



Revolutionary **Low Rise**

Informing London's Suburban Densification

Mike Althorpe + Abigail Batchelor

A Research Project Supported by

RIBA 

Karakusevic Carson Architects

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Revolutionary Low Rise

Mark Swenarton

The projects presented in this study come from a particularly rich period in the 1960s when architects in Europe and North America sought to establish a new format for urban housing. This was the period when the global post-war boom that followed the end of the second world war was at its peak and when a spirit of can-do optimism pervaded western culture, architecture included.

Central to these new developments was a rejection of the urbanism developed between the wars by the first generation of modern architects, that included Le Corbusier's Ville Radieuse and CIAM's Charter of Athens, and implemented in many cities across the western world (and beyond) in the post-war years. On urban sites cleared of all trace of previous inhabitation, high-rise slabs and towers arose surrounded by empty public space. But the utopia soon turned into dystopia, as families found themselves cut off, literally and culturally, from the life that they had known on the ground, and the public space surrounding the slabs turned out to be not the verdant parkland envisaged by the architects, but a no-go area of desolation and detritus.

In this context architects started to develop a quite different model. The trick was to invert the figure-ground relationship of the high-rise estate. Instead of the building forming the figure and the site forming the ground, the building was to be treated as the ground, coterminous with the site, and the figure was to be formed by open space, with access routes, private gardens and communal open space excavated from it. Rather than the vision of the city dweller as a spectator looking out over the landscape offered by the Ville Radieuse, the city dweller was to be immersed in the city, in a dense but low-rise urban 'mat'. Front doors were to open directly onto the open-to-the-sky public routes that traversed

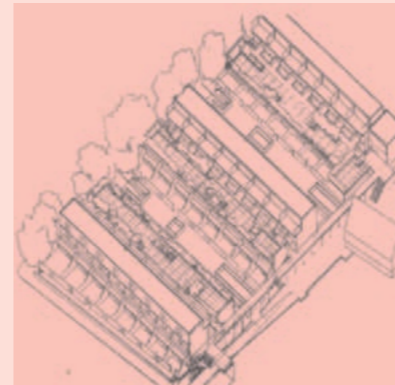
this mat. Private open space was to consist not of balconies stacked one above the other but of rooftop terraces and courtyards, either between or within the curtilage of individual dwellings as in a North African medina.

This concept, so different from that of the Ville Radieuse, was set out in two unbuilt but widely published projects of the late 1940s by, of course, Le Corbusier, the Sainte-Baume and villas 'Roq' and 'Rob' in the south of France. Inspired by these were a number of projects built in the 1950s. Directly descended was Siedlung Halen outside Berne in Switzerland by Atelier 5 (1956-61). The architects of Team X – the Smithsons, Candilis Josic Woods, etc. went back to the street, which Le Corbusier had banished from the Ville Radieuse, and re-instated it as the primary element of urban organisation. In Denmark, Utzon developed a courtyard version in his Kingo and Fredensborg housing of the 1950s and early 60s, a format followed in the UK by Michael Neylan with Bishopsfield at Harlow in 1961. Across the Atlantic the patio house, in which the courtyard was treated as another 'room' analogous to the main rooms of the house, was explored by Sert at Harvard and Rudolph at Yale. Also on the East Coast, Chermayeff and Alexander in Community and Privacy (1963) developed their idea of the household comprising occupants of distinct types (principally, adults and children) who had distinct needs in terms of both private and communal space.

Stimulated by ideas such as these, architects produced a dazzling array of projects that explored low-rise, high-density (LRHD) approaches to housing. As the pages that follow show, we find them in the USA, the UK, Germany, The Netherlands and Italy, as well as many other countries. They were built as private developments like the Sun

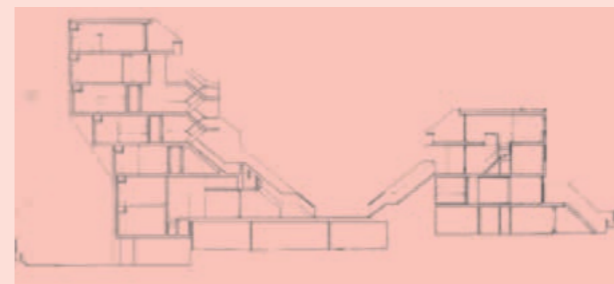
Tech homes in Los Angeles; as public housing projects like Lillington Gardens in London; and by housing associations and co-operatives like Molenvliet in The Netherlands.

Particularly noteworthy were those built in the UK, which in the decades following the second world war had one of the largest public housing programmes and where high-rise flats were at odds with both cultural and tenant preferences. At the London Borough of Camden the doyen of this new kind of mat housing, Neave Brown, designed his major schemes, first Fleet Road (designed 1966-67) (0.01) and then the much larger and more complex Alexandra Road (designed 1967-



0.01

69) (0.02). Inspired by this example others at Camden such as Peter Tábori developed their own interpretation of LRHD, notably at Highgate New Town, now



0.02

known as The Whittington estate (designed 1968-70). Working to the same density requirement as nearby high-rise developments, which meant net residential densities of 395 to 520 persons per hectare, the Camden architects set out to show that good housing could be produced that met the complex needs of households of various sizes, not least the need for external space where children could interact and play in safety.

During the 1970s western economies went from boom to bust, the sense of optimism disappeared, and interest in achieving other than the bare essentials waned. On top of this in many European countries, notably the UK under Margaret Thatcher, public housing programmes were cut back and hence the opportunity to follow up these innovative housing layouts disappeared. With the whole idea of architecture as a route to social progress discredited and post-modernism in the ascendancy, these were the wilderness years for this kind of architectural thinking. After Alexandra Road, Neave Brown received no more architectural commissions in the UK, although his reputation remained high in The Netherlands, where in the 1990s he went

on to build his final masterwork, the Medina at Eindhoven.

In recent years the UK has seen a revival of interest in the LRHD work of the 1960s. The

Donnybrook housing in London by Peter Barber (2002), the Stirling-Prize winning Accordia housing in Cambridge by Feilden Clegg Bradley and others (2008), the award to Neave Brown of the RIBA Royal Gold Medal in 2017, all attest to the growing recognition of the continuing

relevance and value of this body of work.

Responding to changes in the emerging London Plan, this research supported by the RIBA and Karakusevic Carson Architects, opens up an exciting new chapter in this process. For the LRHD projects of the 60s offer a valuable alternative not just to high-rise modernism but also to conventional suburban typologies, which are descended from the low-density prescriptions ('12 houses to the acre', ie 30 units/hectare) of the garden city movement. This low-density format arose as a reaction to what a century ago was seen as the 'overcrowding' represented by Victorian terrace housing. As such it is not inherent to building successful housing in the periphery of London or any other metropolis. Popular opinion would have us believe that any significant increase in density in the periphery would have negative consequences for the dwellings, making homes that are not as good for elderly people, for example, or for families with young children. Yet the testimony collected as part of this research shows that this is not the case; in these respects, as the residents of the Atriumwohnpark and the Whittington estate tell us, these LRHD schemes can actually be better.

As we consider what sort of housing we should be building in London's suburban edge, this study brings out an important lesson from these innovative LRHD projects of fifty years ago. It is this: for London's periphery an increase in density is not an alternative to providing a kind of housing that is better for its occupants to live in – it offers a means to achieve it.

Mark Swenarton is emeritus professor of architecture at Liverpool University and author of Cook's Camden (2017).

About this Project

Introduction

This research seeks to explore and reveal a set of groundbreaking historic housing typologies as a means to offer spatial solutions to the contemporary challenge of the densification of London's suburbs.

As the capital searches for solutions to an ongoing housing shortage and adopts a policy-driven pro-growth agenda, low-rise high-density (LRHD) typologies offer an approach to development which enables densification and an increased number of homes without reducing quality of life or negatively impacting existing neighbourhoods.

Emerging in the 1960s and 70s in response to the Corbusian high-rise "tower in the park" model, LRHD sought to overcome some of the downsides of large urban renewal through an emphasis on new dwelling typologies and experimental types of organisation at a liveable and sociable scale. The critique of high-rise and its failings is a broad study.

Rather than repeat it here, this research uses a range of historic case studies to highlight alternative architectural models that promote residential design quality and embrace human scaled built environments.

The common perception of London's suburbia is typically of single-family homes (0.03). However, in many outer London areas homes have been extended and divided and are frequently in multiple occupancy. This research does not provide a detailed review of suburban

building adaptation, but as part of the city's emerging good growth process, a critique and acknowledgement of the realities of the 21st century suburban context - as opposed to the historic characteristics - should inform

judgements of contemporary proposals and interventions. The compromised nature of subdivided homes provides an evidence base to inform our erroneous understanding of London's suburbs and any future densification strategies (0.04).

In the 21st century, London has shifted to a policy-driven promotion of higher densities rather than that driven purely by the market by itself. Since 2000, Public Transport Accessibility Level (PTAL) ratings linked to central, urban and suburban character areas, while intended to be indicative, have become a dominant guide for planners and developers. According to the Greater London Authority's own evidence such a matrix has provided a poor benchmark of appropriate densities*.

While exact levels may be subject to ongoing debate, the aim of promoting densities is to increase housing provision towards areas with good transport infrastructure, services and amenities and so support the benefits of compact and accessible cities. Density brings economic activity to an area, footfall and activity to streets, and the development of more mixed communities. However, growth in London's suburbs in recent years has often been delivered in a form and at a scale that many urban and suburban Londoners alike are not accustomed to and for which we do not have local precedents.

Through changes to the regulatory framework and local policies, London's politicians aim to support the delivery of more new homes. Notable changes and shifts of emphasis in the 2017 draft London Plan includes; an uncoupling of the emphasis on PTAL and no longer requiring the preservation of an area's character, and a priority on the provision of new housing and reduced scrutiny on smaller projects. As well as this, the 2017 draft Plan affirms that London must grow

within its own boundaries, safeguarding its Green Belt and setting housing targets for all of the city's local authorities to respond to.

The emerging new London Plan calls on local authority planning departments across the capital to provide effective guidance to enable them to scrutinise design proposals. As determining appropriate density becomes a matter of judgement rather than a development matrix, planning departments need to be equipped with the knowledge and evidence to encourage best practice through guidance and require the tools to establish qualitative criteria and new methods to assess

The nine projects represent a range of architectural strategies that are innovative and experimental in their layout, form and dwelling mix

higher density developments.

Whilst the New London Plan supports the provision of housing for London over the protection of an area's character, it is not to say that these two things are mutually exclusive. A LRHD approach can potentially achieve both: delivering growth, but also responding

sympathetically to a predominately two-three storey context that makes up so much of London's fabric, especially in its outer suburban areas. The challenge for designers and planning departments lies in demonstrating that density has been optimised, rather than just maximised at the expense of quality, whilst recognising that the transformation of London's suburban neighbourhoods is possible and can be socially, environmentally and economically beneficial.

This research offers a comparative analysis of nine examples of LRHD development.

Featuring an international mix of projects from the UK, the USA and Europe, it seeks to provide a like for like guide to their spatial characteristics. Crucially however, this research also seeks to blend qualitative evidence from residents, and so offer insights into the lived experience of these projects, and inform practitioners working in London's suburbs today.

The nine projects represent a range of architectural strategies that are innovative and experimental in their layout, form and dwelling mix. They are the result of a selection criteria that was developed intentionally to reflect contemporary planning policy frameworks and so blend

technical as well as environmental and human considerations.

Together they provide a range of typological scenarios that encompass conditions likely to be found in, or required of, London's suburbs in the future and so provide a range of design lessons; from



0.03



0.04

stepped linear terraces on sloping sites, to hidden courtyard clusters and mixed commercial and residential hybrids.

During the selection process, we reviewed numerous landmark schemes that were hugely influential in terms of the evolution of LRHD. The Siedlung Halen, Switzerland by Atelier 5 (1956 to 1961); the Bishopsfield Estate, Harlow by Michael Neylan (1961-1968) and the Marcus Garvey Village, Brooklyn led by New York State's Urban Development Corporation (UDC) (1973 – 1976) for example were reviewed alongside many others and are not included here as they fell short of the requirements of our chosen criteria.

A key aim of this research is to make density and an understanding of it accessible. In place of tables, this document includes redrawing of all case studies as an explicit visual guide to what dense residential environments look like and provides crucial insights into what the experience of living in them is like.

Through this strategy, it is hoped the research may maximise its usefulness to inform best practice. We have spoken to and sought the views of many people, including local historians, planning officers and

residents. Our methodology has included; site visits to all nine projects, literature reviews, the creation of new architectural drawings, letter writing, telephone calls and face-to-face semi-structured interviews with 16 residents and other personnel living on or working at the nine projects. The findings presented represent the outcome of these activities, while incorporating our own observations, opinions, findings and recommendations.

* May 2019, GLA said - Fifteen years of evidence indicates that the density matrix has provided a poor benchmark or indicator of appropriate densities. Over that period, only 35 per cent of development has been within the density matrix range, whereas 50 per cent of development has exceeded the matrix range for its location and 25 per cent has been double the top end of the range. www.london.gov.uk

Period Project is completed in or has its origin in the architectural genesis of the 1960s and 1970s representing the period first reacting against the dominance of post-war high rise.

Architectural quality

Project demonstrates typological innovation through unique building forms and original layouts with attention to detail, materials and landscape.

Density Project encompasses a gross dwelling range of approximately 75 to 150 dwellings per hectare and so reflect reasonable high density in London context

p.9

Height The project is pre-dominantly no more than four storeys and so closely related to low lying forms found in London's suburbs, while representing required upscaling

Setting Project is located in existing high density urban or suburban character areas and so is working as part of a greater whole or working to fill in gaps in built fabric rather than a completely blank or 'tabula rasa' site.

Mix Project contains a mix of dwelling types and range of sizes for different types of living patterns, including families and incorporates other use types such as commercial or community

Context Project responds to the specifics of its site and its immediate adjacencies in terms of form, orientation and materiality

Replicable Project exhibits potential in its building form or dwelling arrangements for scaling up and repetition in other areas and sites

Clarification of terms

Public: project developed or owned by a local authority, council or municipality

Intermediate: project developed or owned by housing association or co-operative or state-supported public utility company

Private: project developed or owned by private commercial company or individuals

The Space Of Outer London

Essays

Landscape Tensions

The relationship between any city and its hinterland is intimate, yet frequently uneasy. While Greater London exists as a single entity, it encompasses a set of contrasting spatial worlds that often puts it at odds with itself. To its 8.6 million inhabitants, Greater London is both urban and non-urban, a place of change yet constancy, where dense city streets give way to spacious detached housing and parkland. Such contrasts are part of London's defining qualities and add value for its citizens. The challenge of such a multifarious entity however, is persuading it to act as one to take collective responsibility in addressing the key issues of our times.

In affirming the need to accommodate growth within its existing boundaries, the emerging New London Plan creates a scenario where the new focus for densification has been put on the landscapes of Outer London, shifting the debate to spaces often regarded as untouchable. It is therefore among the possibilities of the suburbs and its outer urban sites that this study presents the case studies that follow and where London must develop new ideas for housing at higher densities.

Rethinking the role of the suburbs in tackling London's housing need has long been an emotive issue and there have been numerous socio-economic and design-based reports and think pieces advocating its reappraisal. Writing in 2017 in response to the draft London Plan's new emphasis Rowan Moore described the landscape as 'a major untapped resource and, therefore, a battleground' and tension between city and hinterland and two landscape traditions is long.

In the early 20th century the London County Council (LCC) faced opposition from

landowners, urban retirees and neighbouring communities for its 'out county' purchases in Essex and Kent, spaces that grew to become the sprawling cottage estates of Becontree and Bellingham, both essential parts of London's metropolitan housing need. In the post-war years the very different architectural landscape of Roehampton was created by the same authority with mid-rise tower blocks and stepped terraces set amidst rolling hills of Surrey right next to Richmond Park. While the architecture differed, the objective was the same; provide new housing in places that can accommodate it and use the land London needs.

The current concept that London and its hinterland should act together was officially designated in 1965 with the creation of the Greater London Council (GLC) and the current system of 32 boroughs. It is the inheritor of the big municipalism created in 1889 and the LCC. In one bold move historic county boundaries were officially dissolved and once outlying districts found themselves part of the great 'one city' metropolitan project. Such a shift immediately created spatial tensions and housing was at the heart of one of the first big tests of the one city principle and it had longstanding consequences.

In 1965 the GLC published a flagship housing policy of 'Opening Up the Suburbs', the basic premise of which was that London's newly acquired areas should accommodate low income housing programmes. The policy followed in the tradition of the LCC, but the territory was new and it generated instant resistance. The story is told in detail in 'Strategy and Conflict in Metropolitan Housing' a 1978 study by Ken Young and John Kramer, wherein a political stand-off between the GLC and the new outer boroughs

followed. By 1975 the one city ambitions were largely abandoned and housing programmes would not be imposed on the suburbs by central diktat.

The legacy of this bitter episode ultimately led to a devolution of housing responsibilities to the boroughs as we recognise them today. It rocked the GLC's confident centralism and it amplified the idea of separateness between Inner and Outer London once underscored by political geographies and the phenomena of the 'Blue donut', the moniker given to the map of London for most of the 1980s and 1990s when outer boroughs predominantly voted Conservative blue, creating a ring around an inner red of Labour voting boroughs.

However, in the 21st century, the donut is broken and London's suburbs are diverse places, evolving to embrace new social and economic characteristics, underlining the need to look again.



0.05

New Realities

Outer London as we know it today is a product of the 20th century, in particular of the 1920s and 1930s and the intense period of construction that saw the rapid advance of 'Metroland' and its imitators (0.05) During these years hundreds of thousands of low density two storey single family cottage homes were created, facilitated by railways then road building programmes. The result was while London's population increased by 17%, its land mass leapt by 50%. The legacy of this era and its approach to dwelling types and estate layout has been far reaching and Outer London still largely operates in its broad spatial mould.

Across the twenty boroughs that make up Outer London there are about 2,026,000 dwellings with an average gross density of just 16 dwellings per hectare(dph) with Barking and Dagenham most dense at 19 dph and Havering least with 8.9dph. In contrast the boroughs of Inner London average about 45 dph.

If all of London behaved as it's inner area does, an additional 3.6 million dwellings could be accommodated within Greater London. By way of comparison, the 1919 Housing Manual based on the Garden City Movement and those that gave birth to the cottage estate and suburbia as we know it, advocated 12 units per acre or 30 dph. If Outer London could find a way to just meet these conservative densities, while discounting the 35,109 hectares of Outer London designated as Green Belt and thus protected/unavailable, an additional 589,539 dwellings could be accommodated, 38% more than the current 2015-2025 target mandated for the whole of London.

Today the twenty borough's that make up Outer London are home to 4.9 million people. Population growth in these areas is expanding at a faster rate than Inner London and over the next twenty years it has been predicted that these areas will make up 65% of London's total growth. However, in contrast to the popular image of the salubrious suburb that defined these spaces in the 20th century, there are some startling demographic trends emerging in these landscapes.

In its 2018 report 'The Unspoken Decline of Outer London' the Smith Institute offered a critique of current economic development policy, or so-called 'city centralism' evident in London today. In a wide-ranging socio-economic analysis, it found that 60% of Londoner's living in poverty, or 1.4 million people, were to be found in Outer London and that while in 2004 Outer London had 32% of London's most deprived wards, by 2015 it had risen to 47%. In addition, across the similar period, it found that Housing Benefit claims in the Private Rented Sector (PRS) were up 17% in Outer London, but down 13% in Inner London and that while Inner London had seen considerable job growth, Outer London has experienced a decline in job density rates.

This snapshot of evidence illustrates an Outer London landscape that is being left behind and where change is underway that is not advancing the lives and opportunities of its inhabitants. It suggests the need for spatial policies that could promote new life, new value and urban rebalance. Recent infrastructural investments, such as the Overground and the Elizabeth Line, provide examples of how physical interventions can prove transformative.

Of Form and the Suburbs

The current draft London Plan has been described by some as a declaration of ‘war’ with the spectre of looming ‘blocks of flats’ raised provocatively to deliberately polarise debate*. Such positions echo the debate of the early 1970s, however in 21st century London our current building boom offers plenty of substance. In the past twenty years towers and big blocks of flats have been built in record numbers. In 2019, a New London Architecture (NLA) report found that there were 541 buildings above twenty storeys planned or under construction in London, 175 of which were in Outer London. The report offers a compelling guide to numbers, but less on architectural quality or the adverse impacts that tall towers can have on communities or issues of quality of life, light, local environment or inflated land values. These are issues that bind all of London and the well-publicised protests in the distinctly urban neighbourhoods of Shoreditch and Paddington demonstrate this is not a uniquely suburban anxiety.

Typological fearmongering and protectionism often rules out what is hidden in plain sight. Outer London is already full of typological hybrids and it is not a homogeneous landscape. New density can, and must, take more thoughtful and nuanced forms and herein lies the chance to make the suburbs better.

Amidst the expanses of two-storey Outer London, beneath the existing leafy canopy of suburbia, changes are underway that have seen new flats, maisonettes and home extensions within the envelope and permitted development of existing homes. (0.04) Such incremental changes are not new. Decades ago, large single-family Victorian villas in



0.06



0.07



0.08

places like Brockley and Penge were sub-divided into flats or cleared to allow redevelopment on a plot by plot basis. The result was the densification and rebirth of neighbourhoods with multiple families and communities (0.06). The same may be done again today on a case by case basis and extended to encompass appropriate sites across Outer London between services or on space left over by redundant industries. The Greater London Authority’s Small Sites guide offers a glimpse of what sort of landscapes are out there. (0.07)

The urban condition and atmosphere of Outer London shifts dramatically and frequently. Along the many high streets of London are built forms not unlike that found at the urban core with four-five storey buildings rising above one-two storey homes (0.08).

Suburban high streets have historically provided fertile conditions for the development of unusual typologies. Above and behind the linear strips of shops and stations one may find stacked flats and maisonettes accessible by stairs, hidden roof streets leading to front doors and private terraces that work around and above commercial services (0.09 + 0.10). Rather than accept these typologies as simply architectural accidents or one-off quirks, we might in future use them as the basis to develop unique and desirable living spaces without lurching to 20-30 storeys.

The emerging Outer London emphasis of the draft London Plan need not be a precursor to conflict between two spatial

worlds, but an opportunity for a more sustainable, responsible, balanced and better city. Retrofitting the suburbs could be London’s great project of the 21st century and a cause other cities may yet take on as their own as they adapt to change and drive regional economies.

This research is not about imposing a design on a specific place or advocating one style over another. It is about offering a set of nuanced and original case studies born out of a period of intense experimentation in order to push forward new ideas in dwelling form and layout as part of our own sustainable future urban growth.

A denser London built upon existing urban networks will mean a healthier, more prosperous, better functioning and more inclusive city. In this debate, original architectural forms have a crucial role to play in mitigating differences of scales, of challenging attitudes and putting forward possibilities for resolution and a vision for change.

* Andrew Boff, Conservative member of the London Assembly housing committee, Inside Housing, 30 November 2018 and 21 March 2019



0.09



0.10

Resources

A City of Villages - Promoting a Sustainable Future for London’s Suburbs
Greater London Authority, 2002

Aspects of Suburban Landscapes - Inherited Landscapes and Suburban Greens, 1850 – 2015
Jack Hanson and Adam Partington, 2015

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Higher Residential Densities in the Outer London Suburbs
MJP Architects, 2011

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Retrofitting Suburbia - Is the Compact City Feasible?
Louis Rice, 2010

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UWE, 2011

Suburban Design Guide - Draft Supplementary Planning Document
Croydon Council, 2018

Supurbia - A Study of Urban Intensification in Outer London
HTA Design, 2016

Transforming Suburbia - Superbia Semi-Permissive
HTA Design + Pollard Thomas Edwards, 2015

Housing and Growth in Suburbia
The Smith Institute, 2009

Towards a Suburban Renaissance - An Agenda for Our City Suburbs
The Smith Institute, 2016

Suburban Urbanities - Suburbs and the Life of the High Street
UCL Press, 2015

The Heritage of Historic Suburbs - Inherited Landscapes and Suburban Greens
Historic England, 2007

The Unspoken Decline Of Outer London - Why Is Poverty And Inequality Increasing In Outer London And What Needs To Change?
Smith Institute and Trust for London, 2019

Strategy and Conflict in Metropolitan Housing
Ken Young and John Kramer
Heinemann, London 1978

Area

Units/dph

Havering (least dense London Borough)	09
Los Angeles	10
Cambridge	12
Eindhoven	13
Papendrecht	13
Outer London	16
City of Philadelphia	16
Santa Monica	21
Kettwig	21
Greater London	22
Tudor Walters recommendation 1919	30
Greater London NET	35
Terni	35
Inner London	45
Ebenezer Howard Garden City 1898	45
Camden	47
London Suburban PTAL 0-1 (median)	55
New London housing approvals 2015/16	54
Westminster	56
London Plan 1944 (Abercrombie) Low	62
Atriumwohnpark	63
London Suburban PTAL 2-3 (median)	65
Kensington and Chelsea (densest London Borough)	70
Molenvliet	82
Suntech Town Homes	82
London Plan 1944 (Abercrombie) Medium	84
London Suburban PTAL 4-6 (median)	87
Medina	91
Penn's Landing Square	102
Villaggio Matteotti	103
London Plan 1944 (Abercrombie) High	124
The Whittington Estate	130
Malcolm & Manor Place	140
Lillington Gardens	240

All figures shown are gross densities unless otherwise stated. Data resources include; London Data, www.gov.uk; Greenspace

Information for Greater London www.gigl.org.uk; Cambridge www.cambridge.gov.uk; Terni www.dati-censimentopopolazione.istat.it

Eindhoven www.oozo.nl; Philadelphia and Los Angeles www.census.gov; Papendrecht www.allecijfers.nl and Kettwig www.essen.de

Resources

Atrium residential complex at Kettwig/Ruhr, near Essen
Bauen & Wohnen, Volume 26, December 1972

Architecture in the Ruhr area, Essen
Density Research Project Swiss Federal Institute of Technology Zurich
Zurich, 1983

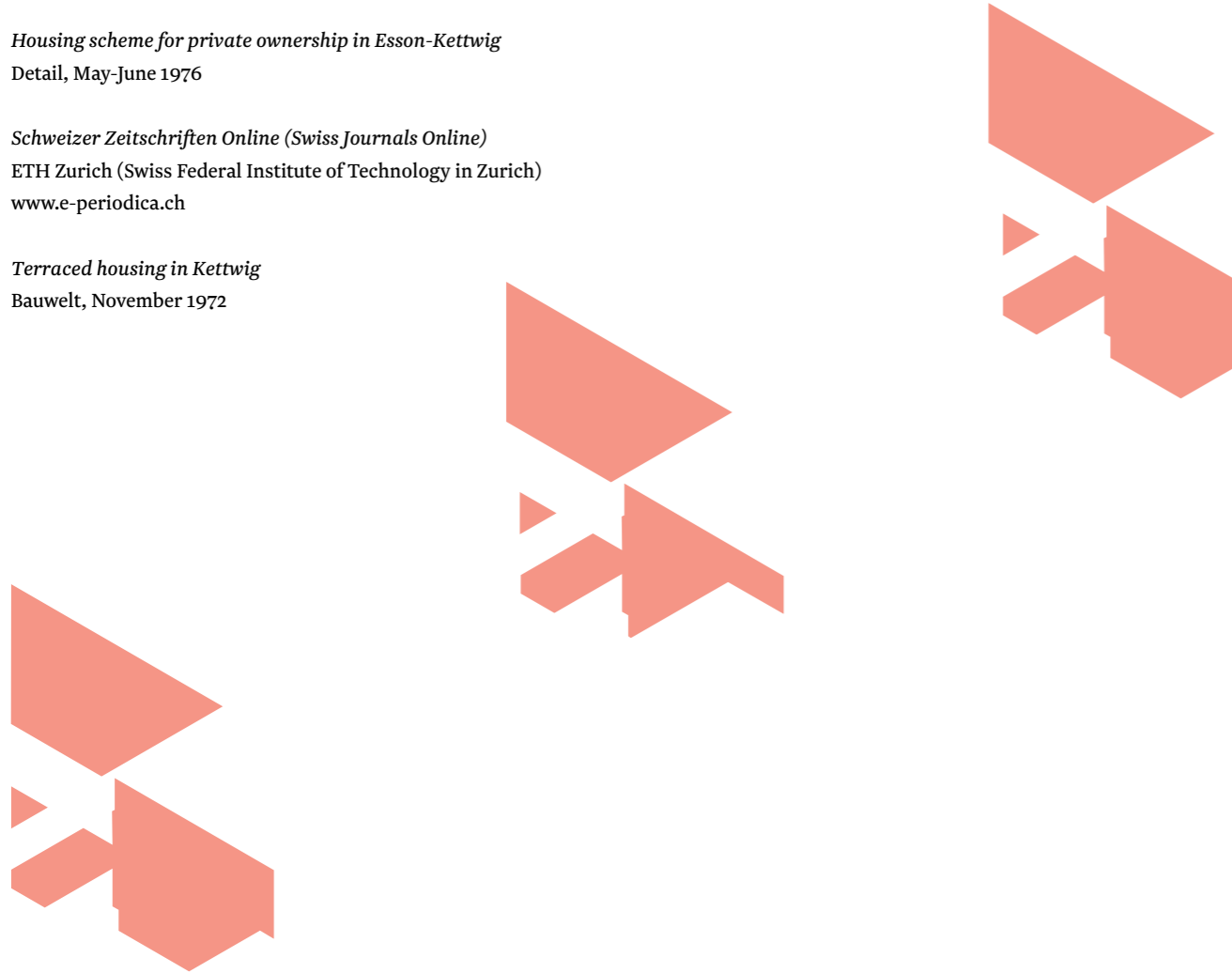
Culture on the Rhein and Ruhr, Essen
Magazin R, January 1981

Das Ruhrgebiet. Architektur nach 1945 (The Ruhr region. Architecture after 1945)
Manfred Bourrée
Klartext Verlag, Essen 1996

Housing scheme for private ownership in Esson-Kettwig
Detail, May-June 1976

Schweizer Zeitschriften Online (Swiss Journals Online)
ETH Zurich (Swiss Federal Institute of Technology in Zurich)
www.e-periodica.ch

Terraced housing in Kettwig
Bauwelt, November 1972



1

Location	Ruhrstraße 11, Kettwig Germany
Postcode	45219 Essen
Geo Co-ordinates	Latitude: 51.361833 / Longitude: 6.939638
Years	1971 - 1972
Architect	Erwin Berning
Client	Consortium including architect
Type	Private
Mix	Residential only
Character setting	Urban
Area size (hectares)	0.24
Built-up extent (ground occupied by dwelling structures)	0.20 (85%)
Communal extent (ground occupied by shared spaces)	0.04 (15%)
Floors	2-3
Parking spaces	15
Number of dwellings	15
Dwelling range	3 apartments + 12 courtyard homes (two bed)
Typical dwelling size	Courtyard home 121.7sqm (+42.3sqm amenity)
Dwelling Density (hectares) dph	63

Atriumwohnpark

Hidden patio homes

About

Located in the small town of Kettwig in Germany's sprawling Ruhr region, the Atriumwohnpark (Atrium Residential Park) is a one-off residential development created as part of efforts to revitalise the residential offer in what was well-connected, but economically sluggish historic town. Once a manufacturing centre close to the industrial heartland of Essen, Kettwig was home to numerous mills and factories located on the slopes of the Ruhr river and close to the adjacent railway at the heart of the town.

As part of the reorganisation of the town in the post-war years, many of these buildings were cleared away and sites offered up for what was envisaged as a mix of new residential and cultural uses. Many regeneration plans, including those for galleries and creative industries, never materialised, but Atriumwohnpark was one of a limited number carried forward by a private development team. With a bold design by local architect Erwin Berning, it reworks a small off-road site behind traditional German street buildings and surviving industrial units.

Architect Berning is a relatively unknown figure beyond the region of Westphalia, but for a short while he was prolific in the local area. The project is one of two notable examples of low rise, high density housing in the town, both of which exploit the potential sloping sites and are in a characteristic modern style known locally as Weiße Häuser (White Houses) on account of their bold white concrete and rendered forms. In recent years, clean lines and white rectilinear forms have once again become the dominant local form for new housing and apartment construction alongside the river.

Tour

Nestled in an off-street site the dwellings of the Atriumwohnpark are organised around their own self-contained 'atrium' or private courtyard garden, a central expression of their character and generating the name and selling point of the project.

The project is accessed from a single point off the town's Ruhr Strasse where a standalone building containing three apartment dwellings responds to the character of the traditional German street with a pitched roof and black painted render finish rising to three storeys. Beyond this however, the development radically changes.

Out of sight of the street and passers-by, the project shifts to a compact townscape of low-slung L-shaped dwellings with stark expanses of bright white render, arranged in cubic terraces that step down with the slope of the area towards the southern and eastern aspect and the river. Alternating and tessellating the basic two storey module, the units are organised in such a way that they do not overlook each other, maintaining privacy and generating a great sense of enclosure with full height windows looking only into the unit's own enclosed private courtyard space.

Within the dwelling module, main accommodation is organised on two floors around two sides of the courtyards, with the third side single storey given over to built-in storage and the fourth side a wall to the neighbouring dwelling.

Inside, the construction was designed in such a way to allow residents customisable options within a basic open plan envelope and fixed bath spaces. In most cases, ground floors contain living, dining and kitchen spaces arranged in an L-shape facing into the courtyards, while above at first floor there is room for either a two or three bed arrangement between a fixed bathroom with a roof terrace leading off the intended master

bedroom areas. At the east side of the development are two single storey units in an L-shape plan that were created in order to step down with the landscape and so remain concealed.

The front doors to homes are located off three planted pedestrian access points that step down, providing access to three to four dwellings each. No windows from any dwellings overlook these spaces.

Car parking for residents is distributed around the edges of the site, mainly at surface level, and is accessible via a short walk rather than provided immediately adjacent to dwellings.

Criteria

The Atriumwohnpark is a project that makes innovative use of a tight off-street site and accommodates numerous original dwelling types. Bordered by other buildings it embraces an active low-rise strategy to make itself largely invisible from the street and as such is both radical and sensitive to its context at the same time.

As built it provides 15 dwellings at a approximate gross density of 63 dwellings per hectare, which is three times the average of the town of Kettwig across its built up area which comes in at 21 dwellings per hectare

While this density falls slightly outside the numeric range set by this study, it is included here as a little-known project that offers valuable lessons in its organisation with a straight-forward tessellation and repetition of its basic modular form.

Additionally, its response to landscape and its low height profile makes an asset of the tight urban site and provides privacy to individual dwellings in spite of proximity to one another.

Initial Findings

We spoke to two sets of residents and the first stages of our wide-ranging discussion and tour of the site rested upon the project's distinctive aesthetics. Those we spoke to enjoyed the simplicity of its visuals, comparing it favourably to key modern movements such as the Bauhaus.

Respondents told us that the project's distinctive courtyards, which afforded privacy and security, had been an important factor in them choosing to live there and that a feeling of enclosure was a fantastic asset. Those we spoke to were retired and the project's location close to the centre of town and its amenities was key in their view for a continued quality of life and they valued this highly.

In both instances we found that the dwellings location and compact layouts were ideal opportunities for downsizing, but that this had come with financial costs. Inside the dwellings, we found that residents have had to make significant alterations to the layouts they moved into. One resident suggested they might have 'thought again' about their home, had they known the changes they would have to make. Sometimes this was down to the curious tastes of previous inhabitants, but also it was the view of our respondents that this may have been the due to the ambitions of its original architect and developers. Our respondents agreed that an original three-bed set up was unrealistic and so much of their improvements had been in rationalising and opening up their dwellings.

We also learned that while some residents were close to one another, the tight layout had not created an amplified sense of community and that the communal spaces were infrequently used and left unactivated.

Interview

Interviews conducted in March 2019. Respondents are an elderly couple (1) living in a two-storey L-shaped courtyard type and a neighbour living in a larger single-level U-shaped type (2). Both are located in south eastern corner of the development.



1.01



1.02



1.03



1.04

Interviewer Resident 1 + 2

How long have you lived here and what do you think about living at high density?

1 — It's fine. We bought our courtyard home over seven years ago and so we have not been living here so long.

