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N eighbourhood

Rethinking a Housing Block in Central London

Johannes Schick

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Linked Diverse Neighbourhood

Rethinking a Social Housing Block in Central London

Diplomarbeit

Zur Erlangung des akademischen Grades eines Diplom-Ingenieurs

Studienrichtung: Architektur

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Graz, April 2013

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London's Prehistory

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London's Prehistory

fig 01: London after the Great Fire of 1666

fig 02: The democratic grid of New York

The urban development of London from the perspective of infrastructure and trade: do not worry, it only takes 2000 years!

In order to understand London, one must consider the circumstances and factors that contributed to its development. The most important point to recognize is that the city's structure is one that has evolved naturally. Over the years, the city has been constructed by different individuals and small groups that were driven by economic opportunism[01] and market influences. This principle is in contrast to other more artificially planned cities such as Paris, New York or Beijing whose design is governed by a single overriding concept. In Paris or Beijing, the city's design is a reflection of the power of its ruler at the time and is staged to rich effect. Whereas, the democratic design of North American cities, like New York, are designed through a grid that quickly divides it into plots, each to be sold according to its real estate value. The bold formalism of ancient Roman cities was a means to an end. The pure efficiency of this design could be the underlying reason behind their rapid military expansion and majority rule over a vast empire.

There have been several attempts through the decades, as a result of extenuating circumstances, to restructure London;

01 Opportunism: OED (noun) "The taking of opportunities as and when they arise, regardless of planning or principle"

or to give it some sort of structural logic in the first place. Of these, the most memorable is Christopher Wren's baroque master plan, which was proposed after the devastating fire of London in 1666. The plan advocated to abandon the city's medieval streets in favour of a broader network of roads which would create view corridors through the city. Due to a lack of assertiveness on behalf of the city planners and the London aristocracy, the city instead returned to its old structure which was based on traditional streets, churches and privately-owned properties. However, Wren's plan did play a role in determining the structure of another city. Haussmann in his design for Paris was inspired by Wren's design yet in this instance, he was provided with the necessary funding and government backing to make it a reality. In the case of Paris, it was the vision of one man that was obtruded onto the entire city, whereas with London, the interests of individual entrepreneurs maintained the complex small-scale grain of the city. Napoleon certainly alludes to the balance of power in determining the structure of a city when he referred to the British as the „Nation of Shopkeepers"[02]

This is not an isolated event in London's history. One could say that London has developed in this haphazard way since the departure of the Romans in 410 AD - consciously unplanned and unpredictable. There is only a single deviation to this norm: when John Nash created Regent Street in his 1811 plan, it was the only instance where a sustainable city-structuring element was designed. John Ackroyd explains this phenomenon as, „[London has ...] never followed a theory or an idea. It has never been driven by a coherent philosophy. It has simply grown in an organic fashion, opportunistic, haphazard and market-led. Yet every building seems part of a general pattern, of a general will to exist in this shape and in no other."[03]

Deciphering the Past

London, as we know it today, was created mainly for economic reasons. By analysing the entrepreneurs, we can understand the different structures that comprise the city as being ascribed to their economically-driven actions and

fig 03: The regular grid of the Roman city, Londinium

fig 04: Wren's baroque master plan for London

fig 05: John Nash's Regent Street

02 cf. Farrell 2010, 201.
03 Ackroyd in: Farrell 2010, 170.

fig 06: A map of London from the South Bank in William Smith's 1588 book The Particular Description of England

fig 07: The bygone trams of London

fig 08: Early transportation on the streets of London

fig 09: The former width of the Thames

patronage. This has led to the urban patchwork of the city as we know it today - a reflection of the economic shifts in the market and industries that have dominated London over time.

The driving force and a prerequisite for any kind of trade is transportation. Over the centuries, perpetual modernisation has led to changes in transport, which in turn has made older structures obsolete. The palimpsest of time and bygone transport networks is still present within the city. It gives us clues to piece together why London is the way it is.

Thames: The Shaping Force

The central driving force that contributed to London's siting and design, was the Thames. It remained for many centuries the heart of the emerging metropolis. Initially, it varied in its width and depth according to the tides of the North Sea. As the city evolved, its banks were gradually expanded and its surface and width were steadily reduced. For a long time, the river served mainly for the supply of goods and the disposal of waste for the city. It was a sewer, harbour and main street at the same time. Thus, the Thames has long been the main attraction, while the city was going to be the event.

This era of the river's dominance ended abruptly in the 20th Century with changes in industry where goods no longer had to be brought to London by ship. Where the earlier concern had been to get ships as close as possible to the buildings that bordered the river, the Thames now functions more as a barrier that separates the two parts of the city from each other. The buildings on the shores of the river emphasise this shift by being oriented away from its banks.

In the last two decades, this condition has evolved. The Thames has returned as a leisure area; creating open spaces for public activities. It has become part of the consciousness of the city once again.[04]

London is situated within a large natural basin formed by

04 cf. Farrell 2010, 55f.

the River Thames and surrounded by hills in the north and south. Early in the city's history, Celtic settlements were formed along the banks of the Thames. One of them existed at the exact location of what is now Westminster, where the river was shallow and easily traversable at low tide. In the riverbed, a two-handled cup from Asia Minor was discovered; evidence that trade via water with the Mediterranean existed from as early on as 900BC. Later, Caesar wrote in his notes of his surprise in discovering that the Celtic Druids used many Greek characters in their writings, further evidence of some sort of cultural exchange.[05]

fig 10: A 1900 view of Wren's St. Paul's Cathedral from across the River Thames

There were several reasons as to why the Romans chose to build their settlement on the north shore where the City of London is now located. The area benefits from a slight south-facing slope towards the sun, which cannot be underestimated in the cold, wet climate of England before the advent of central heating. Since the Thames was relatively shallow at this location, the Romans also built the first safe crossing opportunity - only 100 metres east of the present London Bridge. The wood construction of this Roman bridge was said to be a "majestic and even exceptional structure"[06] for its time.

fig 11: The deep shipping channels along the curvature of the North Bank of the Thames

Lastly, the cross-section of the Thames was another reason why the Romans chose to settle where they did, thereby determining the location of London along the river. The large areas of curvature along the course of the river causes the water to flow faster along the northern bank; creating deep shipping channels because of its steep slope. This slope is absent from the riverbed on the south bank where the water slows the flow of material, making the bank quite flat and the passage of large commercial vessels very difficult. Thus, the areas inside each bend became marshland and were therefore unsuitable for colonisation.

fig 12: Settlements along the outer curves of the river away from the marshy flats

The Roman Empire

When the Romans conquered England for the second time, they founded the still unfortified city of Londinium

05 cf. Ackroyd 2002, 28.
06 From german: Ackroyd 2002, 34.

fig 13: An advertisement for post-war housing in London

around 43-50 AD[07]. The erection of the city wall only came 150 years later.[08] In addition to the aforementioned points, the site of the Roman city was ideally situated since the potential danger of invasion came from the south and London provided the Romans with a fixed base to conquer the north of the island of Great Britain. Starting from the six gates, they built star-shaped roads across the entire kingdom. These roman roads define today's arterial roads and highways that lead traffic from within the city to without. The city's fortress, which served as a military centre, was in the northwest. Today, named after the ruined remains of the fortress walls that were found on site, the concrete towers of the *Barbican Estate* [ch 3.3] soar into the sky.

Londonium quickly evolved to become a thriving commercial city. The city had every amenity that you could find in Rome, including temples, baths, a large (wooden) amphitheatre and a racetrack. The Forum was the largest structure north of the Alps, measuring 167 x 178 metres.[09] The newly constructed basilica surpassed even the proportions of today's St. Paul's Cathedral. Knightrider Street is one of the oldest street names still in existence today, having been named over 2000 years ago. The two oldest markets in Cheapside and East Cheap[10] were major centres of trade until the late Middle Ages and were accessed by the Roman arterial roads. From the time of the Roman Empire, the rights of the city were independent to that of the state that contained it. Throughout history and even today, this characteristic autonomy, specific to London continues to play an important role in the functioning of the city.[11]

Based on archaeological findings, the Roman camp itself was probably traversed by a regular grid as was typical for settlements of that time.[12] The existing street grid of London may be traced back to originate in Roman times. Based on this assumption, Terry Farrell reconstructs what

07 cf. Ackroyd 2002, 36.
08 cf. Ackroyd 2002, 34.
09 http://en.wikipedia.org/wiki/Londinium (25.10.2012).
10 Cheap (from the Old English of cyppan)=„market"; cf. Ackroyd, 2000, 120.
11 cf. Ackroyd 2002, 37.
12 cf. Farrell 2010, 40.

the Roman plan might have looked like. The bend in the southernmost main street of his plan probably stems from a pre-existing street from an earlier settlement, which explains why it deviates from the Roman grid.

fig 14:The regular grid of the Roman City plan for London

To understand how the regimented structure of the Roman grid degenerated into the wonderfully organic and irregular British road network, we must return to the river.

Since the early Middle Ages, a few kilometres up the river on the territory of today's Westminster Abbey, there existed a monastery. 50 years before William the Conqueror invaded England, the then king built Westminster Palace, naming it after the monastery that it stood next to. This palace was the predecessor of the current seat of Parliament. Contrary to what his name suggests, William never conquered nor set foot within the walls of London. He concluded a secret treaty with the Saxon lords so that they would open the gates to his men. The inhabitants, who wanted to determine their own destiny, resisted this intrusion and attacked his forces during their ceremonial invasion. It was for this reason that William the Conqueror decided to reside instead on the outskirts of the city.[13]

fig 15: How the city of London has evolved organically over the last 2000 years

So it happened that not far from the original city, a second city was formed. From here on, London as we know it unfolded between two cities; between Westminster[14] (West End) and Downtown (City of London). To date, the two districts remain as the clearly defined administrative and economic centres respectively.

These two areas were connected to the south-eastern district of Ludgate by a road, the Strand[15]. As the name suggests, this road was originally the main road along the river. The Thames had been narrowed over the years as a result of various measures. Firstly, noble families had built their palaces along its banks. As soon as one palace was torn down, another was built upon the rubble of its predecessor. In this way, the bank was slowly built out into the river. These palaces were oriented, by way of a grand

13 http://en.wikipedia.org/wiki/Palace_of_Westminster / Ackroyd 61f.
14 Westminster = West + monasterio.
15 Strand = Old English for „beach" or „coast"; cf Farrell, 2010 40.

fig 16: Henry Pether, York Water Gate and the Adelphi from the River by Moonlight, 1845-60

fig 17: the landlocked York House Water Gate today

fig 18: London Bridge from 1209. Some of the houses had up to seven stories and cantilevered off the bridge's edge.

entrance, towards the Strand. However, all of them also had an important rear entrance on the side facing the river. Before the 19th century Victorian Embankment gave the Thames its present form, it served well as a main artery for the city. Since the river was still quite wide, the water flowed at a steady but slow pace. The roads were clogged with traffic in the city; therefore the boat was still the most viable means of transportation. Many large parades for kings or the Lord Mayor were not celebrated in the streets but rather on the river. Today, the York Water Gate shows us where the river's border once lay. The formerly imposing back gate of the demolished York House stands alone, nearly 140 metres inland within the Victoria Embankment Garden.[16]

fig 19: The original London Bridge with its wooden pontoon structure

From the 13th century onwards, a new monstrous construction managed to eliminate the tide and transformed London's shores into a completely different place for over 600 years. London Bridge, completed in 1209, was "the first post-Roman stone bridge in Europe, it was a massive structure with 20 arches whose pillars were protected on the surface by wooden pontoon structures [...].[17]" In the Tudor period, there were nearly 200 buildings on the bridge. Some of them had up to seven stories and cantilevered off the bridge's edge. Together, they left only a four metre wide tunnel that all the traffic towards the south of the city had to pass. The bridge became so congested with traffic, to the point where it took 1.5 hours to cross the bridge, that the Lord Mayor established the rule of driving on the left hand side by decree in 1722[18].

16 http://en.wikipedia.org/wiki/York_Water_Gate (25.10.2012).
17 Ackroyd 2002, 70.
18 Lay/Emes 1992, 199.

Because of the small gaps between columns, the new bridge functioned as a weir. By regulating the water's flow and lessening its current, the bridge allowed the water to freeze into ice during the colder winters. „Frost Fairs" were held, with stalls and showmen occupying the surface of the frozen Thames. Once the Thames had frozen, the city brought „its own replicas forth, with all the typical characteristics of its own turbulent life - bull fighting, horse and chariot races, puppet shows and interludes, cooks, liquor taverns and other debauched sites [...]."[19]

fig 20: "Frost Fairs" on the Thames

fig 21: "Het Haene gefecht in Engelandt"

South Bank - The City's Leisure Centre

The low-lying South Bank, as the name suggests, is situated on the south side of the river Thames. It was an area that did not develop until after the Industrial Revolution and the invention of the railroad when it was funded largely by private investment. For many years it just played a minor role in supplying the big city on the north bank. This was largely because of the continuing insecurity of being besieged from the south. There were still only a few settlements near the shore, which were mainly clustered around the entrance to London Bridge.

From the late Middle Ages onwards, the South Bank began to supply the city with, above all, a wide entertainment programme, organised outside the city limits. The only connection by land was via London Bridge whose gates were closed at night. Instead water taxis, which were as commonplace as black cabs, were used to traverse the river. After the curfew, the South Bank came alive, transforming into Shakespeare's world, an alternative to the highly-regulated city life, full of fantasy and culture.

fig 22: Bear hunting as one of London's desires

In addition to the Rose and Globe Theatres, there were arenas for Bear hunting and large bullfights. Yet wherever spectacle exists, the underworld is not far away. Thus, the South Bank also became the nucleus of another part of London, the alternative, seedier part of the life of each city - rife with alcohol, gambling and prostitution. Then, in the 18th century, numerous pleasure gardens were created such as Vauxhall Gardens and Belvedere Gardens. To get an idea of the atmosphere within these places, especially

fig 23: Thomas Rowlandson, Vauxhall Gardens, 1808

19 Ackroyd 2002, 433.

fig 24: Today's Southbank Centre - the cultural hub of the city

with gigantic firework displays, masked balls and all sorts of other pleasurable activities being enclosed in areas across the river from the city, one would have to visit Tivoli Gardens in Copenhagen, which was originally inspired by these early British gardens.

After a lengthy cultural dormancy during the Industrial Revolution, the South Bank today is once again riddled with cultural institutions. From the Design Museum to the Tate Modern to the Southbank Centre and the London Eye, down to Battersea Gardens, these places constitute a majority of the cultural heart of London and continue the tradition of the area.[20]

The Pool of London

fig 25: The dense Pool of London - a busy port crammed with ships

The burgeoning world trade was the biggest change for the region of London. Nearly the entire trade of the British Empire was concentrated around an area known as the Pool of London, which lay between today's Tower Bridge and London Bridge. The edge of the pool was formed by the latter bridge whose closely spaced supporting pillars made it impossible for large sailing ships to pass through. Today, in front of the meeting room inside the Bank of England, hangs a wind vane with a scale. It reminds us of the days when the Pool was the main port of the city. The bank manager needed to be aware, at all times, of the direction in which the wind was blowing and therefore when the ships would arrive; bringing with them both business and money[21].

fig 26: A 1804 painting by William Daniell of the Tower of London with the busy Pool in front of it

As early as the Roman Empire, the pool was the centre of London's harbour. From here, the entire island was supplied with goods. Excavations took place just 100 metres behind the present Promenade to create part of the Roman port facility. Over the centuries, world trade increased so significantly that by the 19th century, the pool within the Thames had become such a lively waterway that it was said people could cross the river on foot by stepping from ship to ship[22]. One only needs to look at paintings from that time to realise that this was where the main trade centre of the empire was situated.

20 cf. Farrell 2010, 49-53.
21 cf. Farrell 2010, 55.
22 cf. Farrell 2010, 60.

The sides of the pool were peppered with piers and associated stores. The supremacy of Great Britain had taken the global trade industry by storm, therefore more and more warehouses and piers were needed to accommodate their ever-growing capacity for goods. Crowded closely together, the built-up area became more and more dense as you walked further along the river.

fig 27: The Pool of London was densely populated with docks.

With the expansion of the British Empire, the trading volume continued to increase steadily and soon space for a new pier was needed. The West India Company, in 1802 and 1805, was the first company to build docks based on a new and previously untested model. Taking advantage of the bend in the river, they created their own connecting channel on the Isle of Dogs. This was a favourable development since it made use of the marshy peninsula that had been impossible to use for agricultural purposes in the past despite its ideal location in close proximity to the city.

During the planning period for the creation of these new docks, there was a general mood of optimism and a zest for action. During this period, W. Revelet led a movement in 1796 to straighten the Thames with the addition of a new canal. In this proposal, the canal would be the new main river, while the bends of the original Thames would be used as docks. However, since this was London and not a city in France or North America, the development of relatively small docks rather than the bolder straighter canal was pushed forward.

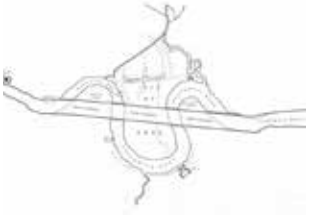

fig 28: Thames converted to docks by W. Revelet

Other shipping companies learned from the example set by these first private ports. Only two years after the West India Company set up their docks on the Isle of Dogs, the nine Surrey Docks took over the Rotherhithe Peninsula to target Scandinavian and Canadian trade. The constant competition between the new docks, which were always trying to outdo one another in size, culminated in 1855 and 1880 with the construction of the gigantic Victoria and Albert Docks.

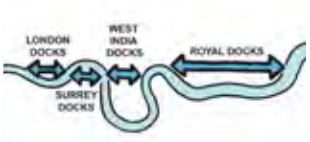

fig 29: main dock companies

fig 30: construction dates of docks

Since only major shipping companies could afford to invest in creating docks, smaller businesses settled for

fig 31: the "Docklands"

fig 32: A portion of Cruchley's 1827 plan of London showing the number of jetties projecting out from the banks on either side

fig 33: The poor living conditions in London - low income housing under a viaduct

buying more and more land along the river. Almost the entire perimeter of the area downriver was privatised. Ultimately, the region was so densely populated with buildings and corporate campuses that it began to be referred to collectively as simply "The Docklands." The sheer abundance of new technologies present in this area, with the latest locks, loading cranes and sea giants must have painted quite a unique picture.

Purely designed for water-based commercial freight, the Docklands became a very introverted area. The entire East End now consisted of many individual, inward-looking communities. The big shipping companies enclosed themselves within high walls. In no time, speculative cheap working-class neighbourhoods sprang up. Properties were rented at exorbitant prices because of the housing shortage. Often several families had to share an apartment. Money was always short as a result of the seasonal nature of the labour market. Entire neighbourhoods with pubs, shops and cafes soon surrounded the docks.

Residential construction could not keep up with the vast volume of people immigrating towards the docks. Two years after the Victoria Docks opened, Charles Dickens visited the ever-expanding slums in Canning Town. On 12 September 1857, he remarked in a weekly magazine about his dismay over the prevailing conditions: "Many select such a dwelling-place because they are already debased below the point of enmity to filth; poorer labourers live there, because they cannot afford to go further, and there become debased. The Dock Company is surely, to a very great extent, answerable for the condition of the town they are creating"[23]

In 1887, almost 40% of the residents of Poplar, the residential area of east London, were living below the poverty line.[24]

After the Docks

As quickly as they came to London, the docks soon became

23 Charles Dickens, in: Farrell 2010, 68.

24 cf. Hobhouse Hermoine, http://www.british-history.ac.uk/report.aspx?compid=46464#n11 (07.11.2012)

obsolete. With the invention of the shipping container, it only took ten years until they went under in the early 1980s. Additionally, the new dimensions of cargo freight containers meant that the Thames was now too small for the traffic of the new giant cruisers to pass abreast. Newfangled ports along the coast of Great Britain began to replace the old docks that had once been specifically designed for this task but now were considered obsolete technology. The distance of these ports from the city no longer mattered. The containers could quickly and cost effectively be transported via trucks, thereby linking them directly to their destination.

fig 34: London City Airport

In subsequent years, some of the docks were filled in while others lay idle, waiting to be repurposed. The new City Airport was built on the site of the former Albert Dock. Soon after this, the authorities in East London were tasked with creating employment opportunities for the former dockworkers. Since the officials failed in this task, the government of Margaret Thatcher set up the London Docklands Development Corporation (LDDC) to find ways in which to add value to the former industrial area once again.

Subsequently, the LDDC inaugurated a project on the site of a former banana market. It looked as though it could be placed anywhere in the world yet bore little reference to the tradition of British town planning. The project, Canary Wharf, was like an implanted disc of Manhattan on the shores of London. With the smallest details thoroughly thought through, as an area of maximally regulated organisation; the new district looks a little out of place amidst its unplanned and chaotic surroundings.

fig 35: Canary Wharf

The private and, in fact, American developer, Skidmore Owings and Merrill, was given a free hand to do what they liked with the area as a result of generous tax breaks from officials and cheap land prices. These measures were originally meant to create incentive for small businesses but were exploited using every trick in the book.[25] In typical London fashion of acting first and then thinking of the consequences, the city invested in extending the public

fig 36: The Docklands Light Railway

25 cf. Burdett/Sudjic 2010, 143.

transportation network out to the Docklands only after the development was completed. In order to bring this area in closer proximity to the city, the subway was extended, a new railway line was built specifically to service the Docklands and several new car tunnels were excavated.

Meanwhile, many investors took interest in the area once again; pushing it as both commercially and residentially attractive to developers. The current city administration has already planned several successful initiatives to gentrify the area and redistribute its former residents[26].

Tributaries: The Patchwork Threads

fig 37: the Thames Tributaries

The Thames tributaries and the North London canals play a key role in understanding London's patchwork-like structure. In the city-centre, as in most European cities, these waterways are banished from the surface, buried below the urban grade, yet their presence in defining the design of the city is unmistakable.

In addition to providing fresh water and for sanitation purposes, the tributaries were primarily used as a major energy source. The Thames itself was unsuitable for power generation because the mills obstructed the route of the merchant ships.

fig 38: A map of the different waterways of London in the style of the London Underground 'tube' map

The Fleet and Lea River Thames tributaries were two of the many navigable waterways that led directly into London. Along their route, numerous villages were created such as Camden Town and Marylebone, which now play an important role as neighbourhoods within London.

We can clearly identify the course of the Tyburn and Counter's Creek. Their routes are closely linked to the current parks of London and the former property of the aristocracy. To name a few examples, the Serpentine in Hyde Park is a reservoir of the Westbourne tributary. The Tyburn provides Regent's Park and St. James's Park with water, forming an integral part of the park's structure.

Between the different tributaries were the great aristocratic estates. In the 18th and early 19th centuries, speculators

26 cf. Farrell 2010, 66-74.

leased the previously agricultural areas of these estates to build large-scale residential areas for the new emerging middle-class. These areas of Kensington, Marylebone, Paddington, Soho or Pimlico were dropped down onto the map without regard to their surrounding context. Till today they form the backbone of the central London housing market. Each estate functions as an individual piece of the larger tapestry or patchwork of the city; fitting together their interior uniform layout of streets and squares with the coarse irregular network of rivers and the main streets oriented around them.

fig 39: The uniform layout of the Great Estates interspersed with the irregular network of rivers and streets

The Thames tributaries played an important role in the development of London. The mouth of the small river Walbrook, which came above ground shortly before the city walls, served as the first port of the Romans. It was also a fresh water supplier and the main sewer of the city. The Fleet, with its sources in Hampstead Heath, lent itself perfectly to create a Western Frontier town since it was barely possible to traverse at high tide. The Tyburn, in turn, created a delta at its mouth whose swampy environment was the basis for founding the first monastery of Westminster. The Lea River Valley, which recently hosted the 2012 Olympic Games, is currently developed as a large recreation area.

fig 40: Lea River Valley Development

The rapid increase in population and the resulting scarcity of land, coupled with the increasing soil load was the underlying reason behind relocating these waterways to below ground. Apart from the major parks within the city, their existence is recognised through how the naming of places throughout London. Knightsbridge was once a bridge over the Westbourne. Fleet Street and Westbourne Road both refer to the tributaries that run below their surface. Within Sloane Square station, if you shift your gaze to the ceiling, you can see a steel canal bridge over which the Westbourne flows towards the Thames.

fig 41: Knightsbridge

The Great Stink

Water pollution as a result of waste and sewage was an early 19th century problem. Not only because of the rising population but also the invention of new technologies such as the toilet flush contributed to increasing the degree of

contamination. Concurrently, the number of factories, tanneries and slaughterhouses dramatically increased during the Industrial Revolution. As a result, in 1853, the heavy water pollution initiated an extensive cholera and typhoid epidemic. The summer of 1858 went down in history as The Great Stink, when sewage-contaminated rivers burst through their banks and flooded the streets. The Parliament buildings had to be perfumed with citrus scents in order for the government to continue working. The entire city was shrouded in this terrible stench.

fig 42: The Victorian Sewer System by Joseph Bazalgette

The positive outcome of this terrible period was the energy devoted by Londoners into constructing a much-needed sewage system for the entire city. It harnessed the Thames and its tributaries in order to relieve the noses of the London population. From 1856-1866, the engineer Joseph Bazalgette led the construction of this high-performance Victorian architectural system. A total of five new main channels, parallel to the flow of the Thames, led to large wastewater treatment plants further downstream. The oversized dimensions of the network they created have meant that it is only today when they need to consider making additions to the sewage system[27].

fig 43: Constructing the below-grade portions of the Embankment

A structural change on this scale for a city brought with it large enterprises, one of which was the construction of the Embankment. The Embankment constitutes a large portion of today's waterfront along the north bank of the Thames. In one of the largest public works projects in its history, London got a waterfront similar to those in many other European cities like Paris or Berlin. The strength of the Thames' current was lessened and its width was narrowed during its construction and the drawings show the way in which it was built.

Until that time, the northern edge of the river had been lined with private wharfs and warehouses. The new embankment created a wider road but that was only the visible surface of a much larger infrastructure. Combining road, canal, fresh water supply and underground transport into a linear large-scale project, the embankment is constructed directly onto the bottom of the Thames. It protects the city with a new retaining

27 cf. Farrell 2010, 110f.

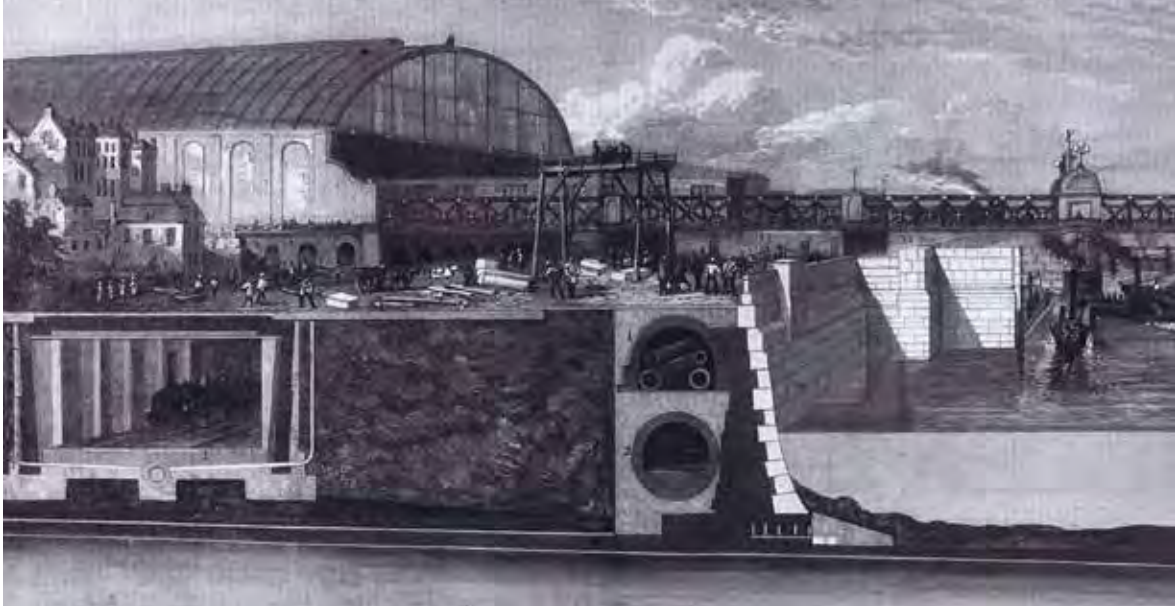

fig 44: A Cross-section through the Victorian Embankment

The Canals

Before the first railroad was laid, shipping routes were essential to distribute the large amount of goods that arrived in the Pool of London and the docks. Large industrial areas developed with neighbouring housing estates along these waterways. Whole towns were built around them. Over 200 years, from 1600 to 1800, the population of London boomed from 200,000 to one million residents[28]. No other city at that time had such a large appetite for building materials and supplies as London. As the river gradually became congested with increasing ship traffic and mills, a combination of the largest canal and duct system was constructed in the 18th Century. Now, Londoners were no longer dependent on the natural course of water but could even pave direct routes through areas that previously could only be accessed by awkward carriages.

fig 45: In 1939, the Grand Junction Canal crossing over the new North Circular Road via an aqueduct

Once again though, the system was incomplete because the development was dependent on private investors. In the 19th and early 20th centuries, the canal system focused on the areas central to both industrial innovation as well as immigration. Along these canals vast new industrial centres emerged with an appetite for new workers. Camden Town, Hackney and Mile End grew by leaps and bounds during this time.

fig 46: A map of the subterranean waterways of London and the settlements that emerged around them

28 cf. Farrell 2010, 119.

With the introduction of the railroad in the 1830s and its ability to transport large quantities of goods, the canals slowly lost their importance. Some, such as the Grosvenor Canal, were literally taken over by railway companies. The straight corridors through major areas and the existing tunnels provided a good starting point for many of the new railway lines.

The Railroad

fig 47: St. Pancras Rail Station

Nearly everywhere else in the world, the railways with their large representative terminals were planned as integral parts of the city. This was not the case in the British capital. But London, by then was not really a city in the truest sense. It was just a metropolis that was spreading out at a rapid pace over a large area. Until the formation of the *London County Council* (*LCC*) in 1889, there was not even an authority to govern over and collect this accumulation of many small towns to form a city. The entire railways network developed as the docks and canals had in the past, without a comprehensive overall plan.

Many different railways companies competed out of pure self-interest to pioneer links throughout the discrete towns and settlements. There was no one who had any experience in the construction of railroads. England was the first country to discover this technology so each project was one step in a long series of experiments, tests and innovative processes.

fig 48: Hoard of passengers wait to board trains to the south at Waterloo station in 1912

To understand the structure of the railways in London, you first have to look at its geographical location within the UK. London, with its high demand for workers, raw materials and goods is located towards the Southern border of the island. Most of the goods that were transported by rail to the capital came from the north and so had a significant influence on the railway infrastructure and urban development.

The first railroads came into being in 1804 as part of a local freight transporter at the Penydarren Ironworks in Wales. From there, they gradually overtook the whole of England. Its inventor, the engineer Richard Trevithick, went to

London in 1808 where he built the first passenger railway. It was just a fairground attraction that ran continuously around in a circle. Fittingly, it was built at Euston Square, exactly where, a few years later, one of the first stations in London was erected.

fig 49: The first London railroad - a fairground attraction at Euston Square

The construction of the London rail network centred around the fact that it initially served only to transport goods from the north and west to supply the city's industry. The idea of transporting humans followed only a few years later.

The freight stations with their large goods yards tried to be situated as close as possible to the city centre. They aligned along the recently completed New Road. The first among them were Paddington Station to the west, Euston, King's Cross and later St. Pancras further to the east. Coincedentally, this new industrial area was found between Regent's Canal which was directly to the north and the finished New Road. Terry Farrell writes, "Within this belt was a smoking industrial complex that anyone from Manchester, Huddersfield and the Black Country might well have recognised as being familiar.[29]"

fig 50: Euston Square Gate at one of the first railway stations in London

The Railways brought the raw materials to the outlying areas. Large factories were built here and the finished goods produced were distributed by horses along the New Road or by ship along the canals to meet the ever-increasing demand of the people of London.

fig 51: Inside one of the early passenger railway stations

Between these factories, terraced houses and other accommodation for the large number of workers and their families were hastily built in order for the workforce to be in the immediate vicinity of each industrial facility. To date, the area around these stations has the largest concentration of social housing in London. Driven by the presence of the new stations and the large flow of goods, the number of workers escalated. The workers' settlements proliferated farther and farther to the north.

Over time the rail operators realised they could make more money if they began to transport people rather than just

29 Farrell 2010, 136.

freight; bringing the passengers closer to the city without interfering with the newly formed industrial area. Large newfangled passenger terminals manifested the new civic architecture of the time and the stations were part of a new civilian city. In 1868 George Gilbert Scott opened his neo-Gothic Midland Grand Hotel adjacent to St. Pancras. Masses of people flocked to the impressive steel and glass buildings or waited in the new concourses for their train's departure to be announced.

fig 52: The different rail connections into the city on the North Bank

Marylebone Station from 1899 and Liverpool Street from 1874 with its luxurious Great Eastern Hotel, joined the ring of those coming from the west, east and north by train. Since the demand to travel in those directions was quite saturated by this time, speculators and railway companies began to think how they could make money from the untapped southern region of England. Unlike in the north, the area between London and the Channel had hardly any long distance travellers and no major commodities. For lack of any demand, they instead came up with an ingenious and novel idea. By building railways that covered short distances between stations, they invented the commute before the neighbourhood was in existence. Soon large worker neighbourhoods developed at each stop along the line as a consequence of this route being created.

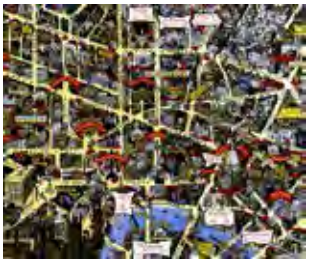

fig 53: A poster produced by British Rail in 1948 showcasing the tourist attractions of London in close proximity to its stations

The great advantage of this new development to the South was that the land was crossed by small rivers and swamps and thus was very cheap. The southern train companies fought with each other to gain the best access into the city and arrive as close as possible to the heart of London.

