

Re-Stitching Urbanism: Reclaiming Urban Voids through Architectural Intervention



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Abstract

Mobility within urban environments has been a key issue since the widespread adoption of automobiles. With the increasing number of personal vehicles on the road, the importance of road infrastructure has grown, whereas the infrastructure needed to integrate human-scale movement within urban environments has diminished. Complex highway networks are often associated with occupying valuable urban landscapes and creating physical, social, and spatial barriers to urban development. This infrastructural occupation is exemplified at Auckland's Central Motorway Junction, where almost 50 hectares of the city's central zone have been dedicated to an extensive vehicular transportation network. With Auckland's population expected to reach 2 million by 2030, according to Stats NZ, efficient use of available urban space is increasingly important. This thesis investigates the paradoxical nature of these infrastructural sites and proposes an architectural intervention to address the urban barriers and void spaces produced by the motorway network. The research combines a review of the theoretical literature, precedent analysis, and contextual and programmatic analyses to inform the final architectural intervention.

To establish an intervention that facilitates a variety of social interactions and engagement, the project does not propose a singular, defined programme. Rather, it investigates an adaptable network of programmes that encourage and accommodate functionally across a range of time frames. By integrating a sense of interventional impermanence, the architectural proposal reimagines the infrastructural landscape as a testing site for urban transformation, where the intervention and its programmes can evolve alongside its users and adapt to the environment

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Date : 23/02/2026

Signed:

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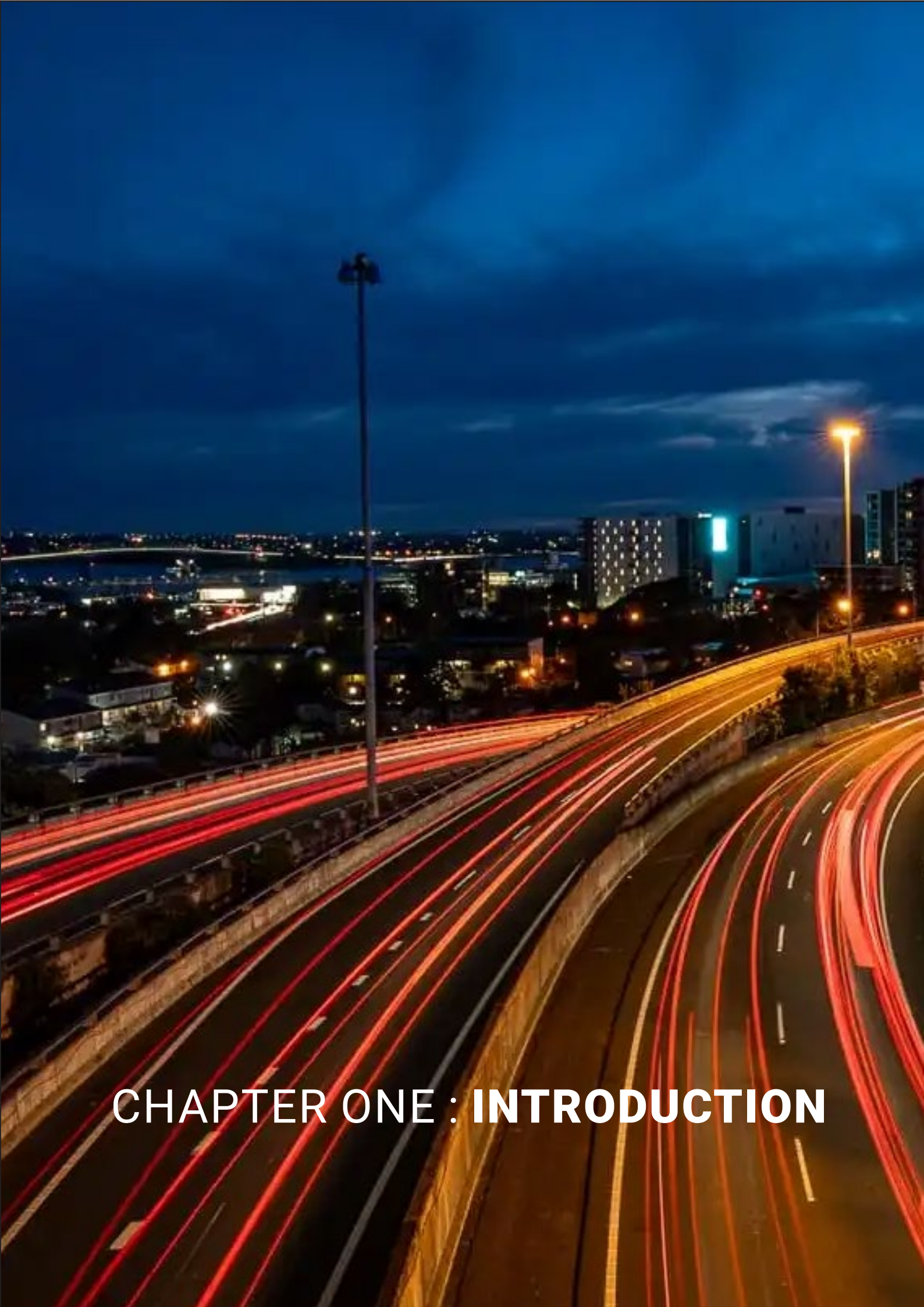
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CHAPTER ONE : INTRODUCTION



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Introduction

- Problem Statement -

Auckland's infrastructural landmark, the Central Motorway Junction (CMJ), commonly referred to as spaghetti-junction, can be interpreted as an infrastructural paradox (Graham & Marvin, 2002). While intended to enhance physical cohesion across the city, its network of roads and bridges has instead fragmented the urban social and spatial fabric. Prioritising the efficient movement of vehicles has created a dimensional inequity, in which accessibility is unevenly distributed and heavily skewed toward private car travel. For those without access to private vehicles, this motorway junction acts more as a barrier than a connective network, producing an infrastructural urban void (Aleha et al., 2023). Indirect, unsafe, and impractical pedestrian routes create a sense of alienation, leaving local communities with a paradoxical experience of destinations that are visible yet inaccessible.

Unfortunately, this challenge is not unique to Auckland. Globally, highway systems are a significant contributor to these hostile infrastructural landscapes, carving through cities and communities (Caro, 1975). Due to the prioritisation of traffic flow over public life, these sites tend to resist conventional methods of urban development; however, because of their centralised location and scale, they are often among the most valuable

and underutilised spaces in cities and suburbs.

The problem lies not only in their disconnection but also in their absence of architectural presence within the infrastructure. Current urban planning strategies consider these spaces as necessary sacrifices for efficient mobility rather than opportunities for civic development. This thesis positions the Auckland CMJ as a testing site for reimagining how public architecture can transform these urban voids into sites for civic engagement, rather than merely thoroughfares within valuable urban landscapes. This research investigates how architecture can restitch divided communities and restore urban continuity to a site that has been neglected and stripped of its identity.

- Research Question -

How can a design-led intervention at Auckland's Central Motorway Junction transform it from an infrastructural void into a connective civic landscape, rebalancing spatial inequities while integrating a layered programmatic system for everyday engagement?

Figure 1 (previous) Auckland Light path and light rails (O'Keefe,2025)

Figure 2 (left) Judge Harry Pregerson Interchange in Los Angeles (iStock, 2022)

- Research Proposition -

This thesis proposes an architectural intervention that transforms Auckland's CMJ from an infrastructural barrier into an inhabitable landscape. It reimagines the site as a connective framework for organised complexity (Jacobs, 1961) an evolving system in which movement, inhabitation, and ecological engagement are seamlessly integrated. The project articulates a programmatic network of spaces that overlap and interact, dissolving rigid spatial hierarchies and reframing the motorway junction as a landscape for public life. This thesis identifies the paradoxical nature of road infrastructure and addresses the spatial injustice it has produced by reintegrating this lost urban space into the city's everyday life.

This thesis does not propose a singular programme, but a system of interdependent, permeable interventions that accommodate functionality across a range of timeframes. These structures operate within a formalised architecture yet encourage informal appropriation – spaces where work, learning, leisure, and movement coexist in negotiated balance. Through this principle of interventional impermanence, the project advocates for continual transformation rather than a fixed resolution, allowing the architecture to evolve alongside its users. This thesis ultimately proposes design as a facilitator for reconnecting and restoring an alienated infrastructural void.

- Research Aims -

- **Spatial Justice:** To use architectural interventions that address paradoxical infrastructure as theorised by Paul Edwards (2002) networks, such as complex motorway interchange junctions, so that they rebalance both spatial and social inequities, facilitate the transformation of a utilitarian landscape, and redefine a lost urban space as a civic asset, rather than an infrastructural void.
- **Programmatic Permeability:** To reimagine the motorway junction as a network of adaptable micro-programmes that mediate between formal and informal spatial uses, transforming its infrastructural landscape through a permeable, layered programmatic pattern of everyday inhabitation that encourages localised activation and continuous functional exchange across the motorway junction.

- Research Objectives -

- Spatial Justice -

RO1:

To reinterpret the infrastructural paradox created by the motorway junction through spatial strategies that restore continuity, permeability, and equitable accessibility to a fragmented urban landscape.

RO2:

To reconfigure the human and ecological relationships within the motorway landscape and its interstitial pockets of green space through design strategies that balance everyday engagement and co-produce conditions of spatial justice.

RO3:

To reframe the public perception of the motorway from a placeless void into an inclusive urban landmark that embodies the layered histories of the site and infrastructure, while restoring a sense of spatial belonging.

- Programmatic Permeability -

RO4:

To explore temporal frameworks that support permeability between programmatic typologies, facilitating dynamic transitions while accommodating informal social and spatial engagement within a formalised architectural intervention.

RO5:

To establish and understand strategies for adaptable micro-programmatic configurations that respond to social and spatial needs as well as the patterns of everyday use, allowing the architecture to evolve through interventional impermanence.

RESEARCH FOR DESIGN → RESEARCH THROUGH DESIGN

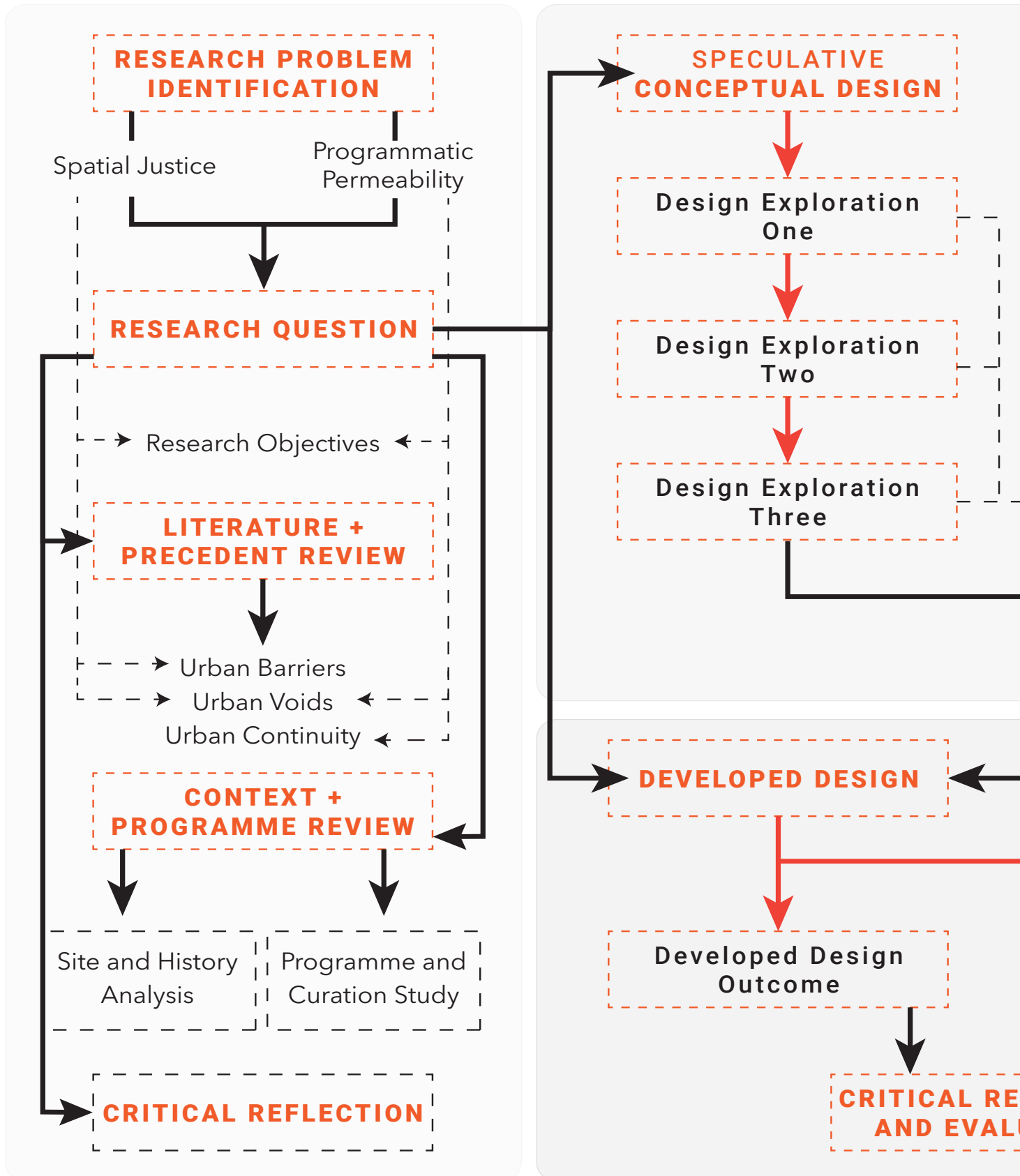
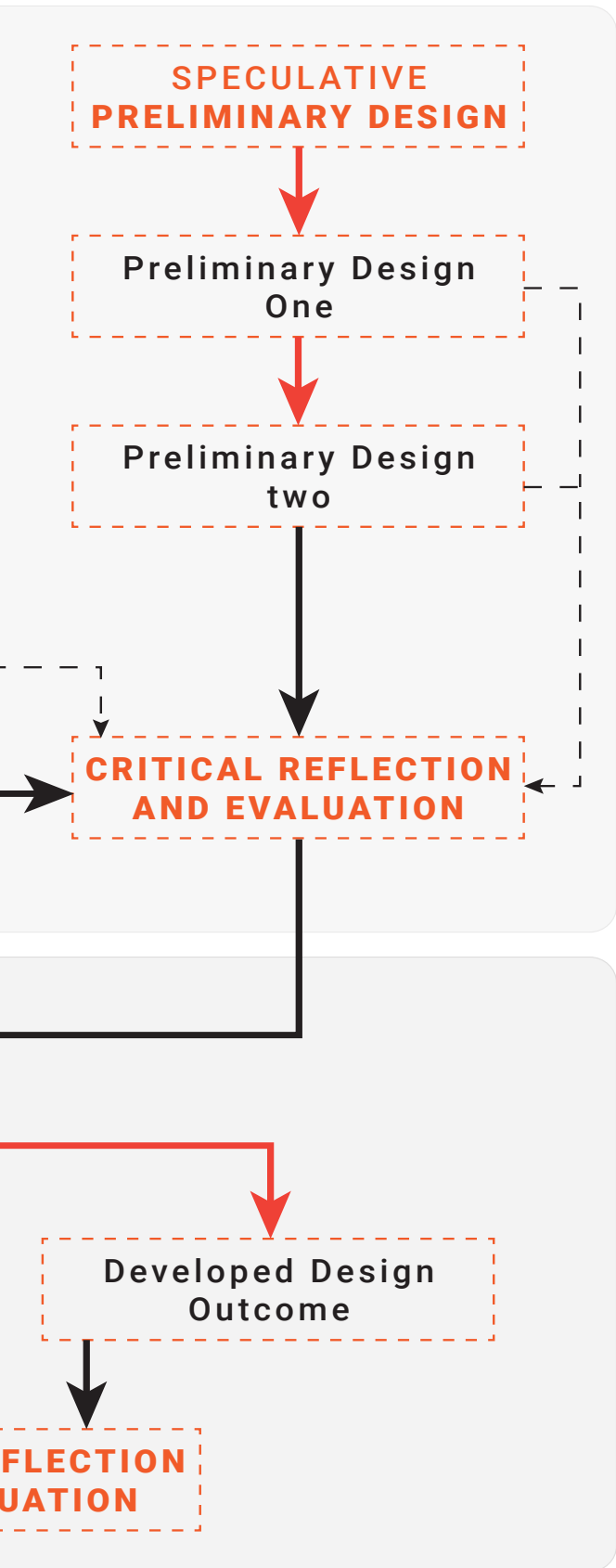


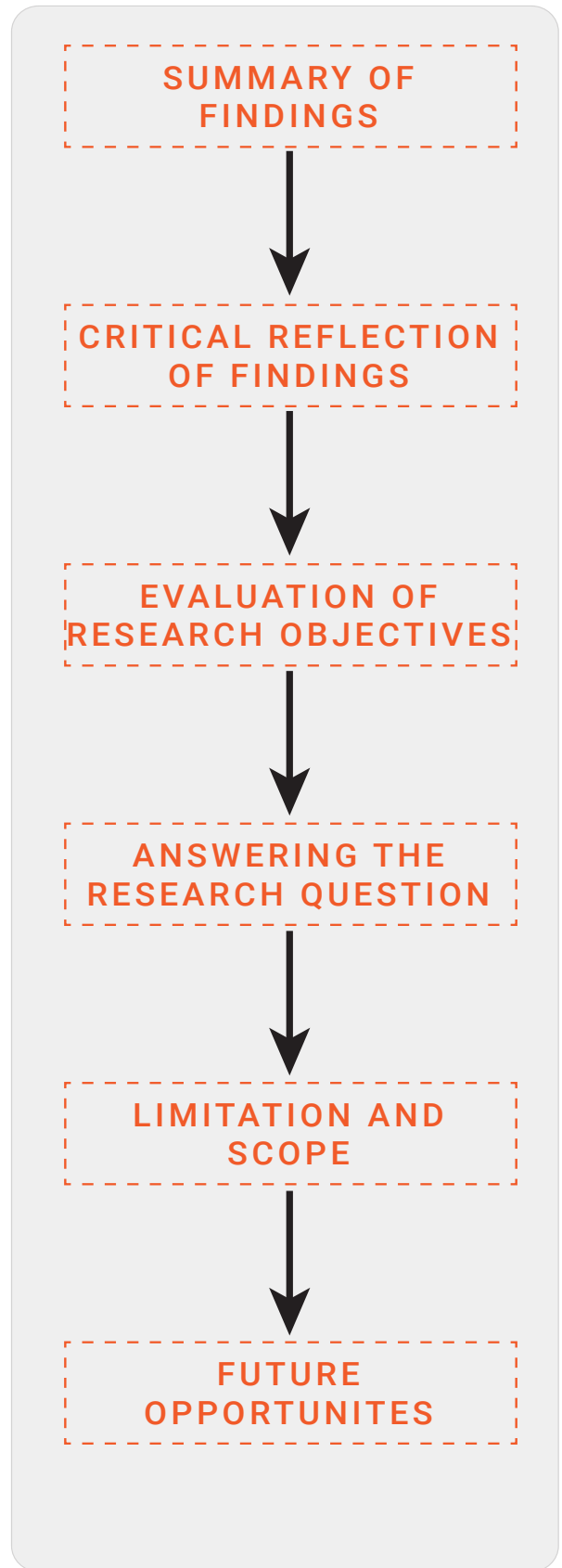
Figure 3 Methodology and Process Diagram, Produced by author

PROCESSESS DIAGRAM -

ROUGH DESIGN



REFLECTION THROUGH RESEARCH



- Methodology + Process -

This thesis employs a research-led design approach in which the architectural intervention is informed and directed by a series of theoretical, contextual, and analytical investigations. The principal research question is addressed through two core aims, each with its own objectives. The first aim examines the paradoxical nature of motorway infrastructure and situates it within Auckland's CMJ. The second aim examines the programmatic elements of these urban environments, specifically their inequitable functionality.

The research process commences with a comprehensive literature review that establishes a framework supporting theories of infrastructural systems, spatial justice, and programmatic coherence. As Groat and Wang (2002) argue that the literature review situates the research problem within an existing body of knowledge, providing conceptual grounding and direction. Theoretical concepts were synthesised into three thematic categories: urban barriers, urban voids, and urban continuity. Subsequently, a series of precedents is analysed to investigate how existing infrastructural sites have been adapted within various urban contexts. These case studies focus on infrastructure projects transformed into publicly accessible environments that encouraged social and spatial interaction. The analysis considers spatial strategies, programmatic organisation, and public engagement, with particular attention to the impacts of adaptability and informal use.

Building upon this foundation, a contextual and programmatic analysis was undertaken to examine the physical, historical, and perceptual conditions of

the landscape, as well as the distribution of activities along its boundaries. The contextual analysis aims to address the objectives of spatial justice, whereas the programmatic analysis focuses on programmatic permeability. This investigation informed the iterative stages of conceptual, preliminary, and developed design processes.

Within the design phase, a speculative design methodology was employed to extend the analytical findings into spatial exploration. As suggested by Dunne and Raby (2013), speculative design aims to open new perspectives that challenge existing conditions, thereby creating spaces for discussion and imagination. In this thesis, speculative design functions as a structured framework for testing micro-programmes and interventional impermanence. The conceptual design phase began with iterative sketching, diagramming, and spatial modelling, with a focus on the architectural form and its relationship to the site. Following this, the preliminary design phase shifts the focus to the programmatic permeability research objectives and the project's interventional nature. An evaluation of the concepts and preliminary designs is conducted to identify their strengths and weaknesses, informing the next design phase.

The Developed design explored the objectives of adaptable programmes and everyday engagement in greater detail. This design phase collates the formal architecture with the informal interaction between people and the site. This design phase ends with a final critical evaluation and reflection.

- Thesis Structure -

Chapter One: Introduction

Outlines the central problem that this research seeks to address, articulates the principal research question, and presents the key aims alongside their respective research objectives.

Chapter Two: Literature and Precedent Review

The first part of this chapter examines the supporting literature and theoretical frameworks surrounding infrastructural systems as a paradoxical landscape - where spatial injustice emerges from poorly planned road networks that fragment the city - producing placeless urban voids and residual spaces of disconnection. The literature review concludes with an exploration of theories on programmatic continuity, highlighting how the activation of sites within such a context must be carefully curated to avoid excessive formalisation that risks sterilising public life. Following this, a series of precedents is analysed to explore how these theories are tested and translated across diverse urban environments.

Chapter Three: Context and Programme Analysis

The context and programme analysis chapter explores the spatial, historical, and environmental conditions of Auckland's CMJ. This chapter aims to identify how large-scale infrastructure has reshaped the accessibility networks, historical identity, and everyday inhabitation of the site. Through an investigation of the site, this chapter examines the physical and perceptual impacts of the motorways' infrastructural development. This is

followed by a programmatic analysis that considers how existing uses operate along the boundaries of the site. This chapter concludes with an exploration of potential programmes and their curatorial configurations across the junction.

Chapter Four: Conceptual and Preliminary Design

The conceptual and preliminary design chapter explores the intervention's architectural forms through a series of iterative sketching and modelling. The conceptual design stage explores early design ideas through moves that aim to address the site's disconnected nature. Moving into the preliminary design, conceptual elements were further explored in relation to the research objectives of programmatic permeability and began to establish a sense of interventional modularity.

Chapter Five: Developed Design

The developed design chapter focuses on the project's adaptability and its capacity to incorporate patterns suitable for daily inhabitation. This section explores the curatorial organisation of programmatic elements and their temporality. The chapter concludes with a final analysis of the design outcomes and an evaluation against the five research objectives.

Chapter Six: Conclusions

The final chapter reflects on the research findings and design outcomes established across the previous chapters. This chapter discusses the conclusions drawn, the research constraints, and avenues for future research.



CHAPTER TWO : LITERATURE + PREC

An aerial photograph of a city street scene. In the foreground, a multi-lane highway with a concrete barrier runs horizontally. A white car is driving on the left side of the highway. To the right of the highway is a landscaped area with various green plants and trees. In the middle ground, a large, modern building with a glass facade and a dark roof is prominent. To its right, there's a construction site with a large, flat, grey concrete slab. Further back, a mix of commercial buildings is visible, including one with a red roof and another with a blue facade. A tall, white street lamp stands in the center. The background shows more city buildings under a sky filled with white, fluffy clouds.

PRECEDENT REVIEW

Introduction

Key Research Objectives addressed:

RO1: addressing the paradox and spatial injustice.

RO3: reframing a place with no identity into an urban asset.

RO5: curating a programmatically cohesive network that aligns with everyday urbanism

This chapter begins by examining theoretical literature that supports the concepts of paradoxical infrastructure networks, spatial injustice, urban voids and programmatic continuity in urban environments. Divided into three sections, the concepts are grouped to address the thematic theories of urban barriers, urban voids, and urban continuity.

The first section addresses RO1 by examining the paradoxical nature of infrastructure and its resulting spatial injustice. This is explored in an urban context through the works of Paul Edwards and Edward Soja, who define and analyse these theoretical concepts. These concepts are contextualised to understand the implications of their impact on Auckland's CMJ.

The following section focuses on the 'lost spaces' produced by road infrastructure networks, as well as the theory of a 'non-place', exploring what it means for a place to have identity. The literature by urban theorists Marc Auge and Roger Trancik was reviewed to address RO3 and to reframe Auckland's CMJ, a non-place lacking identity, as an urban asset.

The literature review concludes with an exploration into themes pertaining to urban continuity, with a focus on programmatic adaptability (RO3) that accommodates everyday urbanism (Crawford et al., 1999). Drawing on insights from Jan Gehl and Michel de Certeau, this section examines the potential of the project's interventional impermanence in the context of Auckland, addressing the equilibrium between mobility and activity.

Following the literature review, a review of precedents was conducted to demonstrate how these theories have been employed in various urban contexts. The precedent review examined the transformation of infrastructural projects and sites into urban assets that encourage social interaction and engagement.

The chapter concludes with a critical analysis of the key findings from the theoretical literature and the precedent review.

Literature Review

Theorist's Credentials

Paul Edwards

Paul Edwards is a Professor in the School of Information and the Department of History at the University of Michigan. Used for theory topics of: Infrastructural Paradox

Stephen Graham

Stephen Graham is a Professor of Cities and Society at Newcastle University's School of Architecture, Planning and Landscape. Used for theory topics of: Splintering Urbanism

Simon Marvin

Simon Marvin is a Professor in the Urban Institute at the University of Sheffield. Used for theory topics of: Splintering Urbanism

Edward Soja

Edward Soja was an Urban Planning theorist and a Professor at the London School of Economics and at the School of Urban Planning at UCLA. Used for theory topics of: Spatial Justice

Henri Lefebvre

Henri Lefebvre was a French philosopher and sociologist. Used for theory topics of: Right to the City and Spatial Production

Marc Augé

Marc Augé was a French anthropologist and ethnologist known for the concept of non-places. Used for the theories of place and identity.

Roger Trancik

Roger Trancik is a Professor of City and Regional Planning at Cornell University. Used for theory topics of: Lost spaces

Ignasi de Solà-Morales

Ignasi de Solà-Morales Rubió was an architect, historian and philosopher. Used for theory topics of: Terrain Vague.

Alan Berger

Alan Berger is Associate Professor of Landscape Architecture and Director of the Project for Reclamation Excellence at Harvard University. Used for theory topics of: Drossscapes

Jan Gehl

Jan Gehl is a renowned Danish architect and urban design consultant. Used for theory topics of: Places for staying and Spaces for walking.

Michel de Certeau

Michel de Certeau was a French Jesuit priest, historian, philosopher, and social theorist. Used for theory topics of: tactical urbanism.

Christopher Alexander

Christopher Wolfgang John Alexander was an urban design theorist and professor at the University of California, Berkeley. Used for theory topics of: urban continuity and urban patterns of architectural engagement.

Jane Jacobs

Jane Jacobs was a pioneering urban theorist, author, and activist. Used for theory topics of: organised complexity.

Urban Barriers: Infrastructural Paradox and Urban Justice

The characteristics of technological systems that co-construct and shape the modern world, often referred to as infrastructures, have been extensively critiqued and studied. Paul Edwards suggests that to be modern is to “live within, and by the means of infrastructure” (Edwards, 2002). He argues that these infrastructures reside in an invisible background that civilisations “fundamentally depend on, yet they are noticed mainly when they fail”. In contrast, Auckland’s CMJ imposes a dominating presence within the city’s urban landscape. The motorway’s visibility exposes the barriers it has created, producing a paradoxical landscape. This road infrastructure, intended as a network for connected systems, has instead become a spatial intrusion on the urban fabric. The contradictory nature of the motorway junction is evident in the way it creates both opportunities and limits, promoting the interest of vehicular mobility at the expense of pedestrian accessibility (Edwards, 2002). As cities increasingly develop a spatial structure dependent on motorised transportation, particularly privately owned vehicles, the associated infrastructure has progressively become linked to local disturbances (Rodrigue et al., 2006). This reliance on automobiles has led to a decline in alternative modes of urban mobility, significantly influencing the infrastructure prioritised for development in cities. With the expansion of road and motorway infrastructure, the spatial and temporal relationships between urban environments and their communities were altered. Transport infrastructure at an urban scale did not solely function as a technical system for mobility; it shaped how spaces are accessed, inhabited, and perceived (Yang et al., 2019). Motorway networks prioritise speed, efficiency, and separation, which creates a spatial logic that privileges vehicular mobility over human accessibility. While these systems connect the city at a metropolitan scale, they often create fragmented neighbourhoods and are commonly at the expense of human-scale inhabitation (Maria Aiello et al., 2025). This paradoxical network produces environments defined by movement rather than active engagement and inhabitation, suppressing public life in the name of circulation (Appleyard, 1981). Stephen Graham and Simon Marvin (2002) argue that the infrastructural paradox evident in these networks pertains to their influence on urban fragmentation and segregated land uses. They question the neutrality of infrastructure, highlighting that Auckland’s motorway junction does not operate as a neutral urban system; rather, it functions as a deliberately constructed spatial instrument that dynamically alters access, visibility, and inclusivity within the city.

Historically, vehicular-centric transportation infrastructure, imposed through top-down planning strategies, divided communities and was directly correlated to class-based segregation. Before the industrialisation of urban environments, the walking city covered five to eight square miles, with members of various economic classes living in proximity to each other (James & Golding, 1978). As the industrialisation of transport infrastructure expanded to replace horse-drawn vehicles, these walking cities were transformed into the modern metropolis. The resulting commercial city was being absorbed, through a series of infrastructural networks, into “a system of cities, tied into a national, rather than local, economy” (James & Golding,

1978, p.6). As discussed by Stephen Graham and Simon Marvin (2002), these infrastructural networks are rarely neutral or universal. Rather, they are shaped by social and political priorities, producing “splintered urbanisms”, which they defined as uneven geographies where selected flows are privileged, while others are obstructed (Graham & Marvin, 2002). They argue that these networks unevenly bind spaces together by defining the social dynamics and divisions within and between urban spaces. These social biases have been either unintentionally or deliberately embedded into infrastructural systems. Graham and Marvin also discuss the development of enclaves, noting that road networks are situated within dense urban landscapes, thereby alienating them from the surrounding built environment.

Urban space theories and their social impact are particularly relevant to this thesis. The concept of ‘spatial justice’ is articulated by Edward Soja (2010) to establish the inequality embedded in the organisation of urban space. Soja discusses the layers of macro-spatial organisation and how the imposition of political power encompasses social control and distribution. The result of this socially and spatially discriminatory organisation was an unjust urban transportation landscape (Soja, 2010), where a car-centric ideology was deemed to be more rational than that of the infrastructure required for mobility at the human scale. These exogenous geographies of power impinge on daily activities and social interaction within an urban environment, contextualising the injustice. This abstract condition becomes legible through Robert Caro’s (1975) biography of Robert Moses and his consolidation of political power. The text revealed how the development of transport infrastructure can enable a sense of spatial control. Moses’ development of the Cross-Bronx Expressway in New York exemplifies how he facilitated regional mobility, while simultaneously displacing thousands of residents (Berman, 1982; Caro, 1975). This expressway, alongside his other projects, demonstrates how infrastructure can influence and perpetuate spatial injustice. Soja’s concept helps to frame these motorway junctions as unjust sites that favour high-speed transit over the displacement, pollution and disconnection that local communities experience. This is evident in the access to specific areas, the exclusions, and the individuals who bear the burdens of these urban infrastructural systems. Additionally, Henri Lefebvre (1996) argues that the right to the city is the right to access, participate in, and transform urban environments as required. He claims that, for the realisation of a successful urban society, it must be shaped by its inhabitants to meet social needs rather than relying on the infrastructure for modern industrialisation (Lefebvre, 1996).

Seen through this lens, Auckland’s junction is not benign infrastructure; it is a political system through which access and mobility are unevenly distributed. An infrastructural paradox that enhances mobility for some and limits accessibility for others. The theoretical perspectives outlined above position the motorway not only as an infrastructural problem but also as an opportunity for transformative intervention. They emphasise the significance of urban space shaped by society for society and underscore the importance of interventions that align with the temporality of urban needs.

Urban voids: Non-Places and Lost Spaces

Places with no or contested identity have been the subject of much architectural and philosophical scrutiny. Urban Theorist, Marc Auge, defines a place as one that is “relational, historical, and concerned with identity,” suggesting that spaces which cannot be defined as such become “non-places” (Auge, 1995). He argues that the “distinction between places and non-places derives from the opposition between place and space.” His concept delineates ‘space’ as the environments generated by transport infrastructure, where individuals become anonymous participants within an interconnected mobility network. These spaces, unlike ‘places’, are not destinations; they are corridors of transit that create conditions of placelessness, in which social interaction and historical identity are suppressed. Auge’s theory provides a powerful framework for analysing Auckland’s CMJ; it represents not only an underutilised landscape but also a network of spaces in which the infrastructure’s transitional characteristics diminish the site’s identity and historical significance. Roger Trancik further conceptualises these environments as “lost spaces.” He regards them as unstructured fragments of land that lack continuity, legibility, and human significance (Trancik, 1991). Trancik contends that such areas are typically undesired in urban environments and offer minimal to no beneficial impact on their immediate surroundings or users. Lost spaces, also referred to as “anti-spaces”, frequently result from modernist planning practices, where infrastructure dominations, particularly automobile infrastructure, generate environments that are spatially disconnected. As a result, these spaces lose their cultural significance and human-oriented functions (Trancik, 1991). Trancik explains that a significant percentage of urban land is devoted to both the movement and storage of automobiles. This configuration of urban land directly affects the spatial organisation of buildings and the vast open areas surrounding them, which serve little to no social purpose.

As the spatial landscape undergoes continuous reorganisation through urban development, the resulting areas are commonly designated as urban voids. The significance of these residual, unused, and underused spaces has been acknowledged across numerous scholarly studies. (Hwang & Lee, 2020). Due to the lack of a definitive definition for the phrase, various literature has employed an array of interchangeable terms to refer to these spaces. While Auge and Trancik characterise these urban voids as issues of identity and integration, Ignasi de Sola Morales presents an alternative perspective through his concept of “terrain vague,” which is derived from French, Latin, and German etymologies. These origins translate to meanings such as “empty and unoccupied” as well as “free, available, and unengaged” (Sola-Morales, 1995). Although these terms emphasise the undesirable characteristics of the sites, they also imply their potential to evoke specific responses. De Sola Morales contends that, despite their indefiniteness and uncertainty, these spaces are not inherently negative. The spatial opportunities within these environments are rooted in their openness and absence of restrictions. In the context of Auckland’s CMJ, despite its closeness to the city centre, it may be regarded as a “mentally exterior space within the physical interior of the city” (Sola-Morales, 1995). Alan Berger (2006) builds on the concept of lost space

at the metropolitan scale by referring to these voids as “wasted landscapes”. Berger describes the nature of these spaces by integrating the inherently mundane aspects of the built environment, which he refers to as ‘dross’, with ‘landscape’ to establish his concept of “Drosscapes” (Berger, 2006). Berger’s classification of urban voids encompasses regional urbanisation at a broader scale than that of a motorway junction; however, his theoretical conceptualisation of these spaces can still be appropriately applied to contexts such as Auckland’s CMJ. By advocating for designers to reimagine these waste landscapes as urban reserves endowed with ecological potential and programmatic significance, Berger proposes that these sites are not beyond recovery and reinhabitation.

Henri Lefebvre’s theory of spatial production extends these critiques by framing infrastructural void spaces as social constructs shaped by power and economic systems (Lefebvre, 1991). In his discussion of the contradictions of space, Lefebvre argues that modern urban environments are structured by opposing spatial logics: the abstract space produced through capitalist rationalisation and the lived space generated through daily social practice. Transport infrastructure exemplifies this contradiction as an abstract space, conceived through global strategies that create a foundation for modernist lifestyles (Lefebvre, 1991). These infrastructures often aim to shape spaces by removing obstacles and other forms of resistance to create the desired environments. In this regard, motorway junctions are not inherently poor designs; rather, they were regarded as the consequence of abstract spatial production. It is through the informalisation of this space that societies produce their own spatial justice, translating it into the lived space. This informalisation is achieved by reintroducing lived spatial practices into these urban voids of abstract space. The following section reviews programmatic continuity theories to establish a framework for these practices.

These theoretical perspectives identify the problematic nature of urban voids; however, they also acknowledge their potential. Auckland’s CMJ results from the transformation of a lived space into an abstract space in which notions of identity and historical relations are absent. A main insight from these concepts is their emphasis on the potential of these spaces, even in their current condition. This issue is especially pertinent to Auckland’s motorway junction, particularly with respect to restoring a sense of identity and rebalancing spatial injustices resulting from the unequal distribution of transportation infrastructure.

Urban Continuity: Everyday Urbanism and Programmatic Permeability

At the heart of the infrastructural paradox lies a disconnection at the pedestrian scale –the byproduct of an urban landscape shaped by inaccessible green spaces and residual voids that cannot be fully experienced or enjoyed. In *Life Between Buildings*, Jan Gehl addresses this condition through the distinction between “places for staying” and “spaces for walking”. This distinction frames the paradox as a human-centred problem of urban form and use (Gehl, 2011). His theory can be directly tied to non-places (Auge, 1995) and lost spaces (Trancik, 1991). Gehl emphasises the importance of mobility and accessibility within these environments, while underscoring the role of identity and sense of belonging. His work demonstrates that the success of an urban space depends on the balance between mobility and activity. An imbalance of these concepts is exemplified in Auckland’s CMJ, where there is a clear absence of spatial programmes that invite interaction, gathering, or social participation. Operating solely for vehicular transit, the motorway overlooks the spatial needs of pedestrians and limits the surrounding landscape from evolving into places that support social engagement and community life.

