. In the ’50s Banham was a major proponent of New Brutalism but in later writing he would revise this opinion.

"Knowingly or not, a whole generation of young architects today carry on the Smithson’s legacy by shifting their attention from the strategies for ordering and designing space to complex contexts relating to effect and action in the built environment.”

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The movement would continue to flourish in Britain and throughout Europe until the mid '70s, despite public and critical speculation. Some communist countries even attempted to adapt Brutalism to create their own "national style", primarily due to the working-class roots of the movement and the appeal of its austere aesthetic. These countries include but are not limited to: Bulgaria, Czechoslovakia, Yugoslavia, Russia and East Germany. Brutalism even travelled to the East with Le Corbusier and Louis Kahn managing several large projects in India. The most notable being the Chandigarh Capitol Complex completed in 1962.

Brutalism would even be disseminated in the Americas, mainly by European immigrants and architects displaced by the wars. Louis Kahn himself was the son of a Jewish émigré. Marcel Breuer, also Jewish, fled to London and then eventually followed Walter Gropius, his Bauhaus mentor to America to work at Harvard University in Cambridge, Massachusetts. Here, Gropius and Breuer tutored the next generation of architects who would design key Brutalist buildings, including Paul Rudolph and I.M. Pei. These American Brutalists would take their own approach to Brutalism which was key to the development of the aesthetic. Breuer was known for having a 'softer' style, using curves instead of sharp angles. Rudolph's work on the other hand was known for its complex floor plans and immense verticality. One of the most unique examples of American Brutalism is the Prentice Women's Hospital Building by Bertrand Goldberg. Structural engineer William F. Baker said that the building was "the only example of its type anywhere in the world". Despite its originality, the building was demolished in 2014.


Though it may not yet be apparent, Brutalism is an important part of New Zealand’s architectural history. If a certain New Zealander had not brought Brutalism back to his home country, today’s architectural landscape would be vastly different. This well-known New Zealander is Sir Miles Warren of Warren and Mahoney Architects. During his time at Auckland University, Warren was inspired by The Group - a small band of avant-garde architecture students who sought to combine modernism with regionalism. After graduation, Warren would spend some time at the London County Council, mentioned earlier as a “breeding ground” for young architects. His time at the Council exposed him to housing projects designed and built using Brutalist principles. Eventually, Warren would return to New Zealand, designing many buildings in a softened version of Brutalism - what would eventually be dubbed as “Colonial Brutalism”. Paul Walker, architectural historian, applauds Warren for taking an international style and developing a local translation. Warren was a key practitioner of Brutalism in New Zealand and without him it would be unlikely that iconic buildings such as “The Beehive” (the executive wing of the New Zealand Parliament Building) would exist today. A prime example of Warren’s architectural sophistication is the Christchurch Town Hall, well-known for its structural “fins”. The building was damaged in the 2011 Christchurch earthquakes and is currently being rebuilt.

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38 M. Crinson and C. Zimmerman, Neo-Avant-Garde and Postmodern: Postwar Architecture in Britain and Beyond, Studies in British Art (Yale Center for British Art, 2010), 287.
39 Ibid., 289.
40 Ibid., 288.
A meagre number of Brutalist architects still remain alive and practising today. A few worth noting are Tadao Ando from Japan, I.M. Pei from China and Paulo Mendes da Rocha from Brazil. These architects have fused their local ideas with those of Brutalism, creating a hybrid style that works well in each of their cultures and climates. Their highly coveted recent work is evidence of the impact which Brutalism has had on the architectural scene. No example shows this more than the Cais das Artes (Quay of Arts) by Mendes da Rocha and METRO Architects. Completed in 2008, the building is a superb example of the relevance of Brutalism in the twenty-first century.

"Brutalist builds are ‘the most visible manifestation and embodiment … of the post war belief in the common good, and progress towards a country that’s more comfortable and affluent for all, irrespective of wealth or class.’"42

Figure 9: Cais das Artes

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41 See Appendix A

RECEPTION

Like the confusing beginnings of the movement itself, it is near impossible to distinguish a single-minded consensus to Brutalism, either from the architectural community or the public. This means that a case-by-case approach is necessary to attempt to gauge critics feelings towards Brutalism from the time of its conception to the twenty-first century.

Many of the United Kingdom’s social housing estates were designed in the Brutalist style between 1950 and 1975. The style, as well as being popular at the time, fit the social manifesto of the Councils who needed to provide quick and affordable housing for those affected most by the poor post-war economy. At the time, concrete was the cheapest material in which to build these mass-housing estates. Steel was still scarce after most of it was used for armament production in World War II. For some critics, "[Brutalist buildings are] the most visible manifestation and embodiment … of the post war belief in the common good, and progress towards a country that’s more comfortable and affluent for all, irrespective of wealth or class." 43

One successful Brutalist building is the Barbican Estate in London City, designed by Chamberlin Powell & Bon and completed in 1982. It is a private estate consisting of over 2000 flats in various shapes and sizes, aimed originally at middle-class professionals. 44 The scheme

43 Ibid.
incorporates an art centre, a museum, a church, two schools, gardens and lakes. According to occupants, it has an ideal sense of community.\textsuperscript{45} The building was the biggest post-war redevelopment in Europe (over 40 acres), and a symbol for the future Britain. Queen Elizabeth has even called it "one of the modern wonders of the world." \textsuperscript{46} Despite being named London's ugliest building in 2003, flats are now worth over £1 million each. It is difficult for critics to find a negative word about the project, other than the fact that it's "ugly" - which is unfounded, because the Brutalist aesthetic is significantly softened by the lake and gardens when compared to other estates.


The polar opposite of The Barbican must be Robin Hood Gardens, a social housing estate for the working-class in Poplar, London - near the Thames and Canary Wharf. It was designed by Alison and Peter Smithson and completed in 1972. It is the greatest manifestation of their ideas about Brutalism and social housing. Based largely off the Smithson's own Golden Lane project of 1952. Golden Lane was highly publicized at the time and influenced many other housing blocks, including the Park Hill, in Sheffield, which now has Grade II heritage listing status. The defining feature of the Golden Lane project was the Smithson's signature "streets in the air" accessways. They wished to preserve traditional qualities of street life and place them many stories above ground. The "streets" were aimed to "maintain age-old practices of collective conviviality" but were largely invalidated due to changing values in Western society. It must be noted that the Smithson's ideas about communal life within an estate were translated from Le Corbusier's Unite d' Habitation. According to writer Andrew Clement, the Smithsons borrowed (and modified) many of Le Corbusier's ideas; including concepts of dwelling, work, recreation and transportation. Despite a highly positive beginning, Robin Hood Gardens was soon blamed for "Ghetto-isolation" and several social issues were brought to attention. Today it is threatened with complete demolition in an effort to "eradicate poverty". This has sparked an international debate with key figures on both sides - with equally valid points. The debate for the demolition or savour of Robin Hood Gardens can be seen as a microcosm of the controversial relevance of Brutalist architecture in the twenty-first century. Outlined below is a list of critics, their background and their reasons for or against Robin Hood Gardens:

For:

- **Richard Rogers**, award-winning architect, knighted in 1991, leads the petition to save Robin Hood Gardens. "... it is the most important social housing development from the post-war era in Britain."  
- **Dirk van den Heuvel**, historian and post-war architecture expert. "Despite the current state of neglect and abuse, Robin Hood Gardens comprises a rare, majestic gesture, both radical and generous in its aspiration for an architecture of human association. As such it still sets an example for architects around the world."  
- **Zaha Hadid**, award-winning international architect. "The project contributed to my own work and understanding of architecture."  
- **Dickon Robinson**, housing expert. "In my view it is entirely reasonable to assert that the interiors were “fit for purpose” when built and are still so today."  
- **Alan Powers**, chairman of the 20th Century Society. "Alison Smithson (1928-1993) and Peter Smithson (1923-2003) have a firmly

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48 Clement, Brutalism: Post-War British Architecture, 104.  
51 Ibid.  
53 Ibid.
established place in the history of British and world architecture, on account of their buildings, their unbuilt projects, their theoretical writings and their teaching."54

Simon Smithson, director of architecture firm and son of Alison and Peter Smithson. "I believe Robin Hood Gardens to be the most significant building completed by my parents. They were particularly proud of the complexity that arises from the disposition of different flat types, the massing, composition and proportion of the blocks."55

Peter St John, teacher and architect at firm Caruso St John. "It is perfectly imaginable that with proper judgment about tenant mix, RHG could house a satisfied community, and in different circumstances I would be happy to live in it."56

Deborah Saunt, co-founder of architectural firm DSDHA. "The fact it has failings has less to do with the hard kit of the architecture than by its sad neglect and mismanagement by its custodians."57

Stefan Muthesius, professor at University of East Anglia. "In spite of all the controversies surrounding their work, then and now, [the Smithsons] must be rated as Britain's most important architectural designers, and especially architectural thinkers, during the period 1950-1970."58

Robert Venturi, Norman Foster and Toyo Ito have also signed Roger's petition to save Robin Hood Gardens.

