Residential palimpsest: a novel dimension to city sustainability

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Abstract

Wellington’s city centre residential population has increased nearly threefold in the past twelve years to over seven thousand people. About two-thirds of city dwellers live in new apartments on the top of or within converted buildings. Apartments on top of buildings may be considered as a form of palimpsest in the conceptual sense of introducing a new layer. The new city residents make a significant contribution to the increased social vitality and economic activity of the centre. Restaurants, convenience stores and retail business have opened to service the population and give new life at the pedestrian level of buildings. By comparison with demolishing existing buildings to make way for new construction, ‘residential palimpsest’ literally builds on and uses the existing infrastructure. It generates relatively low-cost residential densification with little disruption. Architectural heritage and sense of urban place is largely sustained with this typology, though theoretical questions about architecture as object are raised when the design ‘integrity’ of the existing building is challenged by the addition, especially when visual compatibility is low. City centre residents mostly walk to their place of employment. They have the lowest car ownership in Wellington, thereby reducing motor vehicle impact on the city and studies elsewhere would suggest that with regular exercise as pedestrians their health is better than the general population. Residential palimpsest is enhancing the liveability of Wellington in a sustainable way improving environmental, quality of life and economic outcomes. The model could transfer to other cities.

Keywords: apartments on top of existing buildings, palimpsest, typology, layering, city sustainability, liveability.
1 Introduction and context

Wellington is gaining a new building layer, adding to its already distinctive urban character, fig. 1. Previously a city with few inner-city residences, new apartments are being constructed on the top of existing buildings at such a rate that they indicate the emergence of a new typology. By extending the life of existing buildings and accommodating a significant proportion of the centre’s population this phenomenon is contributing to the city's greater liveability, vibrancy and sustainability.

Figure 1: Overview of Wellington city centre.

The population growth for greater Wellington, at 8.64% from the census years of 1991 to 2001, is less than for the whole of New Zealand (10.75%). However the city centre area at 250% increase has experienced a very much higher growth. Of this the South low-city area of TeAro, at 695% increase, generated outstanding growth and it is here that the majority of building-top apartments occur. Te Aro will be the focus of this paper [1].

TeAro has a history of layers of European settlement on earlier Maori use of the area. From the first European building activity in 1841 until the 1950’s it has largely been a working-class mixed residential and service-warehouse-light
manufacturing area. Following two decades of decreasing residential population, in the 1970’s and 80’s TeAro was affected by strategic traffic movement changes together with a city centre building boom and national and regional economic restructuring during the period. The social and functional mix of the area remained diverse but with fewer permanent residents. Demolitions prevailed because of artificially high land values that undermined economic viability of the old buildings in favour of new development potential. Many buildings were unoccupied and their fabric was deteriorating [2].

In the favourable economic climate of the early 1990’s TeAro started rejuvenating, influenced by several factors. A greater Wellington plan was established that contained the city’s growth by re-zoning land on the perimeter from future urban to rural. Within the city centre many buildings were given an extended life through subsidised earthquake reinforcement and a new district plan created the potential for development in the air space above roof level to a maximum datum height. At the same time a new national performance-based building code was launched permitting light-weight (timber-frame) construction for apartment buildings. Together these circumstances contributed to a climate within which new construction on top of existing buildings became profitable for many small developers. All that was needed was market demand.

Inner city living in Wellington has become increasingly attractive for many people, seen as a more fulfilling alternative to suburban lifestyle. This appears to be influenced by sub-urban frustrations of travel time and property maintenance with the converse of easy access to work and facilities and easy maintenance of apartments. It is also influenced by increasing numbers of urbanites experienced through travel and through increasing numbers of immigrants from city-living cultures. Studies confirm that the strongest motivation for inner-city living is the centre’s stimulation appeal, amenities and creative opportunities [3, 4].

2 Palimpsest

Palimpsest literally means “a piece of written material or manuscript on which later writing has been written over the effaced original writing” (Oxford Dictionary). If used outside of this definition palimpsest is metaphorical.

It has been suggested [5] that the use of ‘palimpsest’ in architecture, urban design and planning potentially may apply to a number of concepts. These include collage, erasure, tracing, scribing and what seems to be the most appropriate in this discussion, those of ‘layering’ which is understood as successive layers that make up the whole at any given moment and of ‘transparency’ which is understood in spatial terms as the overlap between separate elements that is claimed by both.

3 Typology

While building-top apartments do not yet appear as a model category in typical texts about residential typologies, which normally include terraces, town-houses, multi-story, duplexes etc. apartments-on-top can be discussed at the level of
performance comparatively with other models. Horizontal and vertical access, building depth, site orientation, number and size of units, floor plan, the idea behind the design and its visual express are all relevant typological sub-topics for building-top-apartments together with other residential buildings.

Adopting the common sub-topic agenda mentioned, Holden [6] has proposed elsewhere that building-top apartments may be considered as an emerging independent typological model because of the distinctive characteristic of being built on top of existing buildings. The argument for this is that apartments-on-top must address several design matters of a constraining kind that do not apply to buildings that are built from the ground up. Key matters derive from the size, construction, strength and visual significance of the host building as well as opportunities to access the top through the base building.