In *The Practice of Everyday Life*, Michel de Certeau frames walking as an act of resistance that reclaims space from systems of control. He describes it as a “tactical practice” that challenges the imposed order and structure of a city (Certeau, 1984). Yet within infrastructural landscapes such as motorway junctions, this form of resistance is neutralised by the dominance of planning and zoning strategies that prioritise vehicular movement over human experience. The political ideologies imposed by architects, engineers, and urban planners produce spatial hierarchies. These tend to constrain spontaneity, limit the freedom of movement, and restrict unplanned collective engagement with urban public spaces. In an environment such as this, where walking is entirely displaced, the reclamation of the infrastructural landscape requires more than connectivity; it requires architectural and programmatic interventions that restore interaction and everyday life to the void.

Margaret Crawford’s *Everyday Urbanism* provides a model for how a series of small-scale programmatic interventions, such as markets, performances, or temporary installations, can restore life and identity to these marginal spaces (Crawford et al., 1999). These informal and adaptive engagement strategies reintroduce public agency, encouraging communities to transform neglected sites through active use rather than through superimposed master planning. Building on this, Christopher Alexander’s *Pattern Language* explores how social patterns of use are translated into spatial patterns that influence design (Alexander, 1977). These patterns outline the logic of inhabitation and how programmatic and spatial arrangement can establish continuity, interaction, and identity within the urban fabric. Patterns such as 18 and 52, a network of paths and cars, warn that movement systems designed primarily for efficiency can weaken opportunities for social interaction and informal engagement. When circulation systems are prioritised over social encounters, urban spaces become transitional rather than inhabitable. In contexts where infrastructure has disrupted the ecological and social fabric,

pattern 104, site repair, underscores the importance of restoring damaged landscapes through environmental and human interventions. Translating these principles into the context of infrastructural voids, a series of micro-programmatic elements, such as arcades, courtyards and public gardens, community kitchens, shared workspaces, student hubs and more, act as more than decorative additions. They provide a spatial framework that supports the natural development of informal activities traditionally found in socially active areas. These elements become the "places for staying" described by Gehl; the anchors that transform corridors of movement into lived urban environments (Gehl, 2011). The architectural programming of an intervention within these infrastructural environments should aim to operate across three layers of engagement: ecological, social, and infrastructural. This configuration of functional elements creates opportunities to revitalise key issues at Auckland's motorway junction. This layered approach explores Jane Jacobs's concept of "organised complexity" in *The Death and Life of Great American Cities*, where she discusses the importance of a self-sustaining urban system. Her concept of a "Sidewalk ballet", used to describe the spontaneous activities that take place along the streets of urban environments, implies the significance of informal interaction that takes place daily in programmatically dense urban landscapes (Jacobs, 1961).

These theories propose that the effectiveness of micro-programmatic elements is not solely dependent on their physical design and configuration but also on their ability to facilitate temporal layering. In Keller Easterling's work, *Extra-statecraft*, these programs are characterised as "active forms," which are systematic networks capable of supporting multiple functions across various timeframes (Easterling, 2016). These hybrid programs are particularly well-suited to infrastructural sites, where architectural permanence must coexist with social adaptability. Nevertheless, programmatic activation may pose significant risks of creating pseudo-public spaces, where informality becomes over-formalised, resulting in environments that are visually inclusive but socially exclusive. Architectural programming within infrastructural contexts should function as a framework for public life, fostering social interactions and daily inhabitation, rather than serving as visionary impositions as perceived by designers and urban planners.

These theories reframe the reactivation of Auckland's Motorway Junction as a choreographed programmatic system rather than an architectural imposition. Gehl's experiential analysis and De Certeau's spatial tactics offer an opportunity for a new civic field that balances design intention with human appropriation. Architecture does not dictate how space is used; it provides the foundation for the natural development of social, ecological, and cultural narratives within the site. These theoretical perspectives highlight the importance of an intervention at a site such as Auckland's Central Motorway junction to reestablish walking or cycling as a form of resistance against the spatial injustice produced by an infrastructural landscape. The theories highlight how a balanced configuration of formal and informal spaces mediates urban areas from becoming pseudo-public, thereby allowing patterns of engagement and interaction to emerge.

Precedent Review

Coulée Verte René-Dumont + High Line

The High Line in New York and the Coulée Verte René-Dumont in Paris are both projects that transformed railway infrastructure into linear public spaces that prioritise pedestrian mobility and urban reconnection. Paris’s Coulée Verte focuses on quiet, continuous circulation and integration with surrounding neighbourhoods through subtle landscaping. In contrast, the High Line portrays the infrastructure’s historical identity through programmed destinations and curated views. This transformation saw an increase in tourism but subsequently highlighted the gentrification of the urban space it occupied. These projects demonstrate how adaptive reuse can restore urban permeability to infrastructural barriers, while also highlighting the tension between informal everyday inhabitation and formalised public activation.

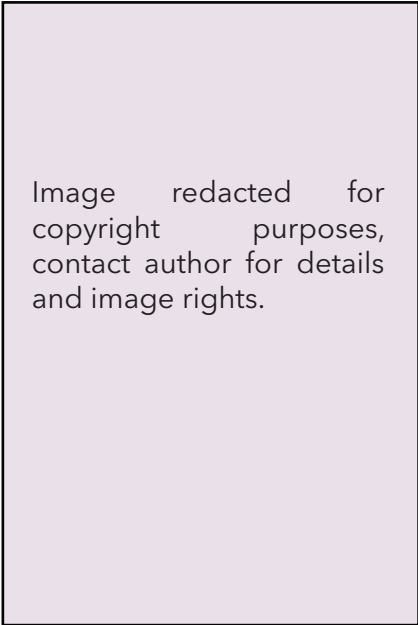


Figure 5 Image of The High Line New York from an apartment (metalocus,2011)

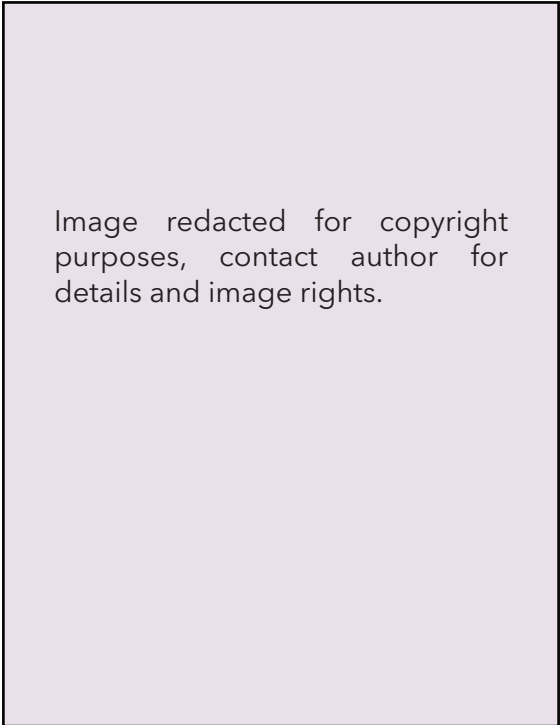


Figure 6 Image of walking track along the High Line New York (Concord Hotel, n.d)

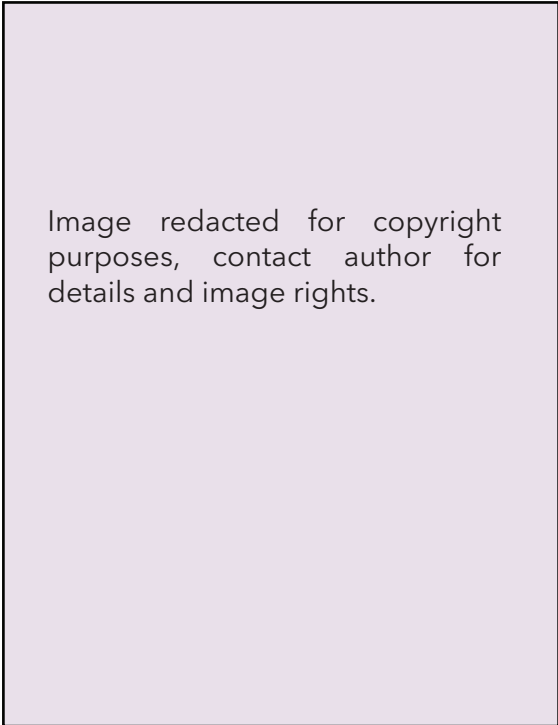


Figure 7 image of the walkway of Coulée Verte René-Dumont (Urban Insider, n,d)

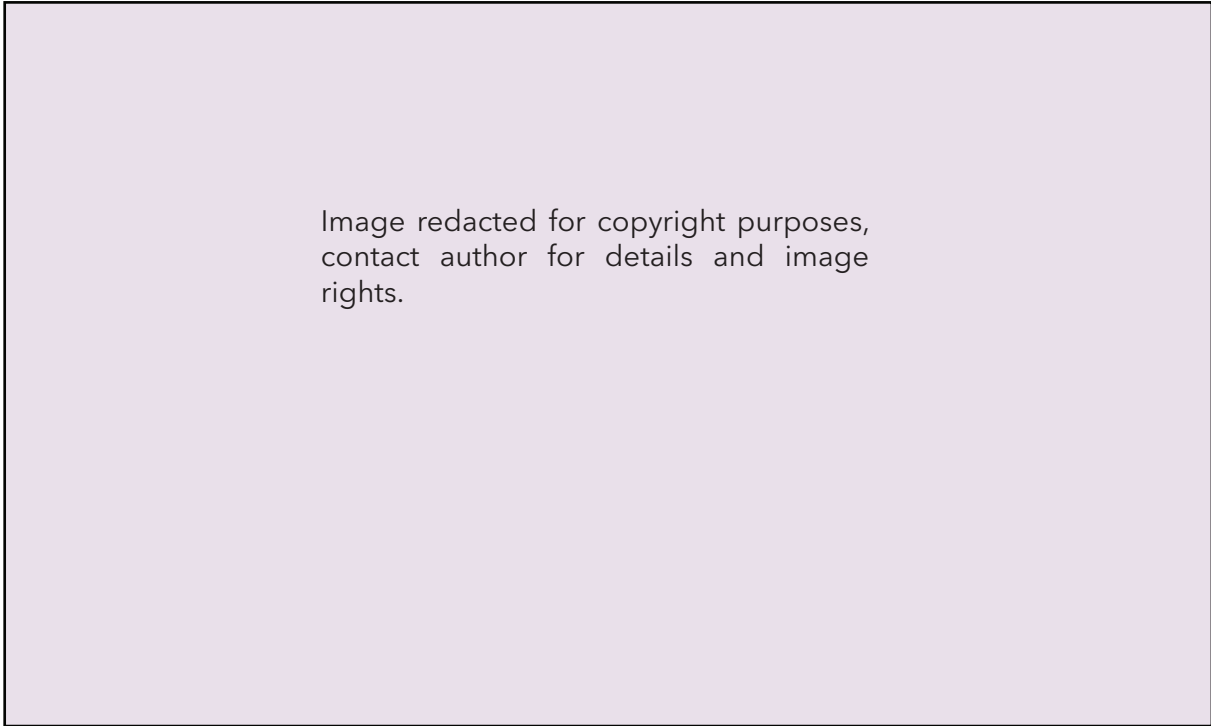


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Figure 8 Canal de l'Ourcq - La folie des anges and the East gateway (La Villete, n.d)

Parc de la Villete

Bernard Tschumi's Parc de la Villette shifts from fixed programmatic zoning into a layered, flexible spatial framework. Rather than formalising specific uses, the park encourages activities that arise from interpretation and inhabitation. This openness reflects a programmatic logic based on adaptability and permeability. Tschumi's approach aligns with his literature that critiques overly formalised public spaces, suggesting that excessive control can suppress and limit public interaction (Tschumi, 1996). Parc de la Villette demonstrates how architecture can serve as a framework for civic life rather than a predetermined solution. A common critique of this project was its perceived informality. Where users often could get overwhelmed by the scale and its lack of curated engagement.

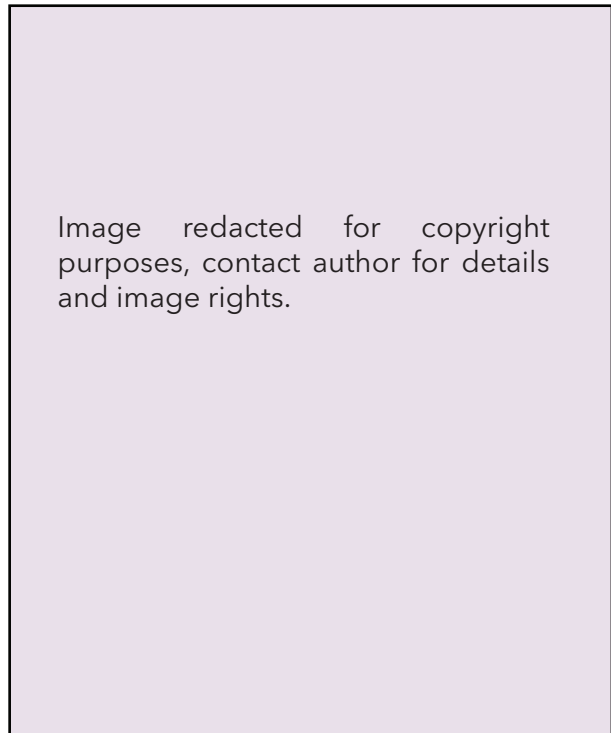


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Figure 9 Interactive map of parc (La Villete, n.d)

Musée d'Orsay

Similar to the High Line and the Coulée Verte René-Dumont, the Musée d'Orsay was the transformation of former railway infrastructure into a public urban space. Originally constructed as the Gare d'Orsay in 1900, the station became obsolete by the 1930s and was repurposed as a museum in 1986. Unlike the transitional nature of the previous projects, the museum supports prolonged occupation, public engagement, and cultural participation. The Musée d'Orsay highlights how infrastructural reprogramming can also support public life through formalised architecture. The museum's controlled circulation and curated exhibitions contrast with the open, informalised nature of the previous infrastructural transformation precedents.

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Figure 10 Musée d'Orsay et la Seine (Wikimedia, 2010) Photograph of the museum's exterior

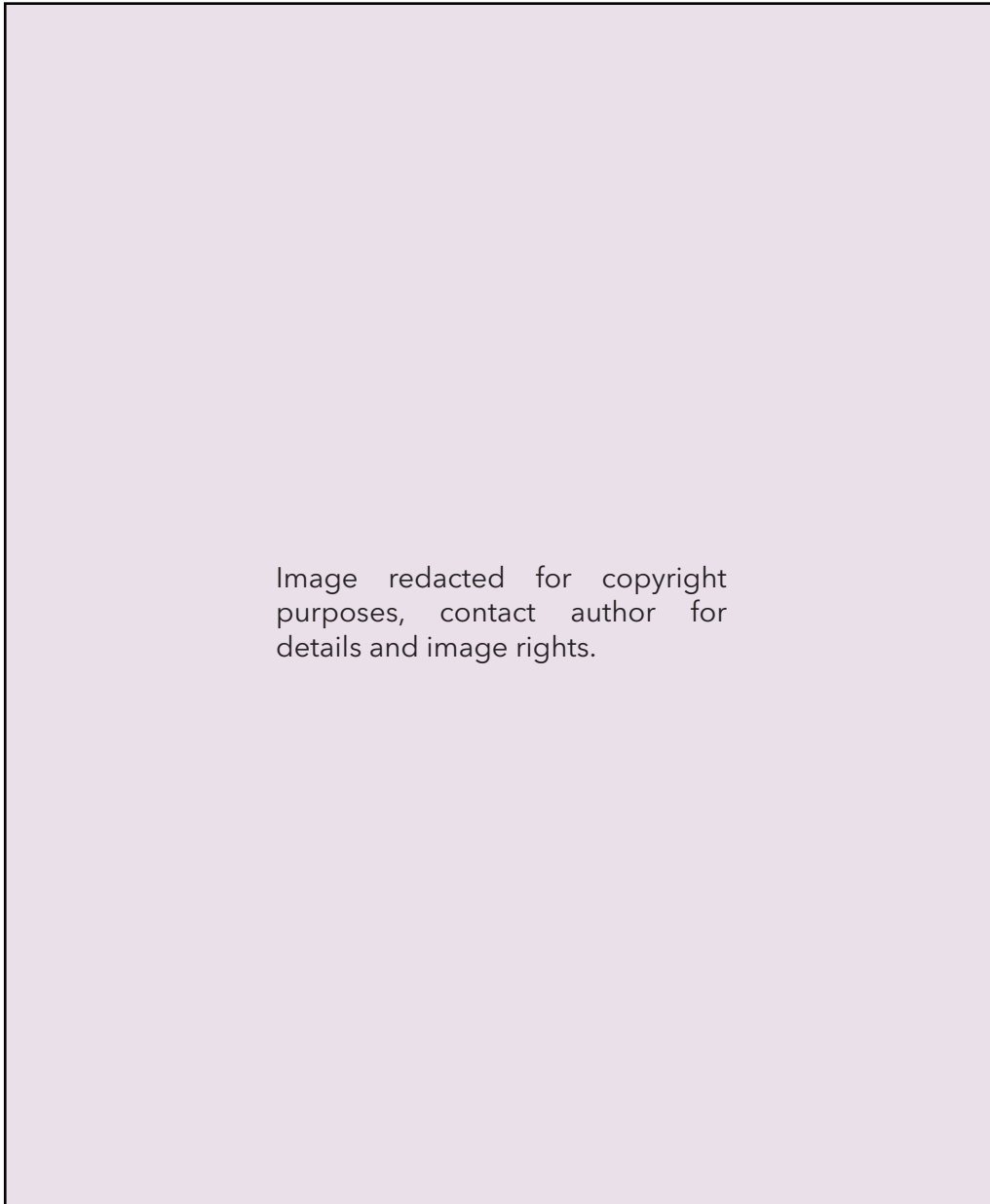


Figure 11 Musée d'Orsay Paris Museum Building Interior (GetArchive, 2016)

This image highlights the corridor-like nature of the museum, reinforcing the formalised character of the infrastructural transformation and providing a curatorial experience for its users. This curation of movement paths inhibits the potential for spontaneous decision-making and informal interaction with the project.

Zeitz Museum

The Zeitz Museum of Contemporary Art in Cape Town repurposes a grain silo into a cultural installation through the transformation of industrial infrastructure into an urban landmark. The project has a unique architectural language that involves carving out a central atrium to produce an intriguing spatial condition, revealing the structure that would otherwise not be seen. This approach demonstrates how infrastructural forms can be reconfigured to enhance public engagement while keeping their historical and material identity. Similar to the Musée d'Orsay, this project implements a formalised architecture with controlled access and curated programmes that limit the potential for everyday patterns. The Zeitz Museum illustrates the architectural potential of infrastructural reuse and how the risk of over-formalisation can restrict social accessibility.



Figure 12 Zeitz Museum programmatic section (Heatherwick, 2017) Image shows the separated curation of programmes and spaces, creating a formalised environment that doesn't facilitate spontaneity or informal interaction.

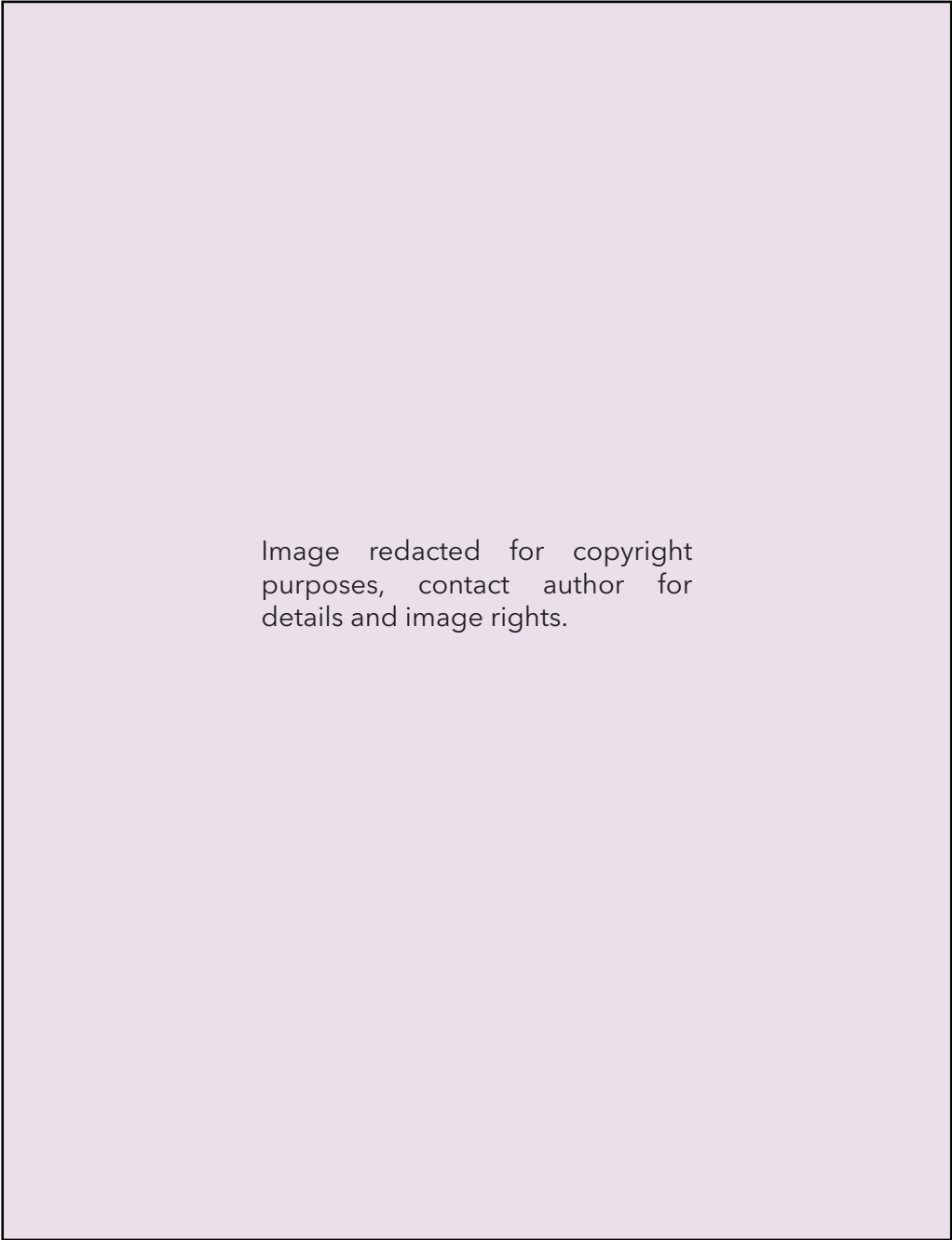


Figure 13 Interior of Zeitz Museum grain silo (Wikimedia, 2022) Image shows the sectional cut into the structure of the grain silo.

Conclusion and Critical Reflection on Findings

Literature Review Reflection

The infrastructural paradox is largely based on the notion that the construction of mobility spaces often creates barriers for communities. It is seen as a result of post-industrial urban planning strategies, governed by political ideologies that prioritise speed, efficiency, and segregation, creating a spatial system that favours privatised mobility over equitable human accessibility. These paradoxical infrastructures produced urban voids and result in what Marc Auge describes as non-places: places without identity or places where the identity has been erased. Additionally, Henri Lefebvre's argument about the contradictions of these void spaces introduces a strong framework for investigating Auckland's motorway junction. His perspective on opposing spatial logic speaks to the abstract spaces and the lived spaces of urban environments. Lefebvre's concepts underscore the potential of these urban voids to become landscapes of spatial justice through the informalisation of abstract spaces, thereby reconfiguring them into lived spaces. Urban continuity theories support his concepts through the likes of Jane Jacobs and Jan Gehl, who illustrate the importance of informal interactions within urban environments. As exemplified in Jane Jacobs metaphor, "sidewalk ballet", where she discusses the intricate and spontaneous choreography of interactions within an urban street.

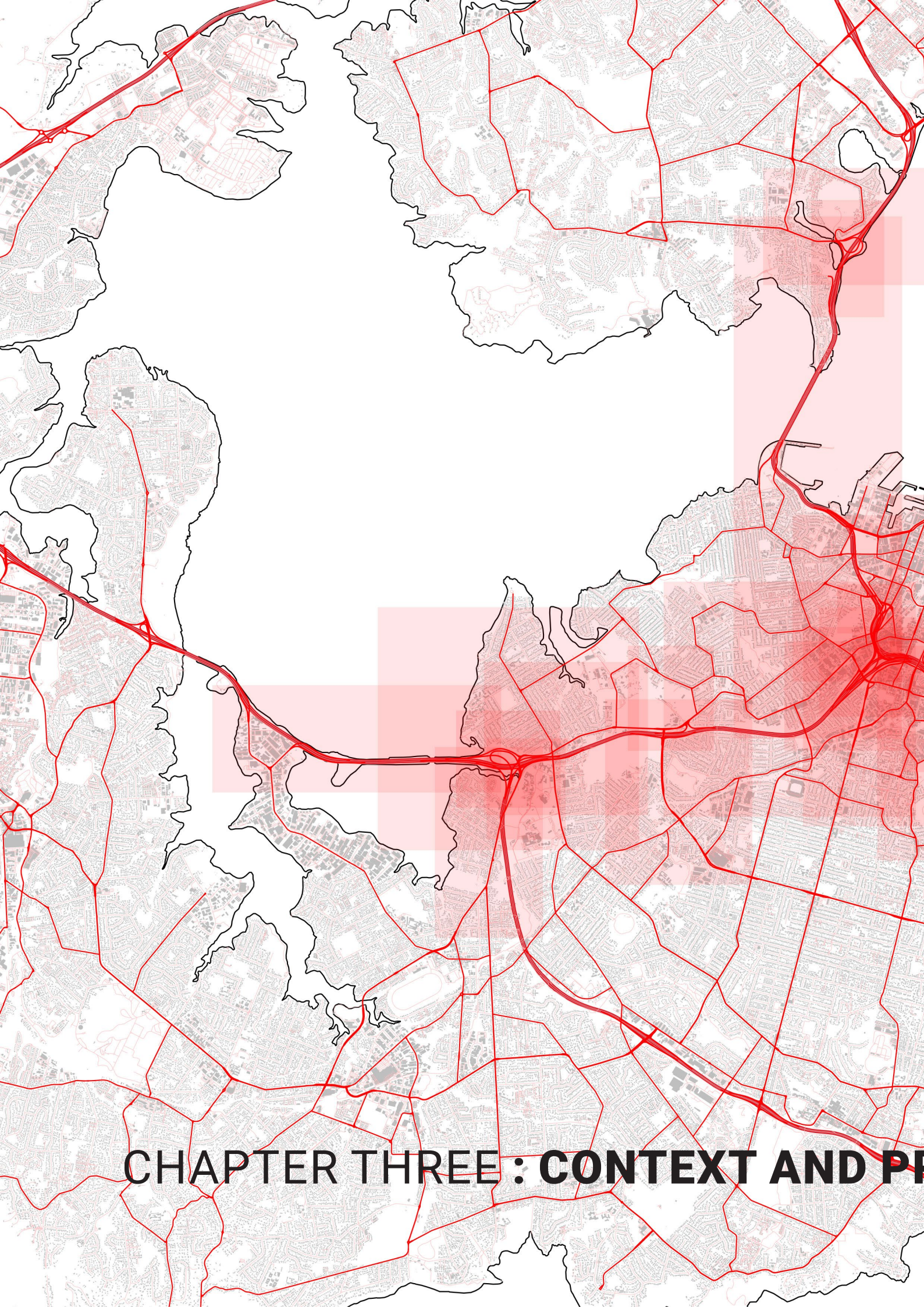
These theories collectively position Auckland's motorway junction within a global infrastructural problem. As the dependence on private vehicular commuting increases, the infrastructure to support it will continue to grow. These theoretical texts highlight the importance of addressing this contradictory development, which impedes social interaction and occupies valuable urban space worldwide.

Precedent Review Reflection

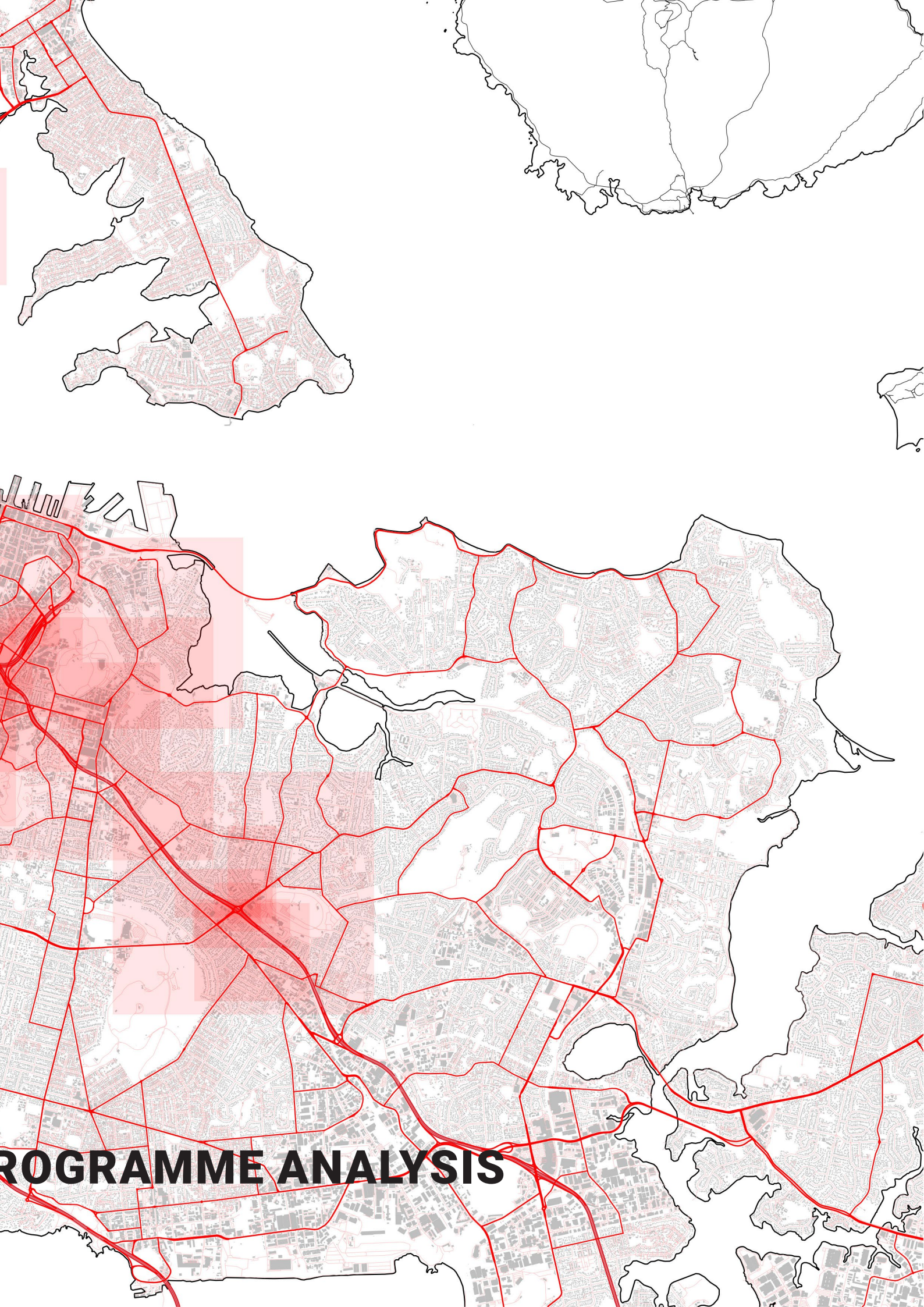
The transformation of infrastructure projects has gained popularity worldwide, indicating that the importance of restoring social life in urban environments is growing. Projects such as the High Line in New York and the Coulée Verte René-Dumont in Paris have sparked interest in reimagining transportation infrastructure, primarily by redefining their functions and adapting them for social interaction rather than solely emphasising efficient mobility networks. Other projects, such as the Zeitz Museum and the Musée d'Orsay, reintroduce programmes to these infrastructural sites, encouraging extended engagement.

A concern that can be raised regarding these infrastructural transformations is the formality of their programmatic purpose. Transformations of these sites require careful curation to maintain a balance between formal and informal activity and engagement. Bernard Tschumi's Parc de La Villette is an example of an infrastructural project that tests this curation. The layered elements and the sheer scale of the project introduce the problem of an over-informalised space. The result of this informalisation is an added complexity to a site, creating an environment that its users do not know how to engage with. Similarly, the High Line and the Coulée Verte René-Dumont tend to promote transient interactions, in which minimal programmatic curation leads to only temporary engagement with elements of the project rather than active engagement. Although these projects possess a degree of informality, they do not reach the same level as Tschumi's Parc. On the other hand, projects such as the Zeitz or the Musée d'Orsay can fall into a category of over-formalisation, in which the interaction of users within the programme is curated and defined, reducing opportunities for spontaneous decisions.

These precedents indicate the potential for sites such as Auckland's Central Motorway Junction; however, they also highlight the challenges that can surface during the transformation of these infrastructural projects. These precedents reaffirm the significance and potential of informalising abstract spaces, as exemplified by Lefebvre.



CHAPTER THREE : CONTEXT AND P



PROGRAMME ANALYSIS

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Introduction

Based on a review of the literature and precedents, the core theoretical concepts of paradoxical infrastructure networks and spatial injustice are particularly relevant to Auckland's Central Motorway Junction. This chapter is divided into two sections: a contextual analysis of Auckland's CMJ, followed by a programmatic analysis and curation of the temporal interventions.

- Contextual Analysis -

The contextual analysis section examines the site's historical and infrastructural context in relation to the research objectives of 'spatial justice' (RO1-RO3). It identifies the site's physical condition as a product of infrastructure-based urban planning. It explores how these planning strategies have reshaped historical patterns of movement, access and occupation within the pre-existing urban fabric. Through an analysis of the site's history and heritage, this section examines the transformation of the landscape and the evolving relationship between infrastructure and urban life. This section also explores how existing infrastructure elements prioritise vehicular connectivity while offering limited opportunities at the human scale, thereby creating constraints at motorway junctions and, consequently, spatial inequity (RO1; infrastructural paradox, RO3; restoring spatial belonging). This analysis explores the residual land and interstitial green spaces, isolated by infrastructure, and their

limitations on everyday human interaction, while demonstrating their potential for reconfiguration and equitable urban management (RO2: restoring human and ecological relationships and everyday engagement).

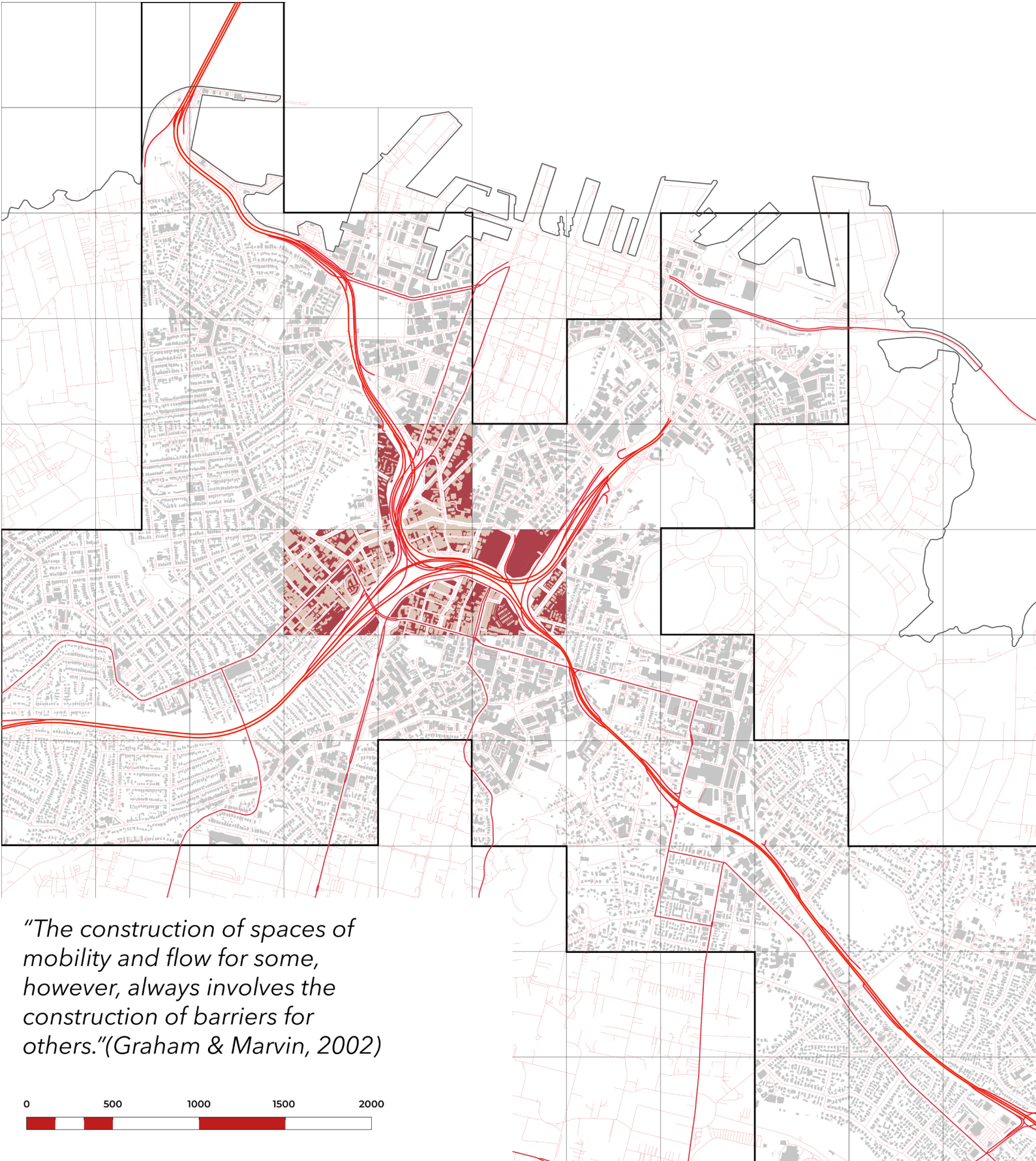
- Programme Analysis -

The programme analysis section examines how existing and potential programmes would work within the motorway landscape in relation to the research objectives of 'permeable programmatic coherence' (RO4, RO5). It explores the current arrangement of programmes and their temporality, or lack thereof, showing the infrastructural prioritisation of efficiency over everyday engagement. This section examines how these conditions affect potential patterns of use, interaction, and adaptability across the site. Through an evaluation of programme distribution, classification, and temporal interventions, this section examines how the incorporation of formalised uses can limit the site from various forms of inhabitation and interaction (RO4; programmatic permeability). This analysis also considers the curatorial configurations of adaptable micro-programmatic elements and how the architecture can accommodate informal, transient patterns of everyday inhabitation through varied forms of participation (RO5; interventional impermanence).