Against:

Peter Eisenmann, architect, writer and critic. "Robin Hood Gardens as built form is not so much a formal failure but perhaps a failure of their forms to sustain the idea of both a generalizing aesthetic and the type-form elements."59

Anthony Pangaro, American architectural critic. "He criticised those 'pause places' as allowing 'no definition of private territory or any sense of belonging to individual occupants'."60

Nikolaus Pevsner, architectural critic and writer. "... though impressively monumental, the scheme is ill-planned to the point of being inhumane."61

William J R Curtis, architectural historian and writer. "The street decks [...] fell short of their symbolic intention of expressing and embodying the ideal community. Indeed, Robin Hood Gardens as a whole seemed propelled by a stark vision of working-class life more in tune with the realities of the early 1950s than with the consumerism of later years."62

Oscar Newman, architectural critic and writer. "In his book Defensible Space [...] Newman contended that public high-rise

54 Ibid.
55 Ibid.
56 Ibid.
57 Ibid.
58 Ibid.
developments were particularly liable to crime and antisocial
behaviour as their residents felt no sense of ownership or
responsibility for them. Design flaws typically acted to facilitate such
behaviour.\(^{63}\)

- **Alice Coleman**, defensible space expert. "The estate allegedly scored
  14 out of 16 on the scale of features held to encourage crime.\(^{64}\)

- **Charles Jencks**, architectural historian, writer and expert on post-
  modernism. "He points out the irony of the disjunction between the
  espousal by architects such as the Smithsons of values such as 'place,
  identity, personality, homecoming' and the built reality of RHG.\(^{65}\)

- **Hugh Pearman**, editor of RIBA journal. "It was disastrous. The brutalist
  concrete structure turned out to be defective, but the social aspects
  were worse: Robin Hood Gardens became a hotbed of crime. The
  Smithsons were exposed as both arrogant and fallible. Their
  reputation never recovered in Britain.\(^{66}\)

- **Simon Thurley**, architectural historian. He describes Robin Hood
  Gardens as "everything that is bad [...] about cheaply built concrete
  estates.\(^{67}\)

Many other Brutalist housing estates, like Robin Hood Gardens,
that quickly fell into disrepair; they were vandalized and communal amenities were closed. According to some
occupants, these estates became havens for drugs, violence and
crime.\(^{68}\) For David Cameron, former prime minister of the United
Kingdom, Brutalism has certainly become a negative topic; "Within
these so-called sink estates, behind front doors, families build warm
and welcoming homes. But step outside in the worst estates and you’re
confronted by [...] brutal high-rise towers and dark alleyways that are
a gift to criminals and drug dealers.\(^{69}\) It is still an ongoing debate
today as to whether these estates have problems because of Brutalist
architecture or because of failed social engineering. Some critics
speculate that the idea of putting so many "working class" citizens
together in one place is flawed from the beginning.\(^{70}\) The issue is
compounded by the fact that media representation has not been kind
to these buildings, often being represented on television as grimy and
dystopian.

Shifting the context of the debate to the Americas, many of the
same issues are raised despite there being relatively few examples
Brutalism in residential application. There is perhaps no Brutalist
building in the United States more controversial than the Yale Art &
Architecture Building (now known as Rudolph Hall) by Paul Rudolph.
Arguably, it is one of America’s most infamous Brutalist buildings. It

\(^{63}\) Dreams, ‘Robin Hood Gardens, Poplar’.

\(^{64}\) Ibid.

\(^{65}\) Stewart, ‘ROBIN HOOD GARDENS - Report on Potential Listing’.

\(^{66}\) Ibid.

\(^{67}\) Ibid.

\(^{68}\) Davies and agencies, ‘David Cameron Vows to “blitz” Poverty by Demolishing UK’s
Worst Sink Estates’.

\(^{69}\) Ibid.

\(^{70}\) A.F. Heath, Migrants and Their Children in Britain: Generational Change in Patterns of
Ethnic Minority Integration, 21st Century Business Management (Taylor & Francis,
2016).
had a short-lived period of glory before it became the target of a suspected arson attack in 1969, rumoured to have been caused by a disgruntled student. Much of the original design was changed after the incident; once expansive studios were broken up with internal partitions making the space dark and humid. An ex-student describes the gloomy building; "I would emerge from Yale seeing the A&A as a tyrannical object lesson in what architecture shouldn’t be - an exercise in willful, self-indulgent form-making that elevated the ego of the architect above the spirits of a building’s users." British architectural critic, Nikolaus Pevsner, present at the building’s inauguration, criticized its lack of functionality. The Art & Architecture building would severely damage Paul Rudolph’s reputation. After a $126 million restoration by Gwathmey Siegel & Associates the building has been modernized and restored to reflect Rudolph’s original intention. Double glazing and a complex HVAC (Heating, Ventilation and Air Conditioning) system has been added to make the space more useable. The building has even been given a neighbour - a completely new structure housing a library and several auditoriums. Ironically, the Yale Art & Architecture building has come full circle to be appreciated yet again.


73 Whiteley, Reyner Banham: Historian of the Immediate Future, 255.
Figure 11: Aftermath of building fire on June 14, 1969.

Another American example is the municipal Orange County Government Center, again designed by Paul Rudolph. There were immediate issues with this building from its completion in 1966. Most of its 87 flat roofs leaked, it was expensive to heat and cool, and its main entrance was on the wrong side of the building, meaning visitors arriving in the car park would have to enter via a small door at the rear. Like Rudolph’s building for Yale University, spaces were carelessly partitioned by the building’s residents, leading to gloomy interiors - not at all his original intent. The County executive has openly called the building "ugly, depressing and disgusting." Many architects, however, admired the scheme. Zaha Hadid defended the design, saying that "there is an integrity within the design that displays a commitment to engagement and connectivity." Unfortunately, in 2011 Hurricane Irene caused flooding and the complex was shut down due instability and mould - though the mould appeared to be due to neglected maintenance. After years of political battle, a partial demolition went ahead and now only the skeleton of the building remains. The County’s plan is to re-clad the building and add a large office block facing towards the car park. Design Lab architects, an architecture firm specializing in the restoration of Brutalist architecture, pulled out of the project "for professional and ethical reasons."


76 Debra Bruno, ‘Time is Running Out for the Orange County Government Center in Goshen, New York’, CityLab, accessed 8 February 2017,
Thermal performance is a critical factor for surviving Brutalist buildings. These buildings usually do not meet the minimum quality-of-life standards that progressive countries now strive for. As an exercise, students (of the Architecture & Sustainable Environmental Design programme at the Architectural Association School of Architecture) analysed the thermal performance of a typical apartment at Robin Hood Gardens. They found that there was significant heat loss near the windows, likely due to the building using outdated single-glazed panels.

Figure 13: Robin Hood Gardens (thermal test)
The critical and public reception of Brutalism has been exceptionally polarizing. Critics have debated the architectural value of Brutalism more fervently than any other style of architecture in history. There is a negative stigma surrounding Brutalist buildings and the reasons they were built. It’s speculated that this is due to the anti-academic nature of the movement and the fact that it was discredited so soon after it began. A common theory is that Brutalism, unwittingly optimistic, proved to be too great a social feat; "... the argument that housing estates were the ‘failed’ experiments of left-wing social engineering began to gain traction."77 Certainly, for Reyner Banham, there seemed to be a fundamental incongruity between what Brutalists said and what they did, as discussed in his 1966 book, The New Brutalism: Ethic or Aesthetic. He came to the conclusion that the Brutalist architects such as the Smithsons had lost their direction. Their work was becoming a sophisticated set of aesthetic rules rather than an ethical mandate.78

As for the future of Brutalism, critics are evenly divided on the architectural value of movement. Some individuals find it impossible to look past the architectural shortcomings of Brutalism while others celebrate these aspects. Each side of the argument has valid points so it becomes a matter of examining the individual building, accepting that it has imperfections and coming up with an architectural strategy to combat them. Therefore, critics purely driven by economical values shall be disregarded. In reality, economic forces often determine the fate of historic buildings, however, in an ideal world there would be no association between heritage and cost.

There are undoubtedly flaws in the Brutalist manifesto yet this should not completely discredit the style as each movement in architecture works to progress the state of knowledge in the field. Many Brutalist buildings are considered to be "significant"79 to architectural history regardless of critical reception. It is easy to forget that the theoretical and urban aspects of Modernism are considered failures by many renowned architectural critics; Colin Rowe once said that modernists had abandoned "that mishmash of millennialistic illusions, chiliastic excitements, and quasi-Marxist fantasies"80. Yet, despite its flaws, Modernism is celebrated today. Therefore, it is not ridiculous to assume that, given time, Brutalism may also be able to achieve recognition. So, it becomes a question of how to deal with buildings that are currently threatened; a question of how these buildings can be conserved (through architectural intervention) until a future where Brutalism is accepted. Contemporary adaptive reuse strategies may address this question.

"Many of the buildings they [Brutalist architects] designed are large, have already suffered unsympathetic alterations, and have become stigmatized locally as well as nationally as symbols of comprehensive redevelopment or political empire building."81 - Michael Stratton

77 ‘Why the Brutalist Architecture of Britain’s Housing Estates Matters in 2016’.
78 Whiteley, Reyner Banham: Historian of the Immediate Future, 133.
ADAPTATION

This section shall explore adaptive reuse strategies which may be relevant to the conservation of Brutalist buildings. According to Warren Kerr, President of the RAIA (Royal Australian Institute of Architects), adaptive reuse is the way in which "...built heritage can be conserved through the successful marriage of existing heritage structures and cutting edge architectural design." Adaptive reuse may determine a new function for a building or improve upon its original function.