2 — I have a courtyard one as well, but it is arranged on one level on three sides and so the atmosphere is quite different. I moved into the development two to three years ago. In terms of density, many Germans live in flats. It is more typical here than in Great Britain for example and so when Germans grow up they usually have the experience of living amongst others at a closeness to others. So I think density is more normal here.

What do you think of the appearance of your homes?

1 — I like the simplicity and blankness of the buildings on this development.

2 — I quite agree. When I first saw this development, I thought of the Bauhaus. When people come to visit me they also see this. It is modern, but at the same time it is classic and of the past. I still think about this inside my home. (1.01 + 1.02) White Houses of Essen are famous here – an architect helped me with my house, they didn't know about the project and appreciate how people see it as part of the Bauhaus or not. The same architect did a bigger development up the hill, but it is much steeper. Similar in appearance, but not layout. I was put off by the house.

So the style of the building was important to you?

2 — Yes. But I would say the atrium spaces and the enclosure are also important. Before I lived here, I was in a large house with a garden. Then I was alone and I didn't want to have to look after the garden anymore.

1 — This was the same for me. I got old. A big garden was too much and I like the convenience of the town nearby and having amenities and shops five minutes away.

Are there many retirees living here and is that typical of Kettwig?

1 — Yes, but it differs elsewhere in the town.

2 — There is one couple who has lived on this development since 1972 when it opened and so they have grown old here, but I think everyone else has moved here consciously in retirement. There are people in the 70s and the oldest is 94(!)

Why do you think the development is so popular with older people in particular?

1 — For being able to shop without a car.

2 — From here you can do everything by foot. You can reach the amenities, the doctor and the shops. I think that's what makes this place work for people and the main reason for its success.

Are there any families within the development?

1 — No, not anymore. Youngest person is 18 and he's away.

2 — A family sold their house to me, it was tight for older kids, they had two children that were 10 years or so, but it was clear it was too much for them. I think at one time people were used to living in smaller spaces, it was common and people used space more intensively, but that has changed.

How has this area changed?

Do you think this project is controversial in terms of its architecture and how it fits into the rest of the neighbourhood?

Do you think other people are aware of it and its revolutionary design?

Do you enjoy the privacy and closed arrangement?

Is there a good sense of community here?

Do the outside communal spaces promote sharing?

2 — This part of Kettwig is linked to the industry of the Rhur, which developed next to the river first in the 18th century beyond the town walls. This area has lots of level changes and it was excavated as a ditch and on this there were factories which closed around 40 years ago. At this time they cleared away many industrial buildings and hoped to attract creative industries, which didn't work and so they are now thinking about what is next. What buildings to keep and what to redevelop.

2 — Depends on your point of view, but I think no. I suppose when they were built there would have been lots of debate about it, but not now. The buildings are approaching 50 years of age now.

1 — The main street nearby is full of black timber and stone structures, but these buildings cannot be seen from the street (1.03). When they were built there was a revolution in buildings.

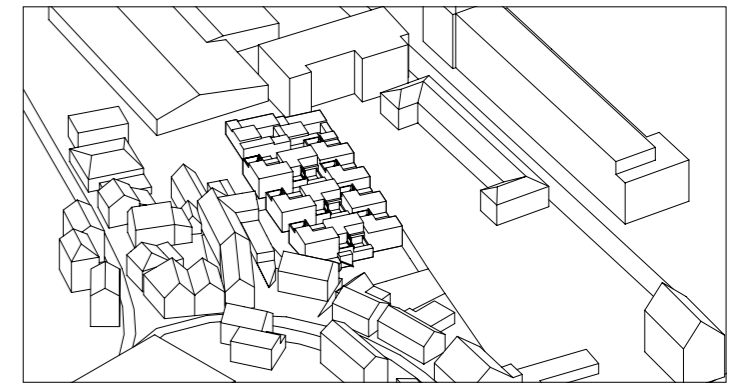
2 — There are many tourists in the town, but they do not come here for this. It is out of sight for them and they do not know to look around the corner. This development is very secluded and private.

1 — This is a very positive thing for me. I think elsewhere there may be problems with crime, but not here I do not think so.

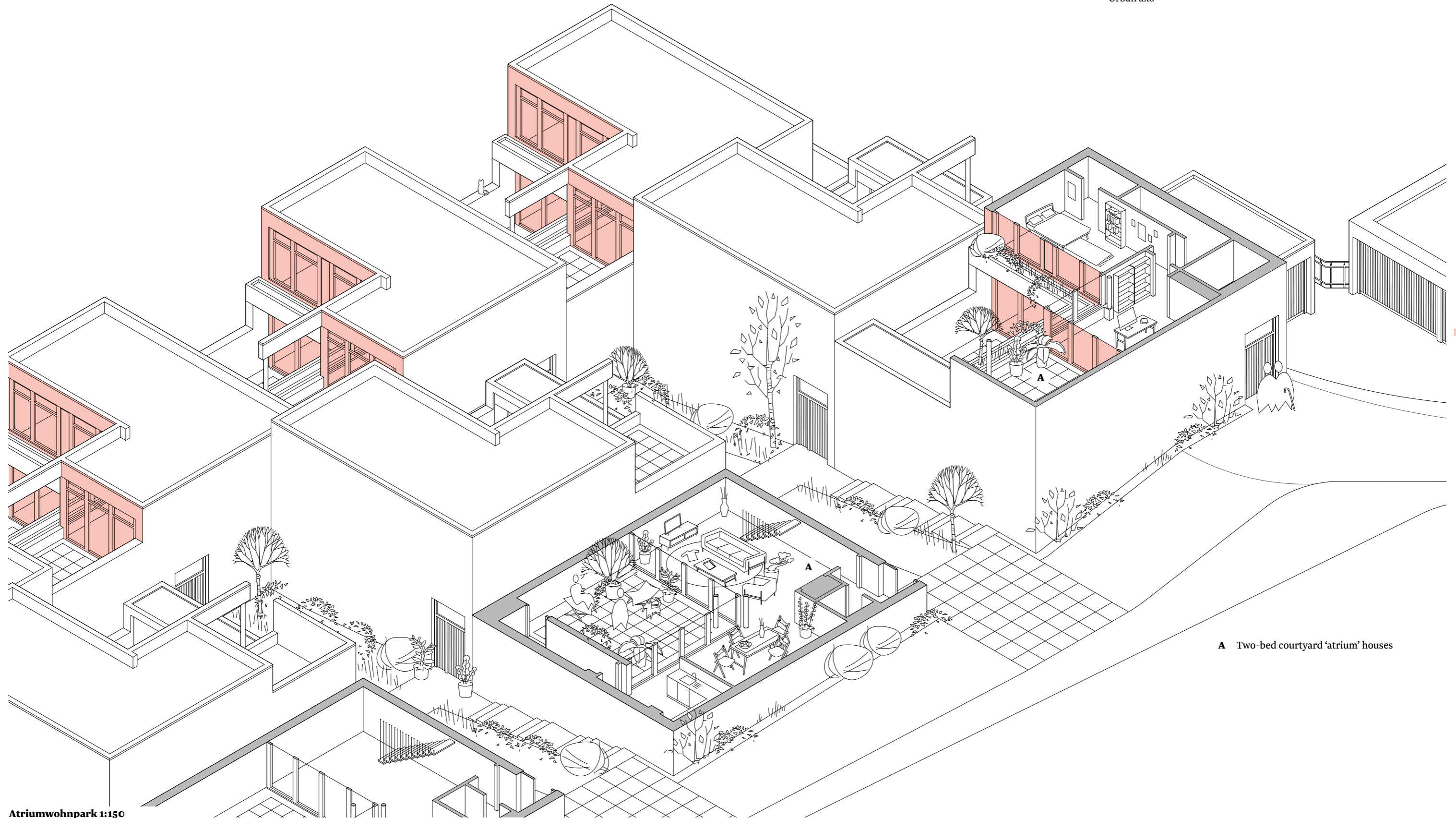
1 — When we moved in we went round to everyone with some wine and introduced ourselves.

2 — I know only three of my neighbours. Women get on, but the men not so much. Ladies in my view are much more well behaved(!) I stand at the fence and talk to my neighbour. We socialise, but overall I would say it doesn't feel like one community. When you first buy a house, you talk to people and you invite everyone round right away and it's fun, but not everyone who moves in has the same attitude, it is different with different people. I can tell this story because it has happened to me at a previous home. At first there are big shared feasts and outside drinking in summer and others move in who want to do the same, then one family moves in who doesn't want to then it drops away and the pattern breaks.

1 — No, not really. It is not for sharing.

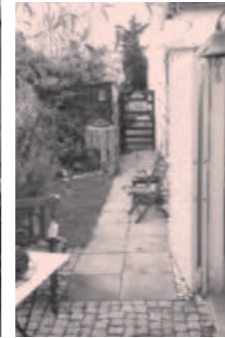


Urban axo



p.19

A Two-bed courtyard 'atrium' houses



“From here you can do everything by foot. You can reach the amenities, the doctor and the shops. I think that’s what makes this place work for people and the main reason for its success.”

1.05

1.06

1.07

1.08

1.09

1.10

How are the communal spaces managed?

2 — We have a shared gardener who comes in twice a year, but as a resident there are defined areas that I am expected to look after. With my home I have drawings that show these areas, but it doesn't work in reality. Management of these spaces are much more about negotiation and talking to each other (1.04). We need to talk about planting, but the other main issue is the discussion about rubbish and where it goes. There is not enough room immediately outside and no one wants anything in front of their doors and so then it is an issue to drag bags up the slopes when it is full (1.05).

Have you had to make any changes since you lived here and was it easy to do so?

2 — We have strict rules in Germany on what you can do, planning rules. You must first ask the community and then government, but this development is not protected.

1 — It's not really Bauhaus!

2 — Yes that's correct. I think the architect had in his mind the Bauhaus, but the residents the people who live here said, 'but we want to have this' etc.... I have had to change the layout a few times. It's been expensive, but the house has allowed plenty of flexibility.

The original idea was that the architect provided the basic building and residents could then design the layout themselves, what do you think about this as an idea for homes?

2 — Yes, the houses are steel frame and concrete walls and in between walls are prefabricated and can be taken down or changed. I understand that usually when a development is proposed it is sold in phases, then once a few are selling and people are subscribing to the plan you can build the rest. Often the architect makes the plan and it is around his ideas that people buy into. But things change in reality, for example, my house is currently a two-bed home, but in my drawings this is shown as three-bed(!) and it is just not. Also, I have another room in my house that was not planned in the beginning from the previous owner. When I first moved in I said 'this room feels different, it doesn't quite belong in the house.' The atmosphere was different from the rest. My head is still working on this, on what to do with it, perhaps a workshop space.

1 — I also have a plan of 1972. The one room you see here was intended as two separate bedrooms for two kids, this is not normal. It's too small. We made two rooms into one and elsewhere we enclosed the roof terrace to create a new space, which was very easy to do. When we bought this six or seven years ago, our home was still in its original 1972 state. We had to take down walls and make it more open.

What attracted you to the development in first place?

1 — I'm 75 and so we must look forward. I might not be able to drive a car soon and so it is all about being on foot. I have another reason. I like that this is a little house. It is not just a flat with a balcony. It has a space I can go out into, something I can inhabit.

2 — I think this is the same for me. It feels like a house with its own space, the atrium space is important. When I first saw the house, I felt comfortable. Someone said to me the concrete walls were like a prison cell or a box, but nonetheless I was comfortable and I wanted it straight away. I did not check for other things nor did I see the money I would go on to spend(!) I am still working on how I decorate it. The thing is the electricity box, I am always thinking of ways to hide it(!) It is a work in progress (1.06).

Do you have favourite spaces in your home?

1 — My bed(!) . ..my own room, I share it with my grandson sometimes. I prefer the new room we made out of the roof terrace.

2 — I think the success of these spaces depend on whether you live independently or as a family. In these houses, the atrium provides one kind of space from the shared living space and the terrace another type from the parents' bed space upstairs. You could keep it distinct if you wanted.

1 — The atrium space was intended as a lawn garden, but it doesn't work as that. It is nonsense as a garden. You have to keep it as a paved terrace to make it practical (1.07).

2 — When I moved in I got a shock as the hoses that are installed to water the garden started to break and we got leaks everywhere.

1 — I like also to go out beyond the atrium as well. Not all have that possibility of the adjacent green space outside (1.08). Trees are very big and so it creates a very secluded environment.

With so much glazing and concrete walls, is it easy to keep your homes warm?

1 — Everything is electric and there is underfloor heating everywhere. Can be expensive, but we have solar panels as well. Our homes are triple glazed and the walls are well insulated. So no real problem with overheating. I find the environment is nice (1. 09).

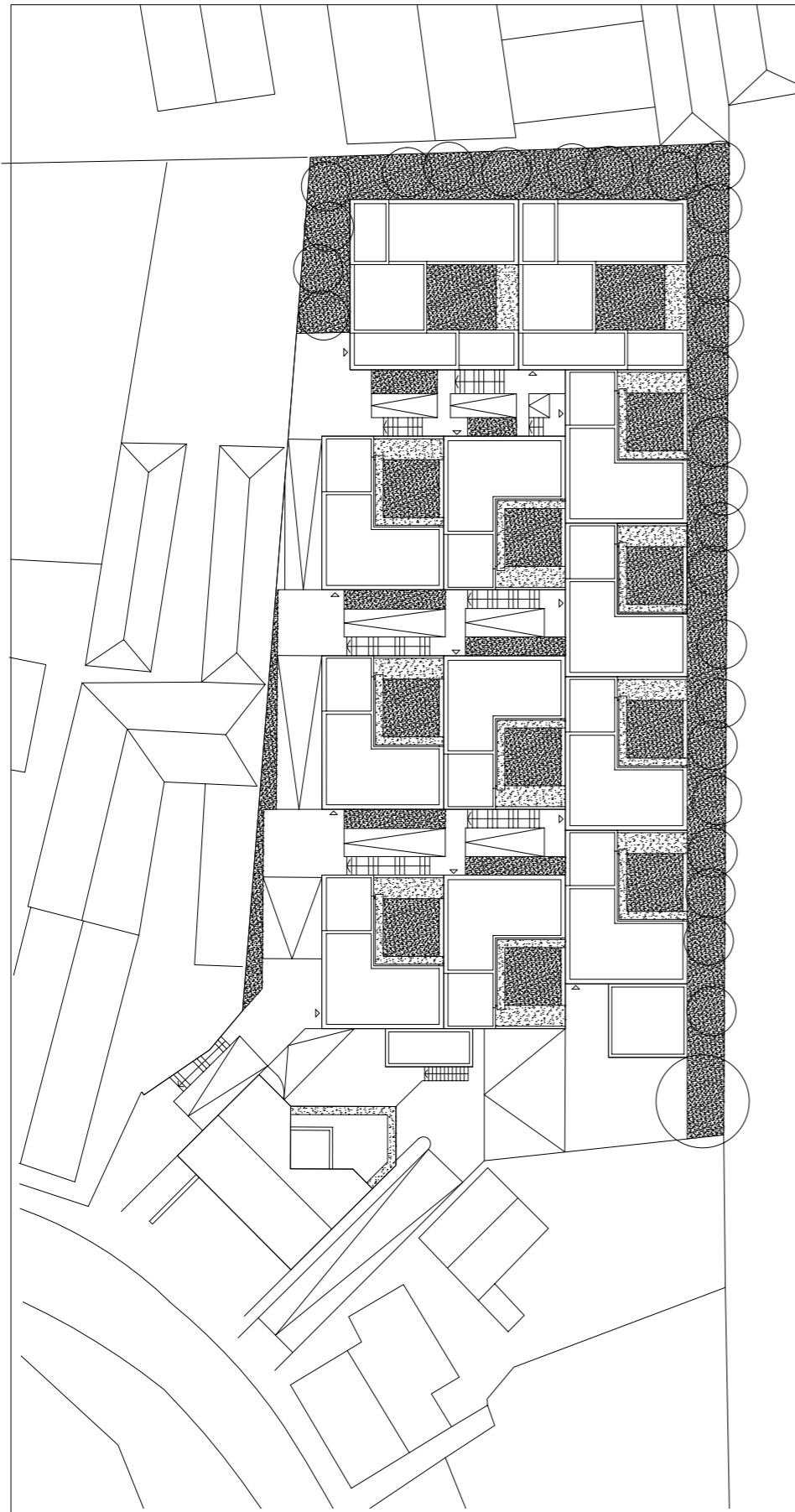
2 — Sun only gets onto one wall of the house. In winter I find my home heats up very quickly in a very nice way. The rooflights are an original feature as well.

Are there any particular aspect you dislike about like about the project?

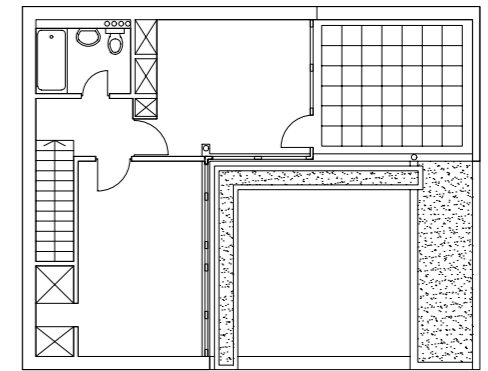
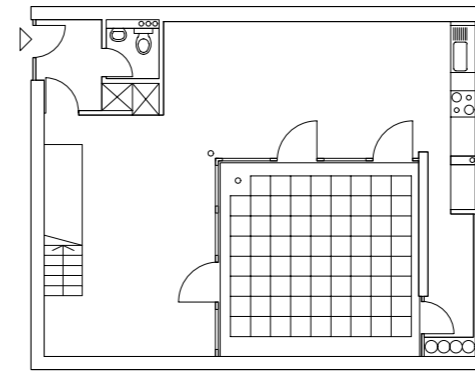
1 — I miss the basement of my old house as a place to store all my things.

2 — I do as well, I also previously had all that room. There are no cellars here and sometimes storage can be a problem. We both have cars, but now our garages act as our cellars once did. We both use our garages today as cars have got bigger now and the spaces through the development have become too narrow for these vehicles and it is a squeeze (1.10). So residents usually park nearby or just outside the development, but also many residents do not have a car now.

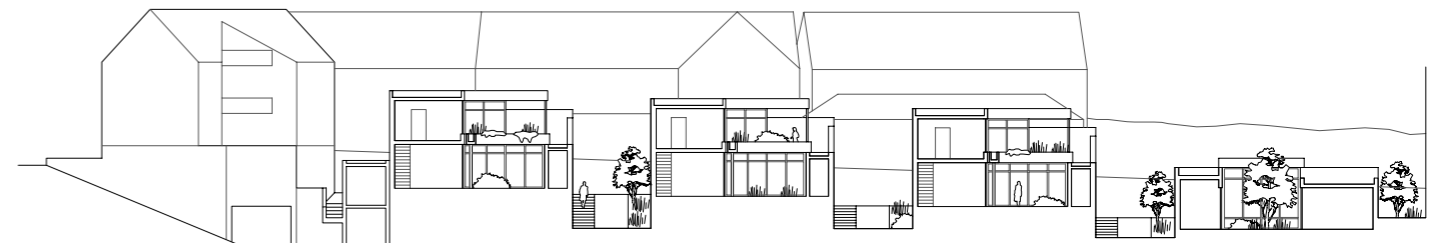
1 — We park our car at the nearby supermarket! The issue for visitors is finding it in the first place and then parking!



Site plan 1:500



Two-bed house unit plan 1:200
121.7sqm (+42.3sqm amenity)



Site section 1:150

Resources

Bristling town houses; Sun Tech Townhouses, Santa Monica, CA
AIA Journal 72, no. 5, May 1983

City Landmark Assessment and Evaluation Report Sun Tech Townhomes
City of Santa Monica Planning Division, July 2015
smgov.ne

Condominiums that elevate city living
Robert Smaus
Los Angeles Times, 12 July, 1981

*Harvard Street Condominiums, Santa Monica, California, 1979; architects:
Urban Forms; Steve Andre, Alan Tossman*
GA Houses 12, October, 1982

High Tech Architecture
Colin Davies
New York: Rizzoli. 1988

Housing. The Socially Responsible Environment: USA/USSR 1980 – 1990.
James Tice, Architects Designers Planners for Social Responsibility and
USSR Union of Architects, 1990

Suntech Townhomes, Santa Monica, California
Architectural Record 171, no. 5, May, 1983

Sun-Tech Townhomes, Santa Monica; an 18-unit condominium
Progressive Architecture, vol. 64 March 1983



Sun
Tech
Town
Homes

2

Location	2433 28th Street, Santa Monica, LA
Postcode	CA 90405
Geo Co-ordinates	Latitude: 34.021334 / Longitude: -118.457836
Years	1980 - 1981
Architect	UFO (Urban Forms Organization) Steve Andre + David Van Hoy
Others/role	Tina Beebe (Colourist), Steve Mezey (Engineer) Emmet Wemple + Associates (Landscape)
Client	Steve Andre, aka Steve Wiseman, Architect/Developer
Type	Private
Mix	Residential only
Character setting	Suburban
Area size (hectares)	0.22
Built-up extent (ground occupied by dwelling structures)	0.16 (72%)
Communal extent (ground occupied by shared spaces)	0.06 (28%)
Floors	4
Parking spaces	36
Number of dwellings	18
Dwelling range	18 Town homes (two-bed)
Typical dwelling size	Type 1 Town home 134.6sqm (+18.8sqm amenity)
Dwelling Density (hectares) dph	82

Connected passageway townhomes

About

Located in the sprawling suburbs of Santa Monica, The Sun Tech Townhomes are a uniquely conceived privately financed development that maximises the opportunity of its site and revels in its distinctive aesthetics.

Created by the practice Urban Forms Organization (UFO), its architects and a team that included an engineer, landscape designer and colourist embraced the emergent High Tech style of the early 1980s to create what they referred to at the time as a 'Utopian European village' – a high density cluster of homes that through its use of solar technologies and orientation was in near constant conversation with the Californian sun.

Designated a Santa Monica City Landmark in 2017, Sun Tech was one of several compact dwelling projects developed by UFO between 1978 and 1983 in the Los Angeles city region. The practice's other projects, such as the Harvard Street Condominiums (1978) and the Putnam Place Townhomes (1983), are similarly innovative in terms of layout, striking architecture and colour palette.

However, Sun Tech represents the refinement of their approach and was groundbreaking as one of the first projects in the neighbourhood of Sunset Park, Santa Monica to reject and actively challenge the dominant local forms and established scale of the area and so push planning boundaries.

Developed from the 1920s onwards in response to the growth of the local aviation industry, Sunset Park is still today defined by low lying two-storey detached homes and condos, usually designed to look like detached homes, set in their own gardens usually in a traditional style locally referred to as Spanish Minimal.

Re-reading the area's strict zoning ordinances and local planning law, which

usually resulted in a maximum of three storey dwellings, UFO were able to legally add a fourth habitable level to the complex, and in doing so were able to transform the type of home on offer.

With the main outdoor focus at roof level, the architects left energy generating service elements and HVAC units exposed in order that they became part of the visual language of the project, features that have since defined the 'solar community' and views of the complex.

Upon its completion, the project was recognised in the USA, but also abroad and received numerous awards including that from the American Institute of Architects (AIA) which in 1983 in the Multiple Family Category stated, "This high-tech version of the condominium model was cited by the jury for its systematic and rather assertive development. Its images and character are clear and it includes well organized and livable rooms both inside and outside."

Tour

The character of Sun Tech is unlike its immediate surroundings with street elevations made up of large expanses of bright pastel shaded rendered concrete in stepped geometric shapes, big expanses of glazing, exposed ducting and strips of horizontal tubular railings. The development is partially concealed by a planted embankment that also disguises the basement level car park deck. Within the basement level each dwelling has two car parking spaces immediately below their dwelling and their own additional storage shed.

Above the deck, the 18 townhomes are organised in four tight terraces that cover nearly all of the square plot and are accessible from the street via open stairs. Between the terraces is an intimate landscape of walkways or narrow 'streets' with planters, small open spaces and lighting. Front doors to all houses face out onto the streets with access via individual recessed steps or stoops with each articulated by a distinct pastel colour shade.

Inside the dwellings the layout has a strongly vertical accent with accommodation organised across three storeys with an open air fourth storey. From the front door one enters the main double-height living space, kitchen and diner, beneath it at lower level are two bedrooms and bathrooms and above it at third floor is a mezzanine which affords flexible use. From this level external walkways and balconies offer private outdoor space, which then extends upwards to generous rooftop terraces at fourth floor. At roof level all dwellings are connected up via communal walkways and small link bridges intended to encourage and develop community and shared activities.

Criteria

Sun Tech is an exceptional response to a suburban site with a layout and architectural form that proactively pushed urban planning policy and defied the local convention.

As built, it delivers 18 units at a gross density of 82 dwellings per hectare. This is around four times the local gross average in the city of Santa Monica and nearly eight times that of the city of Los Angeles as a whole.

It creates unique homes in a manner that makes possible generous private spaces and outdoor amenity as well as providing a built framework for the promotion of community at a physical level and spatial plane that in the suburbs is rarely considered.

Reworking a traditional residential plot, it offers valuable lessons for suburban situations and dwelling massing that may be developed in similarly scale-sensitive environments.

Initial Findings

As part of our tour of the site we were able to interview two residents. Both were keen advocates for their homes with both citing the project's landmark style appeal and distinctive looks as an active contributor to the enjoyment of their home. We heard about planned works to maintain its original design intention and our respondents confirmed that these are projects residents are largely willing to contribute towards. While on site restoration of the original colour scheme and the landscaping was underway.

Our respondents were enthusiastic about the layout with generous basement storage and ample car parking highlighted as an essential in the city of Los Angeles. Inside their homes the volumes created by the open plan living spaces were much valued without evidence of sub- divisions and the rooftop terraces were a key asset that in their view provided outstanding spaces for entertaining and actively encouraged neighbourliness and interaction. Both respondents agreed it was unlike any other condo development they were aware of in Los Angeles.

While the unique design was a core part of their reason for living at Sun Tech, both respondents highlighted ongoing issues with maintenance and leaks arising from so many flat roofs and built-in planters. They also flagged the thermal impact of the car park deck and how this created cold lower level bedrooms. Both were in the view that while some families were resident in the complex at the time of the interviews, Sun Tech was not actively 'family friendly' on account of limited bedroom numbers and so its design appealed to those able to make distinct lifestyle choices.

Interview

Interviews conducted in February 2019. The two respondents live part time on the development and live in two differing town house types, one (1) is on a unit on the edge and the other (2) is in the interior of the layout.



2.01



2.02



2.03



2.04

Interviewer Resident 1 + 2

How long have you lived on the development and what do you think about it?

1 ___ We have lived here three years and five years. We like it. It is very safe, but neither of us are full-time residents. This is a 'pied à terre' for us.

Did you know the scheme before you moved in?

1 ___ No. I happened upon it by chance and I had never seen it before, but I was looking for an architectural listing. I am a visual merchandiser and creative writer. I have always been interested in architecture and design. There are lots of artists and writers in this complex.

What do you think about its appearance?

1 ___ I love it. It's unusual. When I saw it, I thought 'what is this!?' When you approach it from afar you see the smoke-stacks.

2 ___ I like its post industrial look. The colours are playful and the big windows are beautiful. The exposed pipes remind me of the Pompidou Centre and it has a cubist look, which I really appreciated. (2.01)

Do you think the landscaping helps in the street?

1 ___ Yes, it steps back with a green verge and trees and so you're only aware of top two storeys from the street, not unlike what else is now going on in the neighbourhood. That's good. More people are building beyond single storey as property is expensive and they can do more with the space with that.

2 ___ Yes, people are now putting in bigger homes. The zoning on the street means there are more condos than single unit homes on big plots. This area was full of that type once as there was a lot of land available. It was a suburb of Macdonald Douglas (aircraft manufacturers).

Who maintains the landscape here?

2 ___ We have a company that comes in every week, but we are going to have it re-landscaped by a designer. Its going to be more organic and reflective of the original planting scheme with more colour as lots of the first plants didn't survive (2.02). As it is a landmark building, the new landscape plan must be approved by the city. There are five us on a resident's committee steering it through.

Do people still live and work in the area?

1 ___ It's getting harder. There are lots of tech moving in and so the neighbourhood is getting expensive. Living in LA everyone has a car, but there is a new Metro now nearby and it's great. I use buses for work and events downtown and home.

How do others in the area or neighbours perceive the development?

1 ___ It's listed in the Los Angeles architectural guides as a landmark, so it has that status. People know it for that if they've been in the area, but it's not unusual that it is town houses in this area. There are a few others that take this form now.

Do people coming from outside the area find it easy to find your properties?

2 ___ Yeah, they find the building easy, but then sometimes they can't read the letters. I think it's an unusual typeface that the complex uses and people usually look for simple numbers.

Do all residents living on the development recognise its landmark status?

Yes we agreed to the monument status together. We were all very supportive. It also means we get tax breaks to support and maintain its upkeep and repairs. It would cost more otherwise as it's expensive. It won an AIA award in 1980 for best residential.

How do residents of the complex deal with all the design elements, do they embrace the design codes and details?

1 ___ They do now, but I think there are varying levels of interest across the residents. There are some purists and others who push back, but we work it out through our committee to ensure there is some flexibility where possible. But the important thing is that the building itself cannot be altered. For example you can't change your front door and there are other CC&Rs (Covenants, Conditions & Restrictions) that residents have to follow.

2 ___ There haven't been any fines, but there would be if there was any action that caused egregious harm. Our service charges look after most of these things. It a little on the high side, but not exceptional for the size of our properties.

Are there a lot of issues with upkeep and maintenance?

2 ___ No big exciting stuff, but we do have a lot of leaks. The development has flat roofs and we had to have the planters refurbished as water from them were seeping into the houses, these kind of repairs can be expensive without you seeing much physical change.

1 ___ but..... on the exciting side, we have agreed to pay for the complex to be repainted back to its original colours. There's around 53 different shades and so we all want to take it back to those. It is quite a project and we are working with the original colour artist who worked on the scheme when she was really young with the architectural practice Urban Forms. We're lucky she is still with us and so this is very special.

How are the large basement spaces used?

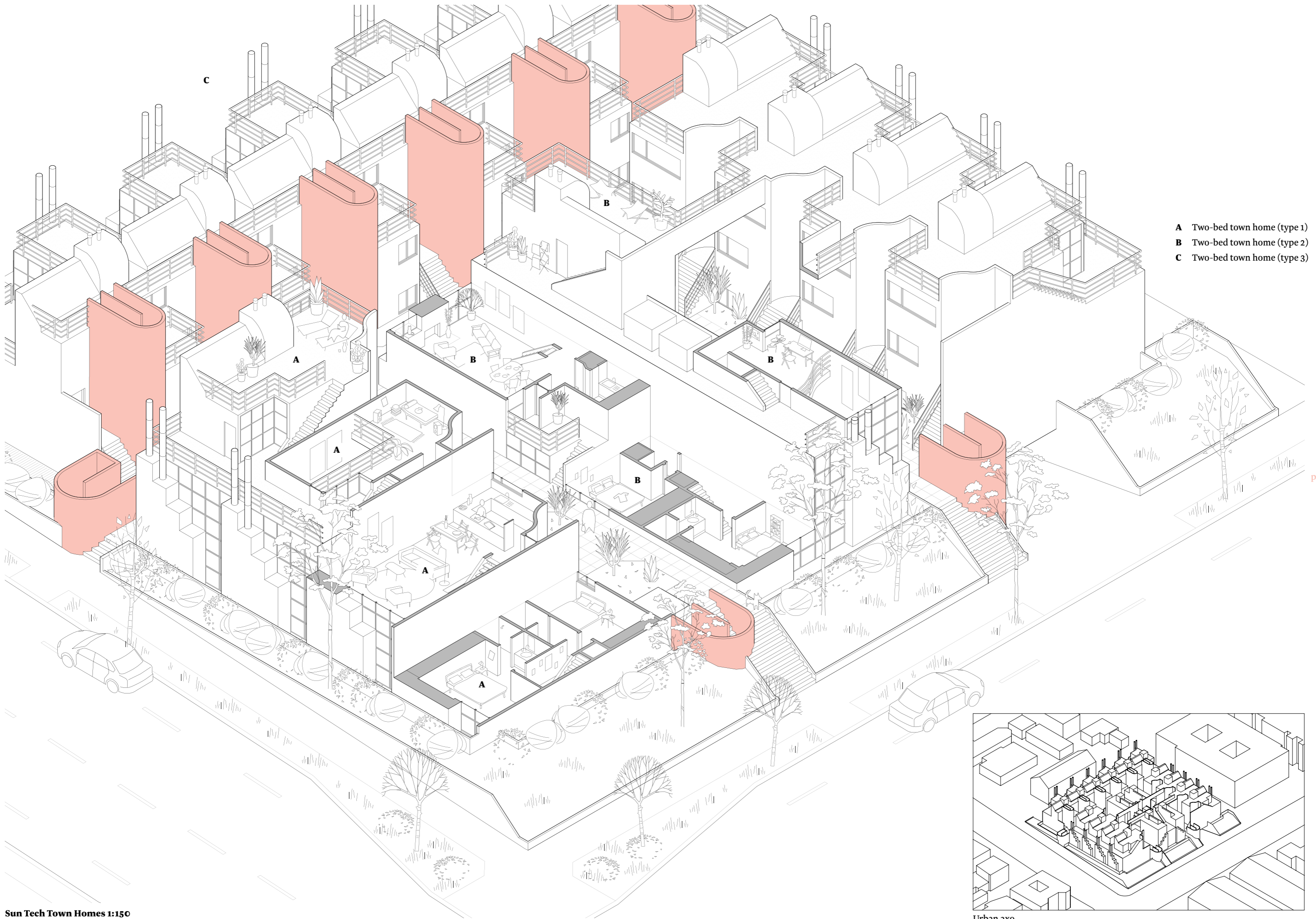
1 ___ There's parking, everyone on the development has two parking spaces which in most cases is directly under everyone's apartments. It means we don't use the on-street parking that much. Each apartment also has its own lock-ups and storage down there as well, which we really need long term for general use and you can expand them if you want according to the plans. There is also bike storage, but we had a rash of thefts, but that's not common.

2 ___ People usually drive into the garage and walk up through one of four stairwells to the deck above and their houses. The post is also delivered down there so it works from that perspective. (2.03). The postman doesn't need to wander around the complex, he has a key to access it. We also put our trash down at basement level for collection.

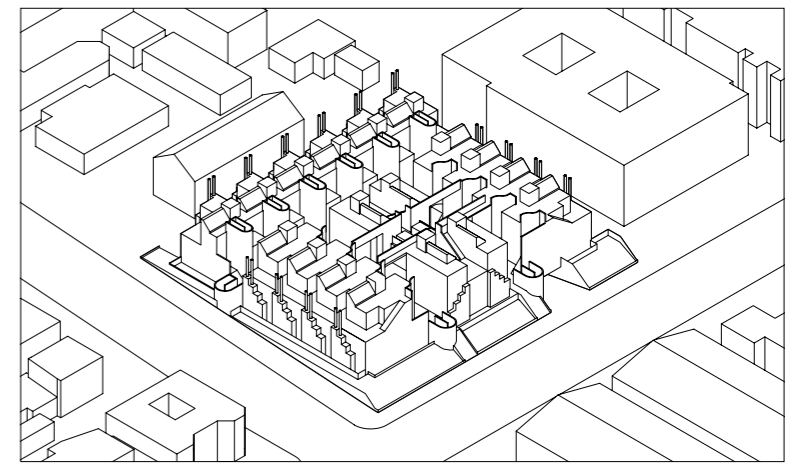
Is the population of the complex transient? Does it change much?

1 ___ No. There was a burst in the past four or five years with a few people moving in, but lots of people are here for the long term and some have been here since the early 1980s when it was built.





- A** Two-bed town home (type 1)
- B** Two-bed town home (type 2)
- C** Two-bed town home (type 3)



Urban axo



2.05



2.06



2.07



2.08



2.09

“Most developments in L.A. do not have a roofscape like this, it’s unique.”

Are there still many families here?

2 — Yes, there’s a mix. But I don’t think the units are all that family or child friendly. I don’t think they were ever sold on that basis. They are spacious, but mainly two-bed and so if you had a larger family you wouldn’t be able to grow here. When my girls stay its fine, there’s space, but not lots of individual spaces.