Figure 14 (previous) Mapping concentration of motorway interchanges. Produced by author

Figure 15 (left) Image of the Northwestern motorway interchange at Great North Road and Point Chevalier Road (iStock, 2024)

Contextual Analysis



"The construction of spaces of mobility and flow for some, however, always involves the construction of barriers for others."(Graham & Marvin, 2002)

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Auckland's Infrastructural Paradox

When urban environments are organised around continuous mobility, the spaces outside central movement corridors may become residual in both their function and identity (Shukla & Deshmukh, 2021). These spaces are rarely designed to facilitate informal interaction, extended engagement, or routine practices. Instead, they are shaped by conditions that discourage inhabitation without explicitly prohibiting it. Lacking programmatic elements, environmental comfort, and appropriate spatial configuration, these landscapes reinforce their identity as transitional zones. Consequently, this results in an uneven distribution of regions within communities, with living conditions markedly affected by economic class and proximity to infrastructure. These landscapes not only govern circulation but also influence occupancy patterns, the conditions under which inhabitation occurs, and the duration of interaction. As discussed in the literature review, such landscapes may be characterised as infrastructural paradoxes.

Figure 16 (left) Nolli mapping of Auckland's Motorway Junction Site. Produced by author
Figure 17 (above) Image of Robert Moses' Cross-Bronx Expressway Infrastructure

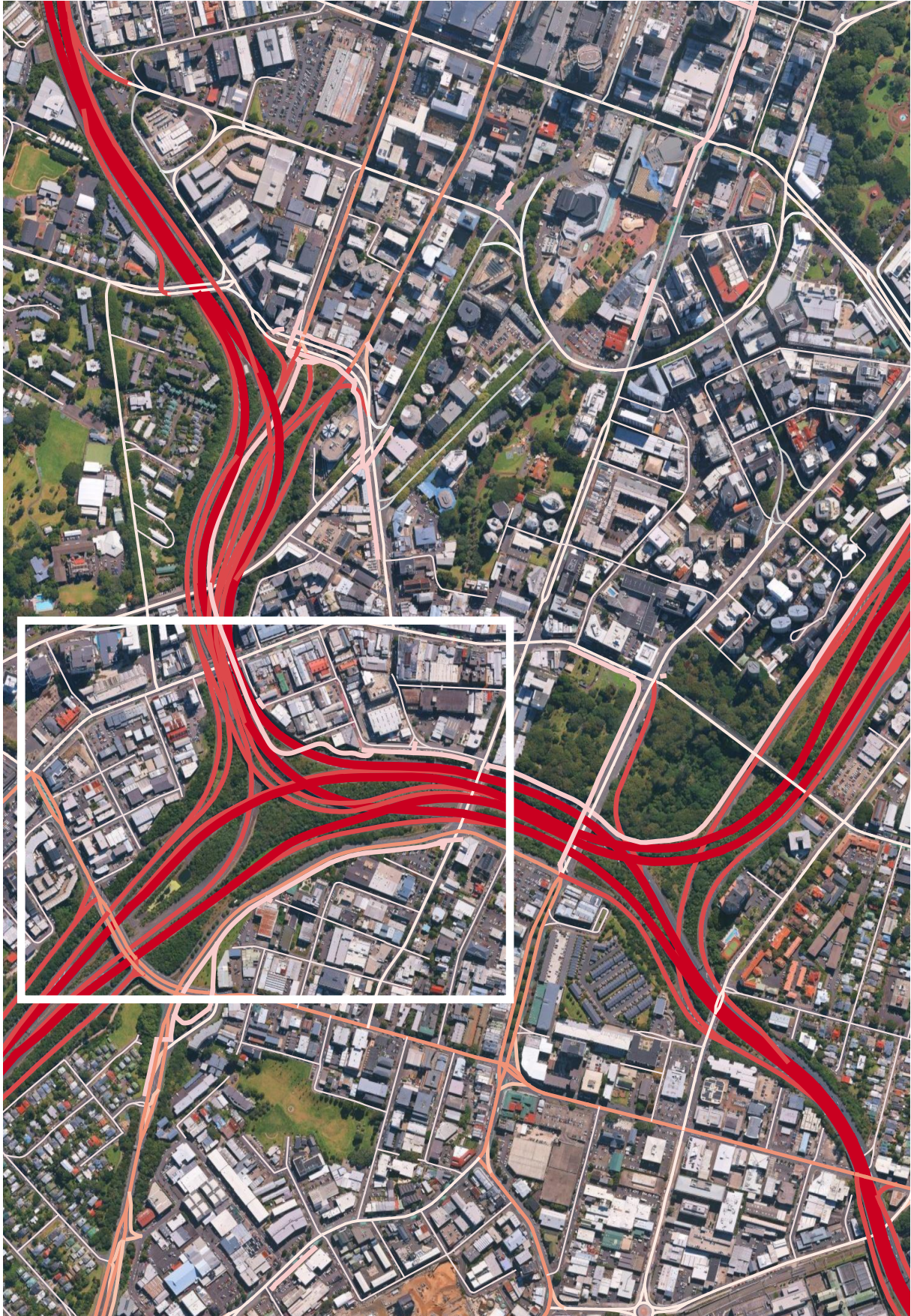


Figure 18 Map of Auckland's motorway interchange highlighting the major high speed transit road networks and surrounding arterial routes. Produced by author

Auckland's Infrastructural Landscape

Auckland's Central Motorway Junction is perceived as an eyesore on the city's landscape. A dense, multi-layered network of ramps, underpasses and elevated roads that dominate valuable space in the urban fabric. The environment at ground level is characterised by shadowed, inaccessible spaces, disconnected edges and structural elements that dictate the spatial experience.

These conditions produce a spatially ambiguous and enclosed atmosphere, where movement channels are selectively placed, with leftover zones considered

as a necessary loss. Despite its central location within the city, the junction creates a disconnected feeling from the surrounding neighbourhood, both physically and perceptually. These spatial conditions not only characterise the physical configuration of the junction, but also the way it is engaged with by urban users. The motorways' infrastructural landscape is often only experienced momentarily when driving through them, but their grand presence comes to light as traffic builds, and we are forced to examine them closely.



Figure 19 Series of underpasses of the motorway junction photographed on site visit by author





Figure 20 (left) looking north across the motorway junction emphasising the visibility of urban environment without direct access routes for pedestrian. Image photographed by author

Figure 21 (top) Images of the opportunities for vehicular travel within and across the site. Image photographed by author

Figure 22 (bottom) Gaps in the vegetation allowing for visibility of elements across the site. Image photographed by author

History of Auckland's Central Motorway Junction

Prior to the construction of the CMJ, this area of Auckland was characterised by local streets, residential neighbourhoods, and natural landscapes. Communities were structured around gullies, waterways, and gradual topographic elevations that supported both ecological systems and everyday human movement. Streets were used to connect adjacent communities through carefully curated networks that also enabled pedestrian circulation and local-scale social interaction. This urban environment was not defined by large-scale infrastructure systems but by a spatial configuration that enabled the coexistence of the landscape, the built environment, and public life. These conditions supported a more equitable and accessible urban structure in which movement, occupation, and ecological systems integrated seamlessly.

Auckland committed to becoming a large city in the mid-twentieth century, when the balance of public and private transportation infrastructure shifted in favour of cars. This decision led to Auckland's principal transportation infrastructure being reliant on motorways rather than the development of a comprehensive public transit system (Auckland Regional Council, 2010). This shift in urban planning had a significant impact on the shape and nature of Auckland's future urban area. Before the "Master Transportation Plan" was prepared in 1955, the construction of Auckland's motorway network had already begun. By 1953, the stretch between Ellerslie and Mount Wellington already completed. However, the CMJ did not begin construction until the early 1970s. The core elements and extensions of the junction continued to develop into the 21st century, with the final links completed and officially opened to traffic in December 2006. The completion of this motorway junction was marked as one of New Zealand's most complex motorway networks.



Figure 23 Looking from the east toward Newton Road, (Donovan 1973). Image showing one of the last standing houses during the construction of the motorway junction.

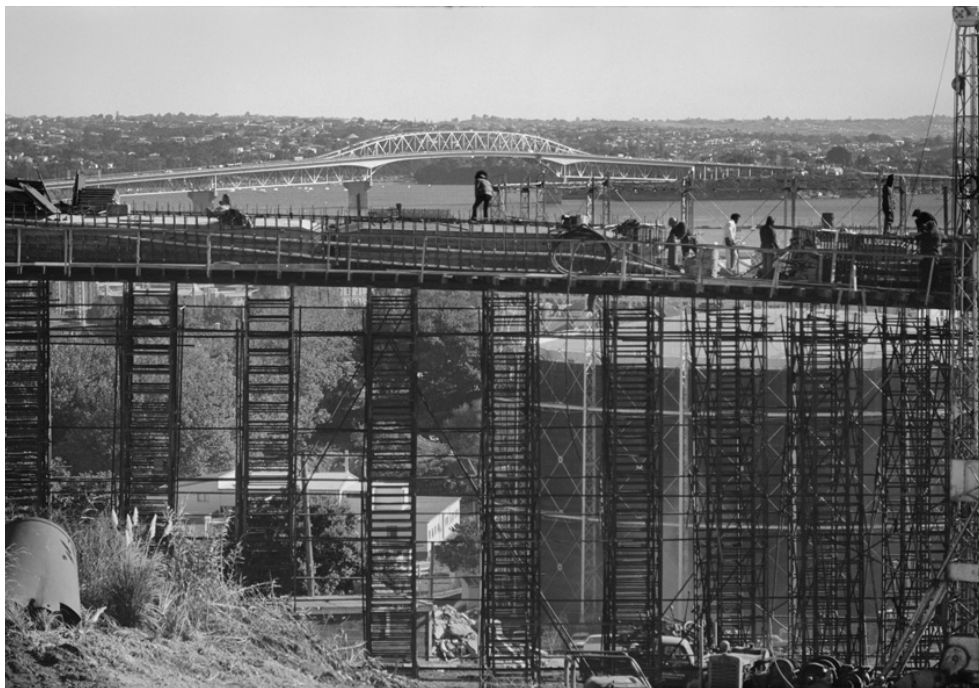


Figure 24 Looking north from Karangahape Road(Donovan, 1973). Image showing the reconstruction of Karangahape road as an overpass for the motorway junction.

//Note: All images on this page courtesy of Brian Donovan



Figure 25 Looking south from the foot of Commercial Road (Donovan 1978). Image showing the pre-existing accessibility routes across the site of the motorway junction.



Figure 26 Newton Road (Donovan, 1973). Image of the construction waste from the demolition of residential housing across the site and the redevelopment of Newton Road as an overpass for the Motorway Junction.



Figure 27 Looking south from Hopetoun Street toward Karangahape Road (Donovan, 1975). Image showing the construction of motorway ramps and road embankments.



Figure 28 Looking south-east across Newton from Karangahape Road, (Donovan, 1976). Image showing the sand belt poured for the construction of the motorway junction. Historical link roads can be seen restructured into dead ends.

//Note: All images on this page courtesy of Brian Donovan

Site Selection

At Auckland's Central Motorway Junction, multiple sites can be reconfigured and restored to address the infrastructural paradox and spatial injustice. Due to the scale of the junction, not all sites can be investigated to the detail required to produce an impactful intervention within the scope of this thesis. Four potential sites within the motorway junction that could benefit from an architectural intervention have been identified. Site one is located on the eastern side of the junction and uses the overpasses of Karangahape Road, Newton Road, and Upper Queen Street as a boundary for the intervention. Site two is situated near the Symonds Street Cemetery and has a similar landscape to site one. This site uses the Grafton Gulley Cycleway, Grafton Road, and the Grafton Bridge to define the project boundary. Site Three is located within the northern section of Site One and aims to directly engage with the new Karangahape Station for the City Rail Link. Finally, Site Four is located within the Grafton Gulley and aims to facilitate connections between university dormitories along Symonds Street and the Grafton University Campus, as well as to the Auckland Hospital. An evaluation of these sites is carried out to identify their opportunities and constraints. These sites are evaluated based on their potential to address the research objectives related to spatial justice and programmatic permeability.

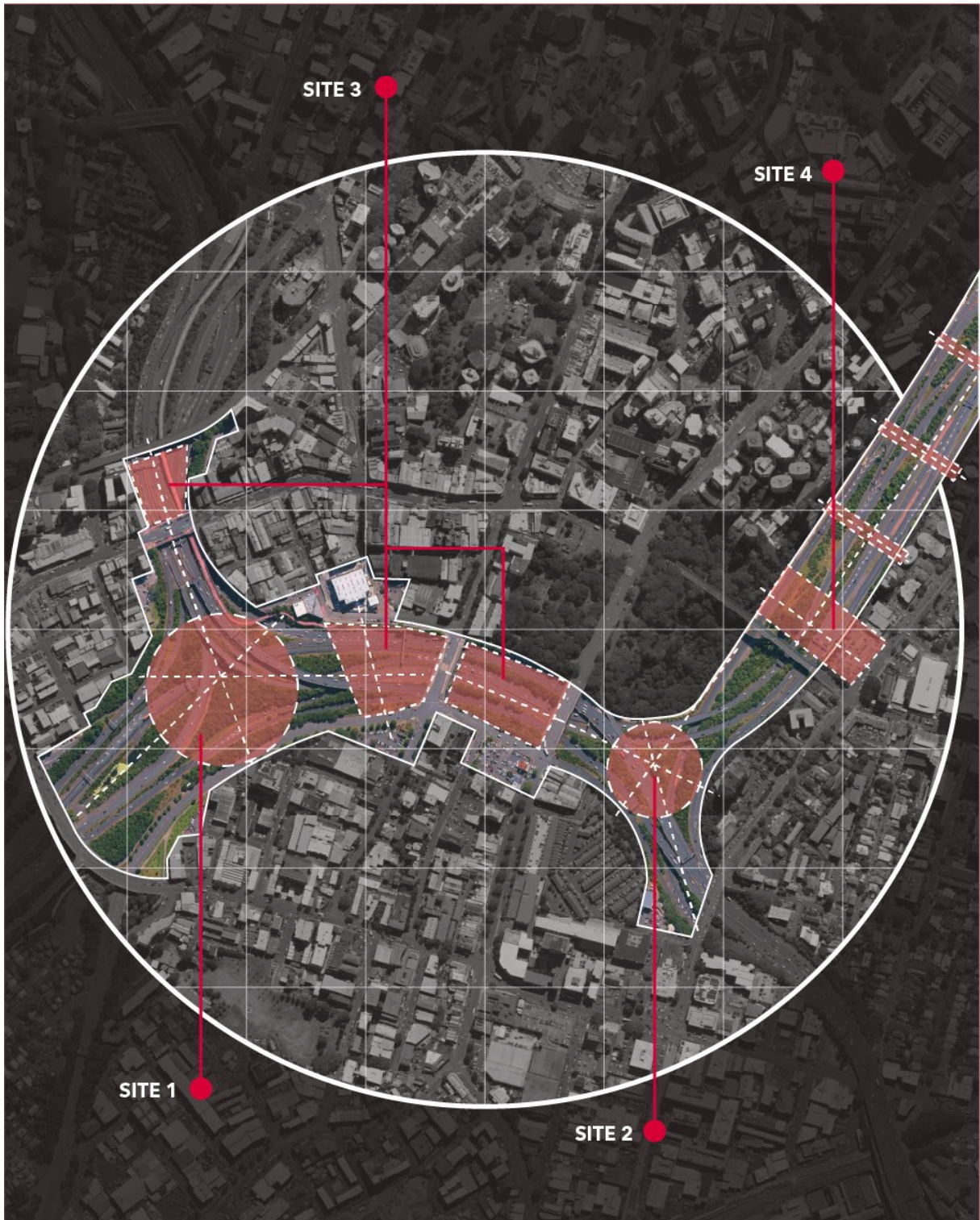
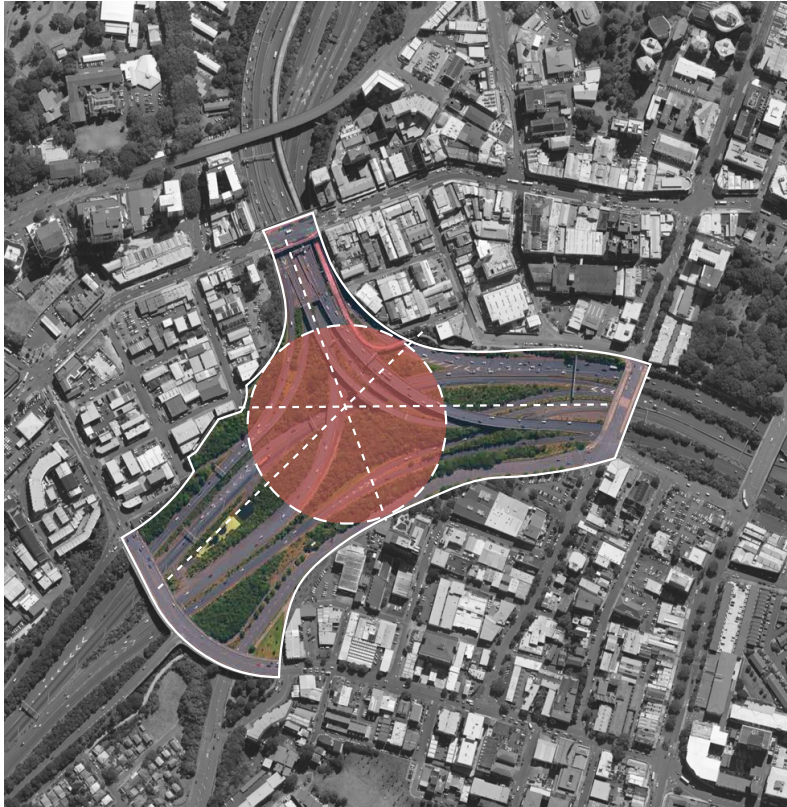


Figure 29 Mapping for the analysis of potential sites to develop the architectural intervention. Produced by author.



Site One

This site proposes an architectural intervention at the centre of the motorway junction's largest enclosed area. An intervention at this site suggests a six-point connection that restitches the three fragmented urban zones. The surrounding environment of this site has potential for programmatic engagement, increasing the opportunity for a permeable programmatic network. This site has the potential to engage with most of the research objectives.



Site Two

This site has design elements similar to the previous site; however, it proposes an intervention that operates at a smaller scale and lacks the vibrant surrounding urban environment present in site one. This site also engages with a six-point connection that integrates existing pedestrian and cyclist mobility infrastructure. This site may struggle to engage with the research objectives that address programmatic permeability.

Site One will be used to conduct further investigation into the architectural intervention proposed in this thesis. Elements of Site Three may be considered and integrated into the project, depending on what is discovered throughout the contextual and programmatic analysis



Site Three

This site proposes an architectural intervention that directly engages with the upcoming Karangahape Station. It is situated within Site One; however, it does not engage with the six points of connection, but rather it aims to act as a funnel for pedestrians and cyclists, guiding them to use the City Rail Link. Due to its proximity to Karangahape Road, this site has the opportunity to integrate a permeable programmatic network. This site has the potential to engage with most of the research objectives.



Site Four

This site proposes an architectural intervention that bridges the void space created across Grafton Gulley between student dormitories and the University Campus in Grafton. This intervention would primarily investigate the accessibility paths across the gulley. Similar to Site Two, this intervention would potentially struggle to address the research objectives for programmatic permeability.

Figure 30 Four images of mapping for the site selection analysis. Produced by Author

Pre-Existing Mobility Conditions

The construction of this junction involved the demolition of approximately 15,000 dwellings, displacing nearly 50,000 people from the area, and forcing the closure of two Catholic schools, St Benedict's College and St Benedict's Primary. In addition to residential and institutional loss, the southern extension of the motorway affected the Anglican and Catholic sections of the Symonds Street Cemetery. Over 2,000 remains from the Anglican plots and 2,100 remains from the Catholic plots were removed, cremated, and returned to the cemetery to make way for this section of the motorway (Verran, 1998). This process significantly disrupted the social and cultural identity of the area.

Before the construction of the junction, a network of central streets, including Cobden Street, Edwin Street, and Upper Pitt Street, provided pedestrian access between Karangahape Road, Upper Queen Street, and Newton Road. However, the introduction of the motorway severed these connections, with some streets converted into dead ends and others renamed or redeveloped entirely. These changes fundamentally restructured the movement and accessibility across the area, replacing natural urban permeability with large-scale infrastructural segregation.

The transformation of this area established a precedent in which infrastructural efficiency was prioritised over local continuity and heritage preservation. This approach normalised large-scale restructuring as a necessary condition of progress, shaping future transport and land-use decisions across Auckland. The resulting landscape reflects a shift in urban values, where historical identity and community memory were lost to the demands of regional mobility

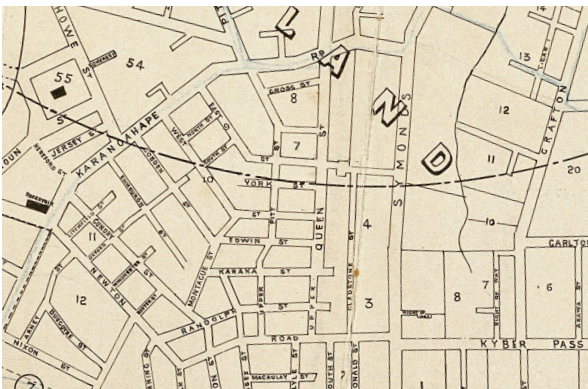


Figure 31 (First) Symonds Street Cemetery Anglican Section (Auckland Libraries Heritage Collections 580-03811, 1959).
Figure 32 (second) Aerial view over Symonds Street Cemetery (Auckland Libraries Heritage Collections 580-10446, 1964)
Figure 33 (third) Satellite imaging of Karangahape Road, Newton Road, Upper Queen Street, and Symond Street Cemetery as well as surrounding neighbourhood before motorway construction (Retro Lens CROWN_1008_080, 1958)
Figure 34 (fourth) Cleve's streets map of the city and suburbs of Auckland, expressly compiled from official surveys for Cleve's directory (Auckland Libraries Heritage Collections Map 5, 1901)

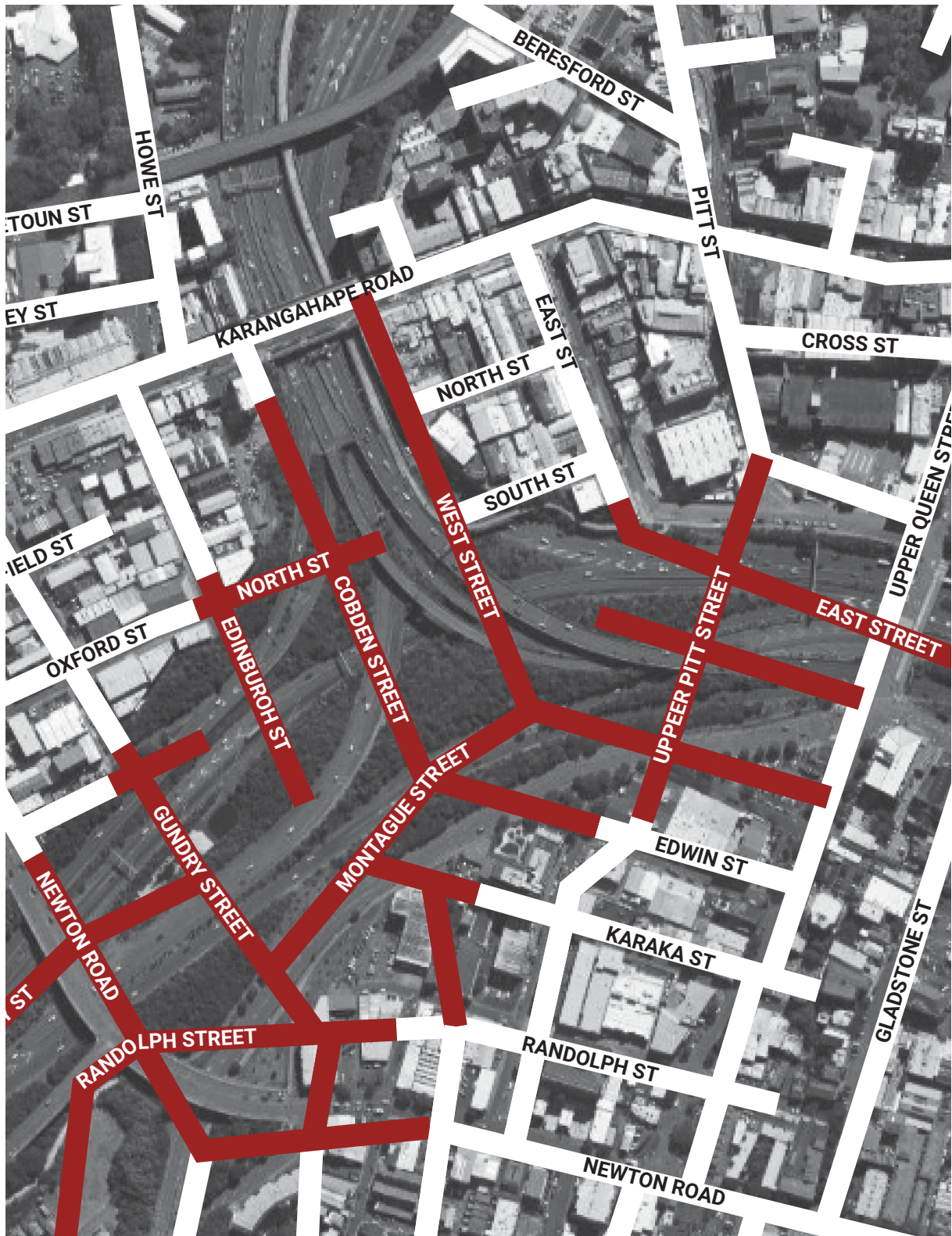


Figure 35 Overlay of historical linking roads, indicating the restructuring, redevelopment and demolition of pre-existing accessibility routes. Produced by author.

Existing Mobility Conditions

Movement through the central motorway junction is heavily favoured towards vehicular traffic. Pedestrian access around the site is generally a network of narrow sidewalks on multi-lane roads with high-flow traffic. These routes are often fragmented and indirect, requiring users to navigate around large infrastructural systems rather than through them. This results in uneven patterns of accessibility, where areas might be physically reachable but perceptually disconnected. An absence of pedestrian corridors negatively impacts the ease of movement between surrounding neighbourhoods, creating a sense of spatial separation at ground level. Infrastructural conditions set by large-scale transportation networks greatly influence how a landscape is navigated. Prioritising one form of mobility at the expense of another contributes to spatial inequality by dictating how different users can navigate and occupy the urban environment.



Potential Mobility Conditions

At the selected site, pedestrian movement is shaped by forced detours rather than proximity due to the spatial configuration of the motorway. Across the junction, the average distance for a direct route across is approximately 400 meters, yet the average distance for the available routes extends to roughly 950 meters. This increases the average walking time from 7 minutes at an average 7% incline to 16 minutes and 30 seconds, indicating that the current network required double the effort for what is geographically a short connection. An interventional development enabling direct crossing would reduce the average walking distance by almost 60%, improving the pedestrian connectivity between the edges of the motorway junction.

Routes	Direct	Indirect	Time Saved
A - AA	330m	950m	10:50
B - BB	450m	980m	9:20
C - CC	430m	860m	7:30
Averages	400m	950m	9:10
AA - CC	200m	650m	7:50
AA - BB	210m	600m	6:50
CC - BB	190m	650m	7:40
Averages	200m	630m	7:20

Figure 36 (top) Mapping showing the sections of the roads that were restructured or converted to dead ends. Produced by author

Figure 37 (bottom) Table showing collected data on walking distances and projected walking duration for potential direct routes. Produced by author

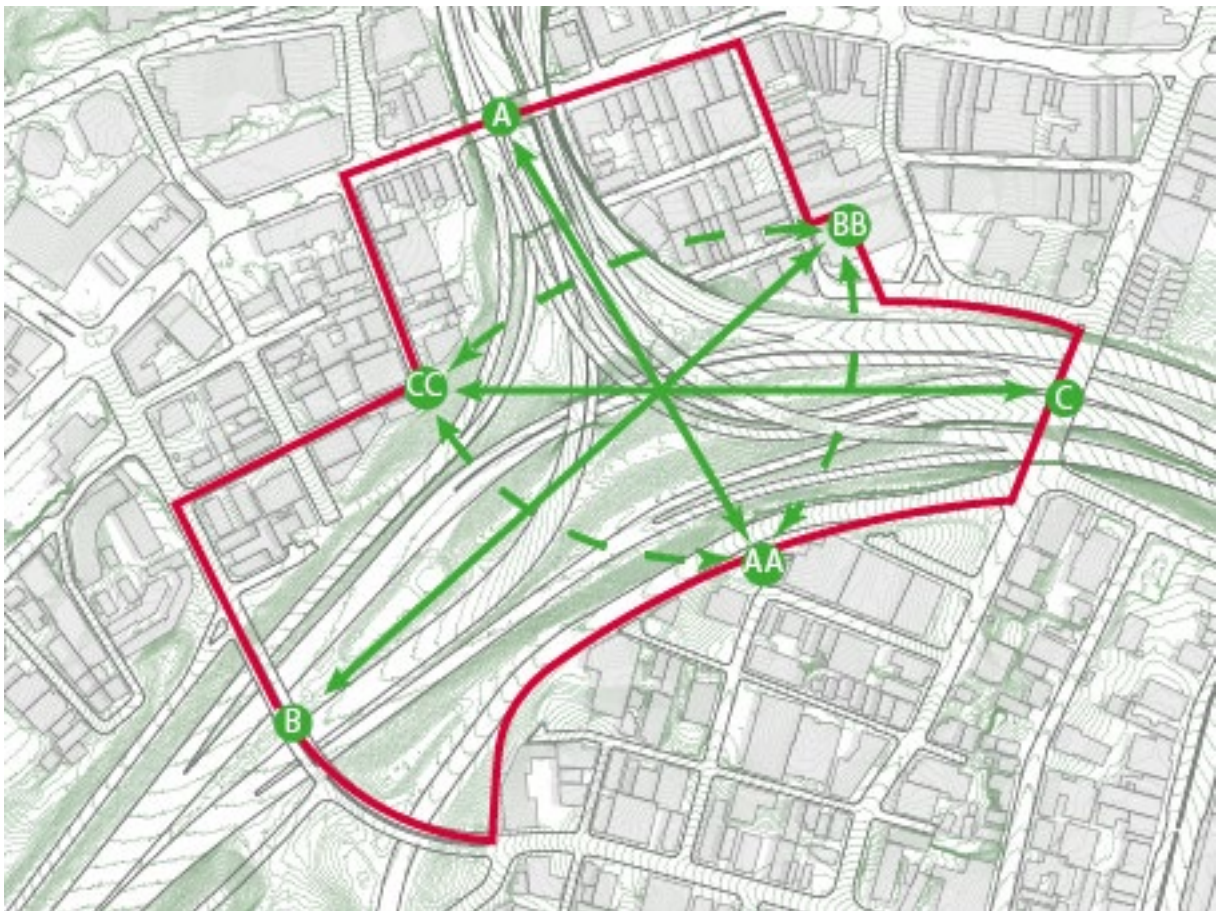
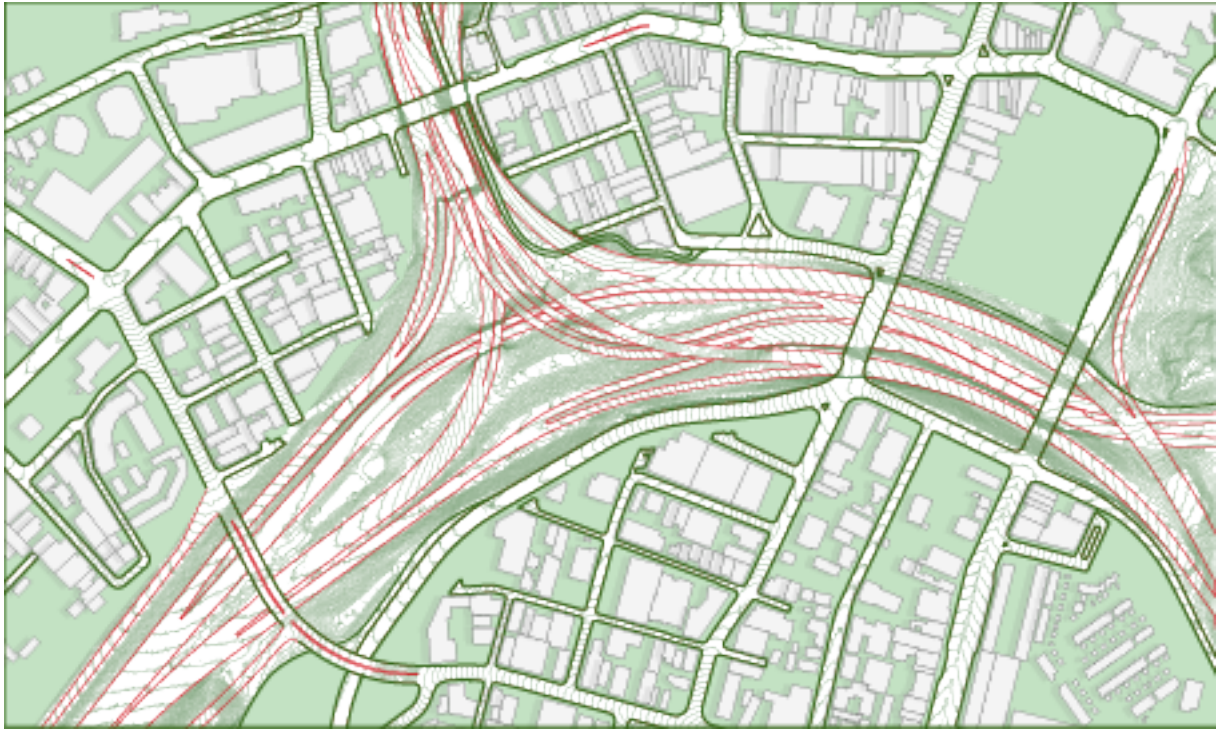


Figure 38 (top) existing pedestrian routes indicated by the solid green lines as well as the areas they can access contrasted by the red paths of motorway routes and pedestrian inaccessibility. Produced by author
Figure 39 (bottom) Existing pedestrian routes in red for 6 points at the centre of each boundary line of the site, potential routes for direct and more efficient routes across the site in green. Produced by author

HISTORICAL LAYERS

This axonometric mapping of the Central Motorway Junction site shows the dynamic shift of urban use and re-classification of a low income, medium density housing network. The Excavation and sand filling of the Newton gully to develop the foundation for the motorway junction saw a significant decrease in the space accessible without a private vehicle.

EXISTING ROAD NETWORK

Existing road and motorway coverage, significantly decreasing the accessibility to the urban landscape. Non-motorway roads followed the same structure of the historical street network

EXISTING BUILDING FOOTPRINT

Nolli map of urban landscape showing the commercialisation and industrialisation of the environment. Densification of built environment producing more impervious surfaces.

RECONSTRUCTED URBAN TERRAIN

Reconstructed urban terrain of the Newton Gully, developments of embankments and retaining walls for motorway network.

HISTORICAL ROAD NETWORKS

Pre-existing historic streets that were reconstructed, demolished, transitioned into dead ends, and renamed for existing infrastructure.

HISTORICAL SITE SATELITE

Satellite map of 1958, pre-existing conditions of the Newton Gully, Upper Queen Street, and Symonds Street

Site Conditions

Construction of the motorway junction required excavating the Newton suburb, sand filling for embankments, and building structural column foundations. After the residential area was demolished, an industrial and commercial district emerged, with urban space increasingly devoted to car parks and street parking. The pre-existing roads were restructured and interconnected to form a complex network, with the intention of increasing vehicular coverage across the site. The development of this site is illustrated in the axonometric map (Figure 40).

The scale of the site underscores the motorway junction's impact on the pre-existing suburb. The acres of land artificially reconfigured to accommodate the motorway infrastructure included attempts to restore some of the site's ecological environment; however, due to the nature of the infrastructure, these green spaces remain isolated and unused by both humans and native animals.

