



Rethinking: Humanizing: Isolation: Aotearoa New Zealand (A Novel Approach to Design)

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Abstract:

Our modern, globalised world is more vulnerable to infectious diseases that can spread voraciously—globalisation has aided the rapid spread of diseases and increased the frequency with which goods and people are transported across borders. Infectious disease pandemics are not a new phenomenon, and their global spread has occurred throughout history, notably the "Spanish Flu" post first world war, and more latterly, MERS CoV (2012), and specific regions and countries. A decade later, the SARS CoV-2 (Covid-19) coronavirus pandemic assailed humanity as a global phenomenon.

Over six million people have died as a result of the novel airborne disease. The pandemic has put unprecedented strain on the healthcare infrastructure and the hotels that were designated as Managed Isolation and Quarantine (MIQ) facilities within Aotearoa, New Zealand. Growing evidence suggests that if purpose-built quarantine facilities that followed best practice design research guidelines had been in place prior to the outbreak, the pandemic's effects could have been significantly reduced.

The role of architecture in mitigating future infectious disease outbreaks and the resulting impact on society will be explored in this project by designing spaces that prioritise health and safety while ensuring patient/resident well-being is at the core of the design. Architecture can aid in infection control through design and promote health and well-being. Biophilic design elements, natural light, air quality circulation, and appropriate building materials have all been shown to improve well-being outcomes. This research-by-design project will put well-being-focused design strategies to the test in order to create a successful health and well-being facility. This research could help reimagine how spaces are designed and operated using new design strategies, allowing the method to be replicated globally.

DEFINING THE ISSUE

The global pandemic has had a significant social and economic impact. Most notably, the impacts of the pandemic on mental health due to lockdown mandates, uncertainty, financial hardship, fear, and grief. Worldwide, the early governmental responses to the outbreak were soft approaches such as “social distancing.” Later, the rapid contamination rates triggered increased restrictions, including the cancelling of social gatherings in an effort to eliminate transmission. Following these restrictions, the Aotearoa New Zealand government introduced mandatory and ambiguous “lockdown” measures, and hotels were used as improvised MIQ facilities for international travelers. Enforced lockdowns were employed as a safety precaution to keep the entire population, whether sick or healthy, separated from one another. Commencing on 21 March 2020, the Government called for ‘go hard, go early’ lockdown mandates. The nation experienced a revolving door of lockdown levels and states of emergency, keeping the whole country confined to their homes, only going outside for essential supplies or exercise for many weeks and months.

In 2019 alone, the total number of travelers entering Aotearoa was close to four million. Yet, there was no facilities for dealing with arriving passengers to minimize contamination from other geographical areas. Being the largest city, with its international airport and ports, Auckland has been the gateway to many of New Zealand’s travelers and ultimately a hotspot for the initial entrance of the virus on multiple occasions. Hotel employees with limited knowledge of healthcare procedures had to quickly become ‘like hospital staff’ to support the new program of MIQ, resulting in hotel staff and other guests being exposed to the disease. Specialist healthcare, defense force, police, aviation security and government workers were brought in to manage the health focus of MIQ. Challenges arose from the multiple episodes of escapees from these five-star hotels. Residents escaped from the Pullman Hotel and Stamford Hotel on multiple occasions, and the public was alerted to these breaches via the news, consequentially treated as tacit escaped prisoners. Mental health has been a persistent concern in New Zealand's health system, most notably in the case of teen suicides. (Illmer, 2017) As defined by the world health organization, holistic health presents a viable opportunity to use this research project to facilitate New Zealand's mental health and aid the struggle in the limited space available in current health care centers. The mental health ramifications of physical isolation from society will be investigated to understand better how healing be done through environmental and therapeutic well-being.

PROJECT OUTLINE

This project proposes the design of an isolation facility in response to issues arising from repurposing hotels and motels as Managed Isolation Quarantine facilities in Aotearoa's pandemic response. The focus on mental health and well-being will be applied as an overarching research strand for a secondary function of the facility in the absence of disease. An issue commonly identified with the sanatorium concept is that they have been prone to becoming *white elephants*, underused after the absence of their primary function. To secure long-term practical value, a mental health retreat, an amenity that Aotearoa needs, will act as a secondary function to the project. The project aims to use architecture as an agent to minimise the risk of transmission of airborne infectious particles, respiratory viruses, and disease; acknowledge the health and safety requirements to ensure staff safety, staff effectiveness and staff quality of care to the patient; use the built environment to promote humane care and holistic well-being. The Health and safety outcomes will be paramount, including site appropriateness, considering contextual relationships such as the environment, circulation of patients transitioning through the facility to reduce contamination, logistics, and a ventilation system. Because of the rich Māori history of the chosen site, acknowledging Māori heritage in the Mangere suburb is an essential aspect of the project's design.

