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**Future Affordable Housing Typologies for Sydney:
Learning from Local Precedent**

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2009 Housing Researchers Conference

Future Affordable Housing Typologies for Sydney: Learning from Local Precedent

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Introduction

The provision of affordable housing is one of the most pressing societal and cultural issues in Australian cities today. This is particularly true for Sydney, which is the least affordable city in the country and even ranks amongst the most unaffordable cities in the world (AAP, 2007). When left unaddressed, the issue of housing affordability has serious consequences for economic and social opportunities, affecting the quality of life of our population.

Recent efforts to encourage and assist the development of affordable housing have been hampered by a lack of political will. However, in 2007, ‘after more than a decade of inaction and reduced investment’ (Plibersek, 2009), the election of a Labor federal government has created an opportunity for new affordable housing projects to be initiated. Given this impetus to build new affordable housing, an architectural question of critical importance remains largely unaddressed - *what types of housing should we build?*

The term ‘affordable housing’ is understood in this paper to mean housing that is affordable *for its occupants*. It is a relative term. Housing is affordable if the occupying household has the ability to meet the costs of other basic necessities after it has met the costs of its housing. The dwelling must also be appropriate for the household in terms of its size and its location. On the supply side, this usually requires that the housing be subsidised through economic intervention in its provision. Affordable housing thus includes social, public, community, not-for-profit, council and workers’ housing, amongst others. On the demand side it means that housing costs should not exceed common affordability benchmarks, generally recognised to be 25-30% of household income for low-to-moderate income households. This can be achieved by a number of means including the offering of sub-market rentals or the cross-subsidisation of rents (Housing NSW Centre for Affordable Housing, 2009). Housing affordability can therefore be reckoned ‘as a function of the relationship between housing costs, household incomes and the standards of housing provision’ (Milligan, 2003; p.70).

In terms of the physical dwelling however, the size and the location become the fundamental variables in the provision of affordable housing. The dwelling must be in close proximity to transport, employment, education and services to help reduce household costs. In the city of Sydney, which is hamstrung by its inadequate public transport network, this calls for the use of urban sites situated close to our major centres and along primary transport corridors. Given the limited number of these sites available, and the premium on land prices, the number of affordable housing dwellings needs to be maximised on these sites when they are developed. This necessitates the consideration of a higher

density housing type rather than the ubiquitous suburban Australian free-standing house. The future shape of affordable housing in Sydney should be the urban apartment.

The design of affordable housing is a specific architectural proposition distinct from other housing types. Because affordable housing is usually a long term proposition for an institutional landlord, the durability of materials and cost of maintenance become considerations of prime importance. This scenario runs contrary to the common misconception that affordable housing is *cheap to build*; often the inverse is true. This high initial investment in affordable housing is in stark contrast to market housing where lower quality construction can translate directly to higher profit for a private developer. Market housing may also seek to provide additional attributes, beyond normal housing requirements, to satisfy its market. Larger apartment sizes, supplementary car parking and lifestyle features increase the initial sale price, but then require increased running costs that must be paid for through inflated strata levies. Affordable housing would sensibly seek to minimise these 'optional extras' and the expenses attached.

Apart from a few discrete examples, like the admirable work of City West Housing, quality urban affordable housing has not been built in Sydney for the best part of thirty years. When looking for contemporary precedents to inform the future of affordable housing types in Sydney, it is obvious that the market examples, although the most accessible, are not the most directly applicable. It is tempting then for architects to look abroad, seeking inspiration from overseas state-of-the-art affordable housing projects. However, whilst international exemplars have the potential to provide fresh perspectives, they are unlikely to be immediately useful. Differences in climate, topography, building policy, construction methods, and particularly cultural expectations, amongst other factors, make it difficult to translate foreign housing design to the local condition.

It is a premise of this paper that when looking forward to future affordable housing typologies in Sydney, it is most pertinent to investigate examples of urban affordable housing that have gone before. Sydney has a rich, but relatively undocumented, history of affordable housing projects from which much architectural knowledge can be drawn. In fact, there are hundreds of innovative projects spanning over a hundred year period that have already successfully addressed the issue of affordable housing. These have all been shaped by the cultural, social, economic, political and physical landscape of our city, and it is these projects that are the precedents of greatest relevance and with the most potential to influence the design of new affordable housing in Sydney today.