At a fundamental level, adaptive reuse is a contemporary method in which to achieve architectural conservation. Therefore, significant knowledge of conservation theory is necessary to understand the motivation for adaptive reuse in architecture. Conservation can be distinguished from preservation which means to keep something as it is. Conservation theory has seen a revolution of ideas from the 1960s, challenging classical theories. The main dilemma in conservation theory has always been choosing which objects are worthy of conservation. In Contemporary Theory of Conservation by Salvador Muñoz Viñas it is suggested that any object of social meaning, symbolic strength and cultural significance should be conserved. William Morris, an early conservation writer, declared that any building that academics find the time to argue over, is worth saving. The second major dilemma is that of truth and authenticity. Classical theories (like those of Camillo Boito) would state that a damaged object must be preserved as close as


possible to its original state so as not to disturb the objects authentic value, however, a conference held in Nara, Japan in 1994 including the world’s leading conservation professionals found that "authenticity did not require a significant place to stay frozen as it is - that the outstanding values of a place could be sustained dynamically, so long as the stories remained credible and truthful." So, as long as alterations maintain the authenticity of a place (perhaps more aptly referred to by philosopher Walter Benjamin as "aura" and "cult value"), adaptive reuse is a justifiable approach to conservation.

Conservation theory is relevant because of a phenomenon called "heritage internationalism." In the Venice Charter, a conservation document written in 1964 (and eventually superseded by the Burra Charter), it states that, "people are becoming more and more conscious of the unity of human values and regard ancient monuments as common heritage. The common responsibility to safeguard them for future generations is recognized." A sub-theory relevant to this project is that of "reversibility." When performing an alteration on a historical object the theory states, "It should be possible to possible to separate it [the alteration] from the original should this be preferred for any reason." The theory goes on to justify the merits of this approach by employing reversibility the person performing the alteration carries less risk and responsibility and is therefore able to shape the object according to their wildest preferences. This theory is applicable to the project because it allows the selected building to remain relatively intact while providing the architect freedom of imagination. Another sub-theory to take into account is "sustainable conservation." It requires the architect to take the future users of the building into account when performing alterations to ensure the building's long term purposefulness. The ultimate goal of conservation is to conserve or improve upon the meaning of the object for the satisfaction of its users. Aesthetic judgements may fluctuate but "by allowing time to do its work, the present rejection can be transformed into admiration and respect. This kind of conservation could be called 'genial conservation,' as it is the result of a stroke of creative genius." The theories covered above are important because they produce the ethical pretext necessary for the adaptive-reuse of the chosen Brutalist building.

To prove a point in support of historical conservation, Le Corbusier’s Villa Savoye was investigated. It is not discussed by the architects of today that Villa Savoye was essentially deemed uninhabitable. Madame Savoye, the owner of the Villa, sent many letters of dissatisfaction to Le Corbusier within the first ten years of owning the building. She complained of roof leaks, bathroom flooding, heat-loss due to the large sections of single-layer glass, and skylight problems, heat-loss due to the large sections of single-layer glass...

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87 Munoz-Vinas, Contemporary Theory of Conservation, 185.
88 Ibid., 191.
89 Ibid., 191.
90 Munoz-Vinas, Contemporary Theory of Conservation, 206.
glazing and an overall cold and damp feeling inside the house - said to contribute to her sons illness.92 Ironically, Le Corbusier was of the mind that his architecture facilitated the health and well-being of its inhabitants. By the 1960s the building was abandoned and left to dilapidate. Despite the Villa’s functional shortcomings (and outdated theoretical justification) it is still praised as a heroic icon of modernism. This example is thematic of many buildings of the modern era, for example; Mies van der Rohe’s Farnsworth House, Philip Johnson’s Glass House and Frank Lloyd Wright’s Falling Water. The point is that despite the failures of these buildings, the work is cherished with an almost religious fervour. This is proof that, in time, popular opinion can change, and that even buildings which are considered flawed may still be worth conserving - providing that they hold historical significance. “The challenge is to differentiate between buildings that are unsound in terms of their conception, function and impact, and those that are visionary although flawed, and may deserve being retained for their historic significance.”93


93 Stratton, Structure and Style: Conserving Twentieth Century Buildings, 6.
For comparison, two diverging examples of conservation will be discussed. Both projects involve buildings of immense historical importance but each exhibits a distinctly different approach towards conservation. The first example is the Colosseum in Rome, completed in 80AD. The building was renovated centuries later by Giuseppe Valadier in 1815.\(^{94}\) Valadier added a precisely slanted brick buttress in a similar colour to the existing stone. One can easily distinguish this addition but it doesn't detract from the architecture of the Colosseum – the addition subtly complements the building, as well as fulfilling its structural purpose. In 2007 the Colosseum, a successful example of conservation architecture, was hailed as one of the Seven wonders of the modern world. The second example is I. M. Pei's much-debated Louvre Museum pyramid constructed in 1989.\(^{95}\) The architecture of the pyramid elegantly contrasts the surrounding 12th century building. It can be classed as conservation architecture because it sensitively adds to the original building (much of the addition is underground), respecting its significance. It was deemed a success as studies showed that the building's visitation doubled since Pei's addition - economically justifying the architecture.\(^{96}\)


The architectural contrast visible in Pei’s Pyramid project, is more applicable to the adaptive reuse of a Brutalist building than a complementary approach like that of the Colosseum example. This is because an addition which complements an existing building is only successful when the building is already successful on its own. A respectfully contrasting addition can work to correct a building’s flaws whilst revealing and elaborating on it’s qualities. However, an addition that is not sensitive to the original intent of a building can be damaging. One has only to look at the Scottish Parliament buildings by Enric Miralles or the Caixa Forum by Herzog and de Meuron to see an unsuccessful contribution. Miles Glendinning utterly admonishes these buildings in his book, The Conservation Movement: Antiquity to Modernity.
Applying what was learnt from the diverging examples of conservation, it became possible to distinguish between successful and unsuccessful examples of Brutalist adaptive reuse. Note that uninspired restoration/modernization projects like Park Hill, Peabody Terrace and the Boston University Law School Tower have been omitted; Chichester Festival Theatre. The intervention by Haworth Tompkins, completed 2014, involved removing all existing alterations and redesigning the interior of the building. The architects also created an extension in rusted Corten steel to house the backstage functions. The steel complements the patina of the concrete and produces a harmonious palette. Part of the brief involved enhancing the in-house café and adding a modern and sustainable HVAC (Heating, Ventilation and Air Conditioning) system. The success of the redevelopment lies in the fact that it did not try to compete with the building. Haworth and Tompkins have also referenced the original building’s structural lines in their extension. The architects have left a small gap between the existing building and the extension to visually reinforce it as a separate element.
Figure 18: Chichester Festival Theatre / Haworth Tompkins
Yale Art & Architecture. Mentioned earlier in the document, the building underwent a thorough overhaul and extension. It was completed in 2008 by GSAA (Gwathmey Siegel & Associates Architects). What one sees most obviously from the exterior is the seven storey extension clad in pale limestone and zinc panels; the colours softly complementing the golden-brown concrete of the original building. It houses a larger library, lecture halls, classrooms, offices and a public café. Each connection with the original building uses glass and aluminium panels, lightly connecting the two volumes. The architecture by GSAA vastly improved the functionality of the space which satisfied the building’s art and architecture students immensely. Again, one can see a continuation of the original building’s lines into the extension and several visual references. The extension somewhat mirrors the existing building and balances its proportions.

"Many similar projects around the world have also suffered neglect; yet sensitive renovation and new programming reveal a profound lightness and generosity, creating exciting and popular spaces where people can connect."97 - Zaha Hadid, on topic of the adaptation of Brutalist buildings.

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97 Lange, ‘Seven Leading Architects Defend the World’s Most Hated Buildings’.
Figure 19: Yale Art Architecture Building / Gwathmey Siegel & Associates Architects
Lawrence Public Library. The architects Gould Evans responded to the brief by completely wrapping the library in a new material. There is practically no trace left as to the fact that this was once a Brutalist building. It highlights the issue of "facadism" in architecture, where a building’s facade is designed separately from its interior spaces. This was chastised by historian and writer Jukka Jokilehto in his book *A History of Architectural Conservation* as a most reprehensible (but sometimes necessary) act. While the public adore the new, functional building, it is not a respectful alteration, merely a practical one.

Orange County Government Center. Early images have come out in the media showing an artist’s impression of the new addition to the Center. These early renderings show an asinine corporate box dropped on the site with little relation to the existing building. It appears a simple three storey office block with some uninspired patterns and claddings. The glass covered office block, for which much of the original building was destroyed, sits uncomfortably in the courtyard (the building’s only positive feature according to some critics) and ruins the pleasant space altogether. The addition’s style, lines, and proportions have no relation to the Center whatsoever. From a conservational standpoint, this scheme is almost as bad as demolishing the existing building.
**Guy's Hospital.** Architects Penoyre & Prasad (in conjunction with Arup Engineers) worked to make this hospital building functional again. The building was wasting a vast amount of energy and the concrete cladding was beginning to flake off, becoming dangerous for passers-by. So, the architects devised a plan to "reskin" the building with "super insulated" aluminium panels. What has resulted is more of a statement to engineering than to architecture. The building is 18 percent more energy efficient, however, the shorter block looks almost exactly the same as before whilst the taller block now looks like a high-tech addition - completely disregarding its shorter, bulkier neighbour. The buildings are simply too visually dissimilar, creating an uncomfortable relationship.

