

Existing Stock for the Future: Problems, Opportunities and Strategies for Energy Upgrade of 1940–1960 State Housing in New Zealand

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Abstract

A large part of current New Zealand housing stock was built before compulsory home insulation was introduced in 1978. In recent years, the low energy efficiency of these older houses has aggravated significantly existing issues of health inequality, fuel poverty and building decay. As they will constitute a significant portion of future housing stock, their retrofit provides a logical option to meet present and future environmental imperatives and to tackle the most urgent health issues of a country with the second highest incidence of asthma in the world. State housing, in particular, includes a relevant portion of problematic buildings, which are cold and damp, often with evidence of mould growth. A consistent and significant cohort of them was built between 1940 and 1960, under the government-funded social housing scheme introduced in 1937 by the Labour Party administration. These houses, built with the iteration of few similar types, good quality materials and sound construction prove to be suitable candidates for effective energy upgrade interventions. Drawing on results of long term research on State housing eco-retrofitting, carried out at the University of Auckland, this paper discusses meaning and value of conservation and energy upgrade of this large State housing cohort built until 1978, threshold to the new era of building energy performance policies in New Zealand.

Keywords: Energy retrofit, New Zealand State house, House typology, Heritage conservation

Article history: Received: 18 July 2014
Revised:
Accepted: 28 July 2014

1. Introduction

According to the International Energy Agency, buildings are responsible for 32% of the total final energy consumption and around 40% of the primary energy consumption in most of its member countries [1]. The growing awareness of the impact of the built environment on energy security that started with the 1973 oil crisis, has worldwide made building energy efficiency a common target of national energy conservation policies and has produced a wide variety of certification and rating tools aimed at assessing and enhancing the energy performance requirement of new buildings. Those measures, however, have had a limited effect as in the developed countries a large part of the global building activity concentrates on existing buildings. Only through a consistent energy efficiency upgrade of the existing stock will it hence be possible to achieve tangible effects in resource savings and CO₂ emission reduction. Moreover, retrofitting is more effective than reconstruction both in economic and environmental terms. The potential environmental impact reductions associated with building reuse and renovation are confirmed by the study *The Greenest Building: Quantifying the Environmental Value of Building Reuse*, commissioned by the National Trust for Historic Preservation [2], that considers new construction over a 75-year life span. Furthermore, when the retrofit involves buildings with historic or cultural value, additional benefits need to be accounted for: heritage retrofit not only contributes to the development of local culture and economy - since that kind of retrofit requires a wide array of skilled labour provided on site - but also enhances the quality of the urban environment, while retaining its character and heritage. Overall the conservation of existing buildings positively influences local communities, eventually promoting more sustainable urban living patterns.

New Zealand is not an exception: retrofit intervention activity has largely exceeded new construction, especially during the years that have followed the GFC. According to a report published by the Building Research



Figure 1. Labour Party state housing, Orakei, Auckland (Courtesy of Renelle Gronert)

Association New Zealand (BRANZ) in 2008, alterations and additions represented about one-third the total value of the new dwellings, including approximately 33,000 residential consents [3]. A forecasted increase in this activity is based on both the significant ageing of the NZ housing stock and some urgent maintenance interventions (i.e. earthquake strengthening). A particularly positive aspect of the dwelling alteration activity is its non-cyclical trend, in contrast to the figures of new residential building activity, characterized by sharp highs and lows over time [4].

Drawing on results of long term research on State housing eco-retrofitting, carried out at the University of Auckland by the authors, this paper discusses the meaning and value of conservation and energy upgrades of the large New Zealand State housing cohort that was built between 1937 – when the first Labour Party housing scheme was enacted – and 1978, the threshold to the new era of building energy performance policies in the country. The question of environmental, economic and cultural sustainability of this stock are evaluated in consideration of the relevant cultural heritage of New Zealand's urban environment.