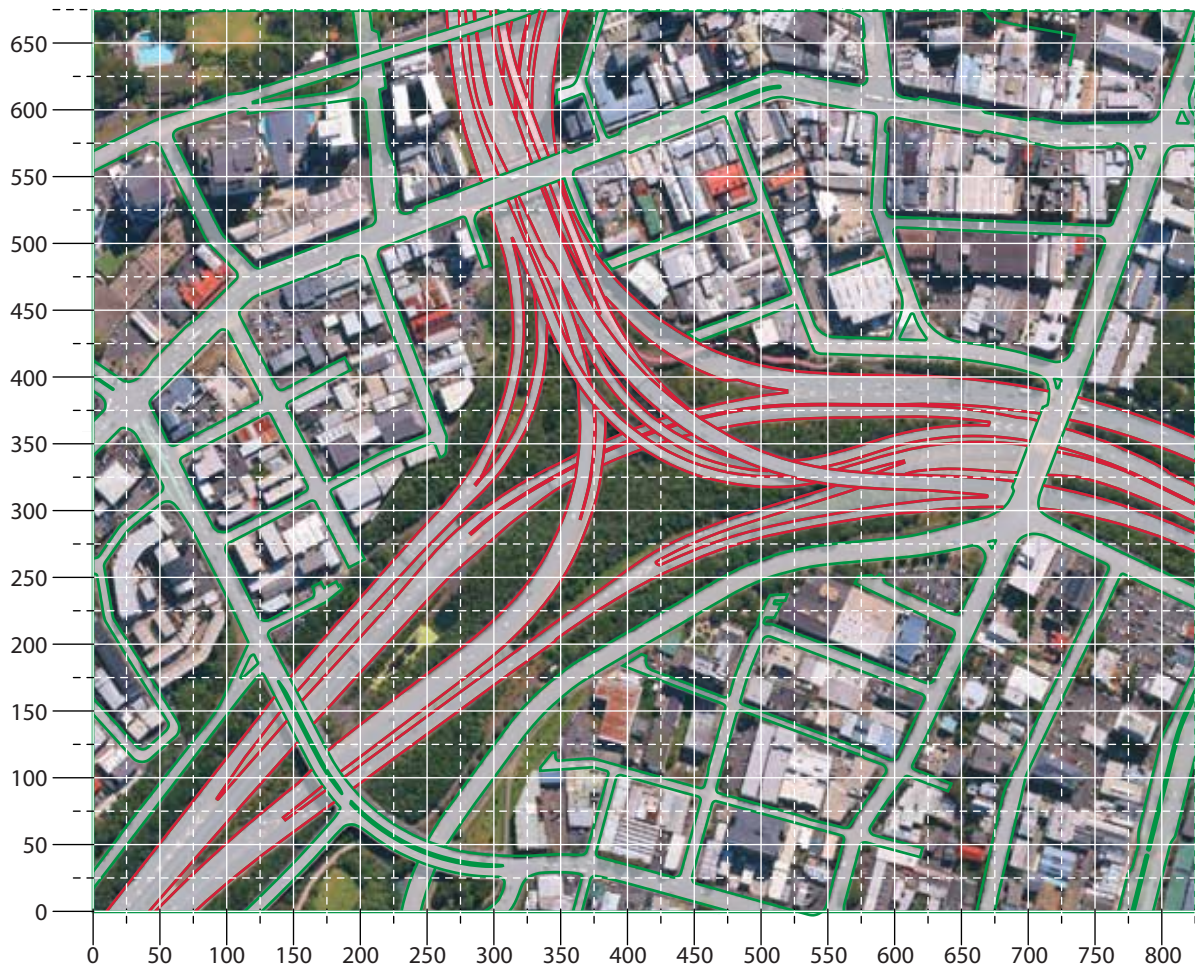
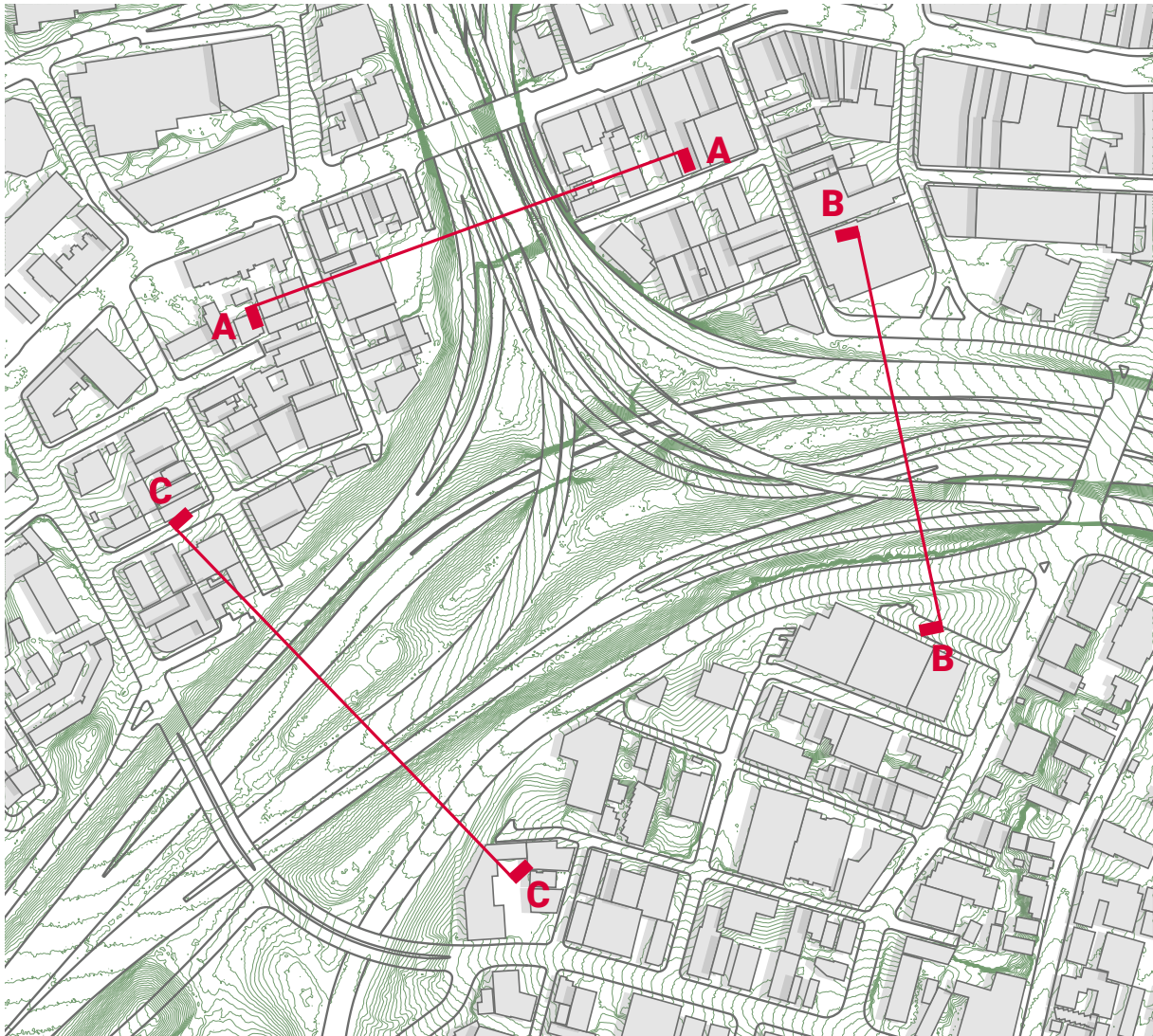


Figure 40 (left) Axonometric map showing the changes to the conditions of the site through artificial land filling and property development. Produced by the author

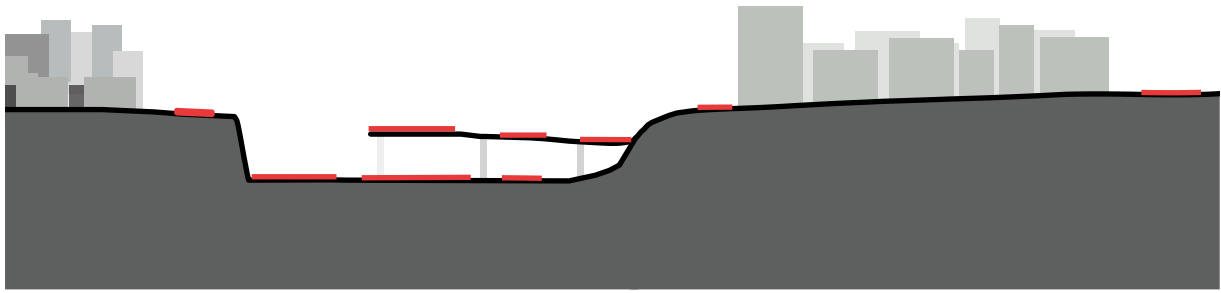
Figure 41 (above) Map of the selected site with pedestrian and road routes establishing the scale of the site in respect to human interaction. Produced by the author



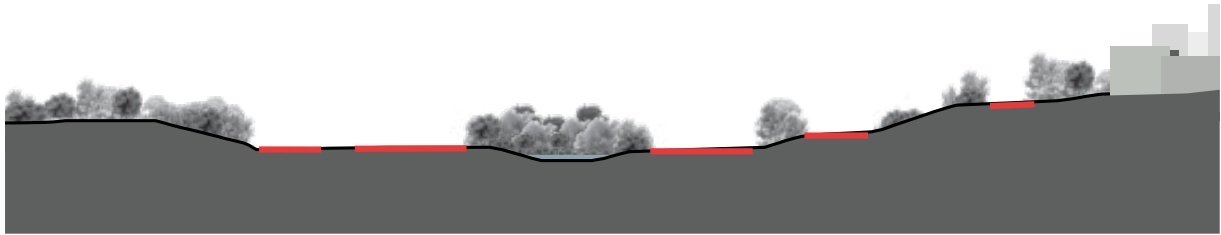
Key Sections

Key sectional drawings were used to analyse the site's topography and its relationship to the surrounding buildings. The three sections were explored to understand the configurations of the road infrastructure along the topography. These sections were cut parallel to the overpass roads that determine the site's boundaries, Newton Road, Karangahape Road, and Upper Queen Street. The investigation into these sections revealed the sudden shift from urban environments into vast open landscapes, with road infrastructure cutting through them. The topographical shift in height is most notable in section A-A, cut across the motorway junction parallel to Karangahape Road, where the underpasses for the motorway ramps from the harbour bridge and Nelson Street emerge. The section shows the major excavation undertaken to accommodate this underpass, and the artificial structure developed to facilitate the ramps towards the bridge and Nelson Street.

Figure 42 Map of the selected site with cut lines for sectional analysis. Produced by author



Section A - A



Section B - B



Section C - C

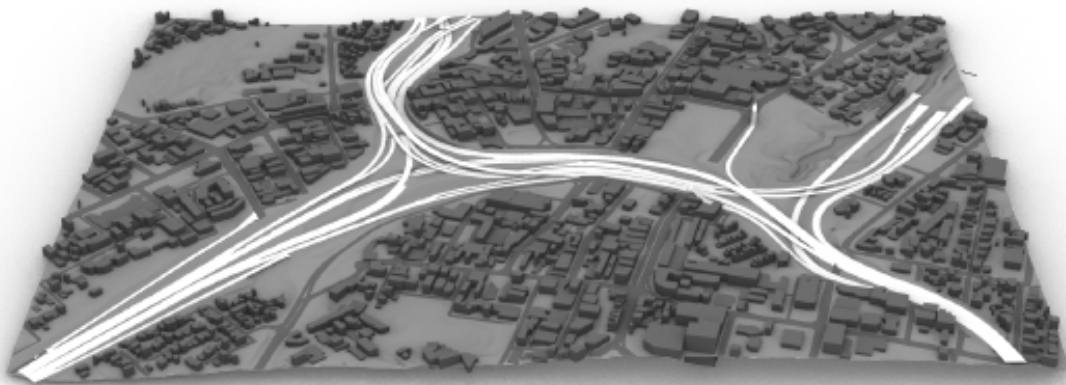


Figure 43 (top) Three sectional cuts into the selected site for topographic analysis of the motorway junction's artificial landscape. Produced by the author

Figure 44 (bottom) 3D model of site with motorway elevations and topographic landscape. Produced by author

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Te Ara I Whiti

On December 3rd 2015, Te Ara I Whiti, commonly known as the Light path, was opened as part of the Nelson Street Cycleway. It repurposed an unused Nelson Street motorway off-ramp into a shared pedestrian and cycle route. The cycleway has become a vital link between Upper Queen Street and the Auckland CBD, connecting to the Grafton Gully cycleway to form part of the city's active transport network. Despite its popularity and significant use, the light path has only two points of entry, which prevents it from reaching its potential to become an integral connective network across this section of the motorway junction. This shortcoming is an element that could be investigated and developed within the architectural intervention.



Figure 45 (top) Light path during peak hour commute (Monk Mackenzie, n.n)

Figure 46 (bottom)Google Earth screen shot of Nelson Street Entrance to Light path (Google Earth, n.d)

Figure 47 (right) aerial image of light path integrated into the motorway ramps (Monk Mackenzie)

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Residual Landscapes

Within the motorway junction, large portions of land remain spatially undefined and underutilised, leaving behind residual zones between and beneath infrastructural elements. These areas are primarily shaped by service access, structural requirements, and safety measures, rather than by ecological intention. As a result, they lack spatial identity, programmatic purpose, and public accessibility. Although some of these spaces contain vegetation or open ground, they primarily function as buffers rather than integrated urban or ecological environments. Their informal status reinforces the perception of the junction as a landscape of leftover space, where they become the product of inequitable infrastructural planning.

These pockets of vegetation that remain within the landscape are often spatially isolated from each other, surrounding ecological systems and other urban green networks. Due to the high wind speeds and noise pollution from vehicular traffic, these green spaces struggle to develop ecosystems within themselves and rarely see birds or other animals nesting in them. In addition to these environmental stressors, the ecological performance of these residual green spaces is further constrained by poor soil quality, surface compaction for structural support, and exposure to polluted stormwater runoff. This limits vegetation growth, reduces species diversity, and restricts the development of stable habitats.

Area Calculation

These residual green spaces within the motorway cover just over 44% of the total land of the selected site. With approximately five and a half hectares of interstitial space, this site highlights the potential for an architectural intervention that encourages social and spatial engagement. The scale of this site illustrates the significant impact the construction of the motorway junction would have made. The selected site only investigates 12 and a half hectares of the motorway junction, leaving approximately 37 hectares that the architectural intervention this thesis proposes will not be able to engage with. The data collected for this analysis is in the table below.

Area	sqm	Percentage
A	9800	7.84%
B	4,600	3.68%
C	2,600	2.08%
D	3,000	2.40%
E	2,000	1.60%
F	9,200	7.36%
G	13,000	10.4%
H	3,100	2.48%
I	8100	6.48%
Roads	69,600	
Total	125,000	44.32%

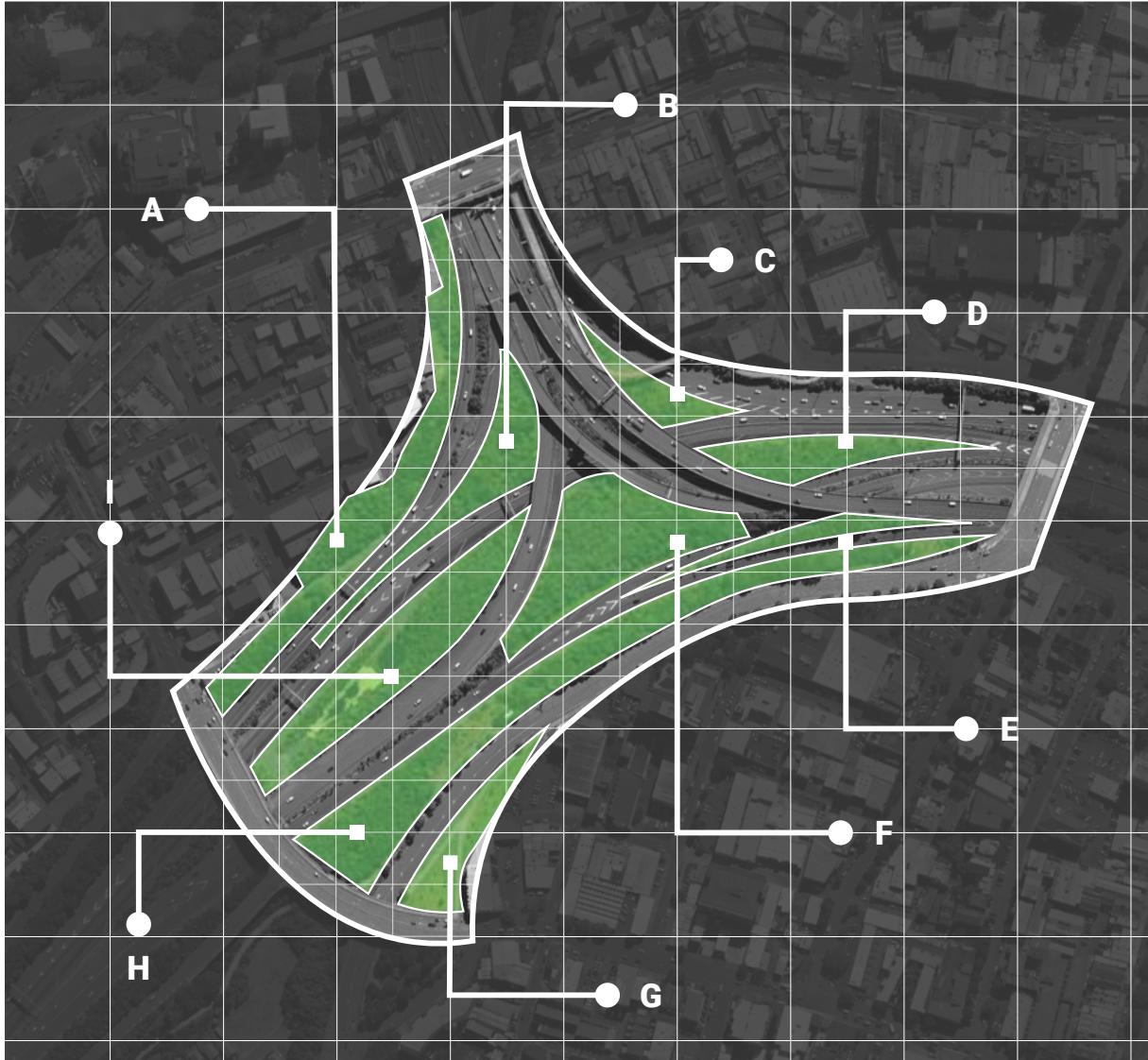


Figure 48 (left) Table showing the calculation of space of potential areas for architectural intervention in respect to the area of the whole site. Produced by author
Figure 49 (above) Map showing the spaces that were used for the calculation of potential sites and interventional zones. Produced by author

Programmatic Analysis

Existing Programme Analysis

Despite being situated in proximity to one of Auckland’s most culturally active and socially vibrant districts, the CMJ is defined by its infrastructural and transitional nature. The surrounding landscape contains a dense mix of residential, commercial, community, and recreational uses. This reflects the vibrancy of the Lower CBD and Uptown areas. However, the motorway network disrupts the spatial continuity between these programmes. This highlights the isolated, residual pockets of land that are situated within the motorway network and its residual spaces. These isolated spaces separate programmatic elements, rather than operating cohesively as a part of an urban system.

An analysis of these existing programmes reveals organised, single-purpose uses with little temporal overlap and even less cross-site integration. Surrounding programmes are limited to specific timeframes or defined functionality. This lack of adaptability reduces opportunities for spontaneous interaction or sustained programmatic engagement. An absence of programmatic overlap reiterates the transitional character of the CMJ. Regardless of the urban density of the surrounding districts, the infrastructural footprint itself remains underutilised as a civic or social space.

This condition highlights the imbalance between the surrounding urban life and the insufficiency of accessible public programmes within the junction. The CMJ interrupts any potential relationships between residential, commercial, and recreational activities. Resulting in a central, high-value landscape that prioritises infrastructural performance over everyday inhabitation and public engagement. In response, this project proposes a distributed network of adaptable, public programmes, carefully curated within the infrastructural landscape. Through strategies of interventional impermanence, the project introduces temporality through architecture that operates across daily, weekly, and seasonal timeframes. The project seeks to establish new patterns of engagement that encourage people to occupy, traverse, and re-experience the junction as a part of everyday life.

Figure 50 Mapping analysis of the existing programmes within the site. Produced by author





Existing Programmatic Temporality

Programmatic activity within the CMJ is commonly at its most concentrated state during peak commuting times. Similarly, publicly accessible uses, primarily consisting of movement-based functions, tend to be at their most active point during these hours. However, unlike private vehicles, they are restricted to footpaths and the shared cycleway with only two points of entry and exit.

Outside of these periods, the site experiences minimal engagement and a reduced social presence. The absence of programmes that operate both across the site and different timeframes limits the opportunities for sustained interaction.

The spatial and programmatic configuration of the junction fails to produce conditions that support informal interaction with the site. The infrastructural dominance, as well as the high wind speeds, noise, and air pollution, reduces comfort and discourages extended occupation.

Without impermanent or adaptable spaces, everyday activities such as meeting, resting, or spontaneous gatherings will remain restricted. The lack of temporal, micro-programmatic elements limits informal urban life, highlighting the need for spatial strategies that encourage more active and socially integrated use.

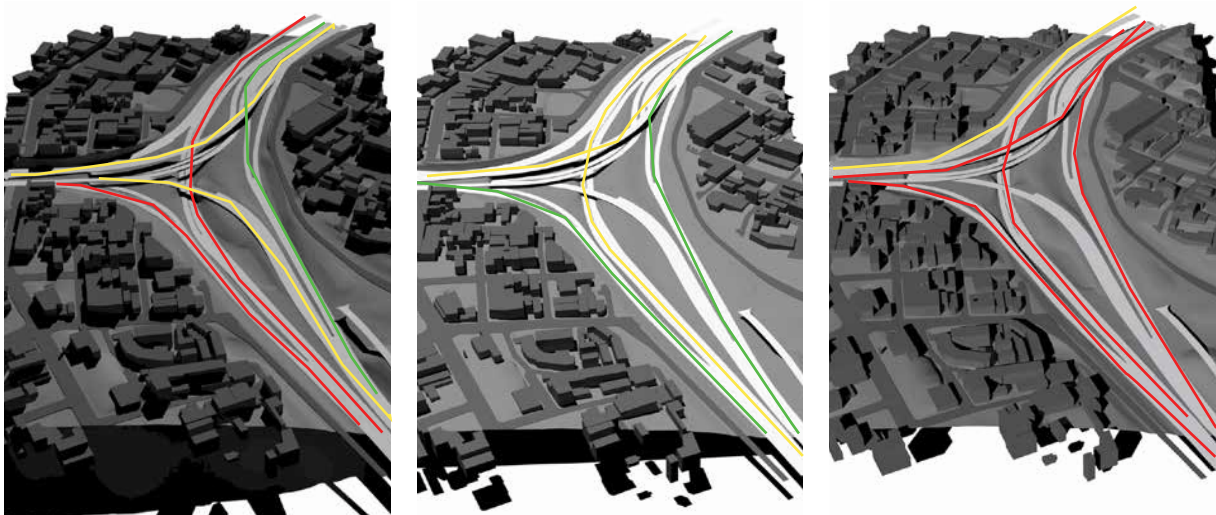
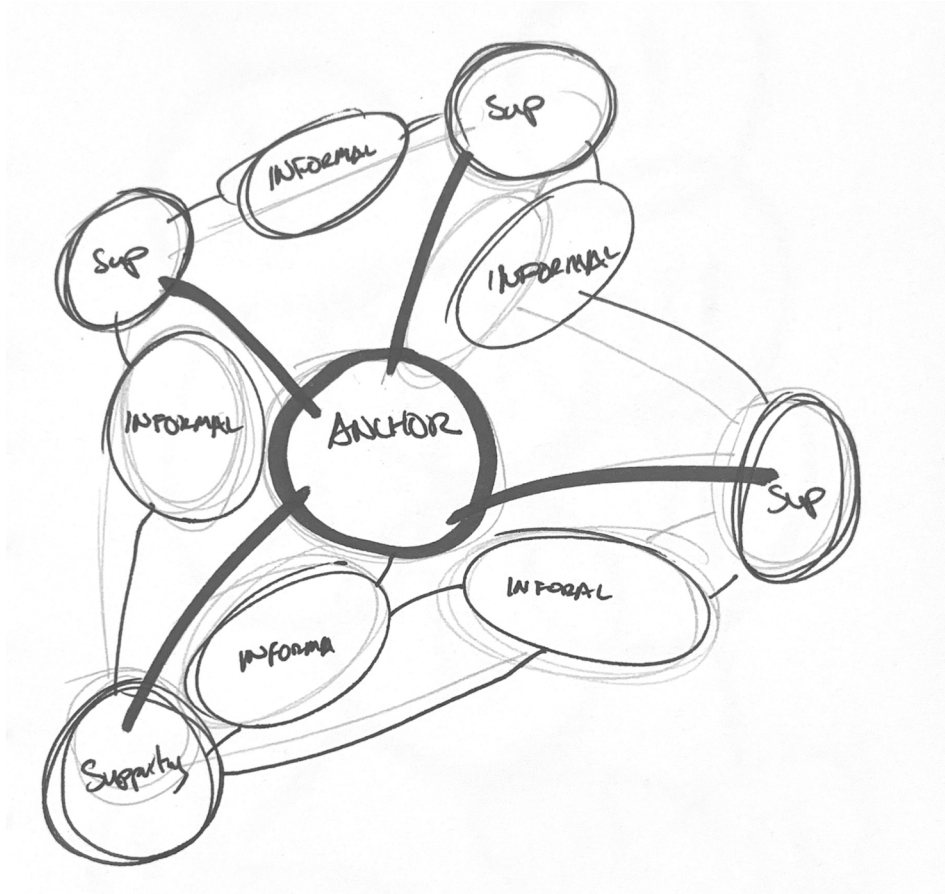


Figure 51 (above) Diagram of site during different times of the day showing the traffic density and fleeting engagement with the motorway junction

Figure 52 (right) Diagram of programmatic curation within the site. Produced by author



Potential Programmatic Curation

The programme curation strategy is structured around a system of core anchors that facilitate continuous inhabitation. Secondary and connective programmes branch out to form a series of journeys through the motorway junction. Programmes are distributed in clusters to create moments of engagement that not only encourage movement between them but also interaction with them. This allows the users to experience the junction as a sequence of social and spatial encounters. Core programmes, such as daily fitness programmes, dedicated study spaces, and work spaces, serve as anchors that support repeated use and establish urban patterns across the site.

These are linked by connective programmes that enhance circulation within the project and across the junction. The curation of these programmes ensures that movement through the site is not purely transitional, but purposeful. Supporting programmes are distributed across the site, connected by accessibility pathways, and remain in close proximity to the intervention's core functions. These programmes facilitate fleeting engagement and short-term interaction among people who use the intervention as a means of mobility. These programmes can include coffee shops and local retail businesses, enabling people to interact with them momentarily for a quick purchase before continuing their commutes.



Figure 53 (above)Table of potential programmatic intervention and their rotational opportunities for programmatic adaptability as well as their temporality of engagement. Produced by author

Figure 54 (right)Diagram of potential for programmatic overlapping and rotationality. Produced by author



Programmatic Potential

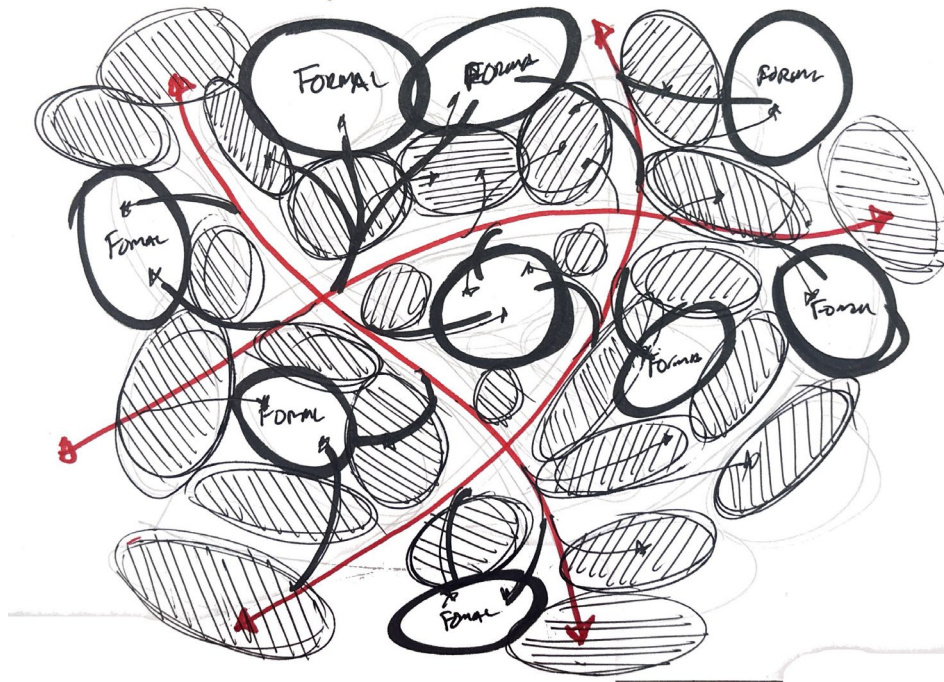
The introduction of adaptable micro-programmes within the CMJ presents an opportunity to reimagine the infrastructural site as both temporally active and socially responsive. These programmes function as interchangeable and overlapping layers that accommodate daily, weekly, and seasonal usage patterns. In contrast to formalised, fixed functions, this initiative incorporates three primary temporal frameworks to establish programmatic permeability. Baseline inhabitation elements that encourage everyday engagement, such as daily fitness sessions, informal study and work arrangements, shared dining, and regular social gatherings, support sustained presence and equitable access to the site. The weekly rotation of interventions facilitates short-term opportunities for local markets and small-business pop-ups, while also enhancing community interactions through events such as temporary exhibitions and community kitchens. Lastly, seasonal programmatic

rotations assess the site's capacity to host large-scale, high-impact interventions, ranging from outdoor cinema screenings and festival infrastructure to temporary housing solutions for natural-disaster management. This shift redefines the narrative of the junction from an infrastructural void to an urban destination and a refuge during emergencies.

The potential for substitution and overlap enables the site to accommodate various forms of utilisation without spatial conflict. This facilitates informal daily interactions with the site and larger communal gatherings. By emphasising adaptability and transient interventions, this methodology challenges the traditional rigidity and fixed allocations of programs in urban settings. Operating at a micro scale within a broader infrastructure network, these programs can respond to environmental factors, social needs, and patterns of habitation.



Figure 55 (top) Diagram of fleeting and active engagement with the site through routes for pedestrian mobility within the motorway ramps. Produced by author
Figure 56 (right) Diagram of engagement paths with and inbetween formalised architectural environments of the intervention. pr



Fleeting Vs Active Engagement

The site features two principal forms of engagement: fleeting engagement, which pertains to interactions during commutes at varying speeds, such as driving, cycling, and walking; and active engagement, which involves direct interaction with the programmes within the intervention. These include individuals who travel to the site for specific activities, as well as those who use the site for commuting but pause to interact with the site separately from their destination. For the success of this project, the architectural intervention must accommodate both transient and active interactions by participants at the site. As depicted in the diagram (Figure 55), formalised accessibility pathways can guide pedestrians and cyclists between a network of programmes that facilitate momentary interaction with the intervention, while also providing routes for individuals who have actively

sought out the programmes within the site. Similarly, the bubble diagram (Figure 57) demonstrates the potential for varied pathways to engage with different programmatic elements, depending on the direction of travel. Finally, the fleeting engagement of commuters along the motorway itself is examined through the strategic placement of programmes at the same level as the motorway ramps, enabling them to pass through the intervention without direct interaction, as illustrated in Figure 56. gatherings. By emphasising adaptability and transient interventions, this methodology challenges the traditional rigidity and fixed allocations of programs in urban settings. Operating at a micro scale within a broader infrastructure network, these programs can respond to environmental factors, social needs, and patterns of habitation.

Conclusion and Critical Reflection on Findings

Contextual Findings Reflection

The contextual analysis of Auckland's motorway junction revealed its negative perception, driven by its occupation of valuable urban space that could be used to establish a zone where the city's suburban zones transition into the urban CBD. This section examined how the motorway infrastructure functions as an urban barrier to ground-level human interaction with the site and its interstitial green spaces, fragmenting connectivity pathways within the urban environment. Additionally, an analysis of the pre-existing and present conditions uncovered the site's historical identity, which has been erased to facilitate infrastructural development in the name of modernity.

This section of the chapter set out to address and investigate the selected site in relation to the research objectives pertaining to the aim of spatial justice. It explored the infrastructural paradox of the site by analysing pre-existing, current, and potential mobility conditions, addressing Research Objective 1. Through an investigation of the site's residual landscapes, this section explored how human-ecological relationships and spatial justice could be restored to the motorway junction, addressing Research Objective 2. This section also examined the site's historical context to facilitate its integration into and inform subsequent iterations of the speculative design process, thereby reframing public perception of the infrastructure and addressing Research Objective 3.

What can be learnt from this section is that there was a story to this site, a vibrant historical identity that is now non-existent. The transformation of this site is similar in nature to Robert Moses' planning regime in New York, as Robert Caro illustrates in *The Power Broker* (1975). The difference between these two instances is that the documentation of Robert Moses' infrastructural development has been extensively investigated and studied. This thesis aims to shed light on Auckland's decision to adopt these urban planning strategies and to develop an architectural intervention that counters the oppressive, inequitable ideologies they establish.

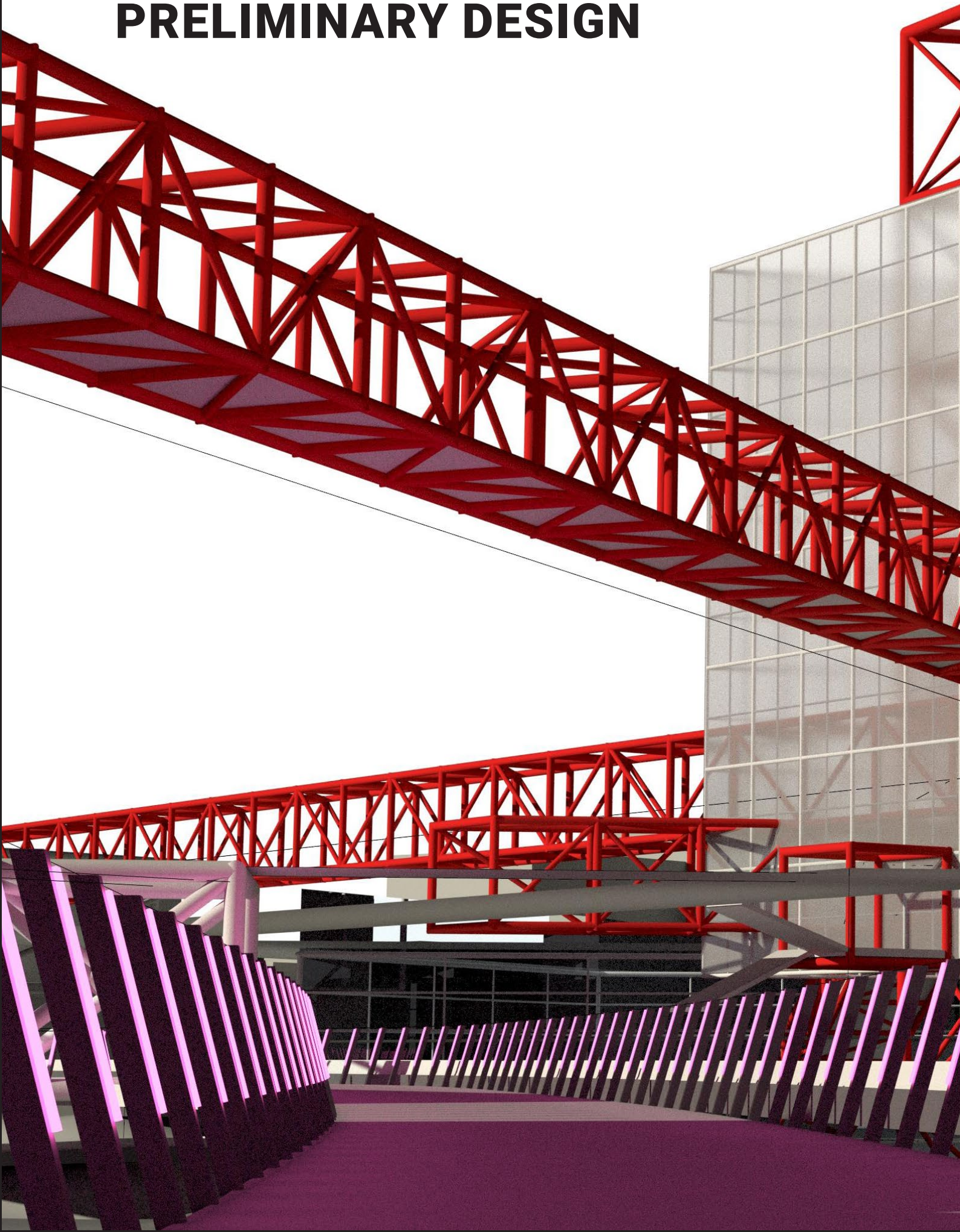
Programmatic Reflection

The programmatic analysis of the site underscored the vibrant characteristics of the surrounding districts, including Newton and Ponsonby, as well as the retail establishments on Karangahape Road. This section examined the allocation of residential and recreational zones within the commercial and industrial sectors, alongside the temporal patterns of vehicular movement and engagement across and within the site. It explored opportunities for programmatic engagement and highlighted how interruptions to spatial continuity curtailed the potential for a lively urban social environment. Additionally, this section investigated the potential programmatic elements and their adaptability for integration into the architectural intervention.

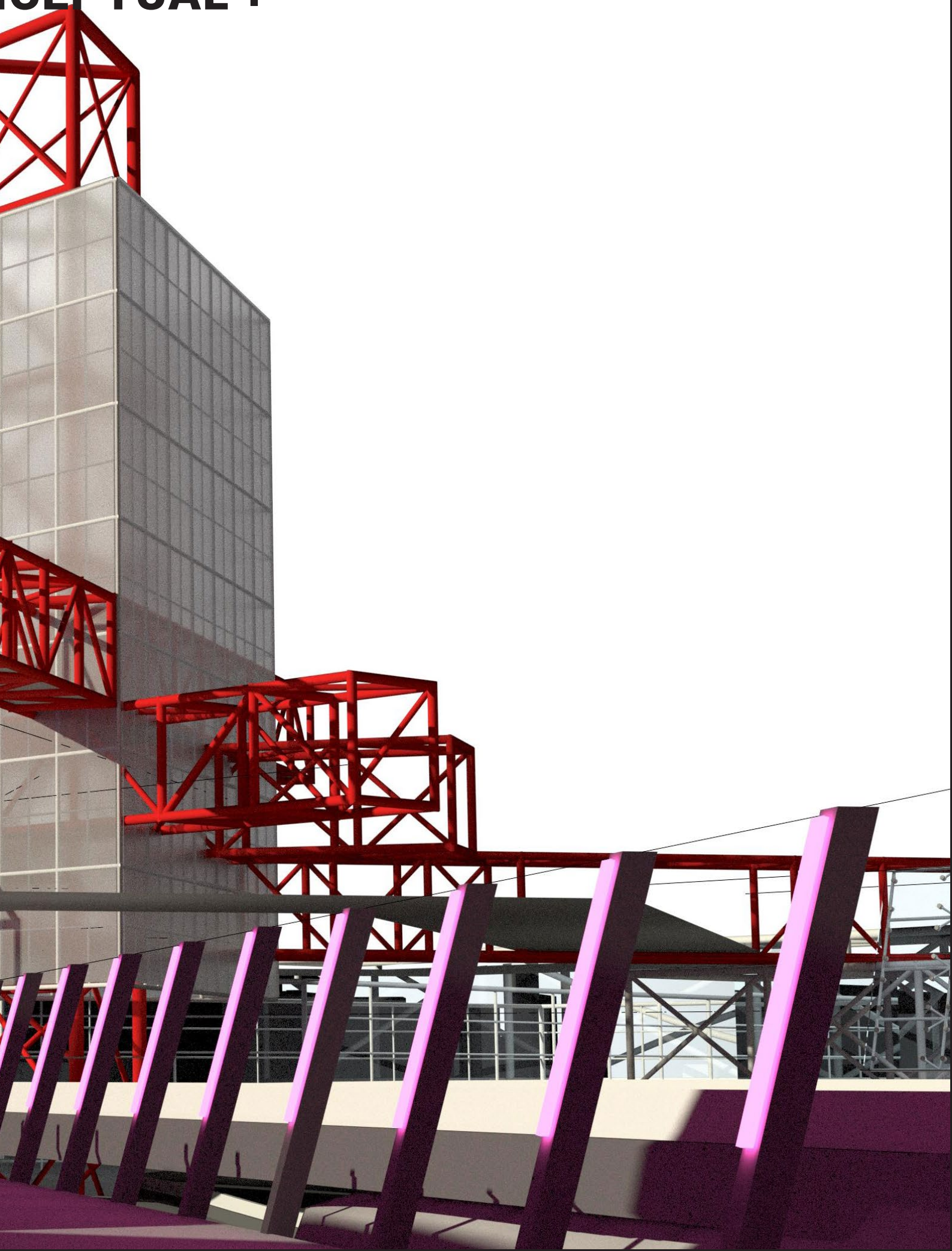
This section set out to investigate and address the research objectives concerning the programmatic permeability of the site. It conducted an exploration of the existing programmatic elements of the site to establish a foundation for an permeability that facilitates formal and informal interaction, addressing Research Objective Four. Through an exploration of potential programmatic configuration across the site, this section explored how the architectural intervention could encourage social engagement and spatial interaction. It also explored the intervention's impermanence through the adaptability of its programmatic arrangement; however, this section only briefly explores how opportunities for everyday patterns would emerge, therefore only partially addressing Research Objective Five. These opportunities for daily pattern use will be revisited later in the thesis development.