The southern railways differ materially from those of the North in two ways. Firstly, they were designed for short-distance commuting. Secondly, they ran mostly on elevated viaducts. In search of good crossing points, they built a confused network of wildly scattered railway tracks, which eventually cut the South Bank off from the rest of the South London. Most companies managed to build their terminal stations on the north bank. Waterloo was built in 1898, directly following the construction of the Waterloo & City underground line. Jokingly called the "drain", it conveyed workers from the river bank to the city centre. Other

stations like London Bridge had to content themselves by being close enough to the city so that the passengers could alight and cross the river on foot.

The Railroad Today

In the last few decades, the railway system in London has undergone two major changes as a result of air travel and improved intra-city railway connections

In the second half of the 20th century, the aircraft revolutionised the international passenger transport industry. Five new airports gradually emerged in and around London in a way reminiscent of the opportunistic development of the railway lines. The logical conclusion for London was now to connect the four non-urban airports to the city by train. Today, in slightly over 24 hours, you can reach almost any part of world from London.

In the London airports as with its stations: there is hardly another city in the world that has more runways than London - the only problem being that they are not linked to one another. Today, they are all in areas where they can hardly adapt to the ever-increasing air traffic. The population has put up tremendous resistance to planned expansions of these airports to create new runways.

The second drastic change to London's railway network was the improvement of connections within the city - something that hadn't existed until then. The first of these to be created was the Thameslink that linked the north of the city to the south. The east-west connection "Crossrail" is currently under construction. The recently completed London Overground forms a loop around new neighbourhoods in East and South London connecting them to existing stations in North and West London.

The Underground: London's Tube

Like so many other great inventions during the Industrial Revolution in Britain, the London Underground was first created as a prototype. The first of its kind in the world, the tube, as the London Underground is commonly referred to, got its nickname from its long subterranean tunnels.

fig 54: The tracks into Charing Cross station go over the river. An office building was built above the station.

fig 55: London's connections within the city and to the rest of the UK and the world

fig 56: The final 1933 London Underground map by Harry Beck based on an electrical circuit diagram

fig 57: The traffic congestion on the New Road

Today, with 268 stations, it is still the world's largest subway system and is an inseparable part of the city's identity.

It was created only after London's biggest growth spurt was already a thing of the past. Most roads, canals and railways were already built. In the middle of the 19th century, the city was overrun with its many transportation routes. It was a city of constantly moving goods and people but had been created without any consideration for rationality and holistic planning. The roads were hopelessly overcrowded.

Not originally planned for passenger transport, the stations were lined up along the outskirts of the city, on the New Road. They were widely spaced and had to be connected not just to the city centre but also to one another. A new overall system was needed to restore order and efficiency to the expanding metropolis.

In 1855, the Parliament voted in favour of the construction of an underground railway line. This line would take passengers from Paddington station via King's Cross into the city centre. The new Metropolitan Railway was the name given to this system and was copied by subway systems all over the world, yet ironically the name did not last long in London. Within a few months after opening in 1863, the underground railways had transported more than 26,000 passengers per day[30]. Piece by piece, the entire network was constructed. Inspired by its great success, more sections continued to be added to connect the different areas of the city. It was finally completed in 1884 with the completion of the Embankment, which in turn, completed the circle of today's Circle Line. This circle came into existence almost by coincident and now defines the "Zone 1" area in Central London.

fig 58: Passengers riding the new underground railway, approaching an open-air station

The first subway trains were steam locomotives so the tunnels needed regular vents in order to function. For this reason, even today, the older subway stations have open tops. The first tunnel was created according to the "cut and cover"[31]method underneath existing roads.

30 cf. http://en.wikipedia.org/wiki/London_Underground (28.10.2012)
31 cf. Ackroyd 2002, 574.

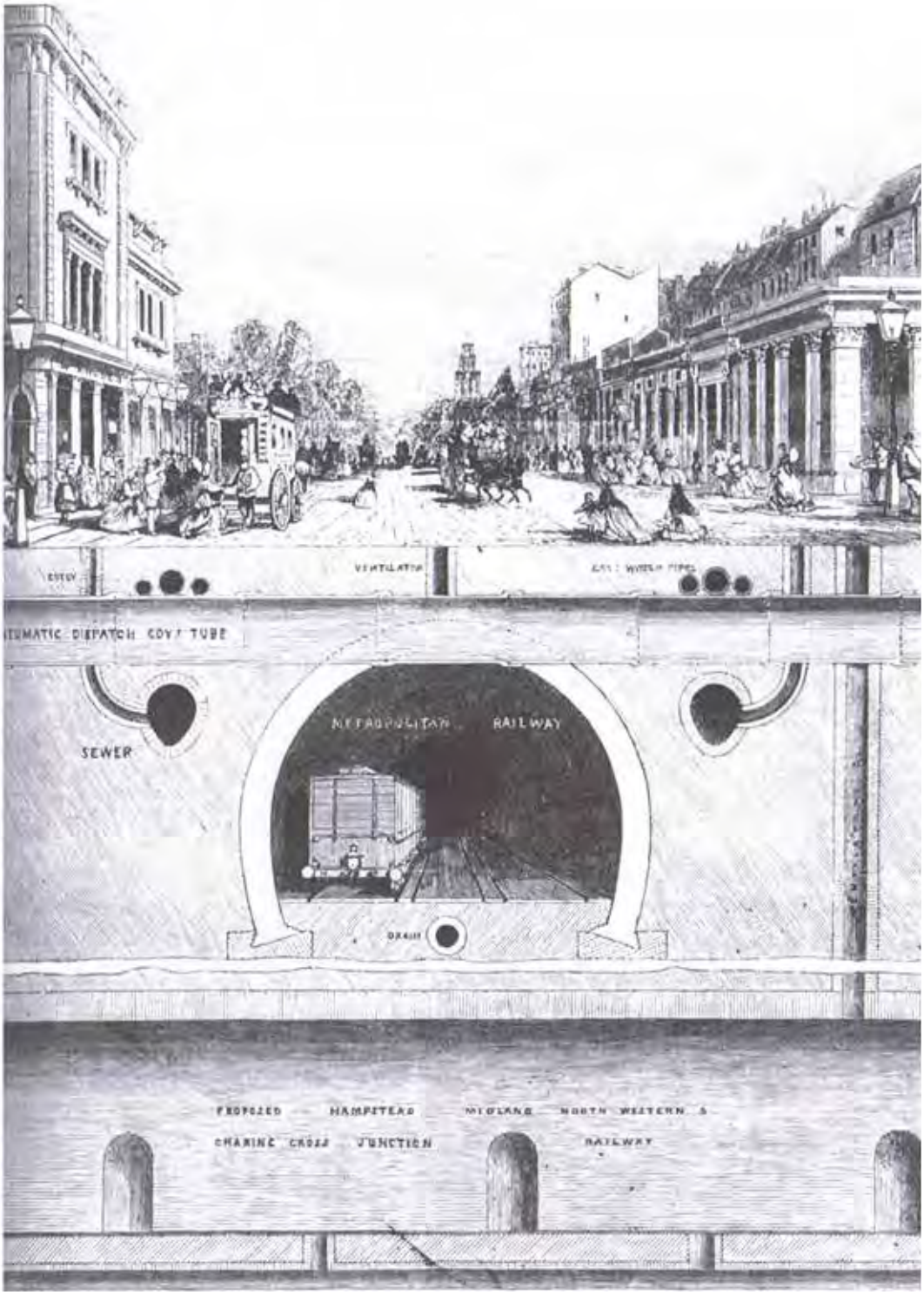

fig 59: A cross-section showing how the early underground tunnels followed the route of the road networks

fig 60: A 1931 London Underground Poster by Edward McKnight Kauffer

fig 61: An ad for life in Golders Green, one of the new suburbs accessed off the underground

fig 62: An ad for homes in Metro-land as the city extended into the suburbs

Along Marylebone and Euston Roads, a new line was determined according to the network of existing roads. Thus, there was always a reference to the passenger's orientation above ground at any time. This would change a few years later. In 1865, a pedestrian tunnel under the Thames was bought by Marc Isambard Kingdom Brunel for the East London Railway Company. Marc Brunel revolutionised the London Underground with his shield tunnel boring machines. The course of the tunnels was no longer dependent on the above ground reality and the aging road network. It could instead be thought of and planned in an entirely new dimension.

Michael Faraday's invention of the electric motor in 1821 in Piccadilly arrived concurrently to other necessary technology for the newly developed railways such as lifts and ventilation systems. The first new subway line that was largely free from being developed alongside the road network was the City and South London Railway in 1890. This later became the existing Northern Line that connects North and South London today. Within a few years, the Waterloo & City line followed (1898) and the Central line in 1900. The first train carriages never had windows because it was understood that you couldn't see anything anyway[32].

Parts of the metro developed in conjunction with the development of the city and the surrounding area, especially towards the north. In 1880, the Metropolitan Railway Company's line was extended mostly above ground until well into the countryside; thereby continuing to expand its sphere of influence. This development went hand in hand with major property developers who were planning new suburbs alongside the newly created stations. These suburban areas were commonly referred to as Metro-land; populated by families who had become tired of city life and could afford a house in the country.

Contrastingly, South London has hardly been touched by the subway system other than a few scattered stops on the Northern line. The underground railroad development was halted here

32 cf. Ackroyd 2002, 574.

for decades and is still waiting to be properly developed.
The system of multiple, independent operating companies often created significant inconveniences. When transferring between lines, passengers often had to travel long distances to the surface in order to interchange and even then had to buy extra tickets to resolve any discrepancies in fare. There were also high administrative costs for the railway companies to create this complex system of connections. In 1908, six operators merged together under a common name and gradually joined the subways into a single coherent network. Even individual names were linked. Thus, for example, the line that ran from Baker Street to Waterloo became known as the Bakerloo line.

The new partnership soon developed under the now world-famous icon of a red circle bisected by a blue line, the infamous London Underground brand as the whole world knows it today. Large advertising campaigns strengthened the new brand image amongst the population and eventually London Transport was established as a state-owned company in 1933.

In the same year, Harry Beck, an electrical engineer, published his connection diagram showing the clearest cognitive overview of London till today. On the one hand, it simplified the understanding of such a complex transport network immensely but on the other, it was the cause of much confusion in the estimation of distances above ground. By the lack of reference to places on the surface, the distortion of Beck's diagram made the subway system seem as though it was a parallel underground city that bore no connection to the world above. At points where several lines intersect, the diagram seemed like a large three-dimensional city with connecting tubes linking to themselves as well as adjacent lines - almost like a giant anthill.

In 2011, the London-based designer Marc Noad released an attempt to establish direct relationships between the city above ground and the subway network below. He released an alternative plan of the London Underground where the geometry relates entirely to the geographic distance between stations on the surface.[33]

33 http://www.london-tubemap.com/step-free_access.php (26.10.2012)

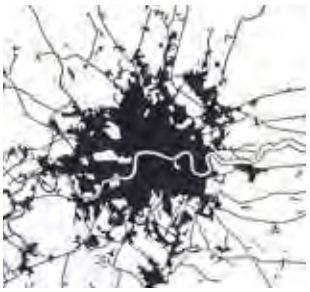

fig 63: London and its outer suburbs in 1901 by Terry Farrell

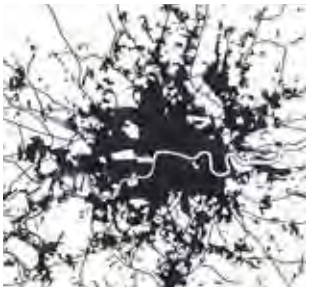

fig 64: The growth of the suburbs in 1911 as the rail and tube create connections to the city

fig 65: London Underground map by Harry Beck from 1926

fig 66: The anthill of tube connections underneath Piccadilly Circus

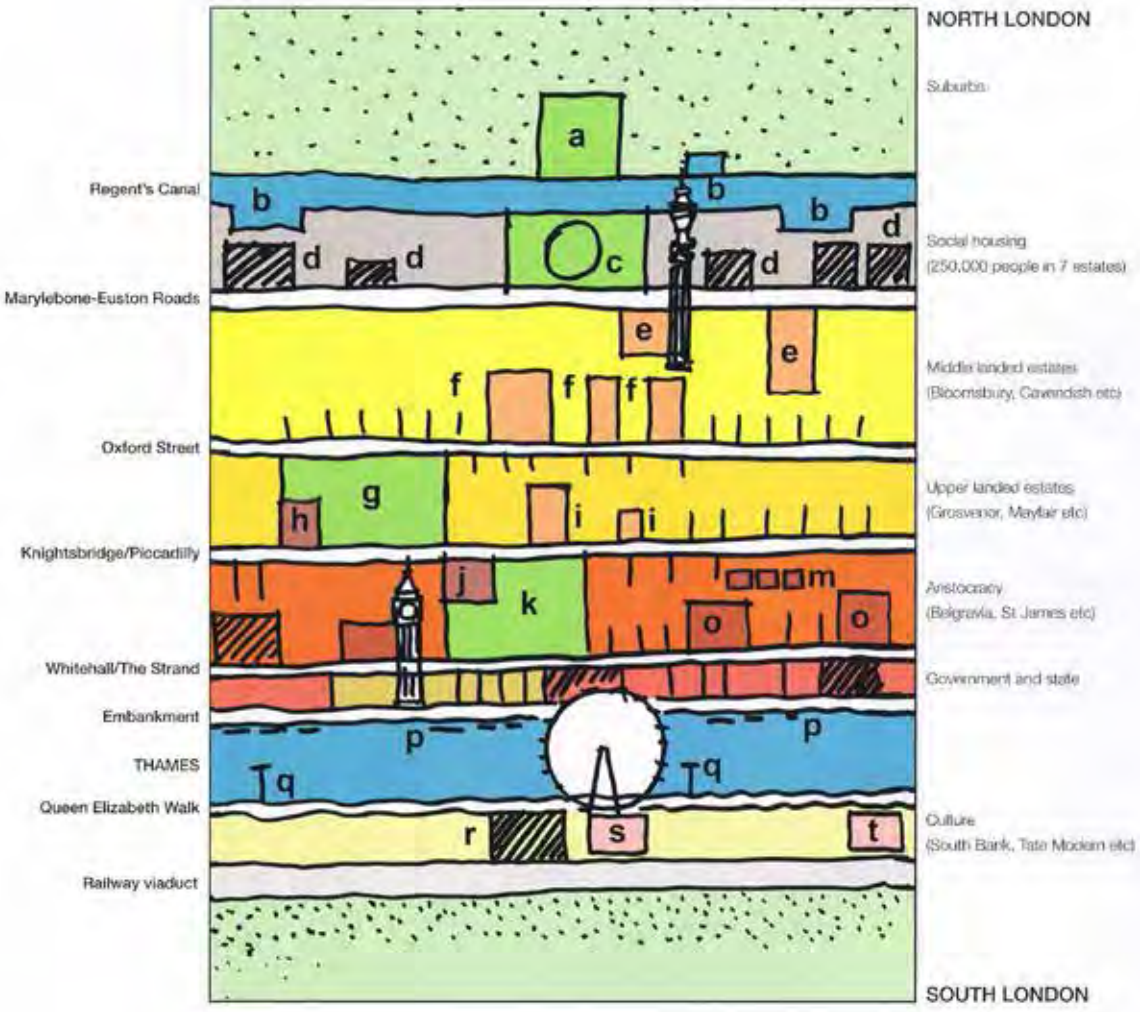

fig 67: Terry Farrell's 2009 diagram of the horizontal layers of London

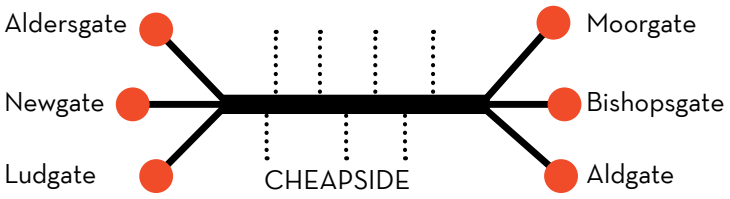

fig 68: A diagram of main streets of the city of London diverge to reach the six different gates

In the future, the biggest challenge will be to adapt the underground system to the current condition. Some technologies are outdated and delays frequently occur at peak times due to overcrowding on the platforms. Also as subway stations in the 21st century, they all need to be made as accessible as possible. For these reasons, there is still a considerable need for this once revolutionary system to adapt to the present day.

fig 69: An advertisement to live in Sudbury Hill, a suburb of London with an underground station.

The City Streets

It has always been very difficult to find in London's maze of streets, a pattern that explains the city's development. The route along which the old city wall used to sit gives us some clues as does the big Marylebone - Euston Road and a handful of other ancient trade routes. Besides these east-west exceptions that developed over time, there is one north-south link in which London city planners had sustained success. From 1811 to 1825, John Nash's Regent Street was presented as the "Via triumphalis"[34] for George IV between St. James's Park and Regent's Park. During a visit in 1826, Prince Pueckler writes: "[London] now seems to look like a residency, not just an immense capital of Shopkeepers, [...]"[35]

South of the River Thames, Elephant & Castle is clearly one such focal point. From here, the road system spreads out radially across the area.

On the North Bank of the Thames, the Strand runs behind the Victorian Embankment. As a direct link between Westminster Abbey and the Tower of London, it extended the backbone of London. Early on, important personalities and bishops had their palaces here.

Parallel to the Strand, but with greater expansion to the West, is the border to the North of Buckingham Palace that defines not a geographical but a class boundary. Piccadilly represents the next level of London's former aristocracy who possess the most power, influence and wealth after the ruling monarchy. It runs from Kensington in the west

fig 70: The different towns, parks and communities that are contained within London

34 Ackroyd 2002, 526.
35 Ackroyd 2002, 525.

fig 71: A 1754 engraving by Sutton Nichols of Leicester Square

fig 72: A 1751 engraving by Sutton Nichols of Soho Square

along Hyde Park and London's richest residential district, Knightsbridge. Its path is a magnet for embassies and palaces. After Leicester Square, this noble road is dissolved into the sprawling street network of 17th century Soho and Covent Garden.

The next major section is largely dominated by residential estates. Its border consists of two main streets, Oxford Street in the West End and Cheapside in the city centre. This lengthy east-west route extends far beyond the city limits; having been known once to have farmers pushing their cattle along its route from Middlesex and Berkshire on their way to London's major markets. On the way through Bayswater and Hyde Park, they had the opportunity to graze their herds in Hyde Park before continuing on their way through to Oxford Street and Smithfield meat market. For hygiene reasons, this route was altered from the Middle Ages to terminate instead at the gates of the city. Through Newgate, you reach Cheapside, which, for a long time, was the origin of the most important market in the City of London. After the road leaves London through Aldgate, this old Roman roadway runs through the large agricultural regions up to Colchester in Essex, the ancient capital of the Roman Empire.

The fourth major barrier in this simplified picture of London separates the middle-class residential areas such as Bloomsbury and Cavendish from the large social housing projects around the stations. Originally planned in 1756 as the first bypass road in the world, it sums up the collapse of the entire city core. When the Industrial Revolution began, they soon attracted first industries and then settlements. A few years later, individual sections of the New Road were renamed after its most important neighbours: Marylebone, Euston and Pentonville Road. Although planned as a bypass, it created more railways and subway stations along its length than any other street in Europe. It did it in such a way that it could be considered as London's main connection with England and the rest of the world.

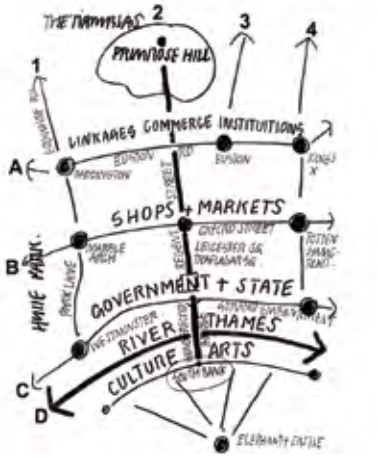

fig 73: Terry Farrell's diagram of the east-west axes of London, each with a specific function

The last two elements of the inner city road system are the long channel and the M25 motorway, the virtual external borders that complete the large circle of Greater London.

Motorways: What got London Up and Running

As explained above, in the 18th century the streets of London were crowded in many places. This fact led to the construction of the New Road, which later had to accommodate not just the volume of traffic but also the many stations that existed along its length.[36]

In the 20th century, the situation changed once again. The car had entered the streets. Even as more travellers began to use public transport, the overcrowding at peak hours and the resulting traffic jams were still predictable. The new democratic system meant that the commuter had access to any form of transportation. The invention of motorised traffic meant that the commuter could also decide when, where and how he wanted to travel.

During World War II, the car became a serious problem for the first time. In 1938, 500 new vehicles were added to the streets each day. Between 1951 and 2006, this number rose from 4.2 million to 33 million registered vehicles.

The city planners were filled with energy to tackle this challenge but didn't have a lot of experience with working on the city as a whole. Formerly it had been overseen by private firms to their own self-serving standards but now they had to take the task on wholeheartedly. There were plenty of ideas. As one can already imagine, most plans failed before they had even begun. Many of the envisaged measures were drastic and would change the London cityscape irreversibly.

The first plan, submitted in 1905 by the "Royal Commission on London Traffic" used more Draconian measures to get the escalating traffic problem under control. A network of wide avenues, each 43 metres wide and roads, each 30 metres wide would need to be cut into the city. The two large main streets of the city were also divided into four lanes. The aggressiveness of these measures and the outbreak of World War I meant that this plan was ultimately doomed.

A second plan for the Ministry of Transport by Edwin Lutyens and Charles Bressey in 1943, put forward the

36 cf. Farrell 2010, 191.

fig 74: A new motorway cuts through the city without any regard for its surroundings in 1969

fig 75: Swiss Cottage in 1893, a balance between residential buildings and the road network

fig 76: Swiss Cottage in 1995 after motorway construction reorganised its layout

fig 77: A London road map of the tangled network of motorways, outer and inner city roads


COUNTY OF LONDON PLAN
ROAD PLAN
CLASSIFICATION OF ROADS
ARTERIAL ROADS BLACK ROUTES
SUB ARTERIAL ROADS BLUE ROUTES
MAIN LOCAL TRAFFIC ROADS GREY ROUTES
LOCAL ROADS UNCOLOURED
SCALE

fig 78: The junction between the M1 and the A1 motorways creating residential islands between their roads

fig 79: How the motorways alters the scale and atmosphere of its surroundings in Paddington from the 1930s to 1966

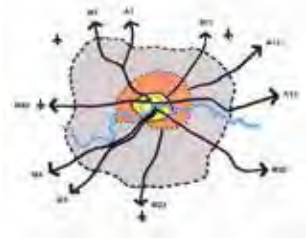

fig 80: The motorways leading out of London

idea of a ring road system. All plans at this time chose to propose actions that would destroy the parts of London that they should actually serve. Once again, plans were thwarted with the outbreak of war.

The 1943 plan of Patrick Abercrombie was a way to rethink London's problems following the war and its terrible destructive consequences. In the decades that followed there were other similar radical plans. In the 1960s, planners began to think of new strategies to relate to London's existing road networks and expand them.

Finally Margaret Thatcher ended this brief era of British nationalisation. Great Britain returned to its Victorian standards of deregulation. Little remained of the great roadway plans. Where major highways have cut through residential areas, they usually seem strangely out of place. The Westway, directing traffic from Marylebone Road in the city centre, is one such example. In Paddington, Archway and some other parts of the city's identity were simply torn out for building large ring road overpasses. These few examples and the larger outer ring are the few remnants of the once great plans for a car-friendly city. While London still has to cope with a lot of traffic, at least, in comparison to previous plans, it remains a human-scaled city.

Conclusion - An Organised Chaos

London's complex history and structure has been described in over 22,000 books[37] since 1939 alone. This figure exemplifies that it is a fascinating place whose great history, full of ups and downs, has captivated its viewers and inhabitants alike.

The metropolis is a unique construct of different eras and influences. It is a city of contrasts where finding a consistent understanding of the cityscape proves to be elusive. During its long history, London was often the starting point and testing ground for new inventions and technologies that would go on to permanently change the world. However because of their sudden appearance and rapid development, it was difficult to predict how influential these inventions would be in shaping the city itself. The economy was the

37 cf. Farrell 2010, 8.

most powerful driving force behind all decisions made in London. The opportunistic methods, driven by fluctuations in the economy, were for a long time the most influential instrument of urban planning.

On the preceding pages, I have tried to show a connection between the many forces that have shaped London over time to make it what it is today. Over the centuries some elements have disappeared or have been overlaid with new ones. However, deciphering the shaping forces behind these layers, allows us to understand London as an organised chaos, which exists according to its own rules.

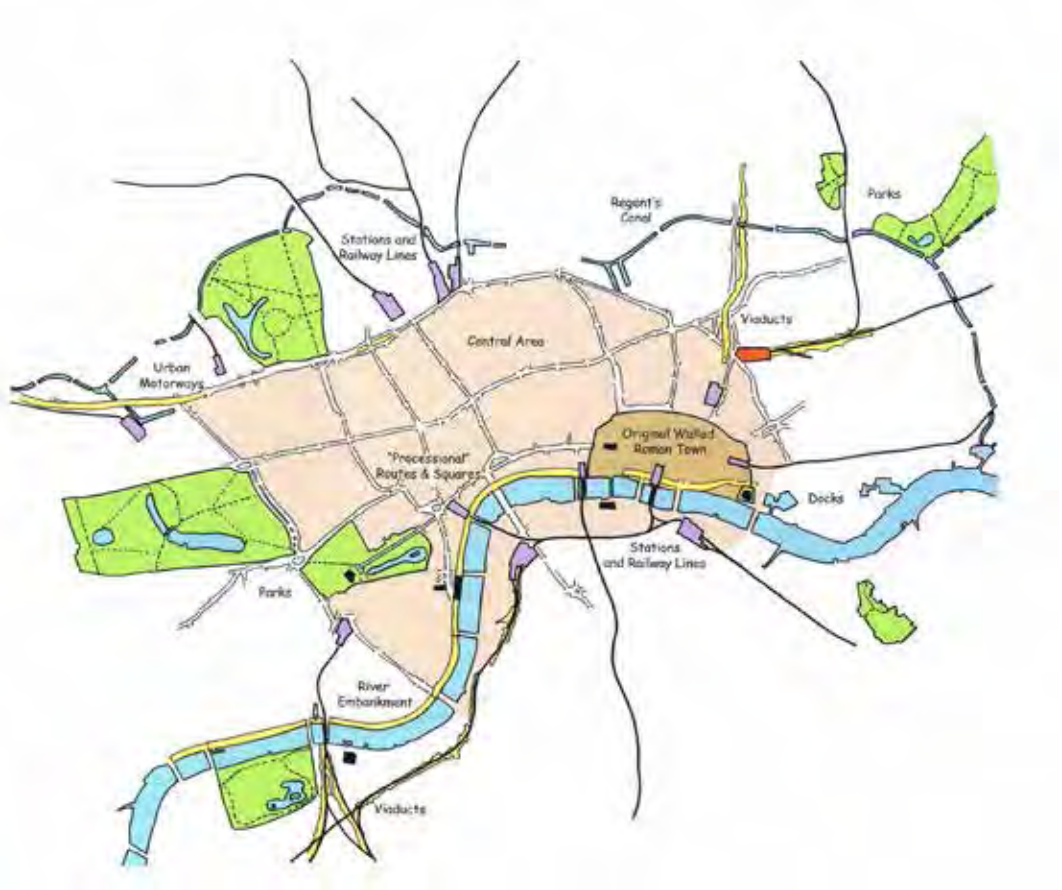

fig 81: An infrastructural diagram of London showing rail, river and major roads

2

The City as a Project

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The City as a Project

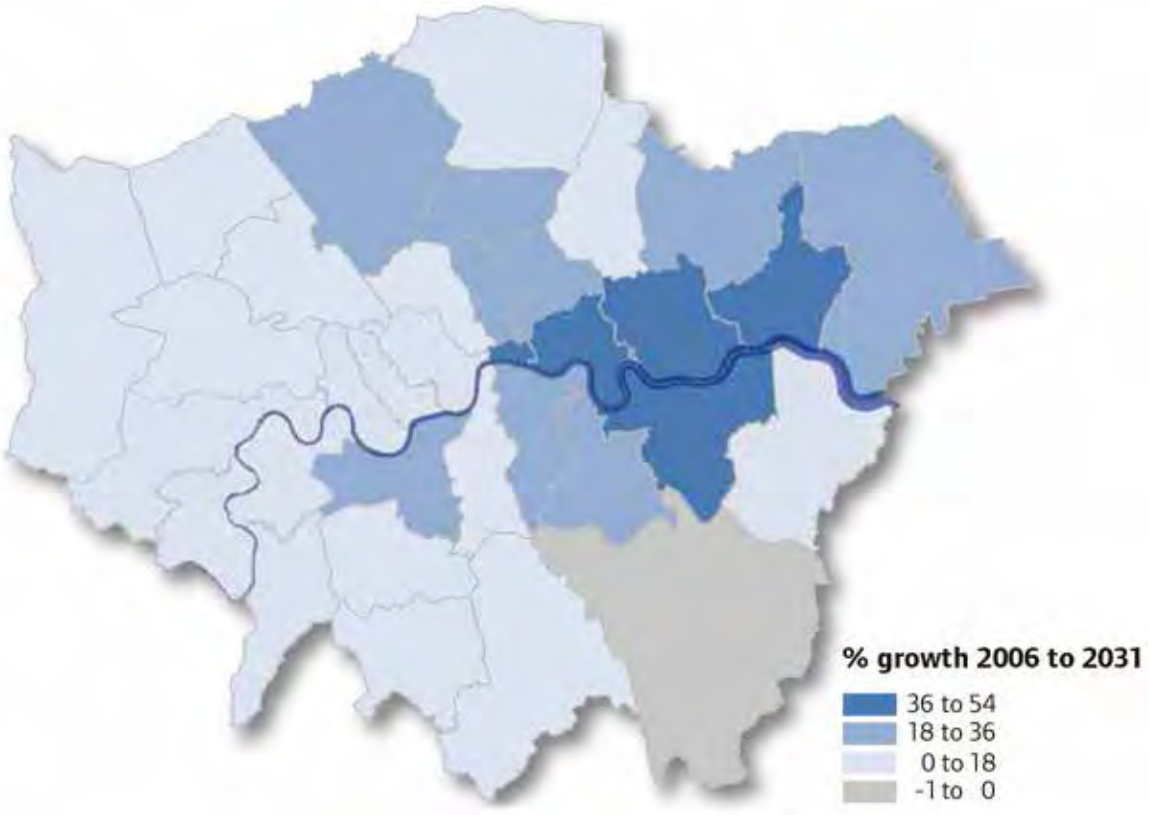

fig 82: Distribution of population growth 2006-2031

London – a success story

London is one of the biggest and most vibrant cities in Europe. Its multinational population is growing rapidly, mainly through immigration from all over the world. Back in 2009, London reached the mark of 7.75 million people (up 85,000 on the previous year). Current estimates for future population range from 8.06 million in 2016, rising to approximately 8.82 million by 2031.[38] Only a small minority of these people come from the United Kingdom itself. Over the last decade, more than 95% of the primarily young immigrants were in fact foreign born (in 2006: 74,960). About half of them come from outside of Europe. The number of European immigrants has recently increased due to the eastern expansion of the European Union.[39]

People are drawn to London by its steadily increasing economy. In 2007, London surpassed New York as the world's leading financial centre.[40] The biggest financial power still lies right within the City of London, the oldest part of the Metropolis, whose roots date back to Roman times. This shows how the city is constantly reinventing itself to keep up with the changing world [ch 1]. Many other sectors, mainly in the service industry, consequently profit from this strong stand in the global context. The London Plan estimates, that by 2031, there will be an increase of 776,000 (16.6%) jobs from 4.68 million in 2007 to 5.45 million.[41] So from an economic standpoint, London has a bright future ahead.

38 cf. The London Plan 2011, 17f.
39 cf. Burdett/Sudjic 2007, 145.
40 cf. Burdett/Sudjic 2007, 145.
41 cf. The London Plan 2011, 23.

Why London?

Not everyone profits from the international success of the metropolis

Although London's economy has been gradually growing for the last 20 years, this success is in no way reflected in the broad spread of its society. By contrast, exploding accommodation costs have had a rather negative impact. The inhabitants only partially profit from the high loans. Subsequently London is an increasingly polarised city. On the one hand there are those whose wages are steadily increasing and on the other hand those, who fall behind due to their low salaries. At 41%, London's poverty rate is the highest in Great Britain.

The up-market housing prices are nearly limitless. Rich investors from abroad want to rescue their wealth by investing money into London's financial save haven. Especially in Westminster a large number of Luxury apartments have arisen as a result of this economic trend. In April 2011, the Ukrainian Billionaire Rinat Akhmetov hit a new maximum with the purchase of his new maisonette apartment with a view over Hide Park. With about £140mi, he exceeded even the most expensive flat in the Shard (£70mi).

This disproportional increase of top-end housing prices and the unequal income distribution have an impact on the whole housing market. Less and less people can afford adequate accommodation without sacrificing their quality of life. This affects particularly families with children.[42]

42 cf. The London Plan 2011, 23.

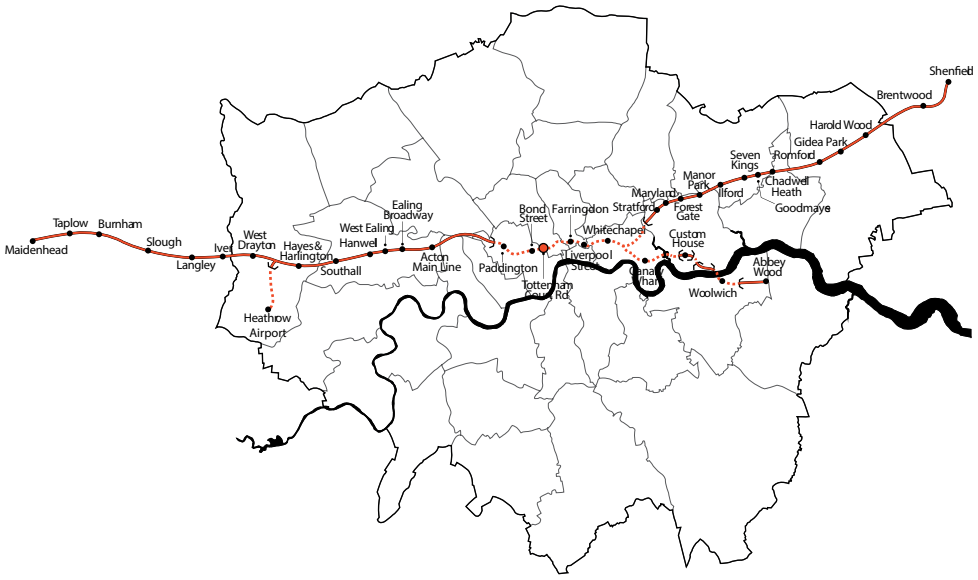

fig 83: "Crossrail" new fast connections between city and suburbs

More Households

More and more dwellings will be needed to absorb the population growth. Social trends like an increasing number of unmarried couples and single households enhance this effect. Also an increase of single parents can be noticed.