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There are some recurring themes which make these Brutalist adaptations successful or not. The more successful redevelopments are careful to consider colour, proportions and lines. One could say that they are aesthetically sensitive. The colours must complement the hue of the concrete but never overpower it. The proportions of the building must also be taken into consideration - matching the size of the fenestrations is a simple yet powerful way to connect the old with the new. One must consider the proportions of the composition as a whole. The vertical and horizontal structural lines of the building must transfer to any additions. And finally, an addition or alteration must create a narrative through its interplay with the existing material; at once connected and disconnected, its own element yet complimentary to the whole. Successful conservation is an undoubtedly thin line yet it can be highly rewarding architecturally. What must be avoided are alterations to the facade of the building, as is proven in the examples above. These attempts to simply "reskin" the original building always appear as if the architect is trying to put a band-aid on a wound; they do not celebrate the qualities of the original building and that is a lost opportunity. The "reskinning" strategy also deviates from basic principles of conservation.

This research shows that Brutalist buildings have considerable potential for successful redevelopment; "They have proved themselves to be sufficiently robust and adaptable to stand the test of time." It is just a matter of taking the time to analyse the building to establish its qualities, and to present them in a way that is relevant to society.

"[buildings] represent energy, labour and materials, which either cannot be replaced or can only be replaced at a high cost. The fight to save particular buildings is not the fancy of some impractical antiquarian. It is part of the battle for the sane use of all our resources." - SAVE Britain's Heritage, from the perspective of practical use and resource-management.

Now that some built examples of adaptive reuse have been examined, conceptual (unbuilt) strategies can be realistically analysed. A competition was held by Building Design Online (in conjunction with Simon Smithson, son of Alison and Peter Smithson) to try to inspire the architectural community about Brutalism and raise awareness of pending doom of Robin Hood Gardens. The competition attracted almost fifty entries from the UK and abroad. While the competition did not foster as much public debate as it would have intended, it did prove that the architectural community and especially a younger generation of architects are interested in historically significant buildings and adaptive reuse. In terms of this project, the most interesting entries were as follows;

99 Stratton, Structure and Style: Conserving Twentieth Century Buildings, 205.

100 Stubbs, Makaš, and Bouchenaki, Architectural Conservation in Europe and the Americas, 67.
This scheme, by Stuart Franks, aims to transform Robin Hood Gardens into a maternity clinic and medical research centre. The addition responds effectively to the original building through its size and proportion and connects Robin Hood to the adjacent site. The incorporation of the "mound" in the middle of the site makes the courtyard space more habitable and appropriate to human scale. The raised pedestrian pathways have a uniquely Brutalist appeal, possibly referencing the Smithson’s "streets in the sky". The scheme only utilises Robin Hood’s eastern block.101

Fletcher Priest Architects & Matteo Cainer Architects came together to work on the scheme above. The main aim was to reanimate the public space within Robin Hood Gardens. It does this through a series of “punctures” 102, breaking up the existing building’s facade. These small interventions appear to be scattered too sparsely and chaotically. What the scheme does do successfully, however, is create an east-west and north-south pedestrian route which would draw people into the courtyard space. In a sense it connects the building to its wider context.


This entry came from student James Walker. While the aesthetic choices of the structure are questionable (Walker was aiming for a modern translation of Brutalism), the scheme realises that the composition of Robin Hood Gardens is empowered by adding a capping to the roof of the building. The addition breaks the horizontality of the building significantly. The striking juxtaposition overpowers the original image. This is especially visible in Walker’s rendered images.
Figure 27: Robin Hood Gardens by James Walker
To summarise, what has been discovered from analysis of these competition entries is that it is important for a large site to have adequate pedestrian access. Another thing that became apparent is the need for a public space to be relative to the human scale. Also, the overall composition/proportions of the original building must be considered. These findings, along with the findings from analysis of built examples provide a compelling criteria for the adaptive reuse of a Brutalist building. More than that, the examples show that adaptive reuse is a powerful strategy which provides almost infinite architectural possibilities; within the framework of an existing building. It means that buildings previously considered failures can be reused and (in most cases) be more successful than they were originally.

Adaptation is relevant in the twenty-first century because overpowering commercial values threaten international cultural heritage. Charles Taylor was among the first to warn conservationists of this disenchantment of traditional values in favour of maximum efficiency. While it is difficult to justify conservation in the world’s current economic and social reality, it is still important to combat the destruction of heritage. Theoretically, adaptive reuse generates a future for Brutalism and other historic buildings. Even ones which are considered critically as failures. To demonstrate the possible success of this strategy, a threatened building would be an apposite case study. The selection of an appropriate building is covered in the following section.

“For a cultural heritage resource to have universal value does not - in itself - imply that is 'the best'; rather it means it shares a particular creative quality, a uniqueness, and the quality of being 'true', original, authentic, as a constituent part of the common, universal heritage of humanity.”

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103 Jokilehto, History of Architectural Conservation, 298.

104 Ibid., 295.
SELECTION

Many early Brutalist buildings have already been torn down this century. It is imperative that awareness be raised for the buildings which are currently threatened. There are various websites specifically aimed at raising awareness of such buildings. SOSBrutalism.org, for example, is a database which was invaluable when compiling a list of the most iconic Brutalist buildings currently threatened - and those which have already been lost. Keeping in mind that the buildings mentioned are exclusively "iconic", meaning that they are important, symbolic, representative of the Brutalist movement and worthy of veneration.

The task of selecting a building was difficult due to the large number of threatened buildings. The project requires a building which not only has enough potential to satisfy the research question but also needs redevelopment via adaptive reuse. In order to choose an adequate building, criteria were established to effectively make the selection. The first criterion is that the building must be threatened. It will be a more compelling argument if the building is in immediate and critical danger. The next criterion, is that the building must reside in the "anglosphere" (a term used to describe "the countries of the world in which the English language and cultural values predominate") so that the findings of this project will remain relevant to New Zealand's architectural context. The third and final criterion is that the Brutalist

105 See Appendix B
106 Ibid.
architecture must be seen as the root of the problem - perhaps aggravating social issues or stigmatization.

By cross-referencing the criteria established above with a list of threatened buildings, three options emerged. The first of which was the Sirius Building in Sydney. Designed in 1980 by Theo Gofers as social housing for the New South Wales Housing Department. It offers some of the most desirable views in Sydney, looking straight at the Opera House and Sydney Harbour. Learning from the mistakes of the UK housing estates, Sirius mixes old pensioners with a younger working-class. Sadly, the country's Housing Department intends to sell the site to a developer so that 250 luxury apartments can be built in its place. Despite tough petitioning against this, only a few residents currently remain in the building. "Heritage and community are worth more than a quick buck!" says the mayor of Sydney, Clover Moore, "...the State Government’s decision to level the iconic building and replace it with luxury apartments is an outrageous cash-grab that sets a dangerous precedent." Sadly, the building failed its heritage listing (it is very difficult to justify a twentieth-century building within the context of the heritage policies of most countries) and is on the cusp of being demolished. While the social pretext of this building is appealing to the project, the architecture is already highly regarded. It's loved by the local community and therefore does not satisfy the final criteria; the architecture is not the problem, it is purely political.

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109 Ibid.
The second building which stood out was the Pirelli Tire Building in New Haven, Connecticut, USA by architect Marcel Breuer. The building was designed as an office and laboratory for the Armstrong Rubber Company. It was completed in 1970 and was met with great local appreciation. IKEA acquired the site in later years and in 2003, the company sought to demolish the entire building to make way for a large car park. After much debate a compromise was reached. Only the two-story warehouse section of the building would be demolished leaving the tower freestanding. Unfortunately "this drastic shortening undoubtedly throws the entire building composition off balance." According to Docomomo USA (Documentation and Conservation of the Modern Movement), the tower has been empty for the past 15 years, only being used as a billboard for IKEA. The irony of the situation is that Breuer designed some of the furniture which originally inspired IKEA. In recent years, the building has revived the interest of the local architectural community and IKEA is currently listening to suggestions for adaptive reuse. The future seems favourable for the Breuer building.


The third and final building was Robin Hood Gardens - whose history has already been briefly covered. The building by Alison and Peter Smithson is currently threatened with redevelopment. This £500 million "regeneration" project is being run by the Tower Hamlets Council in conjunction with developers Swan Housing. The building by Alison and Peter Smithson is currently threatened with redevelopment. This £500 million "regeneration" project is being run by the Tower Hamlets Council in conjunction with developers Swan Housing. They aim to replace Robin Hood Garden's current 250 homes with over 1,500 apartments. Catherine Croft, Director of the UK's Twentieth Century Society, worries that "the danger with the funding [...] is that this will further encourage the demolition of estates sited where land values are high enough to attract private investors." The project includes several surrounding sites and the first phase has already been completed. Currently, Robin Hood Gardens is empty, with all of the flats boarded up. It stands on the cusp of demolition despite outrages from the architectural community; the debate mentioned earlier in the project. The building fulfils all of the established criteria. Also, of the three possible buildings, Robin Hood Gardens most effectively achieves Reyner Banham's description of Brutalism. There are many buildings which successfully exhibit their structure and utilize raw materials but very few achieve an image as memorable as Robin Hood Gardens. "The demand that this form should be apprehensible and memorable is the apical commonplace which makes good building into great architecture." What Banham is saying here is that

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117 'Richard Rogers Urges Architects to Save Robin Hood Gardens'.
Figure 30: Robin Hood Gardens, Poplar: ‘an exemplar – a demonstration of a more enjoyable way of living’
Figure 31: Robin Hood Gardens, Poplar: ‘an exemplar – a demonstration of a more enjoyable way of living’
Before delving into a deeper analysis of Robin Hood Gardens, it would be appropriate to review the proposed "regeneration" scheme to be observed as a comparison in the evaluation phase. The scheme produced by Haworth Tompkins (specialists in redeveloping Brutalist architecture) and Metropolitan Workshop features housing pushed to the perimeter of the site to make way for a large green space in the middle of the site - very similar planning to the Smithson’s scheme. In fact, the grass "mound" at the centre of the site will most likely be kept.  