2. Auckland's housing crisis

The city of Auckland has a steady growing population (8% increase in 2006-2013 and a predicted shift from 1.4 to 2 million over the next 20 years) [5] and is currently affected by a major housing crisis in both quantitative and qualitative terms. The growth in housing demand continues to exceed the growth in supply, as it is propped also by speculative real estate investments relying on a rather favourable financial and fiscal frameworks (e.g. the absence of capital gains tax). The perpetuation of this situation has made the city one of the most over-priced house markets in the world [6] with a steady price growth since 2008 that in 2013 reached +17.5% [7]. The situation has been confirmed by an official survey that found Auckland to be the ninth most expensive place among the largest cities of

Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States; the median house price is 6.7 times higher than the gross median New Zealand household income [8]. The consequent severe housing unaffordability has been identified and recognised as a major problem by both central and local authorities [9] as it further aggravates other consolidated housing related issues characterising the largest New Zealand city, such as house overcrowding [10], socio-spatial polarisation and social segregation [11], and health inequality [12]. The policies and incentives recently promulgated by the authorities to answer the crisis by stimulating the construction of affordable housing do not seem to lead to substantial changes in new housing provision. One main reason lies in the peculiar endogenous problems of the New Zealand construction sector that has traditionally been affected by fundamental issues of both a technical – i.e. the limited capacity and low efficiency of the organisations [13] – and structural, nature – i.e. the size of the local market, shortage of land supply and infrastructural upgrades. The main effect of this situation is the increasing pressure on the existing building stock, which will constitute the largest portion of the country's housing for at least the next three decades [14], assuming a fundamental role in this critical scenario for the future evolution of Auckland's housing conditions.

A particular problem afflicting existing New Zealand housing is their poor healthy and comfortable living conditions. This is mainly due to the low energy performance of the approximately 65% of New Zealand homes built before 1978, in an age of cheap energy and absence of regulation concerning thermal insulation. The 1977 standard NZS 4218P 'Minimum thermal insulation requirements for residential buildings' introduced a first mandatory set of requirements for new construction [15] to improve the standard types (mainly built as basement-less, timber-frame structures, with weatherboard or brick veneer cladding and metal roofing) that have very low thermal inertia, high heat transmittance and minimal or no insulation.

The problems of unhealthy and uncomfortable living conditions have been widely studied and documented. The above-mentioned BRANZ Study Report [3] states that the biggest housing cohort currently requiring major renovation are houses built in the period from 1940 to 1960 (about 480,000). Recent studies assessing their behaviour revealed critical thermal conditions, with winter average indoor air temperatures that recurrently fall below the critical limit of 18°C [16] set by the World Health Organisation [17], and frequent formation of visible mould [18]. The consequent negative impact on occupants' health, in particular on respiratory conditions, has been found especially among less advantaged people [19]. Poorly performing houses, associated with rising energy costs, have aggravated fuel poverty issues and increased the incidence of respiratory diseases and asthma, of which New Zealand has among the worst rates worldwide. The cohort of 1930s - 1970s houses represents therefore the major group to target for effective sustainable retrofit interventions, also in consideration of the scarce improvements gained by buildings that were upgraded according to common New Zealand retrofit practices, as recent surveys demonstrate.

3. Mid-twentieth century state-supported housing

The history of public housing in New Zealand started with the early twentieth-century Liberal government, but only with the extensive mass housing scheme of the first Labour government, that built about 30,000 houses during its 1935-49 term, did State houses start to be associated with progressive living conditions and with the iconic image of standard weatherboard and 'brick and tile' construction. They were based on a limited number of types and construction systems, replicated around the country regardless of different climatic conditions for over twenty years.

As stated above, the houses built from 1940 to 1960 by the State or by private firms with the State's financial support represent today the largest homogeneous housing group in the country [20], and typically presents features that are favourable for energy retrofit interventions, such as the compact shape and the use of good quality materials and sound construction. These houses, despite their quite varied appearance, are mainly single-storey detached buildings, generally with small (around 100 m²), rectangular or L shaped floor plans. Usually they have hipped or gabled roofs, made of tiles, asbestos-cement shingles or corrugated sheets; a suspended timber floor on a concrete perimeter foundation wall; a single fireplace and chimney; timber weatherboard, brick veneer, stucco or asbestos-cement cladding; small multi-paned timber-framed casement

windows and recessed front and rear porches [21]. A characteristic feature is their usual orientation to the north, allowing maximum sun penetration into the interior of the living areas in winter, with eaves for summer heat protection. Their windows are large, for sunlight and fresh air, which was deemed very important to avoid the recently experienced outbreak of Tuberculosis and Diphtheria [22].

Notwithstanding their modern and progressive design and their sound construction those houses ended up being cold and draughty, and a few years after completion mould was discovered in over 50% of them [23]. Although some form of insulation was already available in the 1950s, it was seldom installed, causing houses to be difficult to heat with the single fireplace in the living room - the most common form of space heating until the 1960s. Supplementary heating was supplied using solid fuel stoves, later replaced by gas (reticulated only in the 1960s) and electric heating, which became popular in the 1940s and 50s, despite the unreliable electricity supply.

