INTERNATIONAL ASSOCIATION FOR THE STUDY OF TRADITIONAL ENVIRONMENTS

WORKING PAPER SERIES

HOUSING AND TRADITION

Beatriz Serrazina

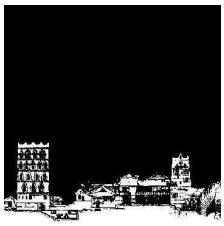
Ella Holmgren

Yura Kim, Akira Matsuyama, Akinori Kuno

Yushi Utaka

2022
Volume 323

Series Editors:
Mark Gillam
Hesham Issa
Adnya Sarasmita



TRADITIONAL DWELLINGS AND SETTLEMENTS WORKING PAPER SERIES

Volume 323
Contents

HOUSING AND TRADITION

Traditional Dwellings and Settlements
Working Paper Series

BUILDING RESILIENCE: WORKERS' VILLAGES IN LATE COLONIAL ANGOLA

Beatriz Serrazina
University of Coimbra, Coimbra, Portugal

Volume 323
Pages 1-21
2022

BUILDING RESILIENCE: WORKERS' VILLAGES IN LATE COLONIAL ANGOLA

◆ ◆ ◆

This paper critically assesses the role of workers' villages in shaping the colonial landscape in Angola. Following a genealogical approach, the paper explores the diversity of villages built in the Lunda district, where public and private powers were responsible for accommodating thousands of labourers and families. In particular, Diamang, a supra-national diamond company, appears as an important player in the (re)configuration of these places, from their materiality to lexicon and design. The paper will conclude by articulating the importance of understanding the long history of workers' villages to engage with difficult architectural legacies and counter flatten histories of (post)colonialism.

1. INTRODUCTION

Villages were key places to support and contest colonialism in Africa, simultaneously providing space for disruption and continuity. While cities received greater attention from the colonial apparatus, it was the control over small rural settlements that would allow imperial formations to consolidate a wider "infrastructural power".[1] Workers' dwellings, in particular, became key instruments for building empires in the 20th century, both materially and politically. That was the case in Angola, under the Portuguese colonial rule, where the state and the private employees were legally obliged to house thousands of workers, from plantation sites to road construction and mining activities. Plans and (re)configurations were discussed in both national and trans-imperial arenas, mostly through repertoires of domination and social engineering.

Everyday life on the ground, though, rather revealed workers' villages as resilient and adaptative spaces. Countering the linear and overarching development narratives, villages emerged as arenas of complex, slippery, shifting and ambiguous power relations,[2] where the "murky waters" of labour were made visible.[3] While social history has long delved into this subject, little is known about the materialization of these sites. How was tradition enacted in village design? How was tradition used to negotiate and bypass colonial violence? What were the layouts, materials, programmes and dimensions?

This paper surveys the plans for and the production of workers' villages in Angola during the late colonial rule. It mobilizes these places simultaneously as centres of continuity and resistance, as well as scenes for change, knowledge transfer and power struggles. The Lunda district, on the north eastern border of the country, will be used as a lens to question the role of workers' dwellings and tradition(s) in shaping the built environment. Lunda was the latest "slice" of land to be considered part of Angola, after the Berlin Conference, in 1885, where Diamang, a supra-national diamond venture, ran its mining activities from the mid 1910s until the 1980s. The company became one of the biggest players of the Portuguese Empire and throughout decades thousands of African workers and families gathered around mining sites. In the 1960s,

Diamang employed over 25.000 men, who lived with their families in hundreds of villages scattered around a large "concession" area of almost 45.000km2 (half of mainland Portugal).

Despite being pictured under a single and homogenous category, the "village" was instead a constellation of very different spaces, whose particularities have been often obscured. The reality on the ground did not comply with colonial binaries nor with a national framework. It is impossible to understand Lunda's spatial patterns without taking into account the diversity of villages and both the local and trans-imperial dimensions that shape them. A comparison will thus be drawn between various typologies, from "company villages" to "strategic camps", to grasp whether and how built repertoires were shared, translated and evolved over time and space, and what was their interplay with tradition. A "genealogical" approach will be followed as a "gray, meticulous, and patiently documentary",[4] remarking the links between power and knowledge while exploring the "village" as a set of shifting discourses and practices.[5]

Some noteworthy historiographical and architectural research has been made about workers' housing in Africa.[6] Aiming to make a contribution to the topic, this paper focuses on the spatialization of labour in Lunda to get a more complex and nuanced picture of the spatial footprint(s) of 20th-century colonialism in Africa, engaging with plenty of actors outside the architectural field, from businessman to engineers, doctors and foremen. When considering the growing calls to diversify archival sources, move away from the canon, explore "off-radar" agents and critically engage with concepts of race, labour and gender,[7] villages appear as promising sites to address decolonial narratives. Since they remain on the ground as "resilient" territorial structures, acknowledging their built protocols, repertoires and repercussions seems paramount to cope with difficult architectural legacies and counter flatten histories of (post)colonialism.

2. WORKER'S HOUSING: A TOOL OF EMPIRE

Diamang was one of the many companies organised at the turn of the 20th century in Africa to exploit and explore the colonial ground. It was set in the north eastern corner of the Lunda district, itself seen as a "fringe" of Angola and a key area to secure the Portuguese rule. From the outset, the interests of the colonial state and the diamond enterprise were intertwined. Labour was the major common ground since African workers were one of the main assets of the colonial apparatus.

Diamang's labour space was organised according to a series of factors: stages in the recruitment process, type of contract, job functions and duration of the mines. On top of these requirements, it was also influenced by political factors (e.g. legal diplomas, pressure from colonial authorities and international bodies) and technical demands (availability of materials, construction methods, health issues and urban planning matters, among others). Unsurprisingly, "workers' housing" was not a standardized scene, but rather a messy, blurred and

really diverse landscape. The same names were sometimes attributed to different spaces, at disparate times and geographies, revealing an intricate, volatile and quite permeable reality. The complexity in mapping and systematizing the different housing modalities and spatial devices illuminates this multiplicity, even amidst the agents on the ground.

The labour-management model was at the foundation of the architecture of Lunda's villages. Similar to other companies working in Angola and as demanded by the Portuguese colonial legislation, Diamang's workforce was divided between "contratados" and "voluntários" [contract and volunteer workers].[8] In short, the first group was "recruited" by the colonial authorities in neighbouring districts, while the second was made up of Lunda's inhabitants. The company's obligations to each group had different spatial outcomes. Diamang was legally obliged to offer lodging to the "contract" workers, as stipulated in the "Código do Trabalho Indígena [Indigenous Labour Code] of 1928. According to this diploma, "any type of dwelling [was] allowed as long as it offers sufficient hygienic conditions and each family [was] provided with an independent house". Employees had to build "small dwellings isolated from each other, and arranged in regular streets, [and were] not allowed to house more than six workers in the same compartment". Villages should also have small kitchens and latrines at a minimum distance of 100 metres from the houses.[9]

Diamang assumed that efforts to organise the mining space benefited both "the indigenous people and in the company's own interest, because by improving conditions more and more local workers will arrive [at the mines]".[10] Gathering "volunteer" workers was paramount and housing was thus doubly instrumental: on the one hand, Diamang aimed to be discharged of the burden of accommodation; on the other, workers usually preferred to stay in their home villages. According to the reports, it was "common practice" to grant "volunteer" men the chance to reside in company villages, but rarely did any family opt for this route.

Diamang's housing plans, presented as "attraction strategies",[11] coincided with emerging international proposals. In view of the deadly conditions in South African and the Copperbelt mining sites, at the base of several riots throughout the 1930s, changes were required to improve industrial production, focusing especially on the role of the family and living conditions.[12] The compounds at the De Beers mines were an increasingly outdated model. Following John Higginson, "a brick house had become the best insurance against disease" in the Belgian Congo camps, underpinning the "replacement of the military metaphor that had characterised the management of the companies over the previous two decades with a bureaucratic and scientific strategy that reflected the imperatives of more technical control".[13]

Diamang was quick to recognise the strategies implemented on the other side of the border, especially by seeking "similar results" to the success achieved by Forminière, a mining company operating just across the

border. The Belgian enterprise was experiencing an "enviable situation" of production, sustained by the excellent work of the Baluba men trained around Tchicapa.[14] A similar situation was reported in the Copperbelt. Drained of "resorting to outside labour", Union Minière had tried to break with the "continuous fluctuations" of workers. The design of space, and above all the supply of housing, was seen as a critical part of the solution, as the first projects for the *communes indigène* or the *centres extra-coutumier* reveal.[15]

It is important to acknowledge that the settlement of African communities was not only desired or discussed by the exploitation companies. Quite the contrary, this question was part of a continuous debate, transversal to various colonial actors, and with analogous strategies, often in competition with each other. Trans-imperial connections were translated into the circulation, appropriation and transformation of ideas and models since the concentration of native populations was considered crucial to sustaining colonialism. "Model villages" spread everywhere, conceiving accommodation as a fruitful "place of civilisation" to educate and encourage African families.[16]

Although the goals were many – guaranteeing labour power on the one hand and transforming social and moral values on the other –, the paths had meaningful intersections between the practices of control and power. Population stability, under the various labels of "settlement", "sedentarisation" or "stabilization", had become an imperious task for the consolidation of colonial power in its political, religious and economic domains. The key stage for this change would be the village, seen as a fundamental tool for shaping settlers and African families.[17] The concept of urbanisation was thus integrated into the idea of modernisation, but, as we shall see, the relationship was not as linear as might have been expected.[18]

3. INTER-WAR ROOTS: PROPAGANDA AND MODEL VILLAGES

Recognising that the so-called "indigenous labour" was one of the main foundations of the company, and once the initial group of mines had been stabilised, Diamang directed its efforts towards space from the 1930s onwards. Houses and villages were rethought and redesigned as fundamental units in this process. Lunda was a sparsely populated district, with scattered villages, which had made recruitment of workers a "major problem".[19] The demand for this adjustment was driven not only by the increase in mining production, but also by the strategies being successfully tested by other mining companies. Most of them were pressured by the volatile nature of their borderland condition, whose permeability allowed local communities to establish plans for resistance and escape.[20] By 1926, Union Minière had launched its "stabilization" repertoire, in which the politics of space were both pivotal and ground-breaking.[21] This conjuncture aligned with the affirmation of the idea of Africa as a "living laboratory", where scientific

knowledge began to be produced and instrumentalised by various actors and different ideologies, visions and models.[22]

The "propaganda villages", built during the 1930s, were one of the first housing strategies tried out in Lunda. Some attempts to settle African communities had already been made during the 1920s, but they had more to do with security and territorial control than with the instrumentalization of the house itself as a device of attraction.[23] Aware of the impact of villages' layouts and materials, Diamang invested in the construction of aligned adobo houses with zinc roofing. The company's general report of 1936 signalled this transformation in the explicit caption of a photograph that contrasted the "type of modern indigenous dwellings compared to the old huts".[24] The confrontation between the two typologies, in a single frame, would work as a *before* and *after* of the reality to be achieved (Fig. 1).

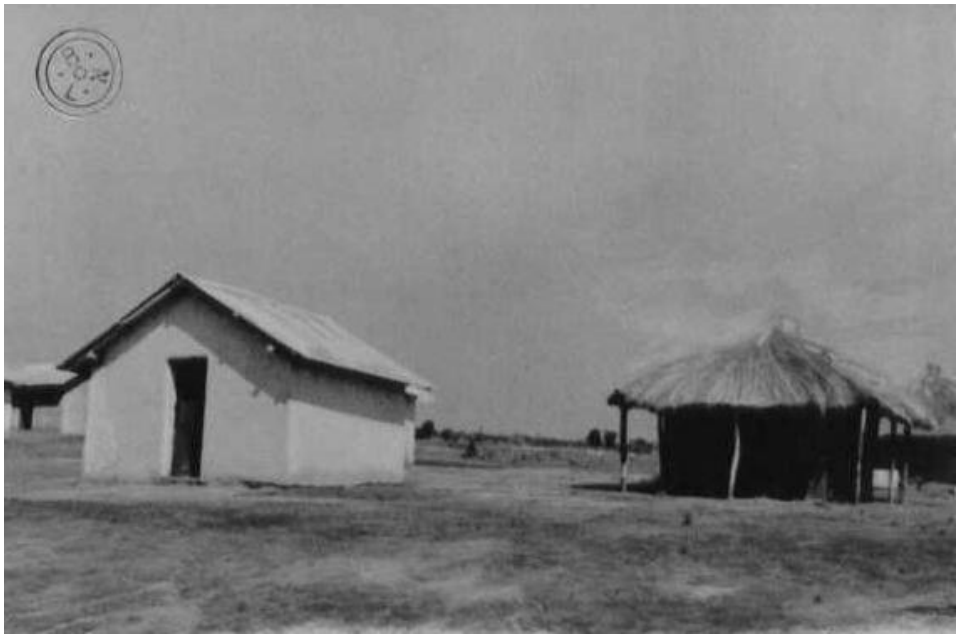


Fig. 1: Diamang's "modern housing type" compared to the "old native huts." (Source: ANTT, PT/TT/AOS/D/N/2-2-1).

From then on, the growth of the workforce in Lunda was concurrently sustained and underpinned by a variety of building and spatial designs and policies. The founding of SPAMOI, Diamang's own department of labour management, in the late 1930s, was the main reflection of and a major push for this commitment. According to the company notes, a "paradigm shift" was being promoted to build a "new, better and healthier habitat" and make the Lunda's mining fields a "very particular and exceptional" case in Angola.[25] The following years saw the most significant increase ever in the number of Diamang's labourers: by 1940, the number of workers had doubled to around 10.000, resulting in a significant reorganization of the territory.

From the experience that kept arriving from the Union Miniére – which notably specialised from the labourers of *Afrique Tropicale* to the workers of "industrial camps" of Haut Katanga[26] –, the benefits of the improvement of housing conditions were evident. Unlike the closed compounds in South Africa, the Belgian doctors proposed open and linear labour camps, with hygiene and social concerns.[27] Typological and construction issues were intertwined. Although recognising that "the types of buildings for the accommodation of black workers are very varied and depend on local resources and the duration of the enterprise", these experts denoted that the "most sought-after dwellings are individual single family houses, with an attached kitchen and including an additional bedroom if there are many children". Reports suggested the offer of "good" houses, "perhaps more expensive, but healthy and preferred by the natives". A labour hierarchy was also made visible through housing and used as a spur for professional training. For the "specialized" workers, for example, "more coquettish" houses were recommended (Fig. 2). These were carefully designed to please families. In particular, the offering of an enclosed patio was said to better reproduce previous village life, thus enacting a particular vision of "tradition".[28]

Fig. 2: House for "specialized" workers in Lunda (Source: ANTT, PT/TT/AOS/D/N/2-2-1)

In parallel, several experiences were collected in terms of materiality. In the Union Minière's quarters there were various models of houses in dry brick, known as Kimberley brick, which had widespread in Africa to accommodate workers, giving strength to a particular "trans-imperial cloud of knowledge" shared between mining companies.[29] In particular, the "standard house" was presented as the best answer in construction, conservation and cost. With cement floor, baked adobe walls and zinc roof, this house used "Orenstein blocks" – so called because they were inspired by the latest De Beers construction guidelines. The two

compartments of the "standard house", sometimes named "double house", allowed the accommodation of two families, representing the economy and comfort that had made it the "most widespread typology in the permanent fields of the Copperbelt".[30]

Diamang ventured down a similar path, denounced not only by the forms but also by the lexicon, with the first "standard houses" being built in 1930 in Lunda. Starting from this background, the company diversified its construction repertoire, with typological, spatial and aesthetic characteristics that closely correspond to the houses of the Union Minière. Although the vast majority of the housing offered in the Lunda remained of wattle and daub, three different "types" of brick houses were established, showing aspirations towards other construction processes.

In 1942, Diamang built a "model village" in the Mucunene area, emphasising the value of empirical knowledge (Fig. 3). It was presented as a fundamental place for "tests on the hygiene of the villages and their upgrading, before [any] measure is generalised to other villages". The location was not random: Mucunene was in a "panoramic spot" which could be seen from afar and was on the route of the visits, reinforcing the weight attributed to the image of space. The "hygiene measures" experimented there by SPAMOI were varied and well detailed, proving that sanitation was still the main obsession of the colonial apparatus.[31] Mucunene, located in a plot of 90 by 100 metres, had a "separation hedge", 40 metres at the back and 10 metres at the top; and a "toilet enclosure" concealed by an orchard. To ensure food, there were an area of "indigenous vegetable gardens" with plots of 14 by 3.5 metres; an "outdoor orchard", on a strip of 16 metres, with 300 trees; and a "farination and drying enclosure", 15 by 30 metres. In addition to these, flowerbeds were laid beside the road and in front of the houses to "embellish" the village. Finally, a few *txissandas* "drumming enclosures" were built between houses so that communities could maintain their traditional dances.[32]

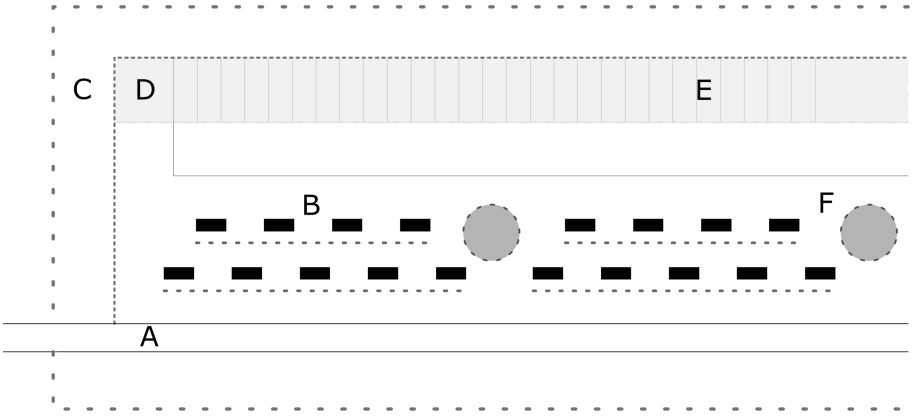


Fig. 3: Mucunene's model layout (Source: author's drawing; from SPAMOI's report, 1942, UC/AD)
A – Road; B – Single houses; C – Orchard; D – Latrins ; E – Gardens; F – Txissanda

During these early decades, there was little state intervention in Diamang's housing design. The only notes came from governors and high officials, whose visits to the Lunda conveyed their appreciation and admiration for the fairly good conditions of the company's villages. However, with the inauguration of the era of the "imperialism of knowledge"[33], after 1945, this situation quickly changed. Scientific expertise about colonial territories, namely on the effects of industrialization and urbanization, became paramount to the international community.[34] The housing problem was no longer just about health and economy, but also – maybe above all – about politics.

4. TRANS-IMPERIAL KNOWLEDGE: MODERN NEIGHBOURHOODS

From the mid 1940s onwards, several initiatives set forth a fresh impulse to address spatial dynamics in Lunda. Following previous village repertoires, "tradition" was to be kept, but "modernisation" had to show up. Rather than being opposites, both became keystones in designing the labour space. The lexicon was once again key. In addition to "native villages", Diamang began to plan and build "workers' neighbourhoods", adding more layers to Lunda's social hierarchy. A similar strategy had already been tested in the 1930s, when a "School neighbourhood" was inaugurated near Diamang's headquarters (Fig. 4). It should act as "an example of the standard of living to which all Africans can rise through education and work".[35] Salubrity was already combined with ideas of modernisation, illuminating the inter-war period as a significant root of the repertoires of late imperialism.

Fig. 4: Diamang's "School neighbourhood" near Dundo, 1945 (Source: ANTT, AOS Cx. 734)

State intervention grew, but always in close connivance with Diamang's needs. Local governors became more demanding about compliance with the law, including housing issues. In the 1950s, labour recruitment guides

were denied until employers submitted plans for their workers' villages. By then, the Public Works Department shared a project for a "model village", putting enterprises and public branches to work together, but that would be rejected by Diamang. Going its own way – while criticizing the lack of recognition by the Portuguese colonial apparatus of the "excellent" and "very suitable" housing plans already used in the Belgian Congo, for example[36] – the company quickly presented a "model scheme" to be transported to all its villages, with an orthogonal layout, in groups of 6 dwellings, a warehouse, office, kitchens, dining halls and latrines (Fig. 5). All the buildings were to be constructed in brick masonry.

Even if the plan was misleading, since it did not correspond to a general "model" but rather to a particular "transit village", it was considered to be "enough" to get new recruiting guides approved. Later, the General Government itself confidentially confirmed that it only wanted to prevent other companies from using Diamang as an excuse for not complying with the required housing conditions. On the contrary, it wanted the company to stand out as a good "example" in Angola.[37] In reality, Diamang would bet on an intermediate solution, no longer able to escape the new social-political requirements. On the one hand, for mines with a duration of more than ten years, brick construction would be provided – also because, according to SPAMOI, "there are areas with difficulties in obtaining timber where there is an advantage in masonry construction". On the other hand, for shorter-term mines, SPAMOI insisted on maintaining "the current type of semi-definitive installation, with adobe constructions".[38]

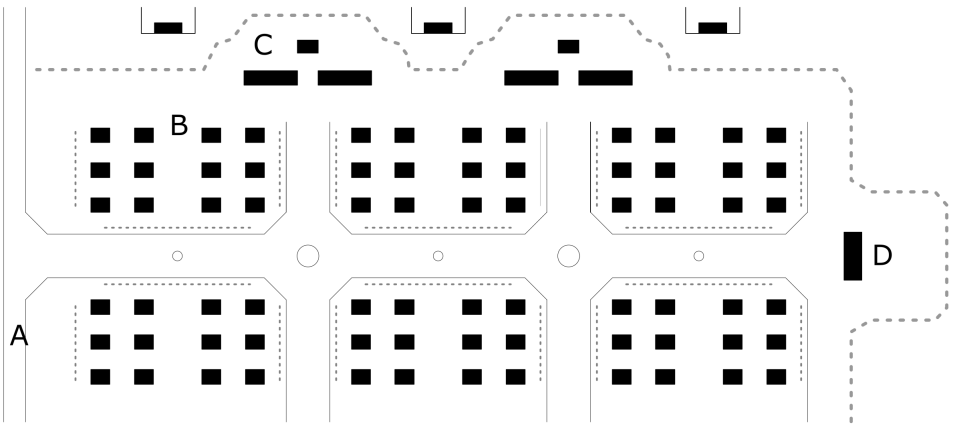


Fig. 5: Diamang's "Transit village" present as a "model plan" (Source: author's drawing; from SPAMOI's report, 1942, UC/AD); A – Road; B – Single houses; C – Latrins; D – Dining hall

In parallel, reinforcing the agreement with the colonial authorities, Diamang was contacted by the Director of Civil Administration Services of Angola, in early 1950, to urgently present elements for the "Inter-African Labour Conference", to be held in Elisabethville in the following June. This international stage, organized by the Commission for Technical Cooperation in Africa South of the Sahara (CCTA), provided Portugal with a

ground to dialogue with the main European powers in Africa. At the meeting, whose purpose was to discuss the so-called "stabilization" of the workers – covering topics like accommodation, diet, promotion of family life and social security –, the company presented a dossier dominated by housing matters, proved by numerous photographs. There was a certain pride in the display of workers' villages, which were considered far superior to what could be found elsewhere in Angola.

Throughout the documentation, legal flaws were subtly distorted in supposed "respect" for the African workers. If the materials used were not "definitive", this was due not only to the short duration of the mines and the ease of repair of the grass roofs and earthen floors, but also to the fact that the workers "do not willingly accept radical transformations of their way of life, even if they are to their benefit (...) [and consider themselves] comfortably installed and at ease in houses of the type to which they have become accustomed". To illustrate this argument, the failure of the latest Diamang's "modern transit neighbourhood" was pointed out, where "the natives never showed any pleasure in residing".[39] Yet, this would be precisely the village project presented and approved by the Portuguese colonial authorities later in 1953, as mentioned above, illuminating a strong orchestration of the space design in accordance with the audience.