Four medium-rise (around 8-storey) buildings will replace Robin Hood Gardens western block. Each of these buildings features a different cladding system but very similar design. This reminds one of low-cost subdivisions where the developers have repeated the building layout but attempted to hide this fact by making minor exterior alterations. The eastern block of Robin Hood Gardens will be demolished in a later phase.

The provisions for community facilities are an enriching addition and Haworth Tompkins have done a good job of opening up the site to the public, hopefully making the space more alive. One does worry, however, that the rendered images are "green-washed" - a term used to describe the misleading act of making architecture seem more appealing by saturating renderings with vegetation. While not completely bad, the scheme proposed by Haworth Tompkins does have obvious flaws (including no provision being made for parking). The unforgivable flaw, however, is that it does not incorporate or reference Robin Hood Gardens. Therefore, the main argument against the scheme is that the historical value of Robin Hood Gardens will be lost which does not align with modern conservation theory.

"...it is questionable if a genuinely innovative project can replace Robin Hood Gardens. Instead, we are more likely to get yet another bland (but safe and ‘sustainable’) scheme that will fit today’s lack of aspiration and vision in architecture."
DEVELOPED DESIGN
ANALYSIS

In the case of Robin Hood Gardens; there is a site, its context and a building to contend with. Not to mention, the historical background of the site. The land that Robin Hood Gardens was built on was once owned by the East India Dock Company. The entire area was primarily used as docklands due to its close proximity to the river Thames. In those times, cargo ships would frequent the area, though much of this industrial background has been erased by intensive redevelopment - especially in the Canary Wharf district which now is now one of London’s busiest centres. To the north of the site is London’s Olympic Park; to the east is the London City Airport; to the south is Canary Wharf and the river Thames and to the west is London City proper.
Figure 34: Bird's eye view
An observation of the local context reveals a rich composition of urban fabric. Surrounding the site are residential areas, parks, retail streets, commercial towers, light industrial buildings and transportation centres. Some key buildings in Robin Hood's local context are All Saints Church, Poplar Mosque, Tower Hamlets Council and the Blackwall Train Station. There is also a primary school to the north of the building, however, it may be displaced as part of the Blackwall regeneration scheme.

Robin Hood Gardens is surrounded by busy roads. North of the site is the eight-lane East India Dock Road which is a major arterial route leading to London City. There is also a large interchange to the north-east leading to the Blackwall Tunnel (directly east of the site) which goes underneath the Thames. To the south of the building is a four lane overpass and elevated railway. One of the most difficult challenges which the Smithsons faced was that of relating the building to its context, despite these noisy highways.

Figure 35: Context plan

Figure 36: Vehicular thoroughfares
The main issue of the site is that it turns its back on the public; the west side (Cotton Street) is entirely walled off with Alison and Peter Smithson’s signature sound-reflecting panels. The efficiency of these panels has been questionable according to critics and inhabitants alike; "...to stop it looking like a prison, the wall panels have angled gaps between them. So if you walk along, you can keep seeing through, but there is no direct path for sound to pass through."\(^\text{121}\) The wall continues on the south side of the site, with a smaller fence on the east. The north side (Woolmore Street) is essentially inaccessible due to pre-existing row housing. There are small, unwelcoming openings on each corner of the site allowing (but discouraging) public entry. The walls isolate the building, making it appear defensive. The vehicular situation on the east and west only works to exaggerate this feeling. The car parking, accessed from the north-west and south-east corners of the site, is at a lower level than the building; yet the top has been left open to allow sunlight into the space. While this makes the car park pleasant, it effectively creates a moat around the building.

\(^{121}\) BBC, The Smithsons on Housing.
The final challenge of the site is the larger-than-necessary courtyard. The architects have admitted that the quiet inner garden has been long-standing tradition in London, something they wanted to transfer to the housing estate.\textsuperscript{122} The Smithsons call it a “stress-free zone”; “To achieve a calm pool in this particular place, we have played down the idea of ‘linkage’.”\textsuperscript{123} Essentially, the architects deliberately disconnected the buildings from their context.

As was mentioned earlier, noise was a huge factor at the site. The Smithsons intentionally made the eastern block taller to protect the courtyard and western block from the noise of the Blackwall tunnel. If the wall can be seen as the first line of defence, the next would be the concrete mullions applied on the exterior of the building. According to the Smithsons, these mullions break up the sound waves as they contact with the facade. The next line of defence is the windows. They were designed with a central horizontal axis, so when opened air was able to come into the top of the window but the angle of the glass prevented any direct noise penetration.\textsuperscript{124} An ingenious but ineffective addition. The final line of defence was a planning element. The architects chose to place the access decks (“streets in the air”) on the road sides of the two blocks; “On the outside, we put the noisy next to the noisy.”\textsuperscript{125} The decks acted as baffle; further separating the living spaces from the noisy roads.

\begin{figure}
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\includegraphics[width=\textwidth]{figure39}
\caption{Built To Last - Robin Hood Gardens}
\end{figure}

\textsuperscript{123} BBC, The Smithsons on Housing.
\textsuperscript{124} Ibid.
\textsuperscript{125} Ibid.
The Smithsons were particularly proud of their "streets in the air" which have already been covered in detail but what hasn't been discussed is the street's "eddy-places". These small spaces allow each apartment to have its own recessed doorstep, set back from the primary flow of human traffic. "This arrangement is clear on the facades as one can distinguish those interruptions of the main volume at specific locations." The feature was used to promote ownership of the eddy and encourage interaction with the community. The architects intended this feature to be treated as a "stoop" in a traditional streetscape. This is possibly the most humanist feature of the building’s design. Lastly, on the topic of circulation, the building features a staircase and lift bank at each end of its blocks with smaller staircases at each bend in the building.

*Figure 40: Robin Hood Gardens*
Most of the apartments are maisonettes (split level) with bedrooms facing the internal courtyard. There are single-level apartments for the elderly placed on the ground floor. The Smithsons used a variety of two, three and four bedroom typologies to encourage social mixture. Robin Hood Gardens is built to the generous "Parker Morris standard" of liveable space. The apartments may be generous in size, though not without their quirks; the kitchen often being placed on a different level to the living room. The spaces are larger than many apartment blocks today, at the cost of density. The provision for modern appliances was made and even play areas for children were considered. The apartments were also intended to take advantage of cross-ventilation to provide a healthy environment for the inhabitants of the building. The housing itself is of an excellent standard, however, a lack of maintenance has led to leaks and degradation.

This analysis has proven that Robin Hood Gardens is ingenious architecture, it has social meaning, symbolic strength and cultural significance - all of the conditions for conservation to become a necessity.

Where Robin Hood Gardens fails is its relationship with human beings. To begin with, the scheme only facilitates the function of living. It doesn’t offer any other way in which to enrich people’s lives. The large internal courtyard offers a unique opportunity to provide facilities which will allow residents to spend their time productively and happily. This added element may also contribute toward humanising the proportions of the blocks on the large site. Currently, the blocks sit on the site in a most uncomfortable and unwelcoming manner. In order to combat this, elements of complimentary urban scale must be added to the site. The last shortcoming of the scheme is that it does not provide safe access to the apartments. The Smithson’s open approach is admirable but naïve; just because it’s public housing does not mean that it has to be public.

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Figure 42: Apartment circulation
INSPIRATION

The next step is to cover some buildings which will be used as inspiration for the design proposal. Many are examples of successful conservation via adaptive reuse, although they do not necessarily have any relation to Brutalism. They do, however, have architectural elements which are transferrable to the adaptive reuse of a Brutalist building. The buildings are credible examples because they are championed by adaptive reuse writers including Charles Blosziers (Old Buildings, New Designs\textsuperscript{129}), Lukas Feireiss (Build-On\textsuperscript{130}) and Francoise Bollack (Old Buildings, New Forms\textsuperscript{131}).

"Those who have stuck their neck out and argued for buildings considered beyond the bounds of contemporary acceptability have usually been vindicated, as academics and journalists have caught up a decade or more later, whether to praise surviving Art Deco factories or lament the loss of early concrete structures."\textsuperscript{132} - Michael Stratton

\begin{footnotesize}
\begin{enumerate}
\item Klanten and Feireiss, Build-on: Converted Architecture and Transformed Buildings.
\item Stratton, Structure and Style: Conserving Twentieth Century Buildings, 6.
\end{enumerate}
\end{footnotesize}
- **Tate Modern**, 2000 (Herzog & de Meuron) London, England. The architects successfully transformed the disused Bankside Power Station into an art gallery. They embraced the station's character, adding to it very minimally.

- **Convertible City**, 2006 (Lukas Feireiss) Venice, Italy. This was the German contribution for the 2006 Venice Biennale. "With an emphasis on transformation and conversion in the urban context, the exhibition reveals a shift in perception within the sphere of architecture [toward reuse of existing buildings]."133

- **Kraanspoor**, 2007 (OTH Architecten) Amsterdam, Netherlands. The architects reused an old ship building structure by placing a 270m glass office block on top of it. A simple yet elegant addition.