This paper presents four select case studies from the earliest affordable housing in Sydney which can be seen to have stood the test of time. They have provided affordable housing continuously and adequately since their construction and have contributed to the city as integrated and legible parts of the built fabric. This paper draws out the typological particularities of these projects through the analysis of architectural documentation, and makes comparisons between the projects to reveal embedded design themes. The relevance of the findings to the architectural design of affordable housing today are suggested. It is argued that knowledge of these attributes becomes constructive for architects assisting them to answer the question - *what types of housing should we build?*

Architectural Typology

The notion of type is intrinsic to architectural knowledge. Francescato (1994; p.254) asserts in *Type and the Possibility of an Architectural Scholarship* that the idea of type is 'central to architecture's own conceptual basis...pertinent to the making of architecture (praxis), thinking about architecture (theory) and knowing in architecture (research).' This suggests that the typological study of affordable housing is indeed a practical endeavour, with direct application to the practice of architectural design. An understanding of type is not the simple replication of precedent examples; rather type is an 'object that can conceive of works that do not necessarily resemble each other. Moreover the type is determined by and evolves with cultural use.' (Cantrill & Thalix, 1996; p.124).

A useful example to illustrate this notion is the building type of the terrace. The terrace type is characterised primarily by its party wall condition, that is, it is built hard to both subdivision

boundaries. This *idea* of the terrace allows for innumerable permutations without limiting its potential. Terraces can be narrow or wide; one storey or more; a shop or a residence; have a pitched or skillion roof and still be a terrace. The terrace type has also come to include different place-specific cultural ideas over time. In Sydney, these meanings might be ‘workers’ housing’, ‘main street strip shop’ or ‘well-located gentrified accommodation’. Thus, an understanding of architectural typologies is powerful; it allows architects to select an appropriate solution in broad principle, and adjust it to suit specific circumstances. Types become a design ‘shorthand’ for more complex architectural ideas; they embody the interrelated architectural strategies, arrangements and dimensions within the design of buildings. And types are not limited to building types only. It is also possible to describe types of sites, open space, apartments, circulation, stairs, in fact almost every physical attribute of a project, at all scales.

Types can be recognised through the careful analysis of architectural documentation. The way for architects to meaningfully engage with and reveal types is through the process of redrawing as Cantrill and Thalís (1996; p118) describe:

drawing is both the tool of the profession’s collective understanding and interpretation, and critical to our conception of the project. Drawing can assist the understanding of the effects of past projects...in the context of the city. The method of accurate redrawing gives a common scale and technique, counterbalancing the impression given by source material...and enables a basis for comparison across time. ...it can reveal the patterns of transformation that can be categorised in terms of type. Studying the changes up to the present in fact propels us into the future.

The four case studies presented below will be briefly introduced and then discussed typologically through the examination of redrawn scale plans derived from original architectural documentation. The comparison section that follows will synthesise the analysis to highlight the typological qualities present, and suggest their suitability for use by practising architects today.

Four Case Studies

Housing was squalid for the working class of Victorian Sydney. Dwellings were of substandard construction, had a severe lack of sanitation and were crowded along narrow, unformed streets. There was no system of public housing available; the only accommodation options were home ownership or private rental at the mercy of a landlord. Housing conditions deteriorated until, in 1900, an outbreak of bubonic plague in Millers Point became a cause for widespread concern. This scare, attributed to slum conditions, spurred an intense period of urban reform. In 1906 the Local Government Act was adopted, which enforced reasonable building and health standards on the construction of housing for the first time, and included minimum room sizes, light and ventilation (Pettigrew, 2005).

In Millers Point and The Rocks, the New South Wales State Government responded by resuming private land, demolishing terrace housing of poor quality, and remodelling the area. Among the massive improvements made, which focused on wharf construction and preparations for the North Shore (Sydney Harbour) Bridge, were many innovative housing projects designed to accommodate the wharf workers. These are arguably Sydney’s first instance of affordable housing (Gregory & Campbell, 1996). Most remain as public housing to the present day.

Among the first of these projects were the High Street Flats, attributed to Engineer-in-Chief Henry Deane Walsh of the Sydney Harbour Trust (figure 1). Built c1910, the High Street Flats occupy two whole north-south city blocks on the western edge of Millers Point. The construction of the flats was part of a much larger project that included the construction of Hickson Road at the lower level through massive rock cuttings; cutting and regrading the land at the upper level to form High Street; a central bridge over Hickson Road leading to the wharves; a lane network to service the new blocks; new shops with apartments above to the north end; additional flats to the south end on both sides of High Street as it turns the corner; and a playground located centrally between the two blocks.



Figure 1. View of the northern half of the High Street Flats looking south along High Street.
Aerial photo from <http://maps.google.com.au>. Photograph by the author (2009).