Do members of the public wander up into the communal areas off the street at all?

1 — No, we have had people wander up, they can do that, but it’s no problem
2 — People don’t tend to do that. (2.04)

**How do you use the communal spaces?
Do you have enough privacy and space here?**

1 — They are functional and the distances between the units is fine, they do what they need to, but we don’t really use it for anything in particular. (2.05)
2 — There is a family with younger children and when it was warm the kids were out here using it to play with the parents hanging out next to them on the stoops, which was great. I think multi-generational living is really great.

Are you able to customise or personalise these spaces and the entrance around your own door?

1 — We are having them upgraded with new plants which will freshen them up and hopefully make it easier to maintain. Drought tolerance is very important here. We can personalise the area in front of our doors and add potted plants, but not on the stairs. (2.06)
2 — I keep the pots looking architectural so it’s in keeping and less of a problem. The doorways are original, the main issue I would flag is the lack of awning or porch and so water and damp can be an issue around it, but it looks great.

**How do you feel about your home?
Why did you choose this type of home?**

1 — When I was looking for a new home, I was keen on something modern. I like this aesthetic and I was downsizing. Also I wanted some outdoor space, that was important to me. So many condos are boxy and have small balconies, this is different. I like the sense of space. I had an instant reaction when I came in, I loved the space. My unit is on the edge of the development and so I have more openness and more sky with view of the mountains.

Inside my home it originally had more railings. That’s one of the things I meant when I said the units were not child friendly. So, I boxed the balustrade areas in to create more storage. Inside you can do whatever you want. The landmark listing only affects the outside of our homes so people have more freedom to change indoors.

2 — It is super cool being able to look straight through, up or down through my home. (2.07 + 2.08) I wouldn’t mind an open space leading from the living space, but it’s no problem. I bought it for its urban city context, so outdoor space is not the real driver for me. I don’t have the extra patios that others have, but I have the roof. I am one of the landlocked units with no exterior edge. There are 12 with an edge and 6 at the centre that are different.

Are people making changes to their homes?

1 — I’ve never seen any that have been partitioned. I think most people like the space and the volumes. The kitchen is the original layout here. It’s fine, its functional, but I would redo. I don’t like the corners. Elsewhere, it is very nice to have two bathrooms. The one on the upper floor is tiny, but perfect and convenient.

How do you find the bedrooms being lower down inside the home?

2 — I try to keep the apartment within its time period, I like mid-century modern and so my home has more original layout features. My house even has the original lighting fixtures.

1 — In terms of heating, the downstairs stays cool. It’s hard to warm up. It can be very cold in winter, but nice in summertime. The exposed pipes still work with heating and cooling. Nothing really over-heats in California. The guest bedroom down there is great, with lots of storage and the main bedroom has a large en-suite and opens to a small private terrace that I use for coffee and reading. Its brighter in there out to the street, but not lots of sun. When my daughters were living here they would use the nook on the mezzanine and put out a futon for sleeping as well. Today I use that space for writing and teaching. It has great light and is very flexible.

2 — Downstairs can be cold, the garage basement is the problem. No heat coming off the concrete deck. All the units suffer from this. I keep the curtains closed in the bedrooms street-side (walkway) as people can really look in, but I didn’t want to change it as it would make it feel more basement like. I have desk space at the upper mezzanine. It can get warm up there and the views are not so great, its feels more industrial, but I bought into that.

**What do you think of the roof spaces?
Are they used often?**

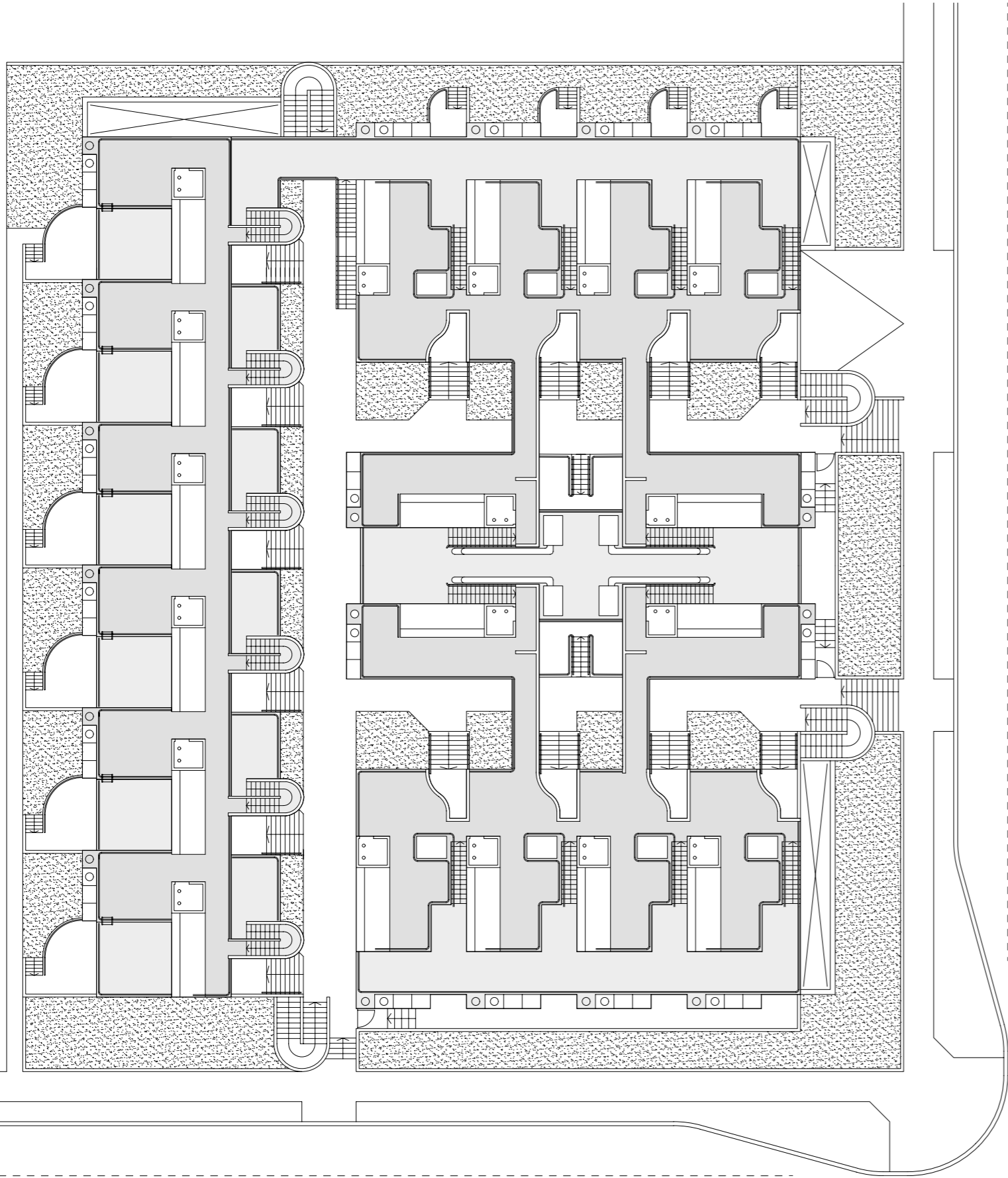
1 — Most developments in L.A. do not have a roofscape like this, it’s unique. It is a real architectural highlight (2.09). It was a clever addition that worked within the rules and height limits of Santa Monica and the zone of this area. It is exposed, which I don’t mind it. I love it. I find it very Gaudi-esque with the rooftops and chimneys. It’s the only one of its type.

2 — The roof used to have solar panels. It was rare in the 1980s to have this advanced technology so that’s why it’s called Sun Tech.

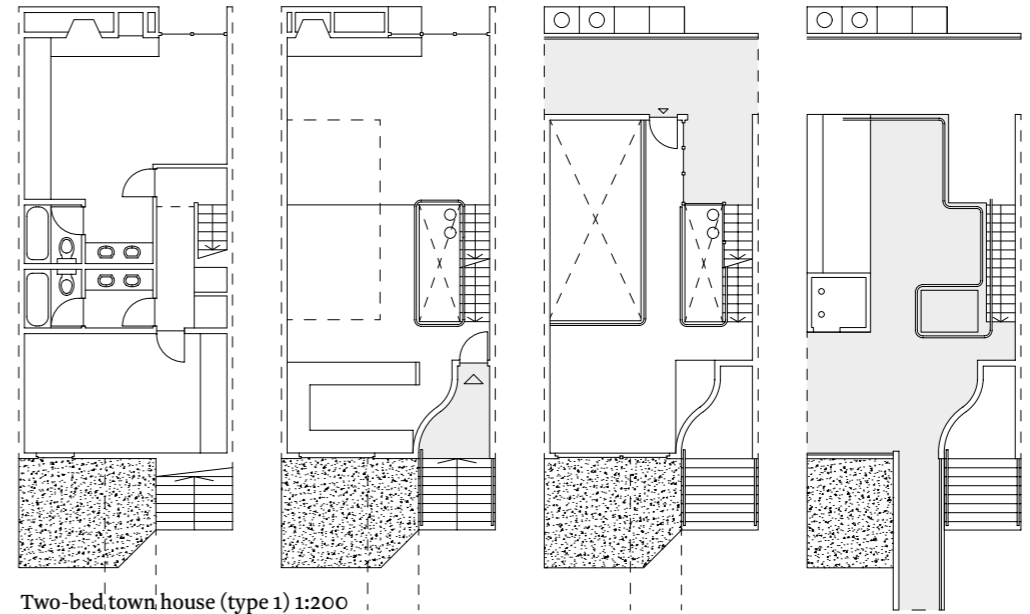
Is there a strong sense of community up there?

1 — The sense of community up here in this space is huge. Everyone has their own main terraces and there are walkways connecting everything. There are common areas and you can walk straight across if there is a community party or something.

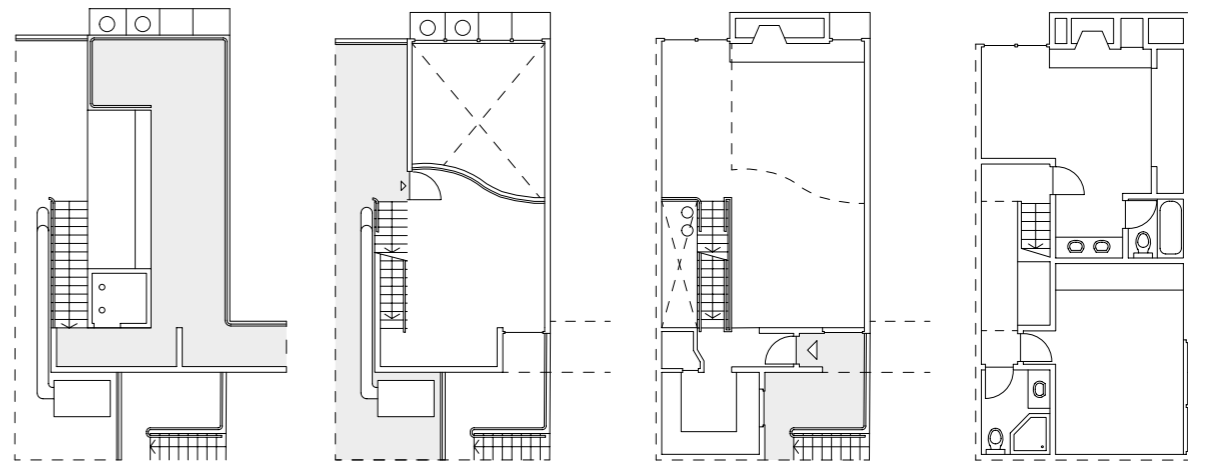
2 — When I moved here, I thought there would be more community than I have experienced, but being on the board has helped. Lots of interaction with passionate individuals, but others don’t seem to mind so much. Like any community but, that said, we’ve had some block parties and we are all friendly. I love my neighbours. It’s very sociable and the spaces definitely make it possible.



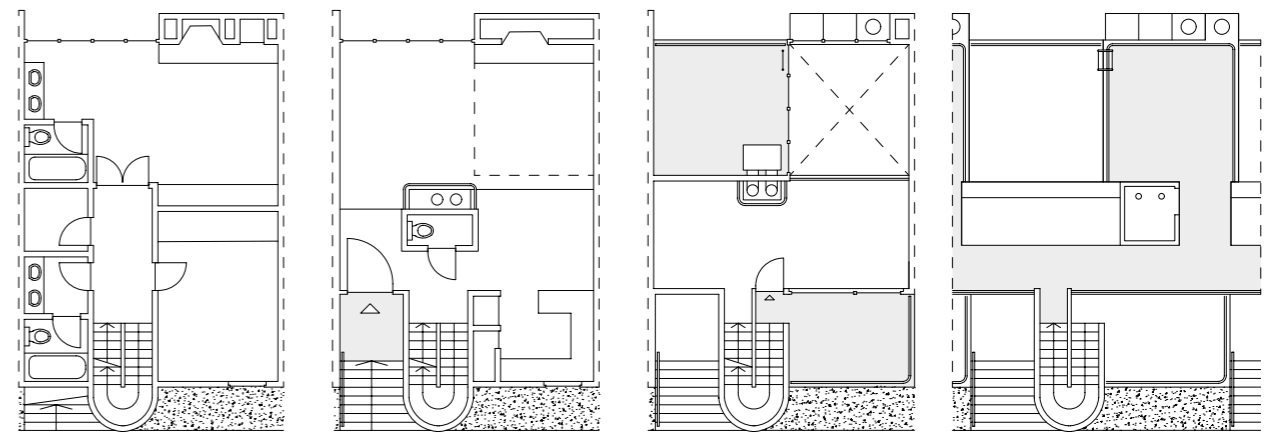
Site plan 1:250



Two-bed town house (type 1) 1:200
Size 134.6sqm (+18.8sqm amenity)



Two-bed town house (type 2) 1:200



Two-bed town house (type 3) 1:200

Unit plans 1:200

Resources

Housing for the Millions, John Habraken and the SAR (1960-2000)

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Molenvliet: support housing for the rented sector recently completed in Papendrecht

T. Van Rooij

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New Concepts in Housing: Supports in The Netherlands

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Uitgeverij O10, Rotterdam 1993

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Li Shanshan

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Architectural Press, London 1972

Social housing in the Netherlands - five examples

Bauwelt, February 1982

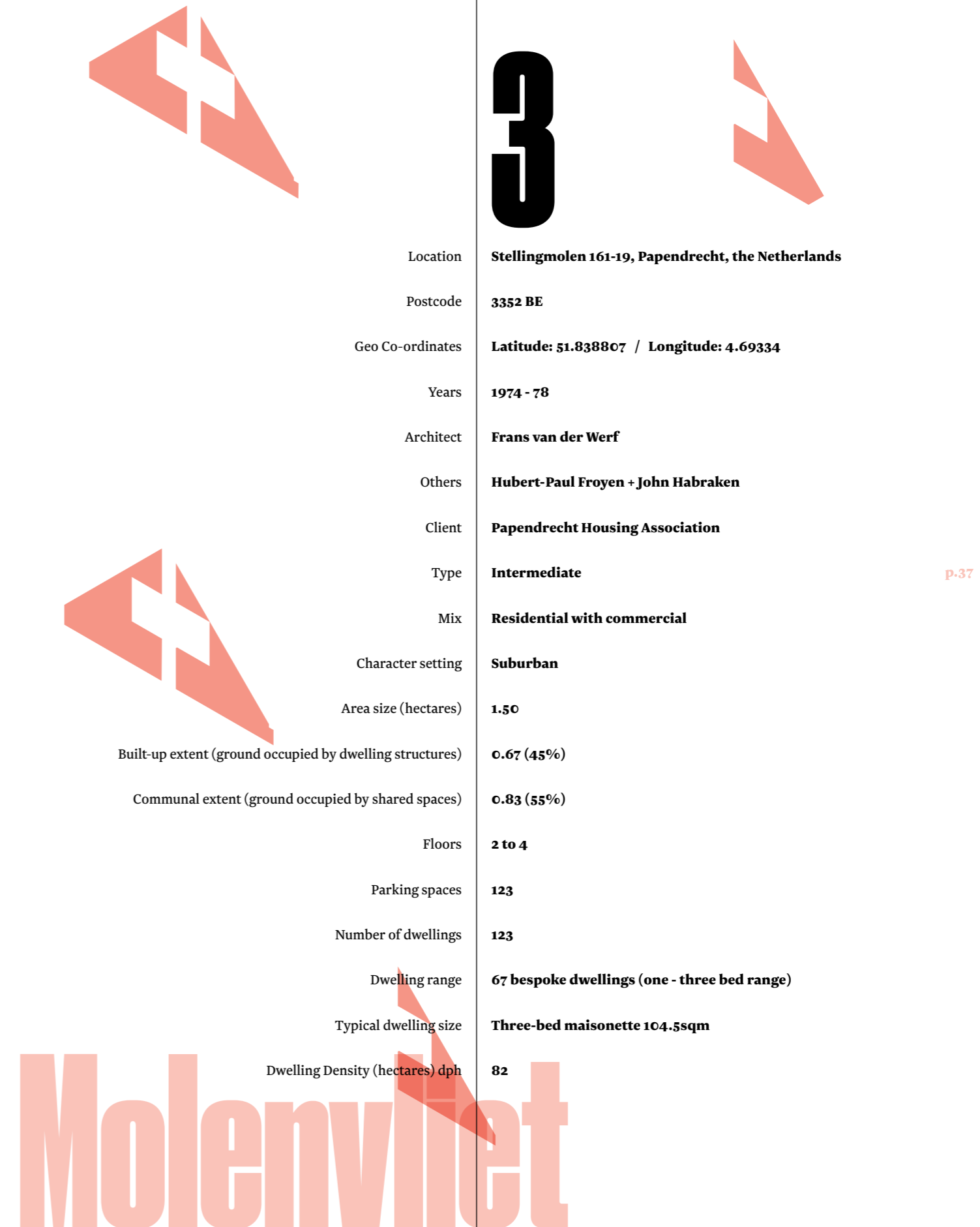
The Molenvliet project

thematicdesign.org

The Scope of Social Architecture

C. R. Hatch

VNR New York, 1984



Framework of communal courtyards

About

The Netherlands has a long tradition of low rise, high density housing. However, Molenvliet, in the city of Papendrecht, is unique among them in its application of not only high numbers of homes, but the principle of dwelling customisation and collaborative design.

Commissioned by the Papendrecht Housing Association, the project was conceived in the early 1970s in an attempt to diversify and reinvigorate the housing offer and tenure mix. During the 1950s and 1960s, the city was expanding rapidly from a small riverside village into a modern industrial new town and competitions were launched during this time to encourage ideas for new types of residential layout and urban design.

The design for Molenvliet emerged from one such award-winning study by architect Frans van der Werf, who was working for a practice led by John Habraken, the celebrated proponent of tenant involvement in housing design. In the study van der Werf developed concepts for a high density of homes to be arranged around a continuous orthogonal grid of low-rise pedestrian courtyards that could be extended out or along a linear central axis as required, to create an urban carpet of interlocking types.

Alongside the principle of this organisation, the architect persuaded the housing association to embrace co-design in its creation, with the architect consulting future inhabitants as to their preferences, needs, likes and dislikes. As such, Molenvliet developed from a focussed brief for 80 2-bed homes to become a 'live experiment' where, in line with Habraken's theory of 'supports', an architectural framework made possible a range of dwelling options, unique personal responses and adaptations over time. The project was officially recognised as an 'Experimental project' by the Dutch Ministry of Housing.

Tour

Sandwiched between two very different estates of the 1960s, Molenvliet stands apart in its Papendrecht neighbourhood in terms of its distinct arrangement and characterful architecture.

The project as built is made up of ten interlocking blocks arranged around four courtyards between two parallel streets. Its unique geometry and orientation of spaces and set-backs is based on a strict 15ft grid of 4.8m x 5.2m.

Created over three floors, this structural grid provided standard piers, floors and roofs and created an economic building envelope and footprint within which the programme of dwellings could be parceled up and organised.

Following lengthy discussion and assessment of future resident need, the project incorporates 67 variations in layouts containing within them dwellings of between 1-6 habitable rooms. Across this number, and between all of the variations, there are two basic types; larger ground floor units with gardens aimed at families and smaller upper floor units above with terrace and attic storeys.

Organisation of the lower dwellings varies between those with front doors onto streets and gardens into a courtyard, or the reverse; with front doors facing into paved courtyards and gardens facing outwards.

For upper dwellings, front doors are via decks that variously run above the streets or courtyards and are accessed via open stairwells located at breaks between the main blocks, which also provide through routes at ground floor.

Pedestrian movement is encouraged on the project with walkways and access routes throughout and cars limited to the two streets where surface parking only is provided. The landscapes of the garden courtyards were originally left open to encourage a sense of spaciousness and communality in these secluded areas. In all cases residents have

since exercised their freedom to erect fences and enclose their own space.

The overall architectural character of the project references traditional Dutch architecture with simple pitched roofs ending in gable ends to the street creating a rhythmic townscape. The elevations of the dwellings are based on modular components and so the location of window openings and spandrels vary according to the spaces inside with options on colours originally chosen by residents and now somewhat more muted than when first completed.

Criteria

The project is a high performing example of high density, low rise residential development all operating under four storeys.

As built it provides 123 small and large dwellings at a gross density of 82 units per hectare, which is around six times the average density of the town of Papendrecht where it is situated.

Molenvliet succeeds in creating a range of multi-storey dwellings within a clear and legible plan and provides a diverse set of pedestrian friendly spaces in a landscape elsewhere dominated by the car and roads.

Its applied architectural theories, both in terms of built form and engagement strategies, are unique and it is well known by those studying processes of collaborative design in Europe. As a project driven by a blend of architectural structuralism and community collaboration, this study believes it holds valuable lessons for practitioners today where people-focussed design is already a high priority.

Initial Findings

As part of our analysis of the project we interviewed a long-standing resident, now one of a small number that had been there since its beginning. We found the project's distinctive architectural style was well liked and within the home there were high levels of pride in how the living arrangements had been personalised over the years.

We found also that the scheme had provided a great environment for raising a family and that its layout encouraged walking with routes extending through the neighbourhood. However, we also heard evidence it was now lacking the characteristics and vital ingredients of a living and fully functioning community compared to its early years.

We found that in recent years dialogue between residents and management had fallen away. Our respondent lamented the physical distance and remote location of these teams and suggested that this may be an active contributor to a feeling of isolation in a neighbourhood where properties change hands frequently and people come and go and where courtyards are always quiet.

However, in terms of their dwelling space, our respondent was extremely positive about the extent to which they had been able to make their home and garden their own. As renters they valued the opportunity to make their own internal changes and adaptations to the original layout and this had supported a sense of investment and ownership. Our respondent cited the importance of the original project leaders that had made this possible from the start and they were appreciative of an informal approach to management that had encouraged community dialogue and fostered strong relationships.

Interview

Interview conducted in March 2019. Resident lives with partner and rents their ground floor family home from the housing association. They have lived on the project for over 40 years since its original construction.



3.01



3.02



3.03



3.04



3.05



3.06

Interviewer Resident

Was it common to live in a co-operative in the Netherlands when you first moved in?

No, it was not usual. In those years this development was a unique project. The idea was to create a community with young and old people together, a mix of people with all kinds of needs. (3.01 + 3.02) That was how it started, but it's not always how it works now. I think the original idea of the project is very nice, but over the years it has not always worked like that. The intention has been lost a bit.

Do you feel like you are living as part of one community here?

No. Many years ago there was a residents' commission and I was the secretary. Back then there was lots of communication between residents, but it has all gone now.

Do you know any of your neighbours at all?

No. They come and go now. I know about two other households from the start, everyone else has gone. We are the last of the Mohicans(!) People move here and sometimes they rent or people buy and then they leave and get themselves another nicer or bigger home somewhere. It is no longer a community as it was before.

Does the layout or the architecture help this at all in your view?

We share door-steps, but no, not really and I think it is a shame. On the estate there are the pedestrian courtyard arrangements, but in most cases people are mainly passing through and we will say hello, but not much more (3.03). Previously with the residents' groups we talked to each other and the commission created mechanisms for people to come together and to discuss things. But in past ten years it has changed a lot.

Was it common to live in a co-operative in the Netherlands when you first moved in?

I moved here first for work. I was working in the nearby steel industry. I don't drive and so it was a great location, really practical for me and the family to be located here. We were lucky to get a home here. We were living in an apartment nearby for two years and so for me and my family it was a great move. The housing corporation helped. Most new housing today is built by private companies and so they work differently.

Was it common to live in a co-operative in the Netherlands when you first moved in?

Back in the 1970s there was talk in the local area and the town that this was a bad neighbourhood, like people talk now on twitter, they would say the same then about here. So, we were part of a group that came together and created a development plan that would lift up the area. When it was completed people came from other areas of the Netherlands to come and look at it. Also, people came from other countries, people from Japan! The neighbourhood had become run down and so this was going to lift it back up and it was received very well. In 1998, together with the housing corporation we installed a shield, a monument and plaque to commemorate the refurbishment and twenty years since its completion.

The wider area is made up of several developments, do you regard yourself as part of one area?

No, I feel we are kept within our smaller developments. I raised my family here and when they were small, the wider neighbourhood was a living place. There were always kids moving around and it was alive you know. But not so much now. It can be a little bit quiet these days.

In terms of the appearance and materials of your home, do you like it?

Oh yes, I like it. Compared to the rest of the area, it is of a very different style. Our home is located in the courtyard (3.04) and so it is quieter and off the main roads. We therefore get fewer cars and it is always quiet.

You have a garden others have terraces, do people use their terraces or gardens more?

No, people with gardens aren't in them any more than the terraces, Dutch people like stones.

Who manages the shared spaces?

For the houses it is the housing corporation, for the streets and shared spaces it is the city hall. It has always been integrated with the city. It has to be. In the beginning we talked about taking on things just like this and doing it together, but that has fallen away. People are lazy. The shared spaces nearby are not used a great deal. (3.05) There is the school yard nearby and beyond that there are more bigger playing areas and so many children go there and it's really nice. Not so much here.

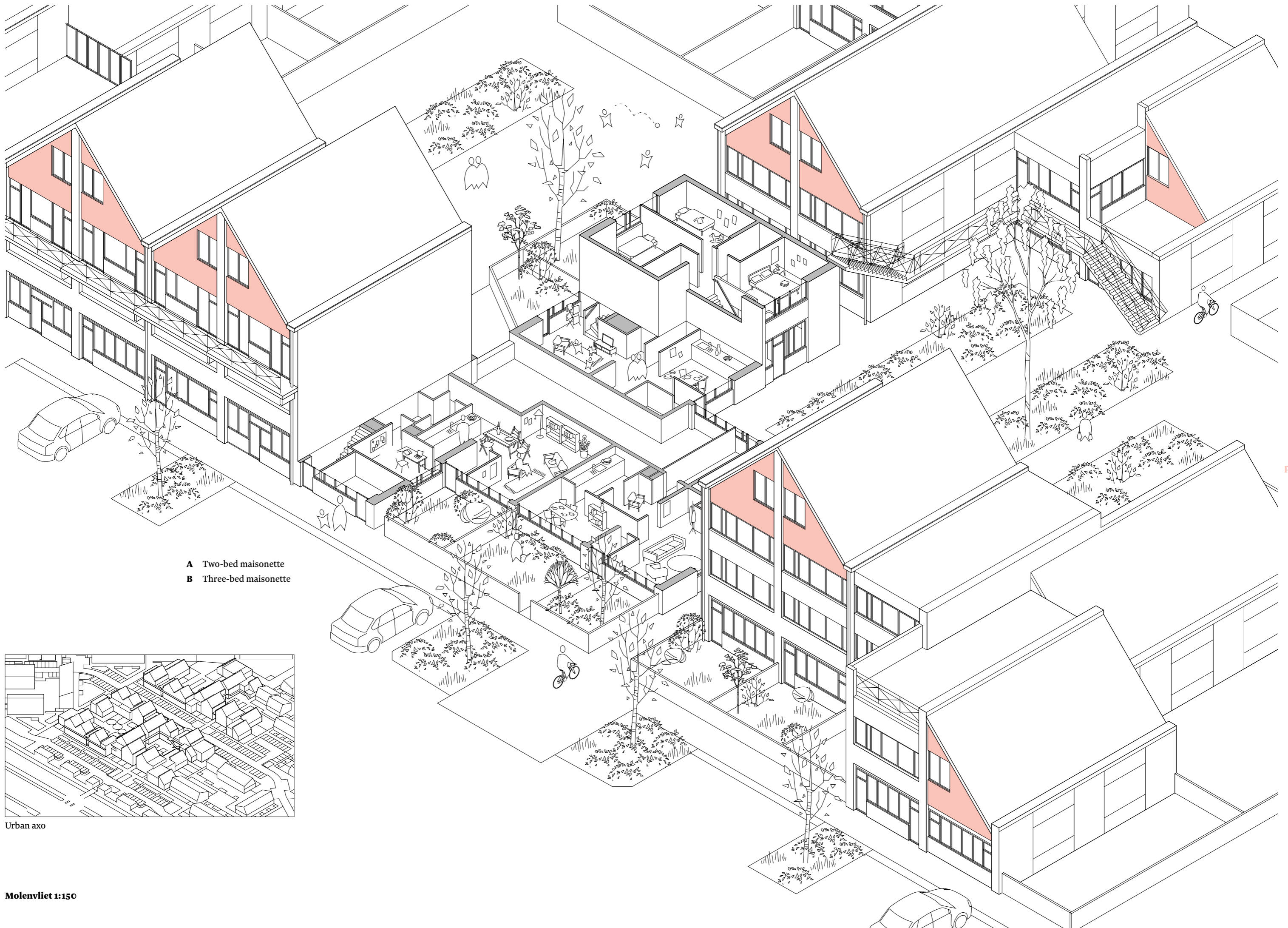
How do you feel about the density and the number of dwellings in a small area and the openness of the access routes?

I think it's fine. It all depends on the people of course, but there have never been any problems with the open access or the number of people here (3.06). What has changed is the day to day contact with the team managing the neighbourhood. They were originally based on the estate nearby, now they are miles away and only on the phone and the close relationship that was once there with residents has gone. I was lucky though, the son of the housing director was on the youth hockey team that I run and so this opened doors!

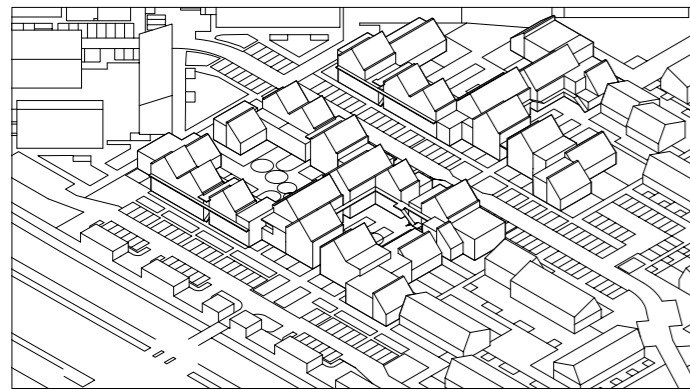
Is there much of a mix of people on the estate today?

The smaller houses upstairs tend to attract younger people who want to buy their first house, (3.07) but they leave soon. You start to get to know them and then they are gone. We have a big problem in Holland that there not enough houses, it's a major problem. People therefore don't want to settle, they move.





- A Two-bed maisonette
- B Three-bed maisonette



Urban axo

Molenvliet 1:150



3.07



3.08



3.09



3.10

“The idea was to create a community with young and old people together, a mix of people with all kinds of needs.”

Are there are shops or other amenities on the estate?

There are shops about five minutes walk away and two minutes by bike. There are some small businesses closer by on site, they come and go. At the moment, in the one unit here there is a tattoo parlour, but that's the only other use here. They were originally the offices of the estate managers.

One of the original considerations of the architect behind the estate was to allow residents a choice in finishes and layout, did you appreciate having that flexibility?

Yes it was important. As a renter it is very nice to be able to make these decisions. All of my neighbours have done different things. I have been here a long time. It is my home. I feel this and I have the right to make it my own through decoration and other such things. When we first moved in we talked with the housing corporation and chose colours and finishes. That was democracy in action!

How have you changed your home?

When I moved in it was empty. One of the origins of the project was that you made your home your own. You were provided with some basic things and you take it from there. In the kitchen there was just the sink and I made all of the rest. (3.08) I also built some walls and doors and created the spaces and layout that we need for all kinds of stuff. It was all open then.

Did you specifically want a closed layout for the kitchen?

Yes. I prefer this.

How does it work today? Are you allowed to change things?

We can change a lot of things. If I want to do anything, I speak to the housing corporation and check and they are usually ok. They operate it on a case by case basis. They do very little inside the home. It is mainly down to the residents to manage changes. I am very happy with my home. Dutch people are tall, there are tall ceilings and nice big windows. The light inside is one of the best things about the house. (3.09)

Have you encountered any problems?

The main problem is heating and some of the homes have had to be adapted and insulated and it hasn't been done nicely. The corporation owns the houses. When people finally move I think then the electricity will change.

Do you like living in a suburban location?

I was born in the city, but I don't want to go back to Rotterdam, I will stay here. I pay my rent, so no problem.

Within your home do you have a favourite space?

This is an exceptional space (motions around living spaces). It is not normal to have this space, that is why we want to stay here. At one point we were looking at other homes, but this is unique. Plus I love my garden. It's nice and private now, but in the early years the idea was that it should be open. Since that time people put up fences to contain the spaces and I have too (3.10). The concept was that it would be open for play space and shared community events. Most people don't care for gardening here.

Was this a good place to bring up a family?

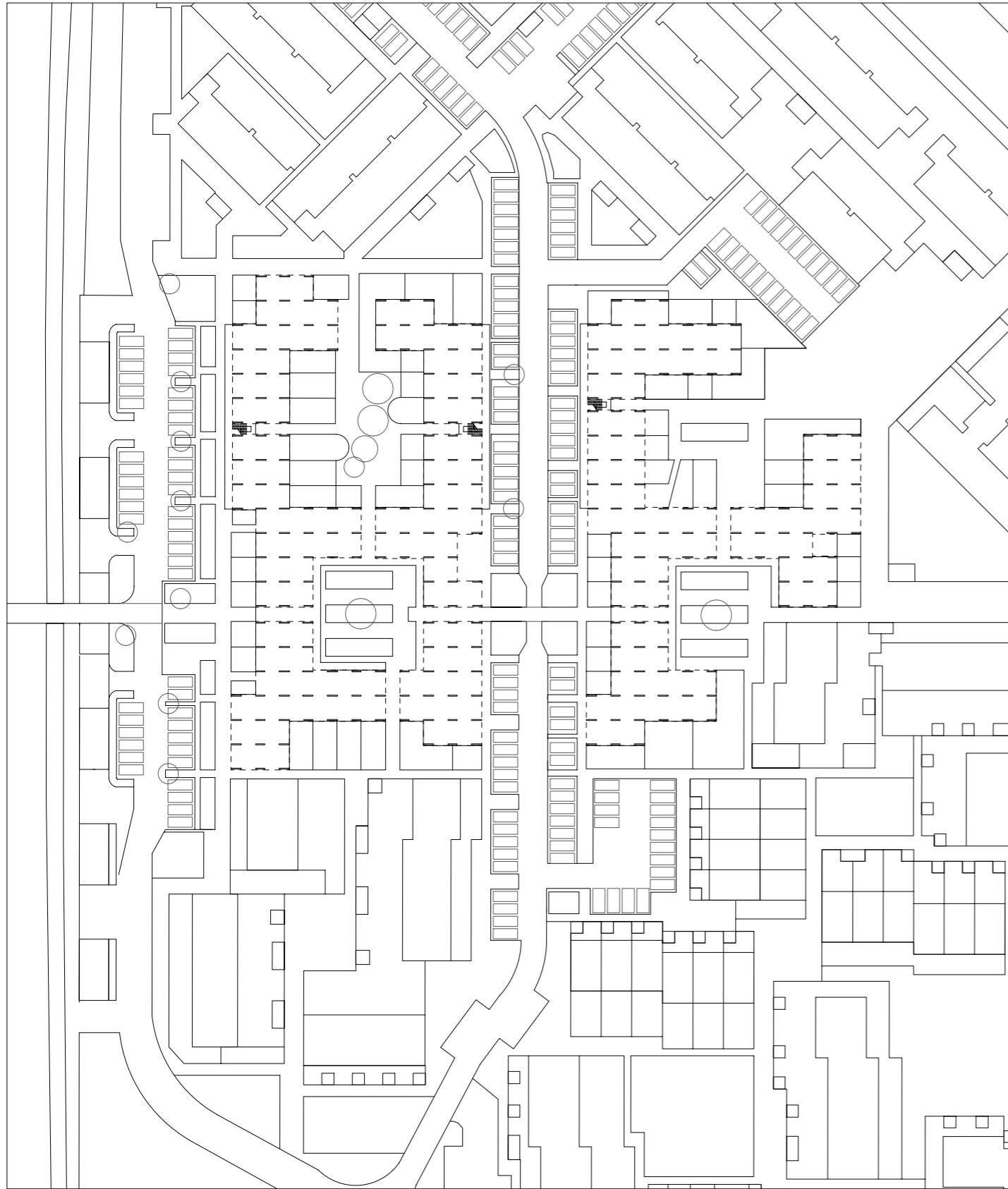
This was a great neighbourhood for kids. Very nice.