The Mayor of London estimates an increase in households from 3.32mi in 2011 to nearly four million in 2031, which are about 30,000 to 35,000 a year.[43] Of this number, about 13,200 dwellings will have to be affordable to keep up with the demand.[44]

Alone in the city of Westminster, 6,800 new flats will be needed within this time period, which averages at about 680 per year.[45]

My proposal centres on the new Crossrail station that is being developed at Tottenham Court Road. The new train line is going to intersect here with Northern and Central line and thus create an important connecting hub. Crossrail will create new, fast connections between the city and the suburbs, as well as between Tottenham Court Road and other important parts of the city. The new development above the much frequented station is a great opportunity to create new dwellings for both, families and single people, and to implement more adequate accommodation in the centre of London.

43 cf. The London Plan 2011, 20.
44 cf. The London Plan 2011, 96.
45 cf. The London Plan 2008, 66.

The City vs. The Suburbs

As soon as they have children, most families tend to move to the suburbs. Like everywhere else in the world, Londoners dream of having their own house in a quiet sheltered, suburban environment.

The city as a living environment is at first often associated with negative characteristics. Street noise, hectic pace and stress are often mentioned factors. For families with children, the surroundings without gardens and playing areas seem too dangerous. Most flats in the city are also too small for families to live in.

On the other hand, there are areas in London which are covered in a carpet of large residential developments. In general they feature repeating terraced housing [ch 3] with small adjacent gardens. Since the industrial revolution, this type of housing is very popular to accommodate large parts of the population. At first glance, it bears many advantages, especially for families. The children can play on the streets or on close-by playgrounds, every dwelling has their own private space behind the house and there seems to be more a sense of community. A major disadvantage of this typology on the other hand, is the low density that forces the city to sprawl always further outwards. Increasing commuting times and the resulting loss of energy also have a negative financial impact on the individual as well as on the city, which has to increase their transportation network further and further outwards.

fig 84: Percentage of 19 years or younger

0 - 15%
15 - 22%
22 - 30%
30 - 40%
40% and over

Due to the planned urban expansion project, Crossrail, urban sprawl is again a widely discussed subject. Until 2018 London is going to invest £14.8bn to deliver the new giant railway project. Crossrail states that at the same time, however, they are only creating £5.5bn in added residential and real estate value in the developed area.[46] Beyond the current city borders, it is meant to develop up to 57.000 new dwellings. In the beginning of 2013, a survey carried out by a think-tank announced, that instead of high-rise towers, more low-rise areas have to come into being. They founded their conclusion with the lower criminality rate, better hygienic conditions and better social integration in such areas.[47]

I believe that this is, in many of the cases, the wrong approach since, as explained above, new big infrastructural problems arise from these suburban explosions. Especially in the case study about the *Golden Lane Estate* [ch 3.4], it can be understood that this conclusion can be avoided. New homes should be desirable places to live. By analysing homes from the 1960s and 70s, their mistakes can be avoided and their many benefits can be found and translated into a new situation.

The main aim for this thesis will be to develop a typology that creates a mixed neighbourhood that its inhabitants can identify with. The new homes must be spacious enough for singles, couples and family life but at the same time be space efficient in their layout.

46 http://www.crossrail.co.uk/news/articles/crossrail-predicted-to-increase-property-values-by-55-billion (23.04.2013)

47 http://www.standard.co.uk/news/london/plan-to-move-families-out-of-tower-blocks-and-into-lowrise-flats-will-improve-quality-of-life-and-save-money-8462838.html?origin=internalSearch (23.04.2013)

fig 85: Layer upon layer of terraced housing in North-East London

Materiality

London is a diverse metropolis. Its disorderly city structure with fragments from every century, as described previously, creates a collage-like picture or tapestry. This collection of urban fragments of different formats and densities is typical for this place. Many buildings, from the design of their front façade, suggest order. Throughout the whole city, we find long rows or squares lined with terraced housing. Their structure is often nearly identical. But many of them have changed slightly over the years. Frames were added around the windows, facades were plastered or just coloured differently or augmented with ornamentation, depending on the availability of funds. But the basic structure of adjacent buildings is identical since they were built concurrently.

The windows themselves have a special format in London. They have a low parapet and are therefore longer. The traditional English window is the sash window. It opens vertically and is divided in the middle. It creates long holes in the often flat facades of especially Soho's terraced houses. The omnipresent material on a typical London façade is brick. There is a never ending variety in tones and shapes. The brick creates a rough and uneven surface and moves slightly over time. It lets windows sit in at a slight angle and through its appearance, makes walls look less even. The whole façade gets an edginess to it along with a sense of history and context through the different tones and materiality of the building.

opposite page, top left to bottom:
fig 86: Painted brick façades, Charlotte Street
fig 87: Terraced housing, Hackney
fig 88: Terraced housing, Soho


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Meanwhile, the buildings' rear sides speak another language. They rarely have clear facades anymore. Extensions are cluttered onto the original structure, walls are torn down and bit by bit, it all comes together to create a new collage at the building scale. Everything is possible here. Pipes seem to run randomly along the side and back facades while everything seems to be improvised to mismatch the rest of the building.

This haphazard agglomeration of elements makes many of the corners and side-streets seem a little run-down. The characteristic sooty brick facades in varying tones, with their particular window to façade proportions, interspersed between new glass and steel or concrete buildings create a unique ensemble that is typical for London.

With his recently completed Central St Giles next to Tottenham Court Road, Renzo Piano reinterpreted the London typologies in a way so that it stands out but still relates to its context in the building's richness. He used the unconventional material of ceramics to cast and create a similar density in texture and typical proportions that define the city's image. The typically brick facades are here translated into vivid hues of green, orange and yellow monolithic ceramic cladding. In 2012, another building by the same architect opened. The Shard creates a completely different image. Being the tallest building in London, the tall icicle-like glass pyramid stands out as an icon for the city, but is alien to its surroundings rather than working within context in which it exists. The two projects by the same architect are each eye-catching and iconic in their own way. The latter example remains an isolated object that could be implanted into any city, anywhere. The former example takes on the weight of history and culture, creating a project that is vibrant and modern in its materiality yet at the same time, through its references and textures, maintains its ties to the past.

fig 89: The Shard by Renzo Piano

fig 90: Central St Giles by Renzo Piano with the finacial district in the background

The Problem with Towers

In England, high-rise buildings have a generally bad reputation. In the large housing estates on the outskirts, they are often associated with run-down flats with bad quality and criminality. In the finance centres of the cities, they mostly stand for the arrogance and power of the financial institutions and money speculation. At night, the centres, that are busy during the day convert into anonymous ghost towns without character and social viability. Complete suburbs are being cut off from public life.

The large, isolated glass cathedrals in the financial districts are watched critically and partly with rejection by the wider public. They were built with money that many people are missing in order to make a living.

In June 2012 the highest building in London was inaugurated. With its 310 metres (1,016ft) the new building already polarised the city's inhabitants before it was opened.

Renzo Piano had high ambitions, to make many things different. Not lastly to improve the image of the skyscraper. He is of the mind that a high-rise can indeed incorporate functions of public life. In an interview with the Guardian in 2002, he praised the project as a multi-functional vertical city with even a small chapel on the observation deck. After a financial shortage and the resulting changes in planning, its program converted towards maximum profit, including

one of the most expensive flats in London (£70mio). The aspired "democratic project"[48] became a pure speculation object. The remaining ten luxury apartments from the floors 53 to 65 will probably stay empty for large times of the year and will not stimulate the area's social activity.

The politics share a decisive responsibility for the negative image of housing towers. After World War II, over two decades, the state saw housing towers as the perfect answer to rapidly growing housing shortage. This way many families could be supplied quickly with adequate living space. Inspired by Modern ideas of contemporary architects, above all Le Corbusier with his Ville Radieuse, those new suburbs seemed to look into a bright future.

But like in other areas of the world, this new typology also fostered new ghettoisation. Many of the newly developed areas that once raised high hopes now concentrate social problems and criminality. After all, the flats in many of those rapidly built towers offer little flexibility and quality of life.

In the beginning of 2013, an expert committee advised the mayor to build more extensive low-rise housing estates, referring to the statistically lower criminality rate. [49]

Personally, I think it is not alone the tower's fault as a typology. I rather think that it is an attitude and the scale factor of the dweller/visitor to the space. The protagonist must be able to experience the building on eye level and to interact with it. It must be available for the public day and night. Then it might be possible to displace the prevalent bad image of the social housing tower.

48 18.05.2012: http://www.dezeen.com/2012/05/18/interview-renzo-piano-on-the-shard/ (23.04.2013)

49 Crerar, Pippa 23.01.2013: http://www.standard.co.uk/news/london/plan-to-move-families-out-of-tower-blocks-and-into-lowrise-flats-will-improve-quality-of-life-and-save-money-8462838.html?origin=internalSearch (23.04.2013)

A High-Rise for London?

Like in many other European cities, also in London the question remains: Is London a city in which a high-rise building can be placed adequately?

Renzo Piano believes that London is not a City of Skyscrapers[50]. On the other hand, in August 2012, he opened the shard, for a few months the tallest building in Europe.

London is a city with many centres. Although there is the City of London as the original central point, meanwhile life distributes over a much larger area. In many major cities like New York or Hong Kong, high-rises in the city centre are understood as self-evident. London on the other hand assembles from many individual focal points to create a vibrant metropolis.

50 18.05.2012: http://www.dezeen.com/2012/05/18/interview-renzo-piano-on-the-shard/ (23.04.2013)

These single focuses are part of an urban concept. The punctual concentration of social/ structural density and activity already manifests in several areas through high-rises. Already in the 1960s at Tottenham Court Road and now at Elephant & Castle and also around London Bridge, not to mention the City's financial centre. Many skyscrapers strongly influence their surrounding's representative image, and in some cases even that of a whole city.

I believe that London can easily cope with skyscrapers. It already proves this with several examples. Important is, however, that they focus on certain centre areas that already show a high level of activity and are bound into the city structure.

fig 91: View from Centre Point - Different centres manifested by Towers

Group Dynamics

The large-scale privatisations during the Thatcher era had wide-spread effects on the condition and public image of housing estates in Britain. All of a sudden, the boroughs did not have the necessary means to maintain them and in consequence many of the once celebrated future visions decayed. They soon lost their good appearance and the backing among the people. By repair and maintenance funding being cut, roofs started leaking, public parks overgrew, and playgrounds depraved and became meeting point for troublesome youth gangs. This had extensive consequences. Within one decade people thought of housing estates as dangerous ghettos with bad quality of life. But originally they were meant to give a way out of the precarious housing conditions and make higher standards also available for lower income brackets.

In the subsequent years, some housing estates, like the *Alexandra & Ainsworth Estate* [ch 3.4], showed an interesting socio-political phenomenon. Its inhabitants did no longer want to settle for the progressing decay of their home environment and, in return, altogether started their own counter-initiative. Some of the inhabitants, who had been living in the estate for many years, now started meeting frequently in order to discuss, which activities could be undertaken to make their home attractive again. They formed task forces and held workshops and thus spanned a network between the families that they could identify with.

Of course not all the inhabitants are involved in the process. Nevertheless, the energy that the organisation sends out has a big impact on the general atmosphere. Especially in a housing area as dense as the *Alexandra & Ainsworth Estate*, it was important to create a functioning community.

The offered activities are multitude. They range from weeding the public gardens and movie evenings to different sports activities. They even produce their own honey on the roof of the community centre. The offered program reaches all age groups and exhibitions are organised. A group of residents interested in film create their own award-winning movie in 2010 ("One Below the Queen: Rowley Way Speaks for Itself") to get rid of prejudices.

This shows that through their commitment some few inhabitants have the chance to motivate many others to follow them and to create a sense of community. As an architect of such housing estates one should not only think about the physical architecture, but also care for the structure and organisation of the peoples' possible joint activities. It is certainly a good starting point to organise the public spaces regarding those activities and group dynamic processes. Many of the housing estates analysed in this thesis create particular spaces, from interleaving circulation spaces to recreation rooms, which foster interactions between the inhabitants already in their everyday life and thus help forming a network.

I believe it would be interesting and important to actively support such initiators and help them right from the start to encourage activity. If people as part of the neighbourhood take the initiative themselves and motivate others - maybe even those from outside – such a program can surely make a higher impact than if this commitment is artificially produced from outside.

In this thesis, I do not want to plan in detail, how motivation for this can exactly look like. This would certainly be the focus of another paper. Nevertheless I want to make sure, that these non-physical aspects are being thought of during the design of a building and thus automatically also of its inhabiting community.

It is every architect's and planner's desire to see his product in good condition and even progressed after several decades. By revealing the connection between the growing relationship of a large part of the community with their estate and the resulting awareness and carefulness in handling it, it must be possible to convince even opportunistically acting investors to support such self-determined human activities from the start.

fig 92: A beekeeper resident harvesting the estate-produced honey

fig 93: One of the residents displaying the fresh fruit and vegetables sold by the estate-run co-op every Saturday morning

Diversity

Mixing affordable and market priced flats.

It is a prevalent opinion that social housing estates are drab and boring spaces that foster and are the source for criminal activities. In some cases this theory can definitely be confirmed without second thoughts. The infamous Heygate Estate is only one example. Often the majority of residents are from lower income groups and often unemployment is common among the inhabitants. By being segregated from the rest of the population, anger and defiance are growing. The other way round, this situation creates prejudices among people outside the estates against those living there, which closes the cycle.

There are several prime examples in London, which prove that if social housing estates are woven into the fabric of wealthier parts of the city, they easily adapt and become part of it. These estates no longer happen to be havens for criminals but contribute to a functioning community.
Lillington Gardens [ch 3.5] is situated right in the heart of Pimlico, a rather affluent neighbourhood. All of its 780 dwellings count as affordable housing units, however, the area is as safe as its surrounding.
Another such example, implanted amongst Georgian terraced blocks in Bloomsbury, is the *Brunswick Centre*. [ch 3.6] Being home to many London universities and the British Museum, the area is one of the better districts of London. The flats in the *Brunswick Centre* are in high demand today.
The new guidelines that will help to create a more integral

city, provided by the Mayor of London in The London Plan, was introduced in 2004 and last updated in July 2011. It aims to provide the market with at least 50% affordably priced flats of an adequate standard in every new dwelling throughout the municipal area.[51] If the building site has the capacity for ten or more homes, a major part of those 50% should be executed as social housing. It has to be clarified however, that The London Plan is still just a guideline and that there is always a way around its suggestions.
By integrating the lower-priced flats into the comprehensive city and social structure, ghettoisation known from some large-scale 1950s and 60s housing schemes is sought to be prevented.

"Mixed-use development can create greater use of buildings and areas throughout the day and night, promote more sustainable forms of development and reduce the need to travel."
[Greater London Authority (pub.) 2008, 80]

Bringing housing and retail together

London is known for its multitude of small new up-and-coming designers, artists and other small start-up businesses that become successful worldwide. The streets in Soho or the East are filled with little individual bars and cafés, which express the improvised patchwork structure of the city.
On the other hand, in housing areas, people are working during the day and leave their houses to go to other parts of the city. Large areas are abandoned for many hours.

In general, these small, young enterprises need rather affordable spaces to occupy for commercial use. However at London rent rates it is hard for young entrepreneurs, to afford both suitable accommodation and a workshop/ office/ retail space. In the London Plan, the Mayor suggests that the "[…] Boroughs should, consider imposing conditions […] to provide or support affordable shop units suitable for small or independent retailers and service outlets […]"[52]. These typologies that mostly exist next to each other in isolation have to be brought together.

In this thesis, I will combine these functions with a variety of different kinds of larger and smaller flats in order to create a vibrant neighbourhood that is frequented by inhabitants as well as visitors during the day and the night.

51 Cf. Greater London Authority (pub.) 2008, p.75.
52 Greater London Authority (pub.) 2011, 131.

Public Image

Walking through various estates during my research, I got to know some great examples of social housing. Looking at the light-flooded double height spaces of the maisonettes at the *Golden Lane Estate* [ch 3.2] or the well laid-out flats at *Alexandra Road* [ch 3.4] with their large terraces and big windows, I was wondering, why nowadays social housing has such a questionable reputation among society.

Of course I know that there are other examples that are very different to those rare exceptions. Many social housing estates, with their similarity to laying batteries, are in fact starting points of criminal energy and often don't offer their inhabitants much more than a roof over their heads and central heating. (e.g. Heygate Estate) [Vgl. Legebatt - Estatefoto] But there are project that make a difference.

A few weeks later, I had a conversation with neighbours living only a few streets away from *Alexandra Road* in a rather large semi-detached house in Hampstead, well suitable for an upper middle class family. They were rather astonished that I bothered to study this housing Estate. Until this evening, it didn't even come to their mind that social housing, especially from the 1960s could provide apartments which feature a high quality of life. They were very surprised, when I explained to them, that the flats inside the brutalist block are actually very nice to live in and the inhabitants are in fact happy there.

The *Alexandra and Ainsworth Estate* was also chosen for film shots on various occasions to show a run-down and socially deprived environment. The inhabitants were quite upset about this circumstance, since this does in no way represent reality. When the film crews arrived on the set, they first had to throw around waste and old mattresses to make it look the way they anticipated it to be.[53]

This conversation made me question how an outsider's or neighbour's perception of a building is influenced. This example shows that the general reputation of the whole typology can brand all its examples, regardless of their actual quality. By being able to ignore it and not having to actually engage with the Estate, it was once branded by projecting others' problems onto it.

I want to consider this problem in the design of the building I am going to propose in this thesis. How can that previously explained circumstance be changed? First of all, there must be a possible interaction between the surrounding's life and the building complex itself. Maybe one possible solution can be to interweave the residential units with other parts of daily life, like shops and office buildings. A mix of inhabitants of different social backgrounds might also be advantageous. Subsequently, the estate will also have to have a positive impact on its visitors' as well as its surrounding's perception. It is important to get life outside and inside to interact with each other and the architecture. If architecture cannot change society, it can at least influence their members to make up their own mind and thus make the difference.

53 Film: One below the Queen. Rowley Way Speaks for Itself. Great Britain 2010 (http://www.rowleyway.org.uk/part2.html).

3

Housing Precedents:

Successes & Failures

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A History of Housing

Private property development on a large scale has a long tradition in Great Britain. From the 17th century onwards, developers did not only build houses, but whole streets and squares. The aftermath of this trend can still be seen today in the relatively low influence on construction by the planners, by relatively low density also of inner city projects and the ongoing dominance of large developers on the housing market.

The Great Estates

The historical origin of this private development dates back to the feudal system when William the Conqueror claimed all the land he ruled as property of the crown. This law still exists today.

The king now had the power to give out land to some of his most faithful lords. These so-called landlords held their freehold estates without having to return it after a certain time. In order to keep them close by, the king granted them lands in the area around West London, close to Westminster.

During the first centuries the land was only leased to farmers as agricultural land. Due to a rapid population increase in the 17th century, after the Great Fire (1666), they began to lease it to investors instead. Apart from an annual fee, a contract committed the tenant to build a certain amount of residential buildings. Their quality and architectural style were predefined as well as the associated streets, lanterns and sewage canals. During that time, this

leaseholder was allowed to sublet it to other tenants and could keep his profit. Additionally he had to maintain the buildings well. Normally the contracts ran for about 80 - 100 years (the equivalent of about three lives)[54]. Since the land including its building development went back to the landlord after the lease expired, for whom this system was nearly risk free.[55]

Till today, these newly developed residential areas, the Great Estates, are characteristic of large areas within London. At Covent Garden, Lord Bedford was the first one to dare such an enterprise. Others like the Earl of Southampton and the Earl of St Albans followed his example with the development of Bloomsbury and St James's Square.[56]

At the time of their appearance, they resembled today's gated communities. Gated parks, only accessible to residents, were incorporated to be able to demand higher rents. Over time, the gaps between the estates were closed by smaller, unplanned settlements.

It is due to this system that today about 50% of the land is possessed by about one percent of the inhabitants.[57] Since the estates are privately owned and work in their own interest, city and state hardly have any influence on their development. On the other hand, this is also the key to their success. By being able to plan with the future in mind, the landlords make sure, that their land stays well developed and expensive.

Today boroughs like Kensington & Chelsea and Westminster are areas with the highest overall density of inhabitants (131/ 84 p/a) and at the same time the highest life expectancy and lowest criminality rate in London.[58]

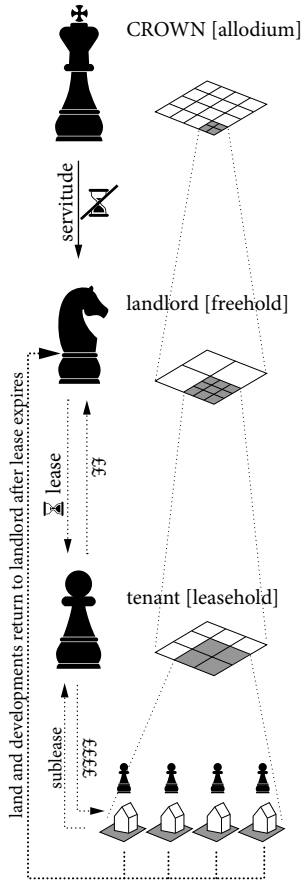


fig 94: Estate development through landlords and tenants

As a result of London's predominant private developers, public regulations of building forms, densities and circulation systems are only rudimentarily developed. Instead building heights or other figures are negotiated case by case. Often it depends on the neighbours' objections if a building application is approved or not.

fig 95: Grosvenor Square 1754

54 cf. Sheppard F. H. W. in www.british-history.ac.uk/report.aspx?compid=46084 (07.11.2012)
55 cf. Firley/Stahl 2009, 104f.
56 cf. Murray 2010, 2.
57 cf. Blechschmidt/Opel/Stöhlmacher 2012, 48.
58 cf. Farrell 2010, 268.

Terraced Housing

Important for the success of the estates was the invention of the terraced house as a new building typology. Invented in the Georgian era, till today it is the most common building form in London. Its name probably derives from the association with a view onto a semi-private park, the development normally surrounded, since it sounded more special than row house.

The most widespread standard version is three to four storeys high. In some areas they are up to seven storeys high with additional mews buildings in the back. While the larger terraced houses were often grouped around a green square, the lower ones did not have this luxury. They were instead strung along long streets to save space.

The inner organisation of the terraced house is simple. Each floor contains one room on each side and an internal staircase. Depending on the social status, the buildings varied in height and width. The wider buildings at the end of the terraces were often occupied by the doctor.

More interesting than the simple plan is the section. Using excavation to build the street had three advantages: Firstly only half the earth had to be moved, secondly it was simpler to create a basement with a light well – often the entrance to the coal storage – and thirdly this construction method allowed for an additional full-fledged floor towards the garden with proper lighting conditions.[59]

The two-storey high mews buildings originally served as servant quarters and stables. What serves as a garden in between today, used to be a domestic courtyard. While the façade is made of brick, due to a building act (1707) resulting in the Great Fire (1666), the interior is dominated by wooden constructions.[60]

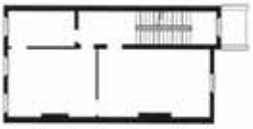
What kept the terraced houses alive over the centuries, was its exceptional flexibility. Originally constructed as single-family homes, it adapted effortlessly to the market and now accommodates several units, hotels, offices or schools. Even the relatively recent request of a garden could be fulfilled with the former work yards and roof terraces.

59 cf. Sherwood 1981, 66.
60 cf. Firley/Stahl 2006, 126f.

fig 96: facade of low terraced housing

fig 97: terraced housing pimlico

fig 98: setting in the city structure



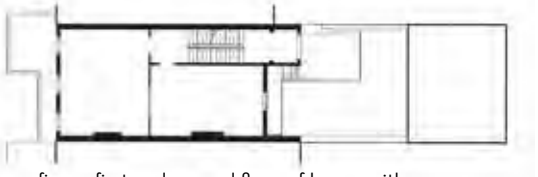


fig 99: first and second floor of house with mews

fig 100: section through low terraced house

fig 101: section through terraced house with mews

Power Balance between Market and State

Because its influence and field of responsibilities was rather small as a consequence of the traditional urban development, London's administrative structure was much smaller than in other cities. For a long time, there was no institutionalised authority that held tasks like urban and street planning. Whenever a road had to be built, a committee was called in and had to find a special solution to the problem. This was then executed by a private firm.

fig 102: Peabody Square, Islington

After cholera had broken out several times in the first half of the 19th century, the efforts for better hygienic conditions throughout the city led to the foundation of the "Metropolitan Commission of Sewers". In 1855[61], their successor, the "Metropolitan Board of Works" (MBW) was, for the first time, able to work city-wide. The MBW only had a few problems: their members were not elected and thus were corrupt and its authority was broken by the boroughs.[62]

Similar to today, through the rapid growth of the city, mainly housing for the middle and upper class was built. In the 1860s, privately funded trusts set out to solve this misery and started building larger collective housing structures for poor people. One of them was the Peabody Trust, which worked within the concept of "five-percent-philanthropy". They committed to making no higher profit than five percent through their housing schemes. They bought up large sites to develop large-scale projects where sets of several rooms shared communal lavatories and kitchens.[63] Many of these housing trusts are still in existence today.

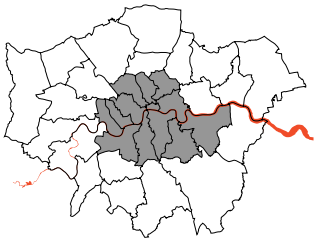


fig 103: *London County Council* (grey) and *Greater London Council* (grey+white)

Through a long complicated process, the MBW was replaced by the *London County Council* (*LCC*). Being given much more authority, also in other fields like schools and public transport, they eventually became one of London's leading architecture firms in Europe. In 1965 it was replaced by the *Greater London Council* (*GLC*). After the Thatcher era, London did not have any superior planning authority. Only in 2000, the Greater London Authority (GLA) was founded and a mayor adopted.[64]

61 cf. Weis 1983, 6.
62 cf. Harnack 2012, 6.
63 cf. Tarn 1971, 12.
64 cf. Harnack 2012, 6.

Fresh start after 1945

Until the privatisation period in the 1980s, the state provided social housing directly. By collaborations of private and public organisations, ground-breaking housing projects were created that were of higher quality than other modern estates at the time.

During the war, large parts of the city were destroyed by German bombs. The politic mainly conformed to the fast development of social housing estates. In 1954, already 74%[65] of all completed dwellings were social housing. In 1950, the *LCC*'s architecture department took over the work from the engineers. Inspired by Modern ideas from Europe the motivated group of young architects set out to become one of the most seminal housing offices in Great Britain and Europe.[66]

In their decisions the *LCC* could not be overruled by the Boroughs and they were given a relatively free hand on decisions. In the first post-war years, point-block and high-density developments were thought to be the only solution to improve the current housing situation by maintaining high density and giving more space to dwellers. In "mixed developments", singles and childless couples were housed in high-rises while families were meant to live in low row houses.[67]

Against wide presumptions, only 25% of the new flats were actually in high-rise buildings. As described among the precedents in this thesis, many of these post-war developments are now listed icons.

In 1965, the *LCC* was replaced by the *Greater London Council* (*GLC*). The *GLC* now had less power than the *LCC* and had to co-ordinate with the Boroughs, which led to hard internal fights over project decisions. Over time, the *GLC* and the boroughs went back to using industrialised building systems given that they were subsidised by the state. Consequently, although being able to create dwellings very quickly, their quality sank again. By 1971, 31% of housing was state owned.[68]

fig 104: New industrialised Point block in Newham, 1966

65 cf. Harnack 2012, 7.
66 cf. Glendinning/Muthesius 1994, 3.
67 Ibid. 26-28.
68 cf. Harnack 2012, 10.

Era of Privatisation and the Right to Buy

In 1979 the conservative party came to power with Margaret Thatcher as Prime Minister. In the following years, they made heavy cuts in public housing and at the same time subsidised private home-ownership. The newly introduced "*Right to Buy*" allowed the tenants of social housing units to buy their flat for a sub-market rate. After renting it for at least 5 years, they are granted a discount of 35% for houses and 50% for flats. The maximum reduction can be £75,000.[69]

The *Right to Buy* was understood as a measure to give each person the possibility to own their own accommodation. Nevertheless, after already a few years, the demand for social housing rose. Those people, who could afford to buy their apartment, soon sold it with profit to the market. On the other hand, there were many of those, who could still not afford to buy their own place. In 1986 and 88, the discounts were raised even further to stimulate the slowing real estate market.[70]

The biggest problem of the *Right to Buy* scheme is especially that the more attractive flats were privatised and only the ones of lower standards are now available as social housing. While their inhabitants were formerly more mixed, this scheme supports social segregation. Due to the extreme shortage of social housing, the state today even has to rent out private real estate to be able to house all those in need.

Hard Times for Social Housing

Today's social housing politics stand in between the necessity to provide affordable housing and to do this with as little governmental influence as possible. Further, for tax reasons, owning a dwelling is supported more in oppose to renting it. This heritage from the Thatcher era lives on.

Because of tight budgets the boroughs are hardly allowed to spend money on new dwellings or even refurbishments. Since 1990 however, they have the possibility to allow private firms to build social facilities like kindergartens and in return run them profitably.

Over the last years, a new concept, funded by the state, was introduced to support first-time buyers. As the "Shared Ownership" scheme, the buyer buys at least 25% (max.

69 cf. Gegidze/Spruth 2012, 79.
70 cf. Harnack 2012, 10.

fig 105: Margret Thatcher, former British Prime Minister

75%) of a property and rents the rest. This system bears disadvantages for the tenant since on the one hand he has to surrender to rent adjustments and on the other hand he is fully responsible for damages and repairs on the property. Further it cannot simply be sold or rent out to subtenants, which restricts his flexibility.

The market is still dominated by large commercial property developers. The four largest dwelling companies were responsible for nearly 40% of completions in 2007. Although the demand rose since 1994, the production rate of new flats has not increased.[71]

Since 1980 the dwelling size is no longer measured in square metres, like in Europe, but in dormitories. It is not hard to believe that this soon led to smaller flat sizes and unusable rooms. Only in this context it becomes understandable that social housing can generally be advantageous in terms of feasibility, size and spatial quality.

71 cf. Harnack 2012, 14.

Let's Live in a Housing Estate!

Large newly developed areas, mostly in East London, are redeveloped as large housing areas. Through the Olympics, £12bn flowed into the Olympic legacy to further develop the Lea Valley and surrounding areas. Many of these developments are undertaken by developing companies like IKEA in large-scale housing schemes. Whole suburbs will emerge from nothing or torn-down, existing domestic areas.

A big proportion of the former social housing dwellers are today academics and part of the "New Middle Class".[72] Although it cannot be understood as classical gentrification, their presence of about five percent is still good for the estates in terms of managing, maintaining and enhancing the properties. On the other hand, examples like the *Brunswick Centre* (BWC) show that the authorities may as well keep a larger fraction of the flats to further rent them out as council housing. This way, they can more easily prevent gentrification, if anticipated.

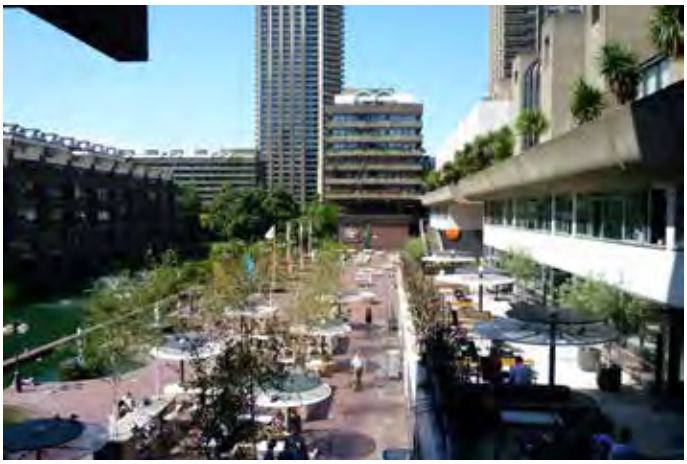
Once ground-breaking and in a Modernist way over scaled, monotonous in social structure and with a socially underdeveloped structure, they are today often not seen as intruding elements into a different city structure any more, but as quotes to an understanding of the city that has since become historic again.[73]

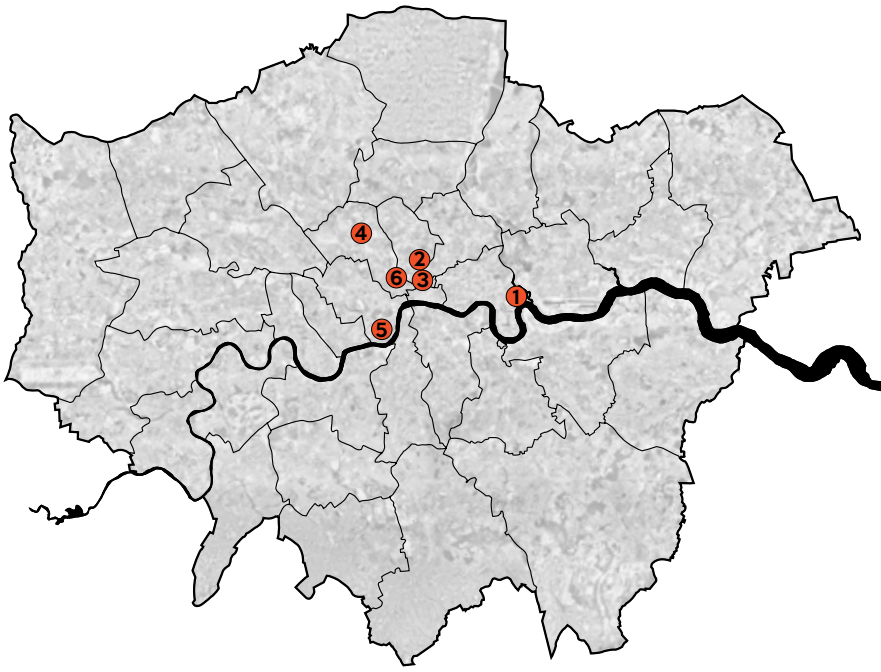
The reason that these housing machines are today seen as high-quality homes, regardless of their actual physical and social development, can be traced back to their high level of independence and sovereignty inside the city structure. Many housing estates like the *Barbican*, the *Brunswick Centre* or other successful examples have become well-known icons whose influence spreads in other fields like fashion or art and have meanwhile become their own brand.