3.1. State housing retrofit programmes

The pre-1978 housing stock does not present significant typological differences between public and privately owned dwellings. However, the level of maintenance of State-owned rental properties – given low-income tenants, peripheral location and budget constraints – has often been lower, with minimal interventions to upgrade their quality over the time. After decades of neglect, in 2001 the government's *National Energy Efficiency and Conservation Strategy* set up the political and financial framework to support a major energy retrofit programme, providing a platform to extend funding for pre-1978 home insulation retrofits around the country, including State housing stock. That same year Housing New Zealand Corporation - the largest public landlord in the country with more than 69,000 rental properties - initiated the *Energy Efficiency Retrofit Program*, addressing the lack of insulation of its pre-1978 houses across the country with a 10–12 year plan. It aimed to upgrade two thirds of the stock with ceiling insulation, aluminium foil below suspended floors, hot water cylinder insulation and draught stoppers. Given the magnitude of the programme, the University of Otago was commissioned to monitor results of the upgrade process [24]. Findings of this study seriously challenged the efficacy of the retrofit programme, revealing apparent limits of retrofitting to the ceiling and floor only, which, in the South Island, this resulted in minimal temperature increase.

The increased awareness of the importance of energy upgrade of existing housing as a means to guarantee healthy and comfortable living conditions has led to the

introduction of policies particularly directed to low-income households, framed in the *New Zealand Energy Efficiency and Conservation Strategy 2011–2016* [25]. Retrofitting of the existing housing stock was also introduced as a priority in the new Auckland Plan, the city's regulatory framework for the next 30 years [26]. Its high socio-economic relevance among disadvantaged social groups was confirmed by studies on the relationship between density of State housing and deprivation status [27], which highlight the key role of the house in improving living conditions of disadvantaged social groups. Accordingly, HNZC has recently focused on upgrading its housing stock in Auckland (where 43% of State housing lies), mainly on pre-1978 detached houses, as this cohort represents a significant portion of the urban housing stock [28].

3.2. Social and cultural relevance of mid-twentieth century state-supported housing

The active preservation of Auckland's mid-twentieth century state-supported housing is a fundamental measure to safeguard both the tangible and intangible cultural patrimony of a specific form of urbanity: the distributed post-colonial city. This represents the evolution of Kiwi culture and its spatial approach, now challenged by irreversible environmental, technological and socio-economic changes. These houses in their urban aggregations bear a unique testimony of the extraordinary effort of modern New Zealand society to perpetuate the 'happy dream' of the foundational nineteenth century colonial era; this core notion of European colonisation would have the migrant's condition changed from "pauperism" to "plenty", transforming him into "a man of property", able to purchase land and build "himself a nice house" [29]. Following this collective vision of prosperity, the construction of the city was made possible through the institution of a State-controlled land supply: the plentiful availability of land in the new colony was both the greatest opportunity and a major threat, given its indefinite excess against the needs of the society [29]. Control was maintained through the development of governance means – from land inalienability to zoning regulation – that allowed the State to instigate a period of intrepid and elated construction of a steady extending green-dominated suburban urbanism that still motivates today's practices.

The Garden City model, introduced in 1919 with the first New Zealand Town-Planning Conference, was reworked into the idea of a green "classless suburb" with the assimilation of various social groups "into an overall

culture of family and home" [30]. The detached family home was conceived as a domestic idyll that deployed an epic narrative, articulating four key elements of the concrete utopia: (1) the 'ideal of retreat' – the creation of a comforting domain granting independency, privacy and isolation; (2) the paradigm of the private 'bucolic space' – directing it to the integration into the natural environment with care for the environment and cultivation; (3) the spatial platform for the individual path to "emancipation through social identification" – centring it on family life and its affirmation in the space through the definition of a distinctive protected, secured and cared territory within an established community framework; and (4) the principal means for "originary self-expression" – fabricating and decorating the house and its annexes as act of truth creation.

Over time, the 'concrete utopia' reified through the production of detached family homes became mainstream and constituted the recognised New Zealand norm for the construction of the city. Permeating all physical, social and psychological spatialities reflected in plans and regulation, interactions and communication, behaviours and everyday practices, it has continued to orient housing choices until today. Its narrative probably constitutes the core component of the intangible values responsible for the obliteration of modern attempts to introduce more dense urban forms. Its momentum has continued to hinder any form of collective housing, notwithstanding the social, economic and environmental problems connected with low density urban sprawl, that have been officially recognised since the 1950s [31].