Do you think this type of development is a good model for housing today?

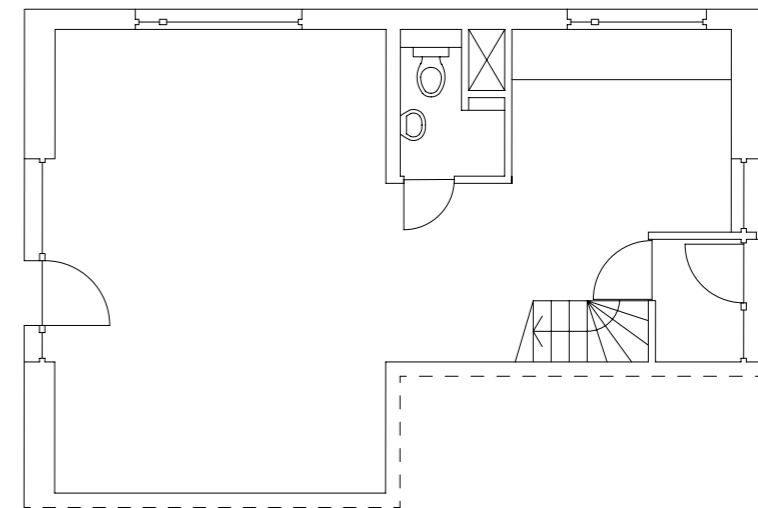
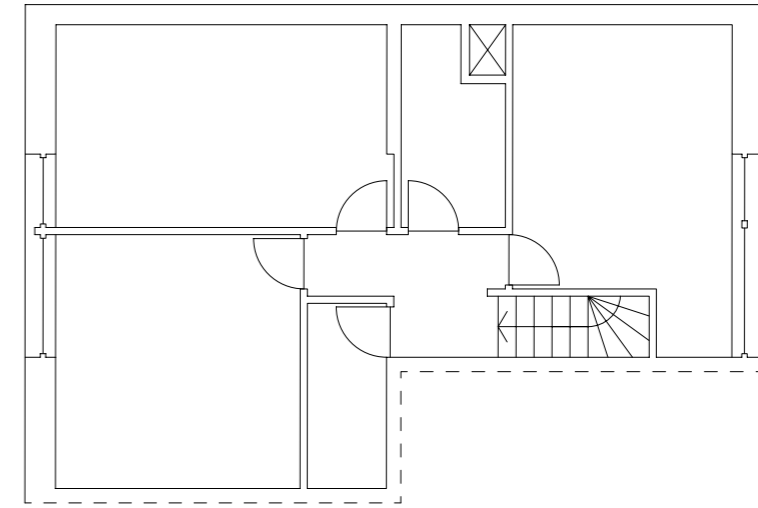
No. At the time it was good, but now we don't do that. We are not labourers or craftsmen anymore, most people don't have the expertise to take it on. We stay here because it's my home. I want to grow old here. When most people buy a house today, they sell it to release money for a pension. People don't care so much about community now. It's a great idea, but it must be well managed.

Do you feel that the original process to realise the estate also made the community?

Yes, very much so. I think the renters talked more with the management from the start and so there was more dialogue towards making a community and there was more reason to talk. It was closer and people had to work together on things. It takes a lot of work and effort to keep that going. I am sure some neighbourhoods and small towns in the smaller provinces have a similar thing, but elsewhere there has been a big shift in culture.



Site plan showing primary structural grid 1:1000



Typical three-bed maisonette unit plan 1:100 104.5sqm

Resources

Exotic and Everyday: Neave Brown in Eindhoven
Tony Fretton
Architecture Today, March 1999

Green Medina
Tony Fretton
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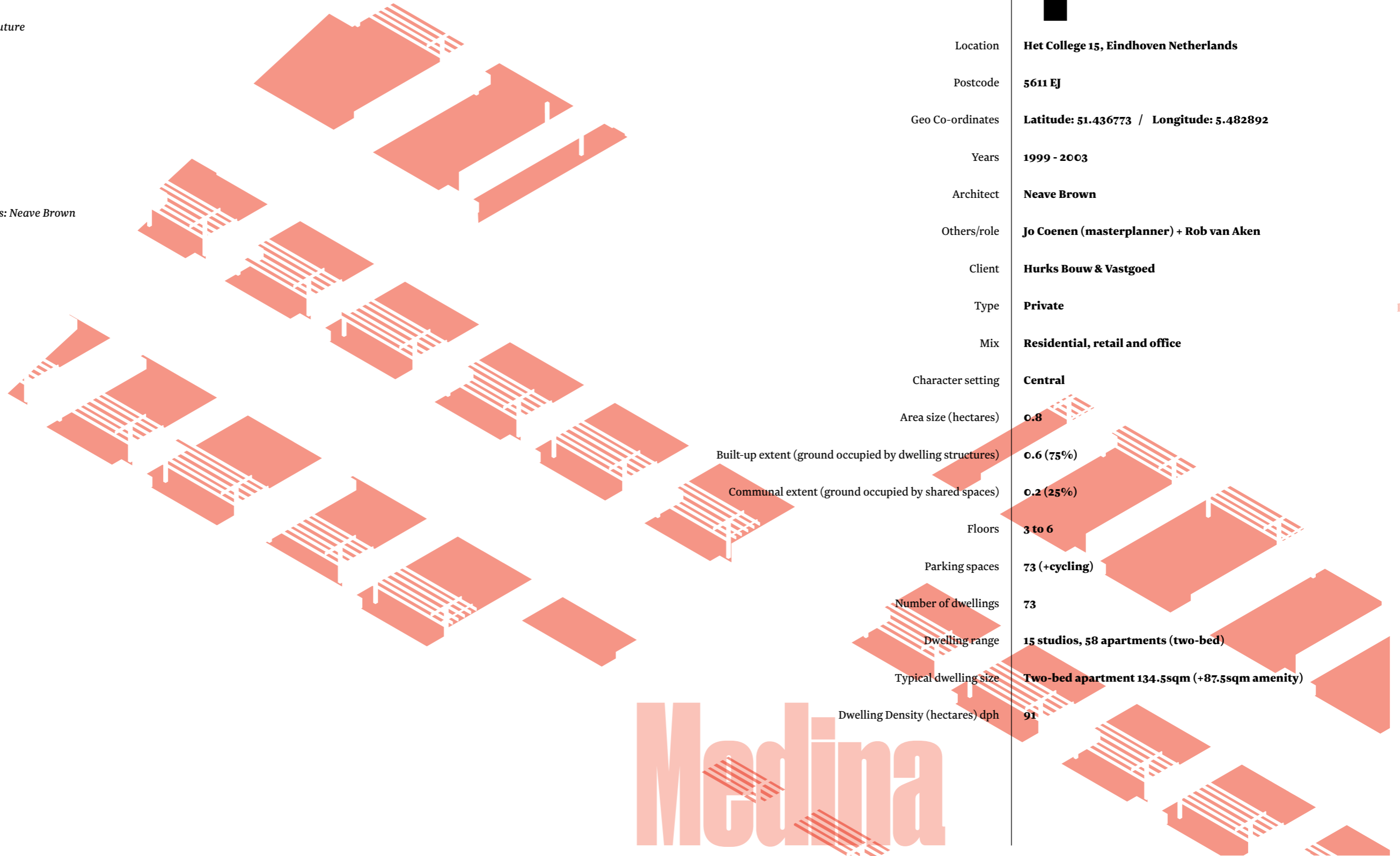
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Smalle Haven
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Woongebouw Medina Eindhoven. Architects: Neave Brown
Bouw, March 2004



Green mediating tiers

About

Located at the commercial heart of Eindhoven, the Medina is a late-flowering landmark in the evolution of a low rise, high density architecture that was developed and refined through the career of its architect Neave Brown.

Developed as part of a masterplan by Jo Coenen (Chief Government Architect of the Netherlands), the project was part of a strategy to revitalise Smalle Haven, a run-down part of the city at the edge of the historic core. Coenen's plan introduced new pedestrian streets and, as the name suggests, also determinedly sought the creation of new residential enclaves to attract new types of urban life. Having seen his work at Alexandra Road completed in 1979 for the London Borough of Camden, Coenen suggested the city and their private developer Hurks Bouw & Vastgoed invite Brown to work on the project.

The brief called for a high density of spacious living spaces and a unique and thoughtful architectural form that could manage the transition between commercial and residential uses. Additionally it had to manage the differing urban scales and atmospheres of the noisy dual carriageway of Vestdijk and the secluded pedestrian street of Het College at the other side linked to the busy commercial area dominated by restaurants and bars.

Many of the site requirements at Eindhoven bore similarities to those which Brown had worked with in London. In composition and massing the Medina owes much of its DNA to projects of the 1960s and 1970s. However, in its visual language and programme it responds to local urban Dutch traditions and the specificity of its complex brief.

Tour

The scheme is composed of two main elements facing each other across a pedestrian street. On the south side is a series of live/work units in low-lying blocks of three storeys with shops at ground floor, while opposite, a larger block starts at 2 storeys then climbs with a stepping section to 8 storeys with dwellings arranged above car parking and commercial space fronting the major road.

The bulk of the 73 dwellings are split-level 2-bed apartments arranged in interlocking tiers enabling homes to have south facing terraces or balconies. In the dwellings most characteristic of the Medina, front doors are located off internal corridors that are top lit by openings in the plan. From front door, one enters the lower level containing two bedrooms, bathroom and utility space. Above this are open plan kitchen, living and dining spaces that extend out to private terraces via a bridge across a sunken patio that provides amenity space and daylight to bedrooms at lower level.

Residents access homes at street level via entrances at either end of the complex or from the centre. At the mid-point of the complex stairs lead off the pedestrian street to create a raised courtyard. Throughout the complex a planting strategy was developed with its main articulation at roof level through planters and pergolas that extend across the edge of the private terraces and encourage wisteria and other species to create green edges that help enclose and buffer them from adjacent noise.

Criteria

While built much later than most of the projects included in this study and extending other criteria conditions, the Medina represents a landmark in the refinement of a complexed typology first developed in the 1960s. As such, we believe it therefore requires further consideration and should be seen in the context of others from this time that similarly embrace its ambition for humane urbanism.

As built the Medina provides 73 dwellings at a gross density of 91 units per hectare. This makes it around seven times as dense as the average across the city of Eindhoven where it is located.

While this project is centrally located and rises to eight storeys in the 'barrier' portion at the rear that addresses the highway, the project offers valuable lessons for blending, mixing uses and managing scale shifts in differing built conditions including that of the suburban edges where commercial strips and traffic arteries must frequently step down to low lying residential hinterlands. The stacked duplex typology and communal access arrangement could be adapted to suit a peripheral low-rise context. Additionally, its active integration of planters and green space provides lessons in active shading, amenity and promoting biodiversity.

Initial Findings

This study was able to tour the complex and speak to a resident living in one of the stepped dwelling types most characteristic of the development. Our respondent was extremely positive about the scheme and they told us its unique architecture was a key driver behind why he actively chose to live there, but also its location at the heart of the city with access to its various amenities, shops and restaurants.

Inside their dwelling, our respondent had nothing negative to say about his home. The layout and sequence of spaces leading to the open living room, the southerly aspect, the view and the generous private terrace together, successfully contributed to their quality of life.

The spaces also proved flexible and adaptable to various uses and live/work patterns with plenty of storage and options for differing uses. Our respondent told us the living room now doubles as their home office and that the qualities of the space actively contributed to their wanting to work from home more often.

Elsewhere the project's strong landscaping and greenery was cited as an active element of its success, not just in terms of aesthetic qualities, but their active role in buffering noise, supporting a micro-climate and creating privacy and a sense of enclosure as per the architect's intention.

While the city centre location was a clear asset for residents, we also learned that this had led to some issues of anti-social behaviour and one particular instance where the design had to be retrofitted. In this example, the open raised courtyard from the street had to be secured with a steel gate to prevent misuse at night. However, this was a minor issue that did not affect an otherwise overwhelmingly positive lived experience and strong sense of community. In our site analysis we found the same space was being used by people at lunchtime to sit and watch street life, while

the space beyond the fence continued to be used by residents.

Through our further analysis of the site we found that within and at all edges of the complex maintenance was to a high standard and its original design details and features had been maintained. At the basement of the complex car parking and bike storage was at capacity and that storage facilities for this had been underestimated.

Interview

**Interview conducted in March 2019.
Resident is a leaseholder and is
chair-person of the residents' board.
They live in a split level two-bed
flat with terrace.**



4.01



4.02



4.03



4.04



4.05

Interviewer Resident

How long have you been here?

I have been here since the project was completed in 2002. We created a publication to celebrate our tenth anniversary in 2012. I was living in the building opposite while this project was being built. I watched it going up. From registering interest in the scheme to choosing an apartment it was easy.

Did the architectural style of the Medina attract you?

Yes it is by the architect Neave Brown. Yes, very much so. The scheme was part of a city masterplan drawn up by Joe Coenen, who is also a very good architect, for new local neighbourhood buildings. Neave Brown designed this block, but also the smaller one across the pedestrian street designated by the city plan (4.01). Previously this area was a surface car park and the site of a part-time market. I understand it was slow to build due to the conditions of the basement, this site used to be a swamp and the large parking garage connects the whole site including some of the adjacent buildings.

What do you think of its materiality?

I like this, I like the brick. It's much cosier, it gives off a warmth and works with the greenery. I have seen others by Neave in concrete, which I find cold. I prefer the warmth of brick.

Do visitors to Eindhoven regard the complex as something special?

Yes, this project is looked at a lot. Lots of people come to view it. I am not aware of anything like it anywhere. But we always have to tell visitors coming to our home where our front door is. They can find it confusing.

How does your current home compare with where you were living previously?

This place is much bigger. The greenery and the terraces appealed to me (4.02). It is not often you can find city centre apartments with gardens. For me, this was the special reason to choose to live in the Medina. Also the location is really important for me. I like to be in the centre of the city. Dutch cities are full of new buildings as we had so much destruction in the second world war. Eindhoven has a diverse range of industries and for its size there is a very mixed and vibrant economy. (4.03)

Can you tell us a bit more about the split-level arrangement, do you like this?

Yes, the level changes are a very good thing to have. Upstairs I can walk straight out from the living room space and across to the garden terrace. Beyond and below the city centre street gets busy and on Saturdays it can get noisy, but by putting the bedrooms below the level of the garden, the step down creates a buffer to noise, which is really cool (4.04).

How does it feel out on your terrace? Are there any issues regarding privacy or being overlooked?

It feels quite private. With so many terraces next to each other, naturally you get lots of noises from neighbours to the left and right, but with the step up it makes it nicer.

What do you feel about the overall layout and other spaces of the apartment?

I like it very much the layout is really effective. I really like the way the kitchen is situated. I like cooking, the space makes it easy. Elsewhere I have big bedrooms, big bathrooms and two toilets and I have lots of storage, which is really great. For us we use the extra space for our bikes usually, lots of others do as well, also this is where we keep lights and furniture for the terrace and my own wine cellar.

Would you say your home reflects your lifestyle?

Yes, I walk out the door and I am in the city. Space is usually at a premium here, but this project has a lot of it and it is unique.

Is there anything you would change about your home?

At the very start I refitted the bathroom and I replaced a solid door with a glazed one in the kitchen so I would have light and a bigger view. It's more open now. There are many glass walls through the complex.

What is your least favourite space?

I don't think I have one. I like this place a lot. I am usually always here. I choose to work from home now because I like the space so much. I have an office downstairs, but I don't really use it. I prefer to be up here in the living space for working. (4.05)

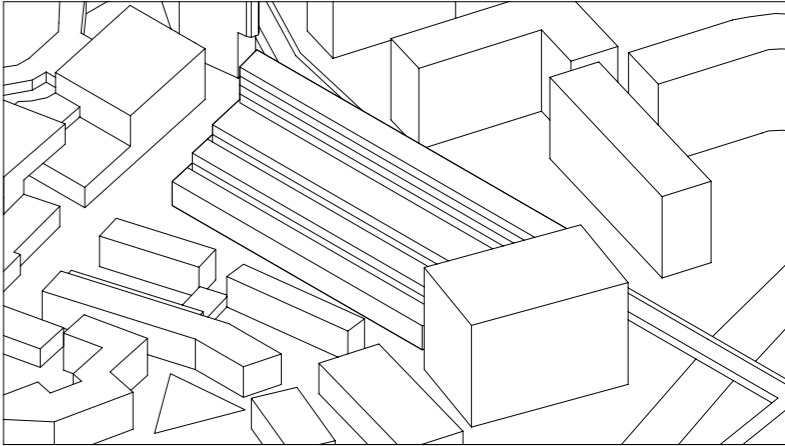
Do you know your neighbours?

Yes, I know everyone. I am the chairman of the board of owners so I set up regular meetings and get together with people, usually in one of the cafes down on the street or sometimes there are BBQs with each other on their terraces which is really nice. Everyone here seems to like social contact.

Does the building help people socialise and meet?

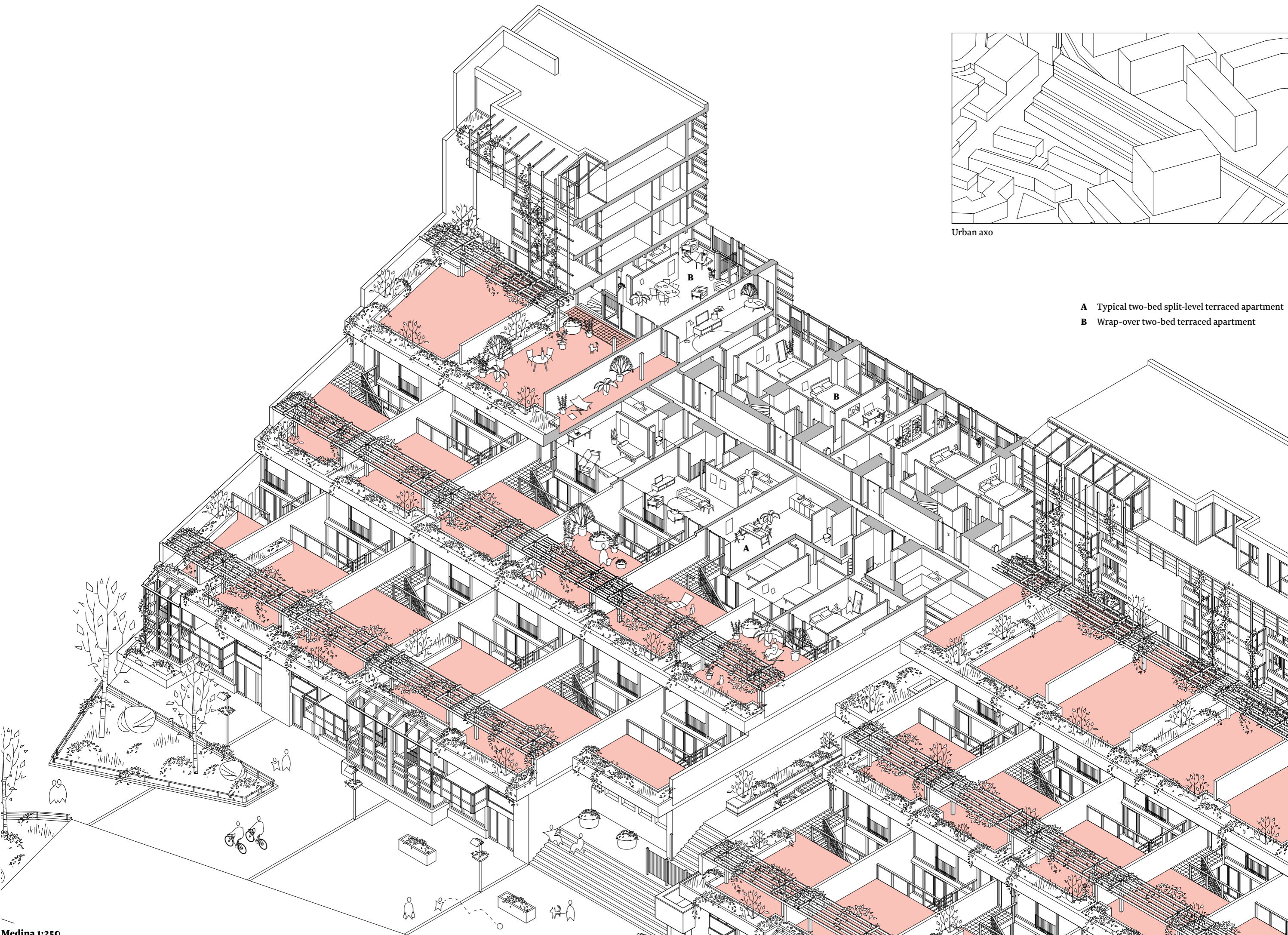
Yes, the layout encourages people to move around and see each other. For example, you have to collect your post and, as you do so, you meet people. The building is full of people who are out regularly in the city, so it's a very sociable project and I meet people a lot.





Urban axo

- A Typical two-bed split-level terraced apartment
- B Wrap-over two-bed terraced apartment





4.06



4.07



4.08



4.09

“I like this place a lot. I am usually always here. I choose to work from home now because I like the space so much.”

Do you have a favourite design feature about the scheme?

This (gestures towards view and sky) is the unique selling point, the open southern aspect. Up high, the sun heats up the building so you can take advantage of that, but if you don't want it, the lower levels have shade and so you can get out of the sun if you want. Having the choice is nice. Depends on the weather, but even in winter there is always the light and the nice view.

Does the single aspect create any problems with over heating and cooling?

No, we have a mechanical ventilation system and it is very effective.

How does the extensive planting work? Are there any issues with this?

Everywhere on this building is wisteria. On the outside of the building, the plant climbs across the whole scheme on a system of wooden pergolas.(4.06) The board manages and maintains this, but within individual terraces it is up to the respective owner. Lots of people have personalised their terraces, they are all a little different. Every apartment must pay for the maintenance of the planting as part of the service charge. We must anticipate it will need changing, removing or upgrading every 20 years or so. The architect Neave Brown told us, he was especially proud of this project and its integrated greenery. He said it was the most successful.

What is the mix of residents here?

Most people own and there are some that rent their places out. Out of 78 apartments, approximately 15 are rented today. Residents on the project tend to be retirees and younger couples. There are not many children here. Most apartments are two- bed and so this makes it difficult if you are a family with two or more kids. I like the idea of mixed communities very much, but due to the cost of living in central Eindhoven it tends to be penthouses and apartments that are built and taken by retired doctors and footballers(!) The Medina is not a social estate. There is no affordable quota in this development.

Did the community play any role in the development of the complex?

Back then, no not really. Once residents were in however, it was different. As residents we want to know everything and get involved in the area. For example, the main road is now being calmed down to encourage cycling. I work as an environmental consultant and I think community involvement should always be present in a development. I was previously a police officer in Amsterdam and part of the board at Medina. I recognise the importance of participation and what it can do.

What do you think of the communal spaces of the complex? Do they get used much?

In terms of the shared spaces the complex is not unique, there are lots of buildings like this in the Netherlands. They are good, but people do not use them for anything specifically. At first the flooring in the shared

corridors was dark blue, but we found the colour boring and so we made it more vivid.

The platform at the ground floor is the only purpose-built outdoor shared space for residents, we used to BBQ there, but tend to go to the cafés now. It was once fully open to the street, but at night some people used the area to urinate or do some sexual/drug stuff and so we closed it as it made it safer for the residents. That space was not working so we took action. (4.07)

During the day people use the stairs to it for lunch, it's really nice. We like that. We are part of a living street and part of the life of the city with links to the nearby businesses. Sometimes things get damaged, but it's no problem. We don't have many security problems. It's not an issue. I know, I was a police officer.

Do all residents have their own parking?

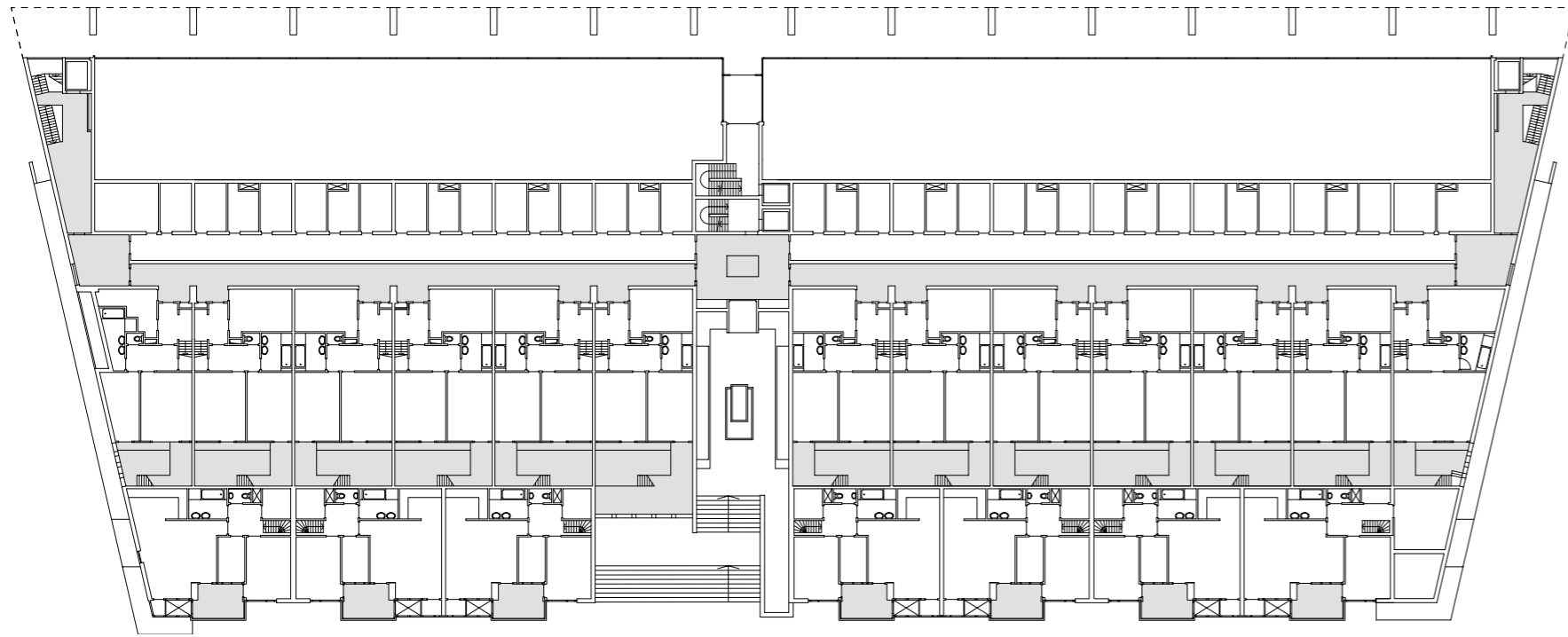
Yes. Every car parking space belongs to an apartment, but we are all cyclists and so we each have our own space for this. This is very typically Dutch.

How do the commercial and public part of the complex work with the rest of the project?

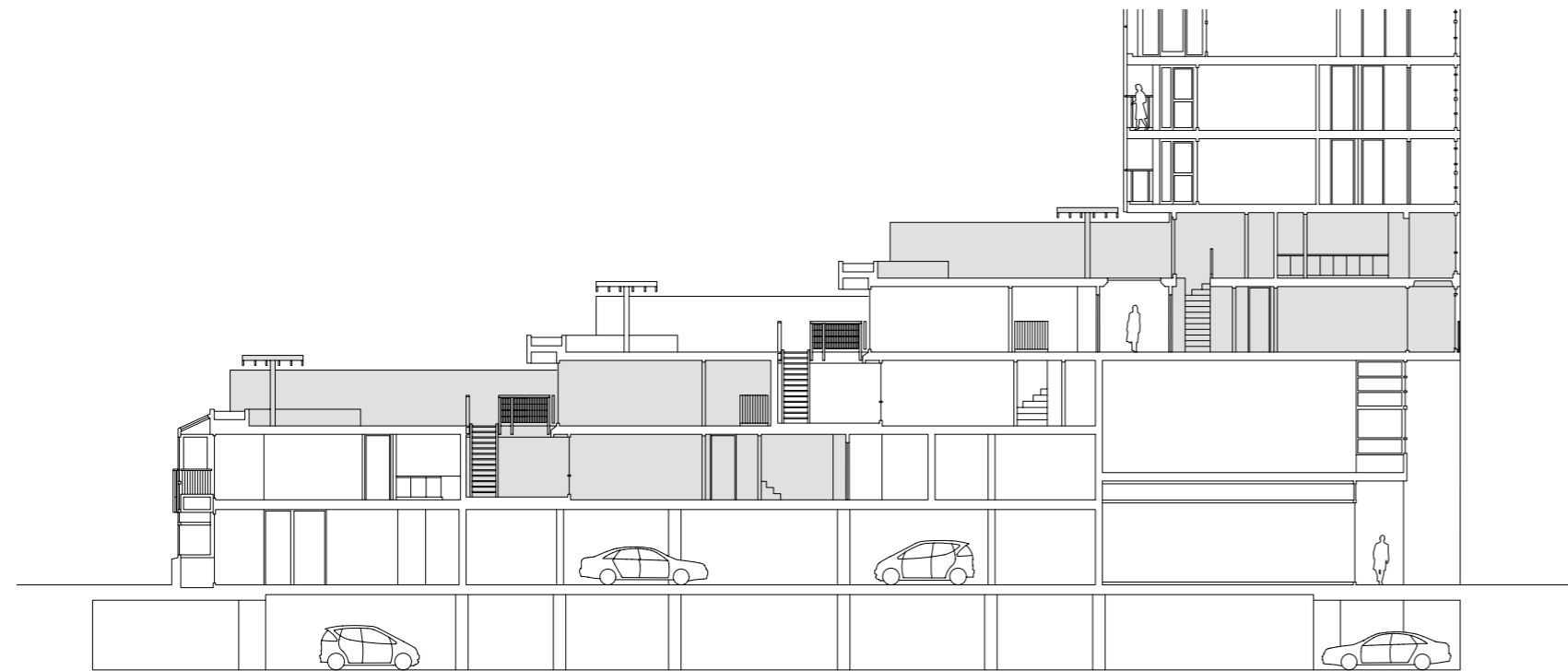
There are three parts to the management of the complex; 1_Commercial, who looks after only the shops and offices and those who rent those spaces (4.08); 2_Garage, who looks after the basement parking and services and 3_Apartments, who looks after residents and the living spaces.

Beyond this, the street downstairs is public, but as residents we adopted it. We have made a deal with the city and they were very happy for us to look after that area. We took on the greenery and so in return we get help on other aspects if they get damage. It is regularly restored. But we put a lot of pressure on them to make sure they do it and it is working. There is a green wall that we did by ourselves as well. We like the green. We want to be a green city and people feel safe in this area and they tend to park their bike and then walk into the city. (4.09)

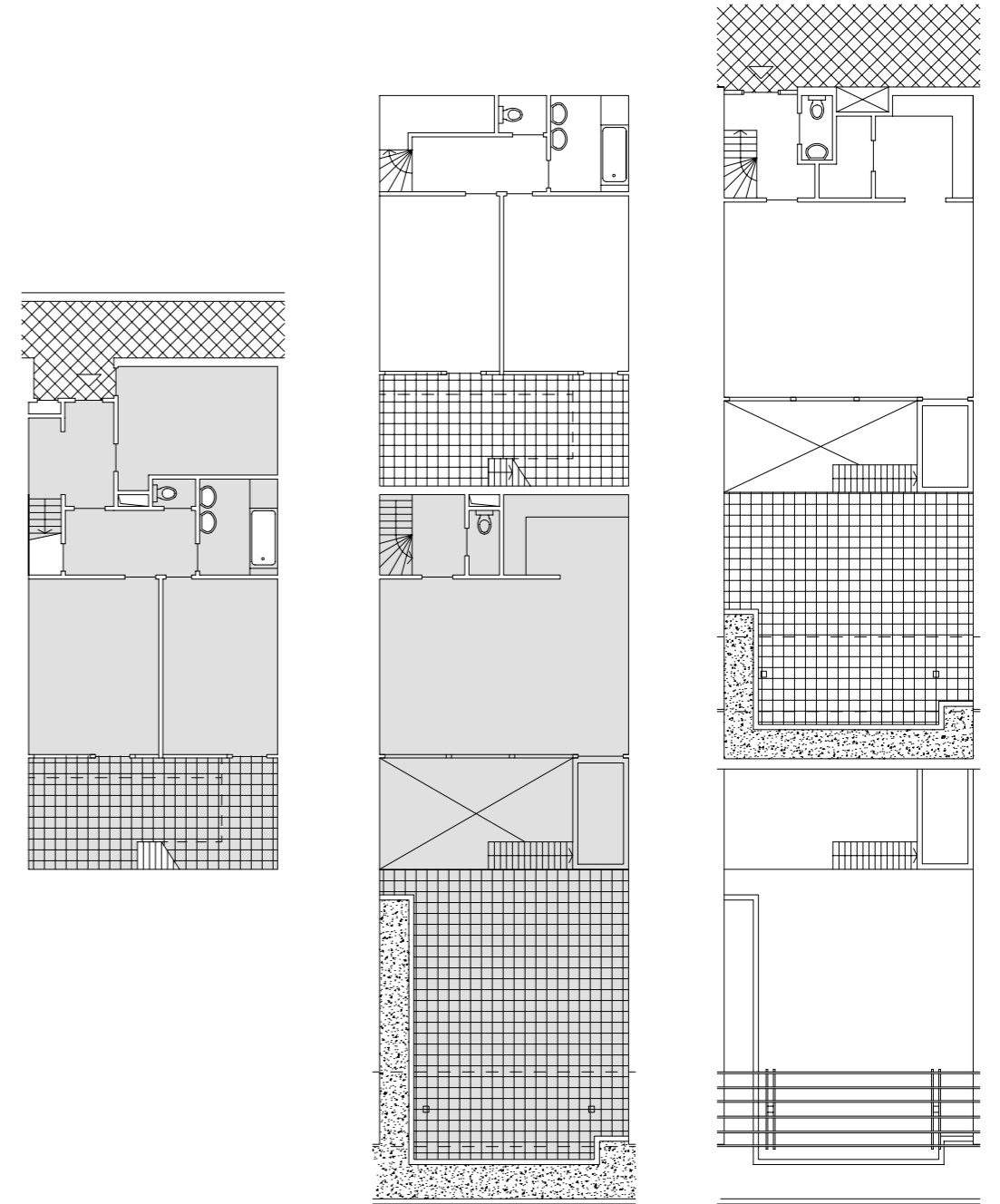
Also, there is the Glow Light Festival here in the city each year and we get involved, they put things on the building sometimes. The whole city gets involved including the design universities, Eindhoven is very civic like that, it is really inspiring.