This upcoming trend can help change the perception and the opinion about the large post-war housing machines. Listing them as national heritage is further helping to set a positive sign in this direction. It will be interesting to see over the upcoming decades, whether it is just another retrospective trend or if it is actually a change in public thinking.

Opposite page, left to right:
fig 106: IKEA development
fig 107: *Barbican Estate*
fig 108: *Trellick Tower* Cushion
fig 109: *Barbican* sweatshirt
fig 110: *Trellick Tower* Plate
fig 111: *Alexandra Road*

72 cf. Hamnett 2003, 2401-2426.
73 cf. Harnack 2012, 14.

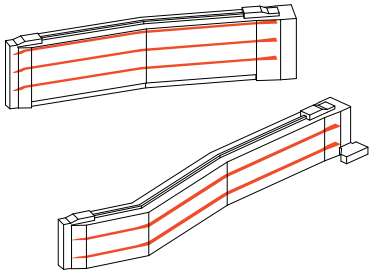




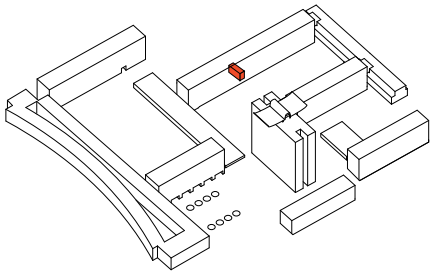
Housing Precedents

On the basis of six particular projects, this chapter describes the strong incentive in the fifties and sixties of the 20th century, when a shortage of accommodation forced the authorities to take action. Through their at the time unconventional ideas, they were all important milestones in London's post-war housing history and thus, except for *Robin Hood Gardens*, have all been granted a place on the "Statutory List of Buildings of Special Architectural or Historic Interest" in Great Britain.

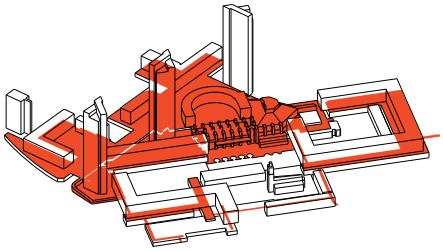
The projects are analysed to explain their basic structure and significance for residential architecture in England. Apart from that, in every project, one special feature is described at more closely, in order to eventually use it for the concluding project of this thesis.



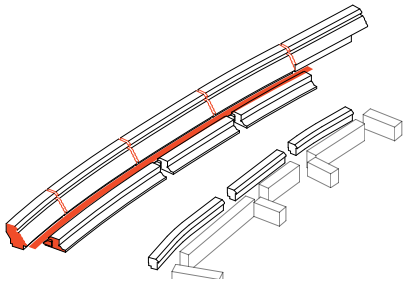
Robin Hood Gardens 1
The Smithsons' "streets in the sky" minimised the necessary circulation space and was meant to create a neighbourhood feel above ground.



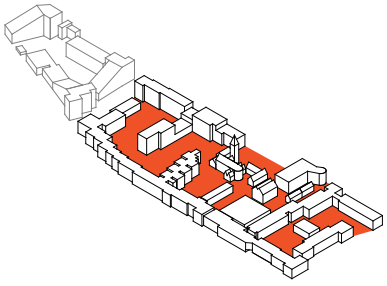
Golden Lane Estate 2
The layout of the standard duplex flats arranges the inner circulation in a way that adds additional spatial qualities to the interior.



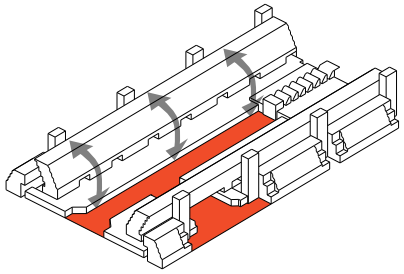
Barbican Estate 3
Elevated walkways and a cultural centre bring life into the estate and create a vibrant and interesting density of life inside the centre.



Alexandra and Ainsworth Estate 4
The "Main Street" recreates a sense of neighbourhood. It resembles the idea of the city. Most dwellings are accessed from here.



Lillington Gardens 5
The humane-scale blocks reference its context's proportions and enclose a meanderinig green courtyard which each dwelling benefits from.



Brunswick Centre 6
The relationship between the commercial ground plane, a platform of offices and the staggered flats above, that draw attention to this precedent.

Robin Hood Gardens

Date of construction:
1966 - 1972

Architects:
Alison and Peter Smithson
(1928-93/1923-03)

Number of units:
213

Number of residents:
1,220

density:
142 p/a (350 p/ha)

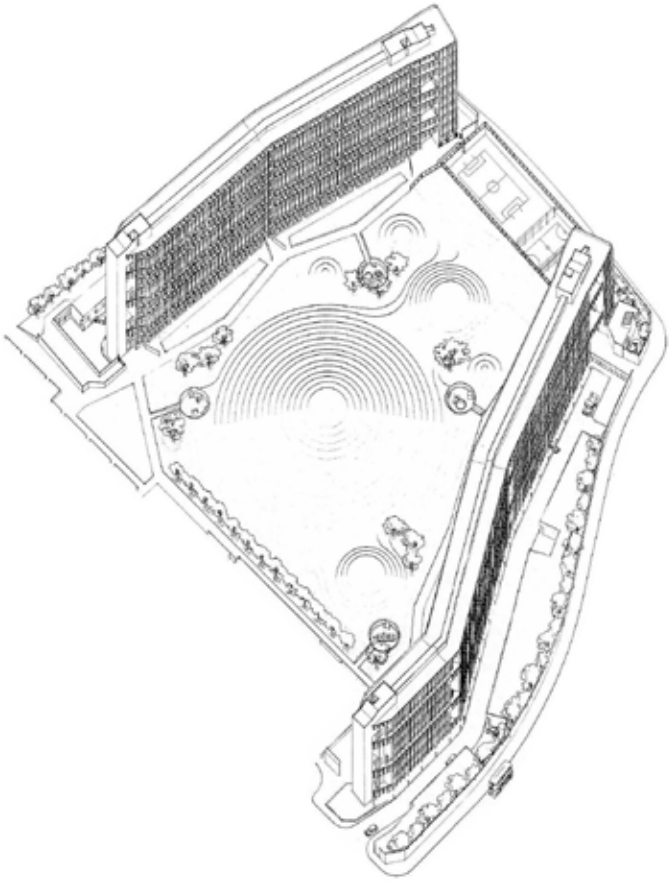
Construction costs:
£1,845,585

"The theme of *Robin Hood Gardens* is protection. To achieve a calm centre, the pressures of the external world are held off by the buildings and outworks."[74] – Peter Smithson

With *Robin Hood Gardens*, the architects Alison and Peter Smithson aimed to improve the living conditions of its inhabitants significantly. However, today the estate faces total demolition to be replaced by a new, more up to date housing scheme. For years, there has been much debate over whether it should be protected by listing it or whether it needs to be replaced.The opinions within the architectural world, including famous architects, are divided and many people want it to disappear in favour for something new. What happened to this once forward-looking scheme and what went wrong?

By the time *Robin Hood Gardens* was planned by the Smithsons, the area around Robin Hood Lane was still strongly influenced by the presence of the shipping

74 cf. Smithson 2001, 296.



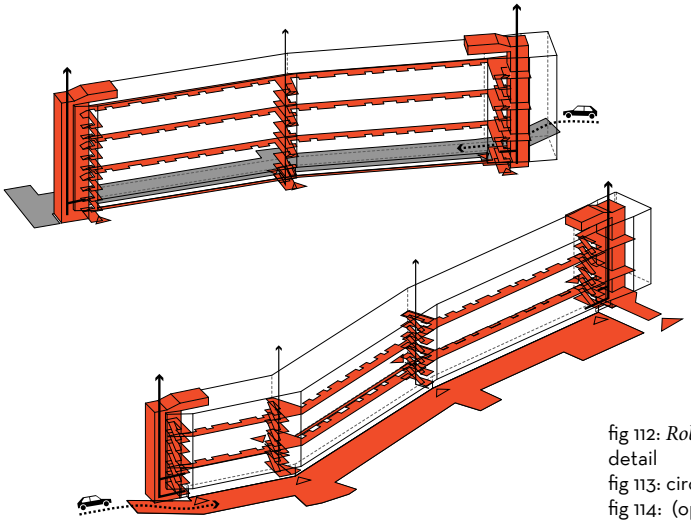


fig 112: *Robin Hood Gardens* in detail
fig 113: circulation diagram
fig 114: (opposite) figure ground plan 1:10,000

industry. [ch 1] Formerly owned by the *East India Dock Company*, the area was densely populated by large working class families. Having been the centre of Great Britain's trading empire, it had by then lost its importance.[75]

Due to high levels of poverty, the area was characterised by Rookeries. The quickly built housing for the dock population was of poor quality and often bore health hazards for its inhabitants. Consequently in the 1890s, the Poplar borough council began to build local authority housing estates. The number of new buildings with improved sanitary conditions rose especially during the inter-war period. Until the 1960s, the buildings were low rises and, with their brick street facades and pitched roofs, traditional in their appearance.

For the specific site of *Robin Hood Gardens*, Poplar relied on private developers. Seven housing blocks that were five storeys in height were intended to house 1,392 in only 542 flats. They were built in a much more robust way than the smaller houses they had replaced. However mainly large families ended up populating flats that were designed for couples and by the 1960s, the living conditions had deteriorated.[76] Finally in 1965, the *Greater London Council* decided to replace them and 1,200 people needed to be rehoused.In 1966, the British couple Alison and Peter Smithson were commissioned to replace the rundown buildings with a new housing estate.

Robin Hood Gardens is bordered by two big main streets, Cotton Street and Robin Hood Lane which leads to the Blackwall Tunnel, a highly frequented southern route. Two 10 ft high walls made of prefab concrete slabs strive to diminish the worst traffic noise. Two building slabs parallel to the main streets "sit like a sheltering battlement, a running bastion enclosing green space."[77] To be able to absorb the curves in the road the slabs are bent at different points.

Mainly ignoring the existing city grid, the blocks run from

75 cf. Stewart 2012, 7f.
76 cf. Stewart 2012, 8.
77 Peter Smithson, in: Stewart 2012, 14.

fig 115: View from the garden

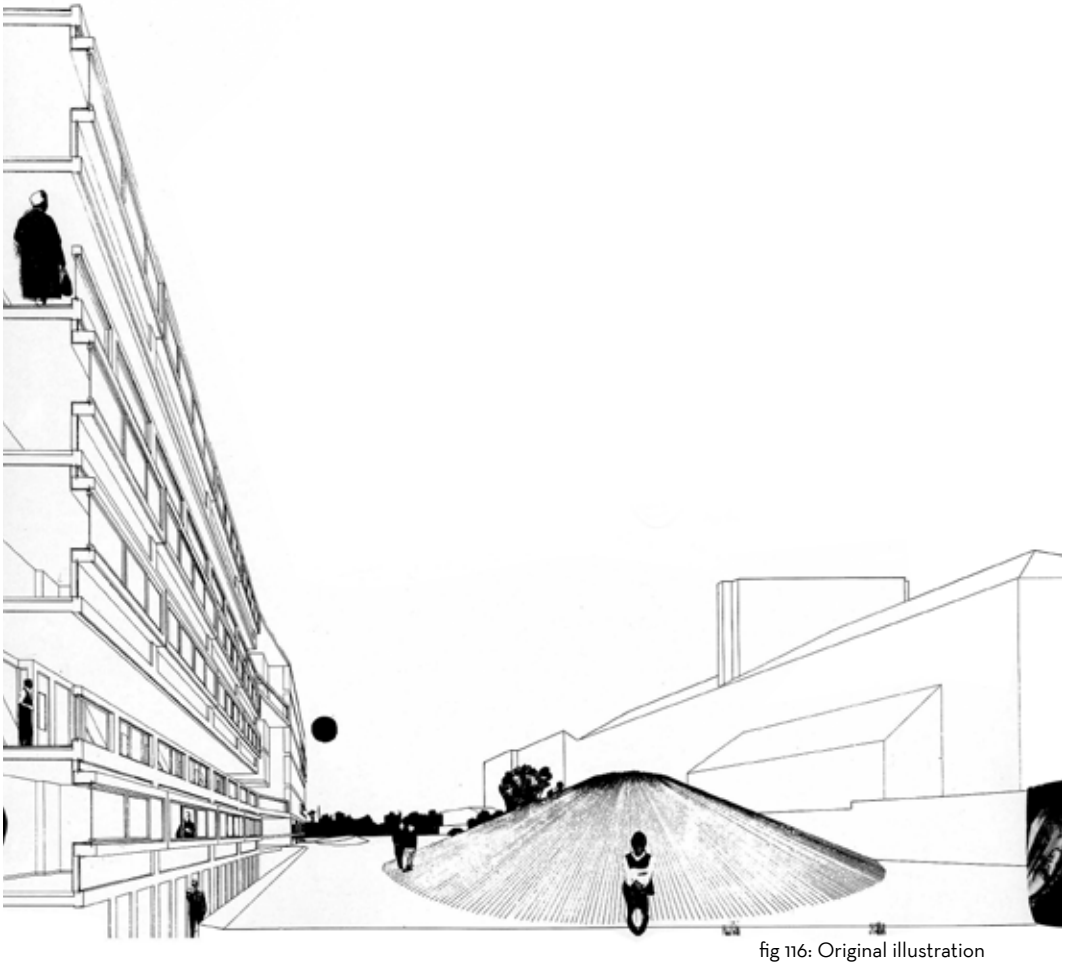


fig 116: Original illustration

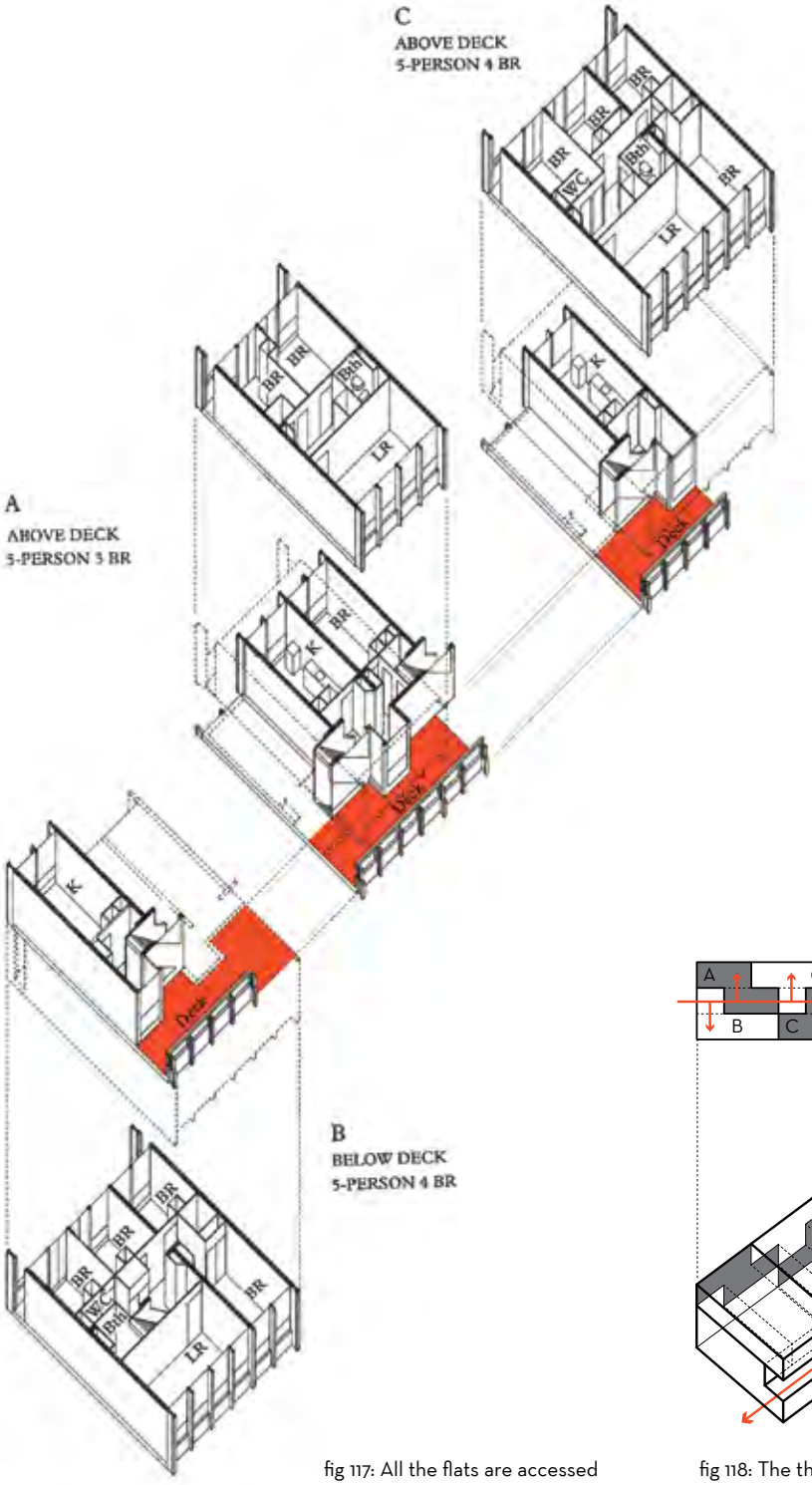


fig 117: All the flats are accessed through the deck levels

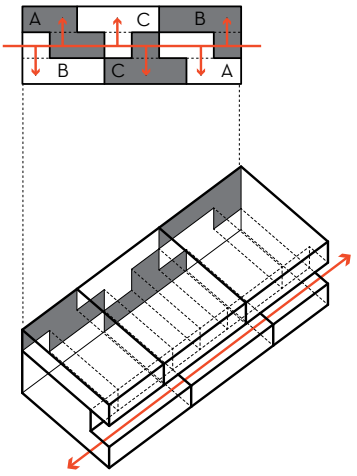


fig 118: The three flat types are arranged to become one module

north to south, allowing the flats to be east-west oriented, following the rules of the CIAM. Smithson's sketches indicate that in the future more blocks of similar character could extend the idea and the density to the north.

The blocks with a height of seven and ten floors are accessed by a moat-like service street where parking for 70% of the flats is accommodated. The main circulation cores are situated on the northern and southern ends of the blocks. Additional staircases link the main floors at the buildings' bends; these floors are the "*Streets in the Sky*". The main horizontal circulation spaces run along the street façades of every third floor, reducing the needed circulation space to a minimum.

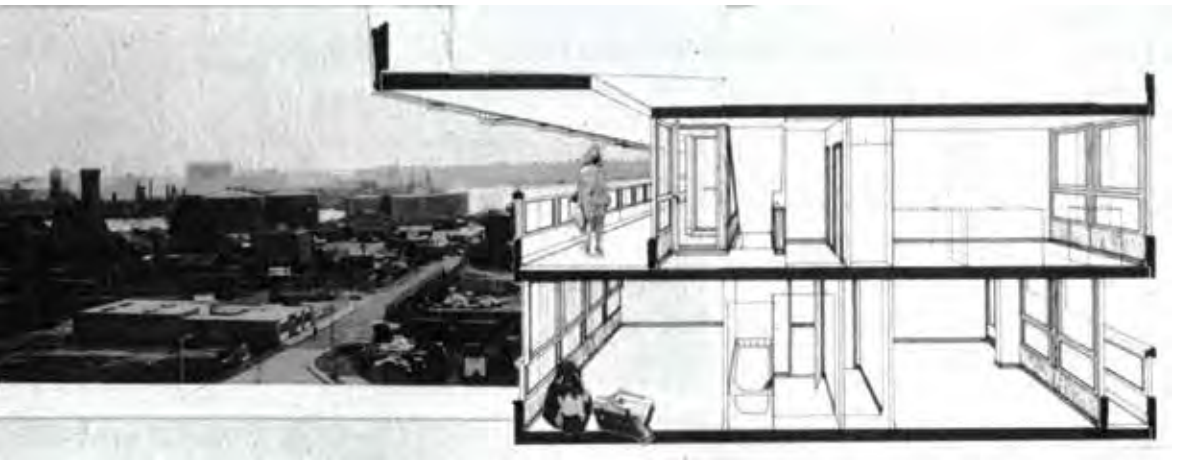
Flats

Except for a minority of simplex flats for elderly people, accessed from the garden on the ground floor, all the flats are duplexes. There are three different typical flat layouts throughout the scheme. These three units are interlaced with each other to create a repetitive module that assembles the overall scheme and which the architects "were particularly proud of"[78].

The dwellings are always entered from the access deck on the middle floor. The sanitary functions take up the middle strip of the top floors. The kitchens and sometimes a spare bedroom share this entrance floor. All the bedrooms are facing the quiet central green space, while the living rooms look out over the tangential roads. The Smithsons did not see this as a problem, since they had invented ways to deal with the noise pollution. "The living room themselves are protected by these vertical pieces which stop noise travelling across the face of the building. And by designing the windows so that they can check in a position that admits air at the top but prevents the entry of direct noise at the bottom."[79]

As an additional measure, they planted large trees to protect the inhabitants from the noise during the summer when the windows were open, while in winter they would

78 Simon Smithson in: Powers (ed.), 2010, 79.
79 Peter Smithson, in: Powers (ed.), 2010, 63.



be closed. Narrow, continuous balconies on the garden side serve as fire escapes.

Façade

Being pioneers of the new brutalism movement in England, the Smithsons followed Le Corbusier's dictum' ('architecture is the establishing of moving relationships with raw materials')"[80]. According to this important rule, their aim should have been not to decorate or conceal the facades but rather to exhibit the building's structure clearly. The Smithsons used concrete in a bold way. To keep the building costs to a minimum, the majority of the structure consists of prefabricated elements that were then assembled on site. Through using these repetitive elements the giant façade needed structuring components. To solve this the Smithsons introduced vertical fins that try to break the continuity of the mostly flat surface and create a more interesting image. Although made of concrete, the actual structure is disguised and overlaid with this different pattern.

fig 119: Garden façade

The protected garden inside the compound is a feature that is still in a similar condition as when it was first installed. The large main hill is often compared to an Iron Age burial mound - an apt comparison since it contains the rubble from the previous development. Although it is not always well maintained, it still features the main idea of the hilly landscape. This did not have any other purpose than preventing children from playing soccer or other ball games.

fig 120: Street façade with car park

For many people, *Robin Hood Gardens* is unappealing and run down. Many of the concrete fins have broken off and expose the corrugated armouring. Many of the entrance doors, once open to everyone, are now locked with key pads or simply bricked up. *Robin Hood Gardens* is mainly inhabited by a big Bangladeshi community which claims to be happy with their living conditions. The main reasons that are brought forward in response to questions about the state of the development can be explained by bad maintenance. Like in so many other housing estates a financial shortage after the privatisation era led to leaking

Opposite page, top to bottom:
fig 121: Original illustration
fig 122: Façade detail of balconies
fig 123: Sound barrier to Cotton St
fig 124: *Robin Hood Gardens* stands isolated

80 Stewart 2012, 10.

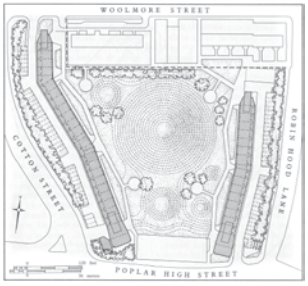


fig 125: Plan of *Robin Hood Gardens*


fig 126: Children playing Cricketin the recently completed estate

"It practically hugs the ground, yet it has also a majestic sense of scale, reminiscent of a Nash terrace."
-Richard Rogers
(in: Powers (ed.), 2010, 120)

roofs and deteriorated exteriors.

Another point refers to the "honest" architecture the Smithsons tried to represent. The pipes and cables that are openly conducted along the streets in the sky, don't exactly increase a glamorous feeling in the estate since poorer quality materials were used for this social housing scheme.

One of the most controversial and at the same time one of the main features of *Robin Hood Gardens*, are the "streets in the sky". A few years earlier, Alison and Peter Smithson introduced the idea in their competition entry for Golden Lane [ch 3.2], which thereafter, alongside their other publications, inspired a whole architecture generation. The Smithson-inspired *Park Hill* estate in Sheffield already slowly began to show that the slab block and street deck concept did not really work this way.The streets in the sky are meant to draw life from the ground plane up into the higher areas of the building. At Golden Lane or *Park Hill*, it was still a network of streets which was anticipated to be much wider. At *Robin Hood Gardens*, it can be understood as "double-ended cul de sacs"[81].

At *Park Hill* at least, favoured by the topography of the site, these streets were directly connected to streets on the ground and are much more generous in design. In contrast, at *Robin Hood Gardens*, they are relatively narrow and uninviting. Although they are not bordered by any columns, they were designed "wide enough for the milkman to bring his car along or for two women with prams to stop for a talk and still let the postman by."[82]

Although the Smithsons gave each flat "eddy-places"[83] at their front doors for personalisation and for a change of scale and volume for passers-by, they were never really used as such.

The space was intended to be a meeting point for the inhabitants and a place for children to play and run close to their front doors. Some inhabitants state that they are

81 Stewart 2010, 13.
82 Smithson, in: Powers (ed.), 2010, 65f.
83 Smithson, in: Powers (ed.), 2010, 65.

happy to meet their neighbours out there, others are afraid of running into undesirable people around the next corner.

With Canary Wharf looming over *Robin Hood Gardens*, the area has recently become one of the focal points for a new development. The city officials want to replace it with a denser and more up to date housing scheme. Officially it aims to keep the lower middle-class inhabitants in the area. But looking at the colourful renderings and other recent developments in London's outer areas, it is rather likely that it is yet another gentrification measure to soar real estate prices in a more and more desirable area.


fig 127: Canary Wharf looms over *Robin Hood Gardens*

Alison and Peter Smithson had very idealistic ambitions for their social housing project. In contrast to many existing housing schemes in the area with small openings, they wanted to give each resident equal access to the sky and to light. By implementing large windows over the whole length of the façade, the interiors are well lit and appear friendly and spacious.

Although they did not strictly follow the brutalist rules, *Robin Hood Gardens* has nevertheless become emblematic of New Brutalism through its sophisticated use of concrete and thus a key architectural expression of the welfare state.[84]This fact and the questionable introduction of the streets in the sky are the main reasons why architecture experts are continuously campaigning against its planned demolition in 2014.


fig 128: High southern neighbours


fig 129: The proximity to Canary Wharf makes the land valuable

84 van den Heuvel, in: Powers (ed.), 47.

Golden Lane Estate

Date of construction:
Phase I: 1953 - 1957
Phase II: 1958 - 1962

Architects:
Chamberlin, Powell & Bon

Number of units:
559

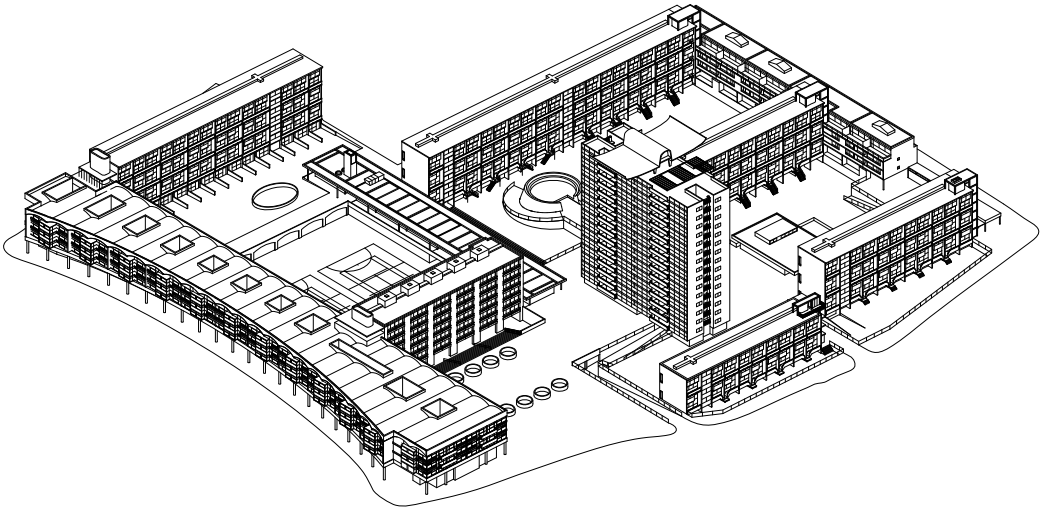
Number of residents:
1,400

density:
200 p/a (480 p/ha)

Large areas of the *Golden Lane Estate*'s site had been destroyed during the Second World War. By the 1950s, there was a vast shortage of housing in London, especially the area around today's *Barbican* and Golden Lane. That's why in February 1952 a competition was launched to design a new housing estate for 900 residents outside of the city. The aim was to create a new inner-city suburb in Finsbury. In retrospect this was the starting point for the later development of the *Barbican Estate* [ch 3.3].[85]

Among the 187[86] competition entries was also the Smithsons' proposal for their streets in the sky scheme which got much wider public attention than Geoffry Powell's winning entry. Powell had an arrangement with his former fellow students Peter (Joe) Chamberlin and Christof Bon, that if one of them was to win a competition, they would form a partnership. After a few further alterations, the scheme now houses 1,400 residents and is one of the first in England to employ urban planning ideas

85 cf. Heathcote, 2009, 59f.
86 Heathcote, 2009, 59.



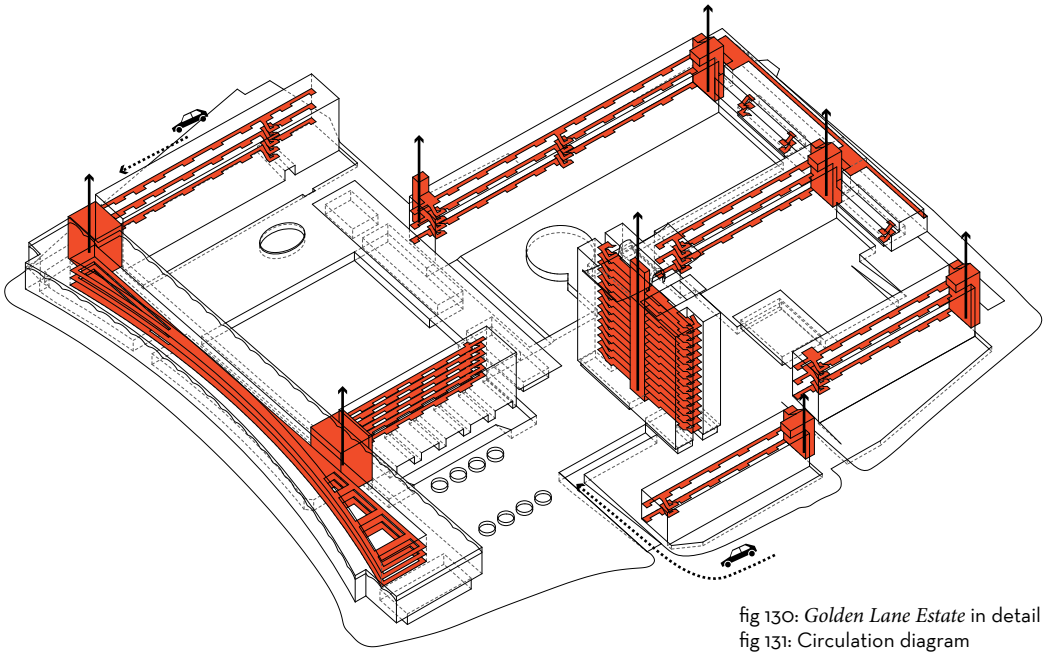
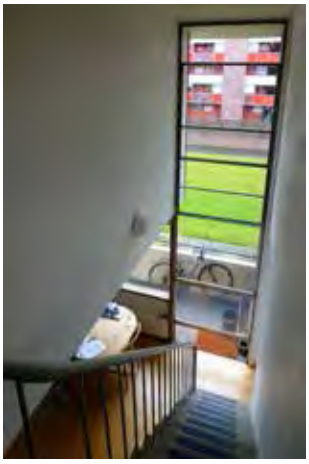
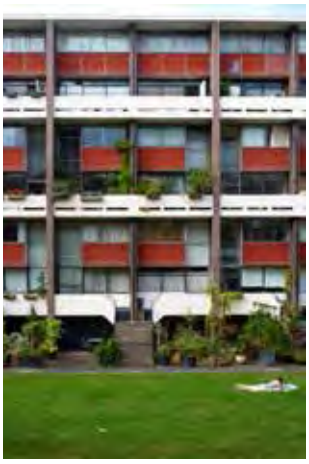


fig 130: *Golden Lane Estate* in detail
fig 131: Circulation diagram
fig 132: (opposite) figure ground plan 1:10,000





promoted by Le Corbusier.

The *Golden Lane Estate* consists of three different building types. The first ones are slabs that are four and six storeys high. Mainly suited for small families, they are located closer to the playgrounds.[87] Most of them run from east to west, creating green enclosed courtyards with direct access to the balconies of the ground floor flats. Those green spaces are mostly on different levels to the main circulation planes and therefore create an imaginary level of privacy for the adjacent residents. In spite of the density of 200 persons/ acre, 60% of the site is open space.

The most prominent feature that can be seen from far away with its iconic Le Corbusier inspired roof sculpture is Arthur House.

Façade

The façade of Crescent House adapts to the curvature of Goswell Road and contains 20 retail units and a pub on the ground floor. A leisure centre with a swimming pool and tennis courts crosses through the complex. The main walking connection from north to south leads along it and one can see the cultural activity taking place from a different angle.
Apart from a small area in the south west, the whole area is pedestrian only and the car park sits under the main square behind Crescent House.

Flats

While Crescent House features small studio flats, Arthur Tower is entirely equipped with just one bedroom apartments.This was a decision made by housing corporation to exclude families.[88] Most other blocks have duplex layouts and circulation spaces on every second floor.