What can be learnt from the programmatic analysis is that the vibrant nature of the site's surrounding landscape reinforces the potential for an engaging architectural intervention. This thesis aims to restore social life and spatial interaction at the motorway junction through the application of interventional architecture, aimed at reestablishing urban continuity within a significant urban site in Auckland.

CHAPTER FOUR : SPECULATIVE CON PRELIMINARY DESIGN



CONCEPTUAL +



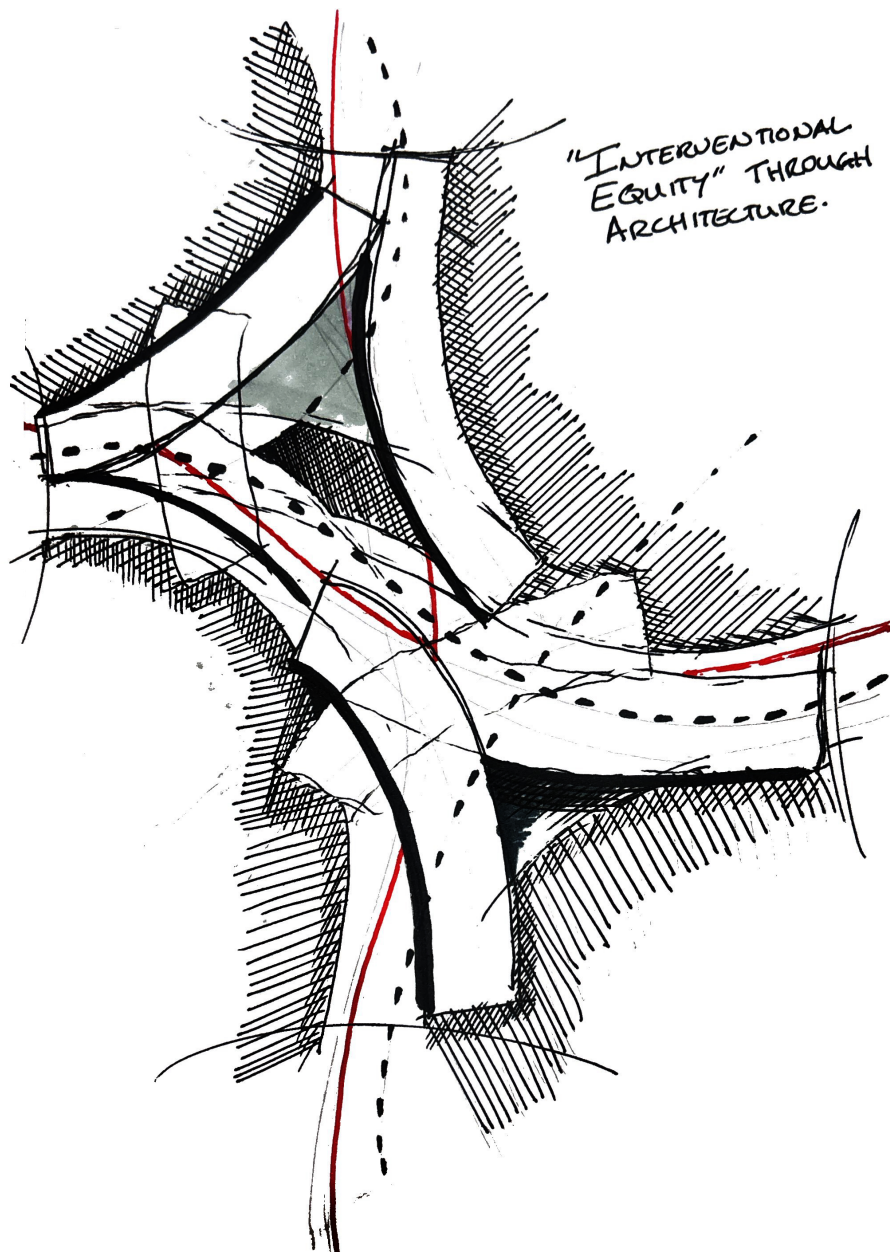


Figure 57 (previous) Image of preliminary design exploration two, perspective from light path looking into the centre of the site. Produced by author

Figure 58 (above) Iterative conceptual sketch proposing a network of interventions covering the central area of the junction. Reconfiguring the site into a space with equitable accessibility for pedestrian and cyclists. Produced by the author

Introduction

This chapter translates the theoretical and analytical foundations of the thesis into a series of conceptual propositions. These will be used to explore how Auckland's CMJ might be reimagined as a site for equitable accessibility and public engagement. Building on the contextual and programmatic analysis, the design phases investigate how this infrastructural void might integrate architecture at the human scale through strategies of interventional impermanence. A speculative design approach is used to test provocative conceptual ideations that challenge conventional infrastructural form.

Early design explorations focus on identifying the key spatial opportunities across the site and establishing a scope of the architectural intervention. This includes identifying major points of disconnection, understanding how residual land can support spatial development, and exploring potential pedestrian desire lines. Through iterative sketching, diagramming, and massing studies, the conceptual design phase examines how architectural design can operate as a framework for the site to

evolve. This allows for adaptability in response to changing environmental conditions, social needs, and spatial constraints. (or change in patterns of occupation/inhabitation)

The preliminary design phase further investigates how layered programming and the project's temporality can support diverse forms of engagement without over-formalising public life. By examining the relationships among circulation, occupation, and landscape within the infrastructural context, this chapter establishes the project's conceptual direction. This chapter lays the foundation for a refined conceptual outcome to be explored in the design development phase.

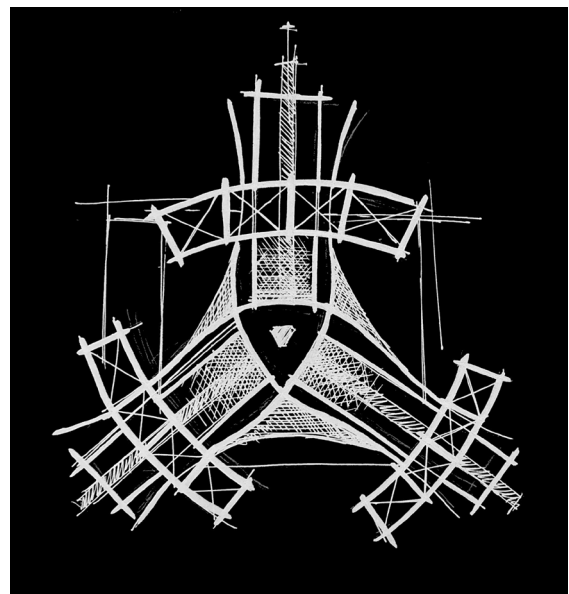
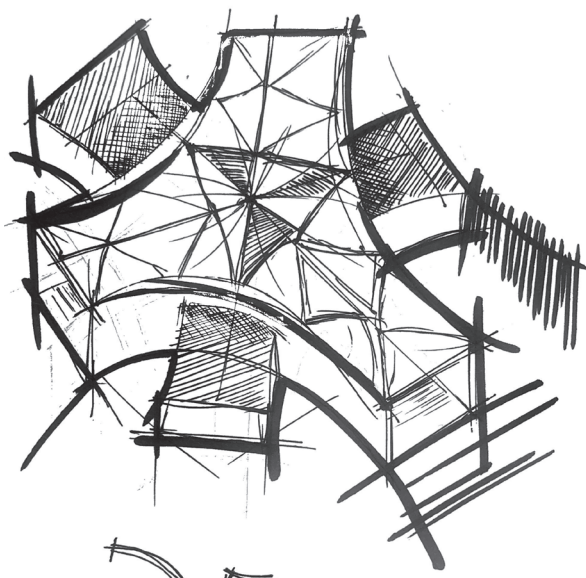
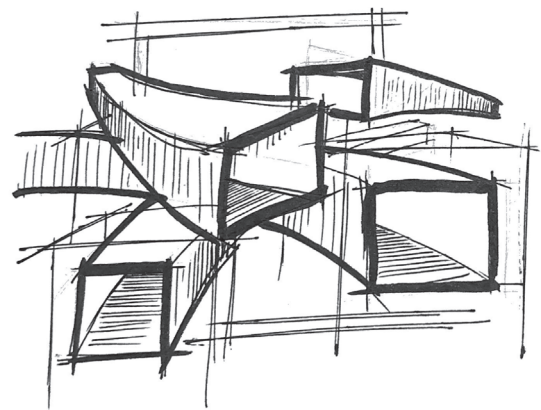
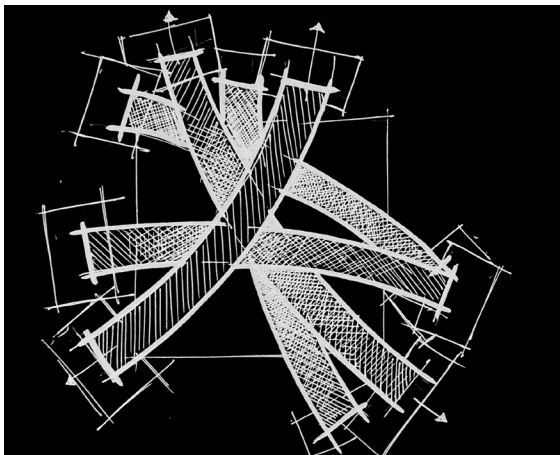
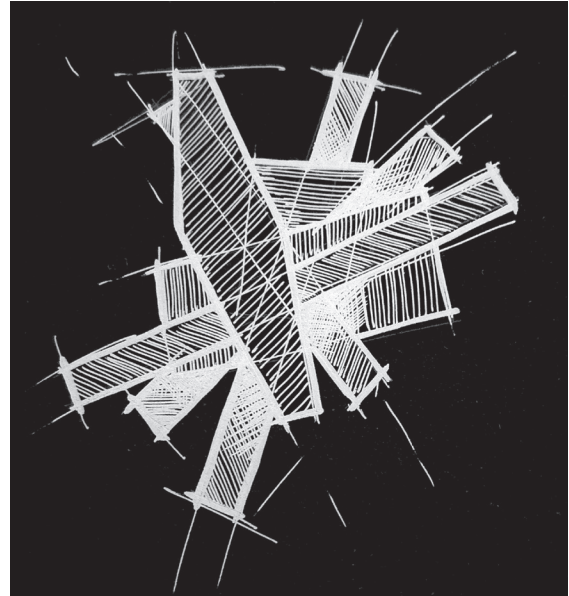
This chapter concludes with a critical reflection on the conceptual and preliminary design investigations. It will assess how effectively the explored strategies respond to the project's aims of spatial justice and programmatic coherence. Spatial, programmatic, and conceptual directions that show potential from the evaluation are identified and carried forward into the next phase.

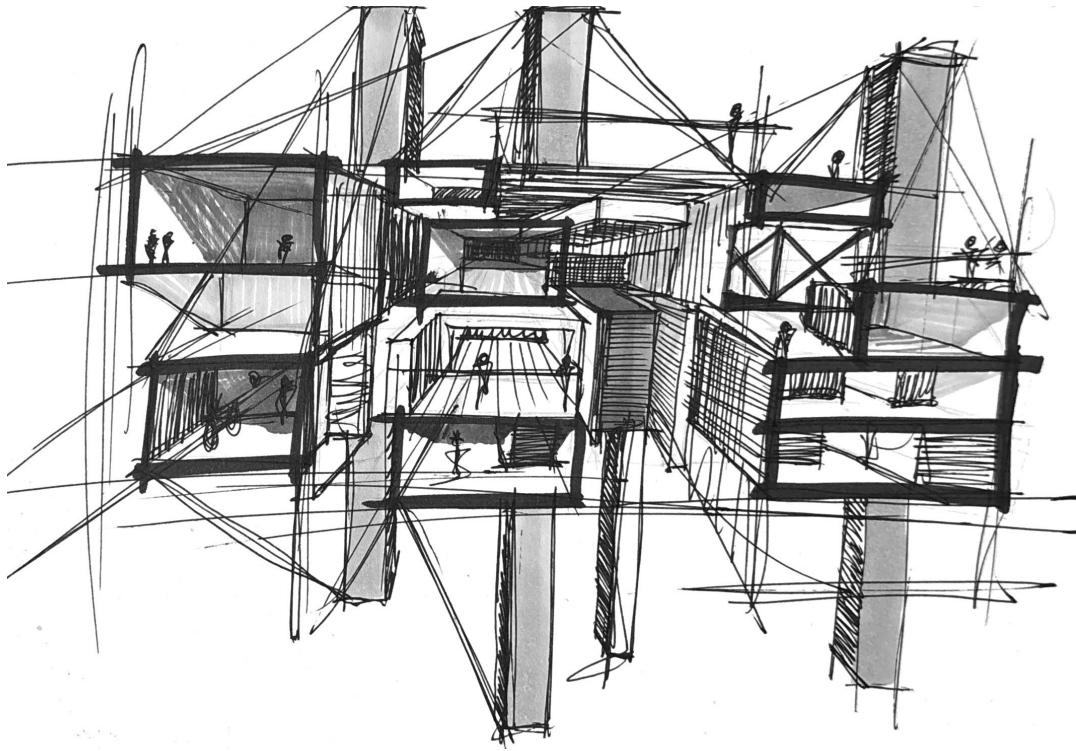
//Note: Images with an asterix are indicative of conceptual ideation and will be refined and clarified for Pin Up

Conceptual Design

Introduction

For the design to be successful, it must engage with the various theoretical concepts examined in the literature review. The three core directions to be addressed are urban barriers, urban voids, and urban continuity. Early concept designs centred on circulation paths as the foundation on which programmatic temporalities could be situated, addressing the urban barriers produced by the motorway. A series of iterative sketches was used to establish a conceptual grounding for paths and their interaction with the site. A core focus of these iterative designs was to explore a range of avenues and to identify elements for further investigation and development.



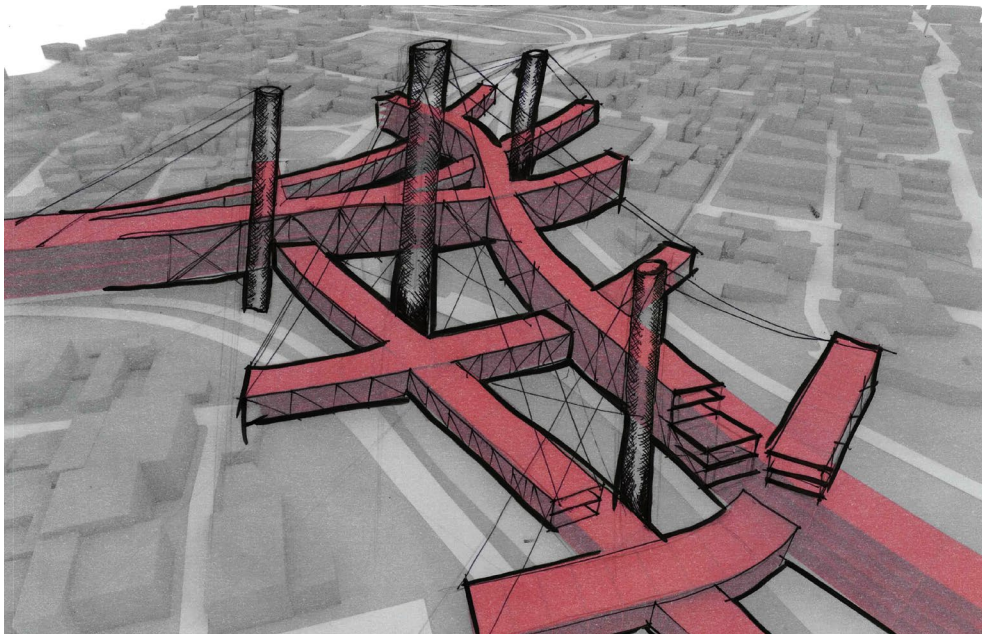


The core ideations behind these iterative sketches was in their attempt to establish means of equitable accesibility within the site while also integrating elements of the historical identity that was investigated through the context and programme analysis. Additionally, design explorations identified the potential for heritage conection with the wider site through the incorporation of view shafts for historical landmarks of Auckland. Developing a balance between internal and external historical layering.

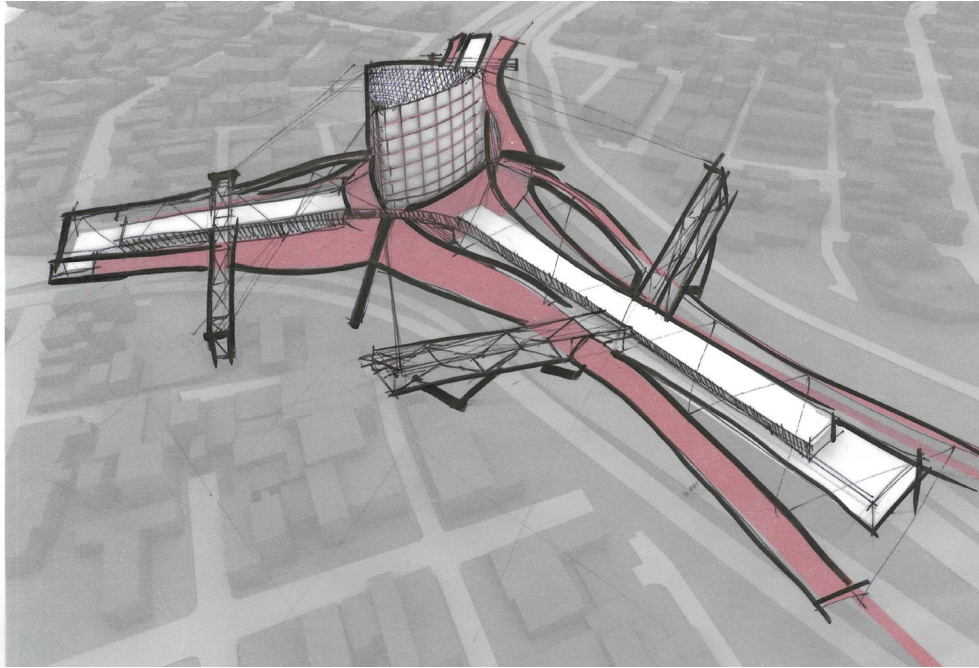
Figure 59 A series of iterative design sketches and conceptual ideas to inform conceptual modelling and the development of the design process. Produced by the author

Conceptual Massing

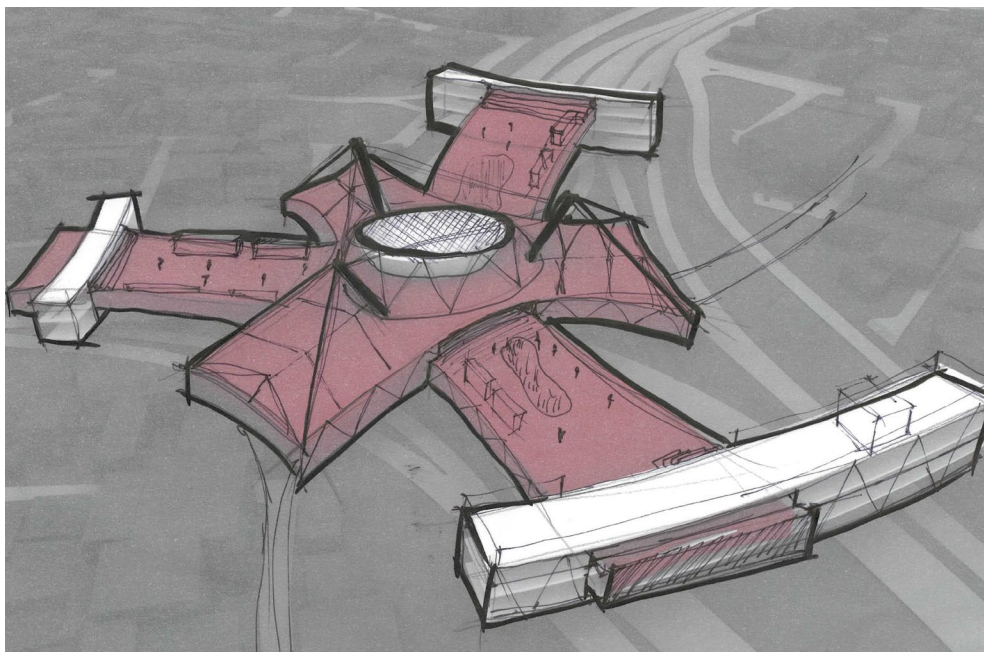
A series of digital models was developed, drawing on elements of the iterative sketches, to establish the intervention's form and scale within the site. These concept models investigated three broad design approaches, the first of which explores a layered network of linear forms that serve as the site's restored historical links. The second approach is delineated by the curved, 'swooping' nature of the motorway junction, and the third conceptual design is influenced by the site's bounding edges, with the form turned in on itself to establish six points of connective pathways. These massing models served as a base layer for detailed sketching and to inform the selection of elements for further exploration in conceptual designs.



Concept sketch A reintroduces the pre-existing conditions of the motorway site through the restoration of historical roads to rebalance the inequity of transportation. These pathways are elevated above the motorway junction and suspended from columns to minimise ground contact, thereby reducing impacts on urban traffic.



Concept sketch B investigates a design form inspired by the arrangement of motorway ramps, aiming to create a shape by guiding individuals into the central area, where they can then determine their subsequent direction. The sweeping boundaries of this design mimic the overlapping organisation of the motorway.



Concept Sketch C shifts the focus to the site's landscape by identifying the topographic configuration and key points of connection at the bridges that define the site's boundary. This form is then rotated to establish three additional points of access to the centre of the intervention.

Figure 60 Three iterations of conceptual massing in response to initial design ideations. Overlaid sketching and refinement to develop the first conceptual designs. Produced by the author

Conceptual Exploration One

The first conceptual investigation concentrates on the goal of spatial justice, specifically the primary research objective of achieving equitable accessibility by reinterpreting the infrastructural paradox (RO1). This design examines the potential desire paths within the site, influenced by the heritage roads that have been removed. This concept serves as a refined development of sketch A, in which the historical connections, used as the basis for the connective pathways, were found to be restrictive and emphasised the vehicular character of the site. Consequently, this, in conjunction with the site's topographical features, necessitated modifications to the pathways' destinations, organisation, and vertical alignment. The initial concept aimed to deliver comprehensive coverage of the junction (Figure 4.*), thereby creating a dedicated pedestrian pathway where none previously existed. As the project scope was further refined, this concept was scaled back to encompass a smaller area within the designated site.

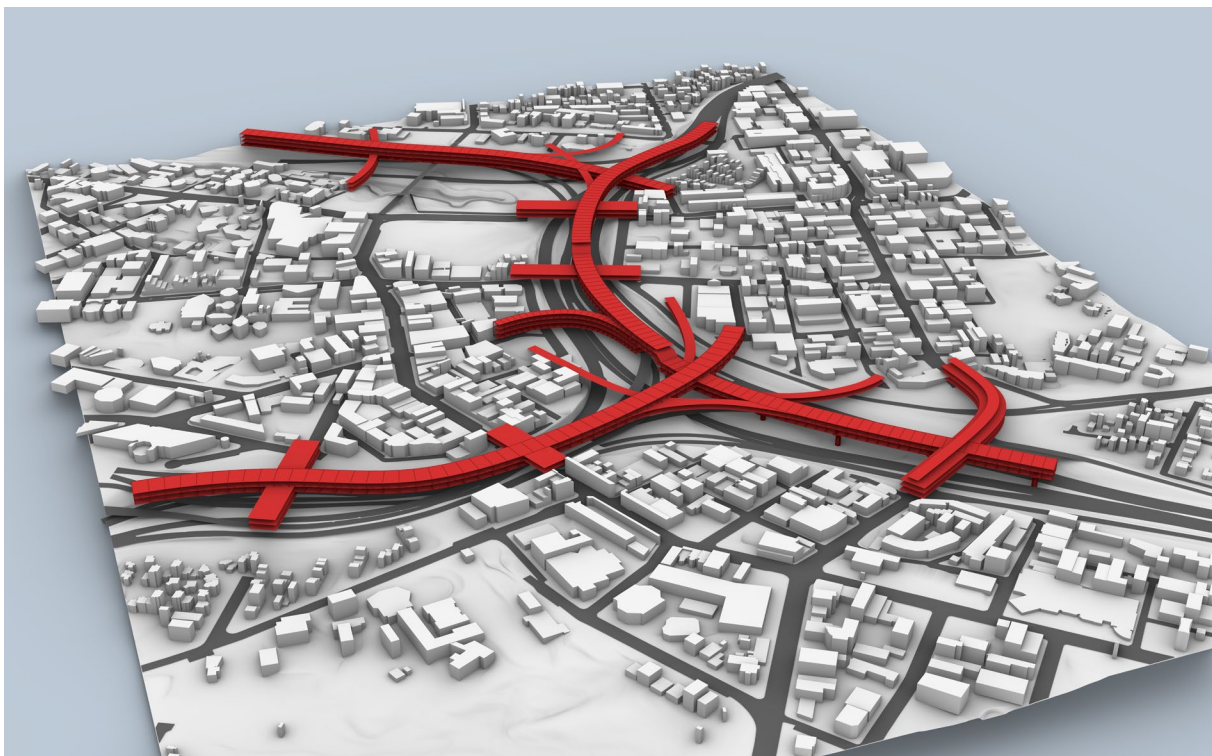
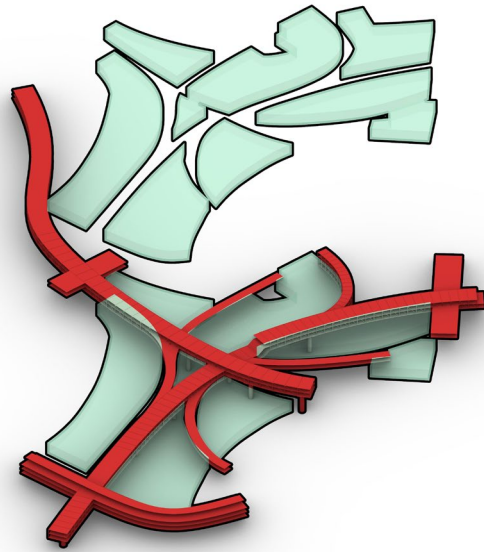
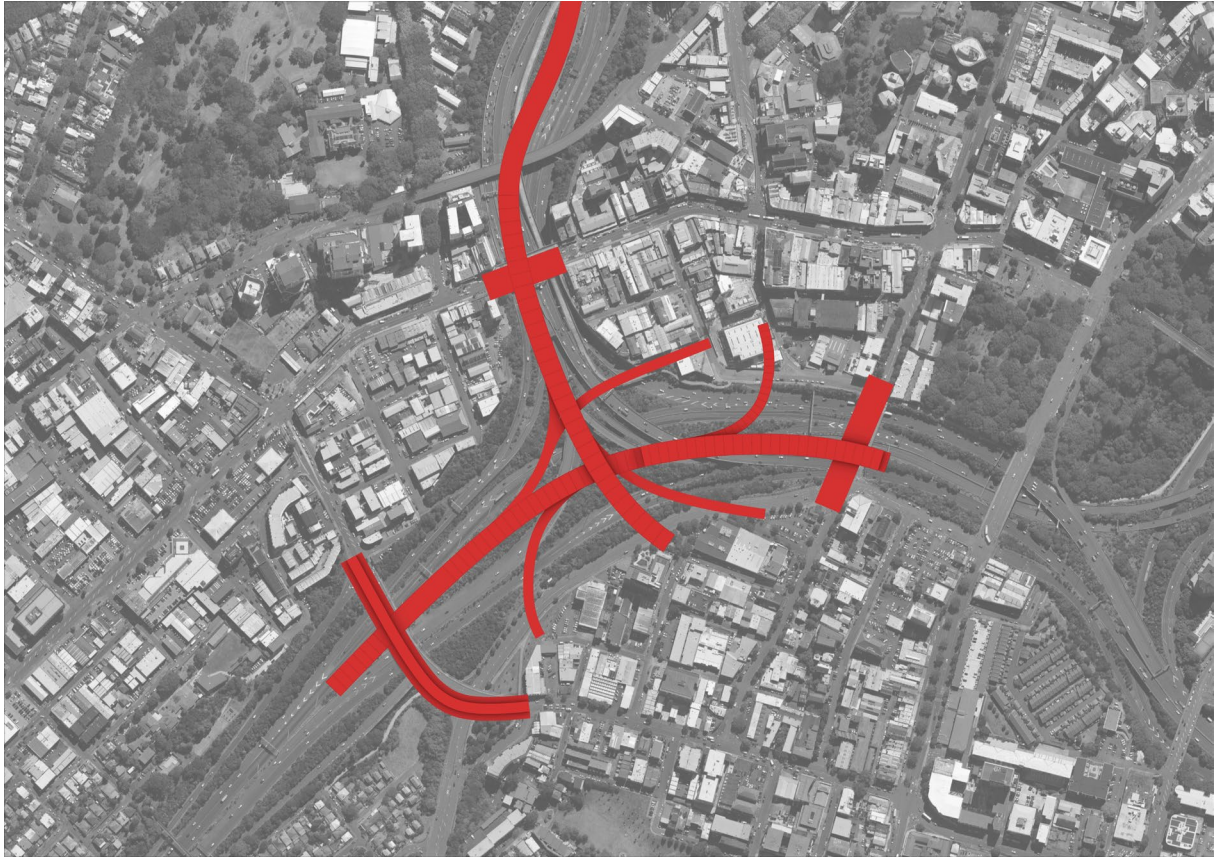
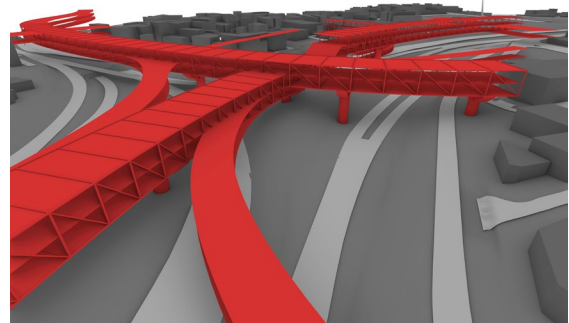


Figure 61 (top) Axonometric diagram of interstitial spaces acting as potential areas for programme. Produced by author
Figure 62 (bottom) Aerial Perspective image of conceptual design exploration one covering the junction in its entirety.



Strengths

- o Restoring equitable access to the site
- o Establishes cross-site connectivity
- o Restoration of urban continuity
- o Addresses and reinterprets the infrastructural paradox by alleviating the urban barriers



Weaknesses

- o Mimics the transient and fleeting nature of the motorway
- o The emphasis is excessively placed on the movement across the site rather than encouraging extended engagement.
- o Doesn't provide a framework for a truly adaptable programmatic system.

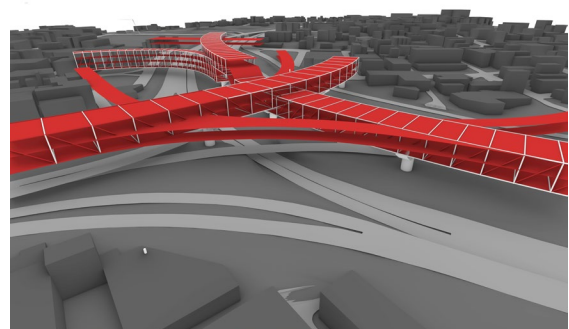


Figure 63 (top) Plan view of conceptual design one, overlaid on satellite imaging of site. Produced by author
Figure 64 (bottom) Perspective images of concept one captured in modelling software. Produced by author

Conceptual Exploration Two

The second conceptual design further explores the aim of spatial justice and investigates the research objective of reframing public perception of the motorway. Utilising architecture as a guiding intervention, this concept incorporates view shafts of existing landmarks to recognise the site's layered heritage (RO3). With these landmarks visible from multiple heights and viewpoints, this concept serves as a navigational intervention that guides visitors to them while also providing linear pathways to improve accessibility across the site. Developed from one of the initial iterative sketches that tested architecture as a directional form, such as a compass. The two-dimensional form was transformed and vertically distributed to accommodate these view shafts and to enhance the intervention's perception as an urban landmark in its own right. This concept briefly addresses the second research objective of engaging with the site's interstitial green spaces through its verticality (RO2). The conceptual iteration encourages participants to journey through the intervention from ground level to a level adjacent to the motorway ramps, and finally above the motorway infrastructure, thereby embracing the layers of ecology, infrastructure, and heritage.