First floor plan 1:500



Typical section through terraced apartments 1:250



Two-bed size 134.5sqm (+87.5sqm amenity)

Typical plan of interlocking terraced apartments 1:200

Resources

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Low-rise housing in America: the urban scene.
David Lewis
Process: architecture no. 14, April 1980 Apr

The Work of Louis Sauer
Jim Morgan
Extract AIA (1980) from Monthly Magazine of Urban Housing 8001,
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Penn's Landing Square, Philadelphia: urban suburban
Jim Morton
Progressive Architecture, March 1976

Penn's Landing Square', housing in Philadelphia By Louis Sauer Associates.
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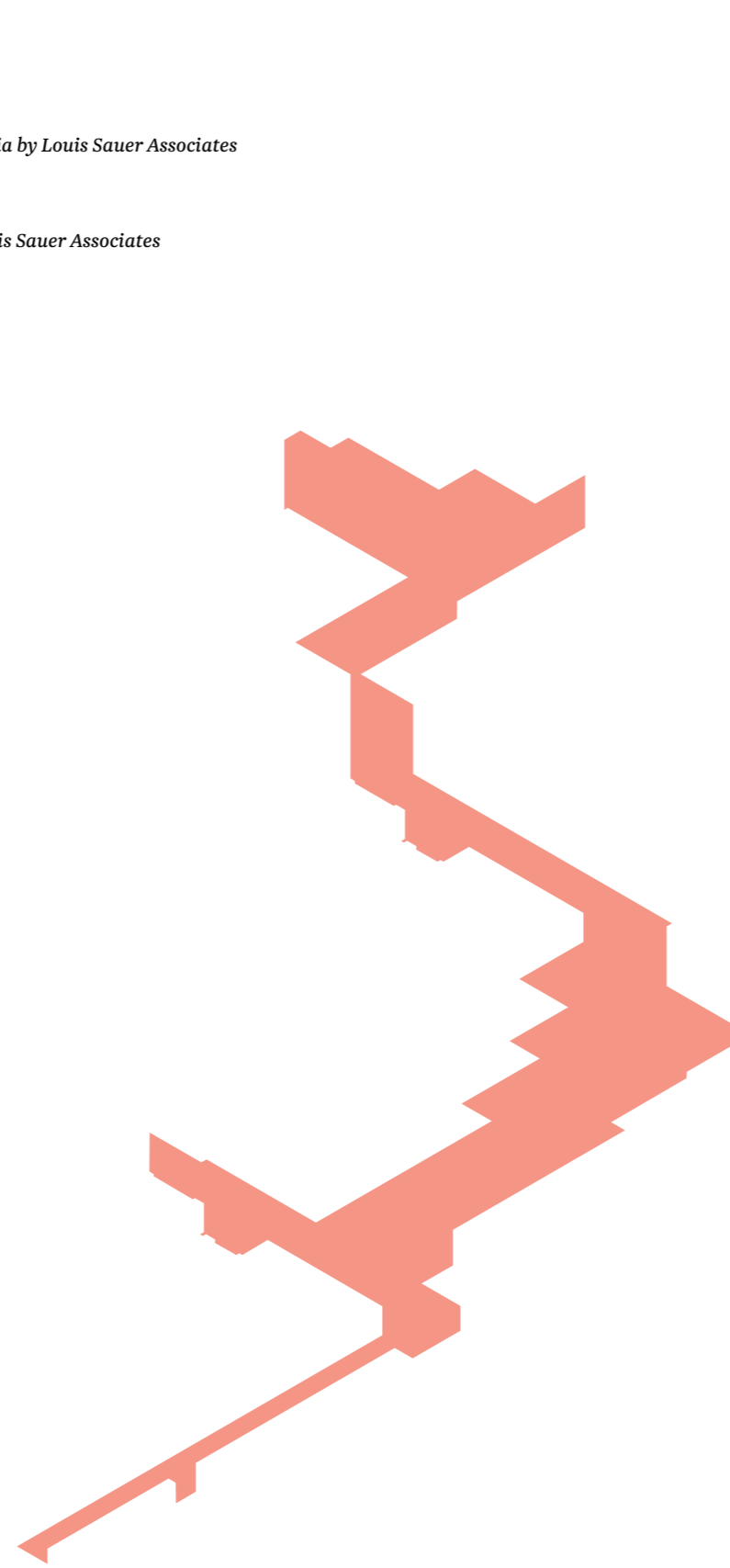
Louis Sauer, The Architect of Low-rise High-density Housing
Antonino Saggio
Dept. Architecture & Urban Design, La Sapienza, University of Rome
Itools-Lulu.com, Raleigh, 2014

Absorbing Venice. Low-rise High-density Housing by Louis Sauer
Antonino Saggio
louissauer.files.wordpress.com

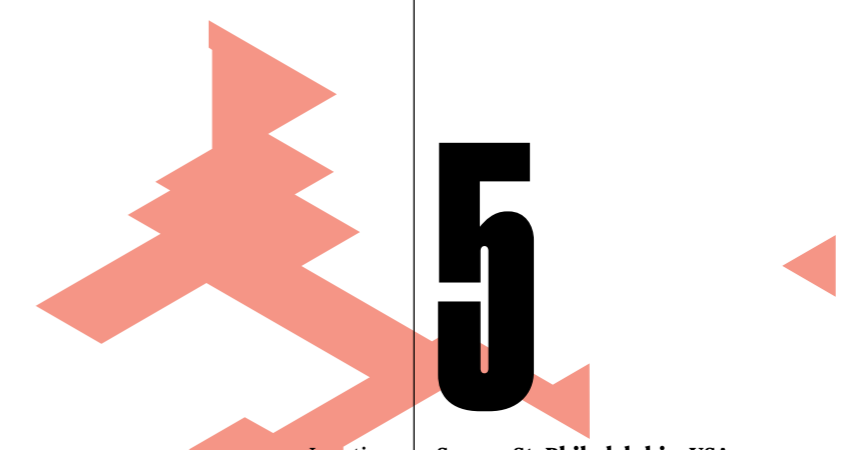
Five Masterworks by Louis Sauer – An Unconventional American Architect
Antonino Saggio
Itools-Lulu.com, Raleigh, 2012

Differing fates for two nearly identical housing developments
Louis Sauer
AIA journal, February 1977

Buildings of Philadelphia
www.philadelphiabuildings.org



Penn's Landing Square



5

Location	Spruce St, Philadelphia, USA
Postcode	PA 19106
Geo Co-ordinates	Latitude: 39.944048 / Longitude: -75.144636
Years	1968 - 1970
Architect	Louis Sauer
Others/role	Edmund Bacon (City planner)
Client	91338 Corporation (Bell-Penn Corp.)
Type	Private
Mix	Residential + Community
Character setting	Urban
Area size (hectares)	1.15
Built-up extent (ground occupied by dwelling structures)	0.85 (74%)
Communal extent (ground occupied by shared spaces)	0.30 (26%)
Floors	3 to 4
Parking spaces	118
Number of dwellings	118
Dwelling range	100 apartments (studio + two-bed) 18 town houses (three/four bed)
Typical dwelling size	Two-bed maisonette 87.4sqm (+20sqm amenity)
Dwelling Density (hectares) dph	102

Dovetailing courtyard house

About

Penn's Landing Square is one of the largest and most complex projects created by its architect Louis Sauer, who devoted his career to refining dwelling form and who made a significant contribution to the urban renewal debate in America.

The project came about as part of a wider urban programme instigated by the city of Philadelphia's director of planning Edmund Bacon. Developed from the late 1940s onwards, it sought to revitalise the city's historic heart and with it the district of Society Hill. Laid out at the end of the 17th century by William Penn, the neighbourhood is regarded as one of the most significant in the USA with colonial era townhouses set on a tight urban grid. In the first half the 20th century it became industrialised owing to nearby markets and docks and fell into decline as these were relocated and people sought opportunities in the suburbs.

To reverse outward movement, the city kick-started renewal with three landmark residential towers by architect I.M Pei in 1964, but these were the exception to a spatial policy that elsewhere encouraged a mix of old and new explicitly at low rise. In an innovative strategy, the city offered cheap loans to fund historic restoration and commissioned young talent to create modern interventions that reinterpreted the area's traditional dwelling typologies.

It is out of this context that Penn's Landing emerged and in the 1970s the Society Hill neighbourhood proved a fertile environment for the development of low rise, high density dwelling types that sought to re-work the city's historic urban grain and tradition of orderly townhouses.

Tour

Penn's Landing occupies an entire block and incorporates a 'package' (Saggio, Antonino) of townhouses and garden apartments above a concealed basement level car park deck and is completed in a restrained modern architectural style that pays close attention to local traditions and scales with simple brick finishing.

Within the core of the block are groups of vertically stacked split level 'garden' apartments that rise to four storeys. In these L-shaped blocks, lower level homes are arranged around a patio and above them, upper level homes around roof terraces. They are organised around an intimate sequence of planted communal spaces that open out to walkways, courtyards and shared community room, swimming pool and terrace. The core is accessible via four secure entrance points with gates designed by a local artist.

Enclosing the scheme are four terraces at the perimeter that each respond to the street traditions of the neighbourhood with orderly facades that repeat to create regular patterns in the manner of surrounding historic townhouses. At the north and east, two long terraces of large 3 storey townhouses face outwards, with courtyard-style gardens bordering the core. On the south side, a terrace of split-level flats lines the street edge with 1-bed ground floor flats accessible via courtyards and 3-bed flats above it with roof terraces accessible from the project core. At the west side is a terrace of three stacked studio apartments with loft style homes at the top opening to terraces facing over the central core. As per the other street facing blocks, this terrace draws on local traditions with characteristic Philadelphia 'stoops' animating entrances.

Criteria

Penn's Landing is one of the most sophisticated projects by Sauer, an architect largely unknown outside the USA and obsessively refined residential layouts at compact sites all over the USA and worked alongside some of the great architects of the 20th century. It is the view of the authors of this study that Sauer deserves wider recognition and this has been an active consideration in the development of this research.

With a compact range of living unit types and amenities, Penn's Landing is a highly complex example of low rise, high density residential design. At a density of 102 units per hectare it is around six times the average gross density of the City of Philadelphia as a whole.

Despite numerous interlocking dwelling types and complex arrangement it is highly legible. Rethinking the possibilities of the city block to create a perimeter and interior situation, it delivers a thoughtful and original response to its historic setting as well as the building traditions of Philadelphia.

Initial Findings

Penn's Landing is a well-loved project. From our site analysis and conversations with four respondents living in garden apartments at the core of the project and in a studio loft apartment along the west side of the project, we found a place where residents feel comfortable and secure in their homes.

The project's unique design and architectural layout was well appreciated and some residents were familiar with Sauer as an architect. Whether intimate with his work or not, people were universal in crediting his design with actively encouraging social interaction from walkways and terraces on the inside to stoops on the outside. However, it was suggested that some typologies benefitted more from this than others. For example, we heard that the outward orientation of townhouses at the perimeter of the project meant that residents in larger dwellings engaged less in the daily life of the complex than those in apartments using the communal spaces in some form. It therefore appeared that a two-tier community had unintentionally emerged along typological lines.

In our observations and in discussions with residents, the landscape and organisational qualities at the core of the complex were cited very strongly as one of the defining aspects of the project. Our respondents loved the mixture of the spaces and how public and private space was managed carefully through planted edges, amplifying the feeling of an 'oasis' in the city. The feeling of comfort and seclusion was underscored by its secure system of gateways and there was a strong sense of community evidenced by an active programme of participatory events and use of amenities such as a community room and pool. Additionally, artwork created as part of the development on the gates was well cared for and generated local pride.

At the time of the study the complex was undergoing refurbishments which in

itself proved revealing. As interviews were conducted the mature planted landscape that has defined the appeal of the project to many of its residents was being actively removed on account of structural damage caused by large root systems to drainage and the deck structure. In these works, residents will gain extra private patio space on account of smaller and shallower planters, but none that we spoke to were happy by the loss of greenery or the executive way in which the process had been handled by the project's private owners, who it appeared had under-appreciated the design intent.

In terms of the dwelling spaces, in the garden flats at ground floor at the core of the project there was criticism of darkness in the kitchens of those with an original layout and overheating in lofts. However, overall our respondents were happy with their homes, crediting their unique design for creating generous volumes, good flow, movement and clever management of overlooking issues at close-proximity.

Interview

Interviews conducted in May 2019. Residents include one person living alone and a retired couple. In both instances they live in ground floor two-bed patio apartments located at heart of scheme.



5.01



5.02



5.03



5.04



5.05

Interviewer Resident

How long have you been at Penn's Landing?

I moved here about 5 years ago from northwest Philadelphia. This is my first time in center city and my first time in a condominium. When I was looking to move, I wanted somewhere close to center city. This area has great amenities, the river, parks, a small commercial area but not the hustle bustle of the downtown, but close enough. The proximity of the city was very important to me.

How did you first discover this project?

I had my eye on it for a few years. I knew someone who lived here and liked it. I liked the area, but I knew I wanted something somewhat modern. It's an historic area with many older homes, but I didn't want a home that would be expensive to maintain. The other feature that appealed to me was the gated community because it provides an extra level of safety while living in the city.

In terms of architectural taste, would you say you were a fan of modernism?

Not until I moved here. I then began reading about Louis Sauer and understanding his urban design, the Society Hill neighbourhood and the urban renewal programme, which started with I.M. Pei's towers here and was followed by Sauer's work in low rise, high density. (5.01)

What do you think of the contrast and the design of I.M. Pei's towers here compared to where you live?

I think the Towers are beautiful and especially the views looking across the city and the Delaware River. That's something you just don't get with a low rise and it is one of my main things about this place that I miss. It's difficult to have both space and views. My unit on the interior has the space, it's on ground floor with a patio to sit out and grill (BBQ), say hello to neighbours and view the beautiful gardens. The townhouses on the outside of the complex have street level views. (5.02 + 5.03) They're not considered condominiums and have their own association board.

Philly has a strong tradition of street houses/row houses. Do you think it is important that new development tries to fit into this?

Absolutely and I think that is exactly what Sauer set out to do that in a modern way. In Philly we have lots of Federalist style homes with similar geometries and symetries. Sauer reproduced and repeated this in a modern and flat front way. He used brick as well, and really tried to bring both new and old together. I am a big fan. (5.04) My favourite bit is the step back here (on 2nd and Spruce Streets) with the gardens out in front and the planting (5.05). The space is used by lots of people. Residents usually pull up here and take groceries and things in and then park in our underground garage, but there is no elevator so you have to walk up steps (5.06). So here, you can pull in and be on ground level.

How does this project compare to other condominium projects elsewhere in the city?

There are not many new low rises being built but there are many high rises and many people are not happy about that. In fact they have just approved a new tower that will block the view of I.M. Pei's Towers. It's unfortunate, but the city is letting it happen. There just isn't room to build something like PLS again. This is pretty unique.

What do friends or visitors say about it if they come from outside the neighbourhood when they visit? Does it cause any issues for utilities?

Architecturally some people appreciate the mid century modern style and other prefer a more historic design. Visitors like the gardens and the privacy they provide. This was part of the original design plan. Unfortunately now there are major renovations underway in the courtyard to replace the deck membrane and will change some of that original style that allowed for privacy between units. There will now be larger patios and smaller gardens. To answer question about utilities, I don't believe there are problems except getting larger pieces of equipment in the complex because of the gates.

What is your preferred route into the development?

There are four entrances into the development, plus communal entrances up to homes once you are underground in the garage, so lots of possible routes in and through for residents. Everyone has a car parking space and so it is well used. The townhouses on the edge have their own direct access there. From the street an artist created four gateways doors that represent the four elements, land, water, air and fire. I think they're beautiful, once they're cleaned they'll be pretty magnificent. The city of Philadelphia operates a fine art contribution, where 1% of the value of the building/development is put into creating art for the neighbourhood and you see a lot of that in the city.

What do you think about the communal spaces at the heart of the development?

Originally lots of beds and planting, good privacy and mix of spaces linked to nearby unit types. On 2nd street, there are three stacked condos and so the development steps down to create a sunken walkway. There's lots of nooks and crannies and a great variety of spaces with brick patios. I think it's beautiful down here (along 2nd Street).

Are the pool and community rooms well used?

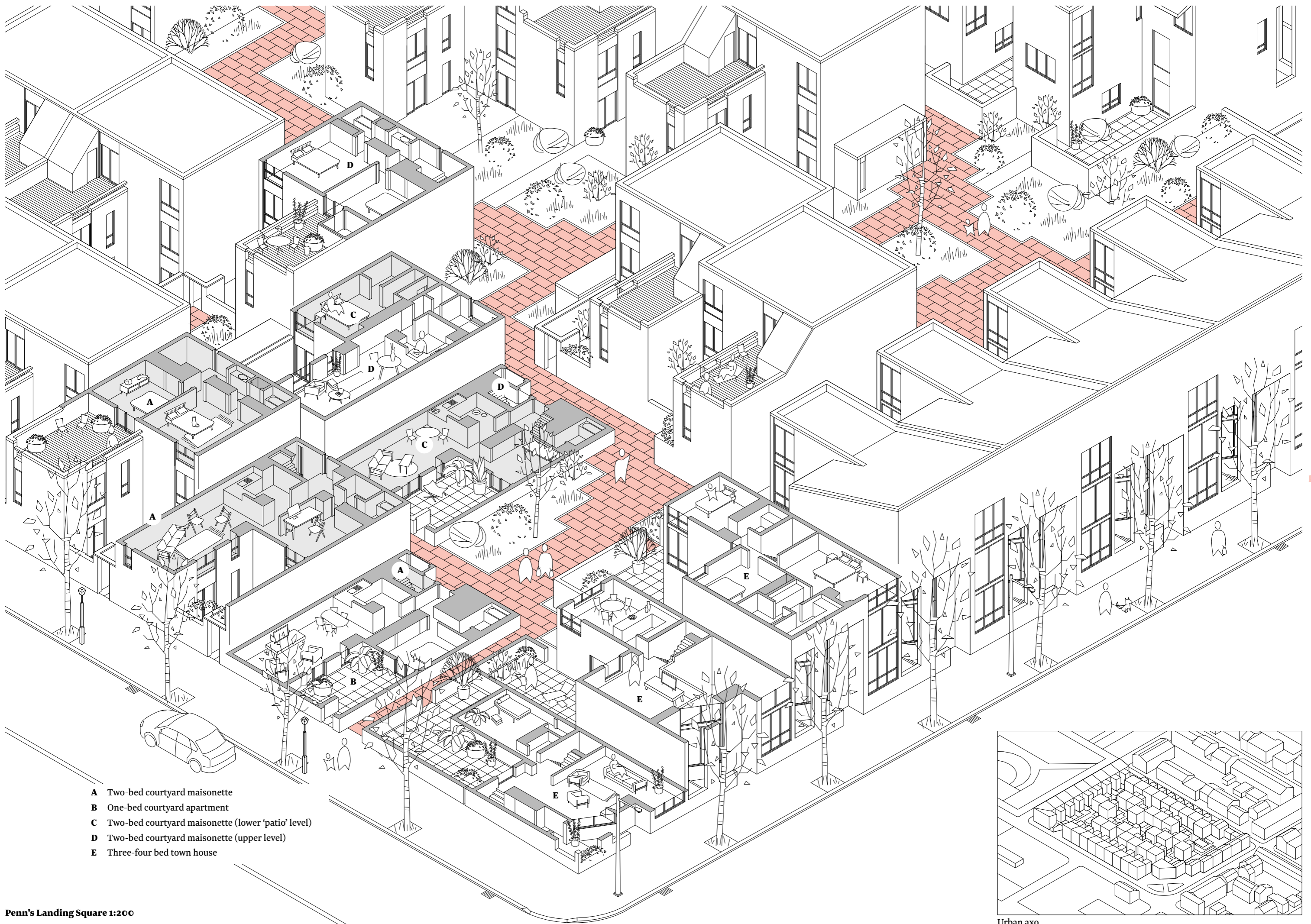
The pool area is well used during the summer months although never crowded (5.07). When the weather is at its best people head out to the Atlantic coast and the mountains. The community room will be redone after the membrane project is complete. It has been used for community meetings and small gatherings.

Is the sense of community strong here?

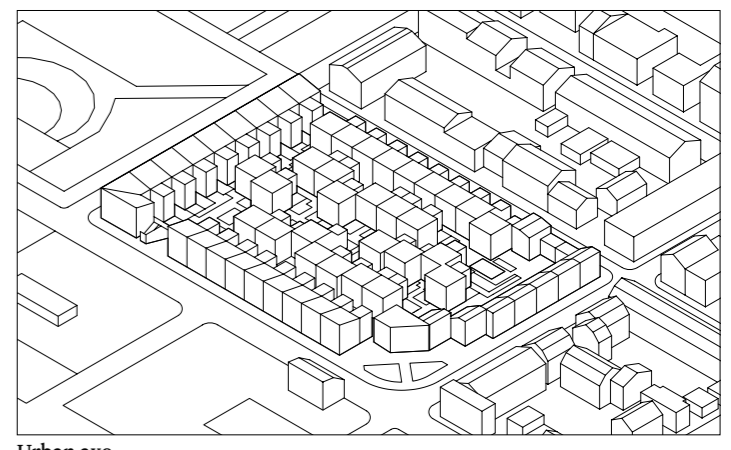
People are friendly and there is a mix of varying age groups that is positive. About 28 percent of the units are rented and often the relationships are not the same as with owners. I wouldn't say there is a strong sense of community like one would have in the suburbs because those in the city are often out and about, but many friendships have formed.

Do people feel a sense of ownership of the spaces, do they get involved in plants and materials?

People really do make use of these spaces, often meeting on our private patios. We have two Boards and owners have the option of running for open positions. There is a Landscaping and an Aesthetic Committee as well.



- A** Two-bed courtyard maisonette
- B** One-bed courtyard apartment
- C** Two-bed courtyard maisonette (lower 'patio' level)
- D** Two-bed courtyard maisonette (upper level)
- E** Three-four bed town house





5.06



5.07



5.08



5.09



5.10



5.11



5.12

Do you think the architectural layout actively helps support social togetherness?

Yes I think it does. The units at ground floor each have a patio area and there are no hard fences and so you see each other and invite people in. I think Sauer wanted this, but he also created plenty of privacy, you can be in your own space without being overlooked. Those green buffers were Sauer's intention (5.08 +5.09). When you walk through the development, your experience was of the landscape, you would have been seeing green. With the new design, there will be smaller beds, smaller trees and a little less privacy.

With the refurb did people choose to have bigger patios rather than planters?

The Board and the engineers decided that. We previously had very tall tree in areas and the depth was about 18 inches, so the root systems became a problem. The engineers did what was best for the protection of the membrane in the future. (5.10)

Respondent meets neighbour as part of walkabout, who joins conversation and leads interviewer into their home

Do you like living here and the architecture of the development?

Yes. Great neighbours and a nice design. I didn't know about Sauer and his architecture, I do now and I like this. We don't like high-rise, we don't like elevators. Personally, I prefer this arrangement and the ability to walk straight into the unit. It feels more like home to me. When we moved into this development we were looking for home, for social qualities, interaction etc... with high-rise you don't get this and the outdoor space.

Do you like the layout of your home with its indoor and outdoor spaces?

Oh yes. We are outdoors people and so we don't need a huge amount of indoor space, we are out a lot. We don't like too much privacy and we don't mind the overlook and people passing by. We get to see everyone. We chose to move somewhere where there are people, that's why we moved into the city. We don't like sitting around doing nothing, we welcome people to come by and we like the mix. It's important, but also here there is the safety of the location. We are on the inside of something, hidden and there are gates. If they weren't there it would be fine, but it's nice to have. You feel a little more secure, it's a secluded spot.

How does this differ from your previous home?

We were downsizing from a four-bed and so this was great. Coming into the city from suburbia this development has really helped the transition. I feel very comfortable in this area and I like the architecture. Brick is nice, looks like home and feels solid and well built. There is a lot of variety within that material in this neighbourhood, which is nice. In suburbia we had a home for 40 years just like everyone else.

Is there anything about your home you would change?

One thing you really need to know about these places is the lack of light because it's on the interior. If we don't turn on the lights, even in summer it can be dark. It was something I noticed when we moved in, but on the plus side in summer there is a lot of shade when it's very hot on the patio.

Discussion returns to original respondent

Do you like the layout of your home with its indoor and outdoor spaces?

My home is based on the same layout as my neighbours, but it has been uniquely refurbished. The previous owner adapted it to reduce the footprint of the staircase and added closets. The ground floor bedroom is now a TV room/study, the kitchen walls were removed to give a more open feeling. I like the changes that were made because there is a great flow (5.11). The storage is unique.

Are there any other problems with this type of home in your view?

Across the development there are two common criticisms. One, the darkness. There are not enough windows to provide light when it's a gorgeous day. The other is the air con units. Lots of them are original and they are extremely loud in summer.

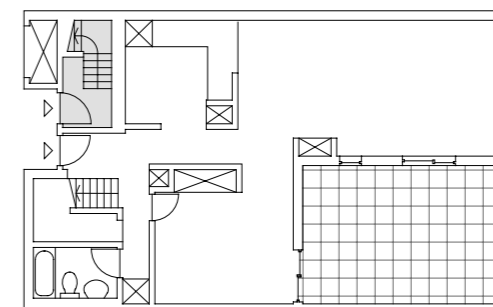
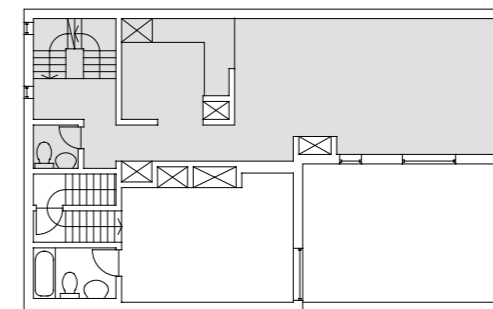
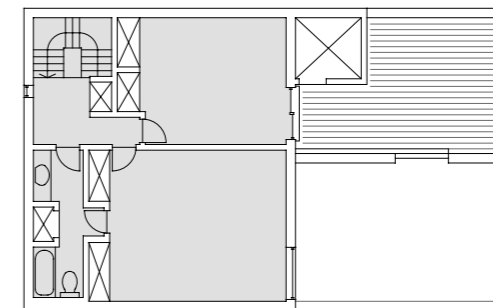
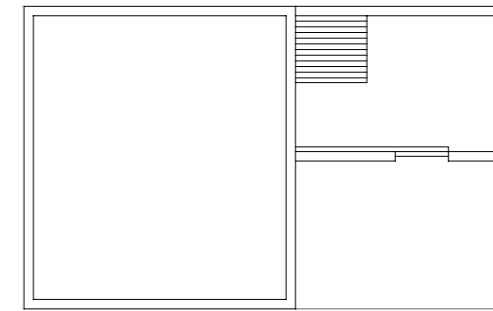
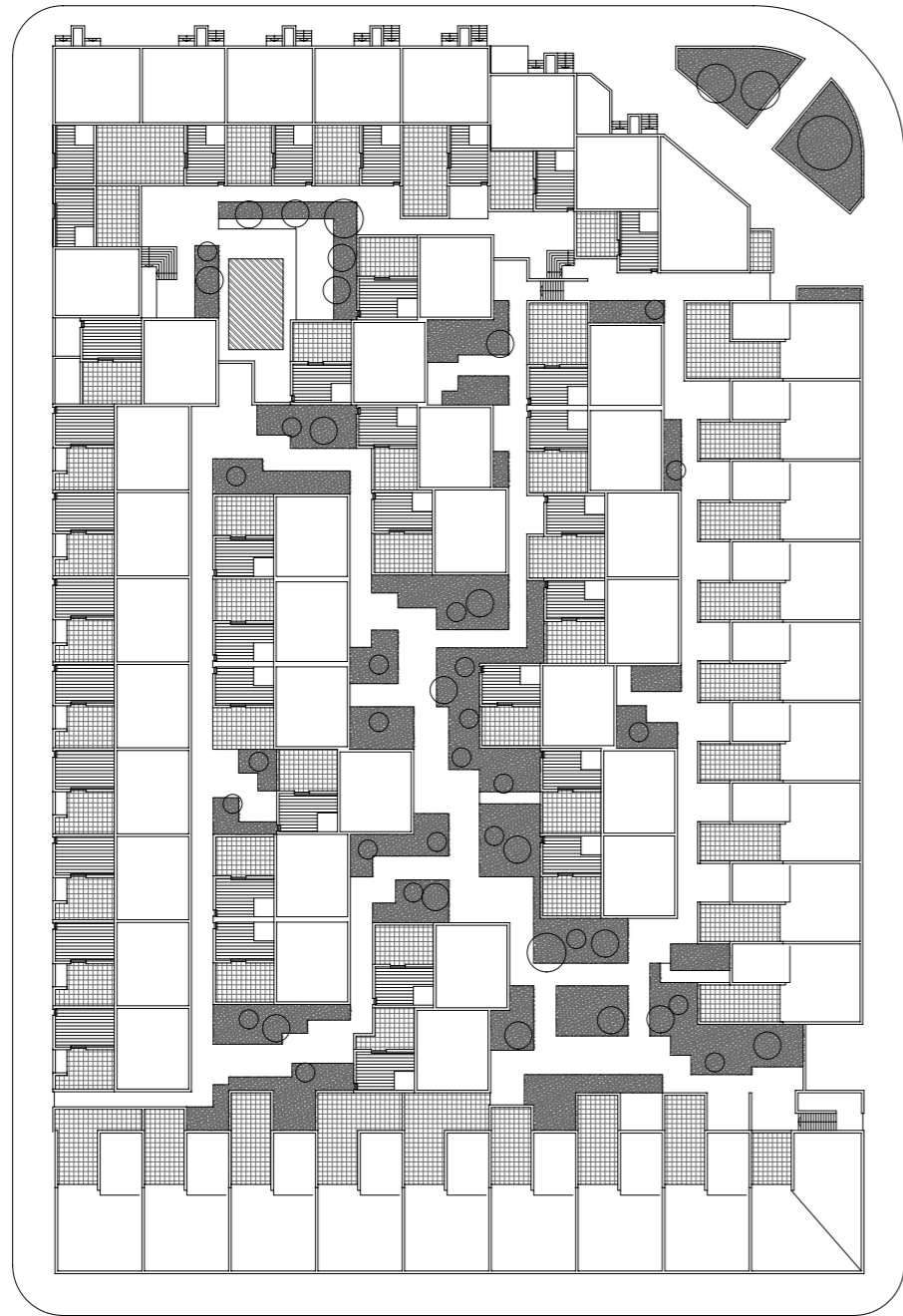
What is your favourite thing about your home?

It's small, but it works. I like having two doors; a front one and one off the back patio. Because when both are open, air moves through the unit. The upstairs units only have one entrance. I would not be comfortable with that.

I also like the privacy of my patio, yet I still see neighbours walking by. I like being on the first floor and not have to climb stairs to get to the living area. at the back. Despite the proximity of my neighbours there are no windows looking back and in. (5.12)

It's a great set up. Sauer prioritised privacy and managed it carefully, sometimes to the detriment of light within the unit, but he got the balance between private and social space right, as well as the original landscape.

“The units at ground floor each have a patio area and there are no hard fences and so you see each other and invite people in.”



Resources

Die Matteotti-Siedlung in Terni (The Matteotti settlement in Terni)

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Butterworth Architecture, London 1992

Giancarlo De Carlo: The reasons of architecture

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Electa, Milan 2005

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Francesca Serrazanetti and Matteo Schubert

Moleskine, Milan 2012

Giancarlo De Carlo. Analytical archive inventory

Francesco Samassa

Poligrafo, Padua 2004

Il nuovo villaggio Matteotti a Terni (The new Matteotti Village in Terni)

Sergio Bracco, Domenico De Masi and Giancarlo De Carlo

Casabella vol. 41, January 1977

Mat-hybrid housing: Two case studies in Terni and London

Virginia De Jorge-Huertas

sciencedirect.com

Matteotti Neighborhood

Alessandro Lanzetta

atlantearchitettura.beniculturali.it

Participatory design: Case study. Housing Development Matteotti of Giancarlo De Carlo

Naomi Miller

Progressive Architecture, n. 12 December 1976

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Giancarlo De Carlo

Maggioli Editore, republished 2008 (Italian)

The Villaggio Matteotti

docomomoitalia.it

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Location	Via Irma Bandiera, 16 Terni, Italy
Postcode	5100 TR
Geo Co-ordinates	Latitude: 42.547759 / Longitude: 12.658647
Years	1969 - 1975
Architect	Giancarlo De Carlo
Others/role	Fausto Colombo, Valeria Fossati Bellani, Sandro Volta; Vittorio Korach (structuralist) Domenico De Masi (sociologist)
Client	Società Terni Acciaierie (The Terni Steelworks Society)
Type	Intermediate
Mix	Residential + Commercial+ Community
Character setting	Suburban
Area size (hectares)	2.42
Built-up extent (ground occupied by dwelling structures)	1.43 (59%)
Communal extent (ground occupied by shared spaces)	0.99 (41%)
Floors	4
Parking spaces	500 (including that for motor bikes)
Number of dwellings	250
Dwelling range	250 family apartments (two-three bed) organised in five block types
Typical dwelling size	Two bed family home 102.9sqm (+32.6sqm amenity)
Dwelling Density (hectares) dph	103

Interlinked rooftop allotments

About

Located on the edge of the City of Terni, the Villaggio Matteotti is a landmark project by architect Giancarlo de Carlo, a leading figure of post-war Italian modernism, whose work sought to combine bold, new architectural form with traditional characteristics associated with a humane approach to urbanism.

The project was commissioned in 1969 by the Terni Company, the town's state-owned steelworks, to provide affordable housing for its workforce, which at the time was the area's largest single employer. The scheme aimed to transform a historic workers settlement located at the edge of the city, into an urban extension with a 20 hectare site providing accommodation for 3,000 people in 840 dwellings at higher density and with improved facilities and connectivity to the centre.

The project emerged in response to the declining quality of affordable housing on the site known as "Italo Balbo" constructed in 1934 and by the demands of workers for improved amenities in their neighbourhood. Seeking to balance the needs of a wide ranging resident group, de Carlo seized the opportunity to pioneer methods of community consultation as part of the design process, concepts very much in their infancy at the time, staging exhibitions to show end users examples of new housing from around the world outside of Italy, including the Roehampton Estate in the UK and the Seidlung Halen in Switzerland, and interviewing hundreds of possible residents to understand what they wanted from their future homes. Additionally, to ensure as much feedback as possible, workers were allowed time within the working day to attend engagement events and compensated for their time.

De Carlo was a member of Team X, a breakaway group of the international CIAM (Congresses of Modern Architecture) and a vocal critic of the banality of the modern

movement. His user-led enquiry was therefore an attempt to inform a more nuanced and responsive approach to the project and its intended sequence of public and domestic spaces.

The brief that emerged from interviewees for the Villaggio was that dwellings should be low rise, no more than three storeys, dwellings should be accessed from the street not a lobby and that each should have its own garden space and that car parking should be separate from the main pedestrian spaces.

Tour

The project as built consists of 250 dwellings representing approximately one quarter of the scheme as originally intended. Public funding cuts prevented the scheme's full realisation.

Its layout, or 'structure' as de De Carlo called it, is formed of five linear blocks containing a range of family dwellings in five cluster types. At its heart are four connected terraces organised as two pairs with communal gardens at their centre and service roads providing vehicular access and undercroft parking at their outer edge. From the outset, the project aimed to separate pedestrian movement via green routes and elevated decks connected by bridging paths that today enable residents to move freely between the terraces at first floor.

Around the diagonal route that bridges at first floor level across the four blocks, De Carlo arranged the mixed-use components of the project providing space for a creche, community centre, library, shops and office space. Had the scheme been realised in its fullest form, these walkways would have been essential in connecting each phase of the development and would have converged at a large neighbourhood shopping area to the north.

Completed in poured in-situ board formed concrete the project is unified by its consistent and bold materiality and articulated by its strong structural frame. Across the four connected terraces there is a mix of four building block types that are organised around open and closed courtyards and interlock with one another to create linear terraces and variously step back, project and overhang to create terraces and decks. Each block incorporates the pedestrian deck and sits above parking areas, stepping down on one side to meet the gardens.

Access to homes is via semi-public staircases located in slots between the block types with each staircase serving six homes.

Open to both sides and oriented east-west these spaces are well lit and from them each front door has a small entrance area that extends the domestic environment and allows for appropriation, personalised with pot plants, door mats and washing hanging out to dry.