The Public Works Department was to become involved in the development of workers' housing in Millers Point as well. The Government Architect, Walter Liberty Vernon, responsible for the Art Gallery of New South Wales, designed the Lower Fort Street Flats, also built in 1910 (figure 2). These flats are situated mid-block on the eastern side of Lower Fort Street, Millers Point, and 'coexisted comfortably with the colonial housing of Fort Street while offering a sophisticated balance of public and private spaces' (Butler-Bowden & Pickett, 2007; p.125)



Figure 2. View of the Lower Fort Street Flats looking east from bend in Lower Fort Street.
Aerial photo from <http://maps.google.com.au>. Photograph by the author (2009).

Soon after, under revisions to the Local Government Act of 1912, councils were granted parallel powers to develop their own workers' housing. The only council to adopt these provisions was the Sydney Municipal Council, which constructed a total of four projects in the following fifteen years. All of these blocks were 'rented to council employees and all...were in poor, Labor-controlled wards' (Spearitt, 2000).

The Sydney Municipal Council's inaugural project was the Strickland Building, designed by the City Architect Robert Hargreave Brodrick, and built in 1914 (figure 3). The Strickland Building occupies a narrow north-south city block in Chippendale with its short southern end addressing Cleveland Street. The site was part of a Sydney Municipal Council slum resumption area, previously occupied by small residential terrace houses. The original proposal was for two identical blocks side by side, however only the western block was ever constructed. A second proposal was made for the neighbouring block in 1916 as the result of an open competition, however it did not go ahead (Zanardo, 2009).



Figure 3. View of the Strickland looking north from Cleveland Street.
Aerial photo from <http://maps.google.com.au>. Photograph by the author (2009).

The Strickland Building was followed by the Dowling Street Flats in Woolloomooloo nine years later in 1925 (figure 4). Designed by Peddle, Thorp & Walker as the result of an open competition, it occupies a mid-block site between Dowling and McElhone Streets in Woolloomooloo and addresses both street frontages.



Figure 4. View of the Dowling Street Flats from Dowling Street looking north.
Aerial photo from <http://maps.google.com.au>. Photograph by the author (2009).

Although well recorded in other forums, for example in social histories, each of these projects embodies architectural knowledge which is rarely revealed or discussed. The following analyses will bring to light aspects of each of the designs which are critical to their architectural conception but which would otherwise lie dormant.