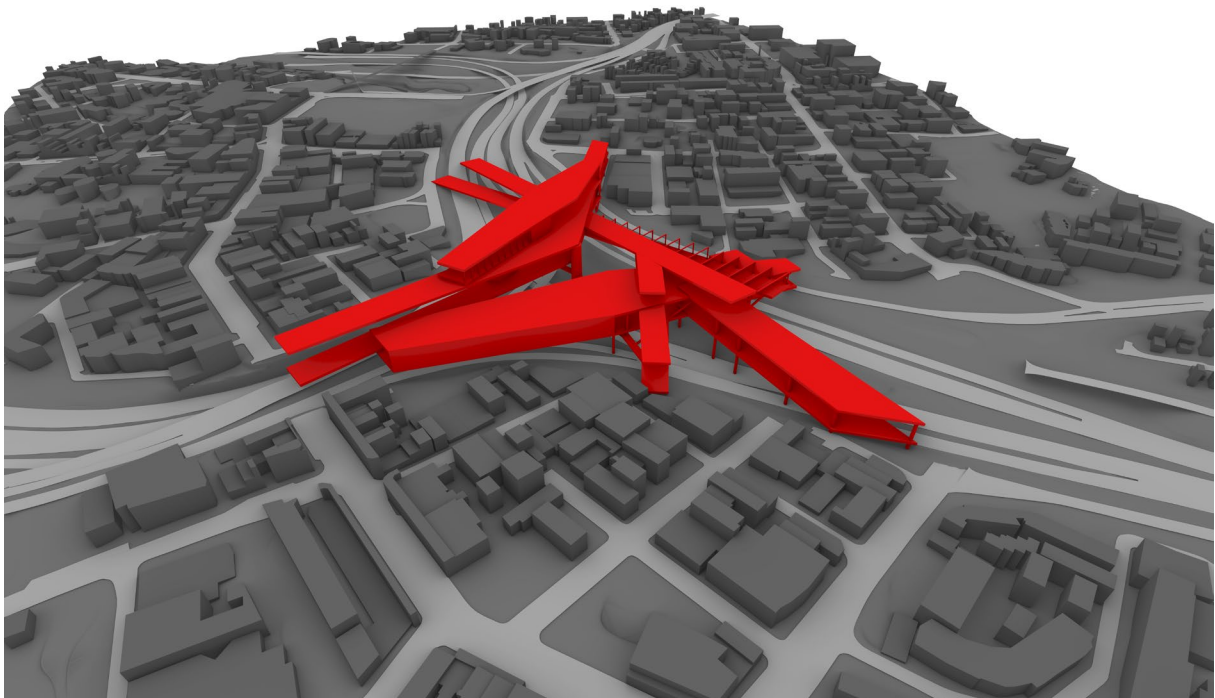
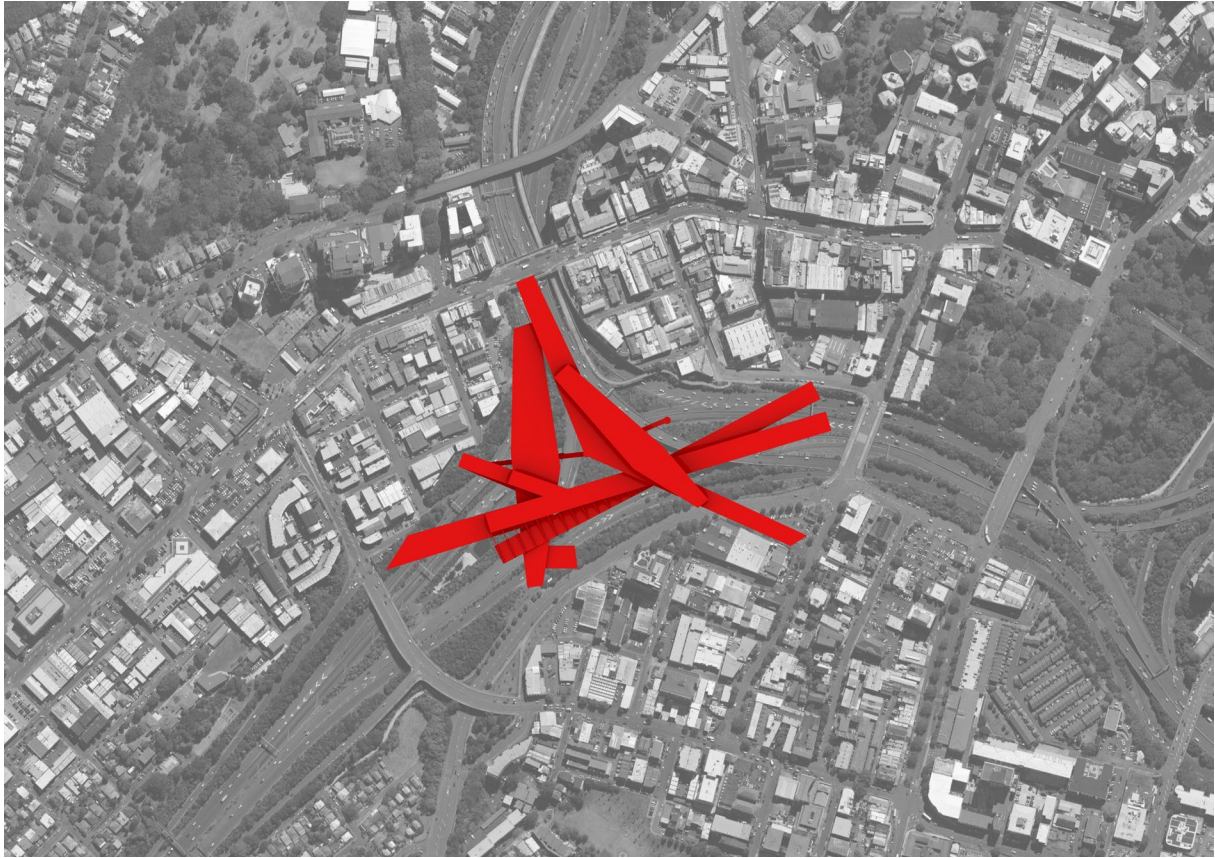
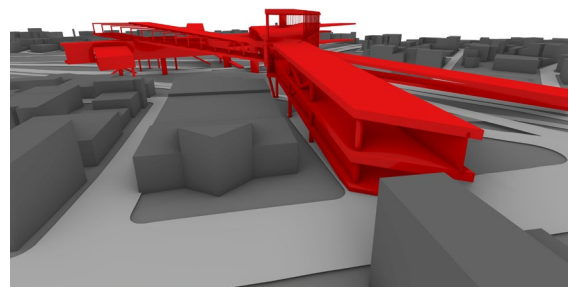


Figure 65 Aerial perspective of conceptual design exploration two. Produced by author



Strengths

- o Reframing the public perception of the site
- o Establishing an intervention for a layered historical experience
- o Restoring a sense of spatial justice through public interaction with the site
- o Developing human and ecological relationships



Weaknesses

- o View shaft directions and verticality affect the engagement with the pedestrian circulation
- o Reliant on the external heritage sites to establish a historical relationship and engagement

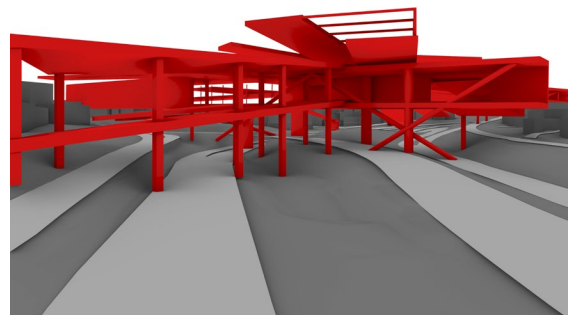


Figure 66 Plan view of concept design two overlaid on satellite imaging of the site. Produced by author
Figure 67 Perspective images of concept two captured in modelling software. Produced by author

Conceptual Exploration Three

This conceptual design similarly addresses the research objectives of equitable accessibility and examines forms that challenge infrastructural barriers by utilising the site's urban void spaces. It concisely addresses the objectives related to public perception and historical layering by incorporating a series of framed view shafts along the organised intervention pathways. This concept merges the verticality of the second concept with the organised desire paths to establish a form that integrates the historical context with external heritage landmarks. This concept also draws inspiration from conceptual sketch A, by suspending these pathways above and alongside the motorway ramps to minimise ground contact and traffic impediment. Additionally, this concept briefly addresses the programmatic permeability aim, specifically focusing on the project's interventional impermanence (RO5). Through a series of adaptable programmes that can be installed and removed from the pathways, this concept begins to address the programmes' temporality within the intervention.

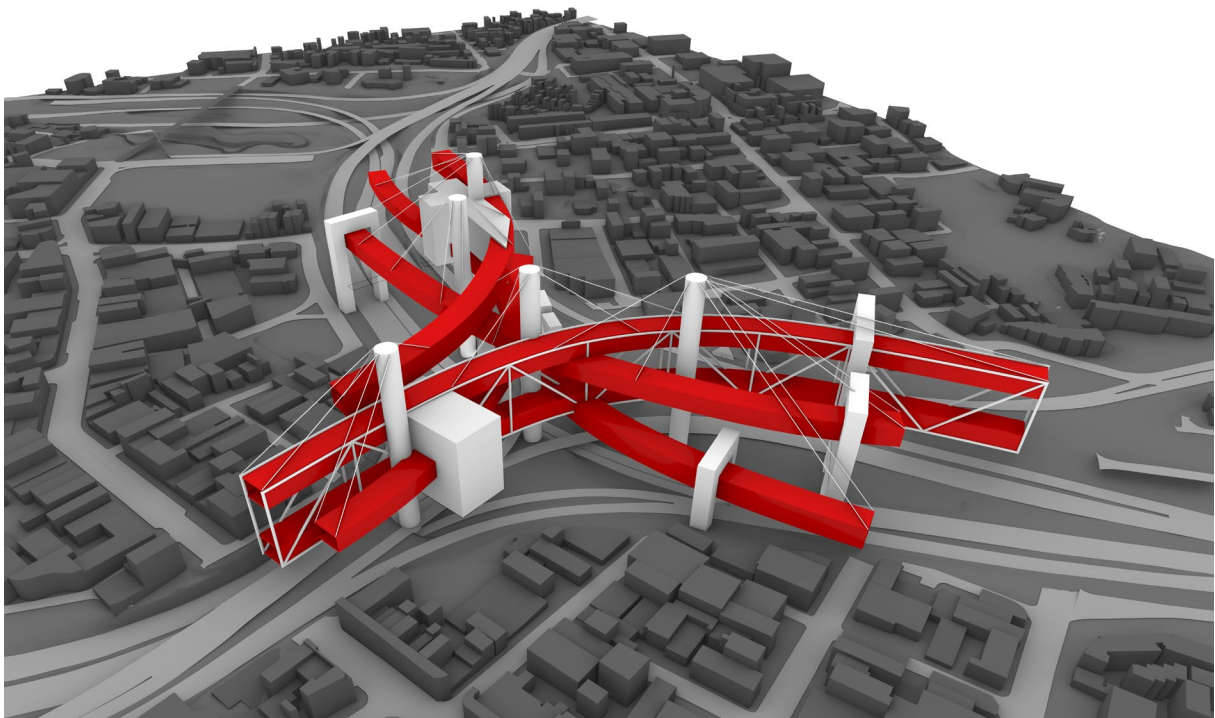
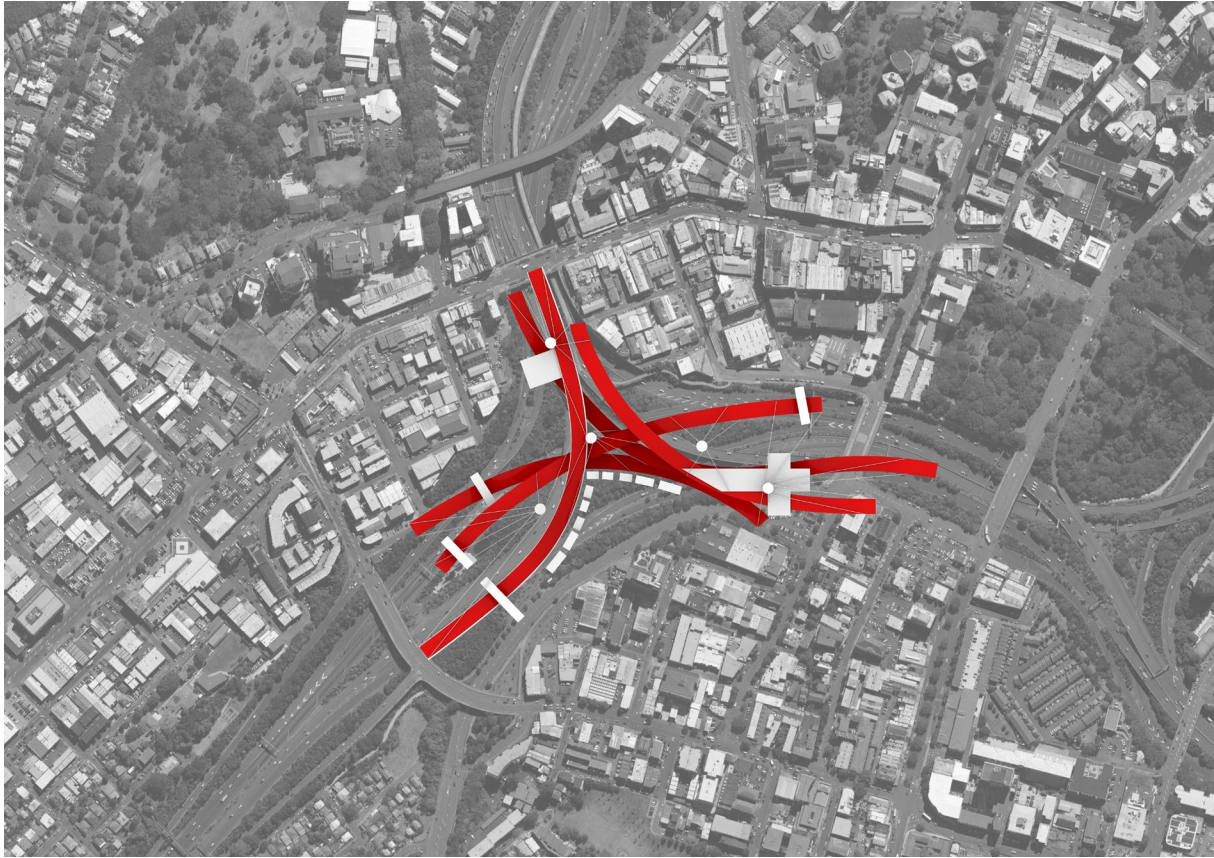
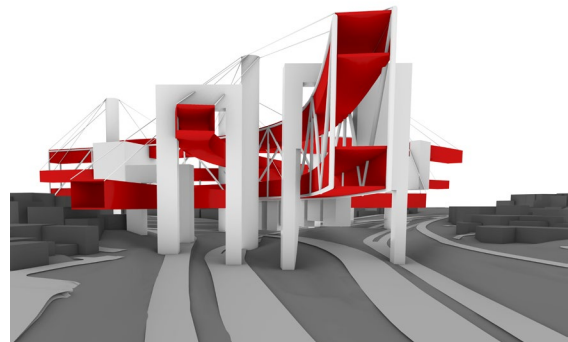


Figure 68 Aerial perspective of conceptual design exploration three. Produced by author



Strengths

- o Restores equitable accessibility while addressing urban barriers and void spaces
- o Balances a historical layering system through internal and external heritage elements
- o Introduces a programmatic temporality and adaptability



Weaknesses

- o Form reinforces a transient experience through the site as opposed to encouraging interaction
- o Does not facilitate the informal engagement with the site; fixed connective pathways establish formalised routes within and across the site.

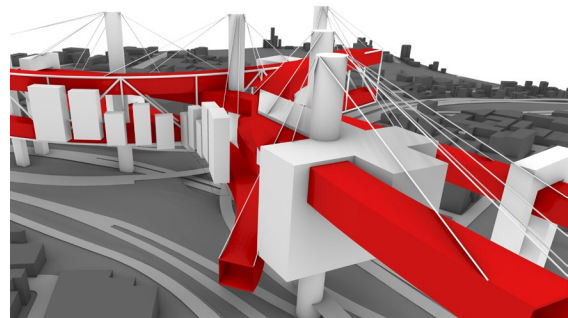


Figure 69 Plan view of concept design three overlaid on satellite imaging of the site. Produced by author
Figure 70 Perspective images of concept three captured in modelling software. Produced by author

Concept Design Reflection

An evaluation of these concepts is conducted to examine their strengths and weaknesses in greater detail. The evaluation criteria are derived from the research aims and objectives to assess the extent to which the concepts align with the project's vision. The objectives of spatial justice addressed in this conceptual development phase included equitable accessibility (RO1), reinterpretation of the infrastructural paradox (RO1), human-ecological relationships (RO2), and reframing public perception and developing layered histories (RO3). Additionally, the objectives of adaptable programmes and interventional impermanence, in relation to programmatic permeability, are addressed (RO5).

The first and second conceptual design iterations adequately address the objectives of spatial justice; however, each iteration contains elements absent in the other, thereby inhibiting either from fully attaining the intended goal. A significant shortcoming was their limited exploration of programme permeability. Concept three referenced adaptable programmes through interventional impermanence but did not alter public perception, as it mainly focused on accessibility pathways. Despite the programming's temporal nature, this concept could be perceived as a transitional environment intended for pedestrians rather than private vehicles. These concepts resemble the High Line and the Coulée Verte René-Dumont, as they transform infrastructural elements into interventions for public life; however, they ultimately lack sufficient programmatic value to encourage sustained public engagement.

Concept one effectively reestablishes equilibrium in the site's accessibility through cross-site connections shaped by its historical links. These connections restitch the surrounding neighbourhoods

across urban voids, addressing infrastructural paradoxes and alleviating urban barriers. However, this concept closely imitates the fleeting, transitional nature of the motorway junction, emphasising movement across the site rather than social engagement. Additionally, this concept struggles to provide an adaptable programmatic framework for interventional impermanence.

Concept two effectively redefines the public perception of the site by employing a layered historical experience through view shafts, thereby establishing a meaningful connection between the project and the broader site. This historical integration reinstates a sense of spatial justice via public interaction with the intervention. The vertical aspect of the concept further enhances the human-ecological relationship as individuals engage with the site and the project. Nevertheless, the building's linear design and structural elements, influenced by the view shafts, affect pedestrian circulation, resulting in an inefficient circulation path. Additionally, the concept relies heavily on external heritage elements to establish a historical relationship, rather than incorporating the history of the direct site.

Concept three establishes an equitable accessibility network that addresses urban barriers and void spaces, while also balancing a historical layering system that engages with both internal and external heritage elements. Additionally, this concept incorporates a programmatic temporality into the design; however, its form reinforces a transient nature for movement through the site rather than encouraging engagement.

Conceptual designs two and three show the most potential and have been selected for further investigation and refinement in the preliminary design exploration. The first conceptual design shows strength in addressing the restoration of equitable accessibility but struggles to implement the other research objectives.

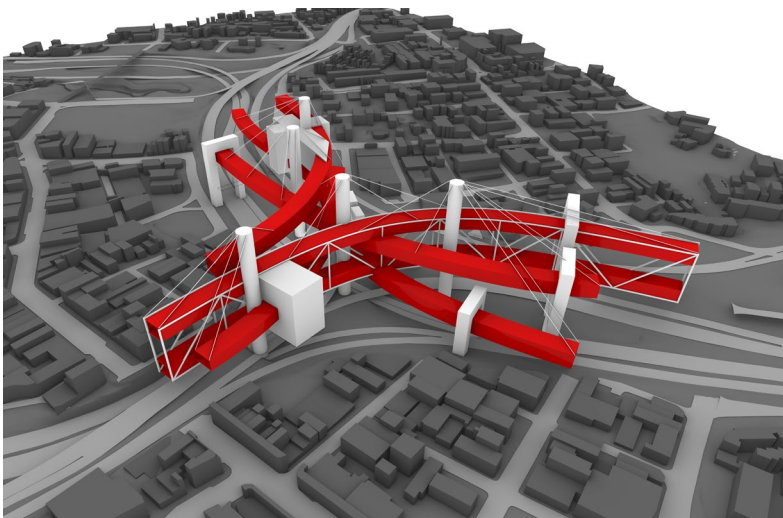
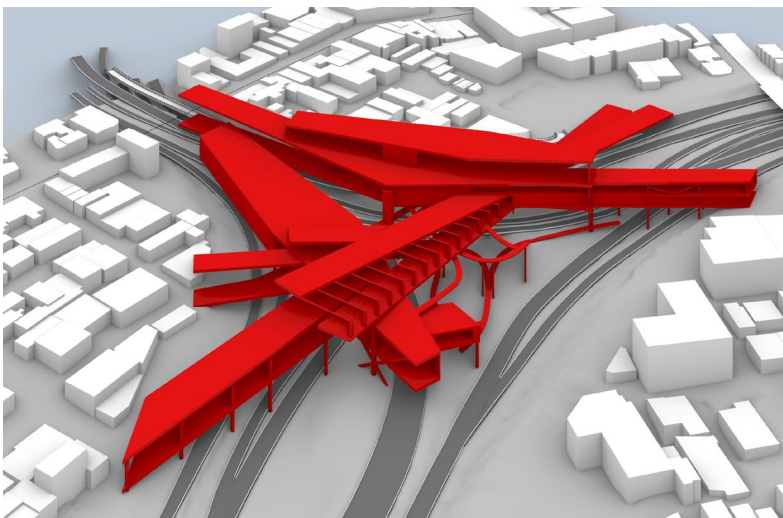
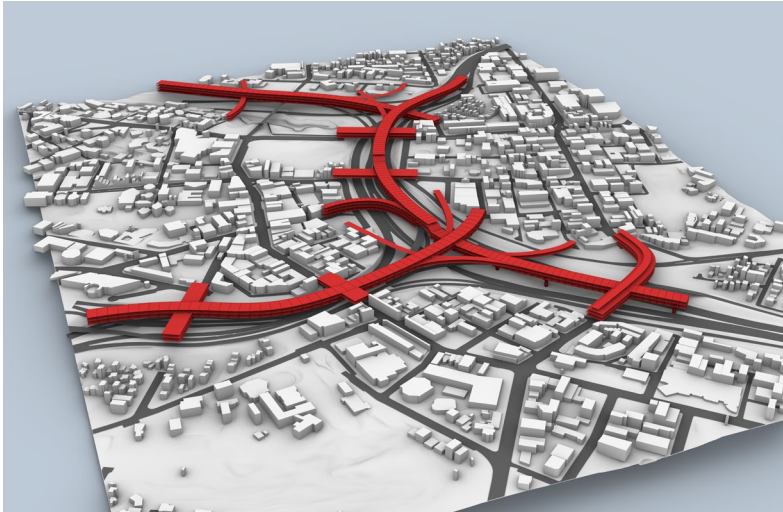


Figure 71 Aerial perspective of the three conceptual design iterations. Produced by author

Preliminary Design

Introduction

The preliminary design phase meticulously analyses the theoretical framework in greater depth and incorporates experiments that yielded positive outcomes from the conceptual iterations. While the conceptual design phase primarily concentrates on theories related to urban barriers, the preliminary design investigation seeks to preserve the equitable accessibility characteristic of the conceptual design iterations, while also more comprehensively addressing the research objectives concerning programmatic permeability. This design phase investigates the dynamic transitions of programmes (RO4) within the intervention and addresses patterns of everyday use at the site (RO5). These facets of the research objectives concerning the aim of programmatic permeability have not been thoroughly explored or have been addressed only briefly during the conceptual design phase.

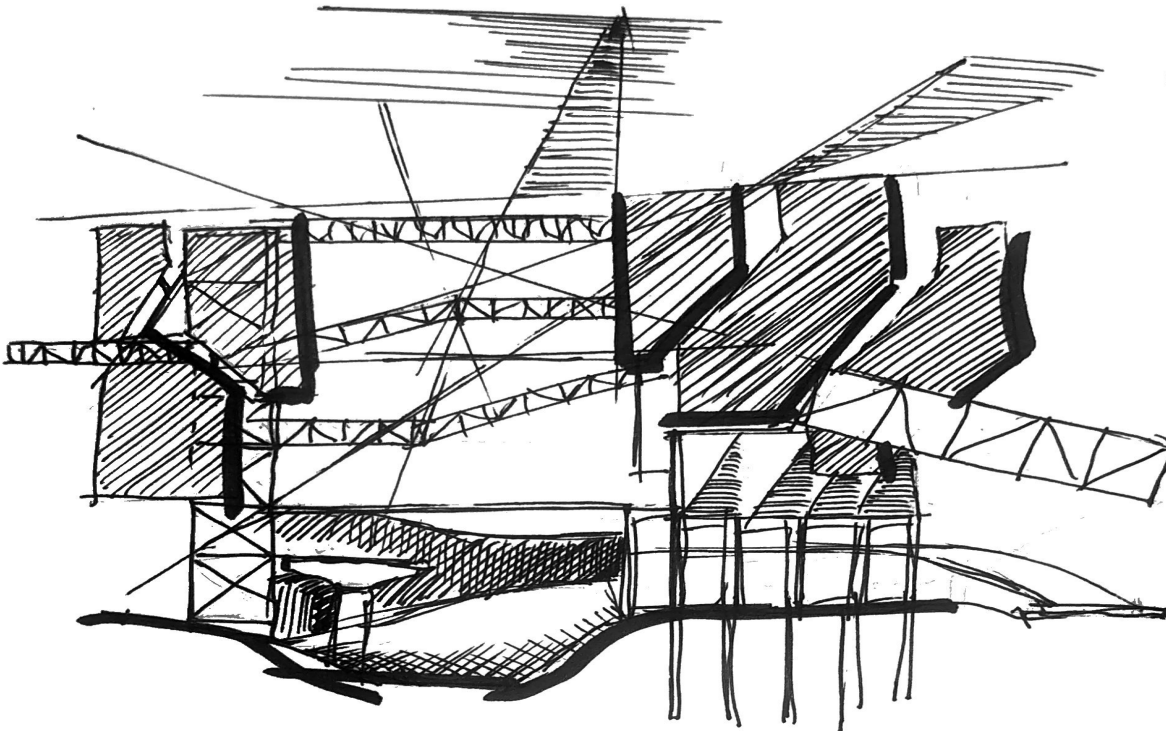
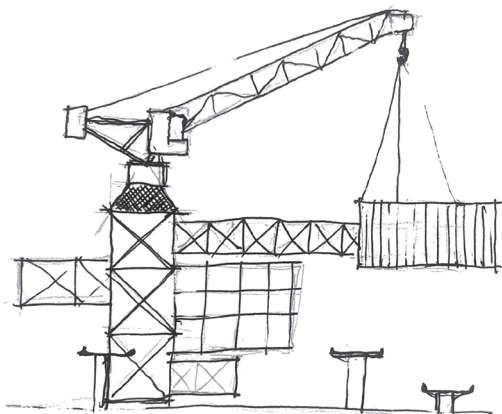
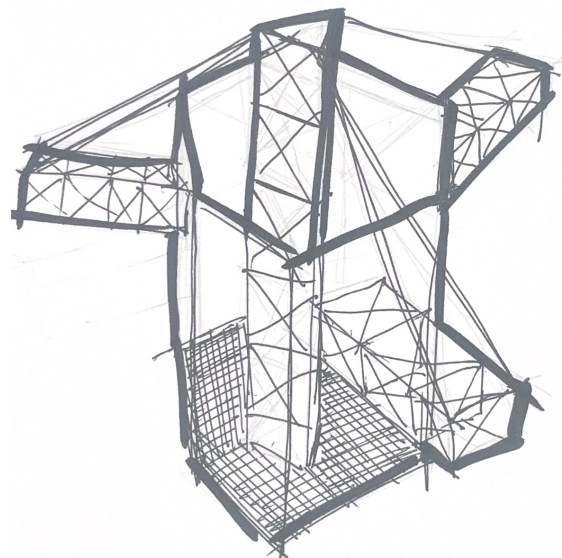
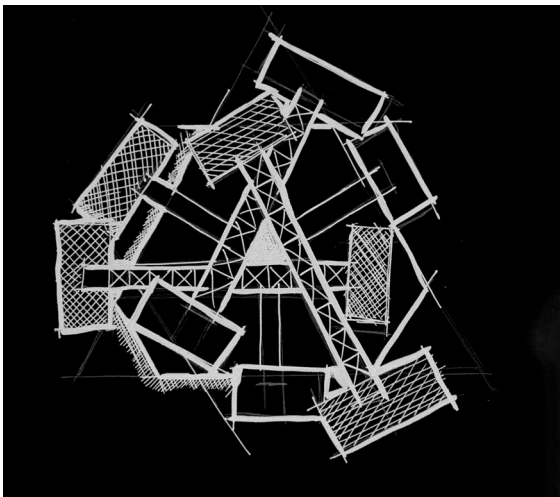


Figure 72 Series of iterative sketching to explore potential for the preliminary design phase.

Similar to the conceptual design phase, the preliminary design begins with a series of iterative sketches to investigate the research objectives and theoretical perspectives. These sketches explored the spatial arrangement and temporal distribution of programmes across the site within a formalised architectural form. Strong elements from these sketches were developed further through digital modelling to reestablish scale and positionality within the motorway junction. Key to the success of the preliminary design was ensuring that it addressed both spatial and programmatic aims equally.



Preliminary Design Exploration One

The first preliminary exploration draws on elements of concept three, specifically the reinforcement of equitable accessibility and a layered historical presence (RO1 and RO3). Additionally, it addresses the informalised transitions from mobility to engagement through a structural system for temporal programmatic interventions. By introducing a structural grid, this design exploration creates opportunities for the spatial arrangement of programmes both horizontally and vertically within the site. This trussed framing system presents an opportunity for a network of adaptable micro-programmes to act as a formalised architecture (RO4 and RO5), facilitating programmatic permeability within the site.

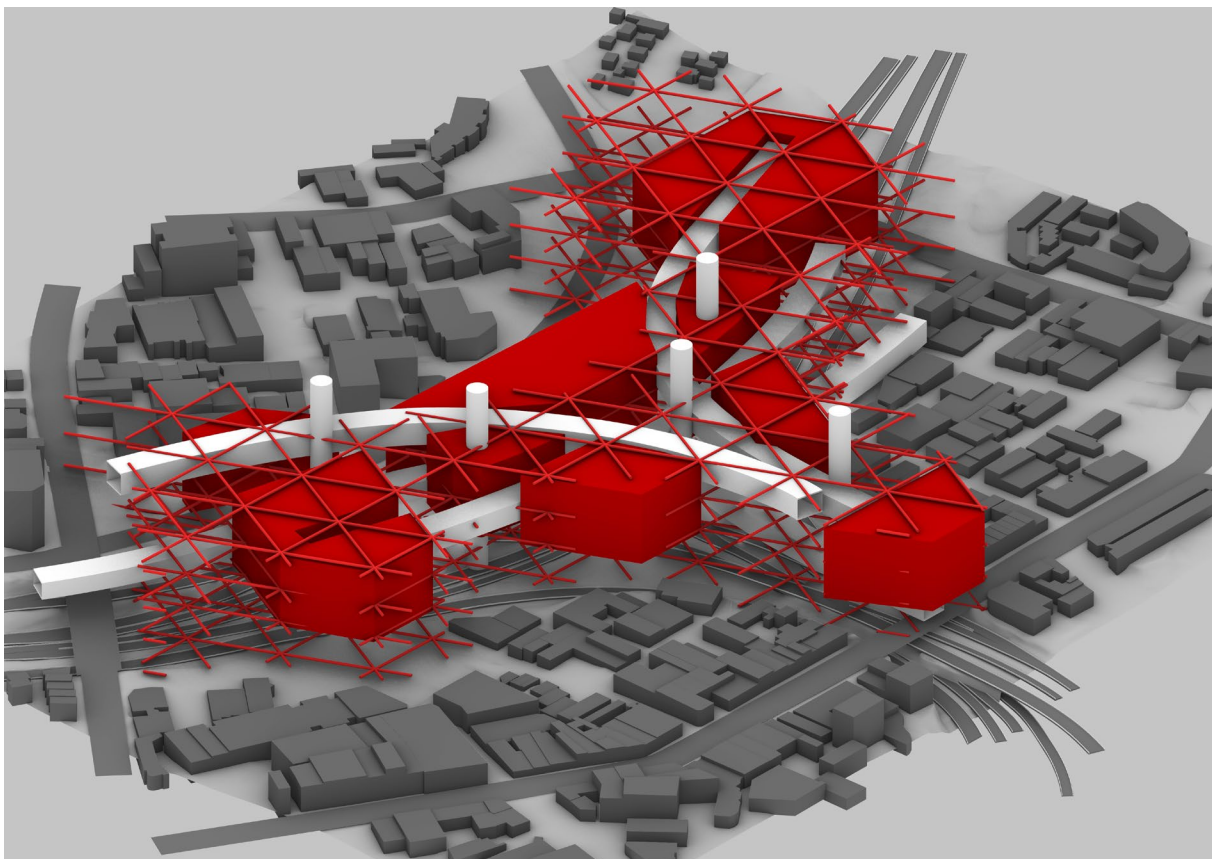
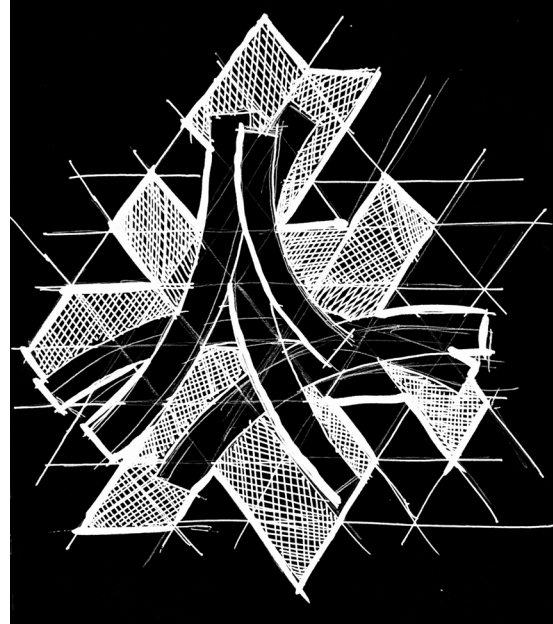
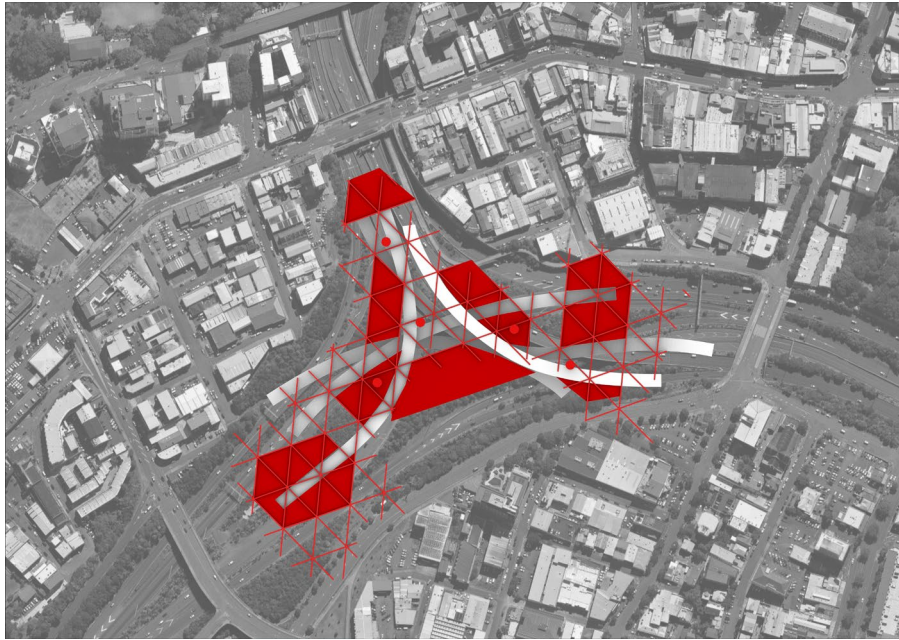


Figure 73 (top) iterative sketch of preliminary design exploration one showing the potential for the integration of a structural framing system for programmatic integration

Figure 74 Aerial perspective of preliminary design exploration one. Produced by author



Strengths

- o Challenges urban barriers by restoring equitable accessibility routes for human engagement with the site
- o Strong historical presence of external and internal heritage
- o Integration of informal interaction within a formalised architecture
- o Reframes the infrastructural void as an inclusive urban intervention restoring spatial justice

Weaknesses

- o Lacks programmatic definition, produces a framework without establishing the configuration of functions
- o Creates a public perception of the site as a space for pedestrian movement rather than active social engagement
- o Produced pathways are formalised in their start and end points, leaving little room for informal interaction and movement.

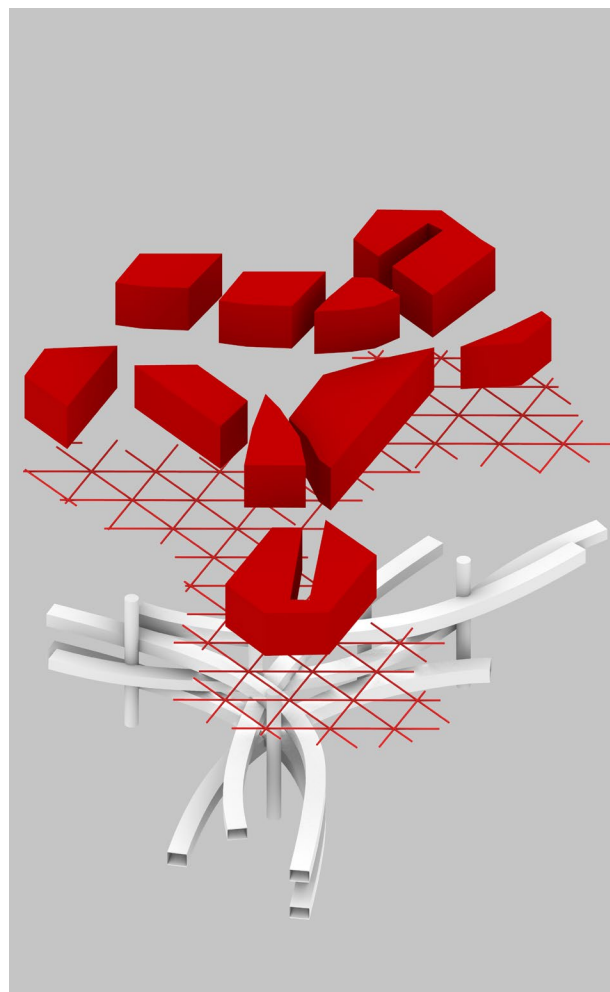


Figure 75 (left) iterative sketch of preliminary design exploration one showing the potential for the integration of a structural framing system for programmatic integration

Figure 76 (right) Aerial perspective of preliminary design exploration one. Produced by author

Preliminary Design Exploration Two

This design was inspired by iterative preliminary design sketching and adopted an alternative approach to researching historical layering. By identifying the core movement directions along historical roads, three core connective directions were established. The design aims to address the theoretical perspective that infrastructure resides in the background (Edwards, 2002). With a central atrium that brings the project's foundation to the foreground, this design exploration allows users to engage visually with the infrastructural intervention. The atrium serves as the project's geometric centre, dictating movement around the site, with core connection paths extending from the atrium to form accessibility paths that intersect the bridging roads and the site boundary.