All dwelling types have elements that can be tailored and adapted to suit resident need, meaning that across the five cluster types there are in principle 45 possible permutations of internal layout. Most basic dwellings are two or three bedroom and all have two bathrooms with dual aspect and split level spaces facing out onto or above the gardens and service areas. Each home has two parking spaces and generous roof terraces, allowing for increased living space and planting or opportunities for food production, a provision resulting from consultation and arising from the popularity of allotments that were once numerous on the original site.

Criteria

The Villaggio is perhaps the most varied project in this study with a wide variety of unit types and building blocks. With 250 dwellings on a site of 2.42 hectares it achieves a gross density of 103 dwellings per hectare. This is just under three times that of the average gross density of the city of Terni at approximately 35 dwellings per hectare.

With its bold concrete forms and mixed-use programme, it is very much a product of its era as well as the determinist vision of its architect. However, its complexed and innovative typologies create scenarios from which lessons may be learned. In the linear distribution of dwellings and vertical separation it echoes many of its contemporaries notably that of the Whittington Estate in the UK and so within this research offers a useful point of comparison where a natural sloping landscape cannot be exploited. Additionally, it is the second project featured in this research to be the product of resident consultation and of a co-design process and so offers further comparison.



Interview

Interview conducted in May 2019. Respondent was one of several met on the communal decks of the development and is elderly and lives with a partner in a two-bed dwelling. They have been on the project since its beginning.

Initial Findings

From our site tour and discussions with residents we found that the projects ambitious mixed-use programme had for many years been in decline. With empty commercial units and little used community facilities, the attempt to integrate a range of uses at upper levels with the residential programme appears to have failed. The fact that the full scheme was never realised has left resulting buildings and their inhabitants isolated with an architectural layout and a density that contrasts sharply with its immediate surroundings comprising numerous two-storey detached houses with large gardens and a patchwork of fields.

As with so many projects of its era the desire to separate cars from pedestrians has resulted in numerous alienating access routes and service areas. The over-provision of vehicle infrastructure is detrimental to activity in these areas and the possibility of connections to its immediate hinterland. On our site visit we found wide empty roads and vacant and lifeless car park spaces that were in sharp contrast to the verdant internal pedestrian routes within.

In our discussions we heard that these green landscape qualities are highly valued and found the integration of green into the building programme through the large upper level terraces, de Carlo's allotments on the third floor, successful. Fronted onto by private gardens at ground level and overlooked by terraces above, these spaces are now characterised by rich and mature landscape and healthy trees.

Elsewhere the active appropriation of the semi-public and communal areas by residents indicated a strong sense of ownership and confidence with appropriating spaces and utilising their potential for extended communal living.

We found also that while the neighbourhood was quieter than it had been in the early years of its completion and that

problems remained on the estate in terms of some misuse of the spaces, the community there were close.

During our site visits and discussions with residents, we were unable to gain access inside homes, but respondents offered us positive accounts of the qualities of these spaces. Dwellings on the Villaggio were valued for their innovative layouts that promoted separation of noisy functions from quiet and were flooded with light, while outdoor amenity was an active contributor to the quality and possibilities of varied domestic life.



6.01



6.02

Interviewer

How long have you been at the Villaggio and how did you come to be living here?

Are you aware of the architect behind the project and its landmark status?

What type of home do you live in here on the development?

What were your first impressions when you first moved in?

Resident

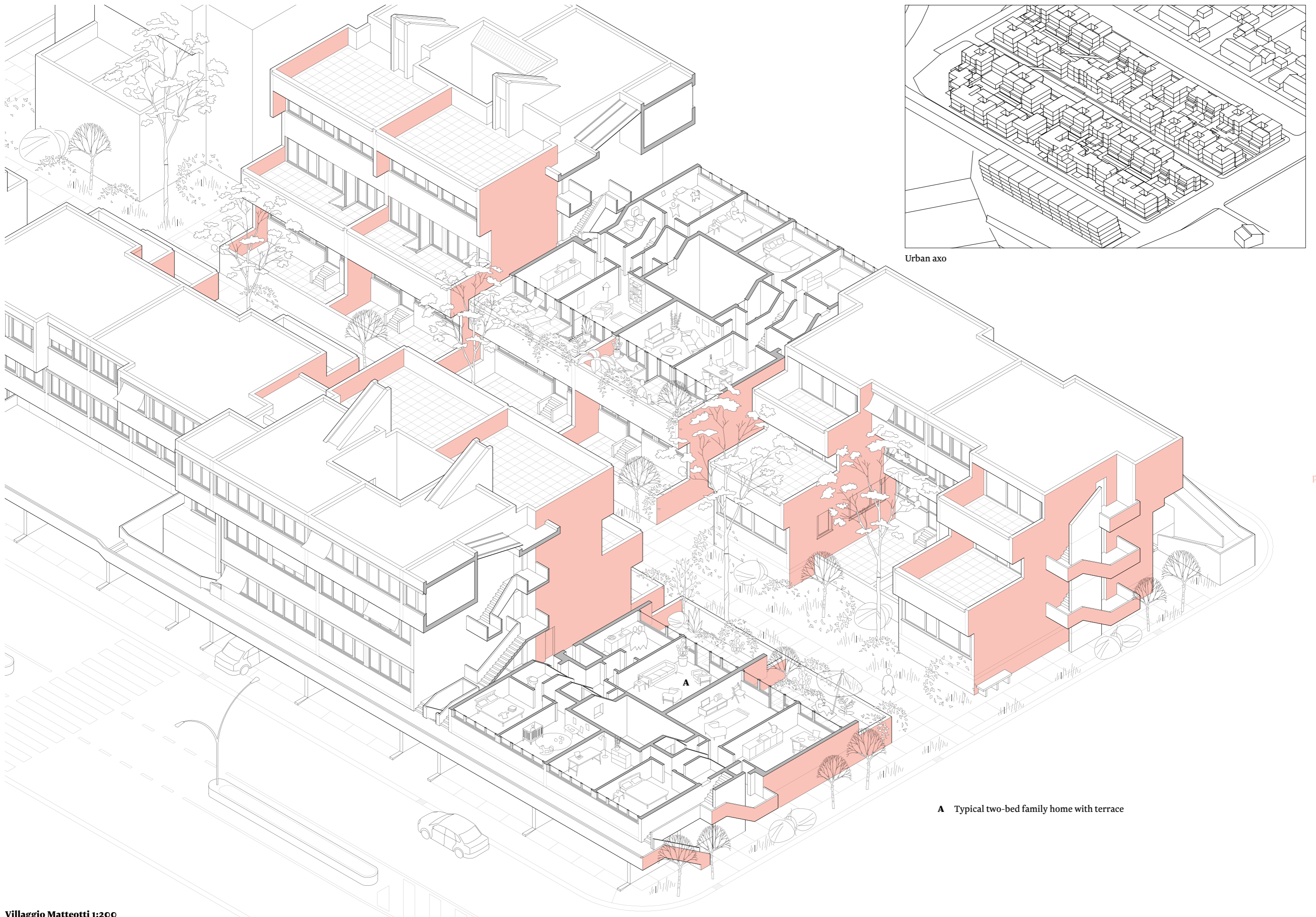
I first came here in 1975 at the very beginning of the entire project. I was working at the steel factory at the time. The house I live in now was already built when they offered me the chance to have a home on the development. Like many others back then, I was able to choose which apartment I wanted and I thought it was a great deal. The price on the contract was around 13 million lire, which back then would be equivalent of around 6,500 euro. By way of comparison a typical flat elsewhere in the city at the time cost around 40 million. Having the opportunity to buy this flat was the only luck I had in life because I was just a worker in a factory.

Yes. There is a lot of interest in our neighbourhood from architects. We have had many researchers like you coming here to see the work of Giancarlo De Carlo (6.01). I understand that there is also now a foundation run by the architect's daughter.

My home is a two-bedroom flat. When I bought it from the development company, I had two children, so it was perfect for me and suited my needs. In terms of space it's around 90 square metres and the layout works really well for a family. Inside the areas for daytime and night-time activities are separated so you enter the home into the living and kitchen areas and then elsewhere the bedrooms and bathroom accessed off a separate corridor. As well as this, we also have a large balcony/terrace and car parking space and a storage locker downstairs. It is a good home for me.

When we first moved in I didn't like it, in fact I wanted to leave because the gardens weren't finished at the time and all I could see outside my window were lots of earthworks. So it wasn't a great neighbourhood, but after they fixed the gardens it started to improve a lot. I enjoyed it more once I could see the greenery from my windows. Now between the blocks it is lovely and green with tall trees which reach up to the homes and terraces above (6.02 + 6.03).

I remember at the beginning lots of people used the sport facilities nearby but now the young people in the neighbourhood don't play football as much. In the beginning there was just a wood fence dividing the estate from the main road and we had problems with drugs addicts using spaces in the building (6.04). This is still a neighbourhood with problems, but we all have problems and there are less here now than initially.



Urban axo

A Typical two-bed family home with terrace



6.03



6.04



6.05



6.06



6.07



6.08



6.09

What is it like living on the estate today?

There are still people living on the estate who work for the steel factory, but many have sold their property and there has recently been a high turnover of residents because once people retire they start to leave. Unfortunately, the estate is not a very popular area to move to for others and the so consequently the house prices are not high and there are always several flats for sale in the buildings.

Why do you think it is unpopular?

The Villaggio was meant to be a city within the city, but only the first 250 flats of the development were delivered and de Carlo's dream for this community didn't come true. Perhaps if the rest of the project had been built, we would have better connections to the city centre and to the surrounding neighbourhoods and the buildings wouldn't seem so different, we might not be so isolated.

Who oversees maintenance of the homes and the communal landscape?

There is an administrative group who organise and take care of the gardens, the decks and the roofs at the top level, but the ownership of the communal spaces between the buildings is still with the council (6.05 + 6.06 + 6.07). The city council was also managing the the spaces for community associations and organisations and the letting of the commercial units, but since the last paying tenant left some years ago, nobody has used the spaces for a long time.

A small group of us residents use the community centre spaces in the afternoon to meet, talk and play cards. Sometimes there are organised events, but this is very rare nowadays. The spaces were much better used in the past.

The office spaces and shops on the estate appear to be empty, have they been like that for a long time?

In the beginning the idea for this project was to have lots of different activities here on site. When we first moved in our youngest daughter was already six years old, so she went to the local school, but there was a nearby nursery that was open and it was a really busy place. But it has been closed for more than ten years now and the office space has been empty during that time as well. We used to have a grocery/convenience shop, but that closed and now there is nowhere nearby to shop for the little things you might need.

What has been the impact of these empty spaces on the community?

The fact that these spaces are empty is a problem for us, the bridges and spaces around them have been vandalised and we recently had to pay from the community funds to repaint and repair them. But despite this, I still like living in this area. It is nice and quiet, but sometimes a little bit too quiet. I would love to see some new people around here and have a more lively place, but I think this is still a nice neighbourhood. There is a good mix of different generations here, pensioners like me, but also younger families with children.

What do you like most about living here?

I understand the architect introduced lots of big terraces and suspended gardens as part of the design (6.08) because at the time of its development lots of people living in this area previously had their own allotment sites. But instead of putting this on the ground or as fields as it was before the architect said, "I will give you an allotment on the third floor". This is something I really enjoy about my apartment. I have a lovely roof terrace where there is plenty of space to eat out there, to grow things and relax (6.09). My balcony is sunny from 11am right up until the evening.

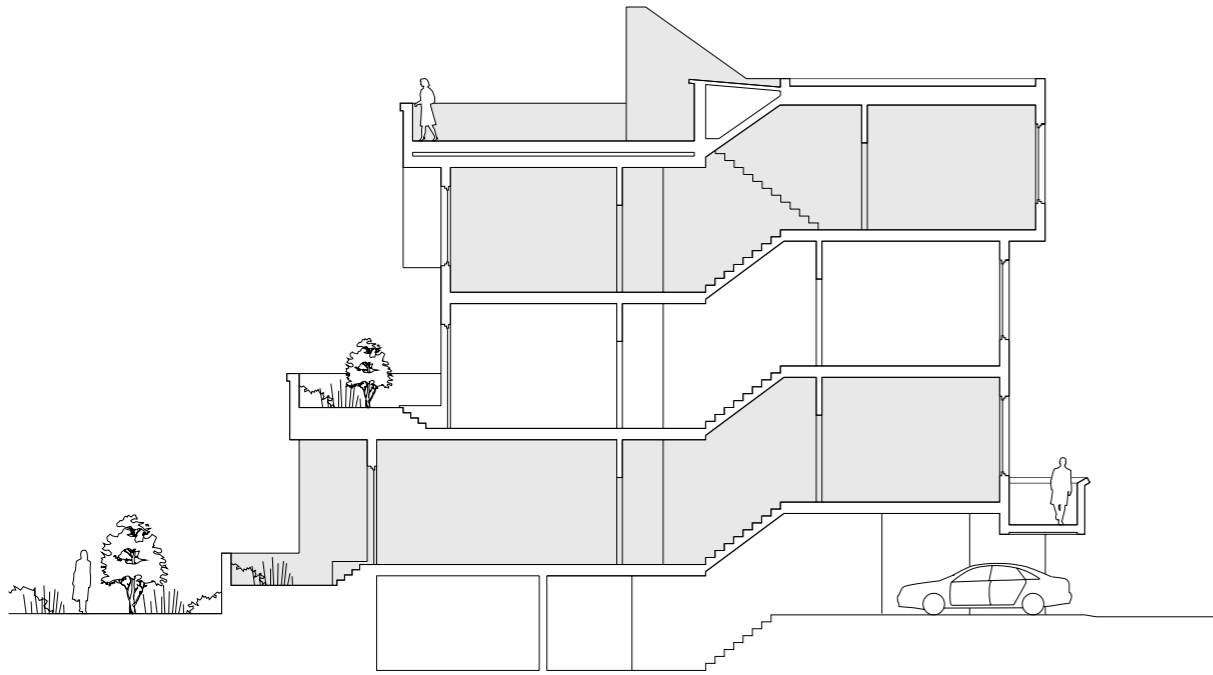
Have you made any changes to your home since you have been?

I did some work to the apartment, but I have not had to change the layout because it works so well for us. We had a bad leak from the bathroom which meant that we had to replace all floors in the bedrooms, but these are superficial changes and in all the years we have lived here I haven't done much more than this.

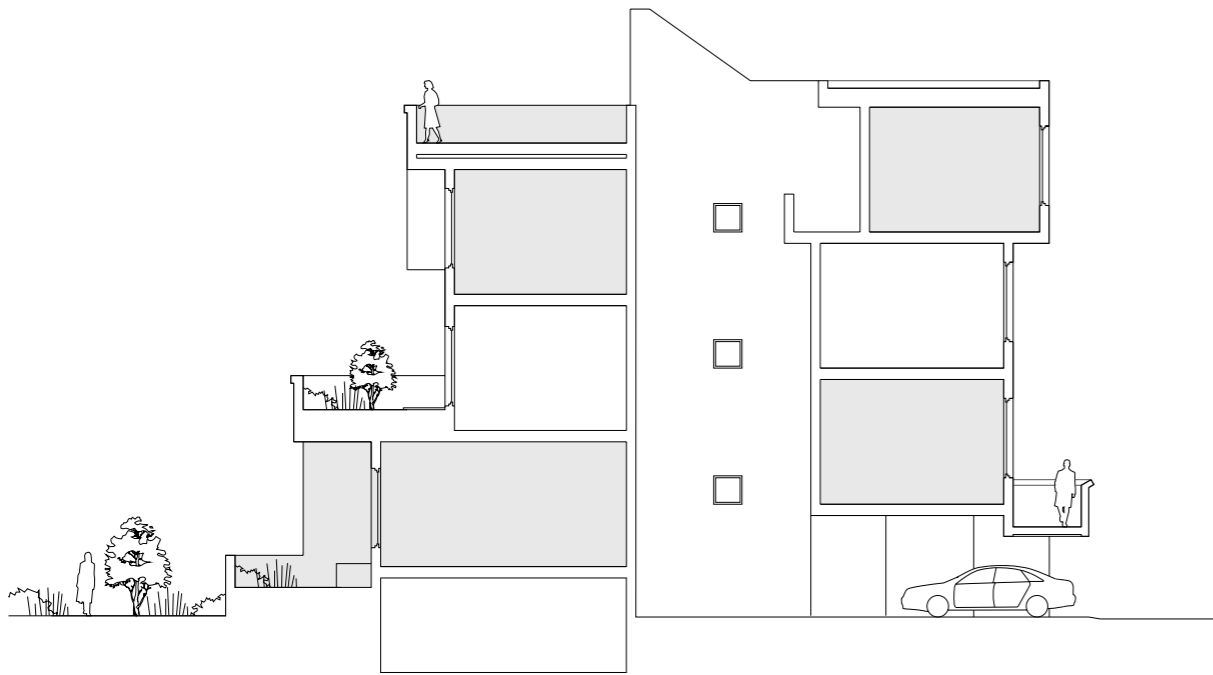
What is your favourite space inside your apartment?

My favourite space is the living room. But actually, now that you ask, I can't think of a space in my apartment that I don't like(!)

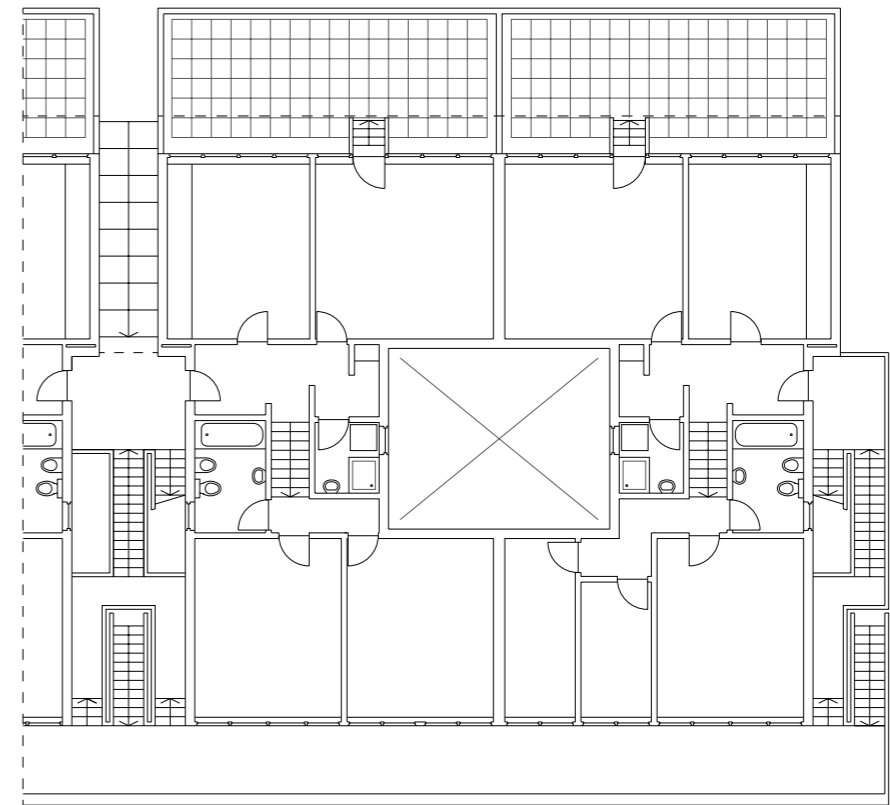
“Inside the areas for daytime and night-time activities are separated so you enter the home into the living and kitchen areas and then elsewhere the bedrooms and bathroom accessed off a separate corridor.”



Typical section 1:200



Lightwell section 1:200



Typical unit plan 1:200 Two bed family home 102.9sqm (+32.6sqm amenity)

Resources

Cook's Camden: The Making of Modern Housing

Mark Swenarton

London, Lund Humphries, 2018

Housing in London borough of Camden; Architect: S. A. G. Cook

Architectural Design, March 1972

Dartmouth Park Conservation Area Appraisal and Management Statement

Camden Council, January 2009

camden.gov.uk

Dwelling stock estimates by local authority district since 2001

Greater London Authority

(DCLG: Live tables on dwelling stock) gov.uk

Modernist estates : The buildings and the people who live in them today

Stefi Orazi

London, Frances Lincoln, 2015

Preview: Highgate New Town

Su Rogers

Architectural Review, September 1973

The Terraces of Camden: or the making of an English town: 1964-1984:

20 years of work by a London architecture department; Architects : Camden Architects Department'

Jean-Luc Arnaud + David Mangin

Architecture d'aujourd'hui, September 1984

The Whittington Estate, Camden

John Boughton, April 2015

municipaldreams.wordpress.com

7

Location	Dartmouth Park Hill, London UK
Postcode	N19 5HZ
Geo Co-ordinates	Latitude: 51.565537 Longitude: -0.141866
Years	1972 - 1979
Architect	Peter Tábori with Kenneth Adie, Camden Architects Dept.
Others/role	Sydney Cook (Head of Department at Camden)
Client	London Borough of Camden
Type	Public
Mix	Residential only
Character setting	Suburban
Area size (hectares)	2.10
Built-up extent (ground occupied by dwelling structures)	1.07 (51%)
Communal extent (ground occupied by shared spaces)	1.03 (49%)
Floors	4
Parking spaces	268
Number of dwellings	275
Dwelling range	116 one-bed , 92 two-bed, 34 three-bed, 32 four-bed, 1 five-bed
Typical dwelling size	One-bed flat 50.5sqm (+7.5sqm amenity)
Dwelling Density (hectares) dph	130

The Whittington Estate

Stepped homes shared promote

About

Situated at the point at which north London shifts from urban to suburban, The Whittington Estate is a public housing scheme created as part of the comprehensive redevelopment of the neighbourhood of Highgate New Town by The London Borough of Camden. Launched in 1966, the plan sought to replace 6.1 hectares of worn out Victorian terraced streets with homes for approximately 2,060 people.

Led by the council's young in-house architectural team and developed by architect Peter Tabori, Highgate New Town, as it was then known, was part of a programme of notable public housing schemes by a local authority which actively rejected the post-war council housing typology approach of high rise and standardised building systems in many of its schemes and instead embraced a set of nuanced low rise, high density approaches.

Conceived in five phases, the principles underlying the design of the Highgate New Town masterplan were identified early in the development process. The plan sought to avoid an enclosed arrangement and so its layout was to be permeable and open to adjacent streets, with each phase extending an overall scheme of linear terraces and spaces that referenced the traditions, scale and character of domestic street architecture in London and offered new public as well as individual private spaces.

The physical landscape of the area was a key enabler in the development of the scheme. The site's long south facing slope created the possibilities for pushing up residential densities higher than the council's original designation with blocks tightly arranged in such a way that it would not detrimentally affect access to light within dwellings or to the shared spaces between them.

Tour

The Whittington Estate as built represents phase one of the original Highgate New Town scheme. The original design also included shops, but these were later built into phase 2. Reduced budgets and shifting architectural tastes delayed phase two (known as the Dartmouth Park Hill Estate today) and when completed in 1979, it was in a very different architectural style. Later planned phases were dropped completely.

Phase one is a distinctive hill-side typology with two groups of three parallel terraces stepping down the slope of the site at half a storey each with the lowermost cluster extended westwards via a single long row or so called 'panhandle.' (Swenarton, Mark) Each group is organised around two parallel pedestrian decks with recreation and circulation space onto which front doors open. Beneath are car parks built into the slope and separating the two groups is a heavily planted linear green public play space with numerous mature trees.

Whittington's external articulation reflects the linear and stepped arrangement of dwellings with bold modular concrete balcony terraces defining units on its south face to create a continuous regular horizontal rhythm broken by party walls and open access stairs. On the north facing elevations of the blocks materials and façade handling is simple with front doors and access stairs to uppermost units projecting outwards across small front gardens onto shared decks. On the west side the site is bounded by a heavily wooded cemetery and at the road to the east there is vehicle access to the car parks, planting and regular stairs taking people up to the deck level.

Criteria

Whittington is part of a generation of post-war housing schemes that has in the past ten years gained critical acclaim for its startling modernity and bold appearance. It is therefore included here, in part for its landmark status as part of a progressive 1960s public housing programme, but more crucially for its physical attributes, accommodation handling and topological approach.

The project achieves a gross density of 130 homes per hectare, approximately six times the London average and almost three times that of the average across the London borough of Camden where it is situated. It managed this through the pursuit of a strongly articulated repeated linear forms, which responds closely to and complements its landscape setting of surrounding residential streets and homes. Located between urban and suburban conditions, this project is in a form that could be readily reapplied elsewhere and offers important lessons in maximising southern aspects and landscape opportunities.

With its terrace typology and linear street inspired layout, it also offers ways in which popular and recognisable forms associated with many British cities may be made denser and innovative in their dwelling distribution.

Initial Findings

The project encountered some difficulties in its early years and experienced some social problems as local authority maintenance and caretaking programmes were slashed and housing design preferences shifted. According to contemporary accounts, the extensive but little used car parking areas were one aspect of the project that suffered from misuse. However, this study found an environment that is well loved and used heavily.

From site observations and interview we found that Whittington was incubating social life and living out the intentions of its original design. Our respondent was enthusiastic about the communal spaces and pedestrian layout. Lifted above street level, they believed the raised decks encouraged social interaction and were ideal for children's play. Such provision is considerable at a gross density of around six times that typically found in London's nearby suburbs.

The organisation of the units afford oversight, passive observation and engagement with neighbours and passers-by. This was valued by our respondent who additionally cited the strong sense of community that defined the project regardless of tenure type or background.

Within their home, our respondent was enthusiastic about its open layout. They were able to make use of all spaces and appreciated the possibilities that the generous hallways and entrances afforded in terms of adaptation for other occasional uses. Storage and utility, in particular space for clothes washing and space for drying, was preferred over additional or duplicate bathrooms or toilet facilities.

The mature landscape of trees and planters was enjoyed by our respondent, but was a cause of concern in terms of light levels into the home especially during summer months. While shading afforded some privacy, the lower levels of the home we looked at were dark and cool. In addition, a south facing

terrace and amenity space provided as part of the bedroom level was rarely used on account of its gloomy aspect and had had simple extra fencing added to provide greater security and privacy from passers-by.

Oversight of the project was found to be good, but concern was raised about the need of caretakers and site managers to control the landscaping in a sensitive way. Our respondent was reticent on the need to retrofit homes without destroying the qualities of their spaces and character and was critical of historic and contemporary works led by site owners in this area.

Interview

Interview conducted in March 2019. Resident lives with their two children in a split level two-bed flat with south facing terraces on two floors.



7.01



7.02



7.03



7.04



7.05



7.06

Interviewer Resident 1 + 2

When you first saw the estate, what did you think about its architectural character?

It was a very long time ago now, but I thought it looked interesting and a bit like Spanish time-share or holiday apartments. They are known as 'the white flats' locally and most people seem to comment on them and like them.

Do you think it's important that new housing blends into their surroundings?

I do think scale is very important but new housing doesn't necessarily need to look the same as the surrounding architecture. It does need to work with it though, most important is how it affects the way people use the streets and external spaces and how they feel.

What do you think about the spaces on the estate? Do you use them frequently?

They're really nice and work really well. In summer lots of us have a door open and the kids are just in and out. I've been here around 20 years and until I had kids I wasn't fully aware of it. One of the fantastic things I've realised since having kids is that they all play out. My four year olds play out here by themselves, and I am in my kitchen looking out and there's a mix of ages, four up to twelve years of age. My kids say they'd rather be out there than in a garden, because there's a chance they can mix and meet each other. For them that opportunity is more exciting and they can move around (7.01).

The spaces provide a place for adults to chat as well, there is usually always someone out here sitting down (7.02). On this terrace as well, the kitchens overlook it and so you can keep an eye on it, which is intentional. The most precious thing as well, it's not gated, but it is secluded. It works. Not just designed in the 1970s, its like living in the 1970s as well(!)

Does everyone look after the spaces and things like the planters?

You can assume ownership of the spaces outside your door, while the council do the main planting. They redid it last year when they redid the drainage. People do take (the planters) on, they get gardening! There's no club as such, but people just do it and so it's well looked after. It's nice and in summer we are often out together. (7.03)

So there is a good mix of people and homes here?

The mix is really good. Here there's one to three bedroom homes and the end ones are big four-beds and it works. Most common here are double duplexes, like mine.

Does the layout of the estate create any problems in terms of navigation?

Its fine, but I think the postman has quite a job. There are lots of steps and dwellings are only grouped in twos so there is a lot for them to cover! (7.04 + 7.05)

How do you feel about the layout of your home? Is there plenty of space inside?

Here it's me and my two daughters. I think it was designed as four-person place, maybe even up to six then(?) The bedrooms are both downstairs, which is nice. The main living area works really well, with a big sliding door opens to the terrace and increases the space by up to third (7.06) Every home has a south facing balcony and

Has the original layout and its fixtures stood the test of time? Are they still working ok?

its big enough out there to get a table and chairs, which is important to me.

I think the original design was for some sort of winter garden treatment like at the Brunswick Centre (in central London), but I think the idea was cut due to budget. I think it is so much better for it not being enclosed, because it is just so lovely to have outside space. They are quite big flats inside and so you don't need more indoor living space. The other great thing as well is that upstairs is the next flat's bedrooms and so no regular footfall, so layouts between flats are buffered acoustically.

Yes, I think the plan was that living spaces and activity would be towards the south façade and so the sliding doors open up everything to that possibility. You could close it off, you have that option and that still works so it's still very flexible. The sliding doors offers more space, I never close it off, unless my kids are watching a loud film. The other good thing I like as a family, is having two doors into the kitchen. If its busy you've got a get out option(!) The kitchen plan is very efficient and you have an outlook and if people go past while you are doing things you can wave.

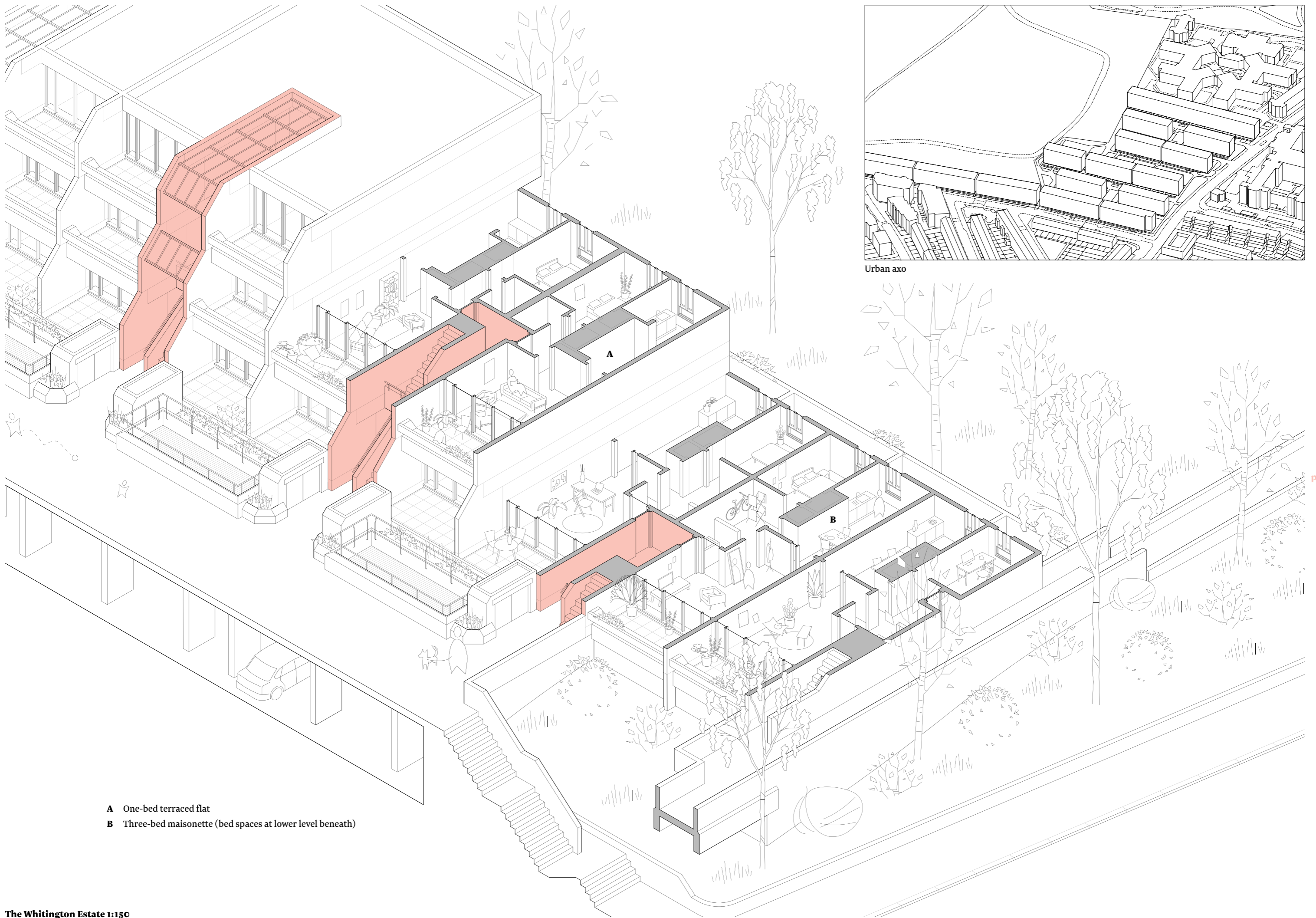
The little slit window opening to the entrance hall is nice. It means you can see who is coming home. Some units have stairs entering straight into the main living spaces. It can make it feel even bigger, but I like the wall edge. The hallways are generous with double door. Some have made them study areas or offices and so you can keep it open or close as you need it. The spaces feel like they have been designed to offer more than just circulation, you can add bookshelves or occasional chairs. Or put washing out or fix a bike there.

Is there anything about the layout you don't like?

My only bug bare now is that, yes the living spaces are south facing, but the big mature trees mean it can be quite dark at times. There is much less light here than when I first moved in. (7.07) In winter it's fine, the leaves are all off the trees and the sun is low in the sky and it comes straight inside. In summer though, it is an issue and it is not being looked after so much these days. Different tree species let in a bit more light. But downstairs at the bedrooms its fine having the darker light.

Is there much that has changed in your home since you have been here?

The council have been forced to carry out modernisation, some retrofitting, but due to asbestos they chose not to use the existing service ducts within the concrete structure and so many of the new water pipes have been surface mounted. It cost me a fortune as a leaseholder, but I pushed mine into the skirting boards at low level. In many cases I think the improvements have debased the original design intent and so there are units on the estate with plastic channels running all over the ceiling etc.... as they wouldn't touch the original spaces that were intended for this. It's a shame to do that in spaces with low ceilings.



Urban axo

- A** One-bed terraced flat
- B** Three-bed maisonette (bed spaces at lower level beneath)



7.07



7.08



7.09



7.10



7.11

“The kitchen plan is very efficient and you have an outlook and if people go past while you are doing things you can wave.”

Do you know if many people elsewhere in the estate have changed the original layouts?

No I don't think so. Not sure if it is that easy to change them. The upstairs ones are clever though, slightly smaller than this, because they step back. They have a wide master bedroom, and I know some units which have split this into two separate kids rooms by taking a partition from the double window and installing a double door. Most things in my home are original and original colour schemes etc...

Do you have enough storage?

Yes loads of storage, more now the old water boiler has gone and so more now and that is a big, big thing. It makes a huge difference.

Are there any issues with keeping your home warm in winter or cool in summer?

No, there's a bit of a draft sometimes, but the underfloor heating is good, it is really warm, so no problem. No real issue with overheating either with it being shaded in summer, though I think the units at top may suffer from this. It's a clever design, the overhang of the above unit means it shades the glazed area and avoids too much direct light at height of summer. (7.08) In winter sun is lower so you gain direct light and heat.

Do you use your terrace downstairs?

We hardly ever use it. We have foxes down here. We use it for drying clothes sometimes, but the trees make it very dark. When it was first done there was none of the fences, just a low wall. The space was a lot more communal back then and there was more light. I had wires across the terrace as it is close to the path so you would get people walking past very close. There's more privacy now, but none of them really look straight out as the block is stepped down and is low lying in the hillside.

Within your home, where do you usually dry clothing?