High Street Flats

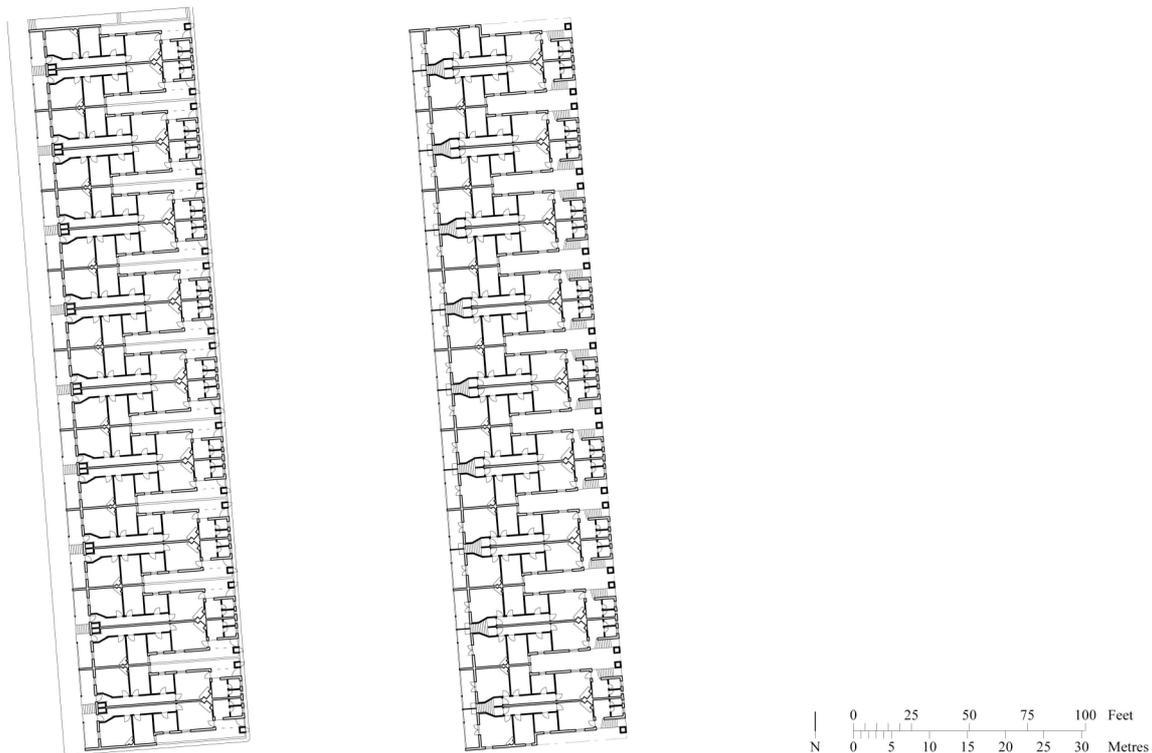


Figure 5. Ground floor plan (left) and first floor plan (right) of the High Street Flats. Only the northern half of the project is shown. The southern half is identical. Drawings by the author (2009).

The High Street Flats are two storeys in height and are comprised of seventy-two apartments, in eighteen attached buildings on two blocks. The apartments are collected into groups of four which are paired two up and two down. Each apartment resembles a single storey terrace in plan which is mirrored around its party wall. The building depth is 63'8" (19.41m) and the frontage taken for each apartment is 17'4½" (5.30m).

The lower apartments are accessed directly off the street from a street level balcony, whilst the upper apartments share a central, straight, single width stair which starts at the footpath's edge and bifurcates at the top to allow access to two front doors. The front room of each apartment is a generous bedroom provided with a balcony which overlooks the street. Next are two progressively smaller bedrooms off the corridor with windows to the side setback. The living room follows, subsuming the width of the corridor to make for a larger communal room. The living room has a window to the side setback, and a door to the rear that leads either to a ground level yard or to stairs leading up to a roof level court. A laundry, bathroom and water closet are accessed externally just on the outside of the living room door. Ground floor apartments have a gate to the rear lane, whilst first floor apartments are able to dispose of rubbish via a garbage chute to a cupboard on the lane. The end apartments of each block on the upper levels have windows to their front bedrooms facing the side lanes.

All apartments are three bedrooms with an average area of 72m². The project has a floor space ratio of 1.28:1 with an 83% site coverage. The front setback is 6'0" (1.83m) although this area is completely occupied by balconies, stairs and projecting party walls. The rear setback is zero for more than half of its width, with service rooms built hard to the lane. The side setback to the rear rooms is 4'0" (1.22m).

Lower Fort Street Flats



Figure 6. Ground floor plan (left) and typical upper floor plan (right) of the Lower Fort Street Flats. Drawings by the author (2009).

The Lower Fort Street Flats are three storeys in height and comprised of twenty-seven apartments in five attached buildings. Apartments are paired around four stairwells, whilst the fifth stairwell serves only a single apartment per floor. The typical apartment plan most closely resembles a single storey semi-detached dwelling. In this instance however, the corridor has been externalised, leaving bedrooms on the party wall to be accessed via an open balcony. The intention of this was alteration was to enable the second and third bedrooms to be sub-let separately whilst still allowing access to the services at the rear. The building depth is 58'3" (17.75m) and the frontage taken for each apartment, including a share of the circulation, is typically 21'5" (6.53m).

The ground floor apartments are accessed at street level via doors either side of a central, straight run of stairs. The upper floor apartments are accessed via doors off open-air landings, with the stair to the second floor returning around the void over the straight stair. In the typical apartment, the front room of each apartment is a large bedroom with a window overlooking the street. This can only be accessed through the living room, which has its window either looking to the stair at ground level, or has a splayed window at upper levels enabling an oblique view back to the street. Next are two equal bedrooms accessed along an open balcony. A copper, pantry, bathroom and water closet are located at the rear. All ground floor apartments have direct access from their open balcony to a drying yard at the rear, whereas upper floor apartments are not provided with any private open space. A small semicircular Juliet balcony to upper floor apartments, fitted with a sink, allows clotheslines to be strung between it and the rear cliff face. The two southern most apartments are distorted by the kink in the street and the differencing orientation of the southern boundary. The pair of the typical apartment generally follows the same layout, however it swaps the positions of the two small bedrooms with the large single bedroom. The single apartment also swaps the bedrooms, but must also reorient the rear services along the plan, rather than across it, within the space remaining. The southernmost unit was also able to have windows to the southern boundary because it previously overlooked a public stair, now demolished.