The kitchen sits right next to the entrance with direct light from the open circulation space outside and shares the floor with the simple living room. The top floor contains a small

87 cf. French 2008, 90.

88 cf. Penoyre, Greg, 03.05.2012: The Golden Lane Estate, London, in: www.bdonline.co.uk/buildings/inspirations/greg-penoyres-inspiration-the-golden-lane-estate-london/5035997.article, in: bdonline.co.uk, 18.04.2013

fig 133: Overview plan

Opposite page, left to right:
fig 134: Crescent House
fig 135: Great Arthur House
fig 136: Internal staircase
fig 137: Internal stair detail
fig 138: Basterfield House
fig 139:Interior view of maisonette

"Golden Lane is all about the details and how people live. It was a highly sensitive way of designing"
Greg Penoyre, worked for CP&B on Golden Lane [http://www.bdonline.co.uk/buildings/inspirations/greg-penoyres-inspiration-the-golden-lane-estate-london/5035997.article, 20.04.2013]

bathroom and two bedrooms. Flats that lie adjacent to the main stairwell, are connected to an additional bedroom.

With the duplex arrangement, Chamberlin Powell & Bon added a new quality to the apartments. The sculptural interior space is visually extended upwards by cutting the ceiling out for the staircase. By this, one third of the living room gets a double height window which brings a lot of light into the space. Thus, the inhabitant is able to experience a much higher space that would otherwise be used just when ascending. Through the slim detailing of the staircase, the space below it stays useable as a living space.

On the top floors, the layout changes slightly. The staircase changes and is instead illuminated by a long skylight. The balconies of those duplex flats are always double height and thus give the impression of not being restricted overhead. From the outside, the different flats are clearly divided by the dividing brick walls that project out to create the front plane.

The only downside of the *Golden Lane Estate* is that there are mainly small flats for one to three inhabitants. Consequently the scheme is not suitable for larger families.

As of 1997, the estate is listed as Grade II with the exception that Crescent House received a Grade II* listing as being an important example of post-war residential architecture.[89]

Under the Right to buy scheme introduced by the Thatcher government, about half of the 559 flats were sold to long lease inhabitants and eventually into the commercial market. The other half is still rented out as affordable housing.

"They were designing a bit of city — not just housing — and that makes it a most integrated scheme."[90]

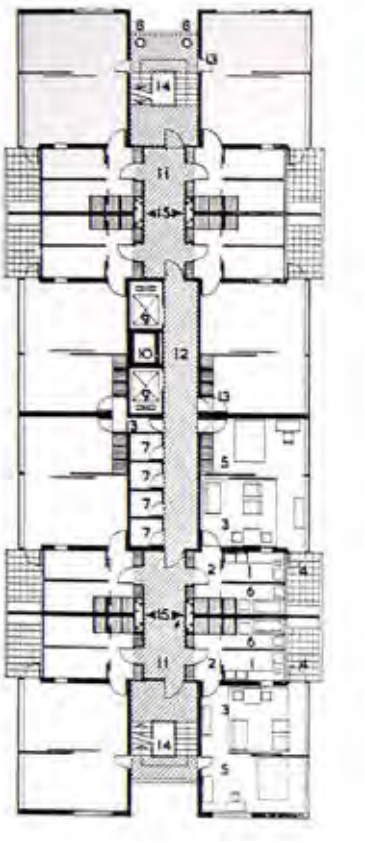


fig 140: Great Arthur House, typical floor plan

89 http://en.wikipedia.org/wiki/Golden_Lane_Estate, 18.04.2013

90 Cf. Penoyre, Greg, 03.05.2012: The Golden Lane Estate, London, in: www.bdonline.co.uk/buildings/inspirations/greg-penoyres-inspiration-the-golden-lane-estate-london/5035997.article, in: bdonline.co.uk, 18.04.2013

fig 141: Listing stages of the estate

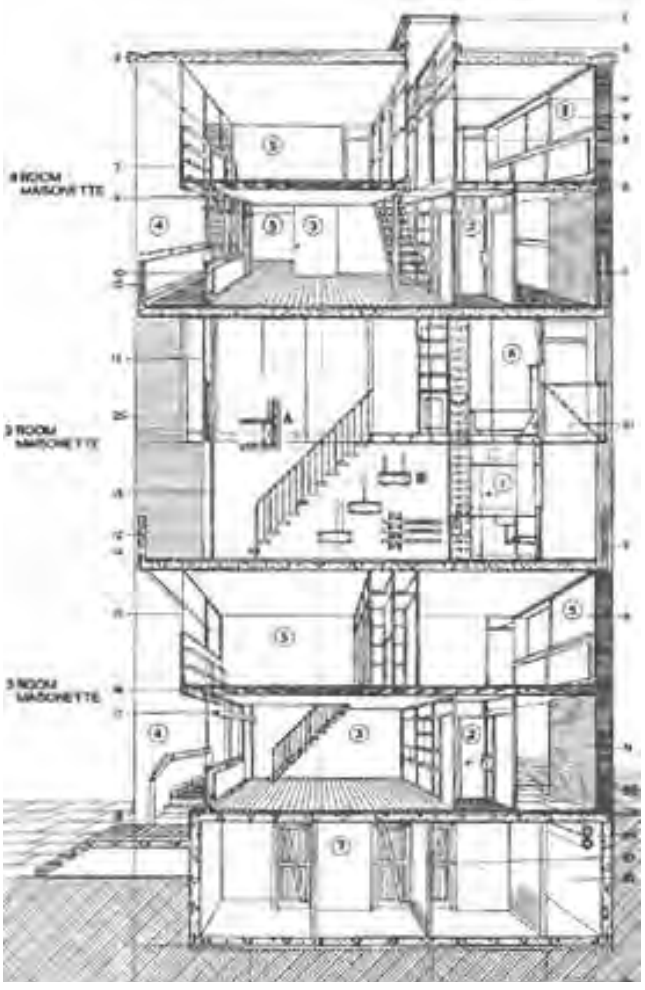
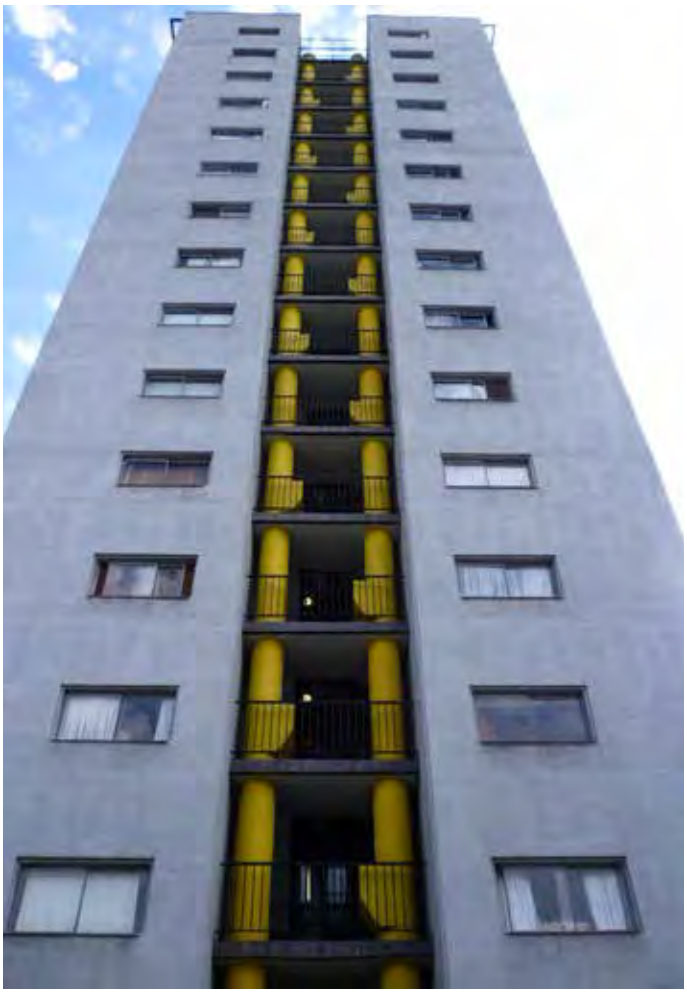


fig 142: Maisonette, upper floor

fig 143: Maisonette, lower floor
fig 144: (left) typical section through Basterfield House

p 98, left to right:
fig 145: Great Arthur House
fig 146:Public Swimming pool
fig 147: Gymnasium from outside
fig 148: Low level courtyard

p 99:
fig 149: Great Arthur House



Barbican Estate

Date of construction:
1965 - 1976

Architects:
Chamberlin, Powell & Bon

Number of units:
2,113

Number of residents:
4,300 (6,500 intended)

density:
230 p/a (552 p/ha)

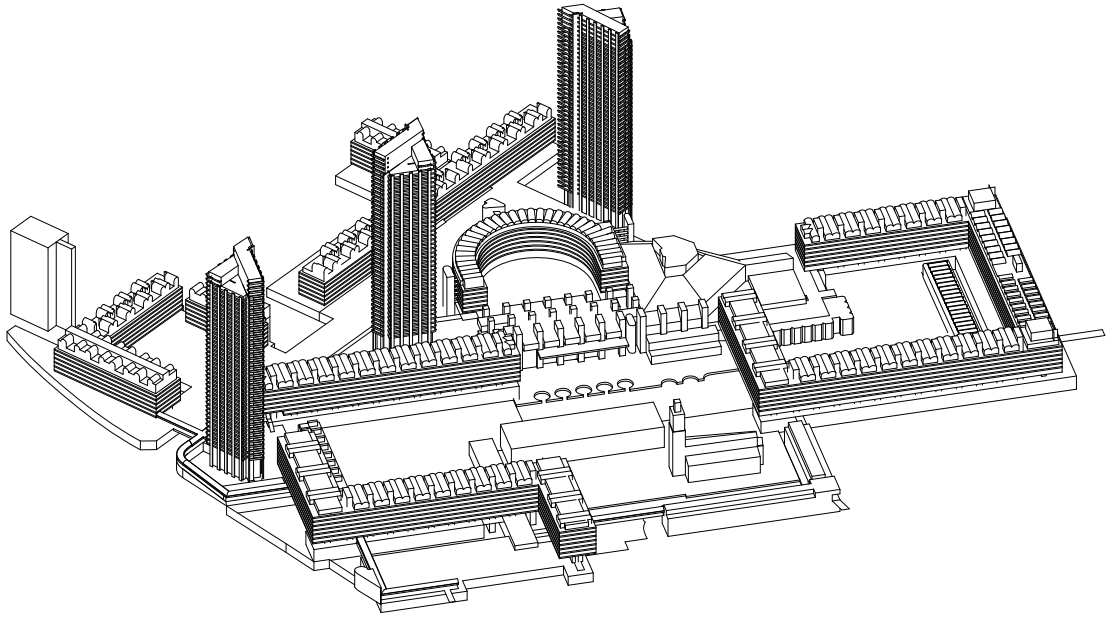
Construction costs:
£11.75 million
(public building £1.25mi)

After their successful development of the *Golden Lane Estate*, Chamberlin Powell and Bon were subsequently commissioned to propose a redevelopment design for the adjacent site, the *Barbican*. The developer sent the three young architects on a journey through Europe, where they were inspired by the car free Venice and the Italian gardens. After several unsatisfying proposals, a scheme was agreed in 1959 that included a multitude of different functions and facilities. Apart from flats, it incorporated a school, a cultural centre with a theatre, concert hall, art gallery and library, a youth hostel, shops and restaurants.[91]

The architects planned to create a new urban centre with high density housing and clearly defined public spaces, representing the structure of the Georgian Squares in West London. The system of elevated walkways played an important part in the wider plan of London's reconstruction after the war.

Unlike its predecessor, the *Golden Lane Estate*, the *Barbican*

91 Barbican Estate. A Listed Building Guide for Residents, 4.



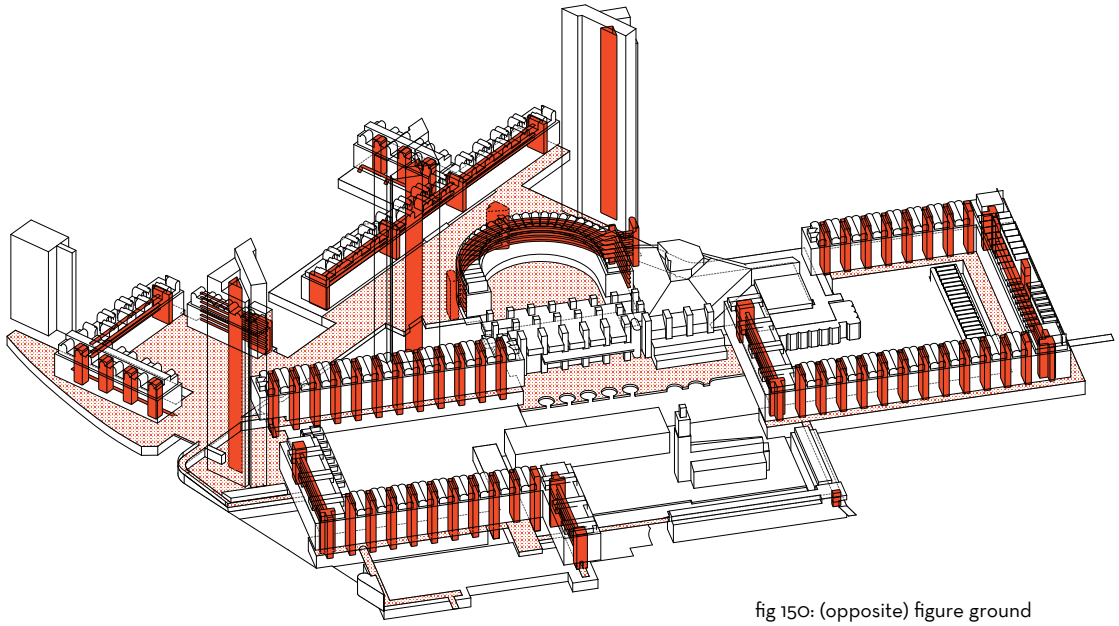
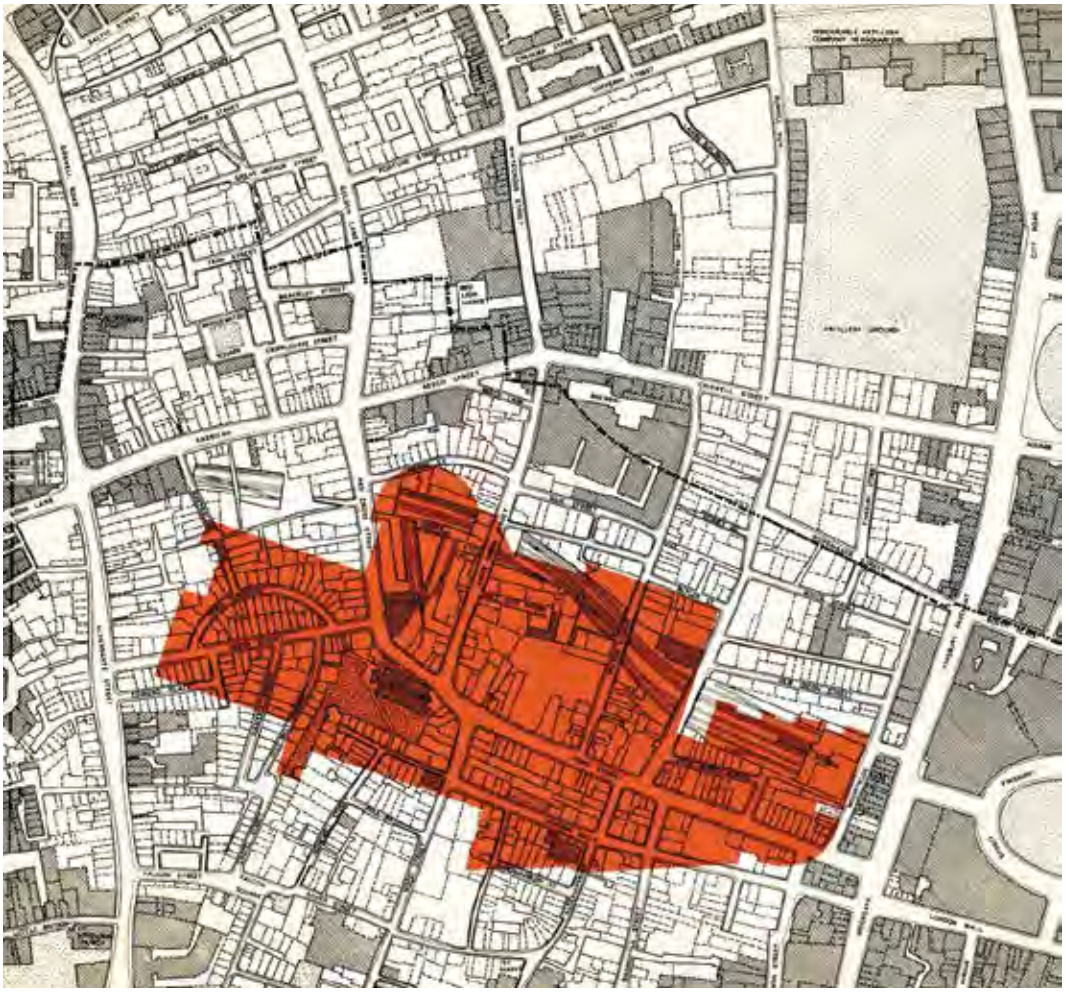


fig 150: (opposite) figure ground plan 1:10,000
fig 151:*Barbican Estate*
fig 152: Circulation diagram



was built as council housing, but has never been social housing. After the Right to buy in 1983, 98% of the flats were privatised.

The whole development clusters around the *Barbican Centre* as the cultural centre piece for a new neighbourhood. The over 2,000 residential units are mainly accommodated in the three high rise towers of 43 storeys and a series of seven storey terrace blocks. At the time they were finished, they were the tallest residential towers in Europe.

The master plan for the development is defined by the circle line, which runs beneath it and Beech Street, which was maintained in its original position but submerged below the pedestrian walkways along with the car parks. The noise of the circle line was meant to be reduced by covering it with a park and an artificial lake.

The entrances to the underground car parks are situated here. The residential units are, without exception, entered from the various pedestrian levels. Mostly depending on the time they were built, some of the blocks have slightly different circulation systems. Here the difference of the design approach to that of social housing can be seen. It mainly differed in not having as many potential interaction nodes between the residents. There are generally more entrances per resident than in a social housing estate.

The narrow balconies are an important characteristic feature of the *Barbican*'s appearance. They run along most of the facades, not only the living rooms and serve additionally as fire escapes. Through the honest use of materials, using exposed concrete throughout and expression of form, function and spaces, the *Barbican* seems to be a brutalist building. Yet the architects were also using the building materials in a sculptural way.

The structure and surfaces mainly consist of in situ concrete with granite aggregate. In many areas, the surface was then labour-intensively bush and hand pick-hammered. This stands in contrast to the initial, much more expensive ideas, to clad the whole exterior with white tiles. Unlike other concrete projects in London, the *Barbican*'s surface

fig 153: War destruction on the future construction site

opposite page, top left to bottom:
fig 155: tropical plants grow in the conservatory, which disguises the theatre's fly tower
fig 156: sculpture court, the theatre's roof
fig 157: Construction before the *Barbican*'s development, showing the destruction after the war (grey = existing, white = destroyed)

fig 154: *Barbican Centre* Terrace

fig 159: Repetitive detail

did not dramatically change its colour over time and has never been cleaned up to present day. Some of the later buildings incorporated more brick onto the facades.

The assigned target resident group were young professionals, working in the city. The flat design was meant to maximise light and to create flexible spaces. The compact and functional kitchens and bathrooms are oriented inwards. The initial interior design was influenced by simple Scandinavian design, which set the base structure and made it easy for residents to alter it afterwards.

Throughout the many different flat designs, the architects concentrated on large living rooms and common areas at the expense of what were regarded as service spaces. The only exception to this hierarchic layout is the design for the tower flats.[92]Those dramatic apartments have spacious bedrooms with adjacent dressing rooms. With their large open-plan living rooms with unique views over the city, they were "a fantastic space to entertain in."[93]

fig 158: Through their rotated position, the towers get a different appearance

Overall, there are over 100 different layouts of flats, some of them just variations of others. But generally, the applied dwelling design changed during the many years of construction and adapted to the different situations. One of the main aspects was the orientation. The north-south oriented blocks mainly have single oriented flats on either side. Willoughby House is an exception and all the living rooms are oriented to the courtyard. The architects simply found the darker street side too unappealing. This way they created a building filled with special solutions. Hardly any layout exists twice here.

From any perspective, the three towers look as if they had different internal layouts. In fact, they are just rotated and mirrored to appear this way. Like this, they don't look repetitive, even from far away.

The many different types of flats create a high sense of community and diversity among the residents.

92 cf. Heathcote, 2009, 133.
93 Heathcote, 2009, 136.

The *Barbican Estate* is an important example how to successfully combine a wide variety of uses and flat types across a large and dense estate with high quality housing.

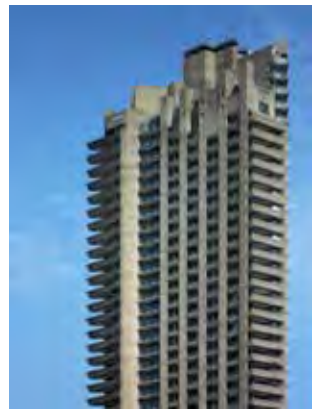


fig 160: Shakespere Tower
fig 161: Shakespere Tower (below)

In spite of the high density of residential units, the spaces in between give a sense of spaciousness. Through the overlapping different layers of public, semi public and private circulation spaces and gardens the whole layout can be experienced by every individual. Even a non-resident does not feel excluded from the large green parks, which are really only accessible by inhabitants of the *Barbican Estate*, although one cannot physically enter them, you overlook them on the elevated walkways.

The semi-private gardens feel protective and are quiet places to relax.

Chamberlin Powell and Bon succeeded in creating a car-free development that provides more parking spaces than its inhabitants actually need.

The many different levels communicate a high grade of business and activeness, especially due to the many levels and the cultural centre in the middle, which is one of the biggest and most influential in Europe.

Through introverted orientation, the *Barbican* plays its role as a fortress-like structure well and feels dark and repellent from the outside. With many details like arrow loop windows and massive walls, it refers to the site's legacy as the location of the city wall; remains of which were found next to St Giles Church.

Finding an entrance to the compound does not happen intuitively. It is only from the inside and the high walks that one realises the qualities the *Barbican Estate* bears. This would not have happened had the architects' plan been pursued to create continuous high walks extending through the whole of London. Instead the high walk system today does not extend further into the surrounding area.

In September 2001, The *Barbican* complex was granted Grade II listing. It would not have to fear any harm by

demolition in any case since it is one of the most desired places to live in London and over the last ten years, the flat prices have more than doubled.

Through being listed, the *Barbican* has provoked special interventions for the neighbourhood. Building laws now restrict the height of future developments around the *Barbican* in order to keep its appearance prominent. The arts centre is constantly lauded as one of the most important cultural facilities in London.

Till today, the *Barbican*, as a brutalist ideal, is a backdrop to human excitement.

fig 162: Entrance to the library
fig 163: Playground under Beddon House
fig 164: Walkway below Defoe House
opposite page, top left to bottom:
fig 165: Lift shaft exit
fig 166: View over the large terrace
fig 167: The balconies are used
fig 168: Elevated walkway
fig 169: Integrated mail boxes
fig 170: Bunyan Court


Defoe House

Alexandra and Ainsworth Estate

Date of construction:
1972 - 1978

Architect:
Neave Brown (*LCC*)

Number of units:
520

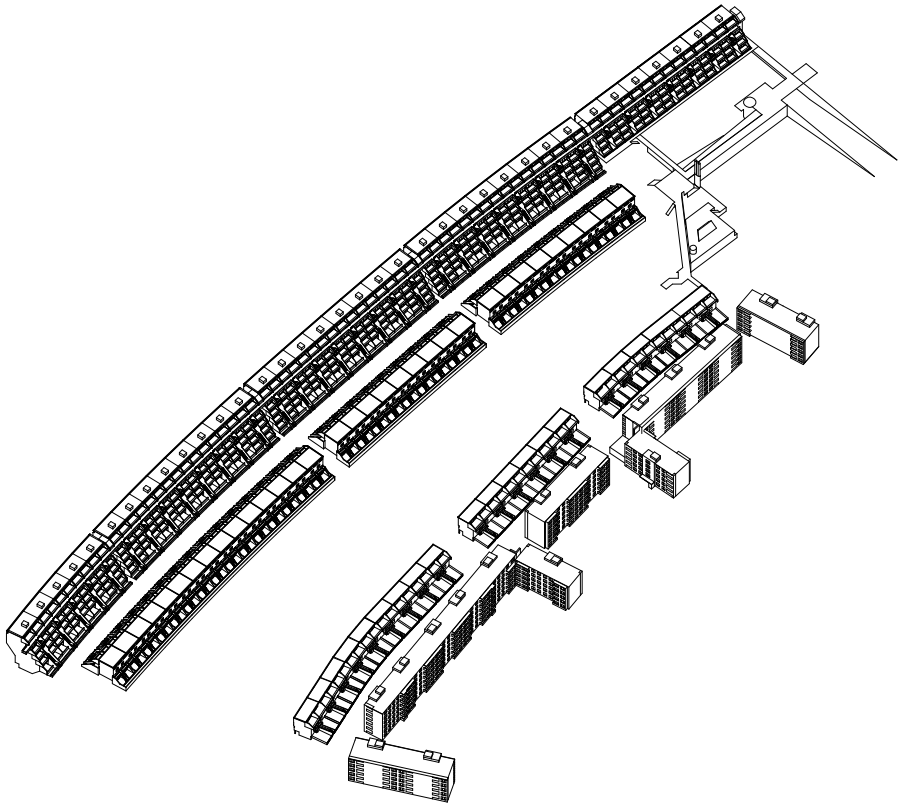
Number of residents:
1,660

density:
200 p/a (495 p/ha)

Construction costs:
£20.9 million
(estimated £4.8 mi)

By the time American-British Architect Neave Brown joined the Camden City Council in 1966, he had already gathered experience in France, Israel and Middlesex, especially in housing. His attitude towards housing was not as progressive as his colleagues' at the Camden Council under Sydney Cook. He had just completed a five-family house for five families that already embodied his architectural principles.

By including two earlier projects by the same architect, Wiscombe Street and Fleet Road both illustrate the themes of open space, access to light and functionality. The three projects together reinforce Neave Brown's unique but successful approach towards housing.



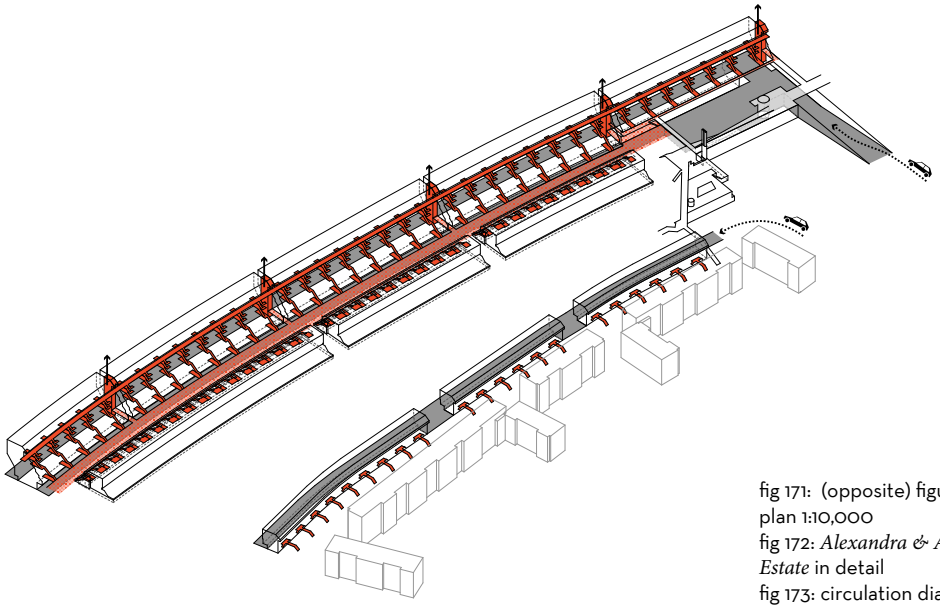


fig 171: (opposite) figure ground plan 1:10,000
fig 172: *Alexandra & Ainsworth Estate* in detail
fig 173: circulation diagram

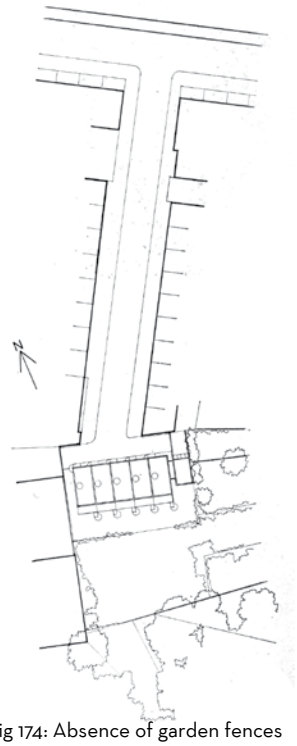


fig 174: Absence of garden fences

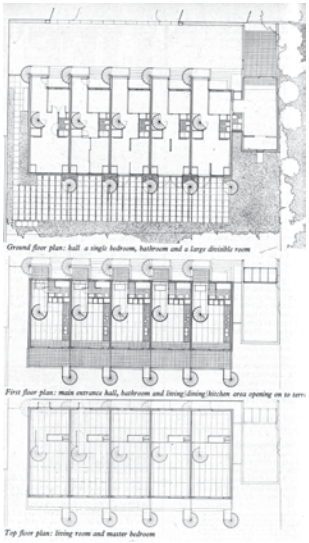


fig 175: Plans of the three floors
fig 176: axonometry of the building
pposite page, top left to bottom:
fig 177: Entrance facade
fig 178: Interior view
fig 179: Sections through one unit
fig 180: Bedrooms are combinable
fig 181: Every corner is defined

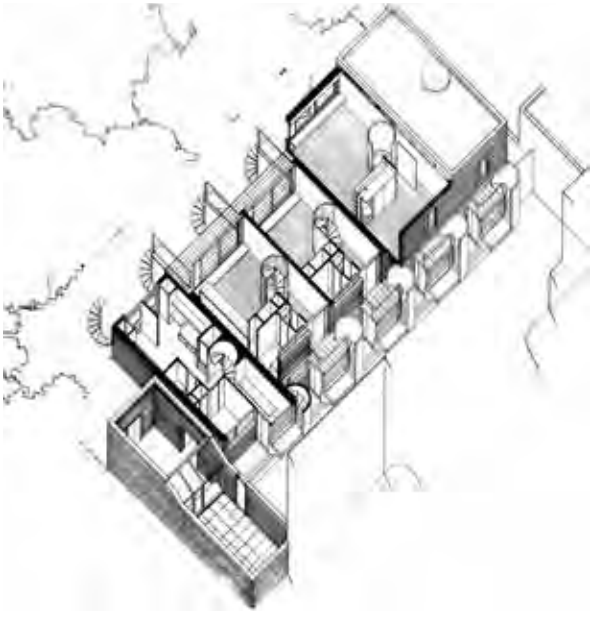
Wiscombe Street

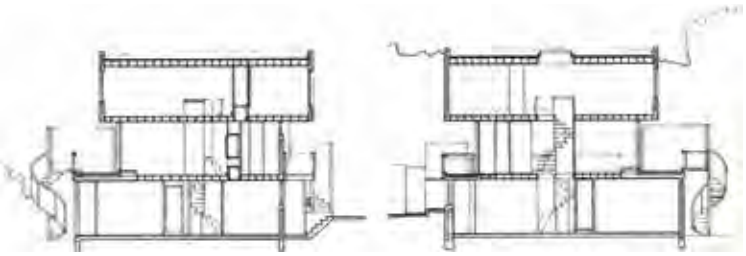
The housing project he planned for himself and four friendly families lies at the end of a one-way street (Wiscombe Street) in North London. In order to receive funding, the three-storey terraced houses were planned to even more than just fulfil the Parker-Morris-Standards from 1961.

While the street oriented side picks up the proportions of the neighbouring terraced houses from the 19th century, the south façade generously opens towards the communal garden with large windows.

The centrepiece is formed by kitchen, dining room and a private balcony. While the upper floor contains parents' bedroom and living room, the lower floor belongs entirely to the children. Two of the tree children bedrooms, which can be joined by sliding doors, directly run into the garden at grade. Each floor is designed in a way that it can later be converted into a separate unit with its own front door to the street. A central spiral stair connects all three floors.

An important characteristic that can be also found in many of Neave Brown's following designs is the layout's openness by using room-high windows and inner doors.





"Architects in the 1960s were exploring the idea of the street as centre of community life. [...] When the plans [of Fleet Road] were first drawn up in 1966, they were avant-garde in Britain."
-English Heritage
(Brandon, 10.09.2010)

"Fleet Road is an experiment [...] that tries to recognise needs beyond the house itself; that housing is a compound of many complex, imponderable and subtle things."
– Neave Brown
(in: Freear 2012, 37)

Fleet Road Terrace Housing

What distinguishes Neave Brown's projects significantly from most other large housing estates of his time is the connection of fresh Modernist ideas with aspects of traditional London housing structures, the "terrace house". Thus he achieved to comply with the extreme need of high compacted housing by creating a new, low-rise housing typology.

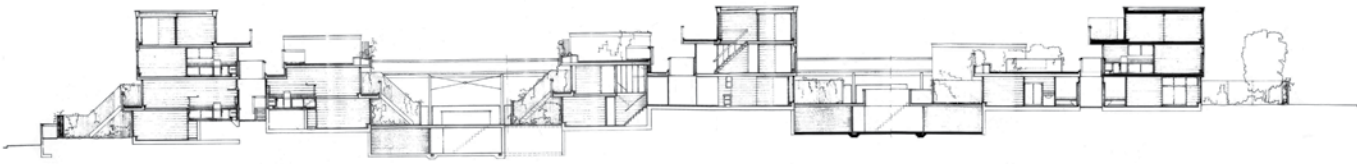
Brown wanted to give a counter proposal to the high rise ghettos forming around cities all over Europe. From this idea, he designed a ground-breaking housing estate between Fleet Road and Dunboyne Road. In spite of its low height of maximum four storeys, the building exceeded all requirements in terms of density. Up to this day, the architect is living here.