Figure 2: Building-top apartments in Te Aro.

Two thirds of Wellington’s city apartment complexes atop existing buildings have been classified. Most contain between four and six apartments though there are several large complexes with up to thirty apartments. Sizes of independent apartments range from forty square metres up to two hundred square metres. Accommodation mostly falls within the range from single to three bedrooms.
Design of the new tops varies considerably influenced by responses to the sub-topic factors mentioned previously but especially by the relationship with the base-building design, materials and style. Generally the new apartments are of light-mass construction (commonly timber framed walls), constrained by the carrying capacity of the foundations of the host building and the intrinsic or reinforced structure of the host. About half of the classified cases are designed in a contemporary-modern style that contrasts with the host building while the others adopt a style that attempts to be compatible with the host.

The quality and performance of the type varies from excellent to poor. In some examples greatest concern lies with inadequate construction standards leading to waterproofing problems and failure of the structure and cladding. In others there is sub-standard internal planning providing inadequate natural light and sunlight or inferior ventilation. These deficiencies are capable of being addressed through more stringent application of the building act, including performance inspections. Other problems derive from the district plan’s lack of treatment of design guidance for the type, including that 100% site cover is permitted without regard to implications for blocking access to light and air.

4 Sustainability

Residential palimpsest is recent in Wellington. While of itself constructing additions on top of existing buildings is not unusual, there being many examples across cities and across time, what is especially significant about Wellington is the extent of building-top apartments built in the past ten years and the consequential impact of the new residential population on the character and liveability performance of the built-environment and on economic outcomes.

Te Aro is one square kilometre. Over two thirds of its apartment complexes are independent building-top developments or building-top developments combined with conversion of at least part of the host building into apartments. Ground floor spaces of many of the developments accommodate retail outlets.

By comparison with demolishing buildings to make way for new construction residential palimpsest literally builds on and uses the existing infrastructure, constrained as mentioned earlier by the carrying capacity of the host building. Existing water supply and sewerage pipes are usually upgraded and new power cabling is installed. In most cases the building remains occupied to some degree during construction work on top, causing less disruption to users within the building and to nearby sites and passing traffic than new building construction.

The urban fabric and sense of place of the immediate area is largely sustained at street level because of the retained building, though the presence of new construction on top is obvious and potentially engaging if clearly visible from street level. In the Cuba Street heritage sensitive area within Te Aro, a precinct plan requires new additions on top to be set back from parapets thereby interrupting sight lines from the street [7]. Most examples of hidden building-top additions are so successful as to leave the casual pedestrian completely un-aware of the extent of residential palimpsest in their immediacy, fig 3.
In architectural terms the more aesthetically successful and intellectually valid additions that are visible are those which are un-ashamedly contemporary. These clearly contrast with the heritage host, fig 4. Contrasting is a philosophical approach that acknowledges the importance of each era to express architecture in the materials and forms of its time and to not engage in false heritage nostalgia. In this both parts of the assemblage retain full architectural respect as the eye is drawn to the qualities of the new and the old separately, rather than to the interconnecting zone of ‘transparency’ that tempts compatibility.

The residential population of Te Aro is approaching thirty five people per hectare, which while well below many European cities (eg. Copenhagen 59/ha, Vienna 67/ha) in new-world city terms it is relatively high. The population is predominately made up of the two distinct categories of young adults (20-40 years) at 53%, a high proportion of whom are university students, and middle-age and older people (50+) at 32%. There are slightly more males than females, the reverse of the national profile, and household size at 2.4 people compares with 2.6 for Wellington City and 2.7 for the whole of New Zealand. Only 32.6% of dwellings are owned compared with 61.7% for Wellington and 67.8% nationally, reflecting the relatively high university student population as well as investor driven ownership. More than half of the population have post-school
qualifications, compared with 32% nationally. 66% of households have access to a motor vehicle compared with 90% nationally. European ethnicity prevails in the area at 86% compared with 80% nationally, with the next largest group being Asian at approximately 9% slightly ahead of Maori people. The median income of people in Te Aro is the highest in New Zealand, equal with other nearby areas in Wellington. There are very few families in Te Aro [1].

Figure 4: Design integrity of new apartments contrasting on top of offices with shops at ground floor.

The demographics of Te Aro raise more questions than can be addressed here, but what appears to be significant in this discussion is that the area is undergoing rejuvenation attracting mobile people with high incomes. However this is not a process of gentrification in that it does not fit the normal conditions for gentrification wherein there is displacement of previous residents. In this case there were relatively few earlier residents and indications are that a high proportion of them remain.