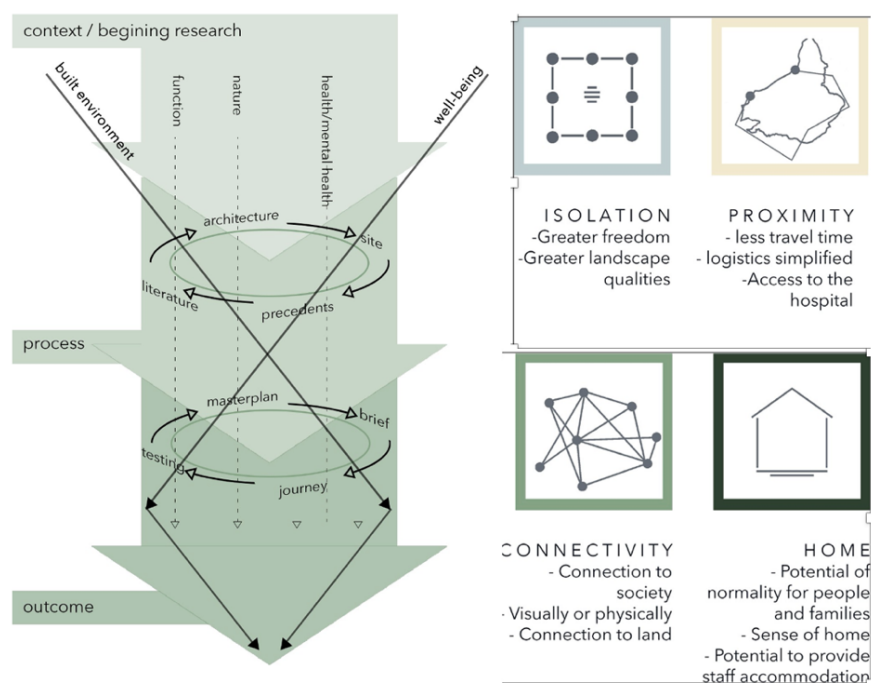


Figure.1: Left diagram of research methodology, and Right: diagram key points and criterion for isolation, proximity, connectivity, and home. Ladegourdie

STATE OF KNOWLEDGE

Isolation has proven to be an essential component of the response to infectious disease spread. As Wellington Intensive Care Units (ICU) specialist Dr Alex Psirides describes, not overburdening hospitals with occupants whom a MIQ facility can manage would be beneficial to the hospital's capacity for ill patients. (Psirides, 2021) Given the current global pandemic, there is a strong need for these, and the evidence for their value is clear. Sanatoriums were the first type of revolution, ushering in a new era of design purity for modernist architecture. In the twenty-first century, most factors contributing to disease emergence will continue, if not intensify. "These include social factors (such as a lack of adequate health care[...], demographic factors" (ageing population, and urbanisation), and "environmental factors (global climate change, lack of adequate sanitation and land-use practise that result in human contact with previously remote habitats, and microbial evolution)". To address these challenges, the public health community must devise long-term strategies.(Vlahov & Bloomberg, 2010, p. 119) The programme benefits from using the theory of holistic well-being as an agent to promote health in a quarantine facility. These ideas imply that there is no need for strict medical assistance and confinement; instead, patients can use isolation as a temporary barrier before being released into the general population.

RESEARCH METHODOLOGY

The three anchor points used throughout the project are health, nature and function. The project will explore three anchor points as the research is collected for the context: literature, precedents, site exploration, and design principles. The research continues to reflect on the project's core anchor points to ensure they always lead the way. Health: the project's systematic journey is a compilation of research on health practices, facility organisation, and humanising concept outcomes. Nature: understanding the relationship between nature and research fields, the built environment, and well-being is a prominent core anchor as the research is developed. Function: because the project's function is the critical context, the research must investigate the functionality of the chosen programme. To ensure that the design's functionality is met, several precedents with similar functions but ultimately different facilities, literature, and design principles must be examined

QUARANTINE, HEALING ARCHITECTURE, BIOPHILIC DESIGN

The fundamental element of quarantine is physical separation from society and the creation of isolated living conditions in order to achieve health certainty. John Cacioppo's research focuses on cognition, social neuroscience, and well-being in the absence of human interaction. Cacioppo's analysis is based on humans' need to create communities and social context for positive mental health. (Cacioppo &

Hawkey, 2009) More specifically, it is important to specify the difference between objective social isolation and perceived social isolation (loneliness.) Objective isolation is the physical aspect that leads individuals to experience perceived social isolation. A study at Kings College in London, Cacioppo uncovered that; most studies reported: “negative psychological effects including post-traumatic stress symptoms, confusion, and anger”(Brooks et al., 2020) due to physical quarantine and isolation. Perceived isolation may lead to long-term adverse physical effects of: “elevated blood pressure, rise in cortisol levels, physical activity, perceptions of the neighbourhood environment, and changes in life satisfaction across a lifetime.” (*Loneliness and Social Isolation Linked to Serious Health Conditions*, 2021)