The complex combines multi-storey maisonettes, split-level flats and one-bedroom apartments and translates them into a new architecture language.

Two main circulation lines serve each one pair of rows of flats. The three highest volumes contain the four person maisonettes. The kitchen with combined dining room lies right next to the entrance. Both children's rooms orient to a small balcony on the back. The upper floors, like in Wiscombe Street, form the adult zone with living, parents' bedroom and a large terrace. A semi-private, garden-like terrace sits on the roof of the opposite strip of flats. Since it is accessible from all surrounding flats, it again enables parents to watch their kids from the kitchen window.

On the ground floor of all six volumes, either single or split level flats are accessed through a mostly uncovered common corridor. Each of them is connected to their private garden. The split level types combine bedroom and bathroom on the lower and a living area with spacious balcony above.

Fleet Road was an important step for London's housing development. It proved that dense housing with individual gardens can be made possible without having to renounce privacy.



3 bedroom maisonette
2 bedroom maisonette
1 bedroom flat
pedestrian access
private terrace
car parking

fig 182: Section (east - west)
fig 183: Section diagram explaining the functions
fig 184: Three interior impressions
fig 185: Plans and axonometry of the middle row

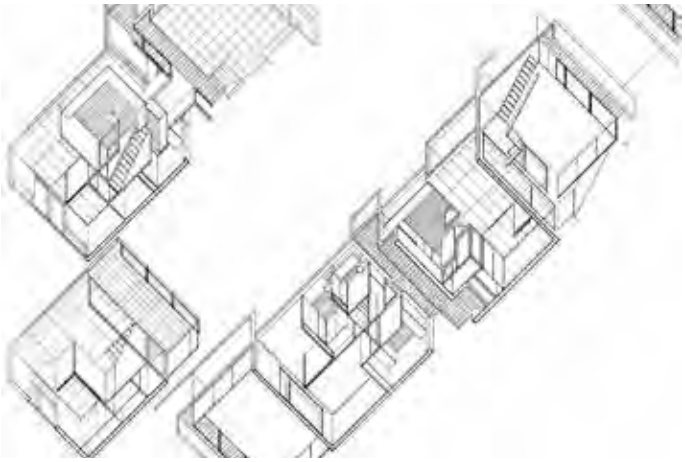


fig 186: Setting in the surrounding

"We wanted to create a continuous, Seamless Society"[94]

Alexandra Road Estate was the first council housing estate to be granted Grade II* listing in Great Britain in 1994.[95] Originally, the private investor South Bank Properties planned to realise a tower scheme on this last available site in Camden. Due to its bankruptcy, Sydney Cook and his team around Neave Brown took on the task in 1967. By proposing an estate with a density of 519 people / ha instead of the intended 371, they managed to convince the city board and eventually construction started in 1972 after many years of heavy discussions.

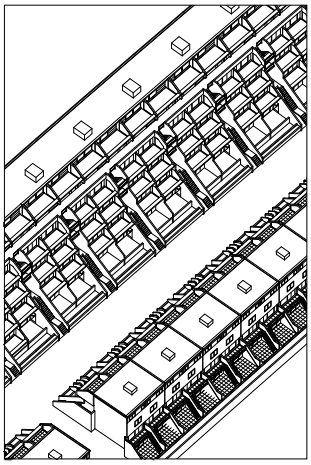


fig 187: South view onto Block A

In the north, the site is defined by the noisy railway line towards Euston Station. In the south, the existing Ainsworth Estate separates it from the surrounding Victorian detached and semi-detached houses. The six-storey post-war brick housing blocks were integrated into the new circulation concept. The contemporary master plan dictated a strict separation between pedestrians and vehicles. Cars enter the underground parking street under Rowley Way and another parallel to the railway from the south-eastern access road. Another street runs parallel to the southern row of houses. The 600 parking spots are calculated for both, the Alexandra and the Ainsworth Estate.

The main part of the master plan consisted of 520 flats of varying size for 1660 people. Phase one consisted, apart from a trainings centre for disabled kids also a community centre, a and a public park. The main entrance was planned to be close to the Underground station Swiss Cottage. The second phase in the end extended Block A eastward and incorporated a disabled home for adults.

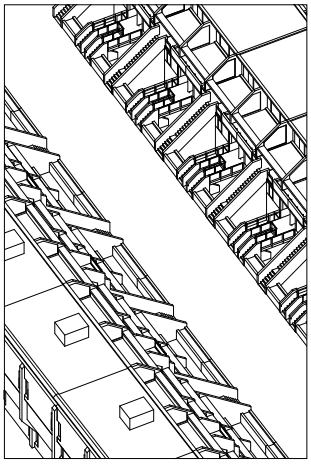


fig 188: View onto Block B

Two pedestrian roads parallel to the site boundaries form the main elements of the estate. Three building volumes follow their bend. The northern Rowley Way is framed by Block B with two super-imposed maisonettes and the seven-storey Block A which cantilevers backwards over the train tracks, to block the noise. Larger maisonettes on the

94 Cordell, Tom: Utopia London. (movie) UK 2010
95 Freear 2012, 35.

fig 189: The machine-like back of block A as a noise barrier

fig 190: The balconies give space for personal taste

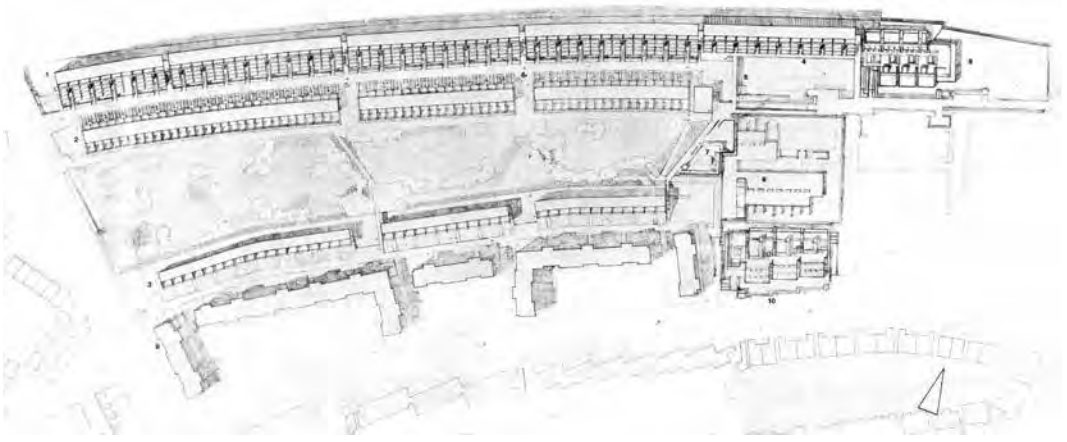


fig 191: Original top view

fig 192: Rowley Way

fig 193: The many green balconies between the concrete fins

ground floor are topped by three simplex flats. They are topped by another row of maisonette flats. Three-storey high terraced houses run along the other path, parallel to the Ainsworth Estate. The long park in between is formally inspired by the close-by Victorian neighbourhood Belsize Park. The community centre and the service amenities are located at its eastern end.

In order to give the inhabitants a feeling of importance and individuality, each flat has direct access to the pedestrian roads. At the same time, the staggered profile allows for each unit to have an open-air terrace with direct sun during nearly the whole day. Additionally, this profile leads to a light and spacious street. The terraces allow for adaptation and planting by the residents and thus create a diverse neighbourhood feel inside the estate.

The external stair cases in Block A each serve two rows of flats. An additional walkway connects all of them on the fifth floor. In addition, four elevators are sandwiched between the larger volumes.

Flats

Six different flat types create great diversity. The overall 520 units vary from two-person flats to such suitable for families with up to six members. The only simplex flat type only exists in block A, whereas all other flats are duplex or, in the case of Block C, triplex.

Bedrooms are always located on the lower floors while the associated living rooms are right above for noise reasons. Each flat can access to one at least 100 sq ft (9.3 m^2) large garden or terrace right from the living room.

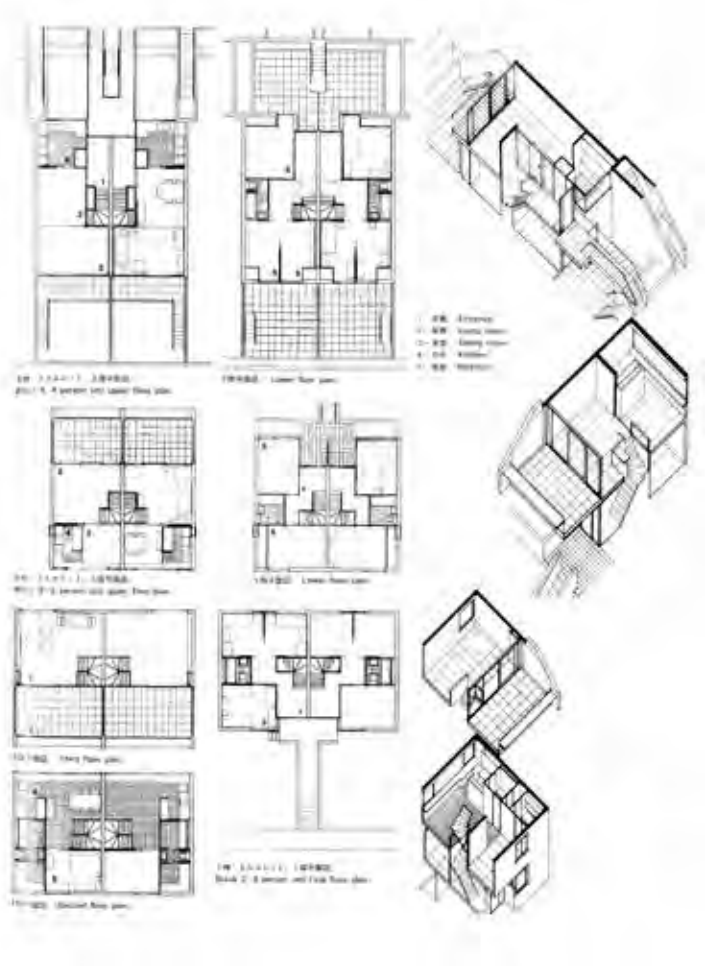
Like in the previous projects, the living rooms can be flexibly divided by ceiling-high sliding element. The interior doors, when opened, follow this concept and are full height. Another interesting detail lies at some of the bathroom doors, as they disguise as part of the cupboard.

Construction and Technical Specifications

Neave Brown, together with the structural engineers Antony Hunt Associates, pushed the boundaries for new

fig 194: (top) One of the lift glass enclosed lift shafts
fig 195: (left) Interior impressions after completion
fig 196: (bottom) Plans and axonometric views of the different flat types

fig 197: Entrance to Block B



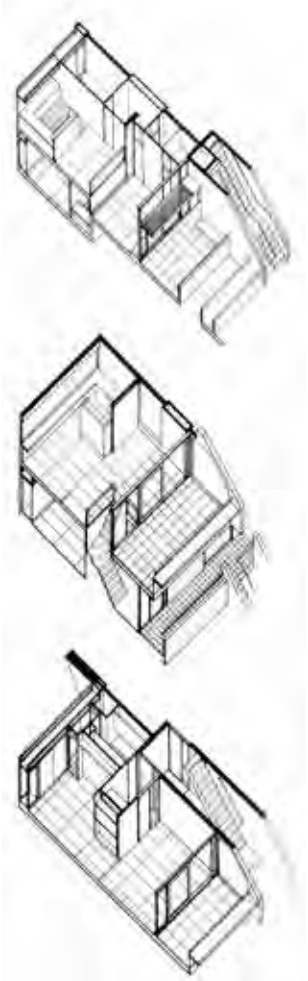


fig 198: Block C - stairway and parents' bedroom in the back

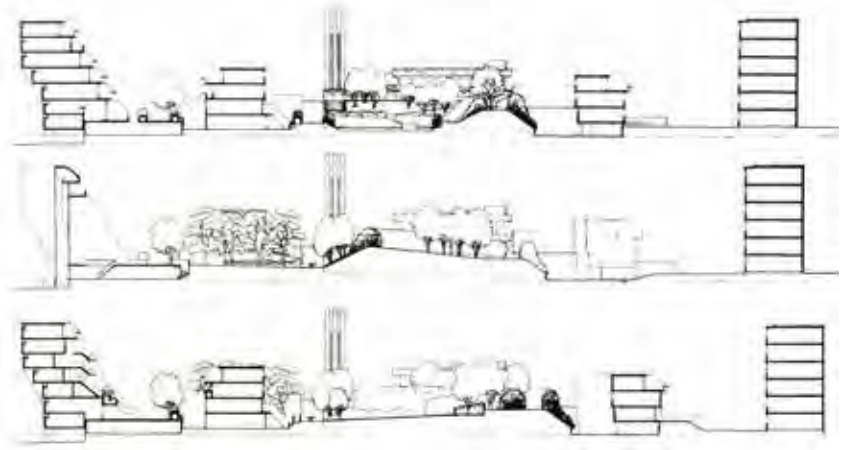


fig 199: Three main sections (north - south)

fig 200: Living room and kitchen in Block C

technical innovations, of which some had been absolute novelties.

The biggest innovation was the special heating system. Instead of installing single radiators that would only take up space inside the flats, the planners integrated heating pipes inside the walls, that are centrally controlled. The clear advantage behind this novelty in comparison to the then omnipresent paraffin stoves was that those were often the source of condensation and thus structural damage. The system's biggest problem is the maintenance. Since the pipes are sealed inside the concrete, the walls have to be destroyed in case they have to be repaired.

fig 201: Below ground car park

As an additional benefit to radiator-free living spaces, the return flow runs back through the walkways to keep them free from ice.

fig 202: Children playing

To reduce the impact sound caused by the railway line, the whole structure of block A is based on pile foundations with special rubber cushions. A big question is what will happen to them, after their original life expectancy of 50 years expires.

The airborne sound instead is blocked by the machine-like concrete back wall of block A. To enhance the reduction even more, the inside is backed with the bedroom's cloths cupboard.

fig 203: Rich in colours

The final construction costs account for £20.9 million and thus clearly exceed the estimated £4.8. Although the architect cannot be accounted for most of the vast increase, it still caused big controversies between the architect and the council. *Alexandra Road* was Neave Brown's last project in the UK.

After several years of decay following the right to buy act, the estate's inhabitants started to form groups and organisations to improve the conditions again. Subsequently, a few years ago, the estate was refurbished, including a cleaning of the weathered concrete surface. The sense of community created by both the architecture and its inhabitants is a long-lasting legacy for this project.

fig 204: Rowley Way at completion

Lillington Gardens

Date of construction:
Phase I: 1964 - 68
Phase II: 1967 - 70
Phase III: 1969 - 74
Longmoore Gdns: 1980s

Architects:
Darbourne & Darke

Number of units:
over 780

Number of residents:
2,000

density:
220 p/a (543 p/ha)

Construction costs:
n/a

Before World War II, The area around *Lillington Gardens* had been, unlike today, a rather poor neighbourhood. Extensive destruction during the war led to the area being designated for redevelopment in the County of London Development Plan. In 1961, John Darbourne won the national competition to design a multi-functional building complex with a density of 200 persons per acre around St James the Less Church and subsequently formed a partnership with Geoffrey Darke.

Lillington Gardens was developed in three phases between 1964 and 1972 with slightly different characters and later extended by the similar looking, smaller *Longmoore Gardens* (1980) by Westminster Council's in-house architects. In the second and third phase, the design was discussed with and adapted to residents' wishes.

Lillington Gardens was one of the first projects in the era of British Social Housing, which tried to overcome the prevalent high-rise typology by adopting a more humane, contextual style instead of the prevalent modernist housing

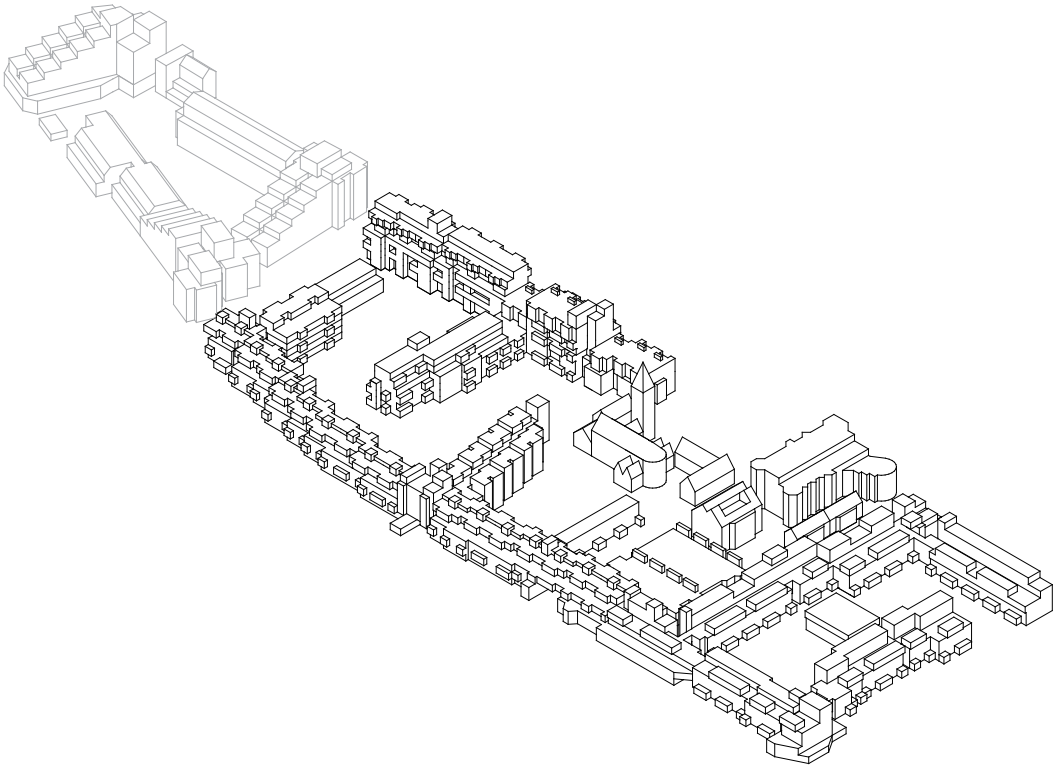


fig 205: (opposite) figure ground plan 1:10,000
fig 206: Lillington and Longmore (grey) Gardens in detail

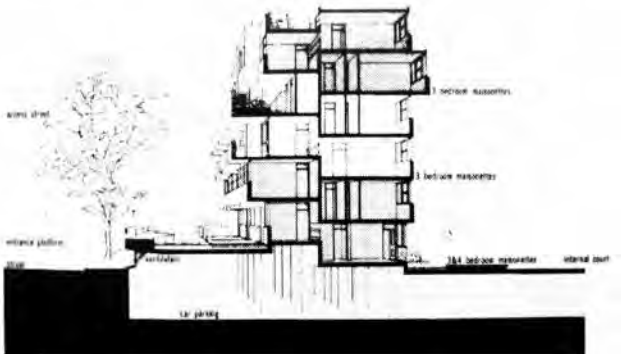


fig 207: Section through southern block along Tachbrook St

fig 208: Playing with materiality

fig 209: Section through garden block

fig 210: Strong formal language

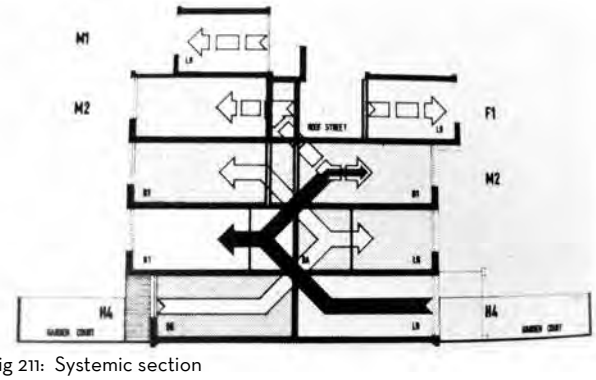


fig 211: Systemic section

fig 212: Garden wall Tachbrook St

designs of the previous decade.[96]

In the years after completion, it won major architectural awards: the Housing Design Award 1961, the Ministry of Housing and Local Government Award for Good Design in 1970, a RIBA Award in 1970 and a RIBA Commendation in 1973.

Darbourne & Darke are today known for being among the first architects to combine high density with a medium rise structure. It was one of the largest post-war public housing developments.

The fourteen blocks that form *Lillington Gardens* include varying combinations of flats and maisonettes, mostly ranging from three to eight storeys in height. The different heights and distribution of types of flats result in the variety in architectural appearance and layout.

The Westminster Conservation Audit defines five main characteristics that led to *Lillington Gardens*' listing in 1990. It honours the human scale and the contextual design, using St James the Less Church as a centre piece and adapting in height to the façade scale of the terraced housing in Tachbrook Street.

The red-brown brick façade is, in materiality and scale, reminiscent of the surrounding Victorian construction, forming a protective wall around the estate's perimeter. The gardens inside this wall form an interlinked network through the whole estate and allow each resident access to green space.

Elevation design is of particular importance for the architectural character of the complex. It expresses the interleaving internal layout that uses scissor-plans to grant each dweller a maximum access to light and green space. This interlaced complexity gives inhabitants the idea of living in a house rather than a flat within a large social-housing block.

This formal complexity further made it possible for the

fig 213: *Longmoore Gardens*

"I enjoyed the fact that the interwoven flats give you the sense of living in a two-storey house while occupying the same footprint as a single-floor flat"

– Manijeh V., former resident

96 cf. Westminster City Council 2012, 18.

architects to give each dwelling its appropriate private outdoor space.

The roof profiles play an important part in the architectural expression of *Lillington Gardens*, to complete its composition.

The estate seems nearly impenetrable from the outside. Few roads are accessible to cars while the rest of the estate is punctuated by pedestrian routes and access gateways. Narrow alleyways, bridges and ramps form a sometimes confusing network of elevated streets that guide through the estate.

The architecture language is honest, showing the structural concrete frame to the outside and filling the gaps with "distinctive, imperial-sized handmade red-brown brick"[97]. Although the estate was developed over several decades, due to the consistent use of materials, it appears as a unified composition.

fig 214: Playful facade and one of the three public houses

Ten small shop units were incorporated in the original design of *Lillington Gardens*. They are considered as an integral component for the appearance of the estate. Besides what was envisaged by the architects, the shop fronts now feature additional signage that draws a more diverse picture.Three Public houses are successfully integrated on different corners of the perimeter.

In the original design, all the pipe work and installation were concealed internally in order to create simple façades. However in recent years some inhabitants added pigeon netting, wires and satellite dishes or Antennas. Thus the originally intended simplicity of the design suffers. The clean lines intended in the original design are softened further by privately planted greenery on roof gardens and balconies.

While they are one of the reasons why *Lillington Gardens* was listed as a conservation area, some inhabitants find the narrow circulation corridors throughout the estate repellent and even compare them to German trenches

97 Westminster City Council 2012, 25.

from the Second World War.[98]

Overall, *Lillington Gardens* successfully bridges the gap between a wealthy upper class and the wider working and middle class. It does this by being fully integrated into the city structure of Pimlico, known for its expensive apartments and fancy cars.

98 O'Callaghan 2010, willofmemory

fig 215: *Lillington Gardens* is based on typical proportions found in the surrounding
fig 216: impressions of the circulation areas

Brunswick Centre

Date of construction:
1967 - 72

Architects:
Patrick Hodgkinson

Number of units:
250

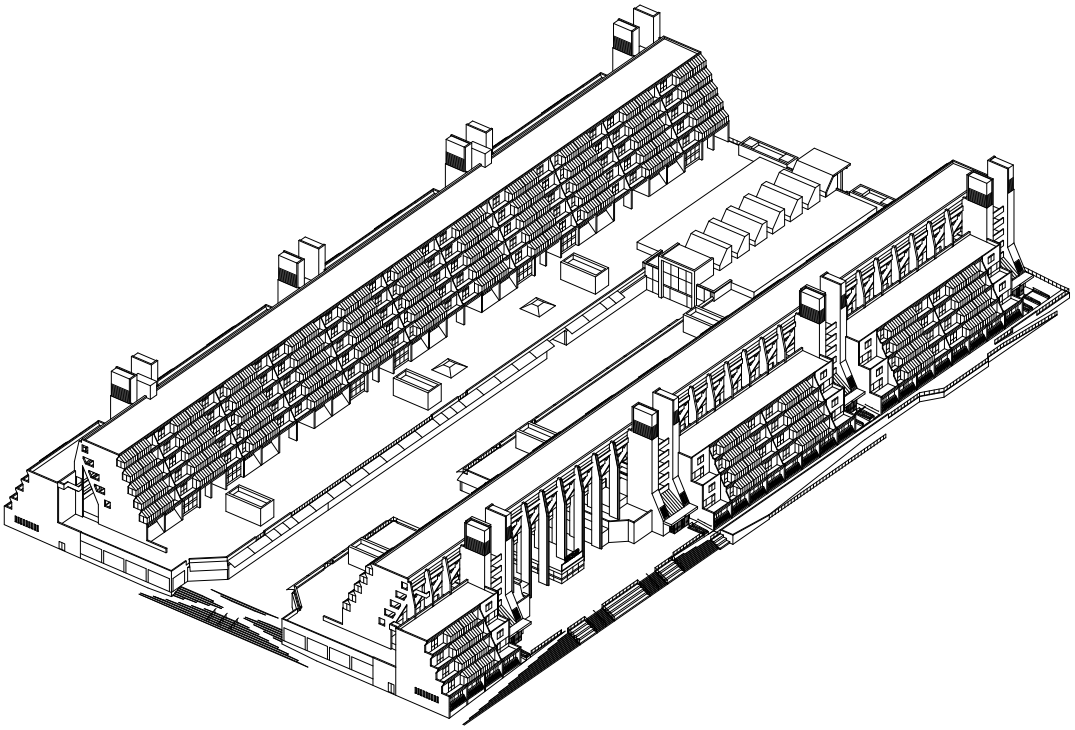
Number of residents:
1,644

Construction costs:
£10 million

The *Brunswick Centre* by Patrick Hodgkinson is a privately developed mixed use scheme in Bloomsbury. Originally developed before 1850, the estate was characterised by high end residential terraced housing until it began to degrade in the beginning of the 20th century.

The original plan extended until Euston Road, but the Ministry of Defence would not give up one of their buildings on the site. The first proposals were rejected by the *LCC* for containing too few residential units. It had to be changed to meet the required density of 200 people per acre within an 80ft height limit to maintain the view from Primrose Hill to St Paul's cathedral. The planned flats and shopping centre were still meant to be of a rather high standard. In 1963, a private developer made a deal with the Council to develop the scheme together in order to save money.

The *Brunswick Centre* consists of two pairs of nearly mirrored ziggurat-like volumes. They border a long square that is surrounded by shopping units. One end features a



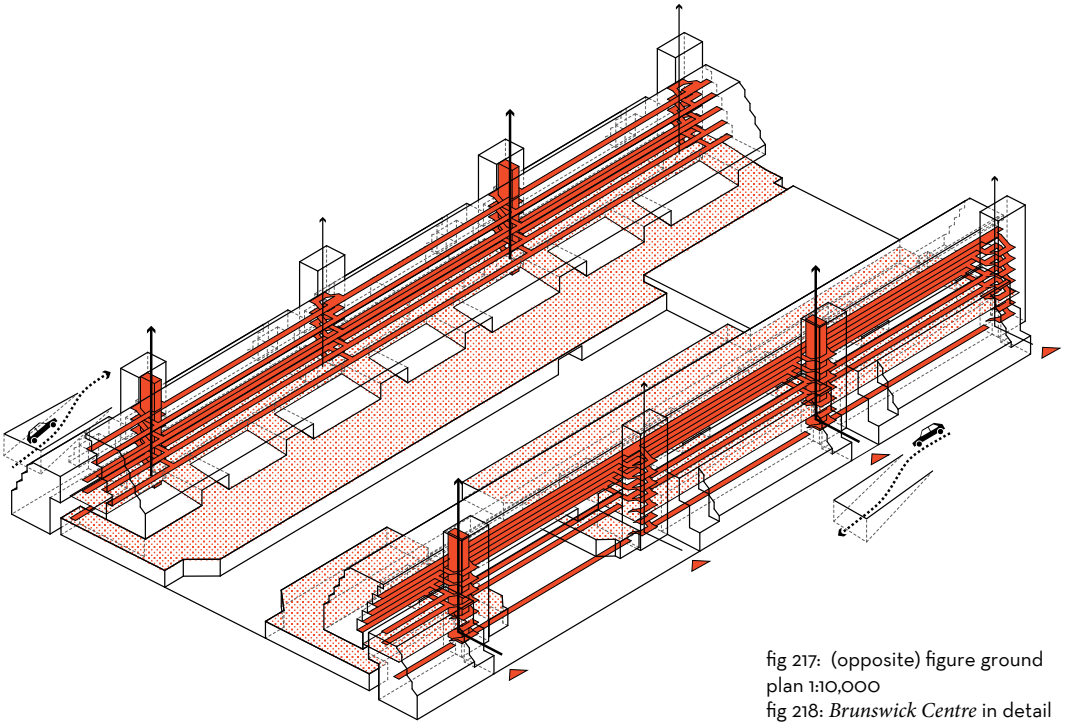


fig 217: (opposite) figure ground plan 1:10,000
fig 218: *Brunswick Centre* in detail
fig 219: circulation diagram

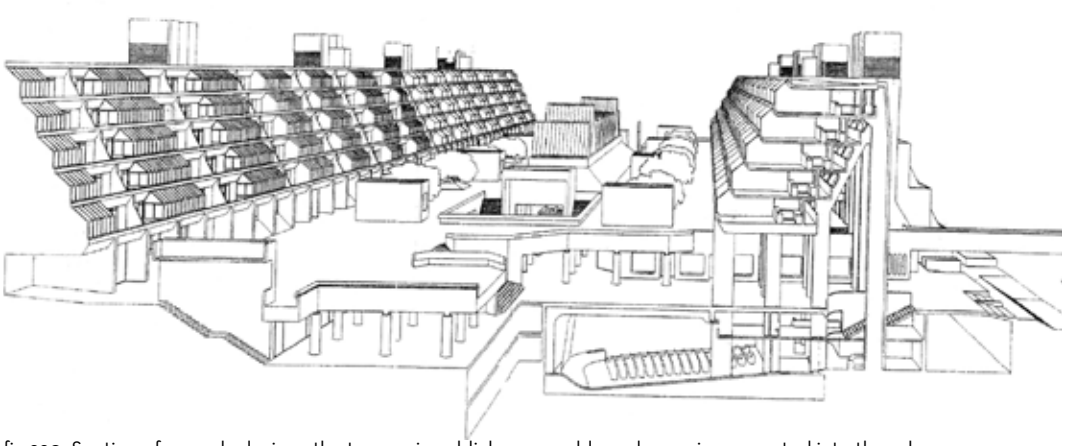


fig 220: Section of an early design - the terrace is publicly accessable and more incorporated into the scheme

fig 221: The “Brunswick”

fig 222: Renovated retail terrace

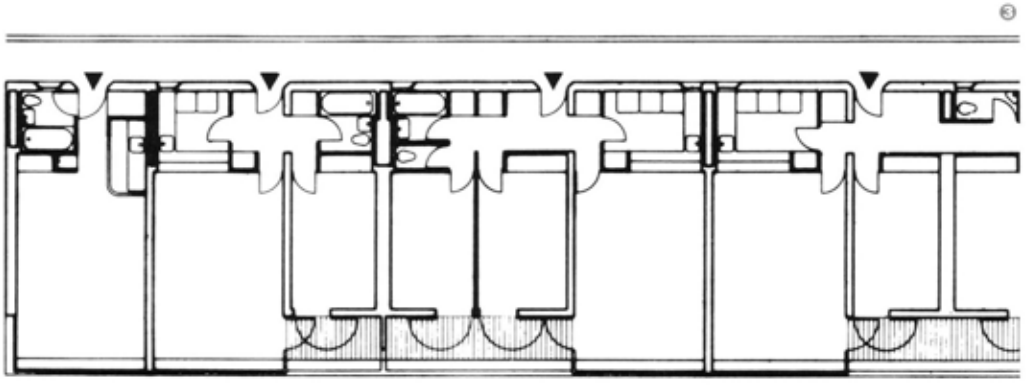


fig 223: Systemic plan of the three different flat types, based on a modular grid

super market. A large double height main entrance to the site contains a cinema. Most of the underground area is taken up by car parking and the cinema itself. Two large platforms roof the commercial space and build the base for the housing units as well as one floor of office spaces accessed right from the plane itself.

The residential units are accessed through staircases and lifts from the perimeter streets. These lead onto horizontal balconies that run along the whole length of the building and give access to the dwellings.

The residential units are arranged on five floors of staggered flats, featuring one, two and three bedroom apartments. The size of the apartments follows a modular grid. The living room of each flat features a winter garden, which allows the sun to enter deep into the interior. The bedrooms end in balconies.

The two mounds of flats together create one of the edges of the *Brunswick Centre*. By starting at different levels and being pushed slightly inward, the higher up they are, they create a gap that contains the circulation space. This space is naturally lit and features expressive concrete elements. On the outside, there are several duplex units.

The whole estate is finished in concrete. This was not anticipated by the architect but rather came into being by accident. When the *LCC* took over the project to develop the residential units, it was simply too expensive to give it a paint coating.

The strong form of the pre-cast elements is supported by the materiality.

The interest of the *Brunswick Centre* for this thesis is its combination of shopping and housing functions in one building. Especially how it was designed by the architects at the time of planning.

Initially, the integration of the different levels between commercial, office and residential sections was supposed to be better executed. In the final scheme, many of the

fig 224: Marked site before the construction of the *Brunswick Centre*

"It's always been known as a Brutalist building but I had no intention of it ending up that way." – Patrick Hodgkinson, 1998
[in: Melhuish 2006, 45]

fig 225: (below) original visualsation of a non-realised version of the retail terrace

opposite, top to bottom right:
fig 226: modular winter gardens
fig 227: Grand entrance and cinema box
fig 228: New street furniture gives people reason to stay
fig 229: Monumental circulation
fig 230: Balcony detail

cross-connections were erased.