For international spectators, Diamang presented another project for a "model village", which was close to the earlier ideas tried out in Mucunene (Fig. 6). The proposal, illustrated by a colourful drawing was described as follows:

> "Grouping of nine houses, arranged in two rows, five houses in front and four behind. They are located in regular streets. Two or more villages can be gathered in the same block. These are built on large plots of land, always on high and vacant places. In a vast area all the land is cleared of grass and bushes. In these terraces, always clean and swept, tables are prepared for drying manioc; latrines are built, two per house group of nine houses; water fountains are installed, with stone and cement. Villages have bougainvillea and cassia hedges, separating them from the road; landscaping with decorative shrubs. Shade trees, usually cassia, are planted around and in the middle of the village, and at the back orchards. At some distance there are ploughs or farms, guided and supervised by SPAMOI."[40]

Despite the messy intricacies, Diamang continued to fine-tune its constructive rhetoric, which proved very beneficial in a rapidly changing world. Similar issues were then discussed between Belgian companies and their colonial apparatus, impelling the mining network to develop new accommodation strategies. Throughout that decade various prefabricated systems, for example, were tried out in Lunda, in parallel with Forminière, from Airform "bubble" houses to Aircon and Jean Prouvé's structures.

Fig. 6: Worker's village in Lunda (Source: Inter-African Labour Conference, CCTA, 1950, UC/AD)

5. A CONSTELLATION OF ACTORS: STRATEGIC CAMPS

A major geographical expansion of Diamang's mines, in the early 1960s, coincided in time and space with the beginning of the end of Portuguese colonialism. As a neighbouring district, Lunda was considered a "victim" of its 1147km border, and Diamang admitted to being in a delicate position. Nonetheless, the conflict gave impulse to new constructive strategies, which again used the "village" as a key device, this time for tackling the liberation movements. The goal was to intertwine "development" repertoires and "security" measures. As a result, Diamang's spatial supremacy became even more visible within the colonial apparatus, mainly because the company was able to offer what most public departments recurrently lacked: money, specialists and manpower. During the processes of "rural reordering", a control strategy that was extended to various parts of Angola[41], various requests were addressed to the company, seeking contractors, carpenters, bricklayers, electricity plans, topographic maps, bricks and furniture.

Within this scope, Diamang participated in a series of meetings of the Institute of Labour, Providence and Social Action (ITPAS), in 1964. The meetings were aimed at "changing conditions in the mining area". The company's management admitted that the "delicate balance" maintained up until then "between the various interests present" in Lunda – that is, "population, State and company" – was under threat.[42] The outbreak of the first revolts in Angola in the early months of 1961 showed the urgency of containing future social unrest, coinciding with (and boosting) the profusion of legislative measures and a growing international scrutiny with many agendas and ambiguities. In the midst of this reformist apparatus, the "Regulamento da Ocupação e Concessão de Terrenos nas Províncias Ultramarinas" (Regulation for the Occupation and Granting of Land in the Overseas Provinces) and the creation of the "Juntas Provinciais de Povoamento"(Provincial Settlement

Boards) made clear that territory, settlements and buildings were fundamental tools to maintaining colonial power. The improvement of Diamang's housing conditions, still very precarious, was at the spotlight. Despite the advances of SPAMOI, the organization on the ground was anything but ideal.

The 1957's report noticed that "[the word] 'villages' here [in Lunda] represents only a permanent reminder that there is something to be done for the workers, because they are a cause of some embarrassment to us".[43] This comment gave credibility to the criticisms made by the sociologist Gilberto Freyre – who denounced the "problem" of housing for Diamang workers in 1953[44] – while showing the company's real perception of its built environment, at odds with the data presented to international bodies or in official reports. The "embarrassing" appearance of some company's houses was later witnessed by ITPAS agents in the 1970s, revealing the persistence of this issue. However, the same notes also referred to the "shocking" contrast with other Diamang's villages, apparently in good condition.[45] ILO's reports were also positive.[46] The territory was therefore very heterogeneous and could not be classified in a simplistic way.

In parallel with these events, the Lunda public administration became more active in housing matters. A bigger constellation of institutions was thus engaged with villages' design. Artur Carmona, governor of the district, took the initial step through two "trials" of "rural planning and agricultural stabilization" in 1963. Firstly, he tried to organize an "experimental village" in Cazage, which aimed to "bring together in concentrated areas the people who were dispersed" and to encourage "small agricultural hydraulic works". He then went ahead with a "mixed settlement" in Saurimo, which established seven Portuguese "soldier-settlers" and six African men.[47] Despite his expectations to obtain support from the Provincial Population Board for technicians, means and materials, Diamang would assume this responsibility.

In the following years, after the growth of the conflicts, Lunda was reorganised into "strategic camps", which culminated in a maximum effort between Diamang's accumulated experience and the local authorities. First, in 1965, the district was divided into 48 "regedorias", with a total of 1720 villages. Then in 1972, under an "expedited development scheme", the territory was regrouped into 488 villages, whose bigger dimensions were said to be more "appropriate" to justify new infrastructures, namely water and sanitation. The new groupings were to be established close to military installations, administrative posts or commercial settlements, maintaining an orthogonal layout.[48]

Meanwhile, Diamang was compelled to respond to warfare demands, reporting the beginning of "a profound and radical change" in its landscape, which had as much of a political matter as urban and architectural theory. As a result, the "workers' quarters" at Tchibaba, Luapasso, Catcheca and Caingági were opened in 1963 (Fig. 7). Despite the different names, these places were similar to previous neighbourhoods, thus

illuminating how nominal changes did not always entail real outcomes. The biggest novelty was their construction by the company's Civil Construction Services, which then replaced SPAMOI. The change was justified both by the alleged constructive "equality" to be sought and by the actual need to build faster, through the use of "definitive" materials, such as bricks and cement, and with new typologies, whose technical complexity was only within the reach of the most specialised technicians.

Fig: 7: Workers' quarters in Lunda (Source: SPAMOI's report, 1961, UC/AD)

Seventy blocks of eight dwellings, each 190 m², were then distributed among various villages of the (re)designated "rural workers", near the mines. Halfway between the demands of concentration and the maintenance of "familiarity" and "indigenous tradition", a compromise solution was put forward, still retaining the benefits of the desired "rural life". These blocks continued to replicate the single-family dwelling, with a balcony and living room, patio and kitchen. Their grouping made it possible to considerably reduce construction costs and time, while at the same time providing Diamang with a clear layout of the villages. The overall plan for the "Bairro do Caingági" (Caingági Neighbourhood) of March 1963 was the model to be followed: a complete first row of blocks aligned with the main street and two subsequent rows, interrupted by a central area with trees, a fountain, a clothes tank, a water tank, and sanitary installations for each sex (Fig. 8).

Facing the colonial institutions, Diamang explained that the company standards were based on the overall conditions of the "native houses", the dwellings built by other companies in Angola and the "lodgings of rural workers in Portugal", even though it did not offer any specific examples. By the time two "workers' quarters" with water and sanitary installations (and did not exclude the later installation of electricity) were built in Lunda, the mining enterprise would not hesitate to claim and reinforce its spatial "exceptionality".

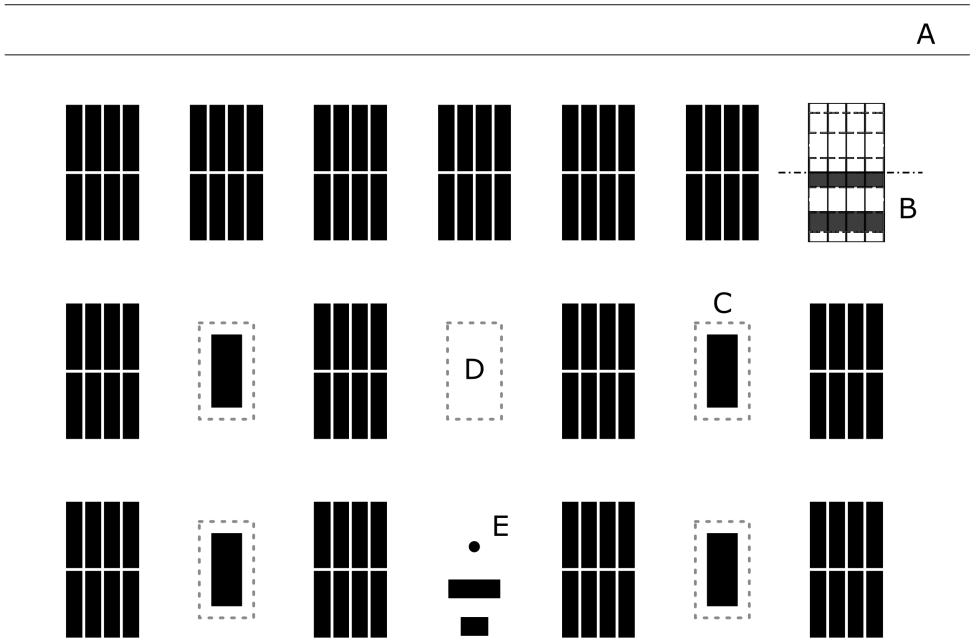


Fig: 8: Plan for Caingági Neighbourhood (Source: author's drawing; Diamang's labour report, 1931, UC/AD)
A – Road; B – Blocks of houses; C – Sanitary; D – Square ; E – Water tanks

6. RESILIENCE AND BUILT HERITAGE

Recent news show how Diamang's building protocols are still ingrained in Lunda. The company's commitment to its built environment inevitably influenced the mining community's relationship with its space. The "exceptional" nature of Lunda continues to be celebrated by today's mining societies, who replicate many of the earlier urban planning lines in the villages they are still responsible for building. For instance, Orenstein red bricks are still considered the best "solution" for housing while large mining neighbourhoods are equipped with green areas and museums.

In fact, Diamang was successful in presenting a sense of control and achievement over its built environment, mostly through detailed reports, packed with statistics, graphs and figures, which constantly stressed the high number of workers' houses as a great "triumph".[49] Labour reports, though, revealed a different, messier scenario. Although accounts of struggles are scant – requiring a careful reading "along and against the archival grain"[50] –, they persist throughout time, pointing to the many histories to be found.

Expectedly, housing excelled as an "arena of contestation".[51] The most repeated notes referred to the frequent abandonment of the company's villages. Accounts written in the 1960s, for example, denounced several empty houses. By that time, quarters with all the requirements (e.g. durable materials, a yard for each family, kitchen, latrines, running water) were being offered and even "Diamang's Type House" was proposed.

However, workers still preferred to build their own houses in nearby places, where certain rules – namely the ban on raising animals – were not enforced.[52] In parallel, families would play with the companies' legal demands for housing to easily get a place to live, exposing the ability to use the rules to their advantage.

Maintaining "native traditions" in the built space, from the adobe walls to the outdoor kitchens, patios or *txissandas*, has always been one of Diamang's concerns in order to "seduce" the local population.[53] The *Best Village Contest*, organised in Lunda since the late 1940s, was a clear showcase for the entanglements between the company's spatial ideals and the population demands and expectations.[54] The competition almost came to an end in the 1960s because of the growing disengagement of the local families, who favoured an independent building approach.[55] The company's employees tried to cover the flaw by building a "winning village", but the assembly between different components – mixing Lunda's painted walls with Diamang's carefully designed windows – was undeniable.

Diamang's villages were thus designed as part of a larger social engineering project, like an ensemble of shared forms that were (and still are) meant to be exemplary in particular ways. After the end of the colonial rule, most private companies were not quite European institutions, not quite African – they stood as in-between states, a condition that allowed for their survival. In particular, housing, as their main tool of control, became a resilient structure.

Architectural resilience notes a building's ability to self-organize, learn and adapt. It looks at "physical objects as carriers of multiple layers of interventions", while offering an "alternative to question the residues of modernist thinking in architectural design, history and theory".[56] Resilience, in fact, stresses how it is impossible to speak about these spaces without acknowledging their genealogy. However, that's not the case for research that has been recently made about these towns as boomtowns with very precarious environments. We can justify this absence by the inability of architectural historiography to disclose these landscapes as crucial pieces and "scaffolds" in Empire building,[57] making it hard to question them in the long term. For this reason, we need to focus on these buildings not as inert remains, but as persistent imperial formations, part of a sedimentation process that occupies multiple historical tenses, that are unfinished histories running in past continuous, as Ann Laura Stoler has argued.[58] Within the rather heterogeneous, erratic and disputed nature(s) of colonialism, mining spots thus show up simultaneously as pictures of "repressive developmentalism"[59] as well as places for new technical skills, struggles and contestation, offering fertile ground for assessing knowledge that was produced between the silenced layers of the colonial web.

7. CONCLUSION

It is well established that the built environment is not just an assembly of "isolated material artefacts"; it shapes and is shaped by the conditions of its design, production, utilisation and circulation. Yet, we are still in need of a broader scope that encompasses everyday landscape and the ordinary buildings. The goal is for an "inclusive approach", covering multiple views, contributions and involvements of local and trans-imperial agents and agendas.[60]

Along these lines, built heritage highlights the significant but often-ignored roles that architecture performs.[61] Due to their wide-span chronology and to their borderland condition, workers' villages, like those founded by Diamang in Angola, challenge the colonial epistemic structure. These places confront us with the need to expand our understanding of architecture and space production beyond nationalist scopes while engaging with local and transnational connections. Significant networks put company towns at the "crossroads" of Empires, whose plural histories defy geographic binaries and diffusionist narratives.[62]

Over time, Diamang's spatial repertoires evolved both in disruption and continuity, borrowing, adapting, recycling and transforming. "Tradition" was simultaneously enacted as a tool of resistance by the African communities and a tool of seduction by the colonial apparatus. The company workers' villages thus show the variety and the resilience of shapes to be found in Lunda's space. Diamang is one of the still off-radar institutions which seem to emerge as important "cracks" in the foundations of "modern" and "modernizing" narratives,[63] disturbing the standard account of the relationship between colonialism and modernity and modernization.

ACKNOWLEDGEMENTS

The author thanks *Fundação para a Ciência e Tecnologia* (FCT), Portugal, for supporting this research through the PhD grant SFRH/BD/122658/2016.

NOTES AND REFERENCES

[1] Michael Mann, "The Autonomous Power of the State: Its Origins, Mechanisms and Results." *European Journal of Sociology / Archives Européennes de Sociologie / Europäisches Archiv Für Soziologie*, vol. 25, no. 2, 1984.
[2] Kirsten Rüther, Martina Barker-Ciganikova, Daniela Waldburger and Carl-Philipp Bodenstein (eds). *The Politics of Housing in (Post-)Colonial Africa: Accommodating workers and urban residents*. De Gruyter Oldenbourg, 2020.
[3] Frederick Cooper, "From free labor to family allowances: labor and African society in colonial discourse." *American Ethnologist*, vol. 16, no. 4 (1989).

[4] Michel Foucault, "Nietzsche, Genealogy, History." *Language, Counter-Memory, Practice: Selected Essays and Interviews*, (ed.) D. F. Bouchard. Ithaca: Cornell, 1977.
[5] Jiat-Hwee Chang and Anthony King, "Towards a genealogy of tropical architecture: Historical fragments of power-knowledge, built environment and climate in the British colonial territories," Singapore Journal of Tropical Geography 32 (2011), 283–300; Benjamin Rubbers, "Mining towns, enclaves and spaces: A genealogy of worker camps in the Congolese Copperbelt," *Geoforum* 98 (2018), p. 88–96.
[6] Robert Home, "From barrack compounds to the single-family house: planning worker housing in colonial Natal and Northern Rhodesia". *Planning Perspectives*, vol. 15, 2010, p. 327–347; Ambe Njoh, *Planning Power. Town planning and social control in colonial Africa*, UCL Press, 2007 (particularly the chapter "Mining and plantation company towns", p. 188–200); Wendy Roberts, "Company Transfer: the Architectural Dialect at the Edges of Empire", Proceedings of the Society of Architectural Historians, Australia and New Zealand, vol. 31, *Translation*, ed. Christoph Schnoor, Auckland: SAHANZ and Unitec ePress, 2014, p. 591–600; Kirsten Rüther et al, *The Politics of Housing*… (particularly Ambe Njoh and Liora Bigon's chapter "Spatio-physical Power and Social Control Strategies of the Colonial State in Africa: The Case of CDC Workers' Camps in Cameroon").
[7] Joe Nasr and Mercedes Volait, "Still on the margin," *ABE Journal* 1 (2012); Kathleen James-Chakraborty, "Beyond postcolonialism: New directions for the history of nonwestern architecture," *Frontiers of Architectural Research* 3 (2014), p. 1–9; G. A. Bremner, Johan Lagae e Mercedes Volait, "Intersecting interests: Developments in networks and flows of information and expertise in architectural history," *Fabrications* 26, no. 2 (2016), p. 227–245; Itohan Osayimwese, "From Postcolonial to Decolonial Architectural Histories: A Method," *Architectures of Colonialism* (Keynote lecture, BTU Cottbus, 2021).
[8] For an in-depth analysis of labour issues at Diamang see Todd Cleveland. Diamonds in the Rough: Corporate Paternalism and African Professionalism on the Mines of Colonial Angola, 1917–1975. Ohio University Press, 2015.
[9] "Código do trabalho dos indígenas nas colónias portuguesas de África", 6 december 1928. Chapter VIII, Section II. "Housing". Art. 236: "The employers of workers whose permanent residence is not near the place of work shall be obliged to provide them with accommodation". *Diário do Governo*, no. 281/1928, Series I.
[10] "Relatório sobre a Mão d'Obra Indígena, de 1938, entregue ao Dr. Manuel Pereira Figueira, Curador Geral dos Serviçais e Colonos". *Mão de Obra*, 1 March 1938. UC/AD.
[11] "Súmula da origem, desenvolvimento, actividade e acção colonizadora da Companhia de Diamantes de Angola. Homenagem à visita do Gov. Geral António Lopes Mateus", 1936. ANTT, PT/TT/AOS/D/N/2/2/1.
[12] Frederick Cooper. Decolonization and African Society. The Labor Question in French and British Africa. University of Michigan Press, 1966; Charles Perrings. Black Mineworkers in Central Africa: Industrial Strategies and the Evolution of an African Prolerariat in the Copperbelt, 1911-1941. New York: Africana Publishing, 1979; Jane Parpart. Labor and Capital on the African Copperbelt. Temple University Press, 1983; Julia Seibert, "Wind of Change': Worker's Unrest and the Transformation of Colonial Capital in Katanga, Belgian Congo," Work and Culture in a Globalized World: From Africa to Latin America, B. Fall, I. Rheinberger and A.Eckert (ed.), Karthala, 2015.
[13] John Higginson, "Disputing the Machines: Scientific Management and the Transformation of the work routine at the UMHK, 1918-1930," *African Economic History,* vol. 17 (1988), p. 1–21.
[14] Relatório de Brandão de Melo para o Governador de Malange, 24 de Maio de 1938. UC/AD.
[15] Grévisse. Le Centre Extra-Coutumier d'Elisabethville: Quelques aspects de la politique indig`wne du Haut-Katanga industriel. Brussels: Institut Royal Colonial Belge, 1951.
[16] Miguel Bandeira Jerónimo and Hugo Gonçalves Dores, "On the "Efficiency" of Civilization: Politics, Religion and the Native Settlement in Portuguese Africa in the 1940s." *Portuguese Studies Review*, vol. 25. Baywolf Press (2017).
[17] As Frederick Cooper noticed in his pioneering work about the connection between labour and colonial space, the uprisings in Northern Rhodesia and the Copperbelt between 1935 and 1940 showed economic and political actors the need to construct a vocabulary that would place Africans in a universe of "industrial capitalism" that broke with the maintenance of the discourse of "colonial society". Frederick Cooper. *Struggle*

for the City: Migrant Labor, Capital, and the State in Urban Africa. SAGE Publications, 1983; Frederick Cooper, "From free…"

[18] Catherine Coquery-Vidrovitch, "The process of urbanization in Africa (from the origins to the beginning of independence)." *African Studies Review*, vol. 34 (1991); Andrew Burton, "Townsmen in the making: social engineering and citizenship in Dar es Salaam, 1945-1960." *International Journal of African Historical Studies*, vol. 36 (2003).

[19] "Súmula da origem..."

[20] The foundation of Diamang, for example, brought difficulties to the recruitment of Union Minière, putting the companies in competition for labour. Charles Perrings, "Good Lawyers but Poor Workers: Recruited Angolan Labour in the Copper Mines of Katanga, 1917-192." *The Journal of African History*, 18 (1977).

[21] Léopold Mottoulle. Politique Sociale de L'Union Minière du Haut Katanga pour as Main- d'Oeuvre et ses réultats au cours de vinght années d'application. Mémoires. Institute Royal Colonial Belge, 1946; "Social Policy of Union Minière du Haut Katanga", African Affairs (1947); John Higginson, "Disputing the Machines: Scientific Management and the Transformation of the Work Routine at the Union Miniere du Haut-Katanga, 1918-1930." African Economic History, 17 (1988); Dibwe Dia Mwembu, "Industrialisation et santé: la transformation de la morbidité et de la mortalité à l'Union minière du Haut-Katanga, 1910-1970." PhD thesis. Université Laval (1990).

[22] Hellen Tilley. Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950. Chicago: University of Chicago Press, 2011.

[23] Some mobilisation plans were drawn up to settle indigenous families in Lunda in 1922 and 1928. The projects were drawn up jointly by Diamang and the colonial state. Despite their limited success, they mark the beginning of Diamang's commitment to the question of housing, the overall management of the territory and the deployment of spatial design tools. From then on, "settlement" became a constant issue.

[24] Relatório apresentado pelos administradores na Diamang, 1936. ANTT, PT/TT/AOS/D-N/2/2/1.

[25] Report to the General Government of Angola, by Jorge Figueiredo de Barros, 11 March 1943. UC/AD.

[26] Arthur Pearson and R. Mouchet (1992). L'hygiène pratique des camps de travailleurs noirs en afrique tropicale. Goemaere, Brussels; René Van Nitsen (1933). L'hygiène des travailleurs noirs dans les camps industriels du Haut-Katanga. Mémoires de la Classe des Sciences naturelles et médicales. Brussels: Institut Royal Colonial Belge.

[27] "General Layout Plan for a Camp MOI". Arthur Pearson and R. Mouchet, *L'hygiène pratique*...

[28] Mottoulle, Politique Sociale…

[29] It was used in the mining sites, such as Mufulira, and in the Mwinilunga district in Zambia, for example. Jane Parpart. *Labor and Capital on the African Copperbelt*. Temple University Press, 1983; Foster Sakala, "The role of women in labour stabilisation at Mufulilra mine, 1930 to 1964." Zambia University, 2001; Iva Pesa, "Moving along the roadside. A social history of Mwinilunga District, 1870s-1970s." PhD thesis, Leiden University, 2014.

[30] Van Nitsen, L'hygiène des travailleurs…

[31] Maynard Swanson, "The Sanitation Syndrome: Bubonic Plaque and Urban Native Policy in the Cape Colony, 1900-1909." *The Journal of African History*, vol. 18 (1977).

[32] SPAMOI: Relatório anual de 1940 [1941]. UC/AD.

[33] Frederick Cooper, "Modernizing Bureaucrats, Backward. Africans, and the Development Concept." Cooper and Packard (eds.), *International Development and the Social Sciences, Essays on the History and Politics of Knowledge*. University of California Press, 1997.

[34] See, for instance, *Social Implications of Industrialization and Urbanization in Africa South of the Sahara*. Prepared under the auspices of UNESCO by the International African Institute, London. Paris: UNESCO, 1956.

[35] "Súmula...", 1936. ANTT, PT/TT/AOS/D/N/2/2/1.