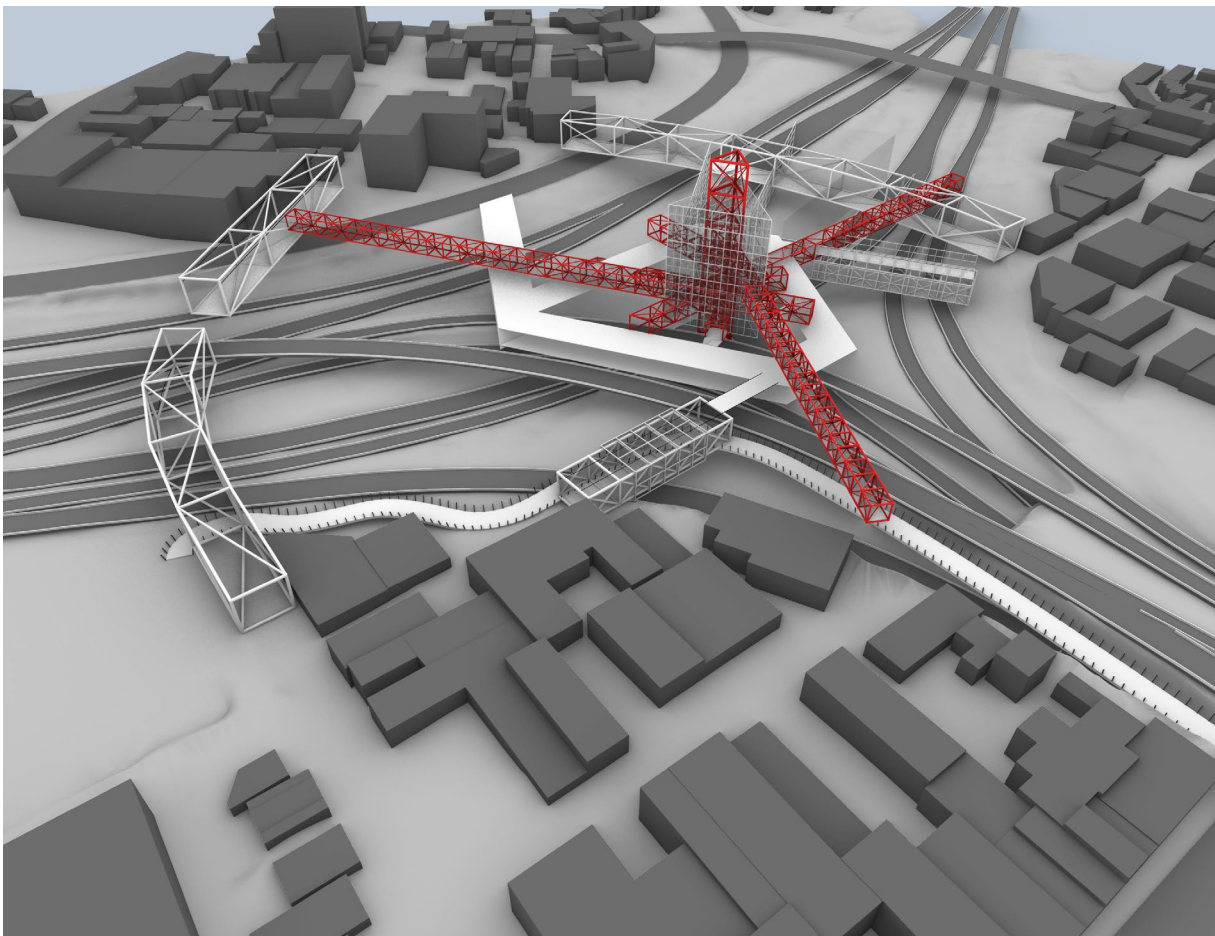
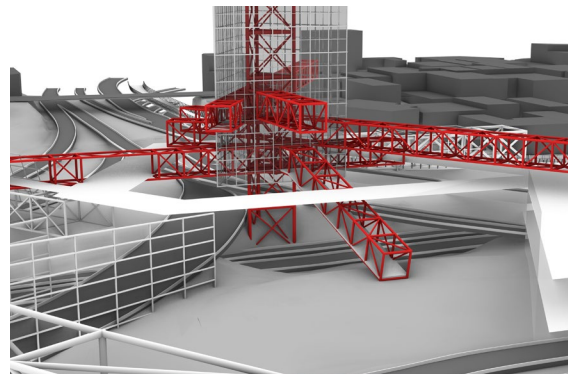
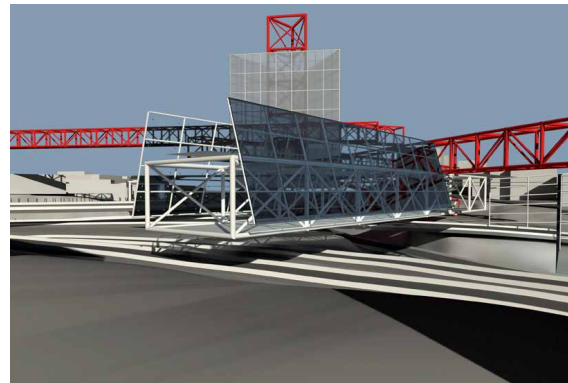


Figure 77 (top) iterative sketch of preliminary design exploration two showing the potential for the integration of historical axes into the intervention. Produced by author

Figure 78 Aerial perspective of preliminary design exploration two. Produced by author

Strengths

- Addresses the research objective pertaining to layered history engagement
- Engages with the internal and external heritage of the site and its surrounding environment
- Restores equitable accessibility across the site through historically influenced pathways.
- Provides opportunities for informal interaction with the site through multiple movement routes across and within the site
- Engages with the site's existing mobility infrastructure for pedestrians and cyclists
- Restores spatial justice, producing an intervention that encourages interaction



Weaknesses

- Fails to provide a definitive framework for programmatic integration into the intervention
- The central atrium serves little to no purpose other than to visually showcase the structural foundation for the design

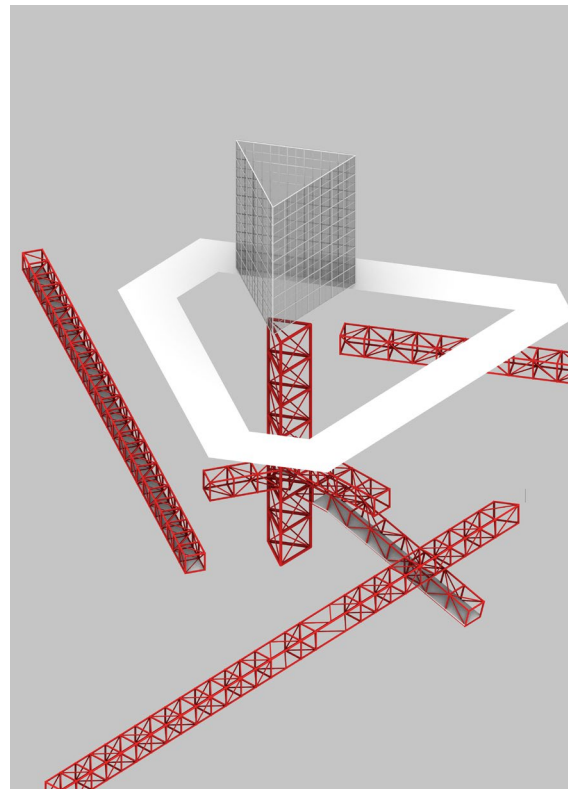


Figure 79 (top) perspective image of preliminary design two. Produced by author

Figure 80 (bottom) axonometric diagram of axes and supporting accessibility paths. Produced by author

Drawing inspiration from conceptual sketch B in the previous design phase, this exploration rotates the core connective pathways to establish six points of connection to the site's boundary. This design also incorporates the framing of view shafts, as explored in the second conceptual design, by organising the vertical distribution of the three pathways from the atrium to align with their respective external heritage views. This design exploration also investigates the potential for integration with existing mobility networks within and along the site, such as The Light Path, the North Western Cycleway, and the new Karangahape Train Station being developed at the motorway junction boundary. Additionally, this preliminary design encourages human engagement with the interstitial green spaces by producing dedicated pathways to the residual spaces for programmatic activation.

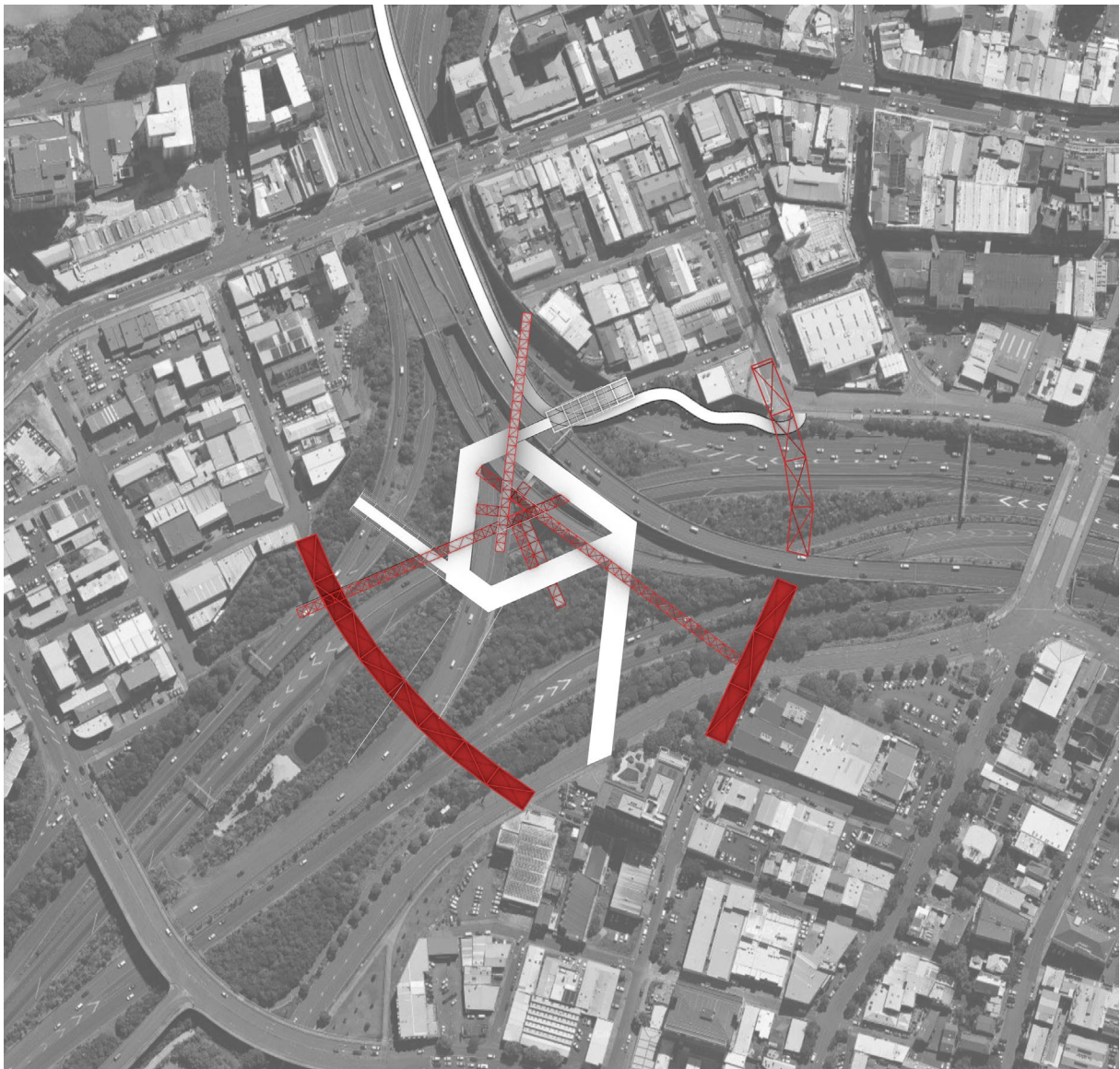


Figure 81 Plan view of preliminary design exploration one, overlaid on satellite imaging of the site. Produced by author

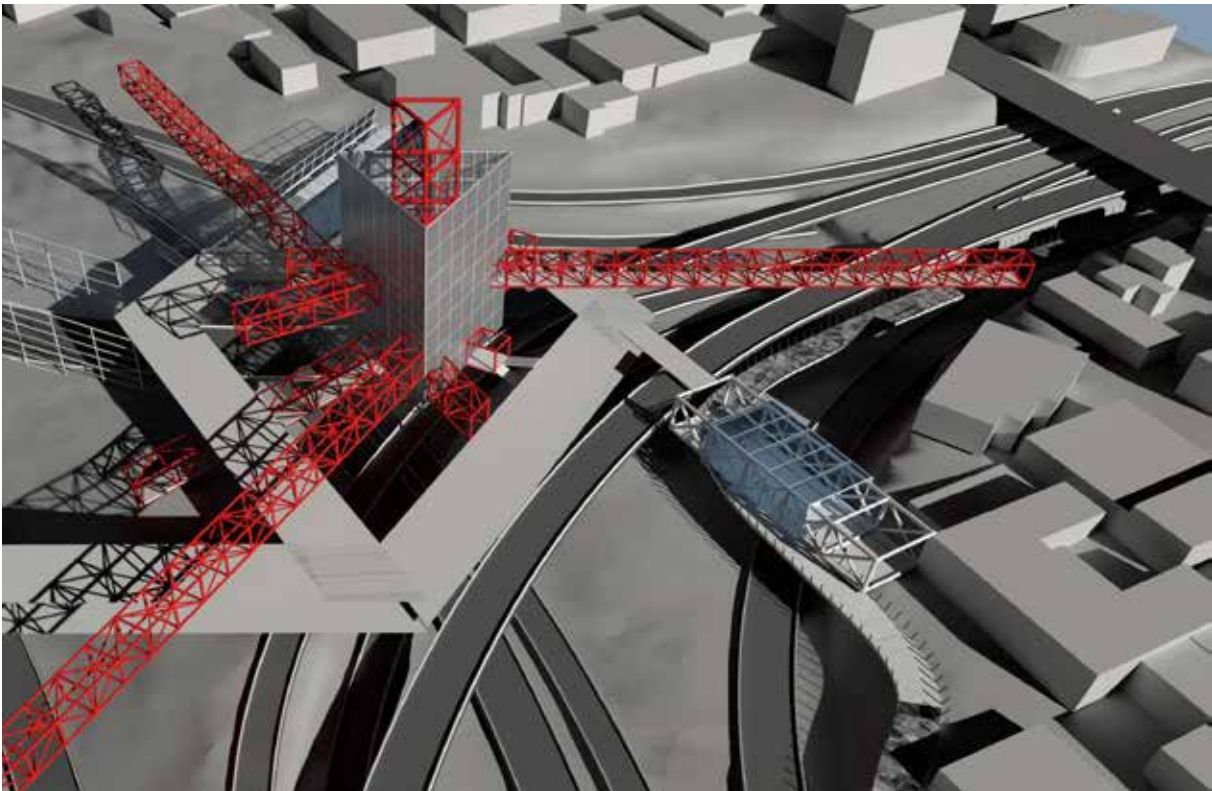
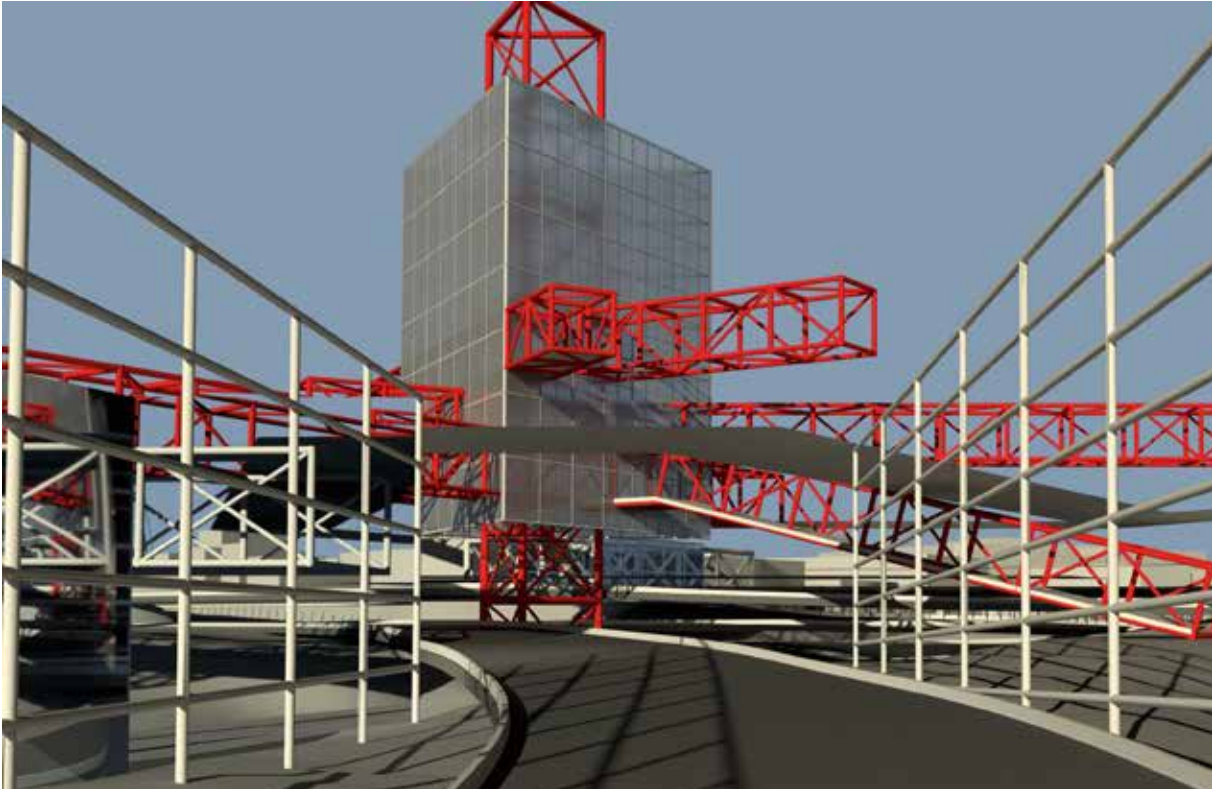


Figure 82 (top) Perspective image of preliminary design from the road.
Figure 83 (bottom) Perspective image of preliminary design two showcasing the integration with the light path.

Preliminary Design Reflection

A recurring critique of the preliminary design was the lack of a clearly defined programme within the intervention, leading to the project being perceived as merely pedestrian pathways rather than an enhancement of urban assets. However, to embrace and address Lefebvre's theoretical perspective on urban voids, there cannot be a clear programme. Lefebvre argues that the project requires a degree of abstract informality. Through a network of programmes that can be plugged into and removed from the project, the intervention aims to establish a series of programmes without defining them as such. This reinforces the paradoxical nature of these spaces and the motorway junction.

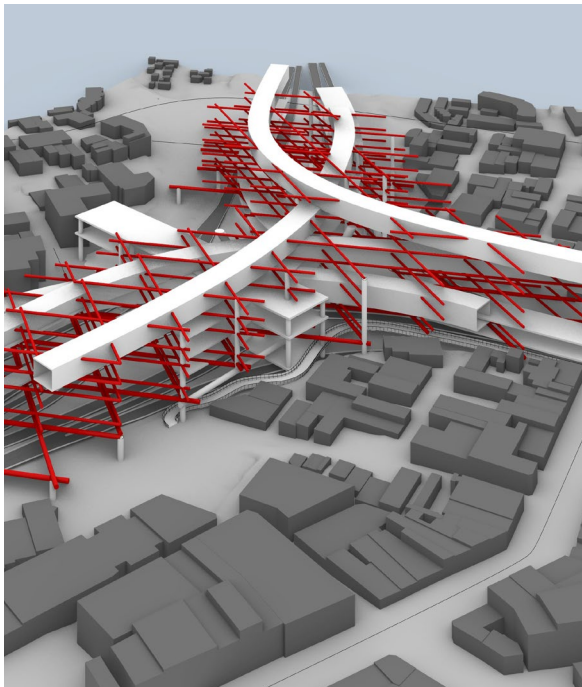
Heatherwick Studios' Vessel Structure in New York is a project that similarly engages in this critique. This infrastructural installation in the Hudson Yards was described as a "stairway to nowhere" (Kimmelman, 2019) in a New York Times article, as well as a "vessel for the depths of architectural cynicism" (Wagner, 2019) in a baffle article. Part of the issue with this installation was the over-formalisation of an informal space. The vessel strives to circumvent the implementation of a program to such an extent that it transcends abstraction and ultimately manifests as a sculpture rather than an interactive intervention. The aim of this thesis's design is to identify and establish a median ground that integrates the informal with the formal, the fleeting with the interactive. This investigation into the programmatic nature of the site will be further explored in the developed design.

Figure 84 Auckland Light path and light rails (O'Keefe,2025)

Figure 85 Judge Harry Pregerson Interchange in Los Angeles (iStock, 2022)

Preliminary Exploration One

The first preliminary design exploration addresses the research objective regarding the infrastructural paradox by restoring urban continuity through accessibility pathways across the site. These connective pathways, influenced by pre-existing roads within the site, integrate a layered historical context into the design, addressing the research objective of public perception and spatial belonging. Additionally, this design exploration implements a framework for informal engagement through a structural system that enables programmatic permeability. This design exploration, however, struggles to address the research objectives regarding the reconfiguration of human-ecological relationships and the response to social and spatial needs that facilitate everyday engagement patterns.



Preliminary Exploration Two

The second preliminary design exploration addresses the research objective pertaining to the site's layered histories by identifying three axes of the pre-existing roads and restoring the key access routes that were demolished. By rotating these key pathways, the design employs spatial strategies to reestablish equitable access across the site, addressing the research objective of public perception of the site. This design exploration investigates integrating existing mobility networks, such as the Northwestern Cycleway, the Light Path, and Karangahape Station, into the intervention. It also explores the human-ecological relationship through dedicated pathways and spaces, as well as everyday engagement patterns. However, it struggles to address the research objectives regarding the project's or program's interventional impermeability.

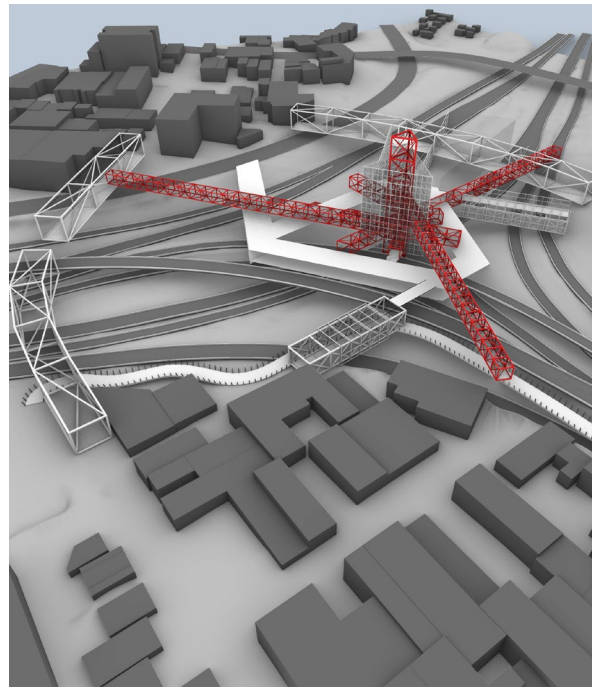


Figure 86 Aerial perspective of preliminary design explorations. Produced by author

Critical Reflection on Research Objectives

Research Objective One

Conceptual designs one and three, as well as both preliminary design explorations, address this research objective directly by reestablishing lost access routes or by integrating new pathways for equitable access across the site, thereby reconfiguring the infrastructural paradox. The second conceptual design briefly employs this research objective; however, it is not as strongly implemented as in the other design iterations.

Research Objective Two

Conceptual designs two and three, alongside the second preliminary design exploration, address this research objective by designing dedicated access routes and spaces for human engagement with the ecological environment within the interstitial green spaces of the motorway junction. However, the first conceptual design iteration and the first preliminary design exploration struggled to implement these interaction spaces and pathways.

Research Objective Three

Conceptual designs two and three, along with the preliminary design explorations, address this research objective by integrating accessibility routes influenced by the pre-existing roads and the view shafts of external heritage sites. By incorporating the site's layered history, these concepts reframe public perception of the site, thereby restoring a portion of its lost identity. The initial conceptual design integrates these historical connections to a certain extent; however, it is not as robust as the other designs.

Research Objective Four

This research objective was not fully implemented in any of the conceptual or preliminary design iterations. While some suggestions regarding programmatic typologies and the formality of architectural spaces were investigated, they did not translate clearly into the designs.

Research Objective Five

Similar to research objective four, the adaptable programmatic elements or the interventional impermanence were not addressed to the detail required to achieve the goals of research objective five. The third conceptual design, as well as both preliminary design explorations, briefly investigated these elements, but they were not effectively integrated into the designs.

All the research objectives regarding the aims of spatial justice and programmatic permeability will be further explored in the developed design chapter, with a particular emphasis on the programmatic elements of the architectural intervention.

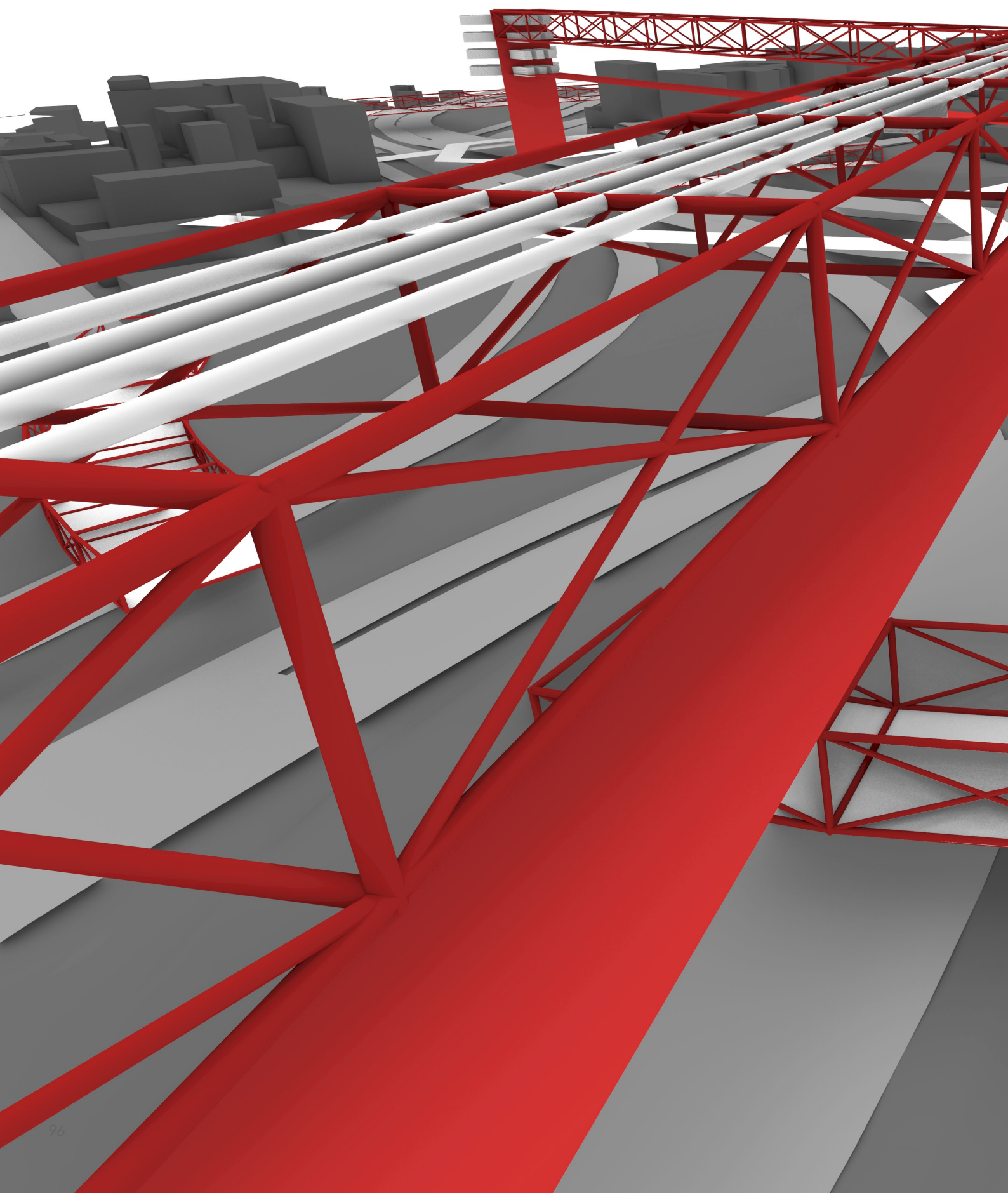
Critical Evaluation and Commentary

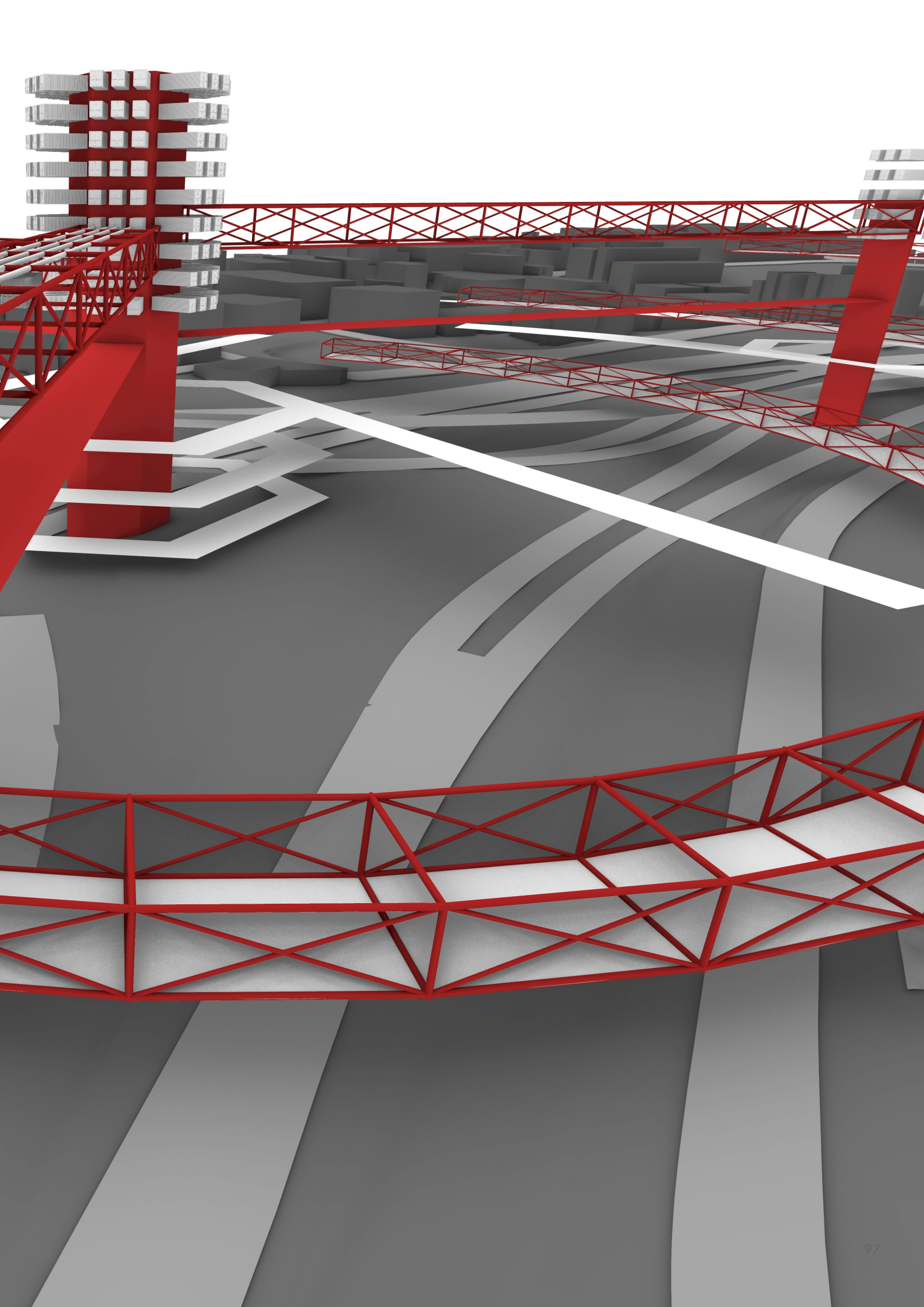
This design chapter successfully conducted a series of iterative conceptual tests to establish a foundation for the architectural intervention. These design experiments were evaluated against the research objectives outlined in this thesis, with strengths and weaknesses noted.

The conceptual design phase provided a strong foundation for the project through a series of iterative tests and experiments. These design iterations primarily investigated the intervention's positioning within the site and the scale of its essential components. The preliminary design explored massing and conceptual forms, refining them to better meet the research objectives.

A significant challenge encountered during these design phases was the scale of the project context. The designated site encompasses approximately 12 hectares of the motorway junction, with one-third allocated to residual spaces between the infrastructure that remain underutilised. Alongside the research objectives, an additional goal of these conceptual and preliminary design explorations was to evaluate intervention strategies that incorporate as many of these areas as possible, while ensuring that design considerations account for human-scale interactions within the architecture. These design explorations struggled to engage with the programmatic permeability research objectives, focusing instead on the aim of spatial justice. The programmatic research objectives will be explored in greater detail in the developed design phase.

CHAPTER FIVE : **DEVELOPED DESIGN**



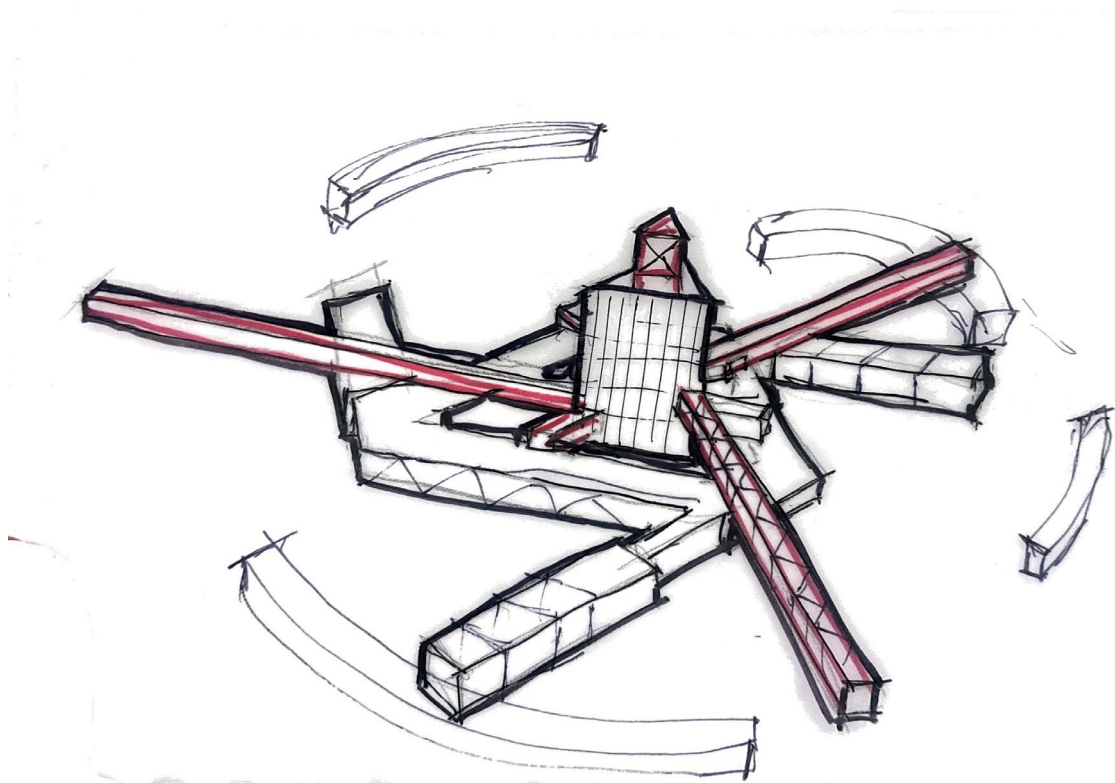


Developed Design

Introduction

Following the preliminary design phase, the developed design focuses on achieving the programmatic permeability research objectives by curating an adaptable network of micro-programmes that balance informal and formal engagement. This chapter will additionally examine strategies that may enhance the design's alignment with the research objectives of spatial justice. These strategies include reinforcing the restoration of equitable access routes and human-ecological relationships, as well as reframing public perception through the integration of the site's internal and external historical relations.

For the developed design phase, the second preliminary exploration was selected for further investigation. Following the iterative development of the design sketch, the concept was further refined through digital modelling. With a common critique being the lack of programmatic definition and refinement, a final precedent was investigated to address the programme research objectives.



//Note: Images are indicative of conceptual ideation and will be refined and clarified for Pin Up

Image redacted for copyright purposes, contact author for details and image rights.

Inspiration from Cedric Price "Fun Palace" informed the development of a network of programmes that physically move through the intervention, allowing for a temporal experience of the site that encourages repeated interaction.

This inspired the idea of a central hub for the programmes to be situated when not in use, readily available for implementation.

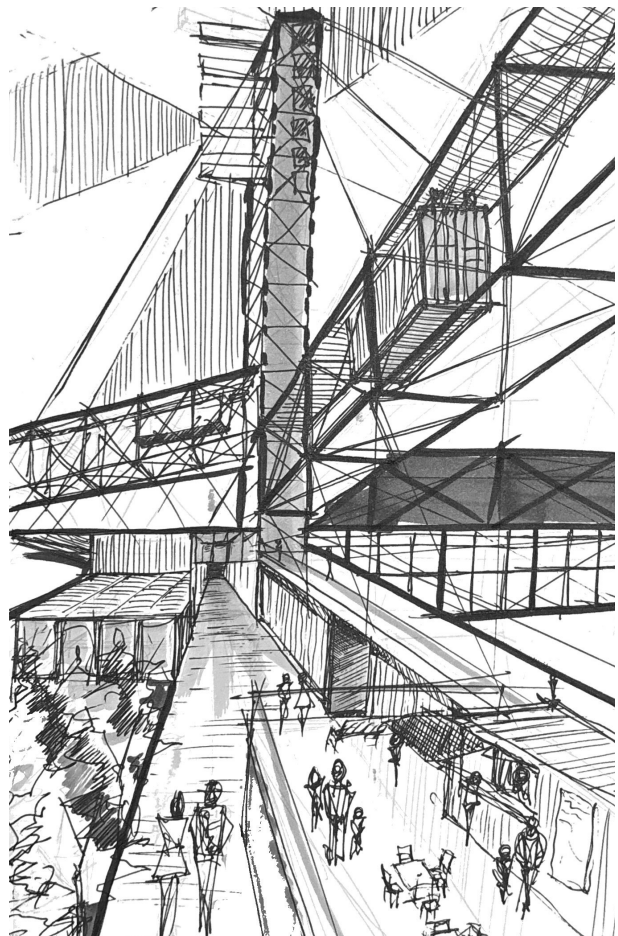
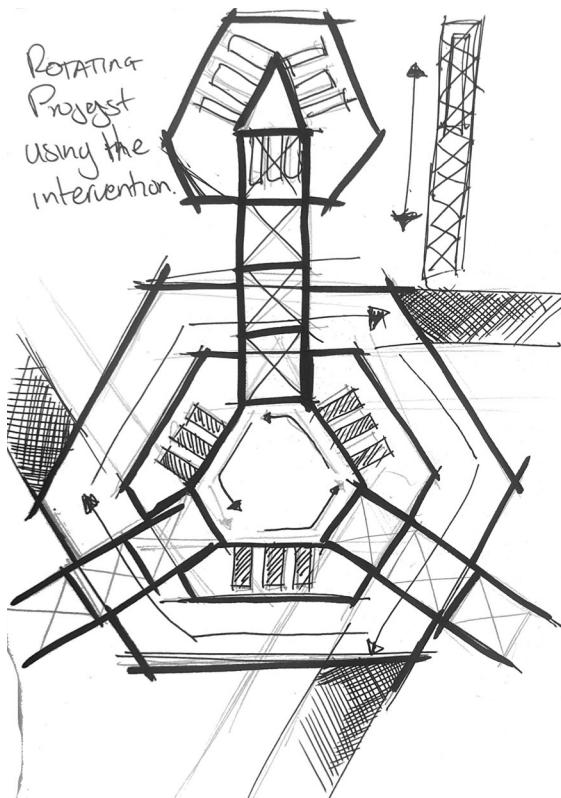


Figure 87 (previous) Perspective image of developed design outcome. Produced by author

Figure 88 (left) Sketch of preliminary design exposing the lack of programmatic elements for exploration. Produced by Author

Figure 89 (top) Cedric Price fun palace as a precedent for the transitional and rotating programmatic elements of the intervention. (Medium, 2014)

Figure 90 (bottom) Iterative sketches for developed design ideation.