All apartments are three bedrooms with a typical area of 82m². The project has a floor space ratio of 1.29:1 with a 62% site coverage. The front setback is zero, with the majority of the frontage built hard to the street. This is relieved only by the five tall, narrow stair slots. The rear setback is typically 24'0" (7.32m), making for relatively generous yards. The side setback to the rear rooms and open access corridor is 4'6" (1.37m).

The Strickland Building

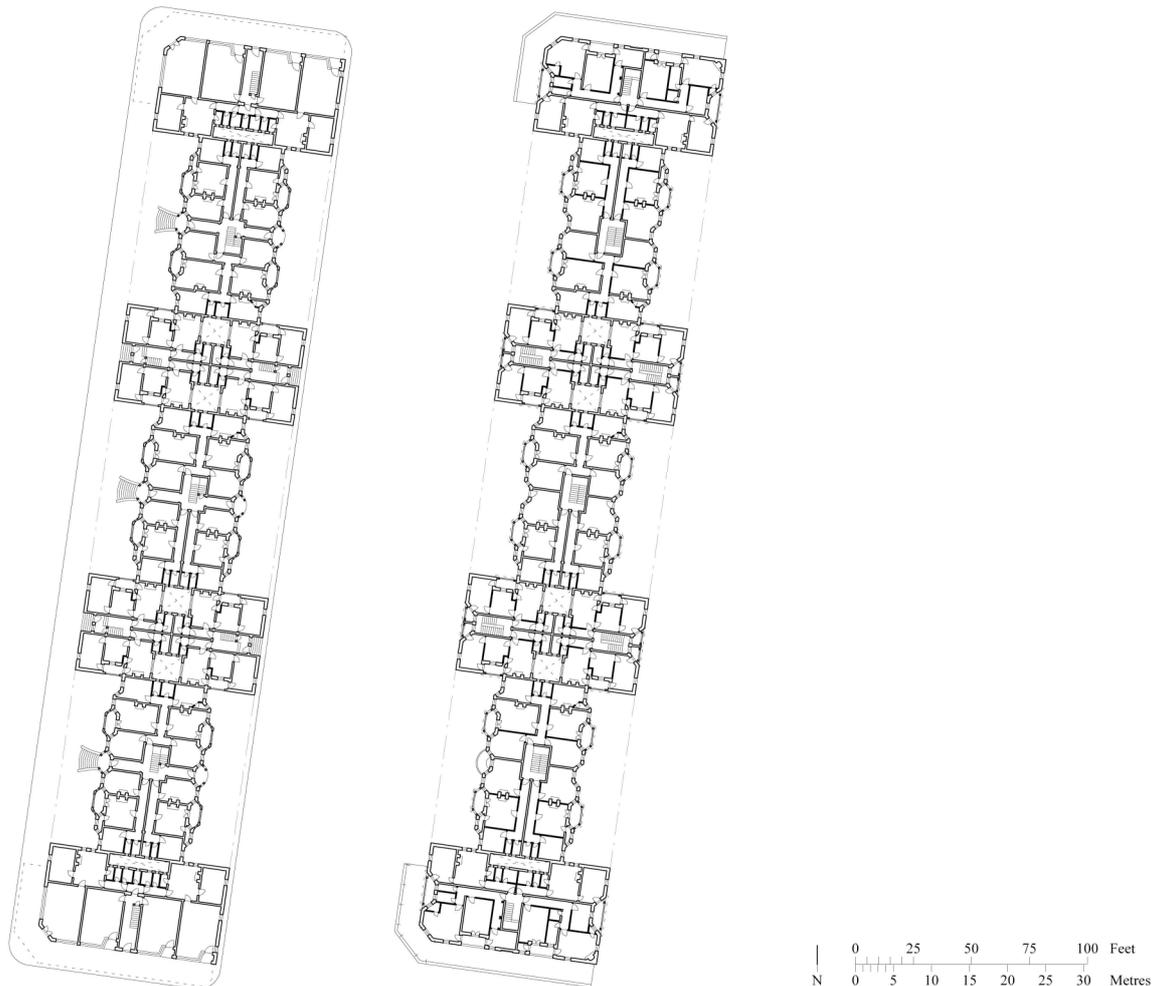


Figure 7. Ground floor plan (left) and typical upper floor plan (right) of The Strickland Building. Drawings by the author (2009).

The Strickland Building is three storeys in height and comprised of sixty-seven apartments and eight shops, four of these with dwellings. The apartments are organised into seven attached buildings of three types and run alternately across and along the site. The buildings contain between nine to twelve apartments each. The endmost buildings are accessed via a single stair located centrally between shops at the short ends of the block. The longitudinal buildings have access to a single central stair from both street frontages, the western side with large stoops. The transverse blocks have two stairs, each accessible from one street only, and as such, could be considered separate two buildings.