[36] Diamang made direct references to the CEPSI's Bulletin, in particular after an extensive report on "Housing and annexes for indigenous workers at Union Minière", numbers 12 and 18, published in 1950 and 1952. Diamang's engineers considered the Bulletin an "excellent manual where the best and suitable [housing] models could be found". *SPAMOI: Recruitment (contracts, fees and accommodation), 1953-54*. UC/AD.

[37] Confidential letter to Ernesto de Vilhena, 3 April 1953. UC/AD.

[38] Letter from Tavares Paulo to Mário Costa, 23 April 1953. UC/AD.
[39] "Elementos destinados à Conferência Interafricana do Trabalho em Elizabethville, 1950". *Mão de obra indígena. Conferências Interafricanas do Trabalho (1ª, 2ª e 3ª.)* 86A,4. 1948-53. UC/AD.
[40] "Elementos destinados....". UC/AD.
[41] "Lunda: Elementos preparatórios para um esquema expedito de desenvolvimento". ANTT, PT/TT/ASC/D/0005.
[42] Mão de obra indígena. Alterações das condições de trabalho na zona das explorações. Reuniões no Instituto do Trabalho, Luanda. January 1964. 86,2A (1ª). UC/AD.
[43] Correspondence Paz Andringa, 10 December 1957. *Direcção Geral/Sede*, 1957-1958. UC/AD.
[44] Gilberto Freyre. *Aventura e Rotina*, 1951.
[45] Report of the ITPAS sub-delegation of Capenda-Camulemba, Lunda District, Jan 1970. UC/AD.
[46] "Rapport de Pierre Juvigny, représentant du Directeur general du Bureau International du Travail, sur les contacts directs avec le gouvernement du Portugal au sujet de l'application de la convention (no. 105) sur l'abolition du travail force". Genève: BIT, 1971.
[47] "Distrito da Lunda: Relatório de Governo, 1961-63, por Artur Carmona". AHU, A2.01.001/02.0009.
[48] "Regedorias e Autoridades Administrativas dos distritos de Lunda, Moxico e Cuando Cubango". ANTT, PT/TT/SCCIA/009/0004. About "regedorias" see Diogo Ramada Curto and Bernando Pinto Cruz, "The Good and the Bad Concentration: *Regedorias* in Angola." *Portuguese Studies Review*, vol. 25 (2017), p. 205-231.
[49] Relatórios por parte dos representantes do Governo, ANTT, PT/TT/CDA/1.
[50] Ann Laura Stoler, Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense. Princeton: Princeton University Press, 2009.
[51] Kirsten Rüther et al, *The Politics of Housing*…
[52] The same question is exposed in the ILO's 1971 report. "Rapport de Pierre Juvigny…"
[53] According to Dovey, "seduction" is one of the modalities of "power over", which manipulates the interests and desires of the subject by shaping perceptions and cognitions. Kim Dovey, *Framing Places: Mediating Power in Built Form*, London; New York: Routledge, 1999, p. 11.
[54] Diamang's Best Village Contest was analyzed elsewhere. Beatriz Serrazina, "Crossed Cultures in Lunda, Angola: Diamang's Urban Project and Its Legacies." *Traditional Dwellings and Settlements Review*, vol. 31, no. 2, p. 23-34 (2020).
[55] "SPAMOI's report, 1962," UC/AD.
[56] Elizabeth Merrill and Stylianos Giamarelos, "From the Pantheon to the Anthropocene: Introducing Resilience in Architectural History". *Architectural Histories*, vol. 7, no. 1 (2019), p. 1–11.
[57] Peter Scriver, "Empire-Building and Thinking in the Public Works Department of British India," *Colonial Modernities: Building, dwelling and architecture in British India and Ceylon*, Peter Scriver and Vikramaditya Prakash, London and New York: Routledge, 2007.
[58] Ann Laura Stoler. *Imperial Debris: On Ruins and Ruination*. Duke University Press, 2013.
[59] Miguel Bandeira Jerónimo, "Repressive Developmentalism: Idioms, Repertoires, and Trajectories in Late Colonialism," *The Oxford Handbook of the Ends of Empire,* ed. Martin Thomas and Andrew Thompson. Oxford University Press, 2018.
[60] Jiat-Hwee Chang and Imran bin Tajudeen offer an interesting contribution about architectural translation and power. *Southeast Asia's Modern Architecture: Questions of Translation, Epistemology and Power*. Jiat Hwee Chang and Imran bin Tajudeen (eds). Singapore: NUS Press, 2019.
[61] Britta Timm Knudsen, John Oldfield, Elizabeth Buettner and Elvan Zabunyan (eds). *Decolonizing Colonial Heritage. New Agendas, Actors and Practices in and beyond Europe*. Routledge, 2021.
[62] Miles Larmer, Enid Guene, Benoit Henriet, Iva Pesa and Rachel Taylor (eds). *Across the Copperbelt: Urban & Social Change in Central Africa's Borderland Communities*. James Currey, 2021.
[63] Itohan Osayimwese, "Cracks in the Modernist Foundation: On the Necessity of Challenging Dominant Narratives." *L'Internationale online: Architectural Dissonances* / DAAS, 2021, p. 51-68.

Britta Timm Knudsen, John Oldfield, Elizabeth Buettner and Elvan Zabunyan (eds). *Decolonizing Colonial Heritage. New Agendas, Actors and Practices in and beyond Europe*. Routledge, 2021.

Chang, Jiat Hwee and Imran bin Tajudeen (eds). *Southeast Asia's Modern Architecture: Questions of Translation, Epistemology and* Power. Singapore: NUS Press, 2019.

Chang, Jiat-Hwee and Anthony King, "Towards a genealogy of tropical architecture: Historical fragments of power-knowledge, built environment and climate in the British colonial territories," Singapore Journal of Tropical Geography 32 (2011), p. 283–300;

Cooper, Frederick, "From free labor to family allowances: labor and African society in colonial discourse." *American Ethnologist*, vol. 16, no. 4 (1989);

Coquery-Vidrovitch, Catherine, "The process of urbanization in Africa (from the origins to the beginning of independence)." *African Studies Review*, vol. 34 (1991);

Foucault, Michel, "Nietzsche, Genealogy, History." *Language, Counter-Memory, Practice: Selected Essays and Interviews*, (ed.) D. F. Bouchard. Ithaca: Cornell, 1977;

Higginson, John, "Disputing the Machines: Scientific Management and the Transformation of the work routine at the UMHK, 1918-1930," *African Economic History,* vol. 17 (1988), p. 1–21.

Home, Robert, "From barrack compounds to the single-family house: planning worker housing in colonial Natal and Northern Rhodesia". *Planning Perspectives*, vol. 15, 2010, p. 327–347;

Larmer, Miles, Enid Guene, Benoit Henriet, Iva Pesa and Rachel Taylor (eds). *Across the Copperbelt: Urban & Social Change in Central Africa's Borderland Communities*. James Currey, 2021.

Mottoulle, Léopold. *Politique Sociale de L'Union Minière du Haut Katanga pour as Main- d'Oeuvre et ses résultats au cours de vinght années d'application*. Mémoires. Institute Royal Colonial Belge, 1946;

Njoh, Ambe. *Planning Power. Town planning and social control in colonial Africa*, UCL Press, 2007;

Osayimwese, Itohan, "Cracks in the Modernist Foundation: On the Necessity of Challenging Dominant Narratives." *L'Internationale online: Architectural Dissonances* / DAAS, 2021, p. 51-68;

Rubbers, Benjamin, "Mining towns, enclaves and spaces: A genealogy of worker camps in the Congolese Copperbelt," *Geoforum* 98 (2018), p. 88–96;

Rüther, Kirsten, Martina Barker-Ciganikova, Daniela Waldburger and Carl-Philipp Bodenstein (eds). *The Politics of Housing in (Post-)Colonial Africa: Accommodating workers and urban residents*. De Gruyter Oldenbourg, 2020;

Stoler, Ann Laura. *Imperial Debris: On Ruins and Ruination*. Duke University Press, 2013.

Archival Documentation: Diamang's Archives, University of Coimbra (UC/AD).

Traditional Dwellings and Settlements
Working Paper Series

EXPLORING THE POLITICAL AND ECONOMIC PRESSURES WITHIN THE DESIGN AND DELIVERY OF ABORIGINAL HOUSING IN THE NORTH-WESTERN DISTRICTS NEW SOUTH WALES, AUSTRALIA

Ella Holmgren
University of Technology Sydney, Sydney, Australia

Volume 323
Pages 22-38
2022

EXPLORING THE POLITICAL AND ECONOMIC PRESSURES WITHIN THE DESIGN AND DELIVERY OF ABORIGINAL HOUSING IN THE NORTH-WESTERN DISTRICTS NEW SOUTH WALES, AUSTRALIA.

◆ ◆ ◆

This research explores the political and economic pressures and the efficacy of various procurement processes within the design and delivery of Aboriginal housing in the north-western districts of New South Wales, Australia.

Centred on the design and delivery of a case study in Boggabilla, this research presents a socio-technical evaluation of Aboriginal housing to inform future models and improvements of culturally responsive design.

The current global pandemic has placed immense political pressure on Indigenous housing, including the declared urgent need for a 'Great Reset' in 2020 which led to increased funding being injected into the Australian economy. The NSW Government implemented a large social housing fund of $183.3m as part of their COVID-19 economic recovery strategy[1]. Despite this investment, it seems that Aboriginal housing continues to fail to meet the needs of Aboriginal tenants. In 2021, depreciating provision of services and material shortages as a consequence of the pandemic led construction costs to rise in New South Wales by "6.6 per cent – the highest annual growth on record for the state."[2] Rising construction costs encourage government agencies to 'rationalise' the design of Aboriginal housing, with focus on cost, maintenance and turnover timeframes. This is often to the detriment of effective design outcomes that address the cultural and domiciliary needs of Aboriginal people.

Questioning the logic of economic rationalisation over delivering culturally responsive outcomes, this research evaluates iterative architectural documentation of a case study project in Boggabilla. The design process is critically reviewed, tracking the initial concepts through to completion of construction. This will be accompanied by interviews with members of the Aboriginal Housing Office, builders, architects and service providers to explore various perspectives within the design and delivery of Aboriginal housing. This reflective and practice-based research explores the political and economic pressures within Aboriginal housing.

Mindful of the legacy of flawed Aboriginal housing and contextualised within the case study of Boggabilla, this research seeks to contribute to the evaluation and development of new housing models to respond to the needs of Aboriginal residents.

1. INTRODUCTION

Political and economic pressures often encourage government agencies to 'rationalise' the design and delivery of Aboriginal housing, placing preference on cost, maintenance and timely delivery of dwellings. This economic focus on the quantity rather than the quality of housing is often to the detriment of effective design that addresses the cultural and domiciliary needs of Aboriginal people.

This research presents a socio-technical evaluation of the design, procurement, and project delivery of Aboriginal housing in north-western districts of New South Wales Australia.

Centred on a case study analysis of a project to be built in Boggabilla, the research evaluates the transformation from the initial design concept through to commencing of construction. Over three years, the research tracks significant political and economic pressures that shaped the design and delivery of the two

dwellings in Boggabilla. The research explores challenges faced such as pressures to spend stimulus money, the global pandemic, natural disasters, and the hardships faced when building in remote communities. Through this analysis, this research seeks to contribute to improved Aboriginal housing outcomes that can contribute to Aboriginal advancement.

Fig. 1: Image of housing in Boggabilla, New South Wales, Australia (Source: Jack Cooper 2020)

2. CONTEXT

2.1. Context: Socio Political

The Centre for Appropriate Technology (CAT) conducted a post-occupancy evaluation of Alice Springs Town Camp Housing between 2008 and 2011. In 2013 they released a report stating that although there was an overall consensus that occupants were happy to have received new or fixed homes, issues remained that '*have been noted in previous POEs of Indigenous housing, and yet remain unresolved even in this program, despite the wealth of knowledge gathered over 30 years of appropriate Indigenous housing development in remote Australia.*'[3]

In 2018, a 10-Year Review of the Council of Australian Government's (COAG) Closing the Gap Strategy was released. It stated that the *'outcomes are fundamentally the result of underlying structural factors, such as social determinants, institutional racism, the quality of housing, and access to appropriate primary health care.'*[4] This explicitly outlines the cruciality of appropriate Indigenous Housing in successfully closing the gap between Indigenous and non-Indigenous Australians. According to the Australian Institute of Health and Welfare (AIHW), between 2018 and 2019 *"1 in 5 Indigenous households were living in dwellings that did not meet an acceptable standard."*[5]

In July 2020, Australian Prime Minister at the time Scott Morrison commented that the initial Closing the

Gap targets were *"wrong-headed"*, lacking proper consultation with Indigenous Australians.[6] These have since been replaced with new targets, developed by a network of Aboriginal and Torres Strait Islander community-controlled organisations called the Coalition of Peaks. The ninth socio-economic outcome aims for Aboriginal and Torres Strait Islander people to *'secure appropriate, affordable housing that is aligned with their priorities and needs.'*[7] However in July 2022, Sarah Collard commented in her article in The Guardian *"The nation is failing to address the systemic disadvantages experienced by First Nations communities, according to the latest Closing the Gap data released by the Productivity Commission on Thursday."*[8] The report outlined that four of the seventeen targets are on track, none of which are improvements in Aboriginal housing.

Existing research outlines the prevalence of a one-size-fits-all model and its impact within Indigenous communities. In 'Housing Strategies That Improve Indigenous Health Outcomes' - a document produced for Closing the Gap, author Vicki-Ann Ware addresses the ignorance of differences between Indigenous and non-Indigenous peoples' ways of living. She suggests that the design elements typically found in a lot of homes across Australia are often not built for the environment or cultural needs within Indigenous communities so therefore should not be implemented within Aboriginal communities[9]. Erin Park posted an article that discusses the impacts of this failed consideration in Indigenous Housing design. She presents the notion of Australian 'Taj Mahals,' to describe large structures that are not fit for purpose which in turn become un-utilised, architectural follies.[10] Paul Memmott demonstrates the consequences of this 'mainstreaming' and outlines how it may *'inadvertently disadvantage a cultural group due to conflict with their customary values, practices and obligations, in which case it can legally be construed as constituting indirect discrimination.'*[11] He describes a 'cultural design paradigm' which outlines the importance of addressing the specific cultural needs of Indigenous peoples. He emphasises that *"to competently design appropriate residential accommodation for Aboriginal people who have traditionally oriented lifestyles, architects must understand the nature of those lifestyles, particularly in the domiciliary context."*[12] Memmott builds further explores this with Cathy Keys as they outline the need for 'cultural sustainability' where architecture is *"sensitive to cross-cultural contexts and values and not overly dominated by Western concepts of what architecture is."*[13]

The current global pandemic has placed immense political pressure on Indigenous housing, including the declared urgent need for a 'Great Reset' in 2020 which led to increased funding being injected into the Australian economy. The New South Wales Government implemented a large social housing fund of $183.3m as part of their COVID-19 economic recovery strategy.[14] In 2021, depreciating provision of services and material shortages led construction costs to rise in New South Wales by *"6.6 per cent – the highest annual growth on record for the state."*[15] It is economic shifts like this that encourage government agencies to focus on cost, maintenance and turnover timeframes, disregarding the specific cultural needs of Indigenous communities.

Some efforts have been made to address the issues within Aboriginal housing however the desired targets and outcomes are yet to be met. Despite various investments in response to pressures from the pandemic, it seems that Aboriginal housing still fails to meet the needs of Aboriginal tenants. As outlined in the above literature review, a deep understanding of the social, spatial and cultural uses within domiciliary environments is a crucial factor of successful, culturally responsive design. Through a socio-technical evaluation of the challenges within the design and delivery of Aboriginal housing, my research seeks to contribute knowledge to inform future improvements within the Aboriginal housing sector.

Fig. 2: Photograph of the vacant lot in Boggabilla before construction commenced. (Source: Jack Cooper 2020)

2.2. Context: Boggabilla

Boggabilla is part of the Gamilaraay nation and is situated just below the Queensland border in New South Wales. It is a 35km travel from Goondiwindi, 115km south from Moree and 15km from the Aboriginal community of Toomelah, which faces ongoing issues such as poverty and racism.

It is important to note the political ramifications within border towns such as Toomelah and Boggabilla where service provision and jurisdiction become complicated and harder to access especially in recent times where COVID-19 has seen state border closures. Residents in these towns who would usually travel to Goondiwindi for goods and services, as well as in times of emergency, had to travel much further to Moree. The separation between large, serviced towns and small Aboriginal communities, missions and reserves, highlights the colonial imposition and mechanism of exclusion that has been prevalent since white settlement.

Fig. 3: Map of Australia, highlighting Boggabilla where case study project is located (left) and Map of Aboriginal Nations within New South Wales, locating Boggabilla (right)

3. RESEARCH METHODOLOGY

This research has emerged from experience gained working on a series of funded research projects. Within my role as a researcher for the University of Technology Sydney (UTS) School of Architecture and a member of The Indigenous Infrastructure and Sustainable Housing Alliance (TIISHA) I have had the opportunity to work with various remote Indigenous communities and government agencies.

The case study project is centred on the design and construction of two two-bedroom dwellings for ageing residents and/or single parents in Boggabilla. Within the project, my role is to assist in the development of culturally responsive design principles and staged architectural documentation. My research tracks this case study project to provide insights into the social and economic decision-making within the delivery of Aboriginal housing in north-western New South Wales.

My research adopts both an action and reflection-based practice methodology. This draws reference to philosopher and professor of urban planning Donald Schön's 'The Reflective Practitioner: How Professionals Think in Action.' Schön proposes that *'our knowledge is in our action'*[16] and we can use a reflective-based practice to gain insight into our experiences and thought processes. Schön describes, *'this capacity to do the right thing.… exhibiting the more that we know in what we do by the way in which we do it, is what we mean by knowing-in-action. And this capacity to respond to surprise through improvisation on the spot is what we mean by reflection-in-action.'*[17] Whereas 'reflection on action' is a 'cognitive postmortem,' reflecting, analysing, and evaluating in retrospect.[18] I have adapted all three of these both within my role in the Boggabilla project and as a researcher presenting this paper.

The *'reflection on action'* within my research retrospectively evaluates moments of impact within design, procurement and project delivery. *'Reflection in action'* is utilised to adapt to the challenges presently faced, taking into account the *'unintended changes.'* [19]An emphasis is placed by Schön on not only problem solving within this practice but 'problem setting' where '*each decision is a local experiment that contributes to the reframing of the problem'* [20]*Problem setting allows this research to inform future improvements in culturally responsive design through the constant adaptive and reflective process, asking 'what if, what is next, so what?'*[21]

Jennifer Greenwood emphasises the importance of 'reflection before action' and 'practical reasoning', where one takes into account a 'series of if/then propositions.'[22] Within my own 'reflection before action', it is important to note the potential bias within this methodology as everyone has their own orientation, background and positioning.Architectural bias could also become present where a designer may sub-consciously override culturally specific needs of Aboriginal residents with what they see best fit as per their professional knowledge. To minimise the risk of my research becoming what Linda Finlay critiques to be 'psychologically explosive'[23], the reflection is accompanied by findings from literature review, architectural documentation, and interviews with government agency representatives, builders, architects and Aboriginal housing providers.

Although significance must be placed on existing data and models of culturally responsive housing, the research methodology adapted within this paper is a contestation of traditional methodologies - shifting the focus to generative and emergent knowledge. It examines systemic issues that have remained present for centuries but focus on innovation and unknown outcomes. The project is yet to be complete and there is an opportunity for future post-occupancy evaluation so it is important to reflect on past, current and emerging issues within the process. This outlines the necessity to adapt 'reflection in action,' 'reflection on action' and 'knowing in action.'

The foundation of this adapted research methodology is that a deep reflection on the social, political, and economic impacts throughout the design and delivery process can assist in addressing such impacts to inform future improvements.

4. COLLECTION OF DATA (RESEARCH METHODS)

1. **Architectural drawings, diagrams and models** of the case study dwellings in Boggabilla are analysed to explore the changes and developments within the iterative design process. This iterative architectural documentation will be evaluated to critically review the design process in Boggabilla, from the initial concepts to development approval and construction.

2. **Interviews** with seven participants from three participant groups; Government Agency Representatives, Builders/trades/Architects, and Aboriginal Housing Providers. I asked the same set of questions in each interview, focusing on the political and economic challenges faced as well as the various processes of procurement within the design and delivery of Aboriginal housing. This allowed me to analyse both similar and competing perspectives within Aboriginal housing in north-western districts of New South Wales. It is important to note that I have received interview responses from largely non-Indigenous perspectives and must take this into consideration. This consultation can highlight issues from these participant's experience in the field however as outlined by preliminary and emerging research, it is essential to present Aboriginal perspectives to inform Aboriginal advancement. I intend to continue to interview more participants to contribute to this knowledge.

5. EVALUATION FRAMEWORK

The collected data is analysed through a socio-technical lens to assess the political and economic influence on the design, procurement, and project delivery processes in Aboriginal housing in north-western districts of New South Wales.

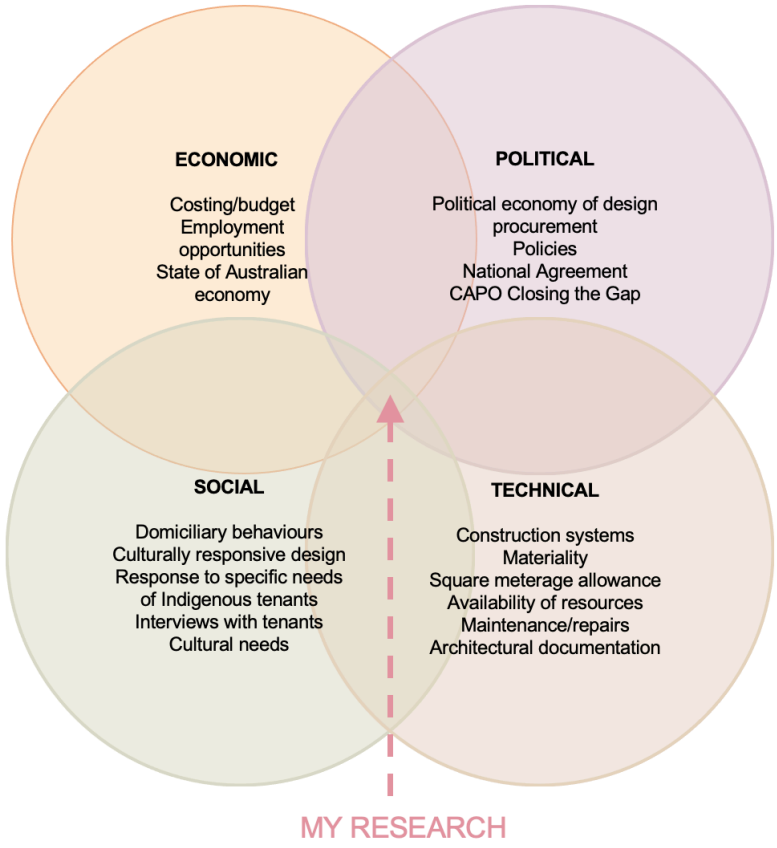


Fig. 4: Ven diagram demonstrating the evaluation framework that has been developed within this research

A Socio-technical analysis is explained through Markusson and co-authors' suggestion that when looking at technologies, the evaluation framework must be socio-technical and co-evolutionary. The authors describe socio-technical systems as analysing *'the full range of technical, economic, political, etc. uncertainties and their interactions,'*[24] where 'uncertainties' refers to gaps in knowledge of such studied technology. They add that *"socio- technical systems are therefore conceptualised as clusters of aligned elements, such as technical artefacts, knowledge, markets, regulation, policies, cultural meaning, rules, infrastructure, etc. Focusing on systems recognises that technologies are embedded within societal systems."*[25]

The socio-technical framework I have developed for this research is influenced by Wiebe E. Bijker and John Law's definition of social technology, stating *"ultimately its purpose is to produce changes in human behaviour;"* and outlines the intrinsic connection between humans and objects; constantly influencing and being defined by one another[26]. In this instance, the technological object is the Aboriginal housing. It is therefore highlighted as essential that this research not only assesses the social aspects of the procurement process but also the determinants of which the house politically and economically came to be.