The political development of this idea in New Zealand's housing history was marked by the enactment of dedicated planning regulations and housing policies from the 1930s to the 1970s (i.e. from the post-Great Depression era to New Zealand's economic downturn). This period saw the alternation of two distinct political approaches, ideologically informed by socially-orientated Labour party and market-orientated National party visions: the housing programs introduced by the first Labour government from 1935 to 1949 – a compound of substantial building and loan schemes to provide all New Zealanders access to highest quality public housing, framed in fundamental welfare state reforms – and the National government's less demanding home ownership policies of the 1950s, anticipating the principles of property owning democracy (eventually developed by the Thatcher government in Britain in the early 1980s). Finally, with the advent of globalisation, the 'dream' has dramatically faded because of environmental imperatives and socioeconomic changes.

4. Heritage conservation issues: Regulatory framework and socio-cultural aspects

The current New Zealand retrofitting practice, principally steered by economic drivers and supported by basic technological principles, is characterised by a limited consideration for both heritage and environmental values. This extremely pragmatic approach is resistant to the cultural orientation of contemporary western conservation theory and practice, entirely relying on the backward national building sector that uses basic construction techniques and often inhibits the penetration of innovative practices targeting energy efficiency heritage conservation. This custom reflects a modest preservation and restoration culture consequent to the relatively minor problems arising from the limited patrimony of material legacy – a fact reflected, for instance, in the absence of UNESCO listed cultural sites in New Zealand. (Napier tried to get UNESCO world heritage status, but was rejected because of an adverse report by a local architectural historian.) Given that context, the current regulatory framework – produced and consolidated during the last three decades of deregulation inspired by a strong neoliberal political orientation – includes rather loose policies and controls in this field. One of the key features of this system is the fundamental transfer of responsibility for heritage identification and protection to local authorities. Under the 1991 Resource Management Act (the country's fundamental legislation for environmental management), they are only required to include a schedule of heritage items in their district plan. Therefore, matters of conservation of building and places of historic, cultural and architectural relevance are addressed inconsistently across the Country and are typically managed with bland zoning practices and development controls.

Auckland has one of the country's most advanced urban planning systems, which includes a formal commitment to the identification, protection and maintenance of its historic patrimony. This obligation (one of the eight main issues of the policy framework of the new *Auckland Unitary Plan*, currently in its submission/observations phase), includes the assumption of responsibility to safeguard and guarantee intactness of historic heritage [26]. The Plan integrates and harmonises, the current district plans of the seven councils amalgamated in 2010, with an emphasis on simplification. It defines three groups of heritage cultural resources: Category A and B places, respectively with exceptional and considerable overall significance, and Historic heritage areas, which include groups of inter-related places or features that collectively meet the criteria for the category A or B places. Those groups include a wide variety of entities: buildings and

structures, archaeological sites, sites sacred and significant to Māori, cultural landscapes, gardens, trees and vegetation. Their broad definition, though, is translated in rather limited heritage protection measures and bland development controls, that do not set peremptory clauses even for demolition and destruction [32]. However, in the Plan these areas are mainly defined around uninterrupted clusters of housing built in the late nineteenth and early twentieth centuries. Moreover, large parts of the city have been included in the 'Special Character Areas' overlay that, according to the aim to retain and manage identified local special character values, is only aimed to retain the overall notable or distinctive aesthetic or physical qualities of the areas and, hence, include controls that are sensibly more relaxed than the Historic Heritage ones. To complete the conservation regulation, a 'precautionary' historic heritage overlay has also been introduced in the new Plan – the 'pre-1944 building demolition control' – "to address concerns that unscheduled historic heritage buildings and places or groups of special character Buildings [among them a significant number of the first generation of State Houses...] will be lost before an evaluation is done" [33].