- **FRAC Dunkerque**, 2013 (Lacaton & Vassal) Dunkirk, France. The architects create a light bioclimatic envelope around the building creating a sense of temporality - this is reinforced by the lightweight steel structure. The transparency of the skin gives the addition a sense of impermanence.

- **Casa Nunez**, 2011 (Adamo-Faiden) Buenos Aires, Argentina. What is particularly exciting about this project is the way in which the thin sheet material is used to create a striking architectural space.

- **Castlewood Ave**, 2012 (ODOS Architects) Dublin, Ireland. The simple additions create a split-level access to the nineteenth century building whilst simultaneously providing facilities which a modern home would be expected to have.

- **Nazari Tower**, 2010 (Castillo Miras Arquitectos) Almeria, Spain. The fortress was built in the thirteenth century during a time of Arab reign. There is a fascinating connection between the old building and the new access tower, despite hundreds of years between the two.

- **15/32 (forecourt design)**, 2008 (FELD72) Austria, Vienna. A simple yet effective addition to the building, creating a dynamic urban space for people to enjoy and explore.

- **The High Line**, 2009 (James Corner Field Operations, Diller Scofidio + Renfro) New York City, USA. A creative example of urban renewal; the project transformed the city’s disused elevated railway, turning it into a pedestrian highway above the busy roads below.

- **The Young Vic**, 2006 (Haworth Tompkins) London, England. The original structure was a pre-war brick building adapted into a theatre. Haworth Tompkins creates new spaces around the existing fabric of the building, a visual interplay between the old and the new.

- **Moderna Museet Malmö**, 2009 (Tham & Videgard Arkitekter) Malmö, Sweden. The modern structure successfully nestles between two heritage buildings. Part of its success lies in its subtlety and unassuming facade - despite being bright red.

- **Kultur Bunker**, 2004 (Index Architekten) Frankfurt, Germany. The bunker constructed in 1940 was designed to withstand bombs, with two metre thick walls. When the building was threatened with demolition, the "German architect firm Index Architekten provided the perfect alternative: A light timber construction has replaced the old, run-down roof structure and sits perched atop the old bunker."134

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What these examples show is the importance of transparency, weight and an appealing urban space; a heavy building calls for a heavy addition. A temporary extension calls for a light material and structure, and an unsuccessful urban space needs to be revitalised. All of the factors identified in the previous sections of the project could be translated into design criteria, assisting with the adaptive reuse process that was undertaken on Robin Hood Gardens. These design criteria are broken down into three categories; conservation, adaptation and alteration:

**Conservation (over-arching theoretical intent)**
1. The design must remain truthful to the Smithson’s original intent.
2. The design must take into account the future users of the building.
3. Any alterations to the existing building must be reversible.

**Adaptation (applicable adaptive reuse strategies)**
1. Any addition must contrast the original architecture.
2. Any addition must use a complementary or harmonious colour palette.
3. Any addition must match the proportions of the original building.
4. Any addition must reflect the structural lines of the original building.
5. Any addition must create a narrative through its interplay with the original building.
6. Any addition must incorporate transparency into its design.
7. Any addition must mirror the weight of the original building.

**Alteration (actual design goals for the intervention)**
1. Open up the site to public pedestrians and improve circulation routes.
2. Reduce the courtyard to a human scale and create an appealing urban space.
3. Enhance the overall composition of the buildings.
4. Improve the aesthetic of the existing building by manipulating its facade.
5. Create a new function or enhance the existing function of the building.
**INTERVENTION**

Depicted below is a sketch from the very early stages of the research project. It can be seen as a visual analogy for what the project aimed to achieve. The soft fabric material represents a modern and contrasting architectural intervention, it weaves in and out of the rigid frame, contrasting old and new, hard and soft. The darker fragmented pieces represent the Brutalism’s fractured reputation and the larger economical forces that determine building conservation. The sketch, although metaphorical, produced an interesting starting point for the project.

*Figure 44: Early abstractions*
Figure 45: urban regeneration at edges of site.
Although this is an adaptive reuse project, the function of the Smithson’s buildings will remain primarily residential. It is still considered reuse in the sense that the scheme will restore the building’s habitability. It will allow the evicted tenants to return to their apartments. Therefore, the building is being re-used. Also, the design provisions (outlined later in the document) to allow the site to provide new and practical functions for the public. Earlier revisions of the scheme suggested that the building might be utilized as part of a University campus, however this programmatic change clouded the Smithson’s intent for the buildings. The Smithson’s considered Robin Hood Gardens an opportunity for urban renewal and this scheme attempts the same with updated conservation theory and knowledge of urban design.

The first issue to address with Robin Hood Gardens was circulation. It was critical to ensure that people would be able to access the site. The sound-baffling wall panels operate as a “first defence” for the building and they were the first thing to be removed. In order to satisfy sustainable conservation practices, an alternate use was determined for the panels. They would be relocated to the eastern perimeter of Robin Hood Lane to help reduce noise from the Blackwall tunnel approach. This immediately opens the site to the public and allows some urban regeneration to take place.

See Appendix C
The second “line of defence” is the lowered car park, acting as a moat around the building. So, the car park was enclosed, allowing pedestrians to walk alongside the building and providing the opportunity for retail frontage. In order to allow natural light into the car park, penetrations were made through the pavement at intervals. This would be covered with a fine steel mesh to allow people to walk over the opening. At night, lights from the car park would shine through the mesh, illuminating the building. This is a whimsical design element aimed to intrigue the public, operating in the same way as the Britomart “Volcanoes” in Auckland City by Jasmax.136 The external areas of the site would then be repurposed in a similar way to the High Line Park in New York City (refer to Figure 47, on previous page). In this example, cuts were made into the concrete to allow for planting of various flora and fauna. Applying this idea of a “greenway” to Robin Hood Gardens; the flow of pedestrians could be manipulated so that the public is drawn into the scheme. The planting areas would liven up the space and act as a baffle for the road noise.

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Figure 51: Section exploring ground connection.
The elimination of the wall and "moat" produces a north-south pedestrian thoroughfare on the outside perimeter of the site. In order to get pedestrians into the quiet centre of the site a small puncture in each block would be necessary on an east-west axis. This access point would funnel pedestrians into an open central courtyard where the Smithson’s raised mound was retained, in an architectural format. Three four-storey buildings were erected in the central area of the site. These buildings act as retail and commercial hubs, providing the community with opportunities for work and leisure. The buildings would be no more than four storeys tall as they must relate to human scale and allow for a visual connection between the Smithson’s east and west block.

The existing row housing on the north of the site would be relocated to allow for a flowing pedestrian route between each of the buildings. While removing the existing row housing may seem somewhat contradictory to conservation theory, the buildings hold no architectural significance. The benefits of opening up the site would outweigh the value of the existing buildings. The tenants of these buildings may be able to be relocated into the new Robin Hood Gardens scheme. Overall, the new buildings in the centre of the site produce a reduced street size between each building. This is optimal to the human scale and promotes the development fine-grain urban activities.

Figure 52: examining the proportionality of Robin Hood.
Figure 53: Development opportunity

- End conditions need work
- Access from road sides
- Indicate potential development space
- Maintain mound

Figure 54: Assumed pedestrian encounters.
Currently, the building’s inhabitants have to walk along the exposed access decks to reach their apartments. There are a few issues that need addressing. The first issue is the long walk from the vertical circulation routes. If residents use the stairs, it is a maximum of a 30 metre walk to their apartment, however, if the resident intends to use an elevator, it could be up to 60 metres. This is simply too long for the elderly and disabled. The issue needs to be addressed as the single-storey units on the ground floor were removed to provide the opportunity for retail frontage.

For safety, residents require private, compartmentalized access routes. This does counteract the Smithson’s "streets in the air" theory, however, the provision for communal activities will be made elsewhere in the intervention. In order to compartmentalize the access routes, it became clear that a series of towers were needed along the perimeter of each block. These towers would allow residents to more easily access their apartments via elevator shaft. According to Francoise Bollack’s book, Old Buildings, New Forms, the access towers could belong to two categories. First, the towers would provide a juxtaposition between the new and the old architecture (this also satisfies the first adaptation criteria; for the any addition to contrast the original architecture). Second, the towers would appear as a parasite, clinging to the original building - the word parasite has negative connotations, however, it refers to a positive symbiosis between architectural elements.

Figure 55: Internal circulation

Figure 56: Streets in the air
Figure 57: Exterior access towers.
The difficulty with the design of the access towers lay in how they were to be represented. Eventually, it was decided to design the towers as if they were cranes at a shipyard. This design choice operates on multiple levels. Primarily, it celebrates the industrial heritage of the Canary Wharf district. The last three dock cranes remaining in operation in the Canary Wharf district are less than a kilometre from Robin Hood Gardens. The light, structural appearance of the crane also reinforces the idea of semi-permanence and reversibility. As well as this, it produces a narrative, giving the building the appearance of being under construction; at once recognizing the failure of Brutalism, accepting this and attempting to address some of the issues. Alternative options saw the tower clad in rusted Corten steel. The aesthetic quality of the weathered steel was too complimentary to the patina of Robin Hood’s concrete, so this option did not satisfy the adaptation criteria.
The second issue related to the access decks was their exposure to the elements. According to climate data from the World Weather and Climate Information website¹, London will experience rain, snow or hail approximately 13 days per month, all year round. Not to mention, the distressingly loud noise coming from the roads surrounding the estate. Robin Hood Gardens must facilitate the most basic of human needs; that is, to be warm, dry and comfortable. To achieve this, translucent polycarbonate panels in a steel frame were fitted to the openings. This will provide residents with protection from rain and noise from the busy roads on the east and west of the site. Due to the nature of the panels, pedestrians at the road level will still be able to see people moving throughout the building, creating a dynamic composition. At night, the access decks will be brightly lit to preserve residents safety and produce a visual attraction for the building. Fully-transparent panels will be scattered at random intervals along the decks to provide residents with a peek of the city, limiting their view outwards but creating intriguing view points, similar to portholes on a sailing ship - an architectural analogy borrowed from Canary Wharf’s history as a docklands. The Smithson’s vision of Robin Hood Gardens is preserved as the "image" of the building is unaffected; the circulation routes are still clearly visible when one examines the building. This design choice also satisfies the second conservation criterion; it takes into account the future users of the building by improving their safety and comfort. The apartments are unaffected by the addition as most of the maisonettes place the stairs adjacent to the access decks, meaning that the slightly limited natural light will not affect the occupants.