This framework presents a foundation for an in-depth analysis of the procurement of the works in Boggabilla, exploring design conception through to the constructed dwellings. My research will also evaluate the performance of such processes and their capacity to inform future culturally responsive housing.

6. ANALYSIS & FINDINGS

During the conducted interviews, I asked the participants to discuss the recent turbulent political and economic climate and how it has affected recent Aboriginal housing projects. The interview responses presented three prominent discussions about; pressures to spend stimulus package funding, the difficulties in building regionally, and whether the traditional or Design and Construct procurement process best suits these emerging economic and political demands. The project in Boggabilla presents a case study example of this Design and Construct process and highlights the challenges faced when trying to deliver a culturally responsive model of Aboriginal housing.

6.1. Pressures to Spend Stimulus Funding

In 2020, the Aboriginal Housing Office received $212 million of funding to deliver housing and maintenance upgrades and encourage economic recovery associated with the global pandemic. This was to spend over the next four years.[27] In June 2022 they received another $149.8 million to build and deliver 200 new homes and refurbish 260 existing homes over the next 3 years. This funding was part of a $2.8 billion Housing Package the Government delivered through the 2022-23 Budget.[28]

According to interview responses, it seems that despite these large injections of funds, the challenge remains to deliver a culturally responsive outcome within these rigid timeframes. A manager within the Aboriginal Housing Office commented in our interview *"one of the things that's quite perverse with us is that… we are funded annually by the government, but we're delivering projects that take multiple years."* He suggested that *"these projects need sustained investment and commitment over many years and they need to go really at the pace of community as well." He also commented that "you don't want to be railroading over community, just to meet some target set by a public servant."* However, whilst alluding to these unrealistic timeframes, an interviewed architect suggested that decisions are being made around "*spending stimulus money"* and "*to make certain ministers, politicians and senior executives look good"* rather than *"actually delivering housing which is of high quality."*

An increase in funding has led to a rapidly rising demand of delivery count for the Aboriginal Housing Office. A construction manager highlighted that *"demand is outstripping supply dramatically and I think that's probably the biggest challenge."* Further exploring this point, another manager highlighted the difficulty in conducting thorough community engagement before the stimulus money expires stating *"it's a lot of sites"* and *"getting out and getting out frequently is going to be a challenge given that we also need to get things progressing."* He also commented *"we don't have the resources"* and highlighted the strain on their regional teams as their geographic coverage is so widely spread. A project officer who works in planning and acquisitions within the Aboriginal Housing Office highlighted that there is also strain within Councils in regional areas where *"they have very little resources, and they take too long which affects our capacity and ability to deliver…"*

In 2020, the Aboriginal Housing Office developed a document called the 'AHO Guidelines' which presented a series of culturally responsive design principles to be considered in the designing of Aboriginal Housing. These guidelines are implemented within every housing project that the Aboriginal Housing Office delivers. A construction manager within this government agency highlighted the significance of developing and maintaining these guidelines "*because the effect is much broader now given our project delivery unit count…if you're not getting it right, it's obviously has a greater impact."*

In 2022, communities within New South Wales suffered various devastating floods. Bronwyn Herbert wrote in an ABC News article *"Lismore was hit with its biggest flood in recorded history in February, displacing thousands of people and damaging more than 1,800 homes."*[29] One of the architects I interviewed commented on these recent floods where *"the need for housing became so apparent as a fundamental right, and then it's sort of exposed it as well. It highlighted the problems in housing"* He suggested that the media coverage of these devastating events perhaps aligned more understanding of *"housing conditions and how precarious houses can be."* He also commented that despite there being funding for Aboriginal housing, *"now it's super competitive against other regions and other forms ofhousing that wasn't there before. I think that's going to be interesting in the in the next five to ten years."*

6.2. Challenges of Building Regionally

Interview responses also highlighted the significant challenges in building within remote communities, impacting the delivery of Aboriginal housing located within these contexts.

A manager within the Aboriginal Housing Office suggested that *"there is a lack of understanding at a high level about the realities of the cost of delivering…especially in remote areas."* These realities are alluded to by a builder who is working on the case study project in Boggabilla. He commented, *"for what I build out here, I could probably build two houses in town."* He continued to highlight that materials cost less in metro areas so he orders a bulk of products which then takes money and investment out of the local, regional communities. An architect commented that most of the housing in these remote areas *"attracted a rather large cost"* however *"the quality doesn't seem to be delivered as well as what you would get in a more urban setting."* A construction manager from the Aboriginal Housing Office outlined that *"obviously a poorly designed house can cost the same to build as a well-designed house,"* placing emphasis on "*investing in the planning component and the design component"* to reach a culturally responsive outcome.

Discussions within the interviews also outlined the shortage of quality builders within remote communities. A manager within the Aboriginal Housing Office commented, *"the businesses that we work with successfully, we go back and we use them repeatedly"* however he also outlined that *"across the whole of New South Wales, we've got a shortage of suitable builders that really can work like that."* A construction manager also suggested, *"broadly the greatest need is just having a builder available in the location you need them.* A member of Moree Local Aboriginal Land Council who lives in town suggested *"our mob would appreciate talking to builders. But… because of COVID and everything else builders are hard to come by."* A builder also alluded to this, reflecting on a potential reason for this shortage of trades. He highlighted *"we've been in a drought for so long. Farmers have been doing it so hard for the last ten years or so. Now that they're out of a drought and the construction industry is booming, they want to rebuild."*

6.3. The Boggabilla Project: A Case Study Analysis of The Design and Construct Procurement Process

Within the conducted interviews, comparisons were drawn between the traditional and Design and Construct procurement process and whether one is more suited to address the challenges faced in the delivery of Aboriginal housing. The case study project in Boggabilla is being delivered using this Design and Construct process which consists of a consultant preparing the design, which is then taken over, completed, and constructed by a contracted builder.

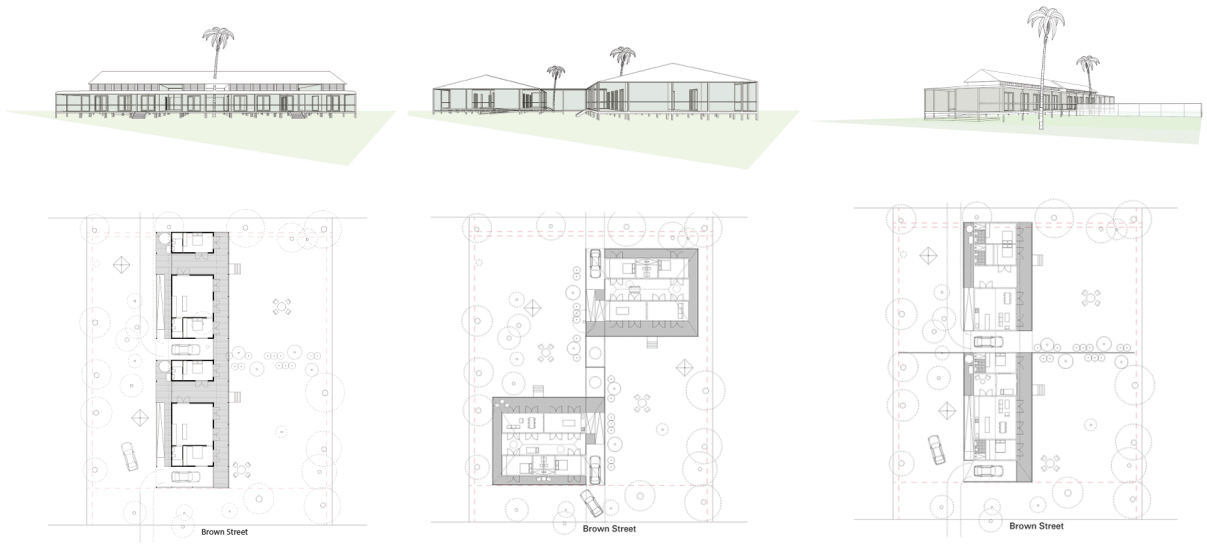


Fig. 5: Architectural drawings of the three options within the first schematic design for the Boggabilla case study project

In December 2020, our research and architectural team completed the first schematic design for two two-bedroom dwellings to be built on a vacant lot in Boggabilla. In February 2021, we travelled to Boggabilla for a site visit and to carry out a participatory workshop with local primary school students. This consultation was unfortunately extremely under-represented and did not directly inform the development of design principles as initially intended. Through this workshop, we aimed to gain a greater cultural understanding however this was not the case and in fact, the participatory workshop became somewhat tokenistic and redundant.

At this stage in the project, the design failed to address significant culturally responsive design principles with too much emphasis placed on siting and orientation of the dwellings. Concerns were raised around privacy and overlooking issues and the internal layout of the dwellings being extremely underdeveloped. Due to the under-represented consultation and the design team's continued failure to develop a culturally responsive design, the Aboriginal Housing Office as our client became dissatisfied. Being forced to re-assess, our team was restructured. With more experience within the Aboriginal housing sector, the leading of the architectural project was transferred to two colleagues and me.

In March 2021, my team developed a set of culturally responsive design principles that were informed by previously conducted surveys with members of Aboriginal communities. These newly developed principles were then implemented within conducted a cut-and-paste exercise to create the next design iteration. This generative design method allowed us to visualise and extract elements of existing housing designs that received the highest satisfaction and performance rates in surveys with Aboriginal tenants from a previous project my team had worked on.

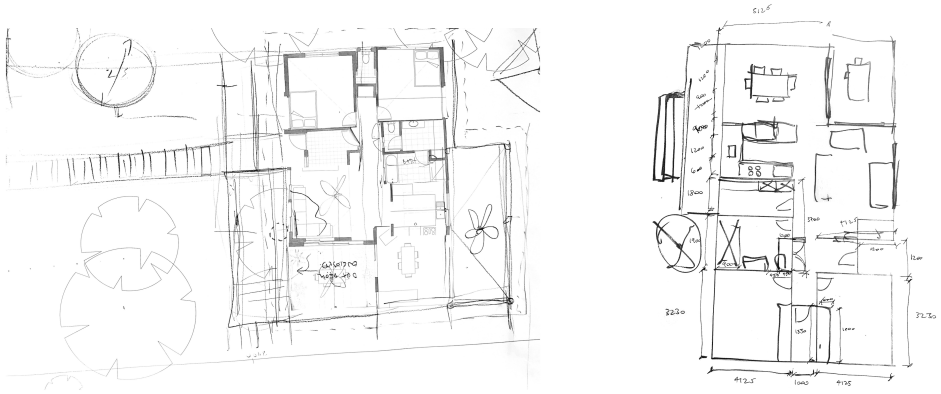


Fig. 6: Scanned drawings from the culturally responsive design principle informed cut-and-paste exercise within the Boggabilla Project

In April 2021, we presented the new scheme to the Aboriginal Housing Office. The design was well received and was followed by minor amendments to reduce the square meterage, landscaping, layout, and materiality, attempting to minimise cost and maintenance. Originally the project was to be submitted as a Development Application however the prolonged design process led the Aboriginal Housing Office to deliver as a Design and Construct which was submitted in May 2021.

In September 2021 the project tender was issued, in December it was awarded, and the control of the design was transferred to the builder. My architectural team was then onboarded by the builder to complete the architectural documentation for the project. This fortunately allowed us to encourage the inclusion of specific design elements that were informed by our previously developed culturally responsive principles.

The most significant adjustment made to the design during this stage was the removal of the detached carport, with a suggestion to instead attach it to the house for improved safety and accessibility. This however resulted in the loss of private, external living space and the outdoor kitchen, two elements that were directly informed and deemed significant as per our developed design principles. An element that we encouraged to remain and did stay within the design was the enclosed outdoor living space. The interior layout of the dwelling also remained relatively the same.

The design was also adapted to an alternative construction method using Structurally Insulated Panels instead of the initially intended traditional timber stud walls. The drawing set had to be adjusted accordingly. During this design revision stage, the builder changed the supplier of the Structurally Insulated Panels. These new material specifications resulted in some of this drawing work becoming abortive as we had to redraw the entire main structure of the two dwellings. The engineers only provided advice and consultation after we had begun these revisions which resulted in more abortive work. These engineers also created a new roof design,

advising that a structural steel frame would support this which then made the structural component of the Structurally Insulated Panels redundant.

The final drawings issued for construction displayed an over-engineered design that took far longer to generate than anticipated. After winning the tender, the builder proposed construction to commence in June 2022 to be completed in October. In late September, I went out to Boggabilla to conduct a site visit and examine how the project was tracking. It appeared that construction commenced only earlier that month with only the main steel flooring structure in. Installation of the Structurally Insulated Panels had commenced but there were not yet any complete walls or roof. After discussions with my architectural team and the builder on site, it is hoped that the project will be complete by end of the year, but it is not certain.

All interviewed members of the Aboriginal Housing Office highlighted their favour of Design and Construct over the traditional process of procurement stating that it is the *"quicker and easier solution"* for them. *An* architect presented an opposing opinion, stating *"whilst it's faster and it's less hassle… I don't think it returns the best quality housing…the builder will always argue otherwise."* He compared Design and Construct to *"a conventional delivery model where the architect will fight for certain design aspects…that in my opinion would make for a better building."*

The Boggabilla project is a somewhat unique example of Design and Construct as we were able to be involved in the documentation after the builder won the tender. An interviewed architect suggested that there needs to be "*less knee-jerk allocations to substandard builders to do Design and Construct"* who often make decisions *"governed by the triple bottom line or economic decisions."* This poses the question; how culturally responsive would the design outcome be if we were not responsible for the architectural documentation? What could our schematic designs have transformed into without reference to culturally responsive design principles?

Fig. 7: Photograph of construction site in Boggabilla, New South Wales during site visit in September 2022

4. CONCLUSION

Through an analysis of preliminary research and interview responses, there are evident political and economic pressures in delivering Aboriginal housing stock. Interview responses outlined the push to spend government funding, difficulties in building regionally and reflected on whether the traditional or Design and Construct procurement process best suits these emerging economic and political demands. This research has highlighted that impetus within the delivery of Aboriginal housing is too often driven by economic efficiencies rather than longevity and social outcomes thus mandating more low-quality housing outcomes rather than less housing of a higher quality.

According to interview responses, it seems that the Design and Construct procurement process can sometimes respond to economic and time pressures however it can also be to the detriment of quality Aboriginal housing. The case study of the Boggabilla project with its delays in consultation, construction, and abortive work, poses the question of how much faster and more efficient the Design and Construct process really is? The project in Boggabilla is just one example of the Design and Construct model. I will continue to conduct further research to better investigate the efficacy of alternative procurement processes.

Referencing Schön's reflective practice, my research presents both a current and retrospective reflection of the project in Boggabilla to inform future improvements and models of culturally responsive design. It is important to note that this project is not yet complete, with an opportunity for future research and post-occupancy evaluation. I intend to continue tracking the project in Boggabilla until construction is complete. I will also conduct further interviews with members of the Aboriginal Housing Office, builders, tradesmen, architects, and Indigenous housing providers to explore the political and economic pressures involved in the delivery of Aboriginal housing in north-western districts of New South Wales.

NOTES AND REFERENCES

[1] NSW Aboriginal Housing Office. 2021. '$43.3 Million in New Funding for the AHO', October. https://www.aho.nsw.gov.au/news/433-million-new-funding-aho.

[2] Australian Financial News and afndaily. "Construction Costs Soar amid Labour and Material Shortage," November 11, 2021. https://afndaily.com.au/2021/11/11/construction- costs-soar-amid-labour-and-material-shortage/.

[3] Centre for Appropriate Technology. 2013. 'Housing Experience: Post Occupancy Evaluation of Alice Springs Town Camp Housing 2008-2011'. Centre for Appropriate Technology.

[4] Holland, Chris. 2018. 'A Ten-Year Review: The Closing the Gap Strategy and Recommendations for Reset'. The Close the Gap Campaign Steering Committee.

[5] Australian Institute of Health and Welfare. "Indigenous Housing." Australia: AIHW, September 16, 2021. https://www.aihw.gov.au/reports/australias-welfare/indigenous-housing.

[6] Higgins, Isabella, Sarah Collard, and Brad Ryan. 2020. 'Closing the Gap Agreement Reset with 16 New Targets to Improve Lives of Aboriginal and Torres Strait Islander Australians', July. https://www.abc.net.au/news/2020-07-30/closing-gap-targets-agreement- aboriginal-torres-strait-islander/12506232.

[7] Closing the Gap Annual Data Compilation Report. East Melbourne VIC, Australian Capital Territory: Productivity Commission, 2022.

[8] Collard, Sarah. "Australia Still Failing to Hit More than Two-Thirds of Closing the Gap Targets, New Data Shows." The Guardian, July 28, 2022. https://www.theguardian.com/ australia-news/2022/jul/28/australia-still-failing-to-hit-more-than-two-thirds-of-closing-the- gap-targets-new-data-shows.

[9] Ware, Vicki-Ann. 2013. 'Housing Strategies That Improve Indigenous Health Outcomes'. Canberra: AIHW.

[10] Parke, Erin. 2020. 'As Governments Spend Big on Stimulus, WA Communities Warn of More Official "Taj Mahals"'. ABC News. 16 August 2020. https://www.abc.net.au/ news/2020-08-16/the-taj-mahals-of-northern-western-australia/12546806.

[11] Memmott, Paul. 2004. "Aboriginal Housing: Has the State of the Art Improved?" Architecture Australia.

[12] Memmott, Paul. 2004. 'Aboriginal Housing: Has the State of the Art Improved?' Architecture Australia. p2

[13] Memmott, Paul, and Cathy Keys. 2015. 'Redefining Architecture to Accommodate Cultural Difference: Designing for Cultural Sustainability'. In *Architectural Science Review*, 58:278–89.

[14] Aboriginal Housing Office. 2021. '$43.3 Million in New Funding for the AHO', October. https://www.aho.nsw.gov.au/news/433-million-new-funding-aho.

[15] Australian Financial News and afndaily. "Construction Costs Soar amid Labour and Material Shortage," November 11, 2021. https://afndaily.com.au/2021/11/11/construction- costs-soar-amid-labour-and-material-shortage/.

[16] Schön, Donald A. The Reflective Practitioner: How Professionals Think in Action. New York: Basic Books, 1983.

[17] Ibid

[18] Ibid

[19] Ibid

[20] Ibid

[21] Ibid

[22] Greenwood, Jennifer. "Reflective Practice: A Critique of the Work of Argyris and Schon." Journal of Advanced Nursing 18, no. 8 (August 1993): 1183–87. https://doi.org/ 10.1046/j.1365-2648.1993.18081183.x.

[23] Finlay, Linda. "Reflecting on 'Reflective Practice.'" Practise-based Professional Learning Centre Centre for Excellence in Teaching and Learning, January 2008.

[24] Markusson, Nils, Florian Kern, Jim Watson, Stathis Arapostathis, Hannah Chalmers, Navraj Ghaleigh, Philip Heptonstall, Peter Pearson, David Rossati, and Stewart Russell. 2012. 'A Socio-Technical Framework for Assessing the Viability of Carbon Capture and Storage Technology'. In Technological Forecasting and Social Change, 5th ed., 79:903–18. https://www.sciencedirect.com/science/article/pii/S0040162511002769.

[25] Ibid

[26] Bijker, Wiebe E., and John Law, eds. 1992. Shaping Technology/Building Society: Studies in Sociotechnical Change. Inside Technology. Cambridge, Mass: MIT Press.

[27] NSW Aboriginal Housing Office. "Strong Families Strong Communities - What We Have Delivered – Housing Solutions." NSW Aboriginal Housing Office, 2022. https:// www.aho.nsw.gov.au/strong-family-strong-communities/housing-solutions.

[28] NSW Department of Planning and Environment (last). "$554.1 Million Investment for New and Improved Social and Aboriginal Housing," June 21, 2022. https:// www.planning.nsw.gov.au/News/2022/Millions-investment-for-new-and-improved-social- and-Aboriginal-housing

[29]Herbert, Bronwyn. "Lismore Council Estimates $500 Million Spend on Retreat Plan for Flood-Affected Homes." ABC News, September 27, 2022. https://www.abc.net.au/ news/2022-09-27/lismore-council-housing-strategy-floods-buyback/101475594.

Traditional Dwellings and Settlements
Working Paper Series

POSSIBILITY OF PROVIDING SERVICES FOR THE ELDERLY BY UTILIZING THE NETWORK AND STOCK OF EXISTING FACILITIES IN LOCAL

Yura Kim[1], Akira Matsuyama[1], Akinori Kuno[2]
[1]Chubu University, Kasugai, Aichi, [2]Kanagawa Building Inspection, Japan

Volume 323
Pages 39-56
2022

POSSIBILITY OF PROVIDING SERVICES FOR THE ELDERLY BY UTILIZING THE NETWORK AND STOCK OF EXISTING FACILITIES IN LOCAL:

◆ ◆ ◆

This paper aims to analyze the example of the 'distributed residences with health and welfare services for the elderly' and examine the possibility of affordable and quality living in the suburban area and the significance of deinstitutionalization using networks.

1. NEED FOR NEW SERVICES

Looking at recent data, the rate of increase in the number of older people has slowed down a little, but it is still on the rise. On the other hand, due to advances in medical technology and improvements in living standards, "healthy life expectancy," which indicates the period during which people can lead daily lives without receiving nursing care or becoming bedridden, is increasing. In 2016, the "healthy life expectancy" of Japanese citizens was 72.14 for men and 74.79 for women.2 Compared to 10 to 20 years ago, Functional changes due to aging are delayed by 5 to 10 years.

Many early elderly (65-74 years old) are still healthy and active. In such cases, care support in daily life is not required. However, a certain degree of support is desired. Future facilities for the elderly need to be developed to meet various needs according to aging.

This paper aims to consider the future of facilities for the early elderly based on the case of "Decentralized residences with health and welfare services for the elderly (hereafter referred to as "decentralized serviced housing")" utilizing existing stock.

2. CURRENT STATUS OF ELDERLY FACILITIES IN NAGOYA CITY

The rate of aging in Nagoya city is lower than that of Japan, but in 2017, the aging rate reached 24.7%. Fig. 1, 2, and 3 show the results of a survey of facilities for the elderly such as serviced housing for the elderly (hereafter referred to as "serviced housing"), various nursing homes, health care facilities for the elderly, and accommodation for the elderly in Nagoya City. Looking at the number of facilities for the elderly in each ward of Nagoya (the part enclosed by the black line) in Figure 1, more facilities for the elderly were built in the new urban areas than in the existing urban areas (approximately the city area in 1937). This shows that the elderly are forced to live far from their convenient and familiar towns.

Looking at the types of facilities for the elderly, facilities for the elderly with a high degree of need for nursing care account for 80% of the total (Fig.1). Only 115, or about 25% of the total, are the elderly who require low levels of nursing care (Fig.2). On the other hand, looking at the age distribution of the elderly, the proportion of the early elderly and the elderly in the latter stage is evenly divided. It refers to the lack of facilities for the early elderly. (table 1)

Looking at the floor plans of facilities for the elderly, the vast majority are one-room plans in which the dining room and bathroom are shared. Only the bedroom is a private area (Fig.3). From the point of view of the facility manager, it is easy to manage, but most of the residents will be living in a very different way from how they used to live at home. This is a departure from "I want home care," which is the most common request of the elderly in the "Survey on the Health of the Elderly" conducted by the Cabinet Office in 2017.