Your questionnaire asked what my favourite room in the house was, well it's this! (inside space under stairs) When we got the heating redone I asked for a radiator in here and it's created a massive storage room that goes under the stairs. In new houses I imagine this kind of space might be a second bathroom, but I'd much rather have this. It seems crazy not to plan for utility spaces.

Do you use the car parking areas for anything? Have these spaces caused any issues on the estate?

I do use it and it's useful for storing bikes etc out of the flat. There used to be issues with kids leaving stolen cars down there years ago, but there are security gates now, which has stopped that.

Has the atmosphere of the estate changed much since you've been here?

Everywhere felt a bit rougher then, but it varies. It always does. We've had a few problems, but there's a lot of continuity of tenure. Families stay here for a long time and I think people really enjoy it. It's quiet here too, we don't get any traffic

Are there any issues for the estate now that you are aware of?

noise. We organise things as well, there's a community rooms for meetings and at Halloween and summer there are parties, resident things. We tend to work united against the council(!) We know each well and so we do coffee mornings etc....it works. Nice mix of leaseholders and council tenants, we work together. There's even a graphic novel about the estate created by the people who live here (7.09). A few are private rent, but very few, little impact.

Do your kids like living here?

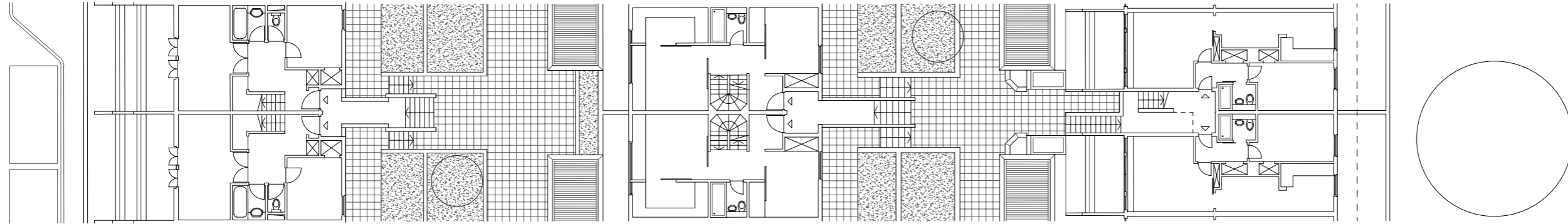
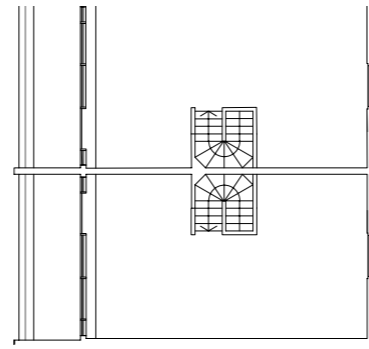
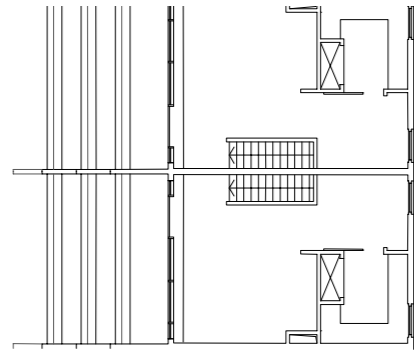
They love it. I think they'd like another bedroom, but its great. In summer they are out all the time, they play out all the time.

Do you have a least favourite space in the house?

The downstairs terrace, doesn't get any sun, but its nice to have. Not very usable because the shade, but if the landscape was managed better it might come to life more. As a smallish home, every space gets used.

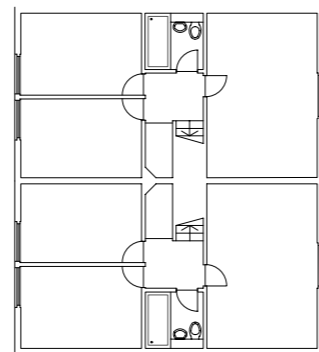
Do people hang out on their stoops much?

Yes, people do. Especially on the upper levels where they project out more, people bring out chairs and I've seen paddling pools on them which is quite nice. (7.10) Our deck is well used, all of them are very active spaces. The one's lower down with larger families are livelier. Lots of kids playing and in the morning when people leave for work together and pass through you see lots of people and also people coming too and from school (7.11). The landscapes are unique, they may look the same, but they're quite distinct. Some used to have play equipment. Some was removed and many are quite plain, they did something new with a landscape designer and its been a disaster, no one uses it. Would have been better to keep it a plain green. Kids make their own games easily. Like anywhere they are complaints about anti-social behaviour, but older kids don't tend to hang around on the decks. They move away and use the stairs out of sight. It helps people know each other. Also, the caretaker lives on site, so it's well looked after.



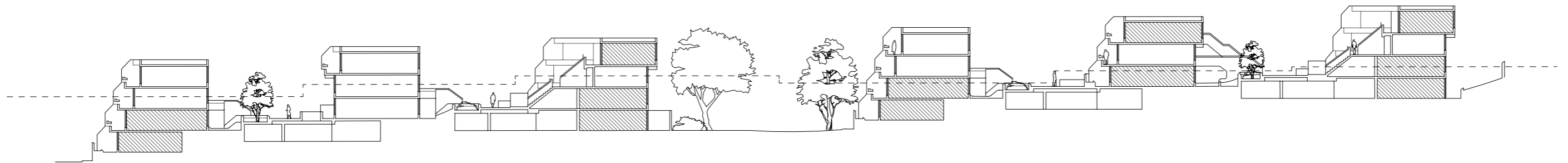
Two-bed maisonette
89.4sqm (+19.8sqm amenity)

One-bed terraced flat
50.5sqm (+7.5sqm amenity)



Four-bed town house
154.6sqm (+10sqm amenity)

Typical unit plans 1:250



Site section 1:500

Resources

Archive of the month: King Street redevelopment

Robin Payne

www.Jesus.cam.ac.uk

Cambridge City Council Archives

www.cambridge.gov.uk

Housing in Wood Green, London, arranged as two rows of terraced houses facing each other by Ivor Smith & Cailey Hutton

Baumeister, vol. 74 December 1977

King Street, Cambridge

Peter Paulhans

Baumeister, vol. 70 January 1973

King Street Housing

www.aldwyck.co.uk

My Kind of Town, Cambridge.

Ivor Smith

Architecture Today, February 2015

Sectional interests: Ivor Smith & Cailey Hutton Architects

Building, 08 February 1974

The King Street Run

The Architects Journal, 07 July 1965

8

Location	King Street, Cambridge UK
Postcode	CB1 1AH
Geo Co-ordinates	Latitude: 52.207549 / Longitude: 0.123111
Years	1965 - 1978
Architect	Ivor Smith, Cailey Hutton
Others	Morton Lupton & Smith
Client	King Street Housing Society Ltd
Type	Intermediate
Mix	Residential + commercial
Character setting	Urban
Area size (hectares)	0.82 (Phase 1 = 0.34 / Ph2 = 0.48)
Built-up extent (ground occupied by dwelling structures)	0.64 (78%)
Communal extent (ground occupied by shared spaces)	0.18 (22%)
Floors	2 to 4
Parking spaces	115
Number of dwellings	115 (Phase 1 = 46 / Phase 2 = 69)
Dwelling range	21 studios, 31 one-bed, 46 two-bed, 13 three-bed)
Typical dwelling size	Two-bed flat 57.1sqm (+6.5sqm amenity)
Dwelling Density (hectares) dph	140 (Phase 1 = 135 / Phase 2 = 143)

High Street Oasis

About

Malcolm and Manor Place were conceived in the early 1960s as part of the remaking of Cambridge's King Street, a historic 18th century street of shops, cottages and pubs. The city designated the area for modernisation in its post-war plan, but it was Jesus College who executed the resulting buildings. The college embraced the planning ambition and developed its holdings along the street, setting up a housing association King Street Housing Society Ltd upon architect Ivor Smith's suggestion to deliver and manage the project.

The original design of 1965 was for a series of linear blocks to be delivered in four phases that started on the street edge and stepped back at right angles in a geometric composition that created a series of quadrants, following the city's collegiate tradition, enclosed at the rear and open to the street with shops. The plan proposed 140 flats stepping up to twice the height of local buildings to four to five storeys to offer new dwellings views across to the nearby Christ's Piece and Fellows Green. Elsewhere was a large multi-storey car park at one end.

The original design came in for heavy criticism, notably for its wide and diffuse spaces, its lack of street character and heavy handling of car parking. The response was a complete redesign after 1965 that saw the strict linear geometries and wide-open spaces abandoned and replaced by smaller, compact arrangements that embraced low rise, high density design principles that the architects later developed at other sites during the 1970s, notably at Wood Green for the London Borough of Haringey.

Tour

As built, Malcolm and Manor Places represents phases one and two respectively of the King Street project. The scheme was revised to three phases, but the final phase never materialised.

Phase one, completed in 1972, is comprised of two linear brick blocks; one lining the street with an arcade of shops at ground level with flats above and another residential block set back from the street and accessed via a raised pedestrian deck.

The deck connects both structures and conceals limited parking and vehicular access for commercial deliveries beneath.

On top of the deck is a terrace reached via three public stairs entered from the street between various stepped or ramped breaks in the blocks. It is from these that residents access the main residential block that steps up in stages from the deck.

The rear block is articulated via a bold horizontal arrangement of south facing terraces broken by open access stairs. At the rear and sides, simple brick facades and small windows offer a more utilitarian look.

Phase two, completed 1978, incorporates the same basic layout of two parallel blocks, one street, one at the hinterland. However, there are distinct differences both in terms of programme and character.

Phase two contains no commercial use and instead, small townhouses line the street in a terrace and behind it a planted garden is provided in place of a wholly paved deck. This garden rises to the main residential accommodation block and this steps up above car parking and then up in yet another sequence of terraces with larger units towards the ground and smaller units to the top.

The character of phase two is more nuanced with character details, an undulating street frontage, implied pitched roofline and shallow dormers.

Criteria

The two phases are recognised here together as outstanding examples of multi-functioning urban typologies that have been sensitively worked into an existing townscape to create a high density of homes and a range of commercial and social spaces.

This study zooms in on Phase one as it is here that residential and commercial use has been integrated fully, however both are discussed together as they offer valuable lessons in working in sensitive environments and managing the transitional relationship between a high street space and its hinterland.

Together they provide a gross density of 140 units per hectare, which is around eleven times the average dwelling density across the city of Cambridge.

Architect Ivor Smith is best known for his 1950s Park Hill scheme in Sheffield with its 'streets in the sky' design. Malcolm and Manor Place are therefore significant in marking a shift in practice towards a low rise, high density genre and the chosen strategy for the site.

Initial Findings

Both phases of the scheme are well integrated into the life of Cambridge city centre. From our site analysis, we found shop units fully let and, from the interview that follows, that dwellings in the project were in high demand. However, we also found that its central location was a key factor in some of the problems that the development now encounters.

King Street is a popular social space with many pubs and is part of the life of the centre of town. Our respondent highlighted the issues that the developments overly permeable layout inadvertently encouraged. To prevent misuse and loitering, many of the access points into the development, particularly in phase two, have been sealed via secure gates. At phase one, pedestrian access to the upper deck via stairs remains open, but access to the rear of commercial units and spaces beneath are now heavily secured and some car parking spaces has been converted into commercial store suggesting low demand for vehicle use.

Our respondent supported the importance of the step back arrangement of the scheme, adding that in their view it ensured homes were secluded and protected from noise. However, they had sympathy for street side dwellings in both phases and from our site analysis it was obvious that road traffic noise and its use as a bus route made the street edge challenging especially in phase two where dwellings faced onto it at ground floor. While security was deemed important, our respondent did not wish to see this dominate the development. They enjoyed the open and easy access where still available as it promoted convenience in coming and going.

Landscaping in phase two was well cared for and in our interview it was flagged many times in supporting an 'oasis' quality of shared spaces and proactively softening sometimes hard architecture, despite the use of extensive local brick colours. Our respondent provided evidence that green spaces in phase two were

regularly used, but not in any organised way. In comparison we found that an off-the-shelf pergola recently installed on the deck at phase one was failing to encourage people out onto it and that there was little evidence of regular use.

Within the dwelling located at the uppermost tier of phase two, our respondent supported one of the designer's original intentions and cited the rooftop view of Christ's Piece as one of their favourite things about their home. They also enjoyed the privacy and space of their balcony terrace and prioritised this outdoor amenity over indoor space given a choice between the two. Storage was a key feature of the discussion and while the unit was one of the smallest, its storage and layout was deemed generous. Front doors to homes open onto an open stair, our respondent did not view any lack of additional security at this point as a problem and at the landing immediately in front of their home they liaised with their neighbour on bringing it to life with plants though was critical of its tendency to overheat owing to the winter garden roof.

Interview

Interview conducted in March 2019. Respondent is a leaseholder living alone in one-bed third floor flat at top of second phase of project. They have lived on the project for over 25 years.



8.01



8.02



8.03



8.04



8.05

Interviewer Resident

Did you know anything about the project before living here?

A friend told me about it and encouraged me to take a look at hers. The design wasn't hugely important to me, I just needed a home, but I thought it was good. It's not the most beautiful structure in the world, but I've seen worse. I am sure its design has a lot to do with the nearby Denys Lasdun building (New Court Christ's College). They call it brutalism now don't they? I think Mister Lasdun has a lot to answer for, its not terribly pretty is it?

Do you like the colour and materials of the development? Do you think future developments should use the same?

When it was first built people referred to it as 'those nice brown flats.' I think both phases fit into the street reasonably well, but I prefer mine (phase 2) (8.01). On other nearby blocks they have timber balconies. I would have liked that. It would have made the blocks slightly less hard. If I had a criticism of them it would be that. There's lots of construction in Cambridge now. I would be happy if they didn't do too much that is different. In a small road like this it would be startling, but my development isn't too jarring, it maintains a balance.

What's it like living immediately behind a high street in a city centre?

It's hugely convenient. I'm retired now, but I was always able to walk to work and that's ideal. But the central location has its problems. In the past 4-5 years we've had issues with rough sleepers and the development has lots of nooks and crannies to hide in. The older block only has two entrances (8.02), ours has many more and they have now installed permanent security gates at the entrances and the under-croft areas at Malcolm Place. But one doesn't want the whole area becoming gated and locked away. It's a very difficult balance in a city like this, trying to keep its character and its history while dealing with modern day issues. When I first moved in, we didn't have any of those issues.

Does the type of neighbouring commercial businesses create any issues?

Yes, the commercial businesses attract more traffic and the pubs can be noisy. However, some businesses which have closed in recent years, such as a betting shop have been replaced with tea/coffee shops which we welcome (8.03).

What do friends and family think when they visit your home?

They love it. When they come they say it's just like a little holiday flat, they say it's like I'm living in Spain with my little balcony. It seems like something of a novelty to them, quite untypical of the area.

Does your flat come with parking?

No. The housing society runs a waiting list and residents can apply to rent a parking space on an annual basis. Some spaces in the car park are let by another organisation on behalf of the ground landlord Jesus College There is also a bike store in the underground car park that residents can use.

Do you like being set back from the street?

Yes I prefer it as I cannot hear traffic noise. It is more of an issue for the flats at the front of the site but since new double-glazed windows were installed and buses were re-routed away from the lower end of King Street the situation has improved.

Do you feel that there is a sense of community between the two phases?

I have lived here a long time so I know people from both sites, but tenancies change more frequently these days so there is less of a sense of community than there used to be.

Do residents assume the lead on any aspect of the development beyond your own home?

Our residents association is not as active as it once was, but we have had some success in the past when residents have come together to object to planning applications which could have had an adverse effect on the area and also in the matter of the re-routing of buses mentioned earlier.

Does the postman and other services find your flat easily?

Oh yes, no trouble. Never an issue. The only time it comes up is when friends say 'oh I never knew you were here.' People know King street as commercial so they don't expect to find a block of flats tucked away behind it.

Do you have a preferred route into the project and your home?

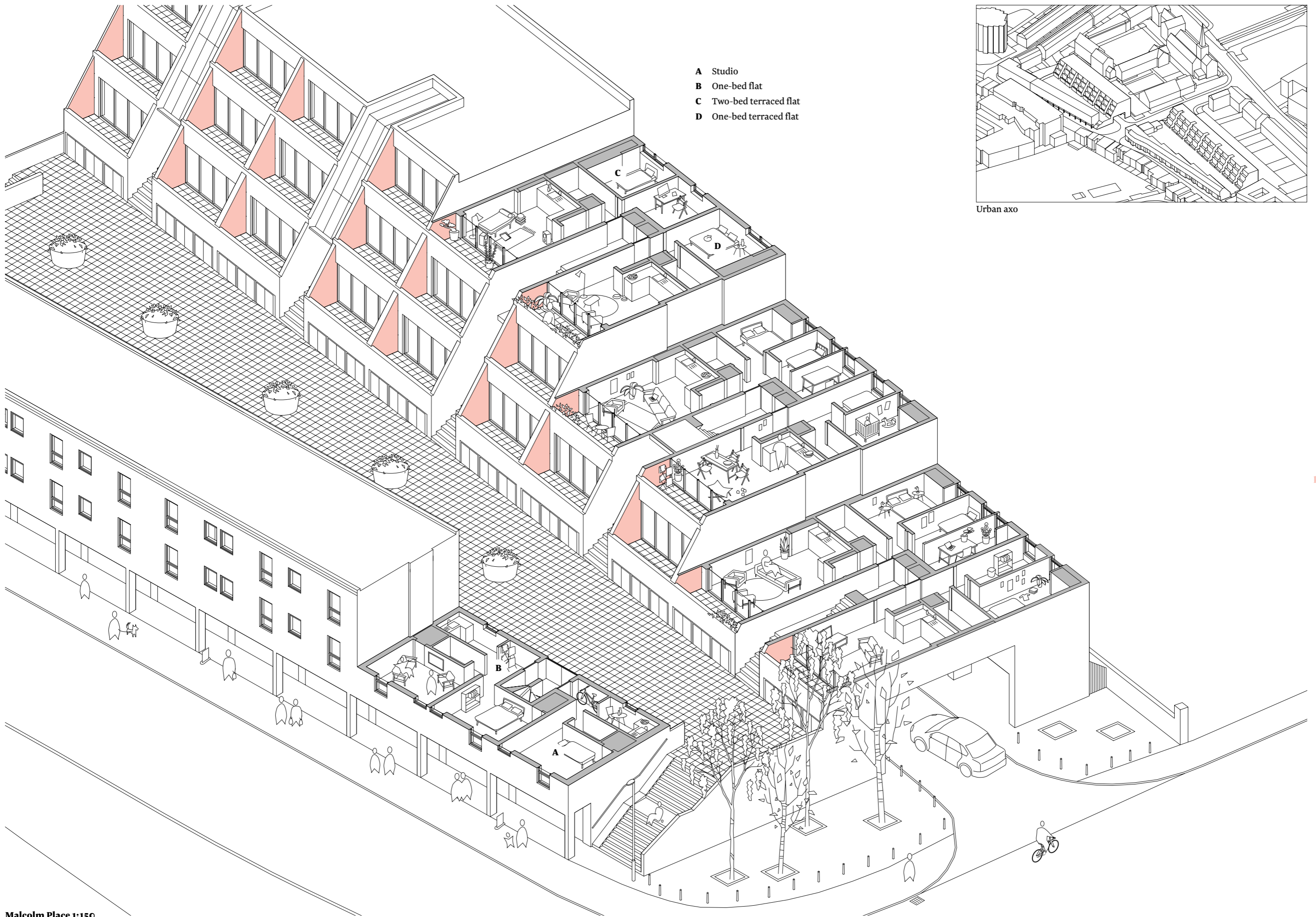
If I am carrying shopping and don't want to fiddle with the locked gate, I will use the rear entrance. (8.04). When railings and signs started going up people said it was starting to look like a prison. We have had free runners as well, but it was a nuisance and it can cause damage. The flats are getting old now, they can't be doing with people bouncing around on them.

Is the dense layout of the homes ok from your point of view?

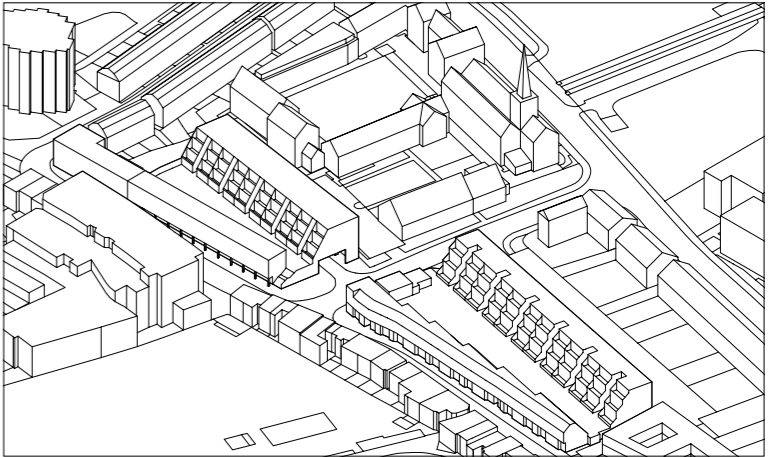
Yes it is fine for me. In our block pairs of balconies adjoin (8.05), but this would only be a problem if anyone had a nuisance neighbour. In my time here this has not been the case.

Are you allowed to personalise any of the communal spaces?

We're permitted to have planting on the balconies as long as pots on the ledges are secured. Some residents had plants which encroached on to the communal garden areas and were asked to scale this back as there was risk to access and movement. The crucial thing in shared spaces is doing what is reasonable and not pushing it too much.



- A Studio
- B One-bed flat
- C Two-bed terraced flat
- D One-bed terraced flat



Urban axo



8.06



8.07



8.08



8.09

“It’s like a little oasis. It’s in the middle of a city, but you wouldn’t think it was. I meet and talk to people here, especially since I retired ... I feel very happy here.”

What do you feel about the shared decks and garden spaces?

It is lovely. Our caretakers maintain the communal spaces well. Residents without balconies tend to use the garden area more than others. Sometimes the housing association will erect a marquee on the lawn to encourage a resident get together.

It’s like a little oasis. It’s in the middle of a city, but you wouldn’t think it was. I meet and talk to people here, especially since I retired. I wander out in my slippers to take out my recycling. I feel very happy here. I am not from the city, but this place and my flat made me feel I could live here happily and always have done.

There are differences in the type of landscape between the two phases, is this noted by any residents?

Yes those in phase 1 are quite jealous of our garden area here. They have a pergola on the deck at their site but I don’t think much more can be added. But they do have external storage - little lockable units beneath the flats which are really useful (8.06) the one thing I lack in my home. I think it’s important to have this kind of space. It could be difficult if for example you had a pram and have to pull it up 3 floors.

Do you feel at night this is a safe space?

Yes. We have had the odd issue with rough sleepers but the area is well lit and the problems are more to do with the mess they leave behind them.

Who gardens and can you influence what is put out here?

Caretakers do the gardening and then once week they will clean and sweep the space and with it the stairs. We used to be able to discuss the plating when we had an active residents association, but that folded up. A lot now depends on what they can afford to do. People use the areas also as cycling storage, which I suppose is ok, but at one point it stated to take over the walkways. Every now and then there will be a purge, lots of people move on and leave their bikes behind. The space is good, the more furniture and things you add to a space the more cluttered it becomes.

What do you think on the entrance sequence to your home?

They’re fine, the materials have been done well. One of the flaws of the stairs areas is the covered stairwells between the blocks of flats, it can feel like a greenhouse, especially last year when it was so hot (8.07) One of the other big problems is cleaning. There’s no mechanism for reaching it. Its only when there is a really good rainstorm that it’s cleaned. We can use the areas for some small plants. My next door neighbour has green fingers so she looks after our shared landing, which I am very happy about. In winter it is still quite warm and can feel like a little summer house at times. (8.14)

What do you think about the layout inside your home?

I have a hugely generous hallway, which is great, but this makes for a smaller living room. I have a one bed, which is fine for me on my own. I have lots of cupboard space which is important. These days storage is overlooked in new developments. It’s SO important. The piece de resistance is in the bedroom where I have a big walk in cupboard/wardrobe, it’s a real plus. I love it. If I ever move, I will really miss this.

Do you enjoy the open plan living space?

It wasn’t something I was used to, I came from a traditional flat with separate rooms, but I love it. I embraced it straight away and its everywhere now. If I was to move now I would probably opt for something that was similarly open in layout. (8.08) Ideally I’d like more living space, but you adapt to what you’ve got. I entertain and have friends round, its easy with the dining space, but I do struggle if I ever have more than 4 people round. I could do 6 at a push. I once had a sofa bed here so people could stay.

Have you had to change anything since you’ve been here?

Yes, I have changed the bathroom and kitchen. The interiors provided by the housing association originally were serviceable, but pretty basic white hygienic units etc.....but some people have still got them so highly serviceable. I redesigned mine to move the sink so I could hide the washing machine from view.

Do you use your outdoor space regularly?

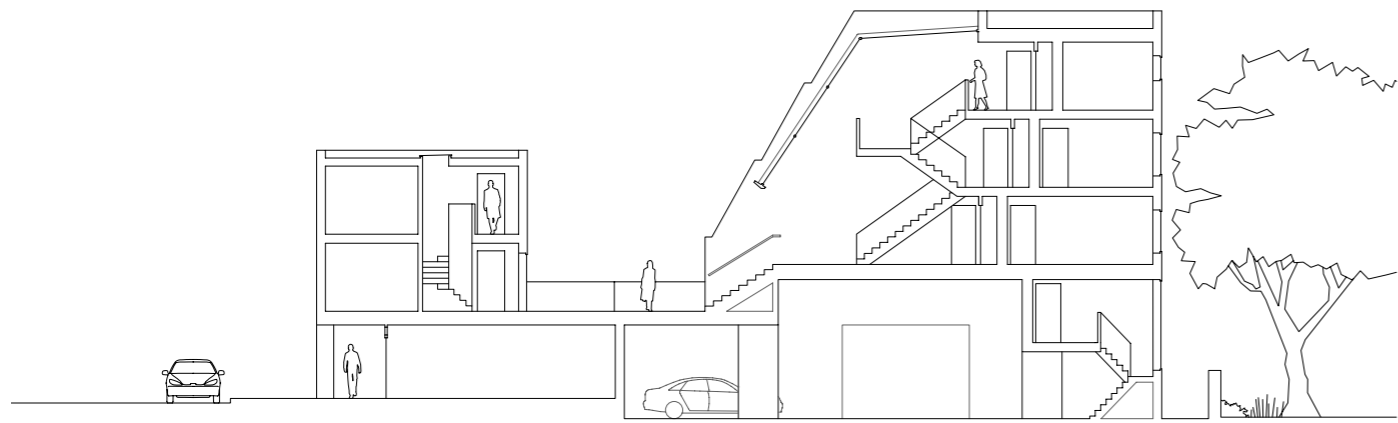
Yes. I really value it as an amenity. I can grow plants and also use it as a seating area. If I was asked to swop flats for a bigger living room, I’d stick with the larger balcony. It is really lovely to have that outside space.(8.09) I put decking down on top of the original asphalt, others have put down paving. The windows and doors were upgraded a few years ago, the original external wooden frames and panelling has been replaced by grey sheet aluminium. I miss them. They were lovely, but required a lot of maintenance.

Has living here shaped you views on modern architecture?

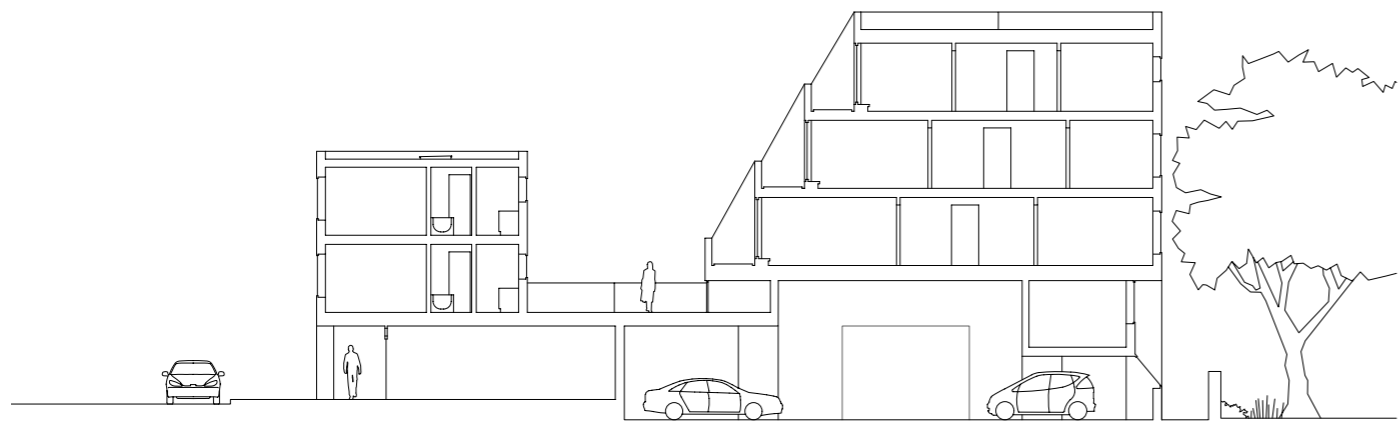
I don’t think people are particularly critical of the architecture, most were on waiting lists and so didn’t specifically choose it on looks or design. It works well. Although sound insulation is poor. You can hear things through the blocks, but if I was to look for anything else in future I would probably go for something similar. The layout is good, we don’t overlook each other here and that that means a lot to me. Privacy is important.

Has living here shaped you views on modern architecture?

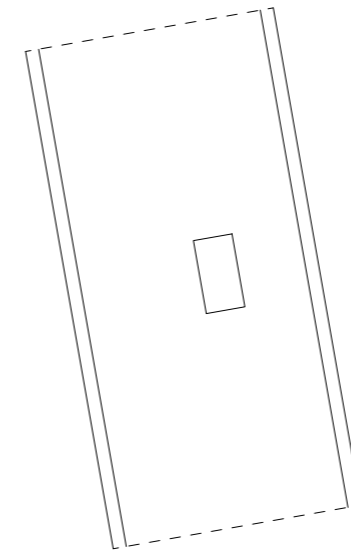
I love being able to sit in the living room and look out of the floor to ceiling windows across the balcony at the trees in the park across the road on the other side of King Street. If I sit low enough I can block out the roof line opposite and I am in the countryside!



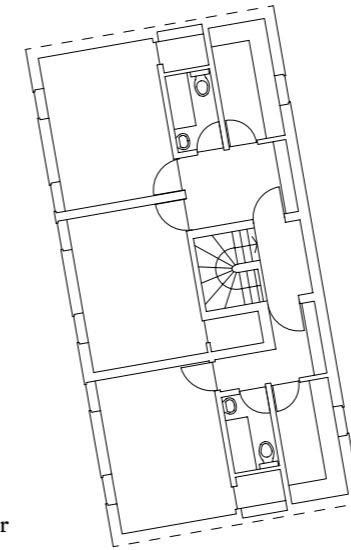
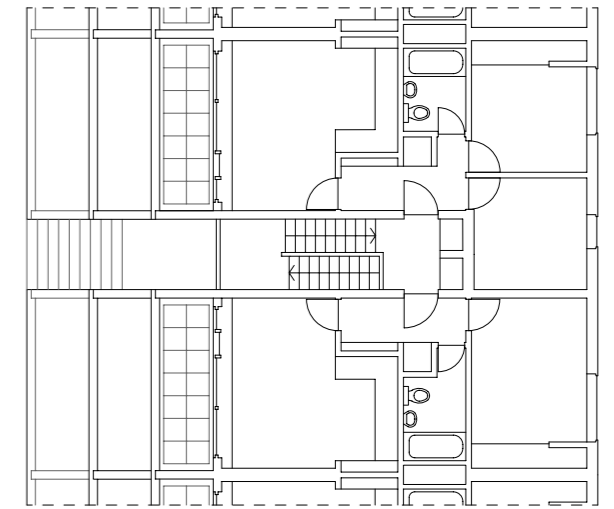
Entrance section 1:250



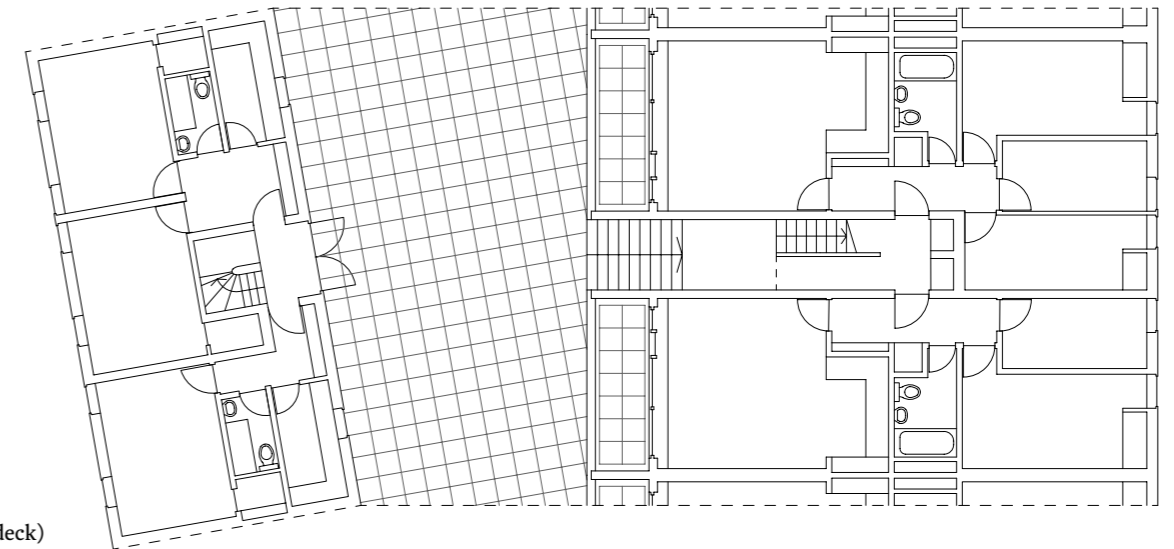
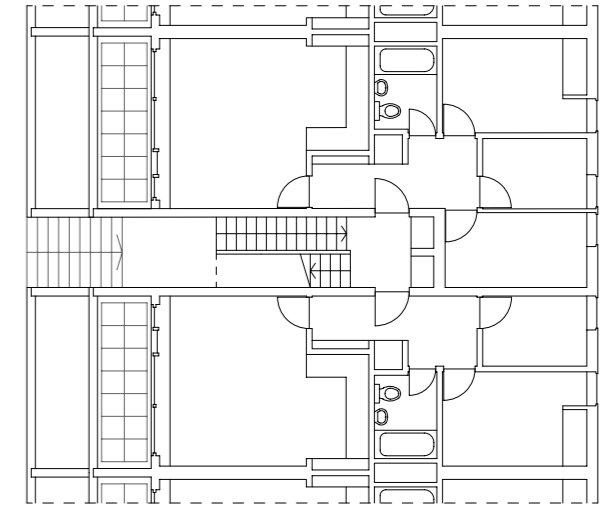
Typical section 1:250



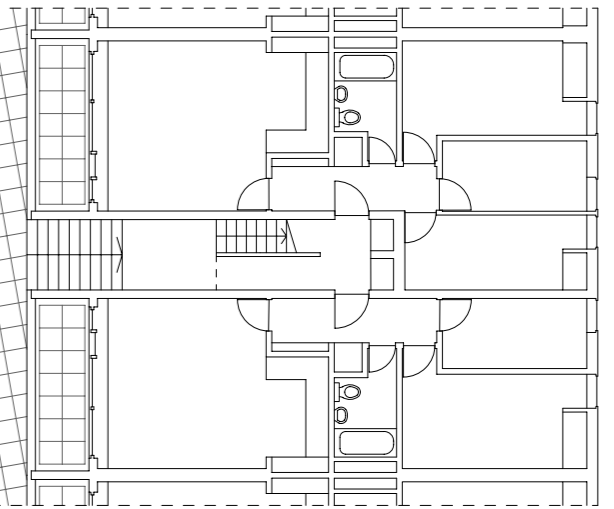
Third floor



Second Floor



First floor (deck)



Resources

An interim report on the work of Darbourne & Darke

A handbook to an exhibition at the Royal Institute of Architects Heinz Gallery
RIBA Publishing Ltd, London 1977

Building Revisited, Lillington Street, Pimlico

Peter Collymore
The Architect's Journal, 01 December 1976

Conservation Area Audit 49 Lillington and Longmoore Gardens

Westminster City Council
www.transact.westminster.gov.uk

High Density in Pimlico

Official Architecture & Planning, November 1969

High Density without crowding; Architects: Darbourne & Darke

Building Design, March 1975

Housing Pimlico London. Architects: Darbourne & Darke

Architectural Review, April 1969

Lillington Street housing development, stage 3. By Darbourne & Darke

Sam Lambert
Architects' Journal, 12 January 1972

Lillington Street 1 + 3 Housing scheme, Westminster. By Darbourne & Darke

Architects' Journal, 01 October 1969

The Architecture of Darbourne & Darke: Housing at Marquess Road

Architect & Builder, March 1980

The Lillington Gardens Estate, Westminster

John Boughton, July 2014
www.municipaldreams.wordpress.com

Westminster Housing Competition, Lillington Street London

The Architect's Journal, 02 Aug 1961

9

Location	Pimlico, Westminster, London, UK
Postcode	SW1V 2TH
Geo Co-ordinates	Latitude: 51.490015 / Longitude: -0.133837
Years	1968-1972
Architect	Darbourne and Darke
Others	Hugh Chate Associates
Client	City of Westminster
Type	Public
Mix	Residential + Community + Commercial
Character setting	Urban
Area size (hectares)	1.18
Built-up extent (ground occupied by dwelling structures)	0.82 (69%)
Communal extent (ground occupied by shared spaces)	0.36 (31%)
Floors	3 to 5
Parking spaces	110
Number of dwellings	284
Dwelling range	170 apartments (studio + one-bed) 114 family homes (two-bed + three-bed)
Typical dwelling size	Three-bed scissor home 87.4sqm (+30.4sqm amenity)
Dwelling Density (hectares) dph	240

Lillington
Gardens
Phase 3

Interlocking “scissor” homes

About

Developed in three phases between 1964 and 1972, the Lillington Gardens Estate is one of the largest public housing projects in Central London and one of the most important in terms of developing an alternative to tall blocks of flats, an approach that helped reshape the housing debate in the UK.