In this framework, the missing inclusion of the individual and clusters of the latest houses of the 'happy dream' built in the mid twentieth century within the scheduled historical heritage is a gap to be urgently filled, as it represents a threat to the preservation of a fundamental part of the cultural heritage to understand and appreciate the distinctive history, culture and identity of Auckland's people and places. The conservation of that patrimony of values embedded in domestic architectures is a relevant measure to preserve and treasure the legacy of the great collective effort of the New Zealand society to construct an effective model for its social, cultural and physical wellbeing. This is because the resulting system of 'ideal' patches that punctuate Auckland's distributed urban landscape of domesticity (Sarah Treadwell, 2005) still comprehends today an invaluable patrimony of ecologies, habitats, signs and symbols that supports the life of communities with unusual high level of cohesion. Those patches are compositions of unique local networks of places that, acting as open surfaces for the inscription of incremental individual contribution, have developed through the highest personal investment of the residents to accommodate their needs and desires, making the best use of all the available material and immaterial resources. The perseverance of the "do it yourself" culture is possibly the most obvious aspect of this society. One of the most authoritative recognitions of this characteristic can be found in the most controversial critique on New Zealand architecture by Nikolaus Pevsner in the late 1950s; an unequivocal appreciation of the impressive character of the typical

suburban houses – “all neatly built and neatly painted in gay, boiled-sweet colours” – in their capability to generate “the most ingratiating chaos one can imagine” [34].

To take care of those houses means primarily to treasure the capital of material and intangible values of the habitat that they host: a crucial undertaking in this period of deep socio-economic transition characterised by a rapid expansion of blanket commodification that increasingly affects the building sector. The current Auckland dwelling culture registers an unprecedented emphasis on economic speculation (supported by the absence of capital gains tax) that subjects most of the construction and transformation practices to the commercial rule of “resale price” maximisation.

The mid-twentieth century State housing is repository of authenticity that needs to be respected, studied, protected and vitalised, as its obliteration would be feral for any intervention aiming at sustainable urban regeneration. Moreover, the effort in preserving these Auckland houses is particularly urgent as their basic foundational function of social inclusion is exposed to an emergent threat correlated to the aforementioned phenomenon of urban fragmentation: the polarization of the habitats of a ‘demographically super-diverse’ territory, where a composite immigration flow, occurred during the last three decades, has developed as a disjoined network of ethnic-specific precinct with rising phenomena of segregation.

5. Conclusions

The social and cultural role assumed by these houses and their habitat in contemporary Auckland is of paramount importance but extremely complex, as it concerns multidimensional matters of identity and diversity, social cohesion and dynamism, wellbeing and health. However, the rich articulation of those implications is also a threat because, as it results are very difficult to identify and measure with simple parameters, empirical indications should be found only in composite indexes – such as the Deprivation index – or in grassroots protest movements like the 2011 Glen Innes state housing riots. The performance-based retrofitting of those houses is a key factor for the substantiation, formulation and enactment of adequate policies and actions to address crisis and disruptions that particularly hit the disadvantaged people the houses of the ‘happy dream’ were built to cater for.

Acknowledgement

The authors acknowledge the support of Housing New Zealand Corporation and of colleagues at the School of

Architecture and Planning, Paul Litterick in particular, for providing fundamental information and encouragement. Great thanks to the Programme Committee of the International Conferences S.ARCH for the efforts done for the success of this event.

Funding source

The authors acknowledge the financial support from the University of Auckland.

References

- [1] International Energy Agency, <https://www.iea.org/aboutus/faqs/energyefficiency/> (accessed 28th April 2014).
- [2] Preservation Green Lab, *The Greenest Building: Quantifying the Environmental Value of Building Reuse*, National Trust for Historic Preservation, Seattle, USA, 2011.
- [3] Page, I.C. and Fung, J., *Housing life cycle and sustainability*, Study Report 214, BRANZ, Porirua, New Zealand, 2008.
- [4] Poot, Jacques, *Building activity brings many benefits for NZ*, *Build*, 125 (2011), August/September, p 31.
- [5] Statistics New Zealand Census 2013; Auckland Council 2012. AGM; SNZ Subnational population estimates.
- [6] OECD, “Economic outlook, general assessment of the macroeconomic situation”, 2014.
- [7] REINZ – Real Estate Institute of New Zealand, Residential Press Release, September 2013.
- [8] Demographia, “9th Annual Demographia International Housing Affordability Survey: 2013 Ratings for Metropolitan Markets”, Belleville, Illinois: 2013.
- [9] New Zealand Government & Auckland Council, *Auckland Housing Accord*, 2012; Department of Building and Housing, ‘New Zealand Housing Report 2009/2010: Structure, pressures and issues, Wellington, 2010).
- [10] Ministry of Housing, Auckland Council, “Auckland Housing Accord”, 2013.
- [11] The Salvation Army, Social Policy and Parliamentary Group, “Mangere housing survey report: A snapshot of overcrowding in south Auckland”, 2011, AUT Social Science + Public Policy, “Super City? State of Auckland”, <http://www.supercityproject.aut.ac.nz> (accessed 1st April 2014).