Figure 61: Shortening the sky streets.

Figure 62: Tower connection with access decks.

Figure 63: A simple insertion will enclose the accessways.
Due to the vast amount of apartment typologies mentioned earlier it was decided to select a typical two bedroom unit for a case study. The findings would then inform the modernization of the other apartment typologies. The main issue with the two bedroom unit is the separation between the kitchen and living space. This rigid separation of spaces does not align with twenty-first century living. The changes (shown in Figure 67) describe the way in which internal partitions might be manipulated in order to modernize the apartments. The first thing added was a partition between entry doors on the deck level. This partition gives the resident privacy when they are entering their apartment and promotes ownership of the doorstep, something the Smithsons strived to achieve. Instead of having the kitchen on the first level it was moved to the upper floor to provide connection to the living spaces. This allowed a master bedroom, with a shared bathroom, to be placed on the ground floor of the apartment. On the second floor, residents would find an open plan living area with unobstructed views to the east and west. This multi-functional space is made possible by relocating the two bedrooms and bathroom to the left side of the apartment. The beauty of this layout is that it’s easy to cater to the individual needs of the residents. For example, if the resident requires a larger kitchen, the adjacent bedroom can be reduced or removed all together. The same applies to the living space/lounge area. With the addition of the bedroom on the first floor, the proposed layout could easily service a family of four or five. This proves the versatility of the Smithson’s building. The structural concrete partitions between each of the apartments did not have to be moved, hypothetically saving a huge cost to the redevelopment of Robin Hood Gardens.
Figure 66: A typical two bedroom apartment in Robin Hood Gardens.
Figure 67: Simple manipulations to modernize the apartments.
The last major architectural intervention occurred at the roof level. A roof terrace was implemented on the uppermost storey of each of Robin Hood Gardens blocks. This design choice was reactionary as the Smithson’s quiet central courtyard was transformed into a bustling public space. By capping the existing roof with a new roof layer (with its own drainage system) the residents would have access to a garden where children could safely play. The roof would carry approximately half a metre of soil meaning that residents could grow a small vegetable patch if they chose to do so. The new roof system would also eliminate existing leaks which residents have complained of. The proportions of the extension would match the levels of the existing building, meaning that it would not appear out of place despite the obvious fact that it is new. This design choice satisfies the third and fourth adaptation criteria.

Figure 68: Roof garden

Figure 69: Jung Architecture’s Magasins Généraux De Pantin

Figure 70: Formal articulation
Regarding the building itself, the patina of the concrete will not be cleaned off. It is imperative, for the success of the scheme, that the community learns to appreciate the Brutalist aesthetic. The interventions, primarily made from brightly-coloured powdercoated steel shall starkly contrast the weathered, decrepit concrete. This reinforces the narrative of old and new; an obvious contradiction, where the Brutalist Béton Brut is celebrated. This design choice helps to break down the stigma surrounding the aesthetic quality of Brutalist housing estates.

"Vintage concrete does not need to be recoated. Patina and streaking [...] can be acceptable and even welcomed."138 Michael Stratton

There is a foreseeable future where Brutalist buildings come to be cherished. When that happens, the beauty of the proposed scheme is that it can be removed completely, allowing the Smithson’s building to go revert to it’s original state. In this way, the architectural intervention satisfies the criteria of reversibility.

Throughout the design stage it became apparent that there were aspects of the scheme that wouldn’t be covered in this project. The three internal buildings were not designed as it would have deviated the focus of the project. The omission may seem crucial to the scheme, however, it does not help to answer the research question. Although, it must be noted that these buildings would be designed using the same design criteria as has been used to for the adaptive reuse of Robin Hood Gardens. Most importantly, the new buildings would need to mimic the structural lines (floor levels and apartment partitions) to illustrate some sort of relationship between the existing building and the new design.

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138 Stratton, Structure and Style: Conserving Twentieth Century Buildings, 1.
The following images will explain the architectural outcome when adaptive reuse principles (and conservation theory) are applied to Robin Hood Gardens - a building that has failed to become heritage listed and threatened with demolition. The outcome provides a viable alternative to the destruction Robin Hood Gardens, conserving the Smithson's architecture while working to shift the public perception of Brutalism.

The architectural interventions, described in the previous section, are theoretically justifiable. They are primarily generated from research but also from the site's aesthetic and historic uniqueness, meaning that if someone were to undertake this process using another Brutalist building, they would come to a very different result. However, this result would be no less legitimate.

The interventions are clearly distinct from the original building, confirming that no artistic forgery has taken place; however, the elements work to enhance the entire scheme. The additions retain and reinforce the healthy social and cultural identity of Robin Hood Gardens. For the residents, the alterations would improve the site's services, public space, community and employment.

Reversibility was extremely important to this scheme and it must be noted that every component that comes into contact with Robin Hood Gardens can be removed in the future; in the eventuality that Brutalist buildings come to be appreciated.
Figure 7.1: Site plan for Robin Hood Gardens, note green "lanes" running between each building.
Figure 72: Collage of proposed exterior of eastern block, note that the access towers give the building the appearance of being under construction.
Figure 73: A simple sectional diagram showing interaction of public space and built structures.
Figure 74: Process plan for RHG.
A. Remove wall and add flora
B. Erect the crane shaft
C. Place element D then remove C
D. Roof terrace connects to roof
E. Crane arm C used as connection
F. Access decks enclosed
G. Carpark covered
H. Retail tenancy at ground floor
I. Cut into ground and add flora
J. Construct interior buildings
K. Modify the mound
Conclusion
**Evaluation**

What has become apparent throughout this project is the fact that the early iconic Brutalist buildings are highly important to architectural history. The buildings remain as controversial as when they were first built, however, they are absolutely worth saving; be it through sensitive architectural intervention or hardcore preservation. Either is better than destruction. However, the design outcome has proven that architects are able to adapt these Brutalist giants into modern and usable buildings with quality spaces and habitable environments. The outcome proves that historically significant Brutalist buildings can be retained using architectural ingenuity.

Furthermore, this research project sets up a framework for the adaptation of other Brutalist buildings. The research question required an understanding of history, adaptive reuse and conservation theory. Applying knowledge of these topics, architects may sensitively interact with historic buildings. The design outcome breathed life into Robin Hood Gardens and there is no reason, or excuse, for a similar method not to be used on other historic Brutalist buildings - in New Zealand or abroad.

Confidently, this project has proven that it is time to, "bridge the chasm that separates the two fields of architectural practice: the overvalued form-making of highbrow "starchitecture" and the undervalued contextualism of historic preservation."\(^{139}\)

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**Future Direction**

Architects are constantly seeking new forms, however this project proves that new isn’t always good. It is time to shift the value system in architecture towards an appreciation of more sensitive projects. Adaptive reuse is a valuable and viable category of architecture.

If this project were continued, it would go on to compare successful adaptive reuse precedents against new builds. It would require an examination of the subtleties of a space which fuses old with new; it’s materials, details and connections. A greater understanding of this symbiosis would push the project to a new depth.

Overall, this would allow the architectural community to better understand the tools available to them when dealing with aged buildings. It might even prevent some buildings from being demolished, which can be beneficial to humanity.
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LIST OF FIGURES


23. Ibid.


27. Ibid.


31. Ibid.


34. Bird’s eye view. Ibid.

35. Context plan. Ibid.

36. Vehicular thoroughfares. Ibid.


42. Apartment circulation, Ibid.


44. Early abstractions. Image by author.

45. Urban regeneration at edges of site. Ibid.


51. Section exploring ground connection. Image by author.

52. Examining the proportionality of Robin Hood. Ibid.

53. Development opportunity. Ibid.

54. Assumed pedestrian encounters. Ibid.

55. Internal circulation. Ibid.


57. Exterior access towers. Image by author.


60. Deck intervention. Image by author.

61. Shortening the sky streets. Ibid.

62. Tower connection with access decks. Ibid.

63. A simple insertion will enclose the accessway. Ibid.


66. A typical two-bedroom apartment in RHG. Image by author.

67. Simple manipulations to modernize the apartments. Ibid.

68. Roof Garden. Ibid.


70. Formal articulation. Image by author.

71. Site plan for Robin Hood. Ibid.

72. Collage of proposed exterior of eastern block. Ibid.

73. Simple sectional diagram. Ibid.

74. Process plan for Robin Hood. Ibid.
Please note that I do NOT own the rights to the images as specified above. They are used purely for educational purposes such as review and commentary.
APPENDIX A

Paolo Mendes da Rocha’s buildings are characterized by monumentality; solid masses performing gravity-defying feats. One of Mendes da Rocha’s most celebrated work is the Brazilian Sculpture Museum, a subterranean gallery. He is applauded for using simple materials to create extraordinary spaces. "The possibility of using extremely superior technologies can overwhelm us and create the desire to use those materials without knowing the reason why or what for, we’re merely driven by an aesthetic sense or to show off. This is completely unreasonable. Architecture is primarily about finding the ideal and sometimes elusive spatial arrangement."140 This statement reflects the sometimes grounded quality of Medes da Rocha’s architecture - bulky, simple forms focused on volumes of space rather than exterior finish. The appeal of Brutalist architecture to his left-wing ideologies must be noted. Both Mendes da Rocha and Ando have often incorporated the element of water into their architecture. It is possible that the addition of this natural element adds to the humanity and connection of such buildings.