Before the renovation in 2002, the central street was surrounded by concrete covered arcades supported by grey columns. The shop fronts were recessed behind them. This led to dark and unwelcoming spaces that were often deserted. Since the renovation, the shopping centre is brighter and now well frequented.

Through the integration of a public square amidst the residential units, residents as well as visitors profit from the higher public surveillance and revitalisation of the area.


RENOIR

4

The New Neighbourhood:

A Microcosm of London

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Site - Soho

The building site for the new neighbourhood lies on the north-eastern corner of the vibrant Soho. The site has recently been cleared for the construction of a new Underground station which connects Northern, Central and the future Crossrail line below ground.
Due to this fact, the oversite development offers great connections to nearly every corner of London, but at the same time, has the chance to stay rooted in Soho with its very own style.
Soho is a small-scale, busy neighbourhood with many small shops, bars and cafés. Formerly an artist area, it is still an exciting part of the city.
The northern boundary is formed by Oxford street, London's most famous and busy shopping street. Nevertheless, the Soho area as its direct neighbour has overall preserved its small and trendy shops, that are an important characteristic of the area.
In close proximity, just one street away, Soho Square is a popular meeting point at lunch time. It attracts so many people that it is always crowded. If there was another public square close-by, people would probably use it as an alternative.
The mixture between housing and retail is an interesting factor that plays an important part in making the area so colourful and vibrant, during the day as well as at night.
Under all cercumstances, the energy and diversity has to be supported and implemented in the design of the new development as a part of Soho.

fig 231: figure ground plan; Soho can clearly be detected with its large bordering roads
fig 232: Food market at Berwick Street
fig 233: The small streets of Soho are always busy
fig 234: Small shop with flats above
fig 235: Many small businesses make Soho an interesting place
fig 236: Colourful and vibrant


THE WEEK
THE WEEK


MISAN TEXTILES

Protected Vistas

One of the most important building rules base on strategic view corridors over the city. They are meant to mean to maintain clear views from certain points towards three important landmarks, St Paul's Cathedral, Palace of Westminster and the Tower of London. There are 27 designated viewing locations of which the most important, hence longest once are shown in the graphic.[99]

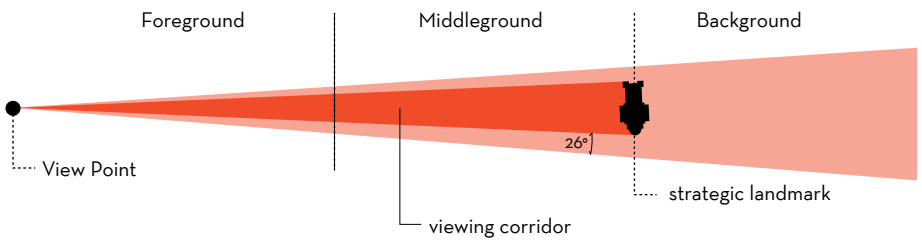
Inside these direct lines, it is strictily prohibited to erect a structure that would block the visual connection. The dimension derives from the simple width of the landmark. In an angle of 26° on both sides, as well as in the background, the corridor is partially protected. Each case discussed seperately.

The Crossrail site at Tottenham Court Road lies just outside the protected views and thus there is no height restriction for any new development there.

There are further many local views throughout London. They are short distance only and the new building is going to react to one in particular: it has to be possible to still see Centre Point from Oxford Street.

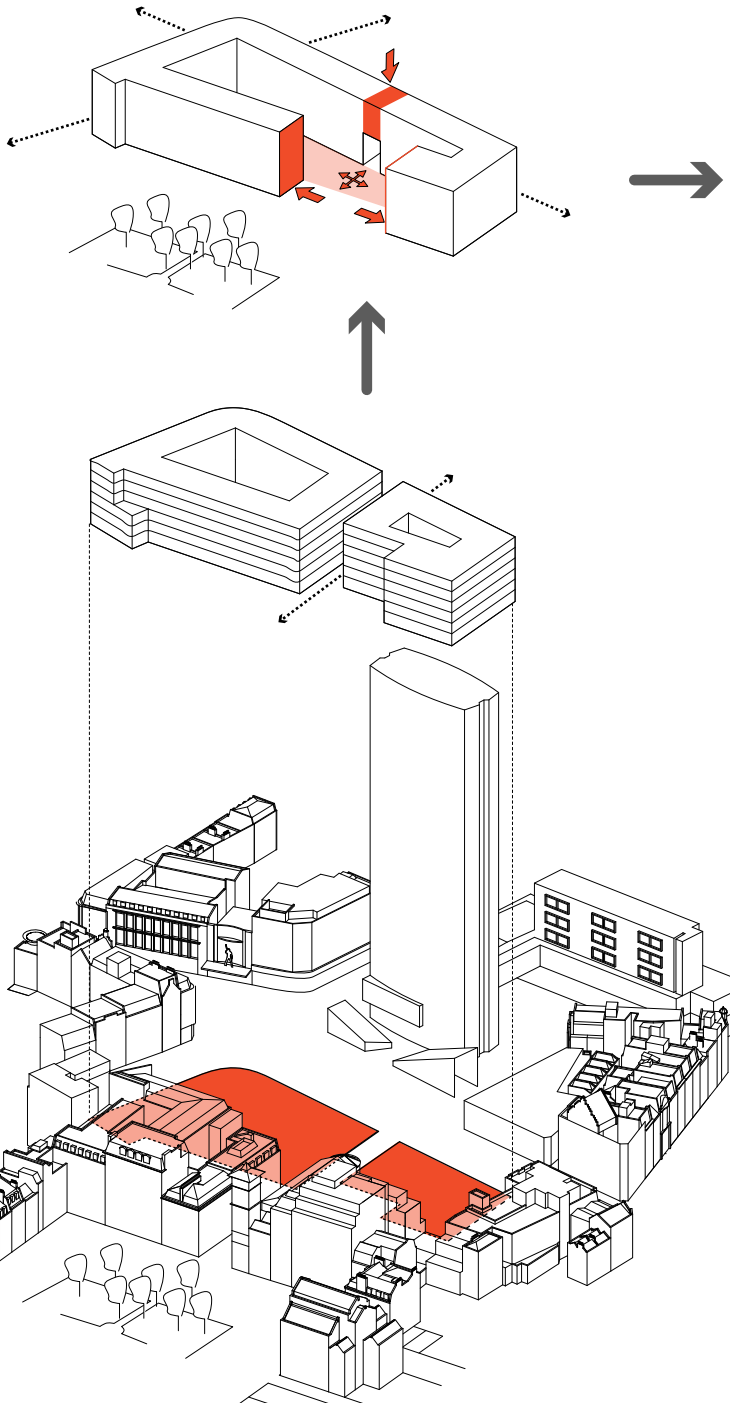
99 Greater London Authority (pub.) 2012, 20.

fig 237: View corridors over London (opposite)
fig 238: functionality of the view corridors (below)

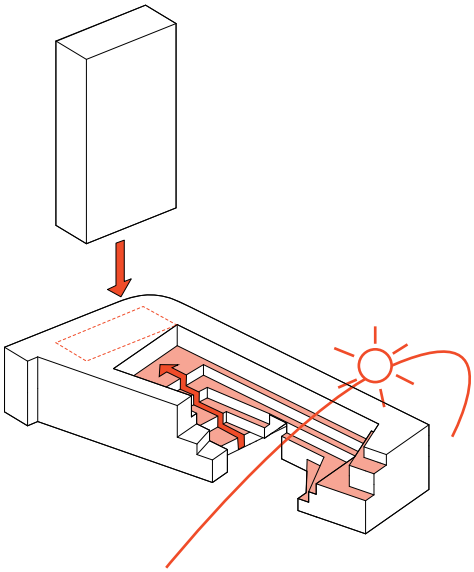


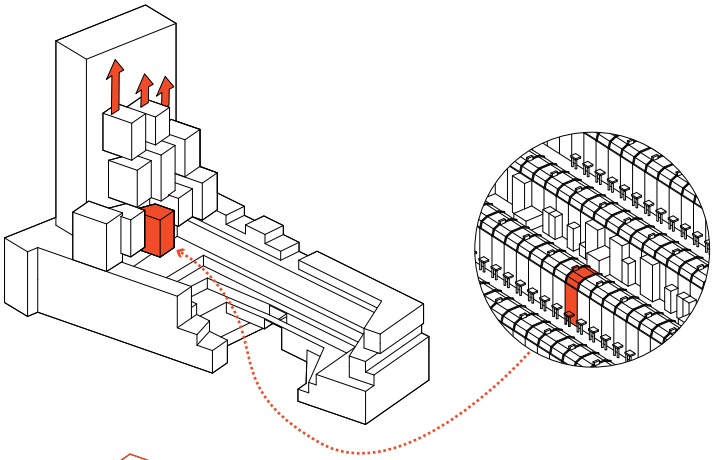

Tottenham
Court Road

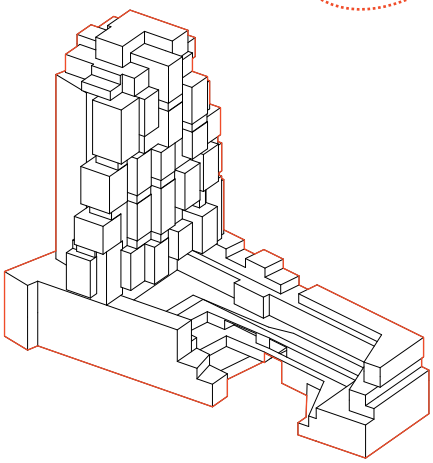
The New Neighbourhood



The site for the new proposal is split in half by a connecting street between Soho Square and the Centre Point with the new Crossrail Station entrance below.
Two busy streets, Oxford Street in the North and Tottenham Court Road in the east run along the site.
By opening up two hypothetical blocks and closing the gap to the main street except for a pedestrian access, the inside becomes a quiet and open space that opens up towards Soho.







In a true London manner, blocks of flats are being haphazardly added onto the southern facade of the tower in order to gain a maximum of light and sun. The offices instead have sufficient light facing north.
The new neighbourhood continues the coexistance of the different typologies, housing, office and retail.

The new neighbourhood is directly connected to the underground line with its own exit. From here, a vertical circulation core brings the inhabitants and visitors directly onto any of their desired elevated platforms. Here they find shops cafés and space to relax.
From the fourth floor terrace, the larges of the four, as well offices as flats are accessed. This means that it will be well frequented during most times of the day, like its role model, Soho, and is never really in danger of shady vacancy that could attract criminal energy.
While the lower floors are laid out to be solely retail space, the upper floors contain units that combine two typologies, housing and retail. Like this, small and young businesses can be supported by not having to afford two seperate spaces. They can be combined as they like and even be used by large families over two floors. The possibilities are diverse.

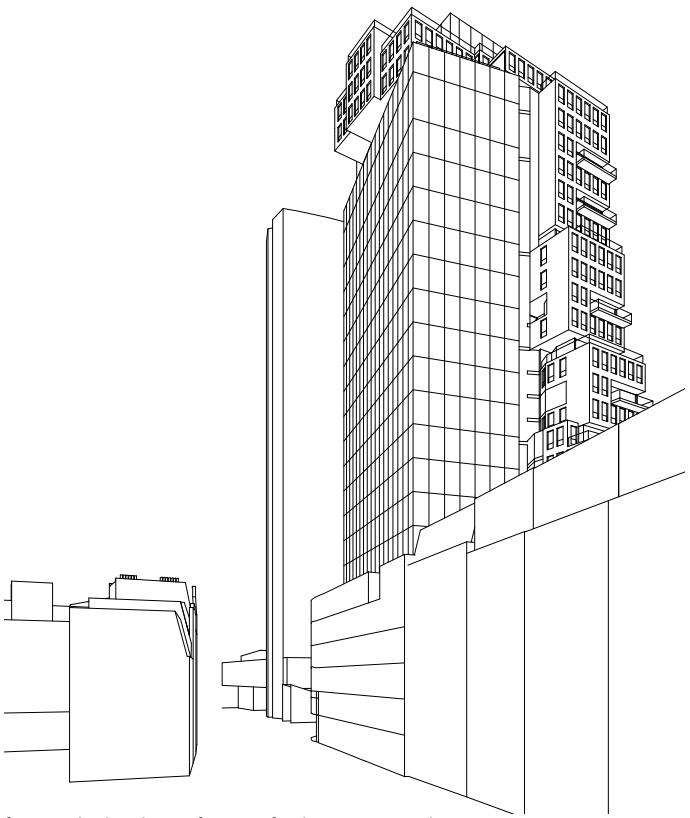
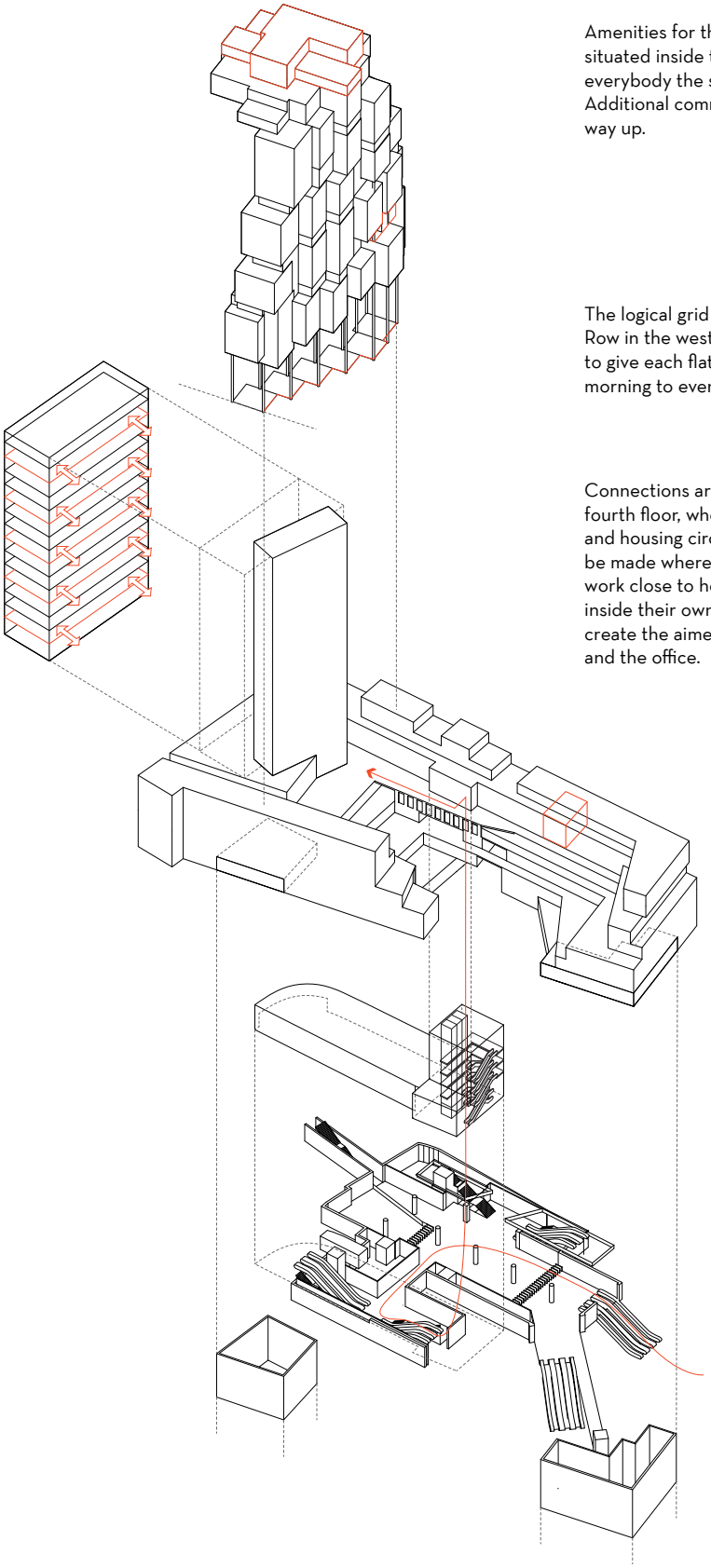


fig 239:The local view from Oxford Street towards Centre point is maintained.



Amenities for the inhabitants of the tower are situated inside the top floors in order to give everybody the same access to it.
Additional common rooms can be found half way up.

The logical grid aligns itself with the small Sutton Row in the west. It continues staggered, in order to give each flat access to direct light from morning to evening.

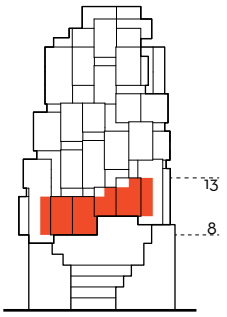
Connections are being made on every third/ fourth floor, wherever the floor slabs of offices and housing circulation align. Arrangements can be made where inhabitants rent office space and work close to home, but are not forced to work inside their own flats. Those floors are meant to create the aimed connection between housing and the office.

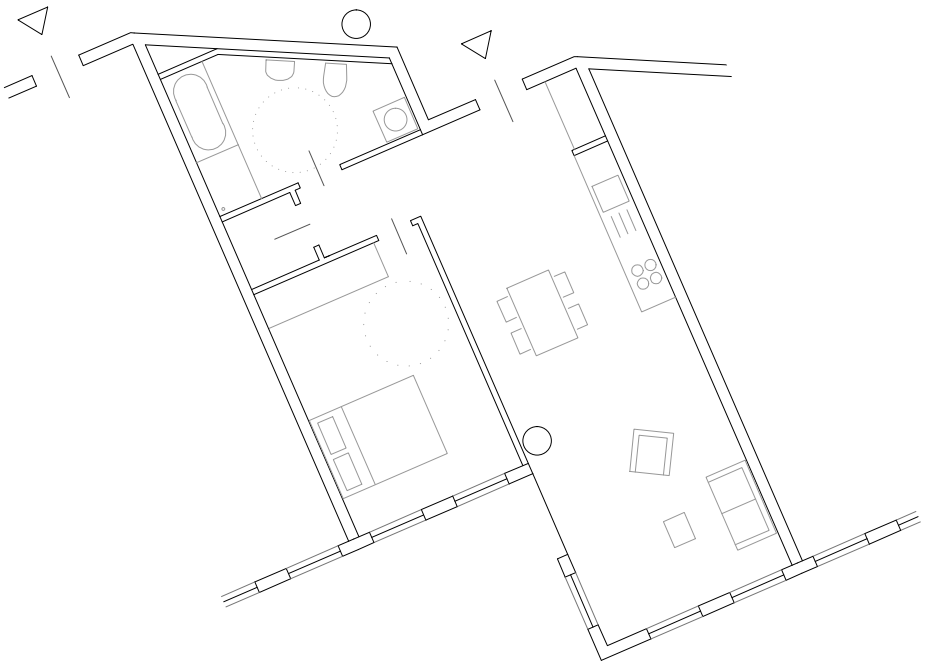
A new type of symbiotic flat is introduced - a combination between retail space on the lower floor and the associated flat above.

The direct access to the underground and the new Crossrail links the new neighbourhood to the whole city.

Flat Type A1

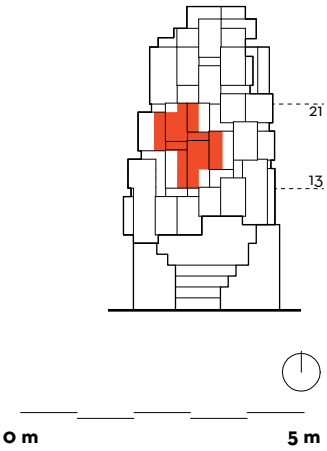
A1 is a very open, fully-accessible flat. It has a double bedroom and the typical living room with light from two sides during the whole day. It only exists in the lower part of the tower, where the building is deepest.

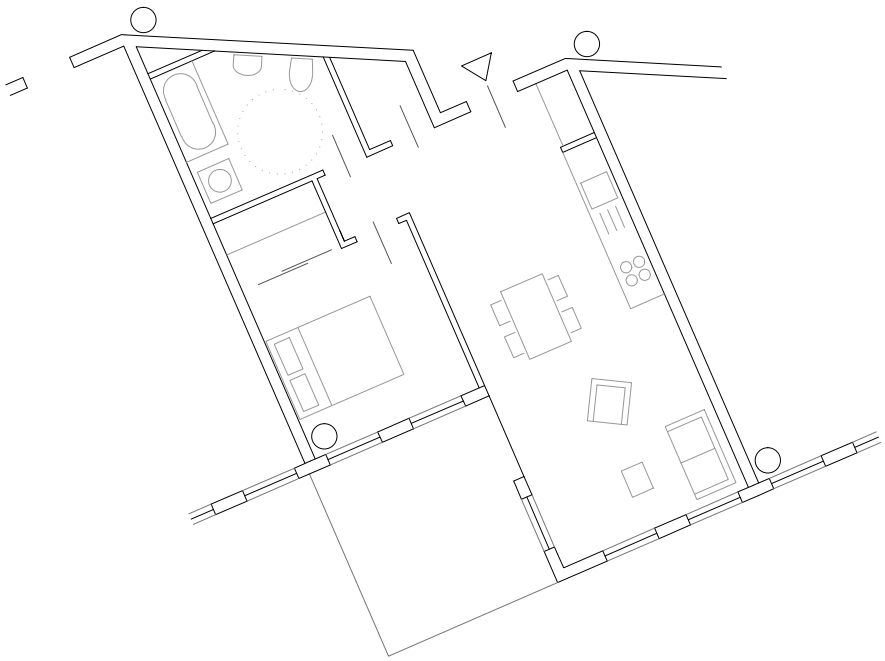


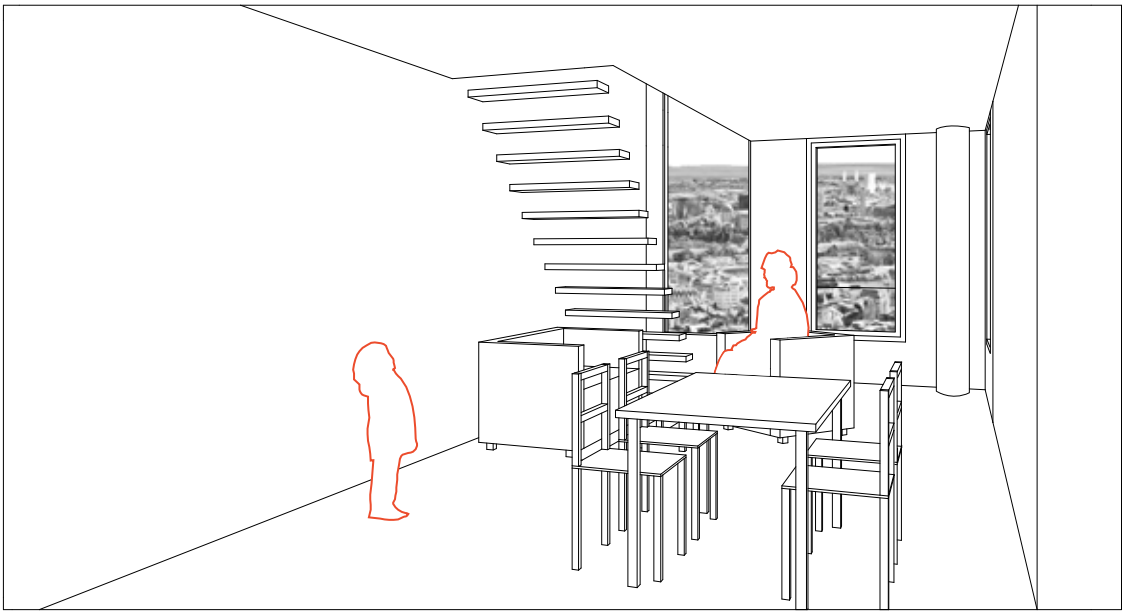


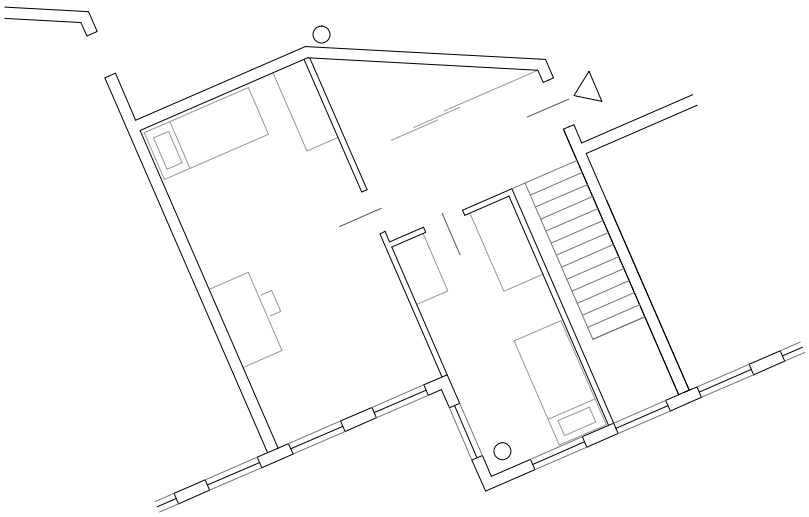
Flat Type A2

This is a slightly smaller type of flats than A1. It is not fully accessible but still features all the other elements. It is located in the middle part of the tower.





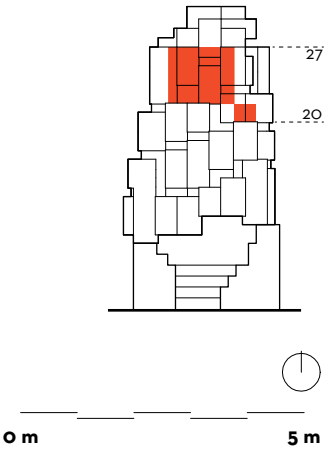


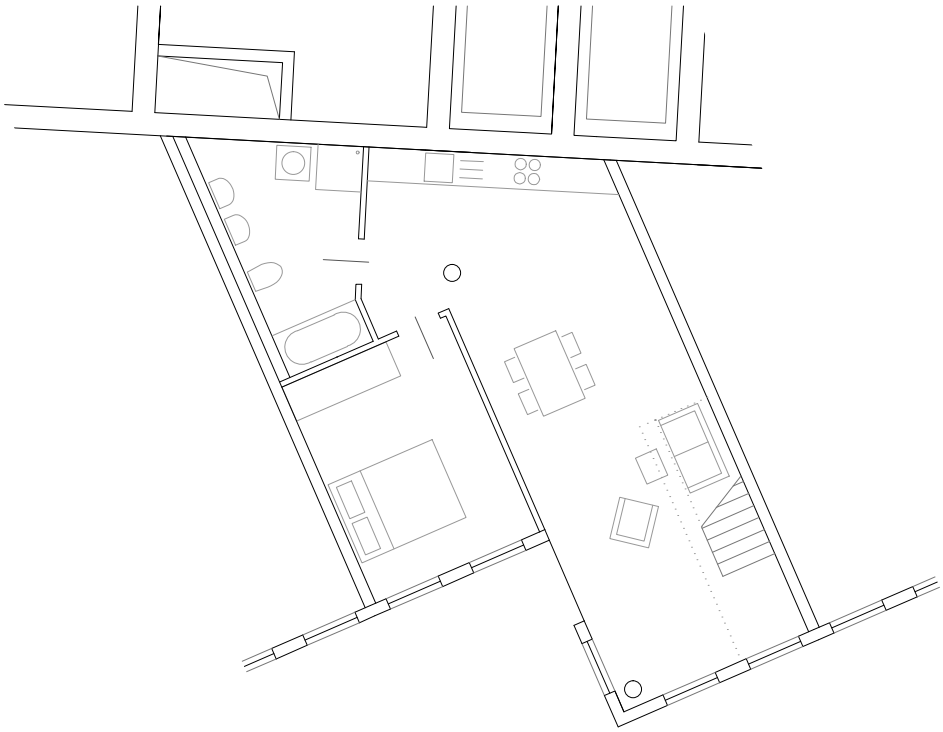


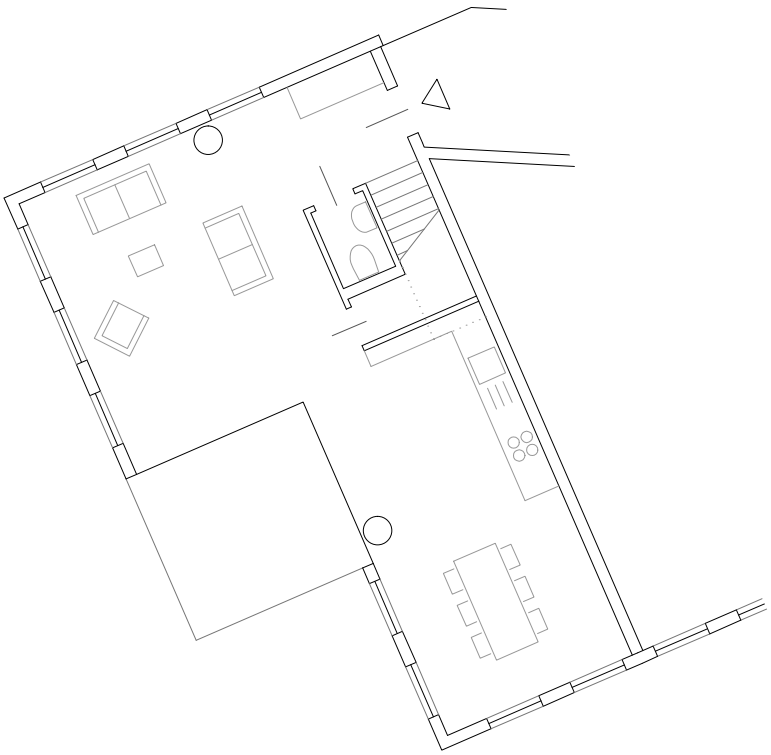
Flat Type M1

The medium duplex flat type for families of four is accessed through the upper floor. Descending the stairs, one has a great view over London through a double height window on the opposite wall.

Due to the high window, the light falls deep inside the flat and the space seems larger and more luxurious thanks to the cut out ceiling.

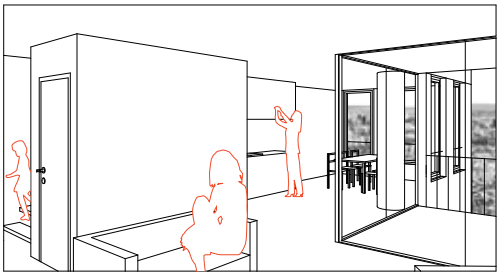


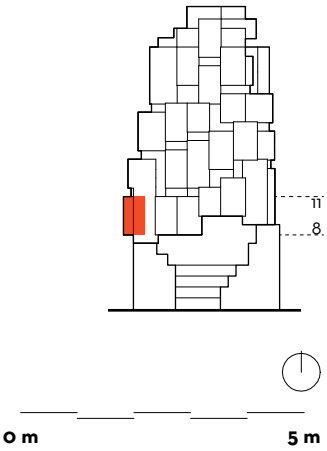


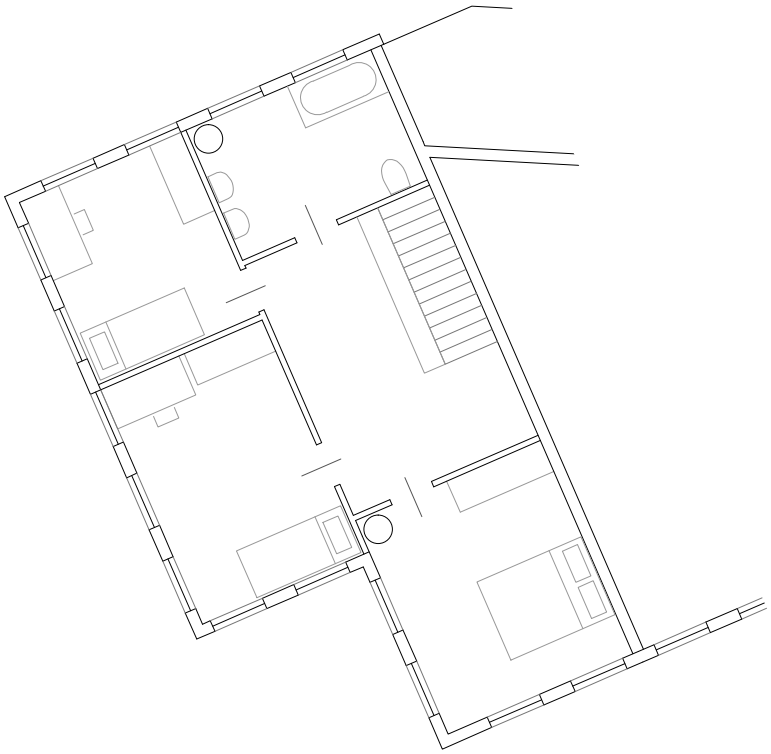


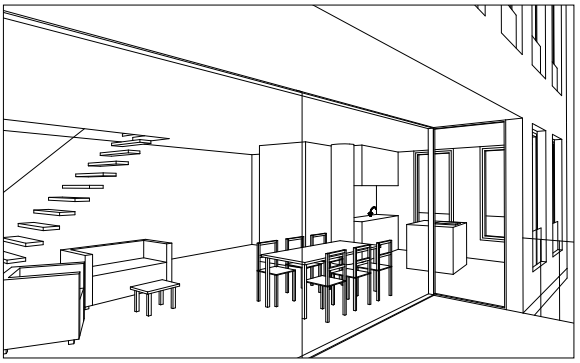
Flat Type M2

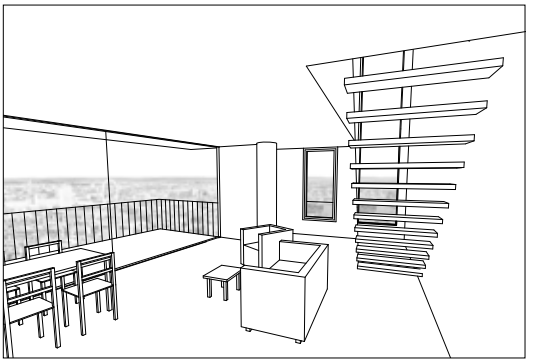
Two flats on the western flank of the tower feature an open-plan living room with kitchen, spacially separated by a large balcony. They are laid out for four people and, like most other flats, fulfil the Mayor's standards for affordable housing.