Year	2015	2017	2019	2020	2021
Total population	2,277,595	2,307,307	2,321,727	2,328,653	2,327,723
age 0~14	285,195	282,357	281,299	279,558	278,078
age 15~64	1,421,044	1,430,406	1,433,399	1,438,474	1,436,270
age over 65	535,588	556,408	568,930	572,559	575,351
age over 75	250,840	271,568	290,150	298,647	301,300

Table 1: Nagoya City Population and Elderly Ratio.[1]

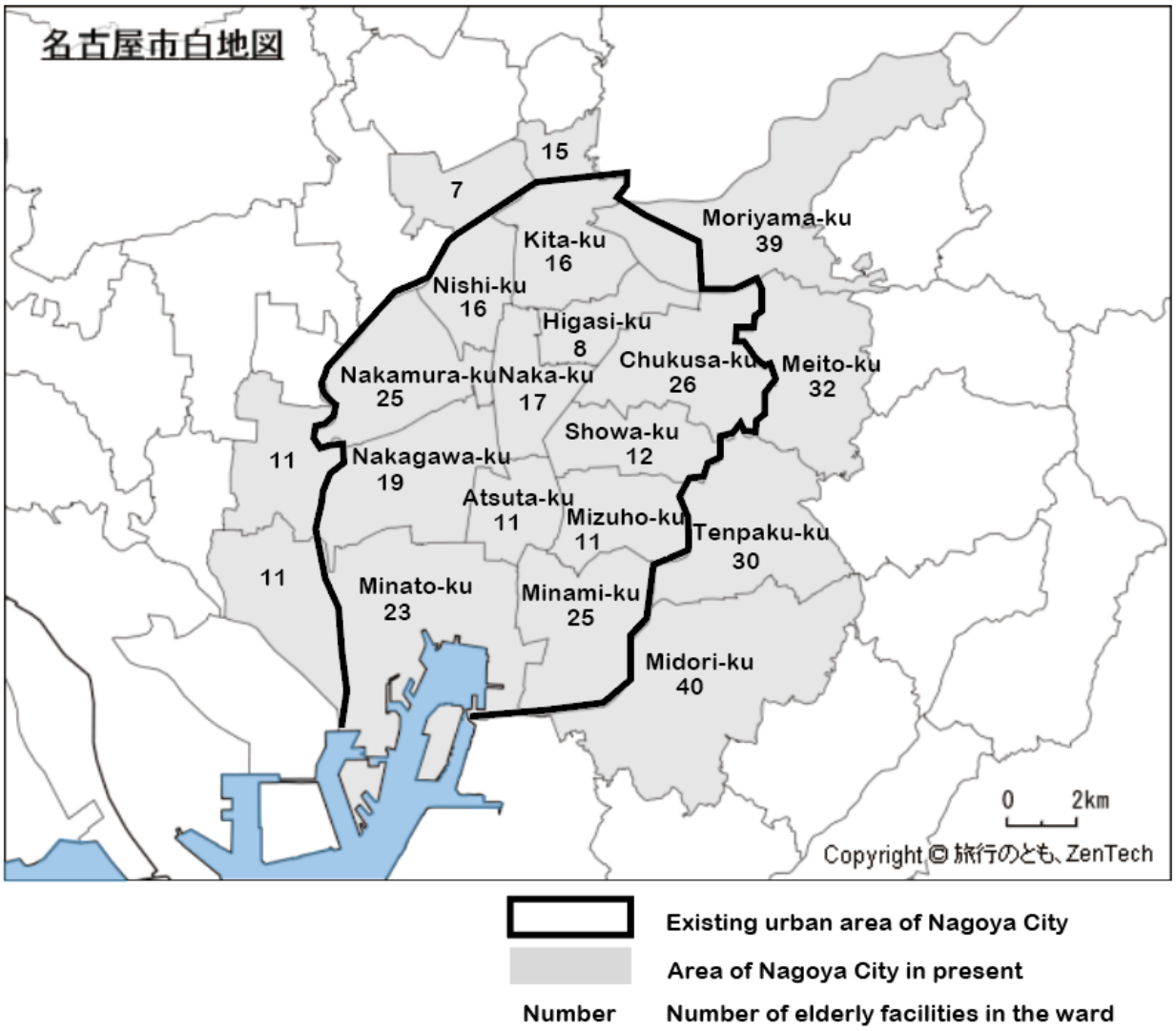


Figure 1. Analysis of Elderly Facilities in Nagoya City.

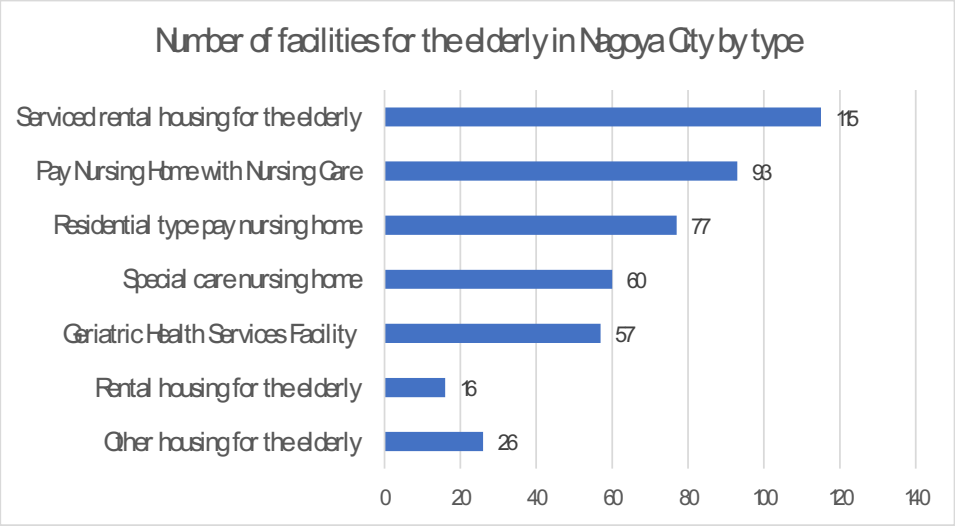


Figure 2. Number of facilities for the elderly in Nagoya City by type.

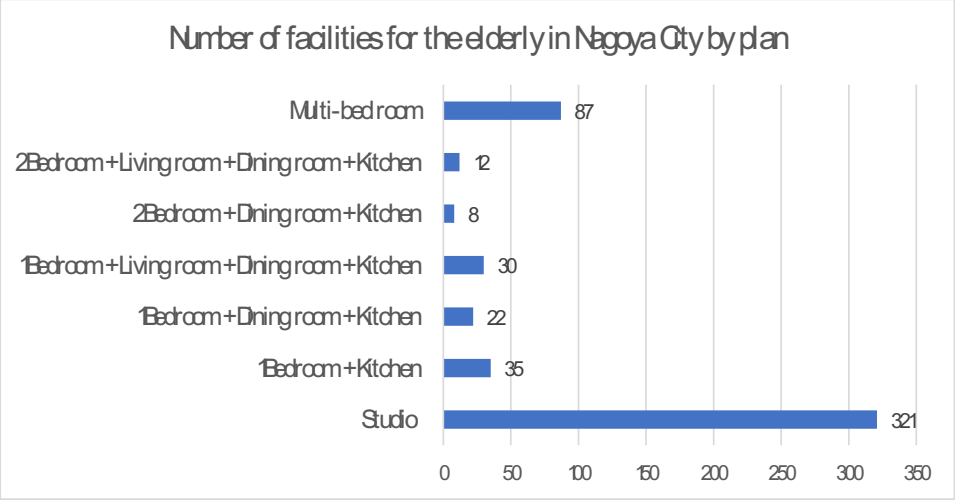


Figure 3. Number of facilities for the elderly in Nagoya City by plan.

3. DECENTRALIZED SERVICED HOUSING AND THE CASE OF YUIMARU OZONE

Serviced housing is based on Article 5 of the Act on Securing Stability of Residence for the Elderly. It functions as rental housing for the elderly and a fee-based nursing home. The elderly move into the dedicated part for living and are provided situation assessment services, life consultation services, and other welfare services necessary for the elderly to lead their daily lives. Generally, each dwelling unit must have an exclusive area of 25 ㎡ or more, be fully equipped with toilets and washbasins, and be barrier-free.

Initially, the offices where the service staff should station in the same building. However, lately, the standards have been relaxed so that offices can be located in buildings up to 500m apart, called "Decentralized residences with health and welfare services for the elderly."

The case study in this research, "decentralized serviced housing," provides barrier-free housing by renovating vacant housing units scattered in existing collective housing. It is a facility that provides services for the elderly only to some dwelling units rather than to an entire building. At present, there are only three decentralized serviced housing: Yuimaru Takashimadaira (Itabashi-Ku, Tokyo), Yuimaru Ozone (Kita-Ku, Nagoya), and Yuimaru Jinnan (Minato-ku, Nagoya). Among them, I conducted a field survey and an interview with the business operators for "Yuimaru Ozone," the first case in Nagoya (survey date: March 2018, October 2018, July 2020, June 2021).

The target, Aichi Prefectural Housing Supply Corporation Ozone Coexistence Housing (from now on "Ozone housing"), is located about 900m away from Ozone Railway Station, Heiandori Subway Station, and Kami-ida subway station. The distance from Kita Hospital, a local co-op hospital, is about 800m. (Fig.4). Ozone housing was completed in 1975. There are two 11-story buildings with H-shaped twin corridors, totaling 480 units. The first-floor houses large stores (grocery stores and small stores), hair salons, coffee shops, and other public rental stores.

In 2012, the grocery stores on the first floor of Ozone housing closed, and the number of vacancies in small stores increased. An employee of Aichi Prefecture, who was seconded to the Aichi Prefectural Housing Supply Public Corporation, felt a sense of crisis. He consulted an architect working for Company S, who was involved in fee-based nursing homes and housing for the elderly, about how to utilize the store. In the architect's network, a study group was established by gathering university teachers, medical and nursing care workers, NPO (Nonprofit Organization) officials, and fellow architects, and examined the use of the store. However, there were no prospects for tenants to use the store-only plan, so it was continued to be considered.

In December 2014, Company S opened a decentralized serviced housing at UR Takashimadaira housing complex in Tokyo. Company S proposed Ozone housing to the public corporation as a plan to utilize not only vacant stores but also vacant houses in public rental housing. Due to revisions to the Act on Securing Stability of Residence for the Elderly and the Housing Supply Corporation Act, it has become possible for public housing to be used for serviced housing. And the public corporation had also started to consider the matter. The study group has also begun recruiting store management organizations for the use of large stores, and asked local co-ops, medical co-op hospitals, hospitals, welfare NPOs, etc. to consider participating.

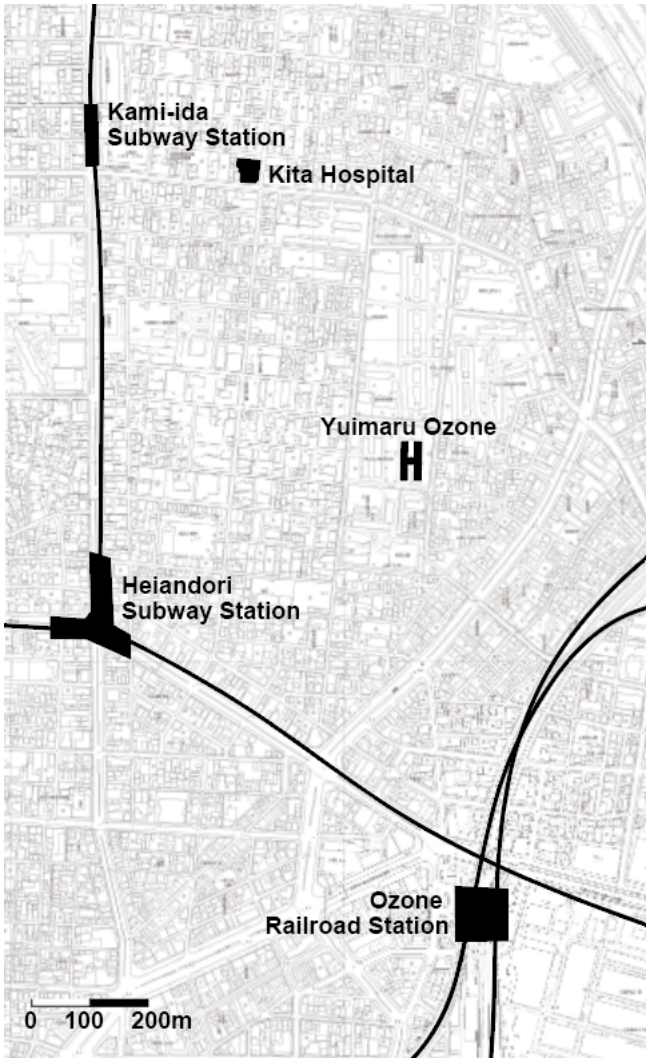


Figure 4. Location of Yuimaru Ozone.

In May 2016, the Aichi Prefectural Housing Supply Public Corporation began recruiting operators for decentralized serviced housing at Ozone housing as a public offering proposal. In August 2016, Community Net Co., Ltd. was established as a management company for decentralized serviced housing at Ozone Housing. In October of the same year, the study group was developed and reorganized to form the "Tsukuru-kai (meaning "making group")" including those who wished to move in. The details of the renovation plan, such as making each dwelling unit barrier-free and changing the floor plan, were examined.

Target housing / tenants		
	Existing rental housing	vacant houses on the 2nd to 11th floors
	Security deposit	(Deposit for 3 months)
	Current monthly rent	53,200 yen, 56,200 yen (380 dollar)
		(including common service fee)
	Exclusive floor area	49.95㎡
	Number of vacant houses	Building no.1: 36 units
		Building no.2 : 48 units
	Exisitng rental tenant	scheduled to be used as an elderly living support facility
		1st floor
	Security deposit	(Deposit for 6 months)
	Exclusive floor area	49.95㎡
Related rental facilities		
	Large store	1st floor
	Security deposit	(Deposit for 6 months)
	Exclusive floor area	982.29㎡
	Small store	
	Security deposit	(Deposit for 6 months)
	Exclusive floor area for 1	88.80㎡
Basic conditions		
	The rental facility shall be used as a living support facility for the elderly, and a large store shall be leased together from among the related rental facilities.	
	Of the vacant rental housing units, 40 units will be rented by fiscal 2017 to provide high-service housing. Depending on the number of vacant houses, up to 30 units can be rented by fiscal 2018.	
	The planned rent for 40 units in fiscal 2016 is 35,000 yen per unit per month, and the planned rent for 30 units by fiscal 2018 is 32,000 yen.	
	The basic services to be provided to the target dwelling units shall be safety confirmations and lifestyle consultation services. The provision of services other than basic services cannot be provided as a service that is considered a "paid nursing home" under the Building Standards Act and Fire Service Act.	
Type of contract		
	Fixed-term building lease contract (20 years)	
Delivery conditions		
	Current state, renovation work such as barrier-free of existing dwelling units will be operated carried out by the operator.	
	The public corporation can bear the cost of repair work up to 1 million yen or 1/3 of the cost per unit of rental housing.	
Service subsidy		
	Assumed that the operator acquires	

Table 2. Recruitment requirements for operators.

In December 2016, it was announced to the board of directors of the Ozone housing complex residents' association, and in February 2017, it was reported to the Ozone housing complex residents' association. Residents were initially pessimistic about serviced housing as they already had a large elderly population and wanted younger generations to move in. Housing Corporation has promised residents that it will repair vacant homes and provide suitable childcare homes and that decentralized serviced housing tenants' contracts for serviced housing will include participation in borough activities. They also carefully explain that when the community center is installed on the first floor, the convenience of the housing complex and the quality of life will be improved, and gained the understanding of the residents.

As a large-scale store management organization, we were considering joint management by multiple organizations because of the large area. Ultimately, however, "Wappa no Kai," Nonprofit Organization with its headquarters in Kita Ward, Nagoya City, where Ozone housing is located, has been developing welfare activities for many years, mainly to support independent employment for people with disabilities, was put in charge.

Renovation work started in April 2017. In September of the same year, a staff office (front desk) was opened in one of the small stores to handle situation assessment and lifestyle consultation services. The first phase of 40 dwelling units started the services as the decentralized serviced housing. In August 2018, the second phase of 30 dwelling units was added, bringing the total to 70 units. (Table 3) The renovation plans for each dwelling unit in Yuimaru Ozone were considered by "Tsukuru-kai," including prospective tenants. A total of three types, one with a one-room kind and the other with separate bedrooms, are available so both single and couples can find a suitable plan. About 30 thousand dollars per house was costed to make it barrier-free.

Month, Year	Main event
2012	The grocery stores on the 1st floor of Ozone Housing is closed
2012	Established Ozone Housing Study Group
2014	Opened Yuimaru Takashimadaira (in Tokyo)
May, 2016	Aichi Prefectural Housing Supply Public Corporation started the public offering
August, 2016	Established Community Net Co., Ltd.
October, 2016	Reorganization of the Ozone Housing Study Group and formation of "Tsukuru kai"
April, 2017	Start of renovation work
September, 2017	Staff office opened, first phase : 40 units
April, 2018	"Sone OZONE" started operations
August,2018	2nd phase : 30 units

Table 3. History of the establishment of Yuimaru Ozone.

Figure 5 shows the original plan modified to 1LDK. The dirt floor was widened so that a ramp could be installed so the residents using wheelchairs could enter the living room directly. The wash basin, toilet, bathroom, and other water-related areas were widened so wheelchairs could easily pass through. Steps in the room were eliminated, and handrails were installed in nine places, including the dirt floor, living room, toilet, and bathroom (Fig. 6). In Phase 1, to reduce the repair work cost, slopes were used in some types to eliminate the difference in level between the multi-purpose room and the LDK. However, the residents did not like it, so in Phase 2, all the floors in residence were made flat.

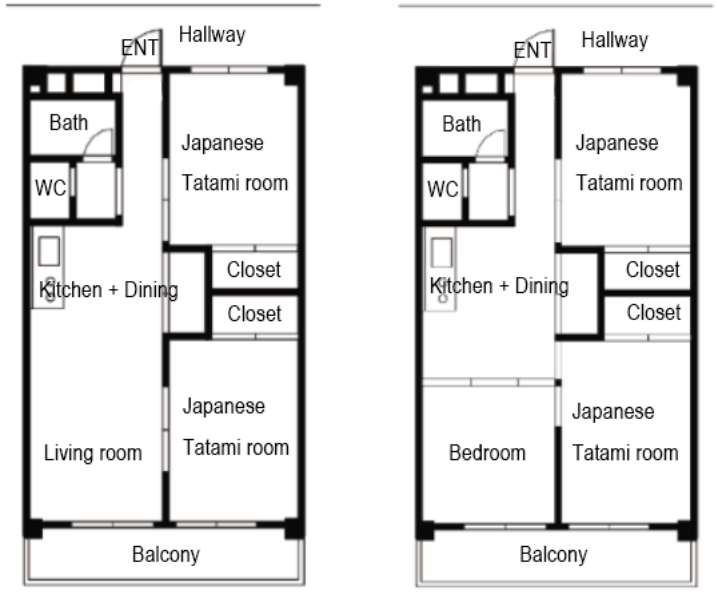


Figure 5. Original floor plan for Ozone housing.

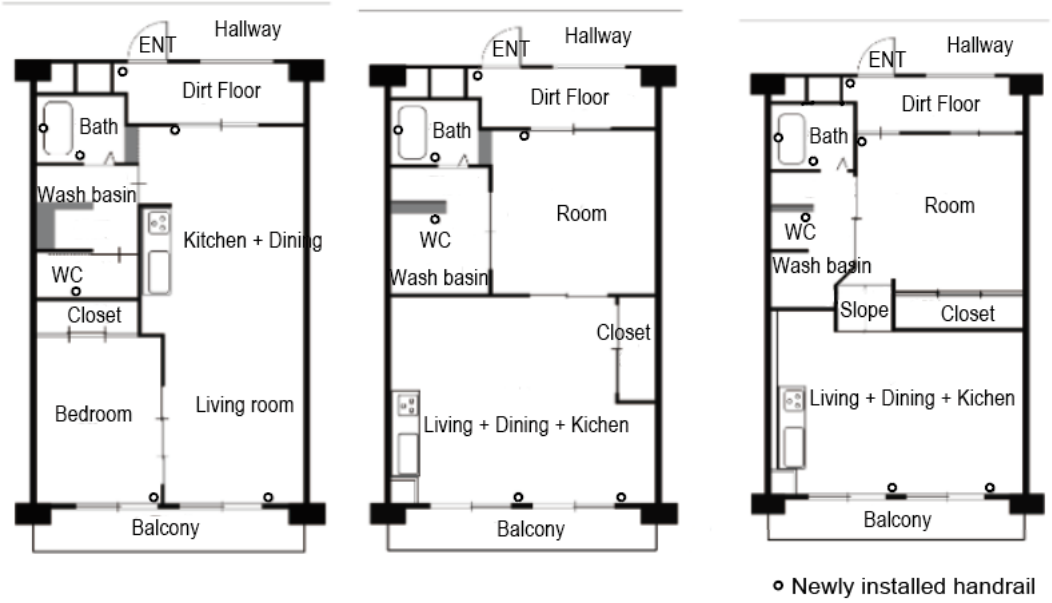


Figure 6. Floor plan of serviced housing (after the renovation).

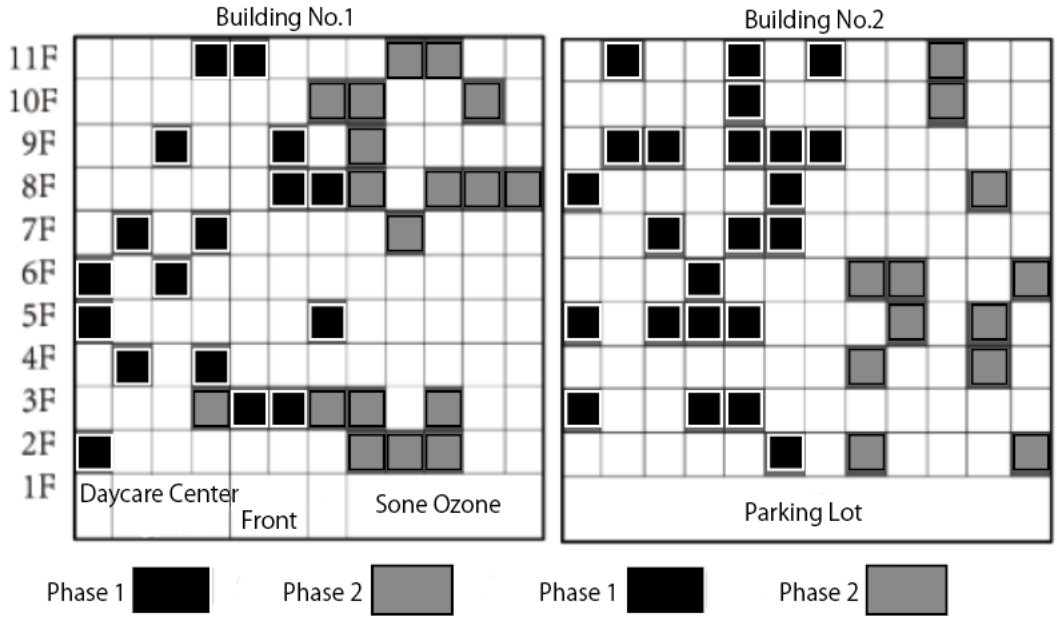


Figure 7. Location of decentralized serviced housing in Ozone housing.

Yuimaru Ozone provides only three services. One is the safety confirmation at the front desk on the first floor (staff stays there 24/7). Residents go to the front desk by 10:00 every morning and inform their safety by turning over the tag. If the safety of the residents is not confirmed, a visit or phone call will be made. The other two are consultation services and emergency contact services. Emergency contact is linked with SECOM, a security company. During the day, the front desk staff answers the emergency call device, and at night, the emergency response personnel of the security company answer. Residents who are long-term care insurance users feel that they need nursing care support services (home nursing care support, home-visit nursing care, outpatient nursing care, home-visit nursing, etc.) are consulted at the front desk, and existing medical and nursing care facilities in the region are responsible for them.