APPENDIX B

Demolished:

- **Prentice Womens Hospital**, 1975 - 2014 (Bertrand Goldberg and Associates) Chicago, USA
- **Trinity Car Park**, 1969 - 2010 (Owen Luder) Gateshead, England
- **Derwent Tower**, 1972 - 2012 (Owen Luder) Gateshead, England
- **Hutchesontown**, 1962 - 1993 (Sir Basil Spence) Glasgow, Scotland
- **Morris Mechanic Theatre**, 1967 - 2015 (John Johansen) Baltimore, USA
- **John Choreley Elementary**, 1969 - 2014 (Paul Rudolph) New York, USA
- **Mummers Theater**, 1970 - 2014 (John Johansen) Oklahoma City, USA
- **Shoreline Apartments**, 1974-2015 (Paul Rudolph) Buffalo, USA
- **Sydney Convention Centre**, 1988-2013 (John Andrews, Philip Cox) Sydney, Australia

Redeveloped:

- **Yale Art & Architecture**, 1963 (Paul Rudolph) New Haven, USA. Suspected arson in 1969 damaged the building severely and many changes were made to Rudolph’s original design when it was repaired. Several more refurbishments followed. Gwathmey Siegel & Associates completed a restoration and extension in 2008.\(^{141}\)
- **Park Hill**, 1961 (JL Womersley) Sheffield, England. Extensive internal and external renovations. Glazing and coloured panels have been added to the outside. The project by Hawkins/Brown was nominated for a Stirling Prize.\(^{142}\)
- **Preston Bus Station**, 1969 (Keith Ingham, Charles Wilson, Ove Arup and Partners) Lancashire, England. From 2000 onwards, this building was threatened with demolition even though a survey found that it was the local community’s favourite building. It became Grade II listed in 2013. John Puttick Associates were chosen in 2014 to renovate the building.\(^{143}\)
- **St Peter’s Seminary**, 1966 (Gillespie, Kidd & Coia) Cardross, Scotland. The building was abandoned just 20 years after it was built.

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\(^{141}\) ‘Brutalism’, 26 September 2014.

\(^{142}\) ‘Park Hill Phase 1 by HawkinsBrown and Studio Egret West’.

then neglected for a further 25 years. Avanti Architects were appointed in 2011 to revive the building.

- **Lawrence Public Library**, 1972 (Robertson, Peters Ericson, Williams P.A.) Kansas, USA. Gould Evans completed an extensive overhaul of the building in 2014 and it is now one of the city’s favourite buildings.

- **Orange County Government Centre**, 1967 (Paul Rudolph) New York, USA. After much public debate, the building’s ‘partial demolition’ began in 2015 and is currently ongoing.


- **Queen Elizabeth Hall**, 1968 (Greater London Council, Ove Arup and Partners) In 2013 Fielden Clegg Bradley Studios won a competition to redesign the centre, however, the scheme was so controversial that it was halted in 2016.  


- **Cameron Offices**, 1976 (John Andrews) Canberra, Australia. Several of the buildings wings have been demolished. The remaining wings have been converted into commercial premises and student accommodation.

- **Holyoke Center**, 1966 (Josep Lluis Sert) Cambridge, Massachusetts, USA. Hopkins Architects were commissioned to transform the outdated building.

- **Christchurch Town Hall**, 1972 (Warren and Mahoney) Christchurch, New Zealand. The building was significantly damaged by an earthquake in 2011. The city council voted to rebuild the hall. It is unknown if the rebuild/strengthening is architecturally sensitive.


- **Alexander Fleming House**, 1962 and 1967 (Erno Goldfinger) Elephant and Castle, England. The blocks were said to be a terrible place to work. They were redeveloped in 1997 to be residential flats and are now in constant demand.

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Threatened:

- The Open Hand Monument, Punjab and Haryana High Court, Secretariat Building, Palace of Assembly Building, Mill Owners’ Association Building, as well as various villas and museums throughout the city, ca. 1951-1961 (Le Corbusier) Chandigarh & Ahmedabad, India. An article in Architectural Review spoke of fears that a growing middle-class population in India threatens Le Corbusier’s buildings of the ’50s. The country lacks serious conservation policies and it is feared that the buildings longevity may not be realised or protected.\(^\text{146}\)

- Flaine Ski Resort, 1969 (Marcell Breuer) Flaine, France. An article on the Dezeen website by Dan Howarth spoke of neglect of the Breuer buildings and talked about the fact that, in general, skiers want ‘cosy log cabins’ rather than concrete boxes. One of the buildings, the Totem Neige recently underwent a refurbishment and it has done relatively well since then.\(^\text{147}\)

- Vele di Scampia, 1975 (Franz di Salvo) Naples, Italy. One of Italy’s largest social housing developments. Nearly half of the buildings were torn down in 2003. The remaining four are in a severe state of disrepair.

- Premabhai Hall, 1972 (Balakrishna V. Doshi) Ahmedabad, India. The building has been an empty shell since 1997 due to fire regulations and financial issues.

- Marxer Pharmaceutical Laboratory, 1962 (Alberto Galardi) Loranze, Italy. The building lies deserted and vandalized.

- Sanskar Kendra Museum, 1957 (Le Corbusier) Ahmedabad, India. The local government attempted to construct a building directly in front of the museum. It was stopped after fierce opposition but is yet to be removed.

- Istituto Marchiondi Spagliardi, 1957 (Vittoriano Viganò) Milan, Italy. The building has been vacant since 1997. It has become a hotspot for squatters. Several renovation plans have failed leaving building in "... acute danger of demolition."\(^\text{148}\)

- Kansas City International Airport, 1972 (Kivett & Myers Architects) Kansas, USA. Architecturally un-sensitive redevelopment concept threatens the airport.

- New Dining Hall, 1968 (Henry Nitschke) Main, Germany. The university building is threatened with demolition.

- Berkley Art Museum, 1970 (Mario Ciampi) California, USA. The building was deemed unsafe as the structure would not withstand an earthquake. It was closed in 2014 and earmarked for demolition.

- Atlanta Central Public Library, 1980 (Marcel Breuer) Atlanta, USA. Unfortunately the building no longer meets the library’s needs so they are relocating. The fate of the building after that is currently being debated.

- Pirelli Tire Building, 1970 (Marcel Breuer) New Haven, USA. IKEA purchased the site and proceeded to demolish half of the building in 2003 to build a car park. All that remains is the tower section of the


building. It is vacant and being used as a billboard. IKEA wanted to demolish the rest of the building but was met with fierce outcry from preservationists.


- **Bidura Children’s Court**, 1983 (J.W. Thomson, Andrew Milcz) Sydney, Australia. Developers have purchased the site and plan to demolish the building placing 8 storey apartment towers in its place. A campaign called Save Bidura was started to attempt to rescue the building.

- **Sirius Building**, 1980 (Theo Gofers) Sydney, Australia. Various trusts are attempting to list Sirius as a heritage building before a large scale redevelopment can go ahead. The S.O.S (Save Our Sirius) campaign was started to oppose this.

- **Ottawa Public Library**, 1973 (George Bemi) Ottawa, Canada. A new library building is being discussed. It is unclear whether the council will want to demolish the building for a new one or extend the current building.

- **Boston City Hall**, 1968 (Kallman, McKinnel & Knowles) Boston, USA. The building sits on a large deserted podium. Attempts have been made to bring life to the expansive area but none have prevailed. The building has previously been threatened with demolition and remains unlisted despite various heritage societies’ efforts.

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An early concept for Robin Hood Gardens intervention.
APPENDIX D

Final presentation drawings attached to the end of this document.
A. Remove wall and add flora
B. Erect the crane shaft
C. Place element D then remove C
D. Roof terrace connects to roof
E. Crane arm C used as connection
F. Access decks enclosed
G. Carpark covered
H. Retail tenancy at ground floor
I. Cut into ground and add flora
J. Construct interior buildings
K. Modify the mound
Full name of author: Taylor Ryan Bell

Full title of thesis/dissertation/research project ('the work'):
A CONCEPT MADE CONCRETE
— conserving... a Brutalist icon through architectural intervention.

Practice Pathway: Architecture

Degree: MArch (Prof.)

Year of presentation: 2017

Principal Supervisor: Christoph Schwoer

Associate Supervisor: David Chaplin

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Name of candidate: Taylor Ryan Bell

This Thesis/Dissertation/Research Project entitled: A Concept Made Concrete

is submitted in partial fulfillment for the requirements for the Unitec degree of

March (Prof.)

Principal Supervisor: C. Schroor

Associate Supervisor/s: D. Chaplin

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I confirm that:

- This Thesis/Dissertation/Research Project represents my own work;
- The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies;
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Candidate Signature: .......................... Date: 26.05.17

Student number: 1398799