The apartment plans do not resemble any particular building type, instead they are a specific solution for this site, designed within a perimeter wall determined by higher order urban considerations (Zanardo, 2009). The apartments in the longitudinal and endmost blocks have corridors to access living and bedrooms, whereas apartments in the transverse blocks do not. Generally, bathrooms and water closets are gathered around light wells in the centre of the building. Sculleries are located either in balcony projections or in cupboards with small windows. All apartments are provided with small balconies.

The building depth is a slender 42'6" (12.95m), providing excellent environmental amenity. The frontages for each apartment vary according to their position in the block, but all are lengthened by means of the variation in the perimeter wall and the presence of internal light areas. The open space at ground level is designated 'garden plot' and is effectively part of the street, however each stairwell leads to an extensive terrace on the roof with laundry facilities and drying space. A mix of apartments is provided: 17% one bedroom (44m²), 70% two bedrooms (48-68m²), and 13% three bedroom (110m²). Shops are 34m². The project has a floor space ratio of 1.78:1 with a 71% site coverage. The front setback is zero for half of the perimeter length, and setback 17'9" (5.41m) for the remainder.

Dowling Street Flats

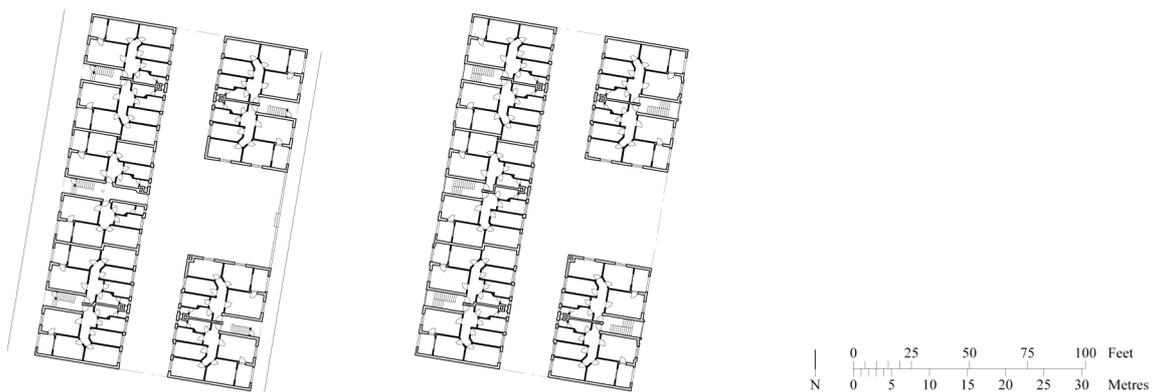


Figure 8. Ground floor plan (left) and typical upper floor plan (right) of the Dowling Street Flats. Drawings by the author (2009).

The Dowling Street Flats are three storeys in height and comprised of thirty apartments in five buildings. Three buildings address Dowling Street to the west and are attached by interlocking party walls. Two buildings address McElhone Street to the east and have a 'playground' located between them. A slender 21'4" (6.50m) courtyard runs north-south between the two rows of buildings and can be accessed from a central location on both street frontages. Privacy issues across the courtyard are ameliorated by the presence of tall mature trees. The building depth of the western block is 36'9" (11.20m), whilst the eastern block is slightly thinner at 36'2" (11.02m). The street frontage for each apartment ranges from 24'9½" (7.56m) to 26'11" (8.20m) including circulation.

All apartments are entered from an open stairwell which can only be accessed from the street. The service rooms and smaller bedrooms of each apartment face inwards towards the courtyard, whilst the living room, main bedroom and balcony all face outwards to the street. A central corridor running through the centre of each apartment provides access to all of the rooms separately. The corridor is kinked awkwardly to gain entry to a corner bedroom and has a curiously slight adjustment of geometry in almost every apartment. Each apartment has an identical kitchen and bathroom arrangement and shares a garbage flue with its neighbouring apartment. All stairwells lead up to individual drying courts set within the pitched roof form.

13% of the apartments have two bedrooms with an area of 56m². The remaining 87% of apartments are three bedrooms with an average size of 67m². The project has a floor space ratio of 1.51:1 and a site coverage of 67%. The front setback is zero with the exception of the playground to McElhone Street. The side setbacks are also zero, with party walls built to the north and south.