Stephanie Pilat’s chapter in *Healing Spaces, Modern Architecture, and the Body*, explains the complexity of achieving such a facility; architects must avoid equating the concept of separation to the extreme of restraint. The most crucial challenge architects must consider is “how to balance the desire for separation with the need for openness and connectivity”. (Schrank & Ekici, 2017) The inquiry into isolated living indicated that connectedness or connectivity is an important feature that functions as a humanising agent in a facility. The objective of quarantine presents apparent limitations in creating a facility that overcomes “objective isolation” to promote physical connectivity. The design exploration will seek to create a connected environment or “sense of community” through architecture while preserving safe, physical separation between inhabitants. Sarah Schrank and Professor Didem Ekici observe psychiatric institutions and explain the negative impacts of “patients being forcibly confined” to an isolation cell, restricting their liberty. Whereas upon observing the ‘first-class’ patient isolation units, Schrank et al described that their stay takes on an entirely new meaning of positive isolation. (Schrank & Ekici, 2017, pp. 96–98) An extensive and growing field of research attests to the correlation between the natural environment and positive emotional well-being and physical health. (Campbell, 2005) Evidence from researchers at the University of Auckland have suggested that the effects of isolation and quarantine on New Zealanders’ mental well-being are unknown, “but are expected to pose a profound threat to psychological health. (Gasteiger et al., 2021) Biophilia hypothesis explains human’s primitive captivation of nature, calming sensations and sensory stimulants through natural environments and has since been used within the architectural field to design nature-filled and inspired architecture. This design theory adapts the notion of salutogenic health theory focusing on the positive attributes of regenerative health. promoting “connectedness, coherence, empathy and helping patients through a natural recovery”.(Browning et al., 2014, p. 52) Kellert had firm opinions on nature's effects on our physical and psychological well-being.(Kellert et al., 2008, p. 15,63) and are credited with pioneering the now-ubiquitous concept of biophilia as an intrinsic connection of humans to the environment.

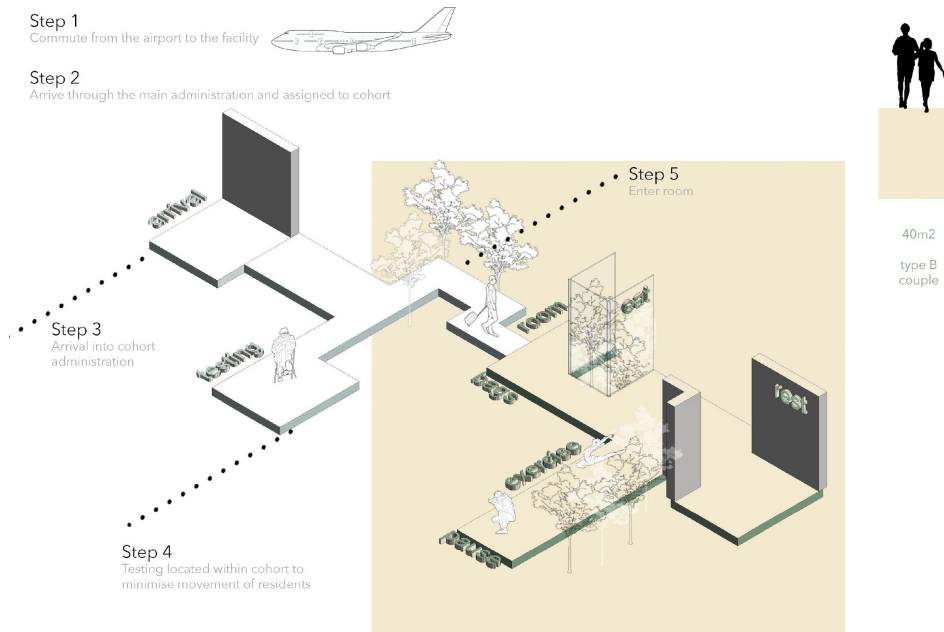


Figure.2: Schematic Journey airport to MIQ facility, Ladegourdie

CONCLUSION

To summarise, the primary goal of this research project was to identify the methodologies needed to construct a dedicated isolation facility promoting well-being and suggest integrating an isolation facility into the traditional city fabric. Retrofitting hotels is not ideal as it does not transcendently achieve the listed formula to humane isolation. An environment should be designed to fit the purpose with humanising design principles. Function, biophilia, well-being, architectural aspirations, and materiality are all elements that must be considered when designing a successful humane facility where isolation is the primary function, as identified by the reviewed literature and the analysis of precedents. The facility's focus on promoting holistic health and mental well-being ensures a second life where the facility will respond to Aotearoa's ever-present mental health issues as a mental health retreat in the absence of pandemics. If the project were to proceed, the Te Aranga Design Principles would be developed to analyze Māori culture and its connection to the well-being of the people Aotearoa of for further enriching design opportunities.



Figure 3. Showing connectedness, yet both Salutogenic and Biophilic elements within the design Ladegourdie

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