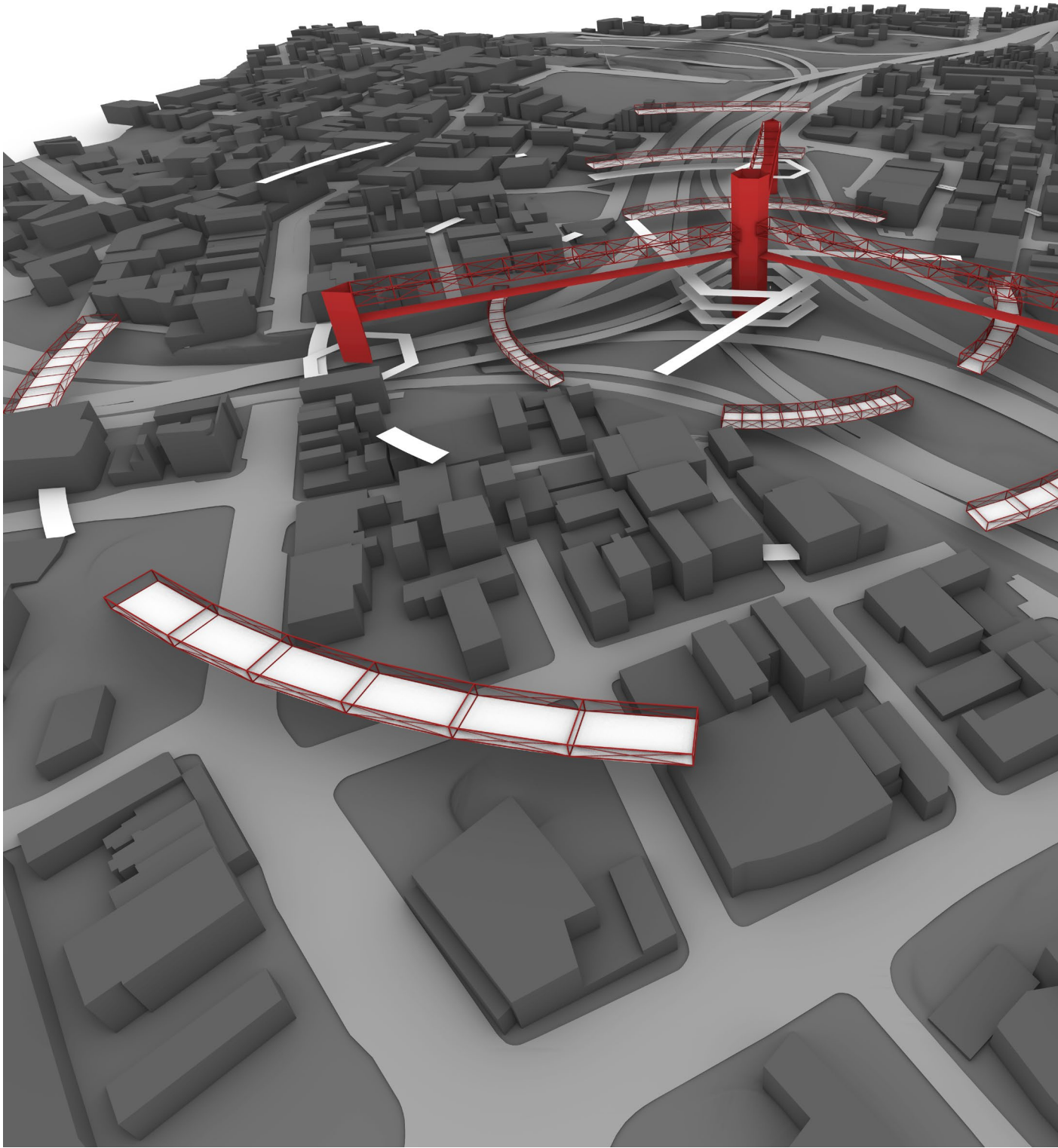


Figure 91 Aerial perspective image of developed design concept. Produced by author

Developed Design Outcomes



A developed design outcome that addresses all the research objectives is crucial to the success of this thesis. The iterations explored in the conceptual and preliminary design chapter primarily focused on engaging with the research objectives of the spatial justice aim. Therefore, the developed design exploration aimed to address the programmatic research objectives by resolving issues of interventional impermanence and everyday use patterns, and by establishing a balance between formal and informal engagement with the architecture. While the programmatic elements of the architectural intervention are important to the project, the aims of spatial justice cannot be neglected. This design addresses the spatial strategies by integrating successful elements from the second preliminary design exploration. By continuing to incorporate the axes of historical roads within the site, engaging with the wider city's heritage landmarks, restoring equitable accessibility across the site, and integrating human-ecological relationships, this design outcome successfully addresses all the research objectives. The architectural language explored in this developed design establishes a geographical centre of the site, from which the connective axes extend to meet a series of programmatic docking stations. These docking stations also draw inspiration from the second preliminary design, in which the structure that held the atrium is reshaped to accommodate modular programmatic structures influenced by the design of Boxed Quarter in Christchurch. Unlike in the preliminary design, these axes do not act solely as pathways from the site boundaries to the centre. Instead, they serve as a structure for transporting programmes from the site's centre to the different stations across the site. Pathways leading to the centre remain interconnected beneath this structure, offering a distinctive visual experience of programmes transitioning across the site and being strategically positioned for suitable rotations of functions. Using the project's geographical centre as a reference point, a network of radial accessibility routes within a five-, ten-, and fifteen-minute walking radius serves as an urban landmark that intersects with the road networks around the site, encouraging commuters and visitors to follow the architectural language towards the intervention.

The following images are indicative of the conceptual ideation; structural refinements, aesthetics, and population within its context will be developed in preparation for the examination.

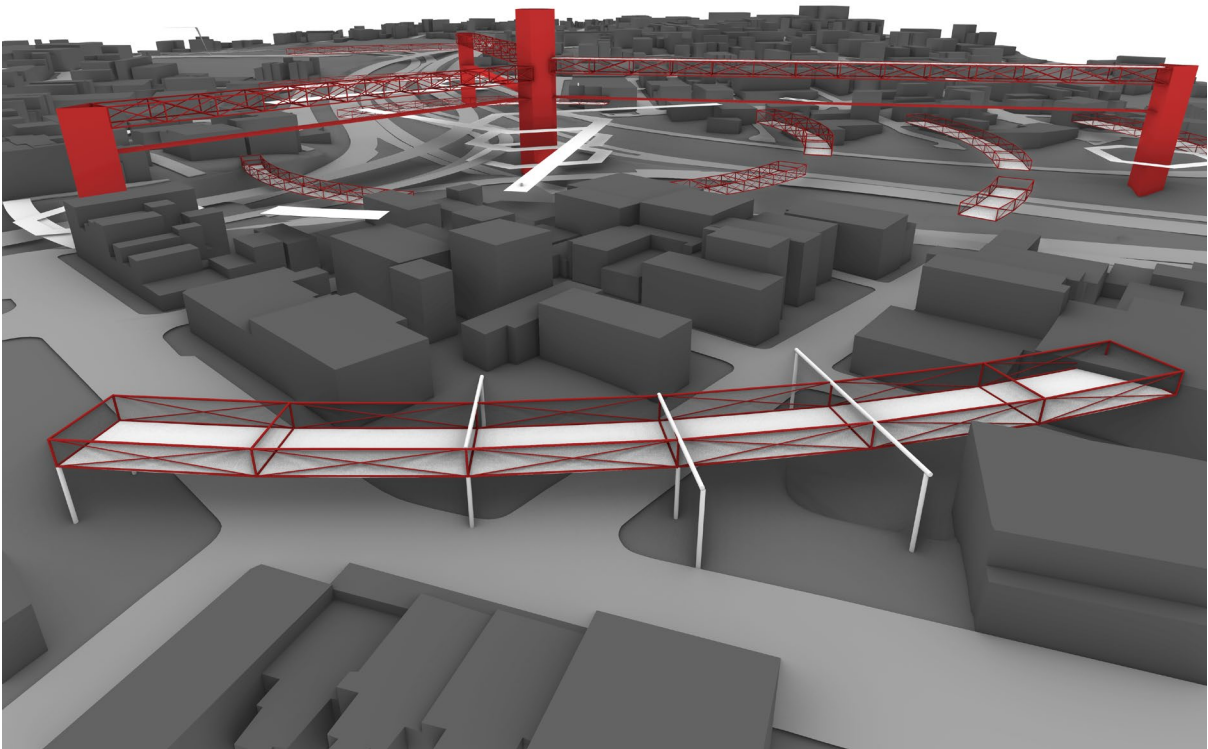
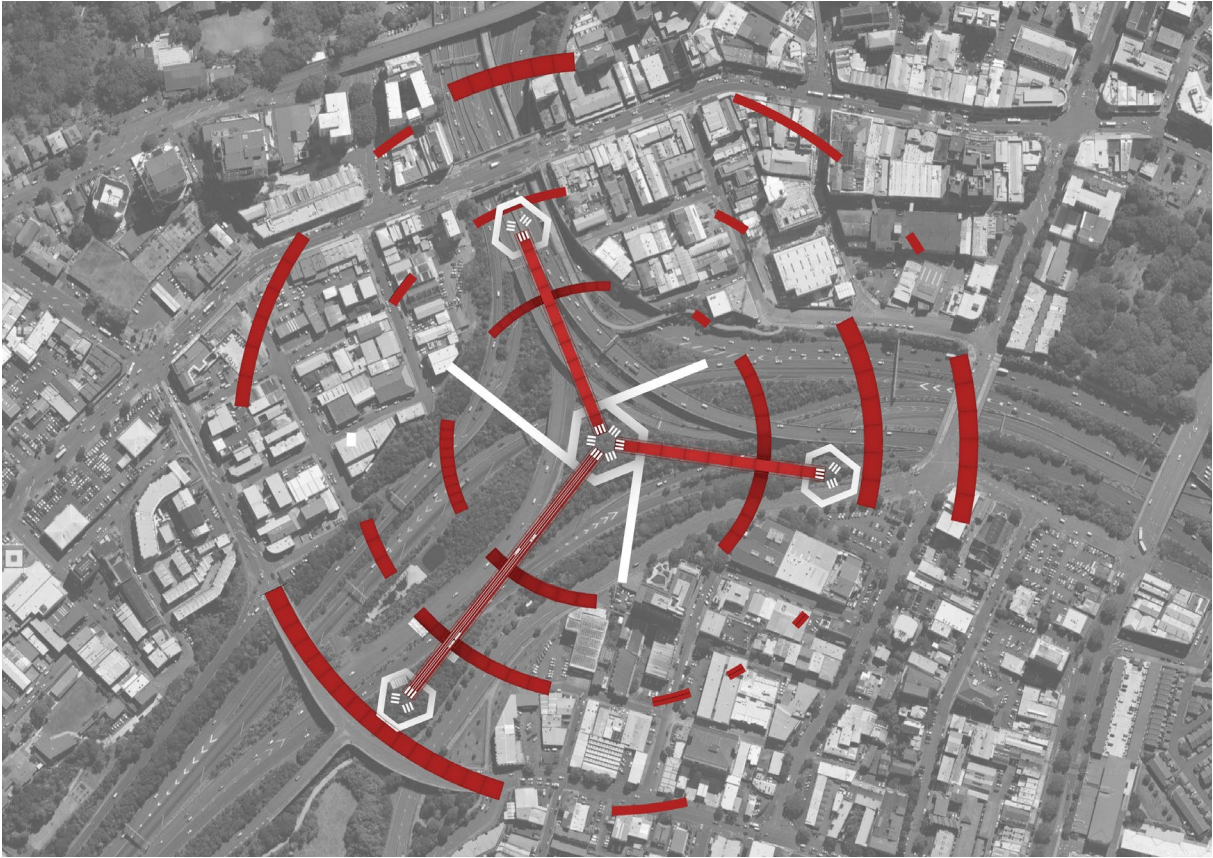


Figure 92 (top) Plan view of developed design outcome overlaid with satellite imagery of the site.
Figure 93 (bottom) Perspective image of the intersecting integration of interventional elements within K Road and Newton Road.

Boxed Quarters

Initially, shipping containers were considered for the storage and rotation of programmatic elements; however, a project based in Christchurch identified an alternative solution that addresses modularity and adaptability. Boxed Quarter was a mixed-use commercial project that was developed following the 2010 Christchurch earthquakes. It was an innovative modular system that created space for community programmes, using a steel-framed boxed system that housed a variety of functions.

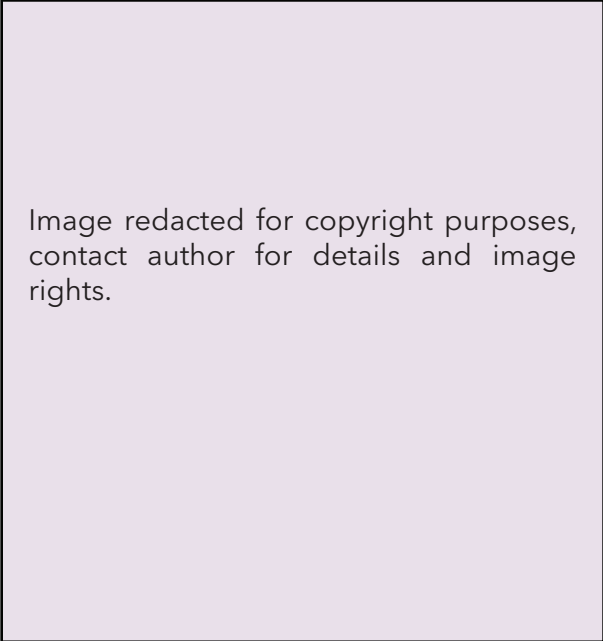


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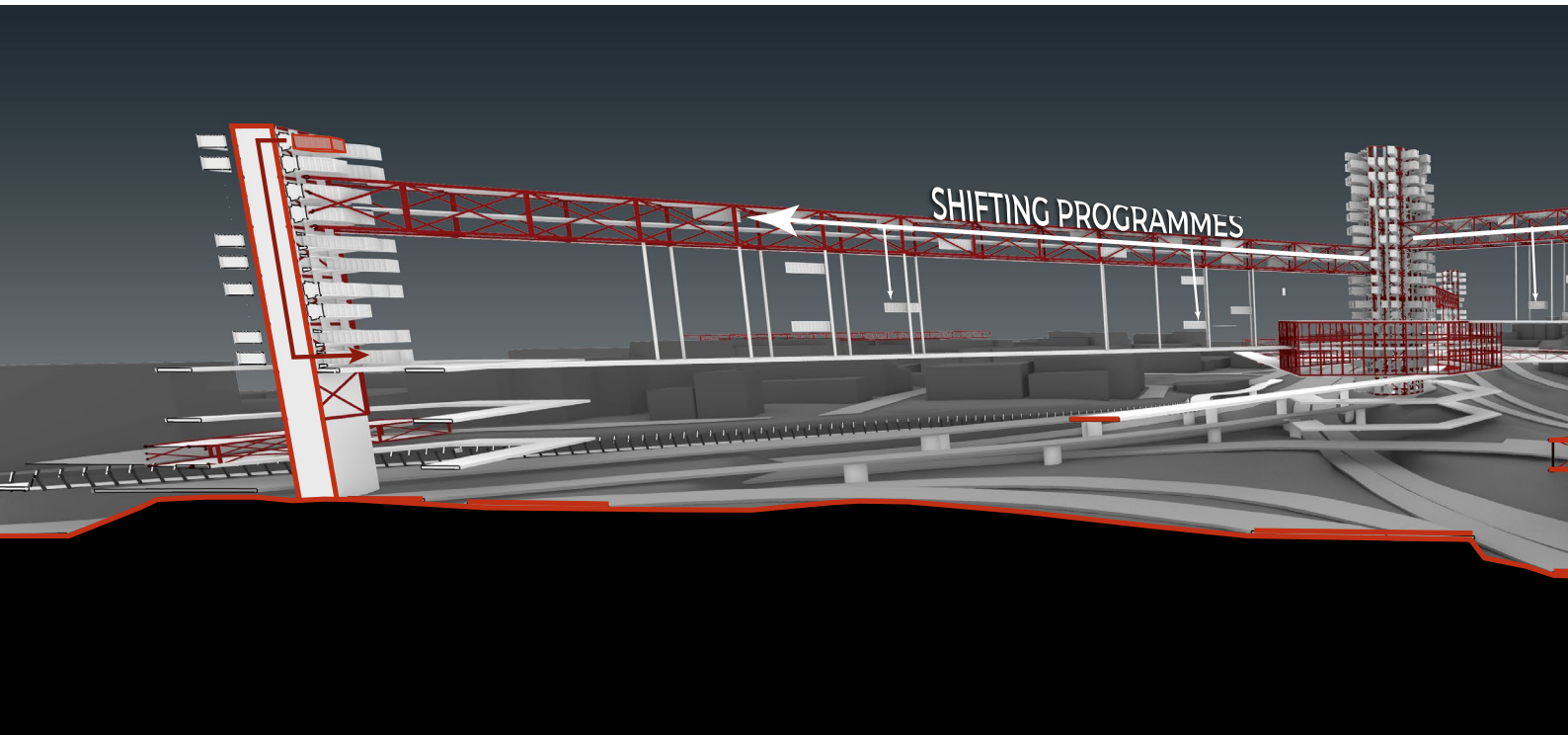
Programmatic Modularity Potential

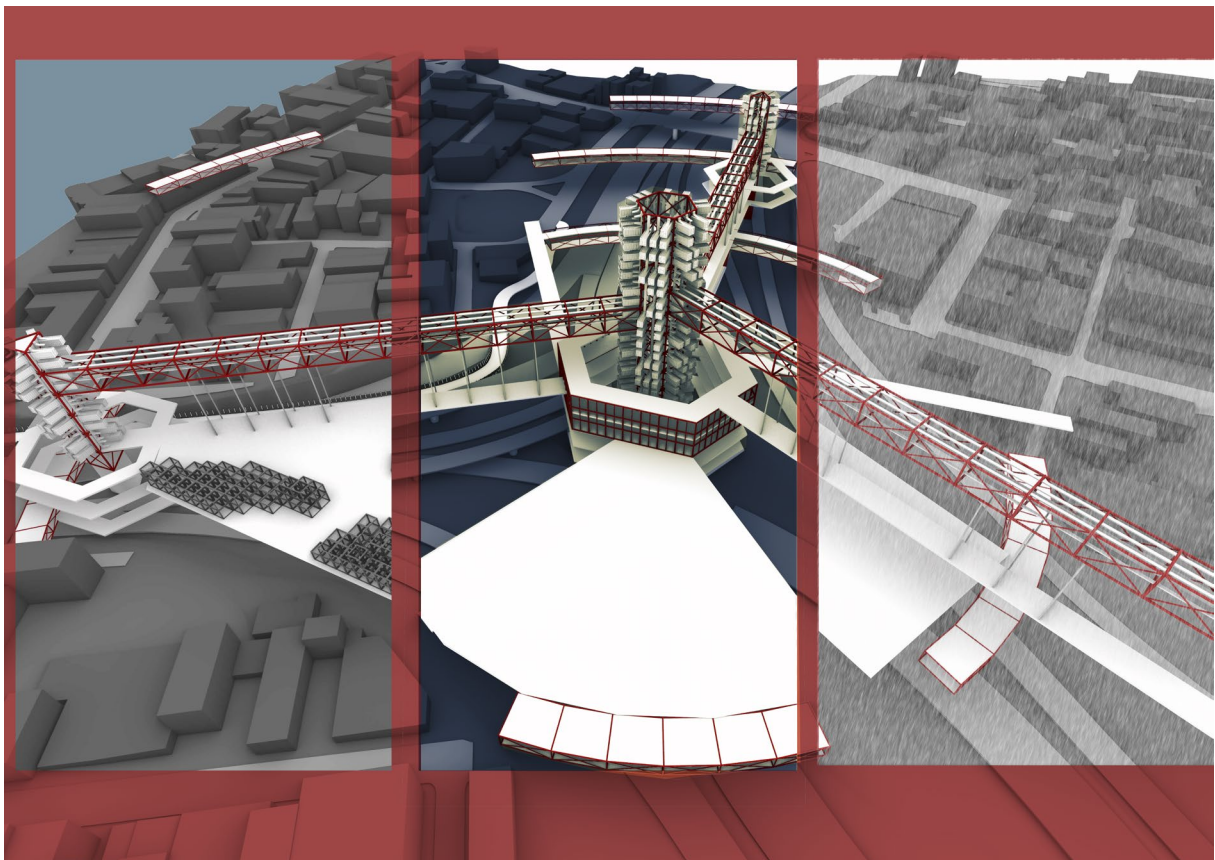
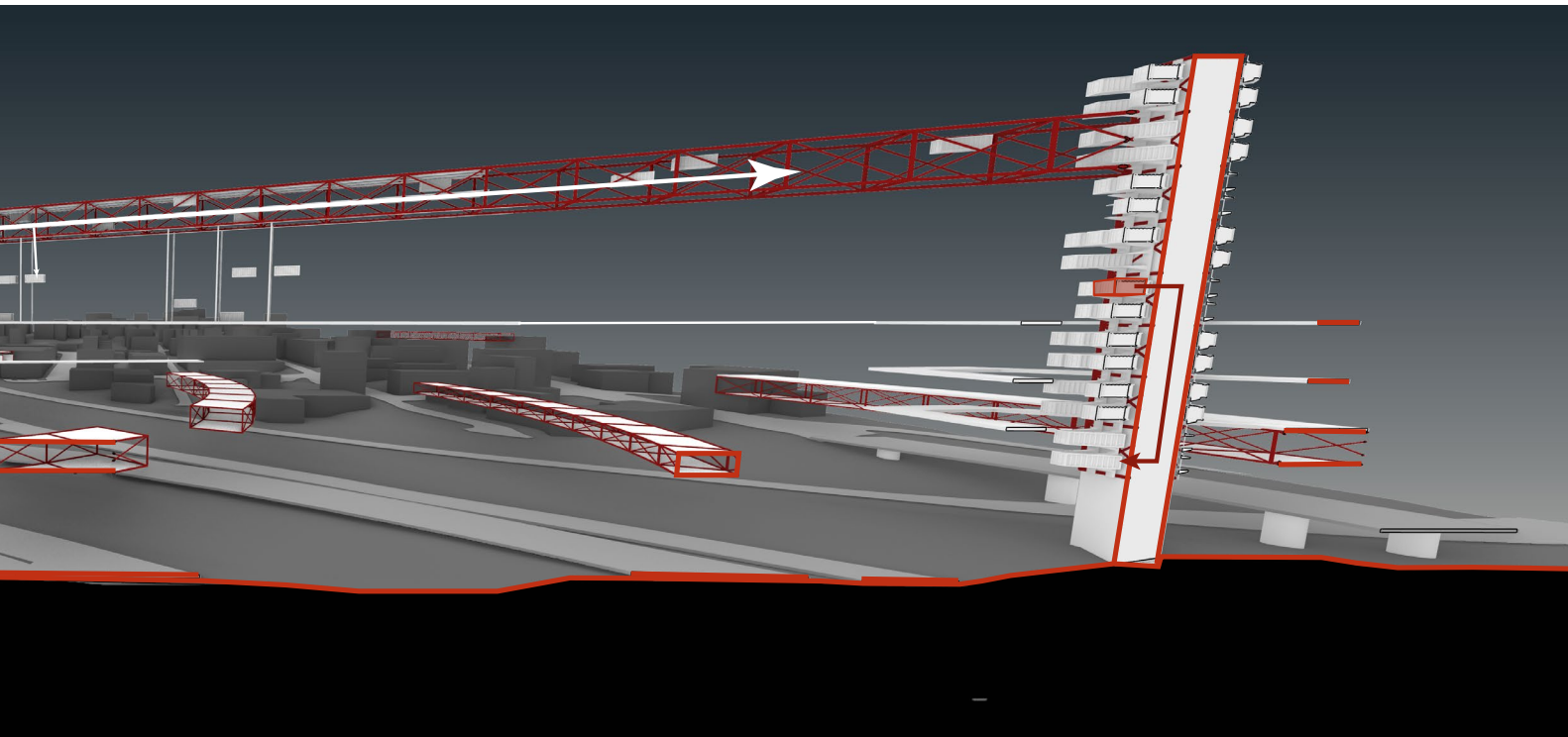
Programmatic curation and temporality play a key role in this design exploration, with the storage and distribution of modular programme structures under the community's control. The structural framework developed by Field Studio opens the door to truly adaptable programmatic opportunities. These modular spaces, in conjunction with the architectural intervention's structural elements, allow for the exploration of temporal frameworks to encourage repeat engagement with the site and the project. These structures can facilitate a wider range of programmes than that of shipping containers, which are commonly explored as architectural design languages for adaptable functions. Containers offer a transportable form that can be maneuvered with ease; however, they require significant additional development to both their interior and exterior before producing spaces that can be interacted with. The modular system in Boxed Quarters provides equivalent versatility to shipping containers through its interlocking capability and can be adapted to accommodate programs with considerably greater ease.

Figure 94 (top) Boxed Quarters project Christchurch (Field Studio, 2014)





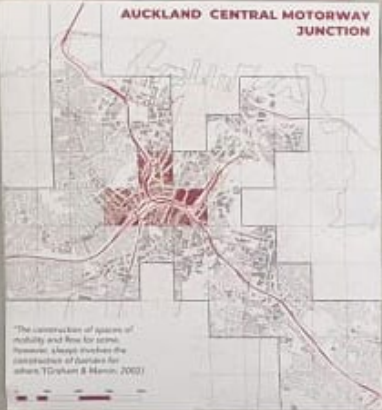




RE-STITCHING URBANISM: Reclaiming Urban Voids Through Architectural Intervention

How can a design-led intervention at Auckland's Central Motorway Junction transform it from an infrastructural void into a connective civic landscape, rebalancing spatial inequities while integrating a layered programmatic system for everyday engagement?

In a city where urban environments have been a key issue since the 1970s, the project aims to address the increasing number of urban voids on the east side of the city. The project is a design-led intervention that aims to transform the Auckland Central Motorway Junction into a connective civic landscape, rebalancing spatial inequities while integrating a layered programmatic system for everyday engagement.





Critical Reflection of Developed Design Outcomes

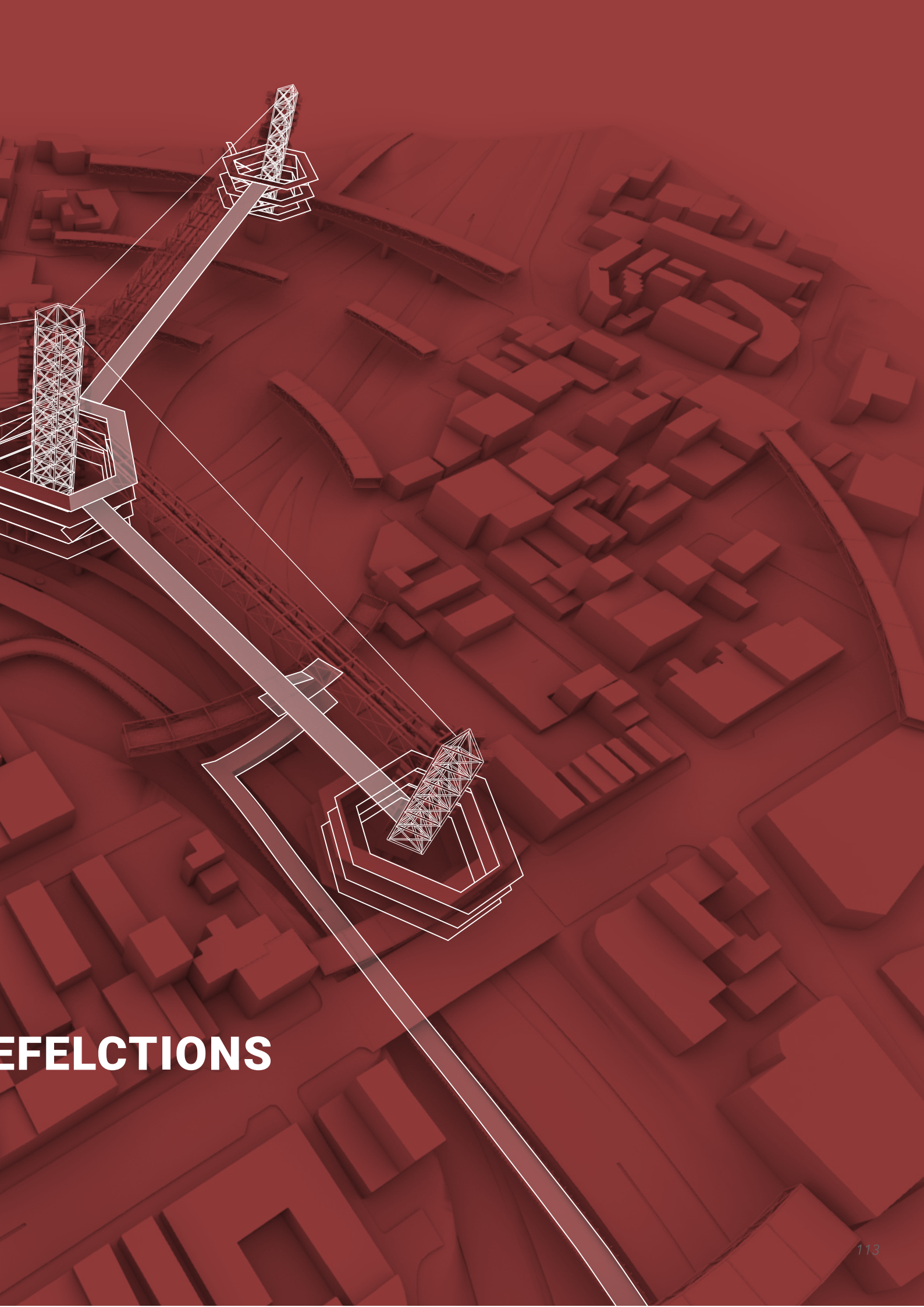
This developed design outcome produces equitable accessibility through spatial strategies that restore connectivity within the site. This is achieved through connective mobility networks for pedestrians and cyclists, addressing RO1. This design exploration also investigates design strategies to balance daily engagement, through formal and informal programmes, their distribution and their adaptability, Addressing RO2 and RO4. It establishes micro-programmatic configurations that respond to social and spatial needs, rotating programmes for daily, weekly, and seasonal activities; encouraging everyday patterns and allowing the architecture to evolve through interventional impermanence, addressing RO5. Finally, this design outcome reframes the public perception of the motorway junction as an inclusive landmark that intersects with the roads around the site, drawing people's attention to the interventional architecture that challenges the infrastructural paradox, addressing RO3

The design outcome in this chapter addressed portions of all the research objectives and have resolved major problems the thesis set out to investigate. However, some aspects of the research objectives present opportunities for the design development to improve. The developed design outcome briefly addresses the human-ecological relationship and the engagement with the interstitial green spaces within the motorway junction, however, it does not propose a clear method or integrated the potential uses of these green spaces into the final design. There are pathways for people to engage with the spaces, but there is no clear use of these spaces defined, rather they are only suggested.



CHAPTER SIX : CONCLUSION AND RE

REFLECTIONS



Summary of Findings

This thesis aimed to investigate the correlation between the paradoxical nature of infrastructural networks and the spatial injustices they produce at Auckland's Central Motorway Junction. Key findings from the literature review indicate that the construction of motorway systems creates social, spatial, and cultural barriers. The precedent review highlighted methods implemented to transform infrastructural systems across a range of urban contexts, addressing the formal and informal nature of these projects and the importance of balancing them to ensure a successful intervention. Following the literature and precedent review, the theories and methods were situated within Auckland through a contextual and programmatic investigation. The contextual analysis explored how the infrastructural paradox, and the spatial injustice it creates, is particularly relevant to Auckland's Central Motorway Junction. The analysis revealed a hidden history to the site that has not been documented or addressed as much as other infrastructural developments,

such as Robert Moses' urban planning developments. This section identifies the evolution of the site as the motorway junction was constructed and documents the lost residential zones as well as the pre-existing roads that acted as a connective network across the Newton Gully. Through this analysis of pre-existing and current mobility networks, this section explores the potential for equitable accessibility routes for direct pathways across and within the site. The programmatic analysis investigated the fixed functionality of the surrounding landscape and explored the opportunities for temporal overlaps within the architectural intervention. Through an investigation into potential programmatic elements, this section explores their temporality within a daily, weekly, and seasonal rotation. The investigation of theories from the literature, and the examination of Auckland's motorway junction within their conceptual perspective, in conjunction with the research objectives of the thesis informed the design chapters.

Critical Reflection

This thesis investigates a pertinent topic for the future of urban environments through a design-led interventional approach. The infrastructural paradox is a theoretical problem that is relevant globally and can be used to interpret most transportation centric infrastructure. This thesis explores how urban planners have prioritised the infrastructural requirements for vehicular mobility while neglecting the need for integration of systems that support mobility at a human scale into infrastructural projects.

This investigation uncovers the history behind the construction of Auckland's motorway junction, revealing the demolition of approximately 15,000 dwellings and the displacement of nearly 50,000 people from the residential zones of the Newton Gulley. It also reveals the impact of the infrastructural construction on the historical Symonds Street Cemetery, where over 4,000 bodies were exhumed, cremated and

returned to different sections of the cemetery. The research conducted in this thesis demonstrates how an architectural intervention can restore identity and spatial justice to sites such as Auckland Central Motorway Junction.

This research also explored urban theories that related to the integration of programmatic interventions within urban environments. Through an exploration into theories such "places for staying and spaces for walking" (Gehl, 2011), as well as theoretical concepts of "organised complexity" and "Sidewalk ballet" (Jacobs, 1961), this thesis demonstrated the potential of finding a balance between formal and informal programmatic curation to produce environments for social and spatial interaction. By integrating theories of urban continuity, this thesis creates opportunities for restoring inhabitation to this infrastructural void.

Evaluation of Spatial Justice Research Objectives

Spatial Justice

RO1: *To reinterpret the infrastructural paradox produced by the motorway junction. Exploring spatial strategies that restore continuity, permeability, and equitable accessibility to a severed urban landscape.*

This thesis examined this research objective through a comprehensive review of existing literature and precedents addressing the urban barriers created by motorway junctions, and contextualised the infrastructural paradox of Auckland's Central Motorway Junction. This investigation was implemented through the restoration of equitable accessibility routes to the motorway Junction across the design phases and into the developed architectural output.

RO2: *To reconfigure the human and ecological relationships within the motorway landscape and its interstitial pockets of green space. Examining design strategies that balance everyday engagement and reintroduce conditions of spatial justice.*

The ecological relationships within the motorway landscape were examined in this research's contextual analysis through an assessment of residual spaces, including the interstitial green areas

within the site. These were calculated to ascertain the distribution of ecological areas and motorway infrastructure. The design exploration, however, struggles to fully engage with this research objective. There are instances of integrating these spaces into the intervention, but they do not directly address human-ecological relationships. This avenue would need to be explored in future research for this thesis topic.

RO3: *To reframe the public perception of the motorway as a placeless void into an inclusive urban landmark. Exploring the layered histories of the site and infrastructure, while restoring a sense of spatial belonging.*

This research addressed this objective through a review of theoretical perspectives and concepts on the urban voids that are produced by motorway infrastructure, such as concepts of non-places (Auge, 1995), lost spaces (Trancik, 1991) and abstract and lived spaces (Lefebvre, 1991). This research objective is addressed through the contextual analysis of the motorway junction, which revealed the site's historical identity. These findings from this investigation were integrated into the design development through the reintroduction of historical pathways, reestablishing the connective nature of the pre-existing site.

Evaluation of Programmatic Research Objectives

Programmatic Permeability

RO4: *To explore temporal frameworks that support permeability between programmatic typologies. Facilitating informal dynamic transitions within a formalised architectural intervention.*

The research into the temporal frameworks for a permeable programmatic intervention was conducted through an analysis of existing functions at the boundary of the infrastructural site to determine the potential for a curated, adaptable programmatic system that balanced formal and informal engagement. The conceptual and preliminary design phases struggled to engage with this research objective and centralised their focus on the site's accessibility, ensuring an intervention that advocates for equitable mobility. The developed design revisited this research objective and extensively investigated the distribution and permeability of the programmes. Resulting in a design that accommodates the temporal framework for transitional programmes and produces an intervention that balances formal and informal interaction with the site.

RO5: *To establish and understand strategies for adaptable micro-programmatic configurations that respond to social and spatial needs as well as the patterns of everyday use, allowing the architecture to evolve through interventional impermanence.*

This research objective, similarly to the previous, was not fully engaged with in the conceptual and preliminary design; however, it is addressed in the developed design outcome through a system for interventional implementation that allows for the rotation and substitution of programmes as required for daily, weekly, and seasonal patterns of use. The configuration of these programmes was investigated in the programmatic analysis, where their functions were grouped into three categories based on temporality. Additionally, two types of interaction with the project were classified, fleeting and active, to determine the temporal and spatial distribution of the programmatic elements within the intervention.

Answering the Research Question

This thesis demonstrates that a design-led intervention at Auckland's Central Motorway Junction can transform the site from an infrastructural void into a connected landscape. It explores how the strategic reintroduction of equitable accessibility routes, ecological engagement, and programmatic interventions can restore social and spatial interaction to a previously inequitable system. Through a research-led design methodology informed by theoretical concepts of spatial justice, paradoxical infrastructure, and urban continuity, this project reframes the motorway junction as an urban asset rather than a residual product of mobility infrastructure. Spatial and ecological inequities are addressed by reactivating residual zones, encouraging human interaction with previously exclusive spaces. The architectural intervention developed in this project restores spatial and ecological equity, reconfiguring the junction from a transitional space into one of inhabitation, participation, and spatial justice. This thesis demonstrates the potential for architectural interventions to recalibrate infrastructural landscapes into equitable urban spaces for the future.

Limitations and Scope

This thesis proposes a speculative design resolution to the infrastructural paradox and therefore disregards the pragmatic and logistical problems that would arise during the development of the concept. As a result, the structural elements and safety precautions that would otherwise be required are outside the scope of this project. Similarly, the logistics of the adaptable programmatic interventions and their distribution, as well as the pragmatism of the programmes themselves, are not the focus of the design and are outside the scope of the thesis.

Due to the scale of the motorway site, it was not realistic to investigate the motorway junction in its entirety; an appropriate section of the motorway that showed potential for an architectural intervention was selected to accommodate the available timeframe for completing the thesis.

Going Forward

Further research into the reconfiguration of motorway systems, such as Auckland's Central Motorway Junction, could be explored through two distinct pathways. One pathway involves investigating a pragmatic approach to an architectural intervention at the site, including a comprehensive examination of the structural components and the integration of a modular, programmatic system. An alternative pathway entails exploring the site within a speculative future where vehicular mobility infrastructure becomes obsolete. In this prospective scenario, the architectural intervention could serve as a foundation for the development of social spaces within an infrastructural landscape.

Further research into such sites could examine the modular nature of the interventional architecture itself. This investigation could consider an intervention wherein components function as an installation that can be adjusted or relocated as necessary to activate urban spaces across various locations in both Aotearoa and globally.

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