Comparison

This paper presents cases studies drawn from the author's doctoral project which has the working title 'Shaping Affordable Housing: A Typological Investigation of Affordable Housing 1901-2000'. The method of comparative analysis used would obviously benefit from the inclusion of a larger number and broader range of projects, which is the intention of the thesis, but not within the scope of this paper. The above analysis has been informed using plan drawings only. A similar investigation can also be made of sectional and elevational drawings, as well as three dimensional orthogonal views such as axonometric projections, all of which would reveal additional information. Different scales of drawing are worthwhile too. For example information from building plans can be augmented by larger scale drawings describing the urban context, and likewise, by smaller scale drawings detailing apartment configurations. The typological data extracted from these analyses becomes a kind of catalogue for architects to draw upon when designing affordable housing. From this standpoint, historical projects become more than just artifacts of history. A typological understanding of these projects becomes generative of new architecture, suggesting possibilities for the future.

The numerical data derived from the above case studies is tabulated below for ready comparison (table I):

Table I

	No. of Storeys	No. of Apts	No. of Bldgs	Apts per Bldg	Bldg Depth	Apt Frontage	% 1 Bed Apts	% 2 Bed Apts	% 3 Bed Apts	Floor Space Ratio	Site Coverage	Front Setback	Rear Setback	Side Setback
High Street Flats	2 + roof	72	18	4	63'8" (19.41m)	17'4½" (5.30m)	-	-	100% (72m ²)	1.28:1	83%	6'0" (1.83m)	zero	4'0" (1.22m)
Lower Fort Street Flats	3	27	5	3 or 6	58'3" (17.75m)	21'5" (6.53m)	-	-	100% (82m ²) sub-let	1.29:1	62%	zero	24'0" (7.32m)	4'6" (1.37m)
The Strickland Building	3 + roof	71 + 8 shops	7	9 or 12	42'6" (12.95m)	varies	17% (44m ²)	70% (48-68 m ²)	13% (110m ²)	1.78:1	71%	zero + 17'9" (5.41m)	-	-
Dowling Street Flats	3 + roof	30	5	6	max 36'9" (11.20m)	min 24'9½" (7.56m)	-	13% (56m ²)	87% (67m ²)	1.51:1	67%	zero	Court 21'4" (6.50m)	zero

Although heights of two and three storeys may be considered low scale by modern standards, these heights might be seen as appropriate given their context. In early twentieth century Millers Point, the predominant building type was the two storey terrace. The decision to retain this order of development assisted the new buildings to sit comfortably within the existing urban environment, making them integrated and legible parts of city. The choice of utilising existing terrace and semi-detached plan types in a densified form is also conducive to the formation of cohesive streetscapes, where comparable frontage widths repeat along the street. Similarly, in Chippendale, the 'blocky' end buildings of the Strickland Building are similar in volumetric form to the neighbouring warehouses, whilst the relief of the garden plot setbacks mirrors the front garden setbacks of terraces across the street. Compare the relative success of these approaches against the alienating effects of 1960s tower-slab type which sits isolated within a park-like setting, cut off from the city around it.

In these early buildings, it is instructive to note too, that there was no technological barrier to taller buildings. Contemporary private apartment buildings in Sydney City and Potts Point were reaching heights of eight to twelve storeys (Kay, Origlia & Rigoli, 1999). However, the initial expense of including lifts and their ongoing maintenance costs would not have been an attractive proposition for affordable housing landlords. Limiting the building height to that of a walk-up type ruled out the need for expensive moving parts. Three of the four projects utilise roof space for drying courts which is a intelligent solution when space is at a premium. High site coverages to increase building footprint and maximise apartment yields naturally limits the amount of ground space available.

Another observation worthy of note is that all of the above projects are divisible into separate buildings; none of the projects are single monolithic structures. There are many benefits to this

approach for affordable housing. Firstly, the public domain of the street is improved; a street is enlivened by smaller frontages. Residents may move into and out of the building at multiple points and gain a more specific address for their apartment, engendering a sense of identity and ownership. This is visible architecturally through elements like the Strickland Building's stoops and Lower Fort Street's stair slots. Secondly, there is the benefit of the buildings being able to be titled and developed separately if needs be. It is indeed difficult to imagine the architectural integrity of these four projects being disrupted by partial redevelopment, whereas elsewhere this has been a significant issue. 1970s Housing Commission townhouse developments, set in amorphous shared open spaces, have defied attempts at redevelopment for this very reason. Thirdly, this approach of having 'separate buildings' provides a logical architectural strategy to negotiate the specific problem of Sydney's steep topography. Smaller building footprints are able to step nimbly on a steep site, as can be witnessed with the High Street or Dowling Street Flats. Lastly, this approach minimises the circulation space required within the buildings so that stairs typically serve only two, three or four apartments per floor. This reduces the amount of common area for the landlord to maintain. It can also be seen to be conducive of fostering social communities within the building. With only four to twelve apartments per stairwell, it becomes possible to know all of your neighbours; larger buildings containing more apartments tend towards creating anonymity between residents.