The large store is run by NPO "Wappa no Kai." They named the place "Sone OZONE." There is a bakery where you can enjoy freshly baked bread, a corner selling vegetables and foods produced in the local area of Aichi Prefecture, miscellaneous goods and foods manufactured at a facility for the disabled, and a cafe restaurant that uses plenty of local ingredients (open from breakfast to dinner and also run the food delivery services for the elderly.), a space for resource purchases, a kids space where families with children can easily visit. The backspace is used for lectures, meetings, local events, and presentations. In addition to the multi-purpose rental space used (currently suspended due to the Covit-19, it was opened at 6:30 every morning, and radio calisthenics were held to promote health), Sone Ozone is also a local service consultation corner that responds to worries and troubles such as identity guarantee, life support, property management, and post-

mortem affairs. As for the health consultation, Sone OZONE collaborates with Kita Hospital, a local medical co-op hospital, and Kinoka Home Clinic, which provides home medical care for the elderly in the area centered on Kita Ward, Nagoya City. (Fig.8)

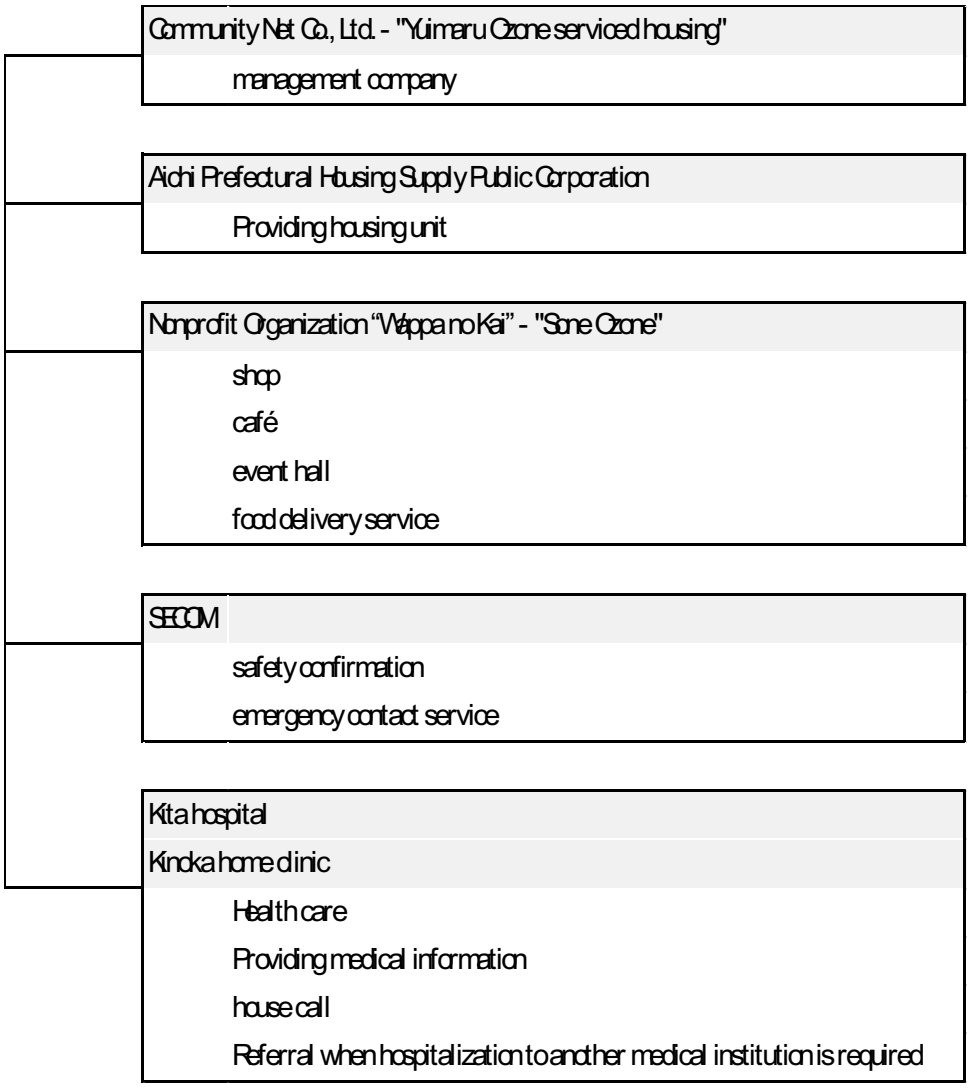


Figure 8. Cooperation between Yuimaru Ozone and other facilities.

The floor plan of Yuimaru Ozone(decentralized serviced housing) is 49.95 ㎡, the same size as the public corporation's rental housing. Seven thousand dollars per dwelling unit or 1/3 of the repair work cost was provided by the government-subsidized project (development of high-service housing). With a fixed lease period of 20 years, the public corporation has reduced the depreciation, and the rent is possible at a reasonable level of 63,600 to 77,000 yen(about five hundred dollars). Table 4 shows the market price of rental

apartments with an area of 45 ㎡ to 50 ㎡ in Kita Ward, Nagoya City. The rent of Yuimaru Ozone belongs to the same section as rental apartments with the same conditions. Given the high land prices in existing urban areas and the supply of new construction in the central city, there is no choice but to set rents that reflect land prices. However, since the existing building was renovated with government and public corporation subsidies, the rent is significantly lower than that of a new building. (Table 5)

Floor Plan	Rental Apartment Market Value (Yen)
Studio	56100
1K	53600
1DK	63500
1LDK	73600
2K	44300
2DK	69700
2LDK	82700
3DK	73900
3LDK	95400

Table 4. Nagoya City Kita Ward Rental Apartment Market Value.[3]

Address	Rent	Utility fee	Consultation	Exclusive area	Years after construction	Management corporation type
	unit: 10000 Yen	unit: 10000 Yen	Unit: 10000 Yen	Unit: m²	Unit: Year	
Hatcoka 2-chome, Kita-ku	9.6 - 11.6	1.0	3.0	25.17	9	Ltd.
Yamada 2-chome, Kita-ku	6.4 - 7.7	0.5	3.9	48.97	46	Ltd.
Nakasugicho, Kita-ku	4.3 - 5.5	1.5 - 2.0	2.5	18.01 - 19.12	4	Ltd.
Nakasugicho, Kita-ku	4.3 - 5.5	2.0 - 4.0	2.5	18.01 - 19.12	9	Ltd.
Joshin 1-chome, Nishi-ku	7.4	2.7	2.7	18.3 - 18.6	9	Ltd.
Kaminagoya 3-chome, Nishi-ku	9.9 - 11.9	1.0	3.0	25.17	9	Ltd.
Kaidacho, Nishi-ku	6.1 - 13.8	0.9 - 2.3	3.9	18.60 - 38.64	2	Ltd.
Biwajima 2-chome, Nishi-ku	8.2 - 9.2	2.0	0	25.44 - 28.68	8	Social Welfare Corporation
Horikoshi 3-chome, Nishi-ku	5.9 - 9.9	2.3 - 2.9	4.2	18.00 - 37.35	10	Ltd.
Kamihorikoshi, Nishi-ku	3.5 - 7.0	1.0 - 2.0	0.5	18.04 - 24.67	9	limited company
Yamaguchicho, Higashi-ku	6.0 - 6.5	3.0	2.2	18.63 - 29.59	8	Ltd.
Shirakabe 5-chome, Higashi-ku	24.3 - 96.2	2.0 - 4.0	6.6	20.00 - 100.45	3	Ltd.
Kawasaki, Chikusa-ku	8.0	2.6	2.5	18.06 - 18.30	9	Ltd.
Koyo 1-chome, Chikusa-ku	10.3 - 13.3	1.0	3.5	25.17 - 27.61	7	Ltd.
Sakuragaoka, Chikusa-ku	3.8 - 16.5	4.1 - 7.0	1.7	21.13 - 44.67	6	Medical Corporation
Taniguchicho, Chikusa-ku	6.5 - 16.0	3.0 - 4.5	2.8	18.75 - 56.64	6	Ltd.
Imaike 3-chome, Chikusa-ku	8.5	2.6	1.7	18.00 - 19.86	9	Ltd.
Imaike 5-chome, Chikusa-ku	8.7 - 18.0	3.9 - 4.9	2.4	27.21 - 58.67	8	Ltd.
Matsuken 2-chome, Chikusa-ku	5.0	3.0	0	20.30 - 21.60	3	Ltd.
Imaike 3-chome, Chikusa-ku	5.0	3.0	0	19.89 - 22.32	5	Ltd.
Mikage, Chikusa-ku	6.7 - 9.3	2.5	2.0	18.02 - 25.58	8	Ltd.
Fujimicho, Naka-ku	7.8 - 14.9	0.9 - 2.3	4.0	18.00 - 34.95	1	Ltd.
Sakae 5-chome, Naka-ku	8.8 - 15.0	1.5 - 3.0	6.1	27.77 - 60.59	8	Ltd.
Shinei 1-chome, Naka-ku	9.2 - 13.4	4.0 - 4.2	4.0	18.09 - 32.41	7	limited company
Chiyoda 2-chome, Naka-ku	7.8 - 24.1	3.0 - 3.8	4.4	21.64 - 63.41	4	Ltd.
Masaki 4-chome, Naka-ku	3.7 - 8.5	0.5 - 2.5	2.2	18.75	6	Ltd.
Shinei 3-chome, Naka-ku	6.0 - 16.0	2.0 - 3.0	5.1	18.01 - 35.85	7	Medical Corporation
6-3 chome, Atsuta-ku	9.8 - 11.8	1.0	3.2	25.17 - 27.61	10	Ltd.
2-1-chome, Atsuta-ku	6.0 - 7.8	3.0	3.9	21.73 - 29.96	6	Ltd.
Daiho 1-chome, Atsuta-ku	5.0	4.5	0	18.02 - 19.32	8	Social Welfare Corporation
6-2 chome, Atsuta-ku	5.3 - 5.4	2.4	1.9	21.23 - 22.91	6	Cooperative
Hatano, Atsuta-ku	5.0 - 9.3	0 - 0.1	2.3	18.15 - 18.50	5	Medical Corporation
Dankei Street, Showa-ku	10.3 - 16.9	1.0	5.6	25.53 - 46.79	9	Medical Corporation
Takigawa, Showa-ku	5.0 - 14.3	0 - 6.3	1.1	18.01 - 25.17	9	Medical Corporation
Yamahana, Showa-ku	5.0 - 10.5	3.5	6.1	18.82 - 23.86	6	Medical Corporation
Minamiyama, Showa-ku	8.5	2.1	2.0	18.00 - 19.35	10	Social Welfare Corporation
Gunsuicho, Mizuho-ku	10.0 - 12.0	1.0	3.6	25.17	9	Ltd.
Yatomi Street, Mizuho-ku	10.0 - 13.0	1.0	3.0	27.61 - 28.03	11	Ltd.
Inomotomachi, Mizuho-ku	5.9 - 6.4	1.3	3.6	18.09 - 18.27	9	Ltd.
Gando, Mizuho-ku	5.9 - 13.6	0.8 - 3.4	3.9	18.00 - 35.00	3	Ltd.
Hatsuhi, Mizuho-ku	8.5 - 21.8	2.9 - 6.3	4.5	26.00 - 55.59	6	Ltd.
Nakayama, Mizuho-ku	5.3 - 10.5	1.0 - 1.2	3.0	25.19 - 54.02	9	Ltd.
Taiki, Mizuho-ku	3.5 - 6.4	1.0 - 1.7	2.0	18.09 - 24.12	8	Corporation
Kameshima 1-chome, Nakamura-ku	6.2 - 7.5	3.0	2.0	20.93 - 23.40	2	Cooperative
Meieki 5-chome, Nakamura-ku	10.5 - 13.7	0.9	1.5	38.72 - 50.13	9	Social Welfare Corporation
Shioike, Nakamura-ku	3.5 - 4.8	1.5 - 2.0	1.1	18.00 - 25.20	6	Ltd.
Morita, Nakamura-ku	7.0	3.0 - 4.5	2.8	18.01 - 24.93	7	Ltd.
Toyokuni Street, Nakamura-ku	3.7 - 10.0	0.9 - 3.9	2.1	18.41 - 43.19	9	Medical Corporation
Kamejima 1-chome, Nakamura-ku	7.4 - 40.0	3.0 - 3.8	4.4	21.11 - 136.54	6	Ltd.
Takebashi, Nakamura-ku	6.0 - 9.6	3.0 - 4.8	1.1	18.30 - 31.95	9	Ltd.
Omotchonmachi, Nakagawa-ku	9.4 - 18.2	3.0	3.9	32.30 - 59.37	3	Ltd.
Nakajima Shinmachi, Nakagawa-ku	3.7 - 5.0	2.0 - 2.5	1.8	18.10 - 19.54	9	Ltd.
Kaminagare, Nakagawa-ku	3.7 - 6.0	1.0 - 2.2	2.5	19.5	7	Ltd.
Kamiwaki, Nakagawa-ku	3.6 - 8.4	5.0	0	18.75 - 20.62	9	Ltd.
Juban, Nakagawa-ku	3.7 - 5.2	2.5	1.0	18.00 - 24.86	9	Ltd.
Takagi, Minato-ku	3.7	2.9	0.9	22.74	5	Individual
Sunari, Minato-ku	3.7	2.0	1.5	19.20 - 19.61	4	Ltd.
Kiba, Minato-ku	6.0 - 9.0	2.5	0	25.02 - 25.33	8	Social Welfare Corporation
Kiba, Minato-ku	6.2 - 8.0	0.5	3.3	62.52	33	Ltd.
Kansei, Minato-ku	6.3 - 11.0	0.8 - 1.5	4.2	18.15 - 36.30	10	Social Welfare Corporation
Toko, Minato-ku	6.5	0.8	2.2	23.23	10	Social Welfare Corporation

Table 5. Monthly fee and area for facilities for the elderly in existing urban areas of Nagoya City.[4]

Figure 10. Tenants on the first floor of the Ozone housing.

Figure 11. Front of "Sone Ozone." Residents go to the front desk by 10:00 every morning and inform their safety by turning over the tag.

Figure 12. Previous entrance of the residence in Ozone housing. The narrow corridor after the step is not suitable for wheelchair users.

Figure 13. Entrance of residence in Ozone housing after the renovation. The dirt floor is wider, so it is convenient for changing shoes.

In addition, one of the significant features of Yuimaru Ozone is the interaction between the elderly and other generations. Unlike a house for the elderly in one whole building, it is an environment that blends into the area where a general family raising children lives in the neighborhood. And because it is not a structure to go in and out through the front desk again, it is just as same as an ordinary house for the residents to live with a sense of freedom and independence.

4. CONCLUSION

Elderly facilities can be broadly classified into two types according to the kind of service: well-equipped medical facilities for the elderly who require a high degree of nursing care (such as unique nursing homes for the elderly, health care facilities for the elderly, and facilities for the elderly with nursing care) and a format similar to collective housing (such as serviced housing and elderly housing). However, while some of the needs of older people are common, many never match. And when facilities for the elderly try to meet all of their needs, they inevitably impose a considerable burden on both the management side of the facilities and the elderly who use them.

The reason how Yuimaru Ozone can offer affordable prices is considered to be due to the following three factors.

1. By utilizing the stock of vacant houses in Ozone housing, it was possible to suppress the rent by subsidizing the renovation cost while keeping the land price from becoming apparent.
2. Yuimaru Ozone minimized the services provided to all residents. Each resident can select and add the services they feel they need, thereby reducing service charges in addition to the rent.
3. A local community complex facility was installed in the vacant large store area, sharing the part of the food delivery service function and life consultation function. And by forming partnerships with existing medical and welfare facilities in the local, Yuimaru Ozone successfully reduced the cost of services dedicated to facilities.

By utilizing the existing stock of facilities, vacant dwelling units, and vacant stores in the area, it is possible to support the lives of the elderly while reducing the burden on residents. Also, it is possible to respond to the needs of the elderly, which are expected to change in the future, by utilizing other facilities in the area.

Due to revisions to the Act on Securing Stability of Residence for the Elderly, it is now possible to use public housing and public corporation housing for serviced housing. However, the use of public housing for senior citizens is limited to the extent that it does not significantly interfere with the proper and rational management of public housing, and only when approval is obtained from the Minister of Land,

Infrastructure, Transport, and Tourism. There have been no examples yet, and only 416 units in 9 housing complexes have been supplied nationwide. Most of them have been provided on a building-by-building basis as part of the public corporation's rental housing reconstruction project. It is challenging to establish serviced housing for early-stage elderly only with public housing or public corporation housing. However, the Yuimaru Ozone, which utilizes a network of other facilities in the area and uses existing vacant units to provide serviced housing at reasonable rent prices, is one example of an effective form of supply for the early elderly in the future.

NOTES AND REFERENCES

1. Nagoya City Official Homepage

https://www.city.nagoya.jp

2. White Paper on Health, Labor, and Welfare, Ministry of Health, Labor and Welfare October 23, 2020

3. Market value information from Lifull Home's (real-estate company in Japan) Website on June 27, 2021

4. Website of the Serviced Housing Information System

https://www.satsuki-jutaku.jp/

5. White Paper on the Aging Society, Cabinet Office, June 17, 2017

6. FY2014 Attitude Survey on the Daily Life of the Elderly, Cabinet Office, March 9, 2016

7. Redefining the elderly as aged 75 years and older: Proposal from the Joint Committee of Japan Gerontological Society and the Japan Geriatrics Society, Geriatrics & Gerontology International Volume 17, Issue 7 pp.1045-1047, March 31, 2017

8. Junko Miyano"Research on housing management methods suitable for elderly people living together," doctoral dissertation, Kyoto University, July 25, 2016

9. Junko Murata, Tomoko Tanaka, Motoo Ando, Moriaki Hirohara "A study on the real state and the estimation of elderly's home modification Part 1", Journal of Planning and Design, Architectural Institute of Japan, No.572, pp.1-8, November 2003

10. "Lively Longevity Plan (Hatsuratsu Choujyu Plan) Nagoya 2018", Nagoya City Official Homepage

11. Masumi Nagakura "Possibilities and Problems in Senior Housing with Services for Living in the Community: Considerations from a Japanese and an English Case," Bulletin of the College of Community and Human Services Rikkyo (St.Paull's) University, No.21, pp.47-62, March 2019

Traditional Dwellings and Settlements
Working Paper Series

BUILDING CONTINUOUS TRADITIONAL ENVIRONMENT AND COMMUNITY: HISTORIC SALT PRODUCTION TOWN OF TAKEHARA PRESERVATION DISTRICT, JAPAN

Yushi Utaka
University of Hyogo, Himeji City, Japan

Volume 323
Pages 57-79
2022

BUILDING CONTINUOUS TRADITIONAL ENVIRONMENT AND COMMUNITY: HISTORIC SALT PRODUCTION TOWN OF TAKEHARA PRESERVATION DISTRICT, JAPAN

◆ ◆ ◆

This paper discusses the 45-year experience of the Japanese preservation district system as a successful example of conserving the traditional environment largely through community-based and private initiatives. However, the recent significant social shrinkage has led to community hollowing in the form of an increasing number of unoccupied historic houses, uncertainty about future leadership, a lack of restoration professionals, and the loss of intangible heritages. The paper focuses on a pioneering preservation district in Takehara City, which has had a heritage conservation practice for over 40 years. It also analyzes and discusses social and spatial transformation to this day. To ensure the continuation of a traditional environment, community encouragement is urgently needed to deal with the emerging disruptive issues of excessively commercialized heritage tourism and catastrophic natural disasters.

1. INTRODUCTION: PRESERVATION DISTRICT UNDER SOCIAL SHRINKAGE

Walking through downtown Takehara City, people may view what appears to be the jumble of a toy box: a crowded pachinko hall, taverns, a massive supermarket, and garish fast-food signage. Then they may suddenly see before them a perfectly beautified traditional streetscape that appears as if time has stood still: the Takehara City preservation district located in Hiroshima Prefecture in the western region of Japan. The town is known for its history of salt production and remarkable intellectuals.

The local community and authorities have continuously focused on preserving the traditional environment: white plaster walls, carefully prepared wooden houses, and quasi-stone pavement. The district has approximately 5 hectors of land, including 146 architectural and 38 structural historic properties. Takehara was selected as the 18th national "Important Preservation District for Groups of Traditional Buildings" in 1982 as the pioneering example under the jurisdiction of the Agency for Cultural Affairs[1].

According to a municipal count of restoration projects from fiscal years 1982 to 2019, 153 projects were carried out. At a glance, the Takehara preservation district is the pioneering example of conservation practice among the 126 districts in Japan (by year 2022).

The author and colleagues have continuously carried out onsite fieldwork and been involved in conservation since the late 1990s. Consequently, author learned about the successful outcomes of heritage conservation from Takehara. However, silent but serious issues have arisen in these districts. Social shrinkage has now become significant due to social aging, depopulation, and a lack of future community leaders. In 2018, the

population was 156, which was almost a 20pt drop from 2011, and 53.8% of these people were 65 years or older in 2020. From a total of 161 properties, 48 were unoccupied for an unoccupied rate of 29.8%.

Despite the successful outcome of physical preservation, community continuity as appears to be the prime issue for future preservation districts. Additionally, a traditional environment and community may be threatened by natural disasters such as floods, typhoons, earthquakes, and fires. The practice of heritage conservation is facing a silent disruption.

Preservation districts are places to live, occupied across multiple generations, and mostly private properties. Most importantly, heritage conservation in Japan is carried out through *machizukuri*, which means community-oriented and grassroots activities being the key elements.

Since its selection as a preservation district, owners of designated historic property in Takehara are eligible for up to 80% or a maximum of 6 million JPY restoration subsidies under conditions of restoration and official supervision. Nevertheless, maintaining traditional environment requires invisible everyday effort by the community. It is a burden for the historic community comprised of those living there for generations.

According to a series of questionnaire surveys administered by the authors (2003, 2011, 2020), which continuously monitored changes in residents' opinions on heritage conservation, the residents gave a positive response to the outcomes of heritage conservation for the past 40 years. However, their prospects are becoming uncertain as they age and due to social shrinkage. Moreover, people are getting less involved in community heritage conservation now organizations than in the past.

In this paper, the author describes the historic environment of Takehara and captures its social transformations from the prime salt production town to the nation's pioneering preservation district. Additionally, the issues of future continuities, particularly issues of tourism development are discussed, and the seek a way to repercussion for historic community under the age of social shrinkage.

2. RISE AND FALL OF TAKEHARA

2.1. Salt Production and Maritime Trade

To date, water is the key resource that represents Takehara's glory and decay since its beginning. Long before the Edo period (1603–1869), the town faced the Seto Inland Sea with its blessed calm and sunny climate, and the coastal lines faced a shallow beach running for over 2 km. Plentiful water is provided by the Kamo River and streams, and enough firewood is always available from the mountains. (Fig. 1)

Historically, Takehara and the regions around Hiroshima comprised a geopolitical focal point. Through the inland sea, maritime exchange was carried out since the ancient period, and major old highways were connected for interregional trade. The prominent *daimyos* (feudal lords) in the Warring States period, such as the Kobayakawa clan fought to rule this region.

Since the Edo period, when the Hiroshima domain sought the arable land around its territory, the costal lands of the inland sea were infiltrated with seawater and became unsuitable for any agricultural productions. In the middle of the 17th century, the local magistrate in Takehara invited two salt experts from the established salt production town of Ako (present Hyogo Prefecture) to investigate possible future developments. Previously, people in Ako had successfully invented the salt production method called *irihama*, which utilizes natural tidal dynamics to supply brine to the saltpan in the shallow beach.