Research by McMurray [4] into city centre apartment demand concluded that family status is a key location determinant in New Zealand cities, with apartments generally not being considered suitable for families. He proposes that as most discretionary spending goes to lifestyle choice categories, and that choosing apartment living is mainly a lifestyle decision, then greater attention than at present should be given to the quality and scope of urban elements and services that contribute to this. He also forecasts that with increasing numbers of young people delaying having children and with the nation’s growing number of
divorcees and elderly people there is a growing proportion of the population that will be attracted to apartment living. Increasing employment opportunities in the city centre has also contributed to the demand for apartments.

With relatively high disposable incomes and attracted by lifestyle, dwellers in the city centre spend more on food, housing, socialising and entertainment than the average for New Zealand. This expenditure has fuelled the growth in numbers of restaurants, bars, food outlets, convenience shops, art galleries, theatres and places of entertainment as well as the provision of services. It has been said anecdotally that Wellington now has more restaurants per capita than New York. Higher numbers and diversity of facilities is giving greater vitality in the centre and more people from the outer suburbs and more out of town visitors are also attracted to engage with the lifestyle opportunities that this offers. Recognising the link between quality of urban space and urban liveability, Wellington City Council has progressively been giving greater attention to the up-grading of public spaces including streets, sidewalks, squares, parks and the integration of artworks. Plans are under development with the assistance of international public space design expert Jan Gehl of Copenhagen.

At approximately 13%, Wellington has the highest Australasian rate of city workers who walk to work. While this compares reasonably favourably with many European cities it is considered that more can be done to achieve even greater pedestrian participation in the city. A project conceived to guide pedestrian engagement is that of ‘Active Journeys’, a research proposal to evaluate the relationships between: quality of the urban environment (experience of the journey including obstacles & barriers to the journey such as vehicle crossings); distance travelled (convenience and comparison with conventional thinking taking account of terrain and weather); legibility and permeability (clarity of way-finding and scope of choices of journey); health of the walkers compared with general population and implications on national cost of public health. Although this research has not yet commenced it promises to generate information to guide future policy and actions for greater city sustainability.

‘Active Journeys’ seeks to explore links between motor vehicles and pedestrian participation in the city, as identified by Woodward’s [8] comments on relevant studies in Australia and New Zealand. He suggests that “disease attributable to traffic pollution may be at least as great as that caused by road accidents” and that “perhaps the most serious public health implication of car-dependent societies is the unprecedented level of sedentariness that this lifestyle encourages”. Woodward discusses the implications of declining physical activity including increased bodyweight leading to higher risks of cardiovascular disease and diabetes and also links between inadequate physical activity and certain cancers.

Woodward’s sustainable city health message echoes true for several achievements in Wellington including: limiting urban sprawl, locating facilities closer to where people live and reducing the occurrence of low-density housing. However more needs to be done to increase ‘active journeys’ including improving public transport, footpaths and cycle ways and improving the quality of public space.
Wellington’s economic performance is healthy because of its overall ‘creative class’ profile (after Florida [9]). Based on Florida’s methodology studies undertaken by Zolner [10] indicate that Wellington is the only New Zealand city that is in the same league as the top centres of creativity in the United States, rating comparatively at about sixth. It is significant that the central city area represents 67% of the ‘high-flying’ creative class.

Florida (p290) writes that “creative cities want to attract more creative people and are running out of suitable space to accommodate them unless existing well-serviced areas are rejuvenated and intensified for residential living”. He points to the importance of proximity of research universities in the creative economy of cities, which he sees as “a basic infrastructure component more important than railroads and freeways systems”. Wellington is blessed with two universities located within walking distance of the Te Aro area. As well adding considerably to the city’s economy through infrastructure and staff and student spending, the institutions provide technology, talent and a culture of tolerance. These are seen as key elements of a city’s sustainable creative culture which helps develop social capital and capacity to respond to change.

5 Conclusion

Residential palimpsest in Wellington was not explicitly planned, it being more of a private developer led opportunistic outcome of the policy, regulatory and economic conditions that prevailed. However there is growing awareness of the importance of this typology to the city’s sustainable development and it is likely that guidelines will be forthcoming to improve the minimum standard of construction and quality of habitable space. Cognisance has been taken by the local authority of the interest that residential palimpsest gives to urban character.

The urban spaces of the city are planned to be upgraded further to enhance city living and visitor experience. The improving liveability of the city is attracting new citizens, more investment and more jobs in the creative industries that are seen as major economic drivers of contemporary cities. There are obvious sustainable benefits of residential palimpsest in conserving and giving new life to old building stock and apartment occupants are contributing to sustained cultural, social and economic activity in the city centre.

Many of Wellington’s existing buildings have adapted and grow for new residential use, and thereby contribute to a more sustainable future for the city. Residential palimpsest is a novel phenomenon that could transfer to other cities that have conducive property economic circumstances and a willing local government.

References


[5] Palimpsest: writing material (as a parchment or tablet) used one or more times after earlier writing has been erased. Palimpsestic architecture: a working bibliography. http://www.xostudio.com/xostudio/palimpsest.htm


[10] Zolner, E., The significance of employment in the Creative Class in New Zealand’s eight largest urban areas, Wellington City Council, 2002