Design decisions relating to building depths and apartment frontages are often responses to site constraints. Where sites have a single street frontage, such as Lower Fort Street or High Street, there is pressure to take advantage of the primary frontage by sectioning it into narrower divisions. This results in deeper building footprints which have more attached party wall and less perimeter wall available for the admittance of light and air. Narrow side setbacks provide additional perimeter wall length for window openings, but less amenity. In the Dowling Street Flats and the Strickland Building, with two and four street frontages respectively, primary apartment frontage is amply available. Here the pressure is on the building depth. The Dowling Street apartments are narrow and wide to fit two rows of building on the site, one addressing each street. Whilst these apartments have generous windows, the compromise here is the narrowness of the shared courtyard space between the buildings. In the Strickland Building, the building is only a single width, so whilst apartments gain excellent environmental amenity, there is no 'back' to the building and no containment of any private or communal open space. This is compensated for, however, by the provision of large terraces over the entire roof.

Front setbacks for these projects are generally zero, the exception being the High Street Flats which provide continuous balconies for the full frontage. This strategy has two positive effects. Firstly, it creates a street wall with its neighbours which strongly defines the separation of public and private space. Secondly, it wastes no land. All of the buildings are consolidated against the street edge, which in turn consolidates open space to the rear; in other words it maximises the usefulness of every square inch of the site area. Where rear setbacks are also zero, a certain efficiency of density is achieved. Compare again Lower Fort Street to High Street. Both achieve almost identical floor space ratios; they are delivering an identical proportion of built space to site area. However, High Street is only two storeys in height, whereas Lower Fort Street is three. Lower Fort Street has generous yards to the rear that are only available to the ground floor apartments, whereas High Street has comparable space dedicated to both ground floor and upper apartments. Open space such as yards, balconies and roof terraces are cheaper spaces to build than enclosed spaces and can considerably add to the quality of an apartment. They are useful spaces to consider when designing affordable housing, providing additional space to supplement often modest unit sizes. Three of the four projects also externalise their circulation areas. This is shrewd from a development perspective nowadays because open air circulation does not usually count towards the floor space ratio, thus leaving more area to maximise apartment yield. It is also good practice environmentally; these circulation spaces are naturally lit and ventilated.

In the design of affordable housing, there is also sense in reducing the areas of apartments to sizes that are comfortable, but not excessive. This allows more apartments to be constructed per site. The PlanningNSW Residential Flat Design Code (2002; p.69) puts forward the following round-number minimum apartment sizes as being not preclusive of affordable housing: 1 bedroom 50m²; 2 bedrooms

70m²; 3 bedrooms 90m². The case studies presented here demonstrate that smaller apartments are indeed possible and can act as precedents to propose further reduced sizes. The case studies show that one way of reducing the floor space per unit is to provide single, rather than multiple, bathrooms.

A mix of apartment types within a project allows for a variety of household structures to live in the same building. The Strickland Building demonstrates this admirably, including as it does, one, two and three bedroom apartments as well as shops with apartments attached. Whilst the Lower Fort Street Flats are comprised of entirely three bedroom apartments, they also provide an interesting variation where bedrooms within apartments are able to be sub-let, made possible by externalising the corridor.

Conclusion

When considering the question of future affordable housing typologies in Sydney, it is highly productive to look at the rich inventory of past affordable housing that Sydney has to offer. A significant body of architectural knowledge lies dormant, hidden within buildings, and lost to professionals through years without active use. A typological investigation of affordable housing is an ideal method of bringing this knowledge to light, making it cohesive and explicit to draw upon in the architectural design process. Typological information does not reveal the ‘best’ way to design affordable housing; what is best for any given site is subjective. Instead, a typological understanding equips an architect with the tools to solve problems. It becomes an immensely valuable repertoire of strategies, principles, and data which can positively inform the design of new urban affordable housing; an undertaking with its own specific brief and inherent design complexities.. In looking to determine how the future shape of affordable housing in Sydney will develop, a close typological investigation of Sydney’s urban affordable housing apartment buildings would be a very good place to start.

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