Since then, the saltpans in Takehara were expanded to reach nearly 1 km^2 in 1720. The salt from Takehara was highly prized for its quality and affordability and was sold as far as in the north Japan. The growth of salt production invites population influx; during the Edo period, the resident population of Takehara grew to over 6,000. With salt production on track, entrepreneurs diversified their businesses, thereby establishing the sake brewing industry, hiring shipping agents, and developing wholesale houses. There is also a pragmatic reason for this activity. Takehara has high-quality rice and water, which facilitates sake production. Additionally, during the peak winter season, sake production provides employment opportunities for salt workers, who are generally employed only summer season.

The growth of Takehara's economy generated significant wealth and provided locals with more educational opportunity, owing to which prominent figures appeared in the town. For example, the prominent philosopher Sanyo Rai (1780–1832), pioneering Japanese whiskey brewer Masataka Taketuru (1894–1979), Prime Minister Hayato Ikeda (1899–1965), theoretical physicist Yoshitaka Mimura, and ceramic potter Masayuki Imai all hailed from this small town.

The locals are said to consider practical reasons to establish their learning: acquiring new knowledge is essential to dealing with merchants and valued clients from wide regions.

2.2. Salt Production Recession and the War

However, the salt production boom was only sustained for 50 years due to unstable market demand and oversupply among competitors of other salt production towns. In response to the backrush, local salt producers in Takehara established the Takehara Salt Corporation in 1888 to increase market competitiveness. Later, in 1905, Japan's salt production was made a government monopoly, which brought an increase in revenue to fund the Russo-Japanese War.

Another regional impact was the war. It is hard to imagine the calm climate and beauty of the "white sand beaches and green pine trees," of this region functioning as a key element in the nation's military strategy. Along the coastal lines of the Seto, cities of Hiroshima (Army), Kure (Navy) and Iwakuni (Naval Aviation Corps) were considered the nation's the most important military cities. Additionally, a strictly confidential poison gas weapon facility was built in Ohkuno Island near Takehara. The island was erased from the map during wartime. To serve the rising wartime demand, a railway link with the Kure line reached Takehara in 1932. Transportation modes shifted from maritime to rail; lately, motorization has caused commercial competition with neighboring towns and cities.

2.3. Land Use Change and Reclaimed Saltpan

After the war ended in 1945, the nation was urged to begin the post-war reconstruction. The regions along the Seto Inland Sea took their place as the nation's strategic development focus; coastal lands were reclaimed to accommodate new factories, in particular the heavy industries such as steel, shipbuilding, and chemical industries.

In the 1950s, the *ryuuka* salt production method was invented, which brought higher productivity and reduced labor costs. However, the salt industry was no longer considered profitable, and the Salt Corporation was dissolved in 1960.

Takehara's vast abandoned salt pan became a potential source for accommodating new industry and development. These land conversions appeared gradually from the northern fringe near from town; the northern portions of the former salt pans were converted for residential and commercial use. The southern portion was for smelting factories and transportation, including railway station and jetties. Former creeks were reclaimed and turned into major streets such as National Route 185, and the city's largest junctions are just above this confluence. The legacy of the salt production city fast disappeared during the 1950s–1970s, but the salt pans silently remained as the hidden backbone of contemporary Takehara.

Despite these spatial transformations in Takehara, the results of development were substantially smaller than in other cities. For example, the former navy base in Kure in the west was transformed into the nation's prime commercial shipbuilding hub, and Mihara in the east featured leading chemical and heavy industrial firms. Takehara has appeared to have lost its competitiveness compared with the coastal industrial cities, thereby dragging out its decay to this day. (Fig.3)

2.4. Urban Setting of the Old Quarters

Adventitiously near the former salt pan, the old quarters had been almost untouched since the Edo period. Salt production brought enormous wealth to Takehara by means of abundant investment and successful business, which brought luxurious residences and warehouses.

Downtown Takehara had been formed as early as the 1600s, as referred to on a cadastral survey by the samurai ruler Masanori Fukushima. The town is between Mount Terayama (96 meter high) in the east and the Honkawa River in the west. The main street (Honmachi Street) runs north–south, and five alleys connect the high street and riverbank.

Architectural historian Masaaki Miyamoto observed that the physical urban setting of Japanese port cities during the medieval period had the following characteristics: alleys were run parallelly and connected coastal quay with the main street of the town center. Along the main street, merchants and people from hinterland traded. In subsequent periods, people began to reclaim the shore and expand the port settlements to accommodate more population and trade activities. The Takehara's urban form is an observable example of a medieval port settlement.[2]

However, the Honkawa River was unable to accommodate deep-draft vessels due to the frequent sediment deposits at the river mouth. This river was formerly a small stream and lately dredged to develop a river port near the town center. For long, frequent dredging was done, including a massive river diversion project of the Kamo River, to reduce sediment at the shoreline. The project took over 50 years, lasting until the 1800s, and eventually, the 30-meter-tall hill on the coast was cut through.

However, the capacity of the Honkawa riverbank was insufficient to accept emerging port development. Later, new jetties were constructed at off-port points to accept larger vessels, and people used lights to transport cargo to town. Thus, Takehara was unable to compete with neighboring Tomo or Onomichi ports, which were capable of berthing larger vessels.

2.5. Built Heritages in Takehara: Significance and Uniqueness

The landscape of Honmachi Street consists of a lined white-wall Machiya (town house) and the green mountain of Terayama in the distance. Machiyas are wooden structures, a common feature of historic towns in Japan. The Machiyas in Takehara along the main streets have mixed styles; some are gabled, and others are placed along eaves on the street front.

Until the end of Edo period, the "maximum rule of three *ken* a span"[3] was in effect, and homes were kept smaller than regional rulers intended. Generally, a gable-fronted Machiya needs additional land for rainwater

drainages. However, the eaves on the fronts of houses are closely connected to neighboring buildings, which enables land use to be maximized. Thus, gable-front Machiyas represented the wealth of the owners, enabling those who were capable to acquire larger land plots to express their higher social hierarchy.

Particularly, the front façade's design represents the owner's prosperity, including massive hewn stone foundations, long timber beams, and carefully finished wooden lattice work. The walls are finished white plaster, and the roofing is made of oxidized silver.

The plan of a Machiya consists of two parts: an earthen section and a flooring section. Generally, the earthen section connects from the front to the rear end, which served as multifunctional space for service, domestic work, and trade. The latter consists of several rooms with tatami or a wooden floor, which has different functions. Generally, the front room serves for trade or reception, and rooms to the rear are given over to more private uses.

Residences are not the only things that represent the urban legacy. Among these Machiyas, massive sake breweries warehouses and quasi-western former public institutions are important visual focus. Additionally, a variety of stonework remains, such as the stone lanterns at shrines, stone walls, and *jizo* guardians. In particular, the stone steps along the bank of the Honkawa River are important reminders of the medieval legacy of this port. (Fig. 2)

Furthermore, as a larger landscape element, the preservation district is surrounded by the natural environment in the form of Mount Terayama and the Honkawa River. These multiple and dynamic landscape compositions provide a rich visual experience for the visitors.

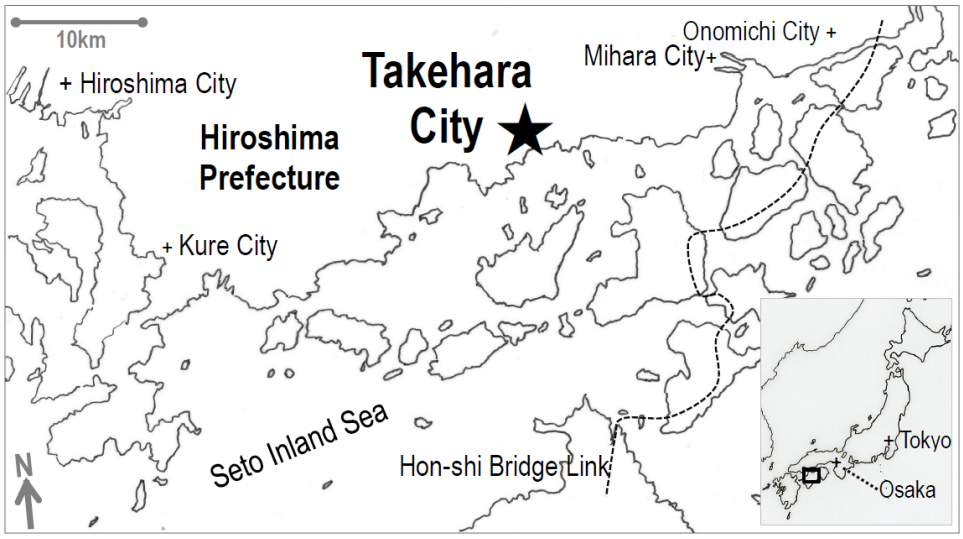


Fig. 1: Location Map - Takehara City and Seto Inland Sea. (Map drawing by author).

Fig. 2: Takehara: Important Preservation District for Groups of Traditional Buildings. (Pictures provided by author).

1. Front façade of a preserved historic house.
2. Honkawa River and townscape. The preservation district is situated on the right bank.
3. Honmachi main street and preserved historic houses.
4. Quasi-western municipal history museum (former residence and town library).

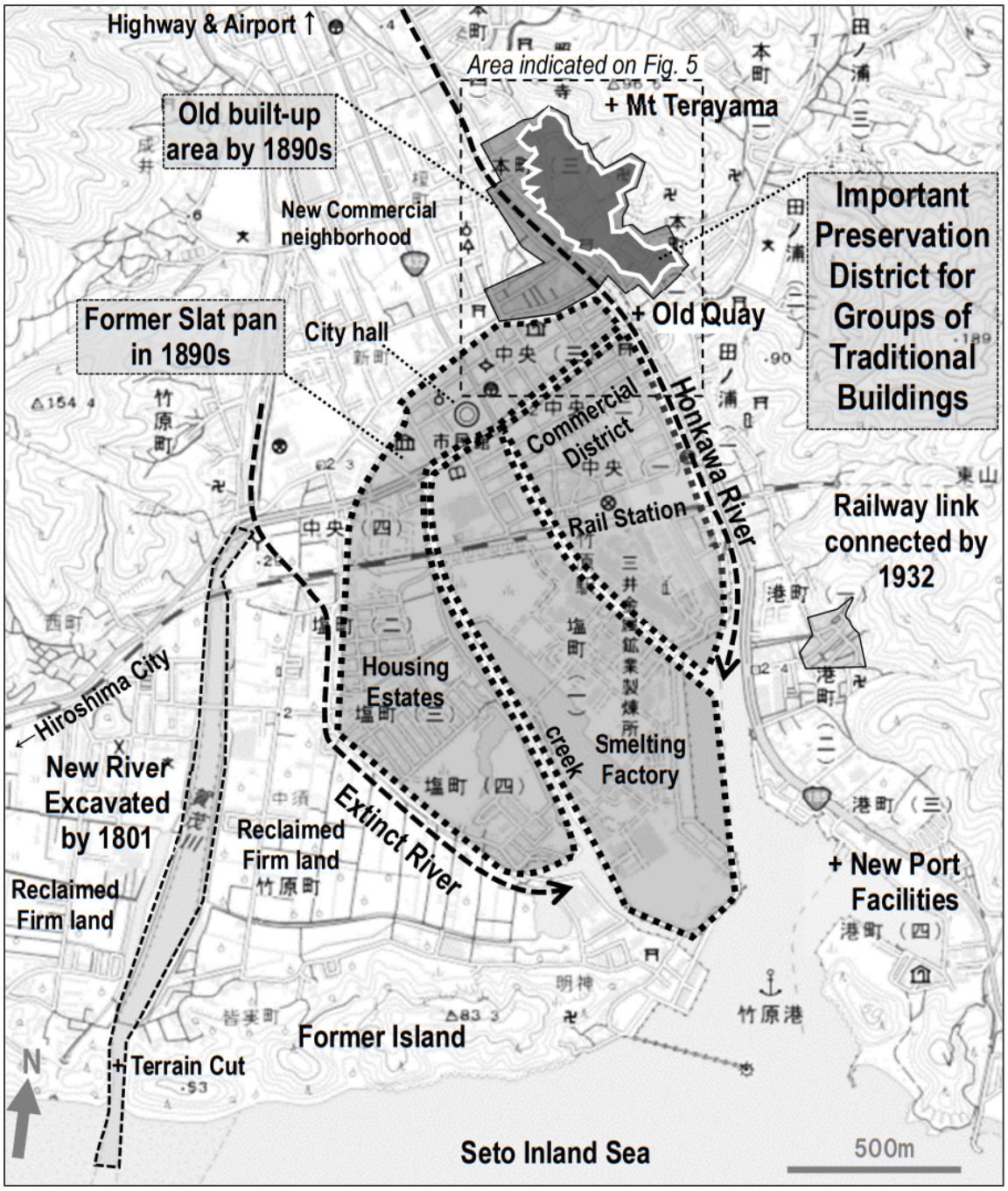


Fig. 3: Land Use Change and Site Location of the Preservation District. (Base map: Geospatial Information Authority of Japan, Retrieved:2022.07.15. https://maps.gsi.go.jp/#15/34.336438/132.910409/&base=std&ls=std&disp=1&vs=c1g1j0h0k0l0u0t0z0r0s0m0f1).

3. HERITAGE CONSERVATION: MAKING A PIONEERING PRESERVATION DISTRICT

3.1. Policy Implementation and Site Management Systems

The flourishing urban legacy and remaining urban built heritage have been well accounted for by historians. Built environment experts have also paid close attention to capture the historic significance. As mentioned in

the previous section, Japanese society experienced her postwar high economic growth during the middle of the 1950s to the early 1970s. The loss of the natural and cultural environment prompts concern and inevitably leads to questioning of the given pattern of social development.

The legal conservation system Preservation Districts for Groups of Traditional Buildings appeared after the amendment of the Law for the Protection of Cultural Properties in 1975. Citizen initiatives were also established; for instance, the Japan National Trust for Cultural and Natural Heritage Conservation[4], and The Japanese Association for Machi-Nami Conservation and Regeneration[5].

Following these moves in Japan, leading academics conducted inventory surveys in Takehara town in 1976[6] and 1978.[7] These studies included an in-depth analysis of the urban history and transformation of landownership using the latest methods for examining urban heritage at that time.

In 1979, Prof. Eizou Inakagi of the University of Tokyo and Prof. Misturu Suzuki of Hiroshima University carried out official preparatory research.[8] This study included the analyses of urban landscapes and a future preservation plan, and it became an important study in terms of establishing a methodology to prepare for future preservation districts in Japan. For the local community in Takehara, enabling the town to establish a historic preservation district as it did in 1982 (Fig. 5).

3.2. Restoration Works and Subsidy System in the Preservation District

As noted in the first section, the owners of designated historic property in Takehara are eligible for up to 80% or maximum 6 million JPY restoration subsidies. According to the municipal count of the restoration works from the fiscal years of 1982 to 2019, 153 projects were carried out, including recovery work on damaged stone walls and installing fire alarms. Restoration costs vary depending on the required carpentry works.[9]

Of the total amount spent on restoration for 37 years period, the owner's cost was 34% and subsidies covered 66%. While the owner's share is smaller than the subsidized amount, yet, it could come to represent a heavy expenditure for elderly property owners.

Nevertheless, the municipal fiscal shape is in critical condition[10]. The city's long years of economic recession reduced tax revenue, particularly in the industrial and commercial sectors, and recent natural disasters restricted the recovery budget. These financial backrushes affect preservation projects as well.

3.3. Role of Community and Organization in the Preservation District and Politics

Machizukuri – community-oriented and grassroots activities are key to the continuities of the preservation district. In the late 1970s, as recalled by older residents, locals initially had a wait-and-see attitude toward

accepting the newly introduced national preservation district system; once officially selected, the property owners can obtain preservation subsidies but are required to keep their homes and unable to alter them beyond conservation guidelines.

In the Takehara preservation district, there are two major community organizations; the Residents' Association (*Jichi-kai*) and Heritage Conservation Association (*Hozon-kai*).

The Residents' Association is a territorial community organization that existed long before the selection of a preservation district. It has a hierarchical structure; the upper group is the Residents' Association, followed by the neighborhood (*kumi*), after which are the units (*han*). The leaders work on a voluntary basis; they are mutually selected from among senior males with good reputations and often from among those who are retired public servants and teachers. Leaders maintain harmony among members, sometimes silently tolerating others' views.

Despite this social setting, upon the selection of the preservation district, the municipality and technical committee delineated the area based on the buildings' historical significance. Consequently, some residents' neighborhoods and units were placed within or outside of preservation district. Additionally, residents living in other areas had different expectations for heritage conservation.

The Heritage Conservation Association was established after official recognition of the area as a preservation district in 1982. Its members were assembled from households living within preservation district territory with participation on a voluntarily basis. The activities are covered by a small annual membership fee and municipal payment of costs for commissioned management work for public facilities. The leaders of the Heritage Conservation Association contribute on a fully voluntary basis, but their role in conservation practice is inevitable because they mediate among the residents, municipality, and professionals.

3.4. Heritage Tourism: Salvaging the Local Economy

According to municipal tourism statistics, tourism in Takehara has been increasing.[11] Tourists coming to the city constantly increased from 2000 (0.5 million annual visitors) to 2015 (1 million). However, since 2015, fewer tourists have arrived, reaching a low of 0.76 million in 2019 before the plunge due to the COVID-19 pandemic.

The preservation district is the prime source of the city's tourism industry; the statistics showed us that the demands steadily increased from 0.16 million in 2000 to 0.5 million by 2015. The preservation district played a role in generating synergistic effects to draw tourists to other places. However, tourist expenditures show

distinct trends; for a long period until 2016, each tourist in the preservation district spent only JPY 400. Since then and later, a sharp increase to JPY 2283 was seen. (Fig. 4)

Recently, heritage tourism in Takehara took a unique approach to make the district more attractive. Sequences of television dramas and animations are a powerful magnet for tourists with higher media consumption. For many years, the town was a filming location, which attracted interest not only in the physical townscape but also by arousing people's imagination through narratives beyond historic artifacts. The pioneering movie for this town was *The Girl Who Leapt through Time*, released in 1983, written by Yasutaka Tsutui, and directed by Nobuhiko Obayashi.[12] Subsequently, other works that have attracted attention were produced approximately 30 years later, such as the animated *Tamayura* in 2010 and national broadcaster NHK's television drama *Massan* in 2014. [13]

The pattern whereby tourists visit filming locations have been sometimes described as "pilgrimages to a holy land," in which visitors seek to fall into the story world. [14] This move has led to a new sort of visitors, particularly the young generation and females, whereas earlier visitors were predominantly seniors. These phenomena have penetrated other "holy lands" that are boosted by SNS.

Their intention to visit the preservation districts were not entirely for the built heritages and traditional culture, but these "pilgrimage to the holy land" approaches certainly provide alternative attractiveness. Surprisingly, numerous enthusiasts have appeared at the arrays and stone steps of the shrine where the story was filmed. This surprises locals as their usual living spaces are now the objects of extreme focus. In fact, an *okonomiyaki* (savory pancake with various ingredients) is overwhelmingly seen to have a long queue because it appeared many times on the story. [15] Of course, the local business sector welcomes these new tourism "detonators." [16]

3.5. Local NPO, Business Sector, and External Capital

Another key player is the nonprofit organization (NPO). A local NPO has been playing a vital role in promoting local heritage since the early 2000s. It has organized various cultural events: traditional salt production and retailing, the making of bamboo lanterns for festivals, and initiating heritage conservation expertise. Additionally, it has functioned as a film commission and dealt with commercial merchandize.

The head of the NPO contributed to promoting historic properties and ignored questions of personal financial profit, acquiring multiple properties in the preservation districts. These real-estate deals are carried out by a private firm which the head of the NPO participated in the executive committee.

Recently, the NPO and related firms acquired a few historic properties and fully renovated them. They established a lease agreement with a franchise of boutique hotel operators from other cities. The boutique hotel in Takehara hangs the same shop curtains on its frontage and has wooden front doors that close quietly, all attractively restored with traditional details, thereby becoming a new icon of Takehara.

The hotel conversion was well thought out; the NPO and boutique hotel operator sought a property with historic charm and a low real-estate price. Each house is full of memories and evokes longstanding emotions beyond generations of siblings. However, absentee landlords generally feel a burden in maintaining their properties, especially when facing inheritance and yearly property tax. The Japanese real-estate market does not appraise older buildings, including historic properties; they receive zero or even negative value when the cost of demolition is considered. Needless to say, existing buildings that do not conform to building regulations lower property values.

This background property information is not visible to outside entrepreneurs or one-time visitors. NPO leaders have enough background information and are relatively trusted by landlords; they are able to acquire historic properties at affordable costs. Following this, they renovate the property using their own funds and various official subsidies.

These properties are rented out to a franchise boutique hotel operator with sufficient management know-how from many historic cities. The lease agreement is in effect for 12 years, and onsite hotel operations are handled by well-trained staffs of the hotel operator. In 2020, the boutique hotel remained at small capacity (10 rooms) in three Machiyas, set exclusive room rates, and estimated occupancy rates as low as 30%. The NPO plans to increase its room capacity to 30; this extension could improve the economy of scale of the operational cost.

These moves could break walls with the previously local community, local authorities, and heritage conservation experts unable to establish this business-oriented revitalization.

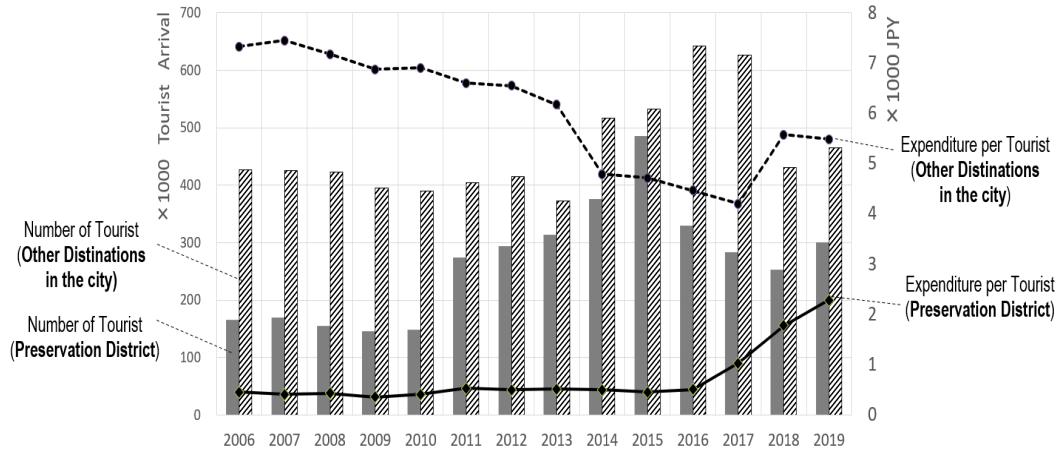


Fig. 4: Number of Tourist Arriving and Expenditure (2006–2019). (Original Data Source: Statistics of Takehara City Government).