- [12] Spoonley, C., Meares, C., "Laissez-Faire Multiculturalism and Relational Embeddedness: Ethnic Precincts in Auckland", *Cosmopolitan Civil Societies Journal*, Vol.3, No.1, 2011.
- [13] The Ministry of Health, "NZDep2013 Index of Deprivation", Wellington, 2014.
- [14] Baker, M.G. et al., "Infectious Diseases Attributable to household Crowding in New Zealand: A systematic review and burden of disease estimate", He Kainga Oranga / Housing and Health Research Programme, University of Otago, Wellington, 2013.
- [15] Auckland Council (2011), The Draft Auckland Plan, Auckland Council, Auckland; Department of Housing and Building (2010), New Zealand Housing Report 2009/2010: Structure, Pressures and Issues. Department of Building and Housing, Wellington.
- [16] Howden-Chapman, P. et al., "Warm homes: Drivers of the demand for heating in the residential sector in New Zealand," *Energy Policy*, 37, 2009, pp. 3387-3399.
- [17] Isaacs, N., Camilleri, M., French, L., Pollard, A., Saville-Smith, K., Fraser, R., Rossouw, P. and Jowett J., *Energy Use in New Zealand Households: Report on the Year 10 Analysis for the Household Energy End-use Project (HEEP)*, Study Report 155, Building Research Association New Zealand, Porirua, New Zealand, 2006.
- [18] World Health Organization - Regional Office for Europe, *Housing, energy and thermal comfort*, Copenhagen, Denmark, 200.
- [19] Keall M.D. et al, 'A measure for quantifying the impact of housing quality on respiratory health: a cross-sectional study', *Environmental Health* 2012, 11:33.
- [20] Pattemore, P.K., et al., Asthma prevalence in European, Maori, and Pacific children in New Zealand: ISAAC study, *PediatrPulmonol*, 5 (2004), 37, pp. 433-42.
- [21] Page, I. and Ryan, V., *It takes all types – a typology of New Zealand housing stock retrofits*, *Innovation and Transformation*, Proceedings Sustainable Building 2010, Wellington, New Zealand, 2010.
- [22] Elkink, A., *Renovate 1940-1960*, Building Research Association New Zealand, Porirua, New Zealand, 2011.
- [23] Firth, C., *State Housing in New Zealand*, Ministry of Works, Wellington, 1949.
- [24] Brien, R.M. and Winsome, D.R., *Investigation into causes and control of moulds in State houses*, Department of Scientific and Industrial Research, Wellington, New Zealand, 1944.
- [25] Lloyd, C.R., Fuel poverty in New Zealand, *Social Policy Journal of New Zealand*, 27 (2006), pp. 142–155.
- [26] Ministry of Economic Development, *Developing our energy potential: New Zealand energy strategy 2011-2021 and the New Zealand Energy Efficiency and Conservation Strategy 2011-2016*, Wellington, New Zealand, 2011.
- [27] Auckland Council, *The Proposed Auckland Unitary Plan* Auckland, New Zealand, 2013: Chapter E: Overlay objectives and policies.
- [28] Grimes, A., et al., *State Housing Database: 1993-2009*, <http://ssrn.com/abstract=1710319>, viewed: 10/9/2010.
- [29] Auckland Regional Growth Forum, *Growth Forum report*, 2003.
- [30] Wakefield, E. G., *A View of the Art of Colonization*, London, 1849.
- [31] Ferguson, G., *Building the New Zealand Dream*, Dunmore, Palmerston North, 1994:204.
- [32] Holden, H.C., "Summary", Department of internal Affairs, Wellington, 1959.
- [33] Auckland Council, *The Proposed Auckland Unitary Plan*, Auckland, New Zealand, 2013: Chapter E: Overlay objectives and policies, 2 Historic Heritage.
- [34] Auckland Council, *The Proposed Auckland Unitary Plan*, Auckland, New Zealand, 2013: Chapter E: Overlay objectives and policies, 3.2 Pre-1944 Building Demolition Control.
- [35] Pevsner, N., "The ingratiating chaos", in *Pevsner on Art and Architecture: The Radio Talks*, Games, S. (Ed.), Methuen, London, U.K., 1958.