Led by the City of Westminster, the project emerged as part of an area wide strategy of housing renewal in Pimlico, an area dominated by large poorly maintained Victorian townhouses most of which had been subdivided into flats at the start of the 20th century. The estate's radical design was arrived at following an open competition that received 68 entries and a brief that originally set an overall density of 200 units per acre (500 dph) across a 9.5 acre (3.84 ha) site with a mix of dwelling types, a range of commercial uses, elderly accommodation and 350 car parking spaces.

In contrast with many submissions that relied upon orthogonal arrangements of towers and slab blocks to achieve the required numbers, the winning scheme by a 26-year-old John William Darbourne, ignored high rise completely and made 'an asset of irregularity' (The Architect's Journal, 02 Aug 1961). In an original move, Darbourne created an informal arrangement of undulating and staggered linear blocks of between four and eight storeys arranged around interlocking green precincts completed in warm red palette of bricks inspired by the site's retained 19th century gothic church.

Within the blocks a high density of living spaces is achieved through a mixed vertical programme of innovative scissor arrangements and split-level dwellings that step forward and back to create a mix of public decks and private outdoor spaces.

Tour

Each of Lillington's three phases has a differing character with phases one and two containing taller and longer blocks comprising large numbers of one and two bed flats rising to a height of six-eight storeys. Following discussions with future residents, designs for phase three were modified to provide more family sized homes and it is this phase of the estate that this research looks at.

Phase three was started in 1968 and completed in 1972. The architectural character differs from earlier phases with four linear blocks organised around a courtyard and stand-alone block rising to four-five storeys and is characterised by matching red brick and slate mansards on upper storeys which is visually intended to bring down its height.

Within the four blocks, dwellings are organised into two main elements. From ground level there are interlocking two-bed and three-bed 'scissor' family units over three floors with their own front doors accessible through independent private walled gardens.

Above are flats that are accessed separately and organised via open-air roof streets that run along the tops of the blocks. From the roof streets dwellings are accessed via own front doors and variously head up or down to create a mix of studio and one-bed dwellings originally aimed at elderly couples as well as single persons.

Along the ground floor of the south west block facing out to the street is a parade of shops and a former library, while at the heart of the courtyard is an undulating landscape with mature trees and a stand-alone block of scissor type houses.

Open to the public, the schemes generous communal spaces feature a mix of lawns, paved seating areas and walkways that pass through and connect up routes between dwellings, access stairs and the wider neighbourhood.

Criteria

Lillington Gardens is a seminal project that refocussed the debate around housing layout in the UK and had a strong influence across Europe.

This study chooses to focus on phase three only, rather than the estate as a whole, in order to break down its size and complexity, but also in order to zoom in on building types that have provided larger family dwellings and gardens as well as small flats in low or medium lying arrangements below five storeys.

As built, phase three provides 284 dwellings at a density of 240 dwellings per hectare making it the densest scheme in this study by far and about four times the average density of the centrally located borough of Westminster where it is located. So, by London terms, even at the heart of the city, it is exceptional.

In strict terms, the project pushes this study's agreed criteria. However, despite this, the scheme's intentional dwelling mix, complexity and sheer variety of types together pecess valuable lessons for mixed suburban areas and intentional multi-generational living.

Initial Findings

From our site analysis and discussions we found a project where there were numerous issues arising from its complexed internal design, layout and courtyard neighbourhood scale, but it was well loved and appreciated. As part of our research we spoke to caretakers, social workers as well as residents. Uniting all was a feeling that the layout of the estate contained too many narrow walkways, stairs and access routes that could encourage anti-social behaviour and we found evidence of this on visits. However, we also found that the estate's possibilities for pedestrian movement was widely appreciated and that people overwhelmingly felt secure and safe in the 'oasis' environment.

We interviewed two residents living in two and three-bed dwellings and both cited the project's humane scale, design and material quality as assets and placed high value on its sequence of quiet green spaces. However, there was little use of communal spaces, with emphasis instead placed upon private amenity. At ground level, the project is dominated by garden walls and gates which mark the main entrances to all family dwellings. We found that gardens were well used with a mix of seating and dining areas, storage units, play and fitness equipment and plants and flowers, especially in those that could take advantage of southern or westerly aspects. The variety of plants across the project is a key feature, with many residents using this to actively create enclosure or extending upwards for added security and privacy from adjacent public walkways.

Both our respondents valued the internal space standards of their homes and generosity of storage facilities, but both had made physical changes in order to create larger and more open-plan spaces. We heard in both cases that some storage provision had compromised a sense of openness inside the dwelling. One of our respondents living in a single aspect

dwelling confirmed that, while their kitchen was flooded with light, other living areas were left dark and so lights were switched on even on a sunny day.

In the interview that follows, our second respondent living in a three-floor scissor family unit, highlighted the unintended social consequences of the estate's interlocking and alternating organisation of larger dwellings that puts noisy spaces next to quiet rooms and vice versa and so creates possible areas for conflict. They suggested also that the estates design complexity was a contributing factor in maintenance issues with knowledge and expertise of it an absolute requirement for successful management and future proofing.

Elsewhere, we heard that flats at the top of the blocks, accessible via stairs and lifts and 'Roof streets', originally intended for elderly residents had in recent years switched over to places for single young people with many short-term lets. We heard that the location at the roof had proved difficult for elderly people and was regarded as remote and isolating. From our site analysis in the roof streets we found contrasting conditions with some areas empty and others full of healthy potted plants and outdoor tables.

Interview

**Interview conducted in June 2019.
Respondent lives in three bedroom
dwelling with scissor arrangement
over three floors with a garden.**



9.01



9.02



9.03



9.04



9.05

Interviewer Resident

How did you come to live on this estate?

I previously lived in George Eliot House at the north end of the estate (phase four). I was renting with a friend. I didn't want to leave Pimlico so looked at what was affordable in the area and ex-council properties are well designed for living in, have a lot of storage space with decent room proportions. There are a lot of Georgian and Victorian conversions in this area that don't work. They have zero storage because it was assumed that you have floors above or below for that.

Did the architectural character of the estate have any influence on your choosing to live here?

No, not especially, at first I was just looking at what was available. But once I got to know the estate and looked around I really liked that there was so much greenery and that for central London it was pretty quiet, you don't hear roads here. It felt like a bit of an oasis and yet incredible close to the centre of town and by the tube. It also felt safe. I live by myself and therefore feeling safe on the way home etc... is quite important to me.

Did you know anything about the architects behind the design of the estate and that it is a listed monument?

I know now it was Darbourne and Darke, but I don't know a great deal more other than that and that the church (St James the Less, 1863) sort of picks it up in terms of inspiration. I quite like the brick. The advantage of the listing is that you keep the cohesion of the design and that's nice (9.01). The weird thing is the brick they've used isn't great with water. It cracks as its quite soft, but now it's listed they have to keep replacing it with the same material that isn't brilliant.

What do you think about the greenery of the estate?

There's an emphasis on outdoor space and you see the challenges and compromises associated with what they've had to do to give everyone a bit of space. Everywhere there are gardens and places to go and be. So those who are not fortunate to have something of their own there is quite a lot. Compared to (nearby) Churchill Gardens, it's a much nicer visually. It all feels like a continuous cohesive landscape in its own right (9.02).

Since you've lived here, have your feelings about the estate changed at all?

When I first moved in there weren't any gates, but it's never felt like an edgy place (fig. 9.03). It still doesn't feel dangerous, night and day coming home isn't a problem. However, the short term let phenomenon has made a difference and it has very negatively impacted the area. A few doors away there are regular short term lets, because this is central London we have people here for weekends who sit out in the gardens until early in the morning and the noise keeps us all awake. Noise is problematic in such small and quiet precincts like this (9.04) It reverberates. And in summer it can be an issue as people have their windows open to keep their homes cool.

Are the shared spaces beyond your home well looked after?

Generally, yes. We once had really good regular gardeners that I came to know, but (the management) outsourced that. Its important to have some sort of relationship with people working on an estate like this. We'd previously won gardening awards, but now there isn't the same care. They're constantly changing who manages the estate and they're more remote then they used to be and so it can be difficult to get things done.

In terms of the longer-term permanent residents, would you say you were a close community here?

It's changed since I've been here. Many longer-term residents have moved on and many properties are now managed by rental agencies, I think that's where it's going wrong. But a lot is okay, those neighbours I still know are an absolute pleasure and we have a good relationship. There are a few new larger families so we'll see how that goes(!)

Do residents get involved in the upkeep of the spaces at all or organise events?

I guess there must be a resident's association, but I'm not involved. There is a community hall further up on the estate. I think I've been there to give blood rather than any community activities, but my older neighbours used to go dancing there on Saturday night. There were live bands and music and they enjoyed that very much. I think the community is less cohesive now. It's strange, we are very intertwined in terms of layout and have really quite beautiful communal spaces, but I don't think we do enough with that. I don't even know the people around that square opposite .

Are there any issues arising from the permeable layout of the estate with its network of walkways?

Yes. Nearby there are a set of steps here where people tend to come in from the street and sit on and we've had some issues with rough sleepers in the garden . It's difficult to strike a balance between the openness and insuring it doesn't become a magnet for anti-social behaviour or vulnerable people. My neighbours and I go back and forth on whether there should be more benches the open spaces (9.05). Congregation can be a very positive thing and you can have a good chat with neighbours (9.06).

In terms of the block itself have there been any problems in terms of maintenance for you?

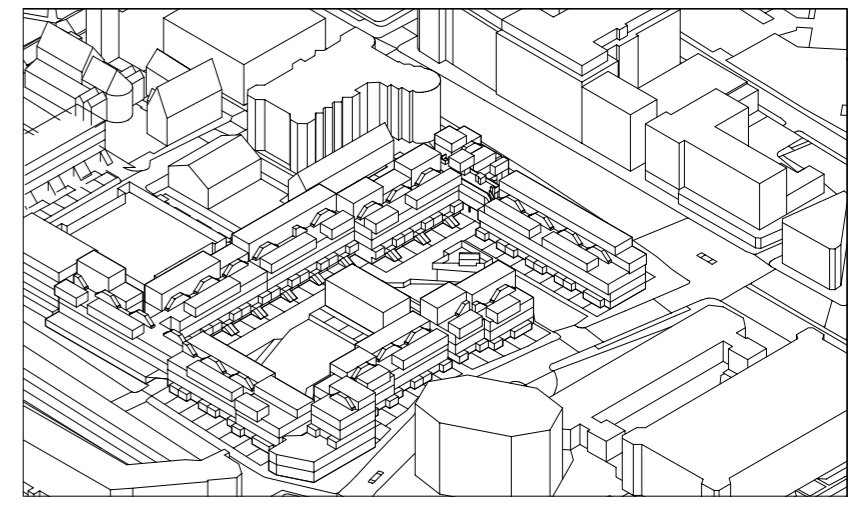
Yes! (The management) replaced the flat roof of the block about four or five years ago and as leaseholders we're still disputing the costs for this work. Their contractors didn't understand that there's no external guttering here only internal guttering, so they blocked all of those drains on their first day and it led to flooding, delayed works and damaged people's properties.

These blocks are not put together in the most intuitive way. It's not typical (9.07). My neighbour is good, he's very very handy and he understands how it's put together better than any of the council contractors who don't understand the intricacies. He often goes around and says to people, if you're having difficulties just let me know! He worries that the skills that enable people to understand how it works are being lost over time.





- A Studios (on elevated roof street)
- B Studio (accessed from roof street above)
- C Three-bed split level scissor home
- D Two-bed split level scissor home



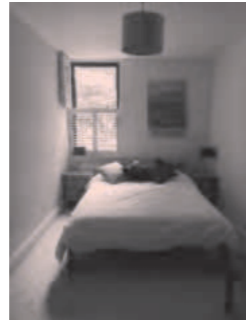
Urban axo



9.06



9.07



9.08



9.09



9.10

“With this type of housing, its high density and interconnected style of living, there is a high dependency on others behaving well and being good neighbours.”

The block is made up of innovative 3-storey scissor homes, have you experienced any problems with this layout specifically?

It needs recording. On this estate, you're really dependent on people really knowing their stuff and I think with endless outsourcing and going for the cheapest price (the management will) end up with people who don't have the time or knowledge to invest and ever do it properly.

The design means my neighbour's living room is above my kitchen and below my bedroom. They smoke and so if they are out in their garden it means that I have to close the windows of my own living room. I find it difficult. If their windows are open while they're talking it can be a three-way conversation because there is no privacy. So, the design of the block means that something that wouldn't be considered anti-social in any other design becomes anti-social here. Sitting and having a cigarette in your own garden shouldn't impact anybody. That's not an anti-social thing to do, but it can be here. It's absolutely fine if everyone is respectful, but it can become problematic. The tenure changes are also making it more of an issue, I think people moving in now are less tolerant than previous long-term residents.

As a leaseholder, do you get a car park space or anything like that?

There are no allocated parking spaces, the old car park is no longer accessible. I don't think there was any demand and it became a place people didn't want to use or feel safe in. I don't even get visitor permits and so if anyone does need to come I have to feed the street meter all day long.

What's your favourite thing about your home?

I like having stairs. I had been living in a flat previously and the idea that you go upstairs to bed pleases me. It feels spacious, the rooms are all a decent sizes (9.08) and I like the outdoor space and its potential. (9.09) I like the fact that it's quiet and that its central, but you're not on a road which is a kick if you have delivery's, but great for anything else!

Do you have plenty of storage in your home?

I think in these units there's plenty, which is great. To be able to qualify for these houses as a council tenant you have to have at least three children and so you're talking about six people in a house of with no attic because you're on a flat roof and that's why you have so much storage. Maybe there's more than you might need with one person, but it's never unhelpful.

Since you moved in, have you had to make any alternations or updates?

In the kitchen, there was a masonry shed accessible from the garden that was taking up a lot of space and so I knocked it out to create a more open spacious layout. Because of the listing I had to keep the external door facing outside. Elsewhere there were masonry brick-built wardrobes in every one of the three bedrooms so those have all been knocked out and predominately, I've just

Is there anything that you dislike about your home?

repainted, plastered replaced the radiators, replaced all of the lights, repainted the doors, door handles skirting boards etc.... things like that. All the proportions are still the same.

Is there anything about the internal layout that you dislike?

It gets hot. In winter sometimes you have to have the windows open because it's so hot and because it's a big communal system there isn't an easy way of turning that down. It's imbedded and all linked up. The hot water used to come under the river from Battersea power station as an overflow and now from the Pimlico district heating unit. In order for water to reach the whole estate, the pressure is kept high. When I was replacing radiators there was only a certain amount of designs you could look at because the bar pressure was so high, I was told its equivalent to the bar pressure you would put in a skyscraper(!) Which is one of the reasons that why when there are leaks it floods, they are more catastrophic.

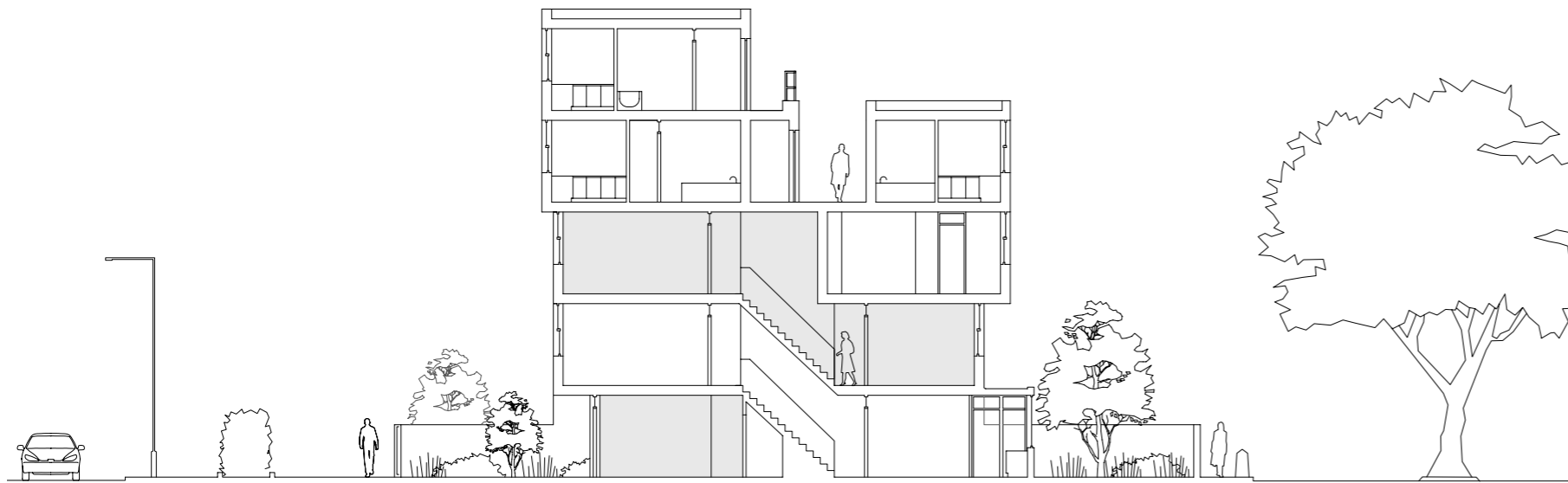
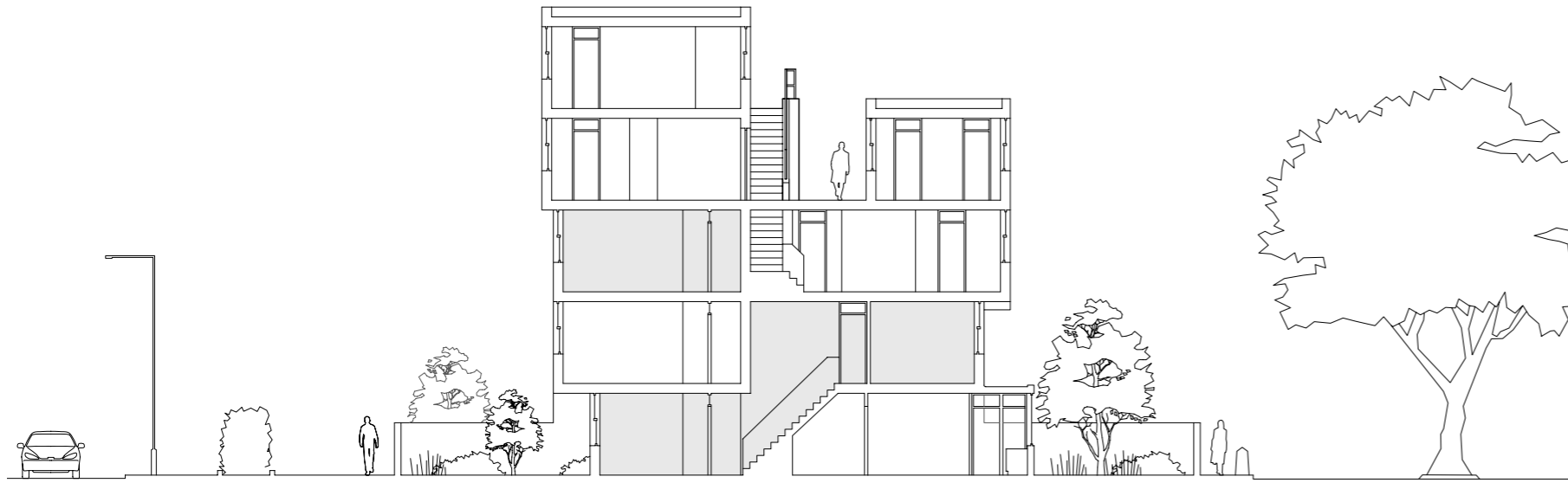
When you are at home, where do you spend most of your time?

My only frustration, now having lived here for several years is that my ideal scenario would be for my main living space to be on the ground floor so that when you have friends you're not split between the kitchen and up here. At present there's no possibility of going between the two easily. Perhaps that's just more 2019 open plan living then 1972(!) ... but then again, if you were lots of people, having very separate rooms maybe good in terms of trying to create and maintain personal space. So I suspect that its more designed for a family, but I would have thought it would be challenging with small children on all these stairs. For my elderly neighbour, she suffered from vertigo so coming down all the time was just a bit too much for her and was one of the main reasons she moved.

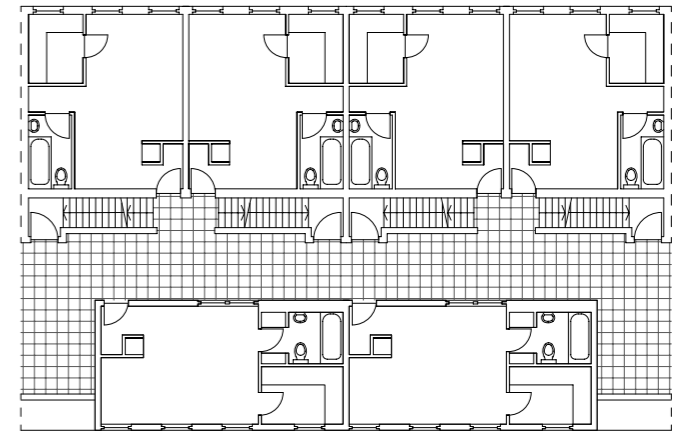
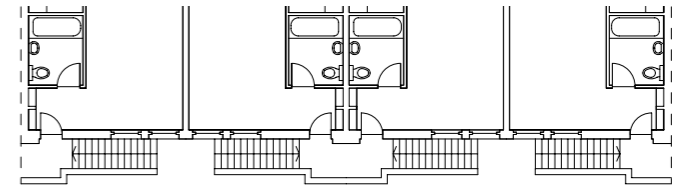
If you were to move house, would you seek out another similar mid-century home?

In the living room. As electronic devices have changed, I spend less time in the study, so now I can do much more work sitting on my sofa (9.10). When I first moved in that was where I would work and it was important, but that's certainly more combined now.

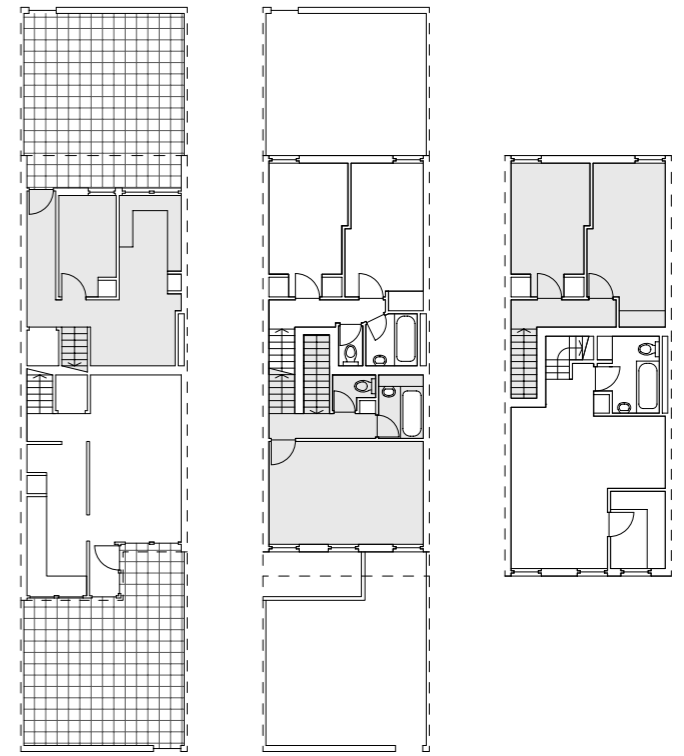
As council (public) housing goes, this is definitely one of the most visually pleasing. I am happy here. But with this type of housing, its high density and interconnected style of living, there is a high dependency on others behaving well and being good neighbours. It takes very little to make it a less pleasant place to live.



Sections 1:200



Roof street studios
Size 29.5sqm



Split level 'scissor' family homes
Two-bed size 64.2sqm (+28.7sqm amenity)
Three-bed size 87.4sqm (+30.4sqm amenity)

Unit plans 1:250

Conclusion p.122
Credits p.127

The premise of this research is that much can be learnt from ambitious experiments in modern architecture as well as from places where living in more dense urban settings is the norm.

Responding to the draft New London Plan's call for the optimisation of housing and a broader range of typologies, this report posits its evidence and findings in London's contemporary suburbs, surveying approaches to accommodating higher density housing with lessons for London's outer boroughs.

London's suburbs are the archetypal image of British homes with independent unit types with front and back gardens, a doorstep and porch. These semi-detached and terraced houses of the suburbs appear to accommodate nuclear families, but on closer inspection multiple doorbells signal changing demographics, living preferences and family structures that bring into question our attachment to this image of the home and its modern-day use.

Whilst the flat may not reflect the popular British image of home, many millions already live in them. In London they are frequently compromised in their layouts due to poor adaptation from historic housing typologies and building types. New-build flats are too often typified by generic dwelling typologies that simply conform to, rather than exceed the minimum standards.

London's need for more housing and the desire to minimise its impact on the environment, whilst making the most of existing land and infrastructure, requires us to ask; what is the right density for the city? But also, what are the typologies best suited to our changing demographics?

While numbers and matrices are presented here as part of our research, on their own they are a crude guides to measuring success or failure. In living at high density, there are always compromises and trade-offs to be made which the designer must carefully balance. The residents of our selected projects are from a range of backgrounds and age groups, each have their own circumstances, personal habits and tolerances. The reasons for their choice of home are broad, and both deterministic and happenstantial. The international spread of the case studies also means the economic, social and cultural contexts of our eight host cities varies greatly.

One of the key drivers of this research has been to make density accessible to a broad range of audiences through a better understanding of the lived experience through semi-structured interviews. To enable this, we chose to compare a mix of architectural approaches and sites, rather than compare a host of experiences on a single site. Therefore, this research is not able to offer a comprehensive analysis or quantitative post occupancy survey. The research combines careful redrawing of the projects informed by our unique conversations with the small sample of residents, providing a valuable set of qualitative assessments and judgments.

The challenges for densifying the suburbs are summarised here as key themes which have been identified and surveyed through the case studies.

Density requires contextual design

The projects each have unique architectural characters, typologies and arrangements. The designs have been adapted to exploit their settings through bespoke site-specific responses. Whittington makes the most of the sloping site with a stepped profile, Atriumwohnpark similarly nestles into its backland plot, while at Penn's Landing and Sun Tech intelligent reinterpretations of historic terraced home enclose typological experiments beyond. At Medina, the building rises to the noise of a highway forming a barrier block, then steps down to the south west, creating generous terraces and responding to the three storey context.

In contrast, the Villaggio's failings stem mainly from the approach of separating the pedestrians and vehicles, its contrasting scale and architectural language to its context creating a sense of isolation. This means its radical dialogue is with itself rather than Terni and the mixed-use spaces at its centre are concealed and disused. Revolutionary architectures succeed when they incorporate design strategies of transition rather than act in isolation.

Density creates green sanctuaries

Successful domestic realms benefit from a close relationship between internal and external spaces. Malcolm and Manor, Penn's Landing, Villaggio and Lillington all incorporate strategies for greening that are celebrated by respondents and have enabled the softening of the architecture, the provision of shade, a sense of enclosure, a place to retreat to and an environmental buffer to the city beyond. At Sun Tech planting enables it to sit successfully within its suburban context, whilst challenging planning height restrictions.

However, we also found that ambitious planting schemes in dense arrangements need to be tempered by structural capacities and amenity requirements. At Penn's Landing a mature landscape ambition is now being removed to maintain the project's structural fabric and at Whittington, its mature canopy of trees was the cause of internal light issues within habitable rooms at lower levels.

Density creates original homes

Dwelling types in this study are diverse, including courtyard, stepped, scissor and terraced homes. We found overwhelmingly that people were happy with their homes and their variety of spaces. This may be a result of the selection process by which we identified interviewees, but it was remarkable given conventional thinking about the challenges of density that physical proximity was not identified as an issue by any of the respondents.

At Penn's Landing overlooking had been cleverly managed with offsets, misalignments and planting. Villaggio and Molenvliet stagger homes around roof terraces or communal courtyards to differentiate individual homes and give longer views.

Daylighting needs to be carefully considered, as even with lower buildings tight-knit arrangements may have caused compromises in relation to daylighting at Penn's Landing, Whittington and Lillington. At Lillington, the scissor sectional arrangement and interlocking terraces puts one resident's quiet space alongside their neighbour's noisy space, while its arrangement over three separate levels has proved inflexible to shifting lifestyle choices, restricting opportunities for more open plan arrangements.

The structural framework at Atriumwohnpark and Molenvliet proved adaptable as residents have reshaped living plans to suit their circumstances for example where rooms were deemed too small, they have removed partitions.

Conclusion

Density encourages interaction

These projects demonstrated that where there were opportunities, residents appropriated communal spaces, increasing the opportunities for neighbourliness.

At Malcolm and at Villaggio doorway layouts and landing spaces encouraged sharing and collaboration. This depends on individuals, at Lillington we saw contrasting ‘sky streets’ at the upper level, one full of plant pots and tables, the other bare and unwelcoming. At Penn’s Landing there were dedicated and intentional facilities such as a swimming pool and recreation room, but it was the everyday possibilities of proximity and casual interaction that were highly valued by respondents. This was supported at Whittington by a layout that makes it possible to wave at passers-by from the kitchen.

The similarity in the initial premise of Molenvliet and the Villaggio, of creating a rigid structural grid to accommodate a multitude of apartment types designed through resident consultation, created two very different architectural expressions. Both schemes accommodate a surprisingly diverse array of house types within a coherent architectural language but neither project seems to have successfully transferred the original sense of community ownership to new inhabitants.

Density does not prohibit quality outdoor spaces

Private outdoor space is too often compromised by living at density. The examples here typically prioritise private terraces, courtyards and roofs as drivers in massing and architectural form, as well as a focus for arrangements of apartment plans. We found a range of successful spaces at a variety of levels across the projects and all were valued by residents. We found that Cambridge and Camden can feel like Spain when layouts exploit south facing aspects for terraces. Allotments and growing spaces can be re-provided at third floor alongside dining space and thrive as at the Villaggio. Compact ground floor patios and paved gardens can be oases as at Penn’s Landing, Atriumwohnpark and Lillington.

Additionally, Atriumwhohnpark and Suntech demonstrate it is possible to achieve higher densities without vertical stacking of homes and without compromising on private outdoor space.

Density requires careful sequencing of public and communal spaces

In order to achieve higher densities the projects typically depart from conventional street arrangements. Homes are accessed by tertiary communal routes that require careful design to maintain legibility of front doors and create open and logical routes for security and servicing. These spaces offered opportunities for greening, for appropriation and neighbourly interaction.

At Malcolm and Manor and at Medina the over-permeability through both sites has become problematic and has had to be remedied by additional gating of entrances. Ill-defined spaces were also witnessed at Villaggio and Lillington and became used for anti-social behaviour. However perhaps surprisingly, security was not regarded as a major problem by any of our respondents. Residents were comfortable with a wide variety of access and wayfinding designs.

In the case of Atriumwhohnpark and Penn’s Landing, implied thresholds created an enclosed and tranquil space of retreat, while departing the street at Whittington created a playable landscape.

Density supports intergenerational living

Across the projects we found that dense environments close to services and amenities were ideal places for growing old. In contrast to the popular image of retiring to quieter rural or coastal areas, at both Penn’s Landing and Atriumwohnpark we found older age groups chose urban settings because of their local services and amenities providing a better quality of life. Several of the projects were places where people had chosen to downsize to, and responses suggest they support a sense of conviviality that might mitigate against loneliness and isolation in old age.

We found Whittington was a great environment for children, the deck providing numerous large play areas and green spaces located at the heart of the project away from the traffic of nearby roads and within sightlines of dwellings and thus parents/guardians.

Density encourages smart mixes

Embracing unconventional forms and typologies, the projects are able to incorporate a range of uses successfully on restricted sites.

At Penn’s Landing, Malcolm and Manor and Sun Tech, subterranean decks conceal and separate car parking and utilities such as refuse collection. At Whittington and at Malcolm and Medina the car parks needed to be retrospectively secured and at Sun Tech poor insulation caused issues with cold bridging between basement and ground floors. Such structures are costly to build and maintain however, the trade-off is the doubled ground plane that increases amenity spaces and reduces the negative impacts of cars.

At Villaggio the diagonal, raised route with mixed-uses along its length seems to have failed in part because it does not connect into the wider urban hierarchies. At Medina, Malcolm and Manor and Lillington architectural massing and distribution of mixed uses are combined to successfully respond to edge conditions, contribute to the urban nature of their locations whilst creating a buffer for housing from busier streets.

This research shows that managing the challenges of proximity requires a considered individual architectural approach that actively responds to its setting.

Across the case studies, the residents we spoke to did not feel that living at high density compromised their privacy. Instead, our conversations suggested that they each offered an opportunity to return to the conviviality of homes and spaces found in the fabric of historic urban neighbourhoods.

It is hard to achieve higher density at low rise using traditional suburban street layouts. We found that pedestrian access routes to front doors separated from streets had issues of anti-social behavior on some projects, but equivalent spaces on other projects were seen positively, creating spaces for neighbourly interaction, appropriation, greening and play. The human scale of the surrounding homes and windows addressing these spaces seem to successfully mitigate any sense of unease.

Embracing complexity and architectural originality requires careful management in the long term. At most projects there are ongoing maintenance issues particularly associated with flat roofs, stepping sections and decks causing issues with cold-bridging, damp and water ingress. However, many of these technical failings can be overcome simply with contemporary construction techniques and appropriately robust maintenance strategies.

These projects demonstrate that there is no reason to compromise on the quality of homes when designing at higher densities. Across the case studies a focus on private external space as a key design driver, has helped to successfully orientate homes, to extend apartments onto roof terraces and wrap homes around courtyards.

In contrast to generic contemporary housing that is often the unintentional result

of minimum regulations and guidance, low-rise high-density housing offers spatial solutions at a human scale. Embracing such an approach can create a framework for appropriation and adaptation over time, as well as creating the setting for a more participatory type of neighbourhood and a more sustainable urban lifestyle than is currently possible in the suburbs.

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