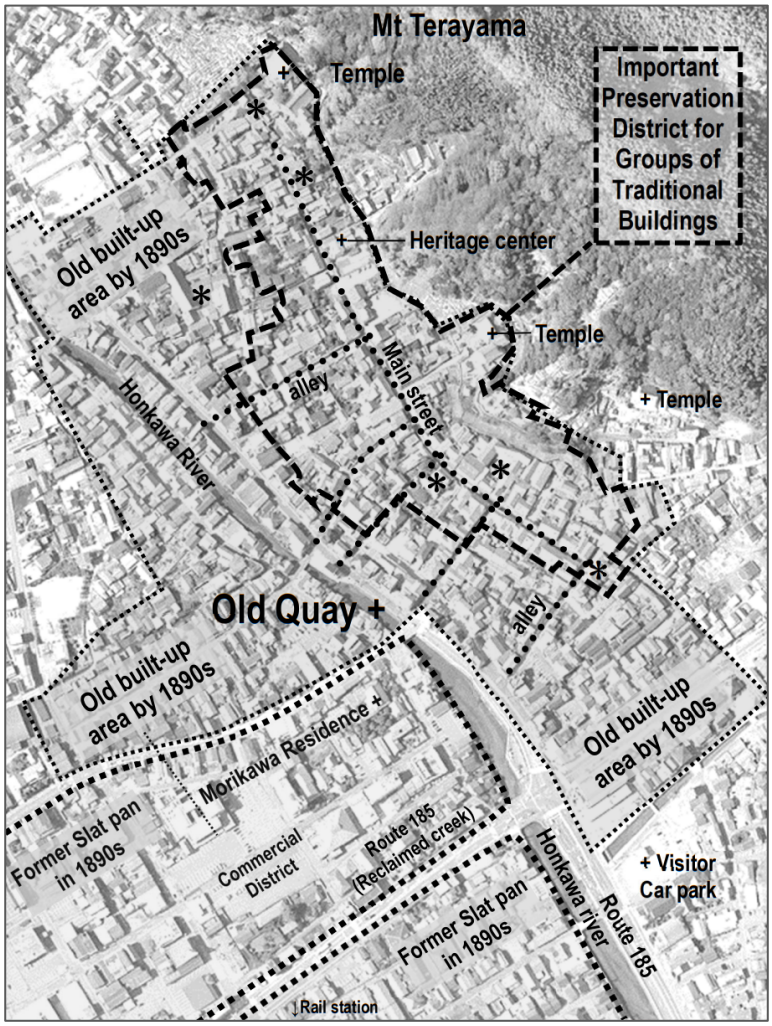


Fig. 5: Site Setting of the Takehara Preservation District for Groups of Traditional Buildings. (Background aerial picture: Geospatial Information Authority of Japan, Retrieved: 2022.07.15. https://maps.gsi.go.jp/#17/34.344353/132.909583/&base=ort&ls=ort&disp=1&vs=c1g1j0h0k0l0u0t0z0r0s0m0f1&d=m)

4. RISING ISSUES AND CHALLENGES

4.1. Escalating Depopulation and Social Aging

The population of Hiroshima reached its peak in 1998 (2.88 million), but since then, it has fallen continuously to 2.78 million in 2020 (−4.5%). Conversely, during the same period, social aging rate (statistically 65 years and above) accelerated from 15.9% to 28.9%.

These depopulation and social aging trends are becoming apparent in provincial society, including in Takehara. The city population recorded its peak in 1980 (0.36 million) and has been in continuous decline since then (with a registered 0.24 million population in 2021). Social aging rate has hit over 41.6%. These trends are worsening as flows out particularly the younger residents. The city has no institution of higher education or employment opportunities with favorable terms of employment compare to larger cities.

This social shrinkage is even more critical in the preservation district. In 2020, according to the municipal government, the population was 156, and 53.8% of them were 65 years or older. The population fell 19% from its 2011 level, but the elderly population increased by 7.2%.

4.2. Increasing Unoccupied Properties

Population decline and social aging have increased unoccupied properties. According to the municipal data, in 2018, 48 of 161 total properties were unoccupied for a 29.8% unoccupied rate. In 2014, four years previously, 31 properties (14.6%) were unoccupied. The main reasons for unoccupancy are the occupier's death or hospitalization of elders. Physical assets are well preserved, but the living heritage is fast disappearing. Of course, unoccupied properties deteriorate more quickly; daily ventilation is essential to maintain the wooden structure, especially preventing damage and the spread of pests.

These historic houses are incompatible with contemporary needs and their real-estate valuation. A housing research expert Hiroshi Mano and his research associates examined the real-estate property registers in the Takehara preservation district. They found that 33.5% of properties were smaller than 100 m^2, which did not meet contemporary national housing standards. Most transfers of ownership occur upon property succession (38.9%), purchase (42.5%), donation (12.5%), and others. H. Mano pointed out that these real-estate valuations can influence the owner's concerns regarding the maintenance of historic houses.[17]

4.3. Future Community Leadership

The Heritage Conservation Association has maintained proximity with the community on occurrences of conservation practices. However, their leadership is also affected by social aging. The members of the conservation association are generally the heads of households, but now 80% of them are over 80 years old. Membership is decreasing year by year as seen in other preservation districts.

Leaders are not favorable to inviting new members from outside the preservation districts because doing so might reduce the harmony in their association. The old quarters had been relatively conservative and sometimes skeptical in response to accepting something new that may entail change. They are quiet and calm and sometimes seem expressionless; there are invisible social orders, such as the vestiges of family status and unspoken long standing feuds that outsiders are unable to recognize. This also relates to the faith and the leadership of religious institutions as such as temples and shrines. This social atmosphere is widely observed in the old quarters as a part of tradition.

Arguably, in mutual relationships among residents over multiple generations, the perceptions incline from introverted forces and sometimes militate exclusively away from others outside their own world. Emerging issues and complicated long-term issues are sometimes beyond their capability.

4.4. Administration and Carpenter Manpower

Another key player in maintaining preservation districts is the administrators of local authority. Heritage conservation policies fall under the educational authority in Japan. The Takehara City authority administers the conservation division under the city's Board of Education. [18]

The municipal conservation unit is the administrative body of the preservation district and bridges both community and national government. However, due to the human resources policies of the local government, officers receive an internal transfer in at most 3 years, which can impede conservation projects. The staff may not be necessarily be appointed from among architectural or conservation professionals.

Carpenters from private firms who work on restoration sites under the supervision of the authorities are most important players to determine the quality of the restoration, and this work largely depends on their professional skills. However, provincial towns have a limited number of carpenters, and this number is decreasing due to social shrinkage. For them, there is not enough profitable opportunity of orders in preservation districts to maintain their incomes, and they are also aging.

4.5. Changing People's Perceptions and Ambitions

The author and colleagues repeatedly monitored changes in residents' opinions through a series of questionnaire surveys (2003, 2011, 2020). The research team examined how the residents accept their heritage conservation and how they have been impacted by social and spatial changes over the years (Fig. 6).

Over the nearly 20 years of the research period, the residents have maintained a positive response to the outcomes of heritage conservation; 79.6% of respondents reported a favorable evaluation of the legal

preservation district system and restoration subsidies. The street beatification project and the infrastructural upgrading project are also well-accepted terms.

However, their future prospects are unclear, due to the uncertainty of their lives as they age and as a significant population moves away to the big cities. Particularly, uncertainty regarding property inheritance and the recent flooding disaster have become critical burdens for them. Gradually, residents have begun to lose their intention to participate in Heritage Conservation Association. In 2003, 71.7% of respondents responded that they were either participating or had the intention to participate. However, in 2020, this rate was 63.7%, a drop of almost 8 percentage points.

At the beginning of the preservation effort in the 1980s, this pioneering community was relatively young and had an intense ambition to preserve their endangered heritage in the face of industrial development under the nation's high economic growth. After nearly 40 years as residents of a preservation district, the weathering of their initial ambitions is incontrovertible.

4.6. Interregional Competition on Heritage Tourism

Historic cities now facing more interregional competitions for contracting tourism market due to population shrinkage and hovered economy. In the Takehara region, particularly in coastal cities along the inland sea, there are prepotent tourist destinations that provide the appeal of attractive urban heritages. A one-hour drive from Takehara, the historic quarters in Onomichi City [19] and Tomo town in Fukuyama City [20] not only highlight their unique traditional environments but also provide new tourism experiences, such as cycling, boating, or unique lodging in converted old houses.

A series of the national preservation district system is increasing and expanding to 126 districts in 43 prefectures in 2022. Additionally, many local authorities independently established their preservation system; naturally the rarity of the traditional townscape has become less common.

Tourist activities in the Takehara preservation district were established and have existed for many years. In other words, the district is relatively old-fashioned and unattractive particularly for younger generation. Locals have urged that Takehara should establish ways to attract tourism income; however, the local authority and community possess limited business capability.

4.7. Rising Heritage Business and Silent Community

The recent opening of the boutique hotel by a private firm has provided a valuable realization. So far, the neighbors have displayed no anxiety about this. The boutique hotel is of relatively small capacity, exclusive,

and the guests are usually quiet; they are predominantly seniors and of a higher income group. The reaction from the local community has been muted.

In the relatively conservative old quarter, no aggressive objection to others has been observed. It is sometimes impossible to grasp the subtle feelings and politics. Locals silently watch the financial profits of heritage businesses generated by tourist merchandize, real-estate deals, and media publicity. Older residents have self-confidence and a legitimate claim to their long years of voluntary contribution to their daily conservation practices. A resident whisper, *"This town will be the company village in the near future. They are clever. Buying houses, but only properties with better condition. They have never showed up for community activities."*

Conversely, in the context of recent challenges of the NPOs and private firms, their professionalism and business ability are essential for future revitalization: building conversion, marketing, fund-raising, and site operation to entertain high-end visitors.

In 2021, an incident shocked locals and professionals when a designated historic property was demolished by the owner without official permission. The city government accused the owner and contractor of violating the Ordinance of The Takehara Preservation District for Groups of Traditional Buildings. The accused explained that the removal of the building was an error, and the district public prosecutor's office decided not to initiate public action. This is notably considered the first case of violation as such in almost 50 years of Japanese preservation district experience.[21]

4.8. Worsening Incidents of Natural Disaster

The Takehara preservation district has faced uncountable numbers of disasters. Due to the nature of wooden structures, conflagration is always a prime concern. An accidental fire occurred early one morning in March 2016 and destroyed houses in the central neighborhood of the preservation district.[22]

The town has frequently experienced flooding. In July 2018, the northern portion of the preservation district was flooded, and houses were inundated above floor level. Historic warehouse of sake breweries were also flooded, which required a few years of heavy recovery costs. The municipality passed a budget bill for disaster recovery that allocated over 10% of the total annual municipal budget at 1.8 billion JPY.[23]

The city has provided a disaster "hazard map" that indicates the future risk; potential damages are shown, such as sediment flow from the mountains in the east and that floods will rise to a maximum 1–2m height within the preservation district. However, the degree and frequency of these natural disasters are becoming worse and less predictable.

At the scene of 2018 flood, a community leader recalled that the rain was extremely heavy, and reached a level that he had never experienced previously. *"It was a crazy downpour. It was more than the previous big flood in 1967. When we decided to evacuate, I checked on all the neighbors, particularly worried about lonely elders. I called younger people to support them in the deluge of rain. None of those people were left behind."*

These community leaders not only engaged in immediate rescue efforts but also worked extremely hard in disaster relief efforts by cleaning up houses covered in heavy mud, contacting absentee landlords, and helping elders return to their homes. A community leader added, *"Now, we are all getting older. I cannot promise people that I can take the same action in the next extreme disaster."*

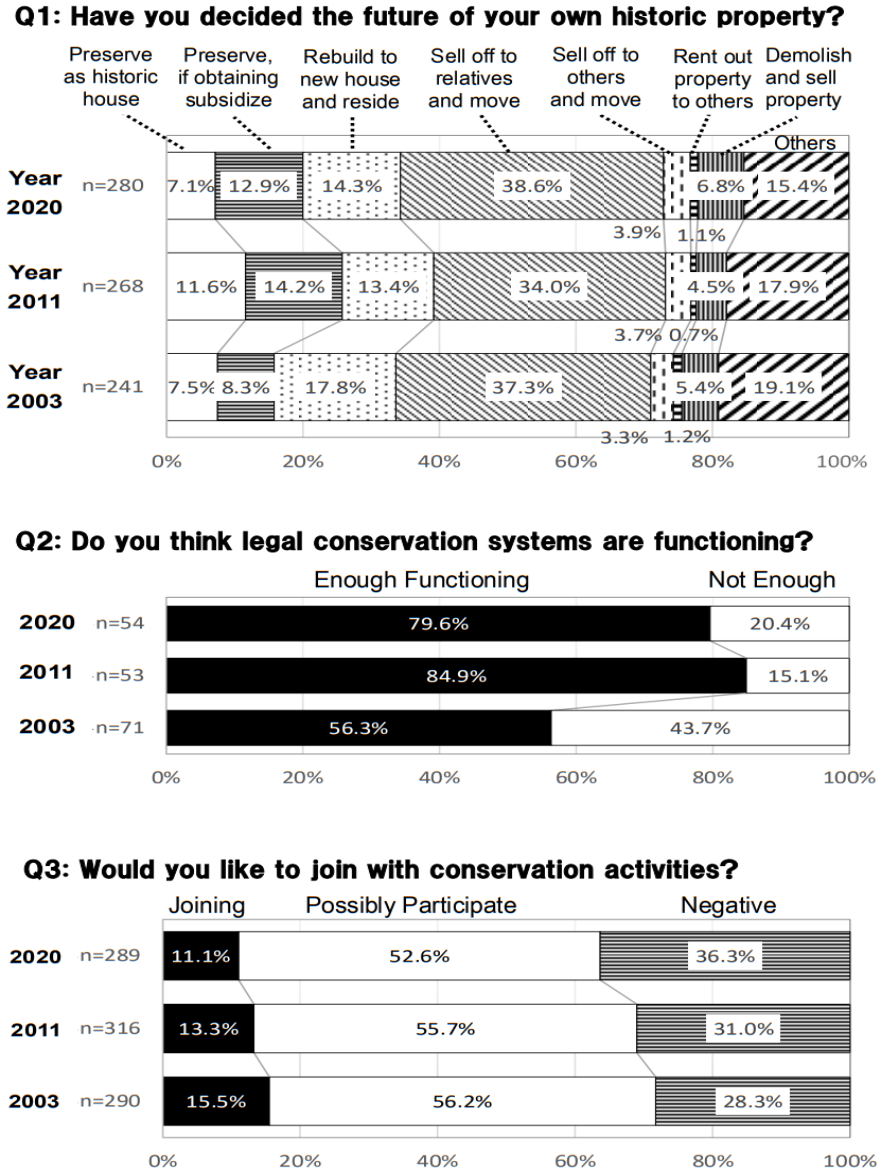


Fig. 6: Changes in Residents' Opinions—Series of Questionnaire Surveys (Year 2003, 2011, 2020).

The questionnaire survey was initiated by the Heritage Conservation Association (*Hozon-kai*) and municipality. It was carried out by author, Mr. Nobuyuki Uemura, and Ms. Noriko Yoshida, and several university students also participated in the series of field studies.

5. CONCLUSION—CHALLENGES OF CONTINUOUS TRADITIONAL ENVIRONMENT

5.1. New Policy Implementations

Despite multiple challenges in the Takehara preservation districts, community and local authorities urged to take action toward social revitalization to uplift the historic city. Local governments have prepared new legislation that ensures a more sustainable historic environment.

The actual preservation district system was reexamined in a supplementary inventory survey from 2010 to 2011. In this study, research committee discussed the possibilities of further territorial expansion of preservation district, particularly including the area of the west bank of Honkawa River. However, this is facing a deadlock, because the Honkawa River is slated for expansion to upgrade antiflood capacity, which could significantly change the riverside landscape and historic artifacts.

Since 2012, the Act on the Maintenance and Improvement of Historic Scenery has been in effect, which encourages comprehensive site management and includes surrounding territory. This enactment provides a variety of budget package that enables a wide range of heritage-related projects.

In May 2019, another title was granted to the city: The Japan Heritage, under the auspices of the Agency of Cultural Affairs to promote it heritage to international visitors in particular. [24] Under the listing, local authority consolidates promotional organizations and establishes a story to promote their heritage. In the case of the Japan Heritage in Takehara, the promotion theme was entitled "*Kitamae-Bune* Sea Routes, Ports, and Residences Built on the Dreams of Brave Seafarers." [25]

Recently, the city has made steady and continuous upgrades to its urban management; preparing the implementation of new landscape control regulations and an urban street revitalization plan.

5.2. Continuous, Traditional Environment and Community

It can be said that these new policy implementations contribute to further conservation practices in Takehara and improve the city's physical appearance. However, as discussed in previous sections, there has been no consideration of continuity of community in its solution. Japanese heritage conservation systems exemplify a community-oriented approach. However, as the social shrinking scenario is escalating and the substance of the community is changing, the need to discuss community is inevitable. Increasing numbers of unoccupied

properties, falling population numbers, population aging, lack of manpower, and uncertainty of future leadership have reached a critical stage.

5.3. Encouragement for the Community

Until recently, the selection of preservation districts in Japan has been based on the significance of artifacts. In recent years, the social aspects have become widely included on preparation documents for selection, and efforts have been made to induce a more participatory approach.

The diverse visions and thinking of individuals cross through this small historic town, including those of entrepreneurs, carpenters, administrators, politicians, families, and siblings. Nevertheless, the mutual cooperation and discussion among these players is now inevitable to sustain the preservation district.

The role of community organizations could be reexamined, for example, encouraging the participation of the younger generation, inviting ex-preservation district residents, and ensuring mutual long-term consultation with professionals.

However, because the Takehara preservation district has marked over 40 years, people sometimes face mannerism for their heritage conservation practices. A revised focus on reinventing their urban history and architectural significance is required. For example, there is only limited representation of the historic background in the preservation area. Presumably, readdressing the natural aspects of water, past legacy of salt production, and maritime trade would be important components in making Takehara more attractive to locals, visitors, and future generations.

5.4. Seeking Alternative and Continuous Heritage Tourism

Takehara experienced frequent and high demands for tourism due to media coverage and social events. Recently, international tourists have also become an emerging demand. This demand is eagerly welcomed by local business sectors, although these demands vary and fluctuate by season and period. In particular, the COVID-19 pandemic flashed over the inbound demand and overshadowed local economy.

To make heritage tourism resilient against future uncertainty, the tourism strategy must be diversified; e.g., encouraging more visiting opportunity for citizens, utilizing more school field work, networking with neighboring historic towns, and setting up an adequate capacity for international tourist.

To ensure that an initiative is taken by a local community, it may need to be professionalized to better encounter potential business deals with capital from outside of the preservation district. This should be

established using a prior consultation system to accept the commencement of a new business in town to mitigate possible conflict with locals.

5.6. Disaster Prevention and Upgrading Infrastructures

Urban infrastructure and disaster prevention should be urgently upgraded. As discussed earlier, the worsening damages of disaster critically endanger the traditional environment and community. The living standards should be upgraded with disaster mitigation measures and sewer systems, which could invite more people to live in the preservation district.

ACKNOWLEDGMENTS

The questionnaire surveys were conducted with the valuable support of the residents of Takehara and the local authority. The questionnaire surveys were conducted by the author, Mr. Nobuyuki Uemura (Hiroshima University), and Ms. Noriko Yoshida (Prefectural University of Hiroshima). This chapter is based on the author's own research and observations, and it should not be attributed in any manner to any projects or official committees with which the author was involved.

NOTES AND REFERENCES

References marked * in this list are in Japanese. The titles given below are translations by the author.

[1] The Law for the Protection of Cultural Properties (1950) falls under the jurisdiction of the Agency for Cultural Affairs (Ministry of Education, Culture, Sports, Science, and Technology).

[2] Masaaki Miyamoto, 2005, Urban Form of the Early Medieval Period, Chuokouron Bijyutsu, pp. 200–201. *

[3] "*ken*" – a traditional system of measures. 1 ken is approximately 1818mm.

[4] The Japan National Trust for Cultural and Natural Heritage Conservation - established in 1968, it has undertaken the role of a public interest incorporated foundation that provides financial support to local communities and performs heritage inventories.

[5] The Japanese Association for Machi-Nami Conservation and Regeneration - established in 1974 by a community-based alliance of heritage lovers from historic towns to foster networking and collaboration

[6] The 1976 inventory - Prof. Kouji Nishikawa of Kyoto University and his research team conducted an architectural and settlement inventory (Kouji Nishikawa, et al., 1976, Chapter 3-Ⅲ Takehara; Kouji Nishikawa, et al. (eds.), Report on the Future Utilization of Heritages on Regional Development, research grant (1975) provided by Association of Architectural Research, pp. 221–288). *

[7] The 1978 inventory - Prof. Eizou Inakagi of the University of Tokyo applied a *tipologia edilizia* approach, invented by Italian urbanities and commonly used in Japan since the 1970s (Laboratory of Architectural History of the University of Tokyo, 1978, Takehara: Formation and Transformation of Historic District). *

[8] The Research Committee of Preservation of Built Heritages in Takehara, 1979, Takehara; Research Report of Historic Buildings of Takehara City, Board of Education of Takehara City. *

[9] Restoration work has been carried out; during the 1980s and 1990s, 5–10 projects were carried out, and in the ensuing period 3 projects were done annually. In some properties, multiple restoration projects were done beyond the fiscal year due to the need for carpentry work or different types of restoration.

[10] The city has not accepted an administrative merger with a neighboring municipality that is unable to obtain the designation of special debt that would be given support by the national government. These fiscal instabilities affected urban management, and administrators are unable to construct a new city hall building; instead, they use an old block that does not comply with the latest earthquake resistance architectural standards.

[11] In Takehara, there are four major tourist destinations that can be statistically categorized: the preservation district, Ohkuno island (former gas weapon facility during wartime and recently highlighted habitation of hares), the Yusaka district (hot springs hamlet), and others.

[12] The time travel, science fiction scenario presented in this film captured the sentiment of adolescents and was highly praised by enthusiasts.

[13] For the drama's main character, the local-born pioneering Japanese whiskey brewer Masataka Taketuru was selected.

[14] For animation enthusiasts in particular, Takashi Okamoto withheld its beginning, but the presumed earliest example of a "pilgrimage to the holy land" for an animation is observed as early as the 1990s.

[15] Yomiuri Shimbun, 22.4.2016.

[16] Yomiuri Shimbun, 21.4.2011.

[17] Kei Tanaka, Hiroshi Mano, et al. 2003, Study on Land & Building Ownership and Townscape conservation at the Conservation areas of Traditional Structures – case of Takeharachiku, Architectural Institute of Japan Research Report, Chugoku Branch, pp. 893–896.

[18] The Board of Education is a semi-independent authority within the municipal administrative system to prevent any political interference.

[19] Yushi Utaka, 2022, Historic Port City Onomichi: Re-addressing Historic Landscape and Legacies (forthcoming paper).

[20] Yushi Utaka, 2020, Conserving the historic port town of Tomo, Seto Inland Sea, Japan: Re-positioning urban heritage in the 'shrinking society', Kapila Silva edited, The Routledge Handbook on Historic Urban Landscapes in the Asia-Pacific, Routledge, pp. 476–489.

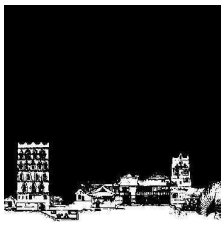
[21] Chugoku Shimbun, 27.8.2021.

[22] Asahi Shimbun, 24.3.2016.

[23] Asahi Shimbun, 16.2.2019.

[24] By 2020, over 100 Japan heritages are listed and provided with subsidies to carry out conservation projects and hold events.

[25] *Kitamae-Bune* refers to historic merchant vessels, the first rulers of a reunified Japan, the Edo Shogunate, established west-bound sea routes between Osaka and the rice production region in the north.



TRADITIONAL DWELLINGS AND SETTLEMENTS WORKING PAPER SERIES

Volume 323
Contributors

HOUSING AND TRADITION

Beatriz Serrazina
University of Coimbra
Portugal
beatriz.serrazina@gmail.com

Ella Holmgren
Universiy of Technology Sydney
Australia
ellajadeholmgren@gmail.com

Yura Kim[1,3], Akira Matsuyama[1,4], Akinori Kuno[2,5]
[1]Chubu University, [2]Kanagawa Building Inspection
Japan
[3] nameyura@hotmail.com, [4] matsuyamaakira@isc.chubu.ac.jp,
[5] happyday06212000@yahoo.co.jp

Yushi Utaka
University of Hyogo
Japan
utaka@shse.u-hyogo.ac.jp