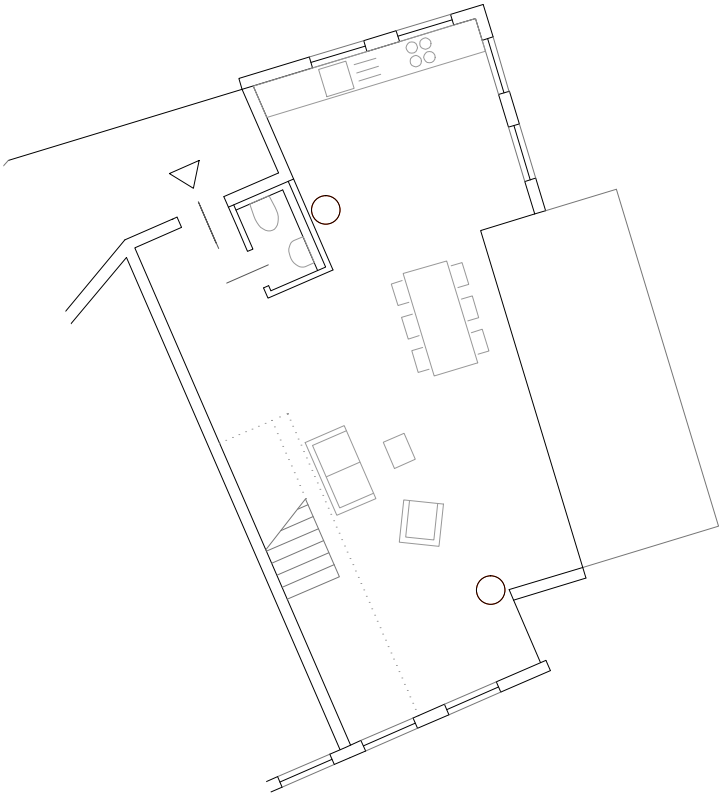






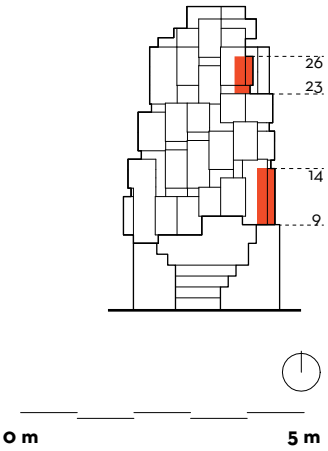


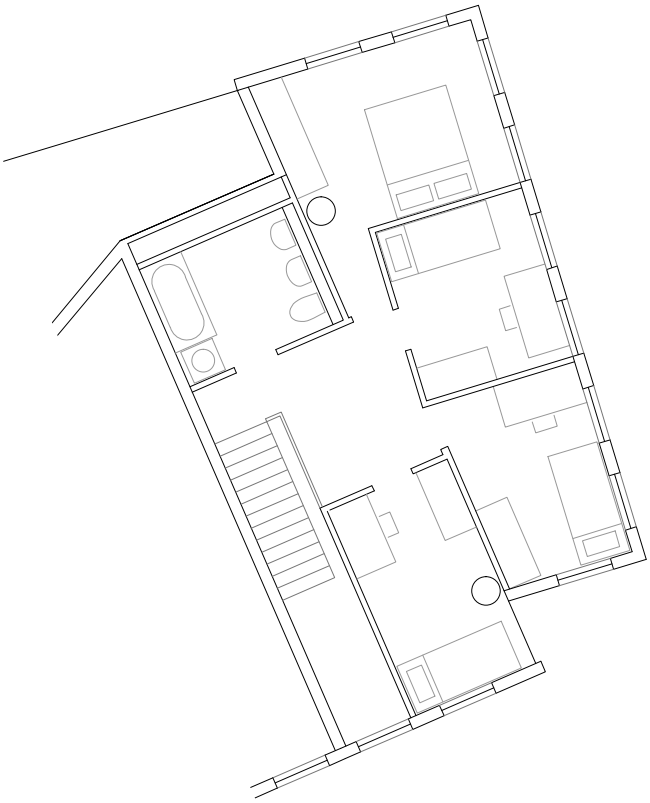


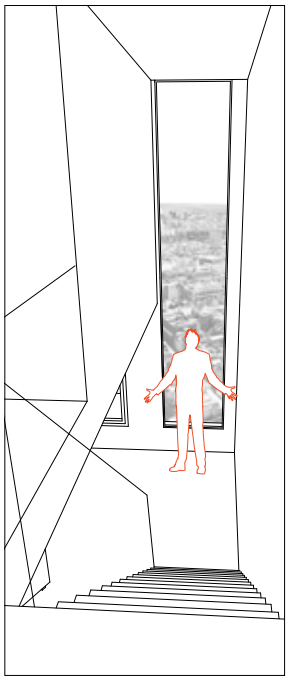


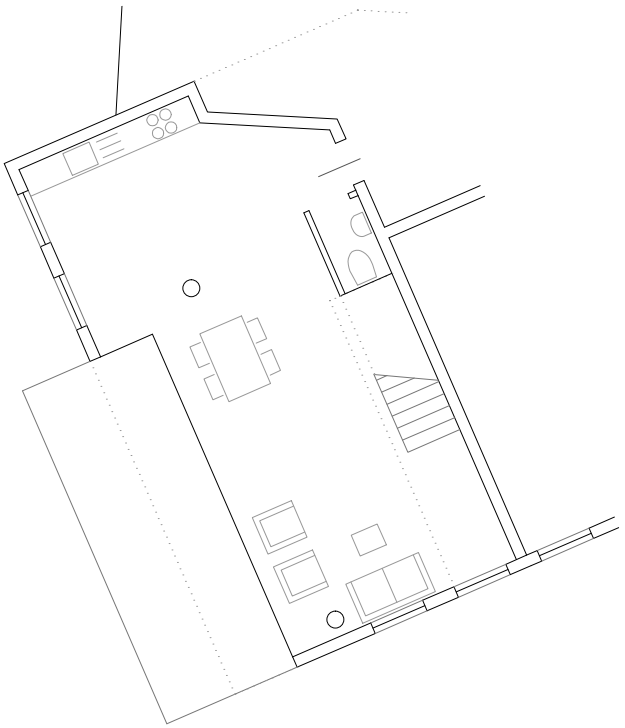
Flat Type M3

This flat type also features an open-plan living room as well as a very large balcony. Due to this fact it is ideal for families with up to three children. The flat also features the large stair window with a view over the city.



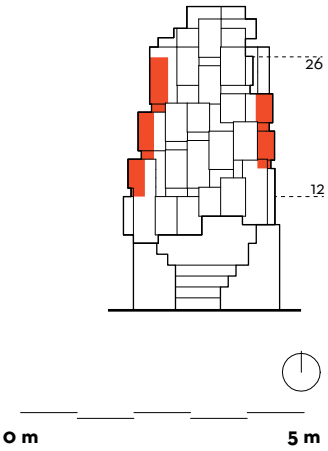


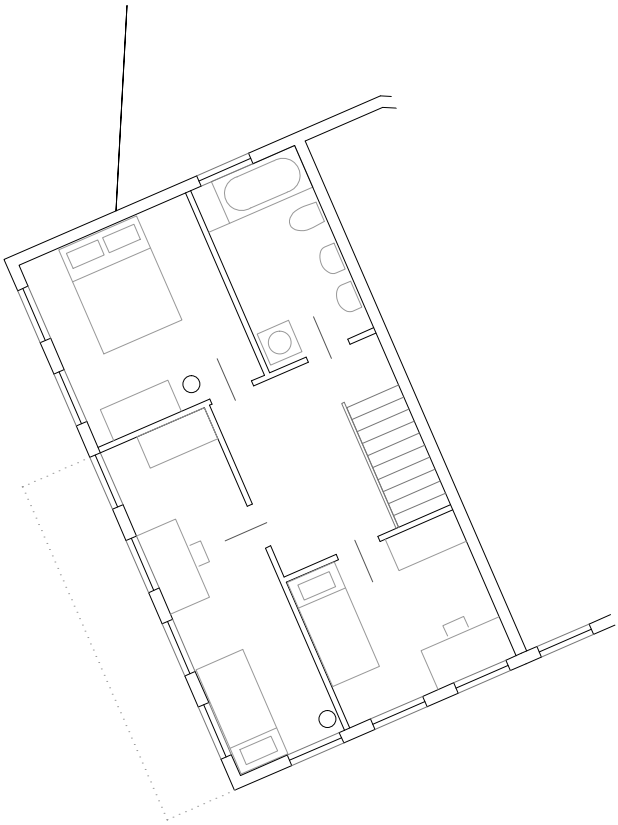




Flat Type M4

Similar to M3 but slightly smaller in size, Type M4 has three bedrooms for four people in total. Its main features are the generous balcony and the cut-out for the stair.

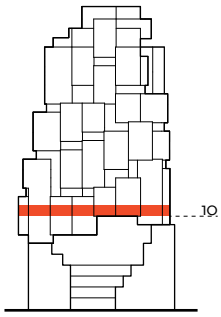




The office block and the flats are attached to the circulation core from both sides. The offices in the north and the residential units in the south in order to get the maximum amount of light into the rooms. The dwellings are arranged in a way that each of them takes up half a volume. This makes sure that neighbours cannot directly see inside each others' living or sleeping rooms. Where the blocks meet, a large full-height glass panel opens up for even more light to enter.

The circulation is arranged in a way that there is always a connection to the exterior and no claustrophobic or enclosed feelings appear. Where offices and housing meets, interesting multi-level air spaces open up and the connection betweenn the two is always apparent.

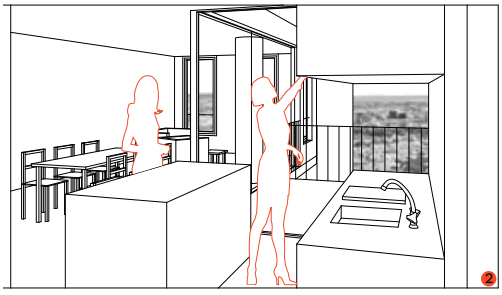
1

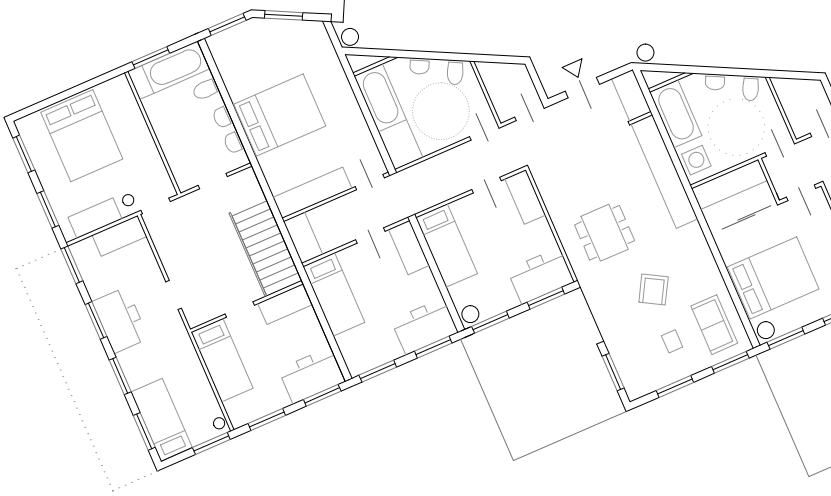


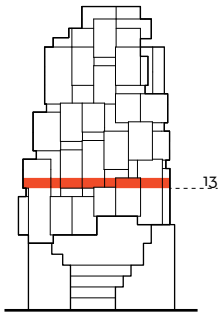
1:200

0 m 10 m

Some of the floors feature more luxurious flats. The construction technique allows for open living spaces with flowing and flexible layouts throughout.



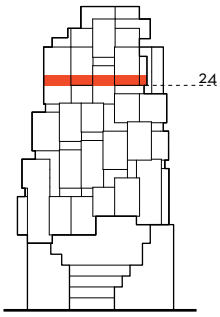




1:200

0 m 10 m

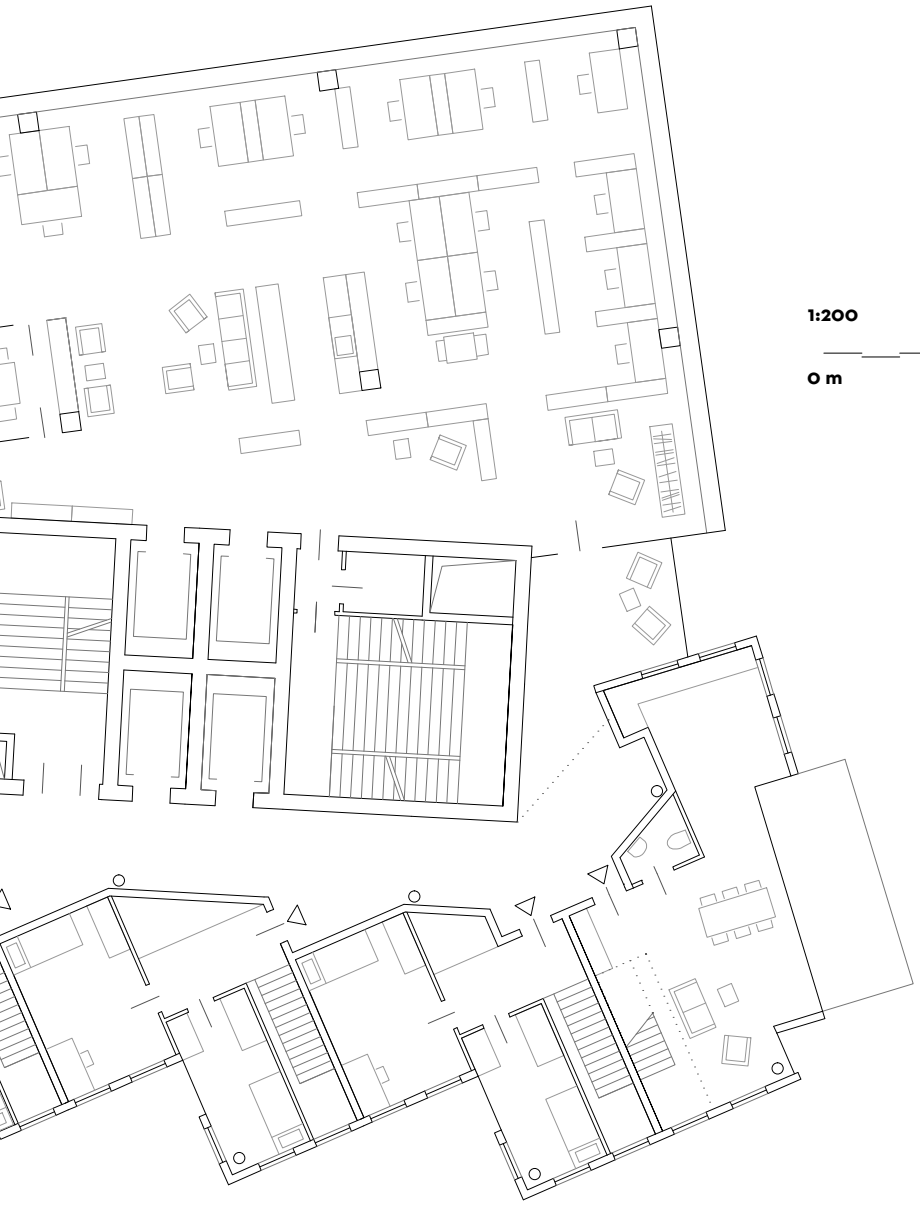
Towards the top, the number of floors is decreasing.
This is an example of the upper levels, where every second corridor is not needed and the flats can take up the whole floor.

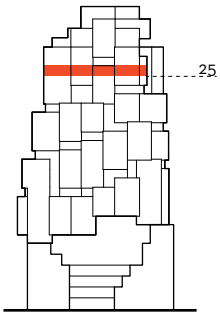


1:200

0 m 10 m

The connection between the offices and the housing tower is realised on every third/ fourth floor.
The high open spaces with generous views over the city through the glazed gaps between the two towers add additional value to the whole building.

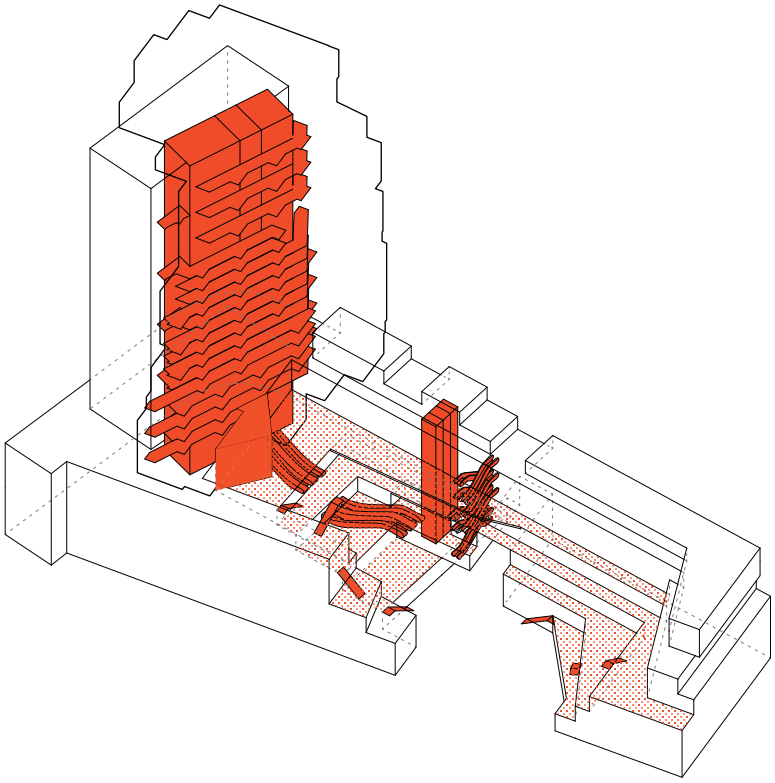


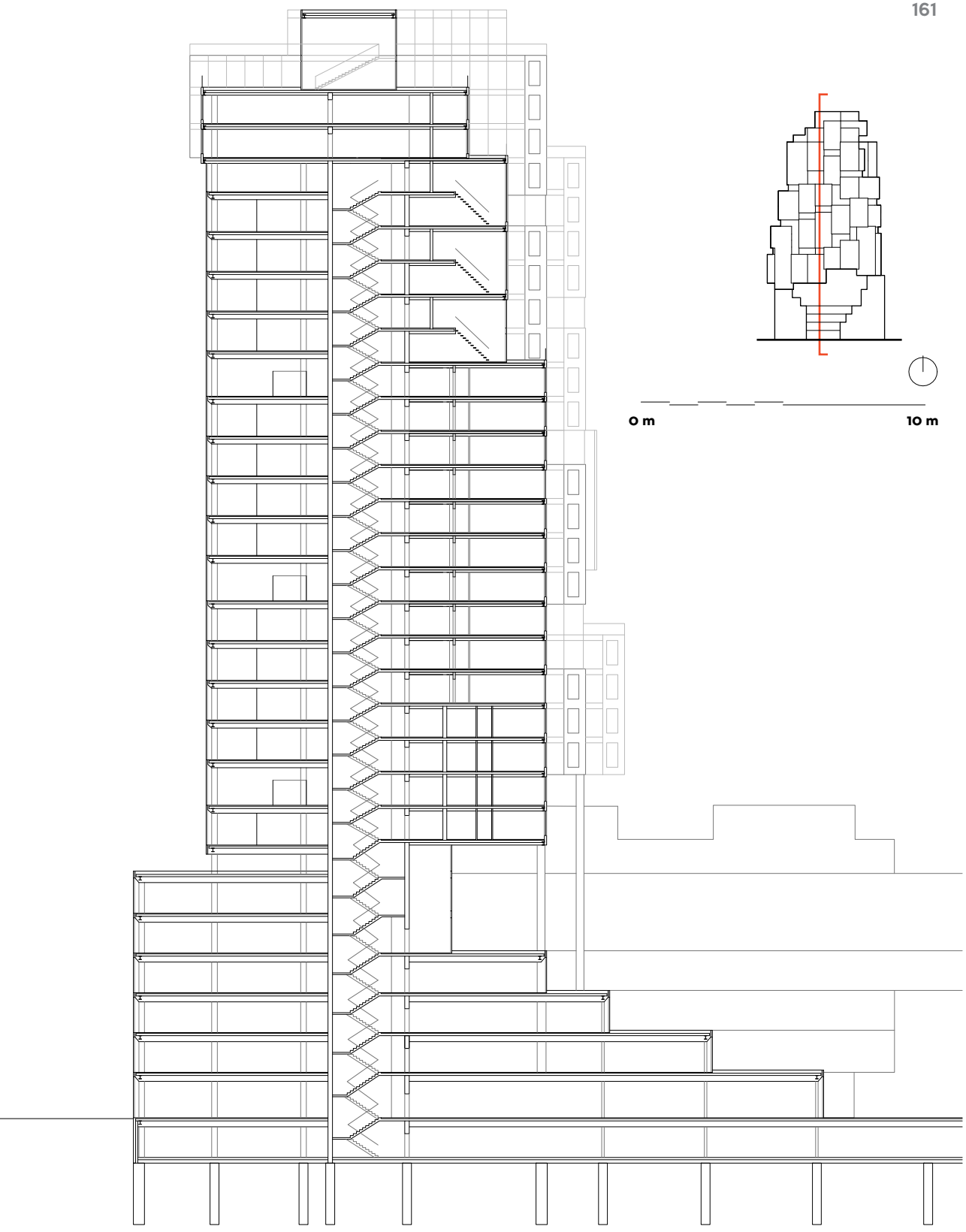


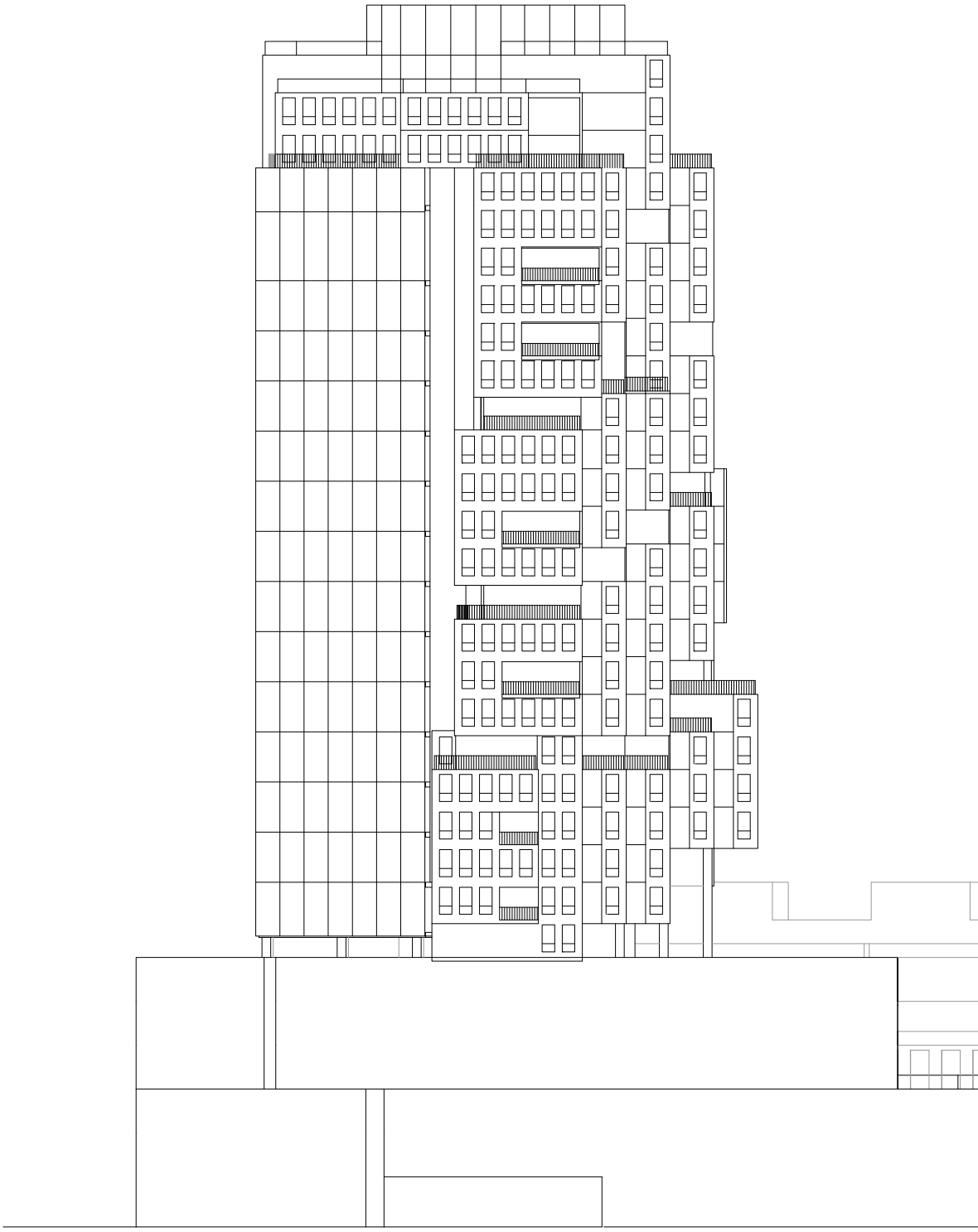
1:200

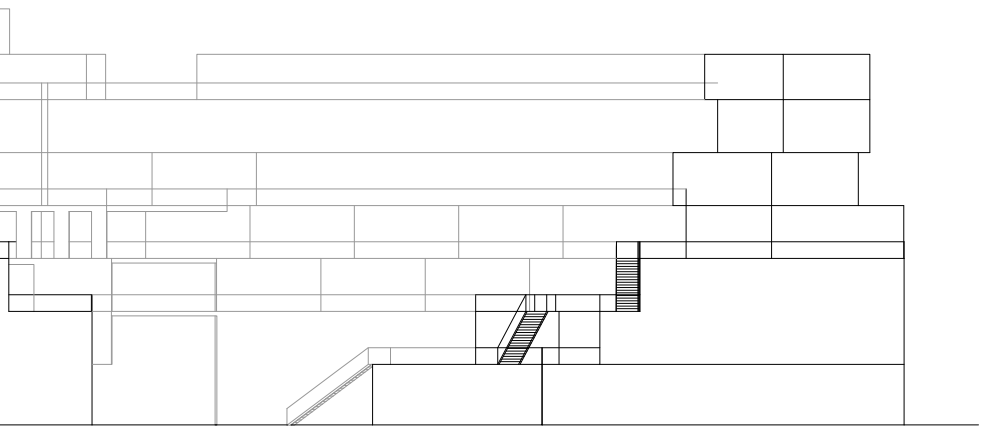
0 m 10 m

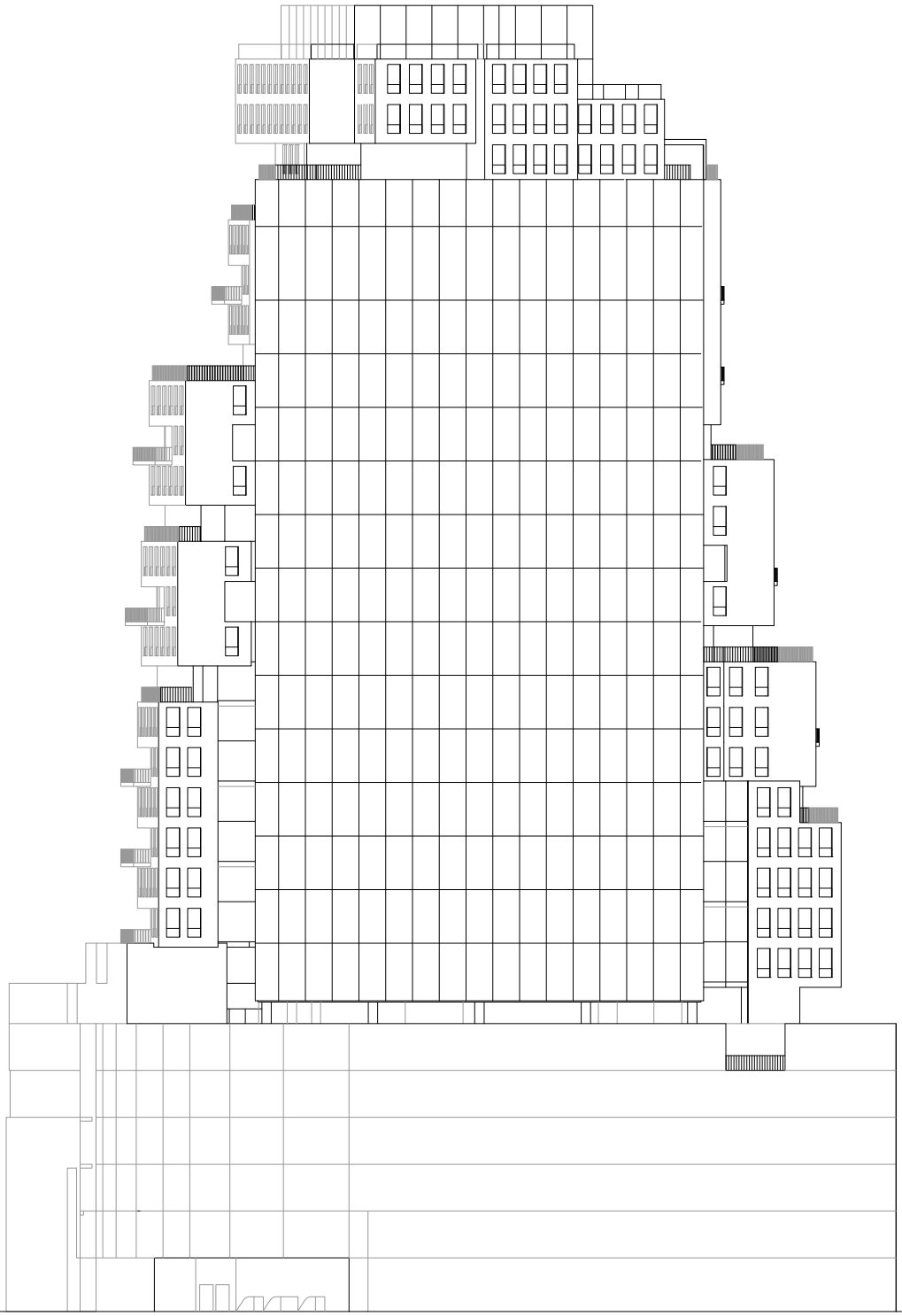
The circulation diagram shows the public connection in two direct lines from the underground upwards to the retail levels and further up, the private link through the tower.

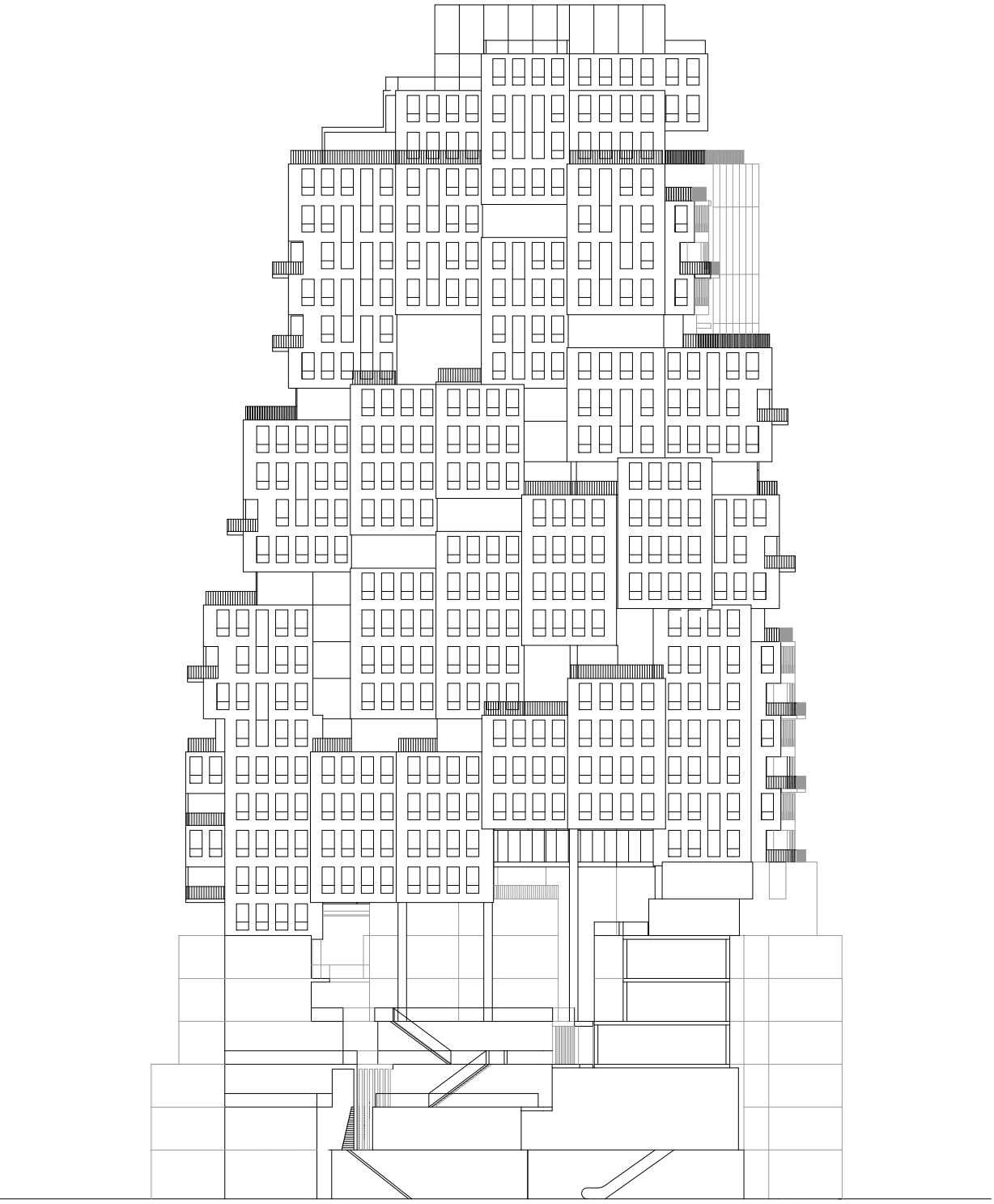


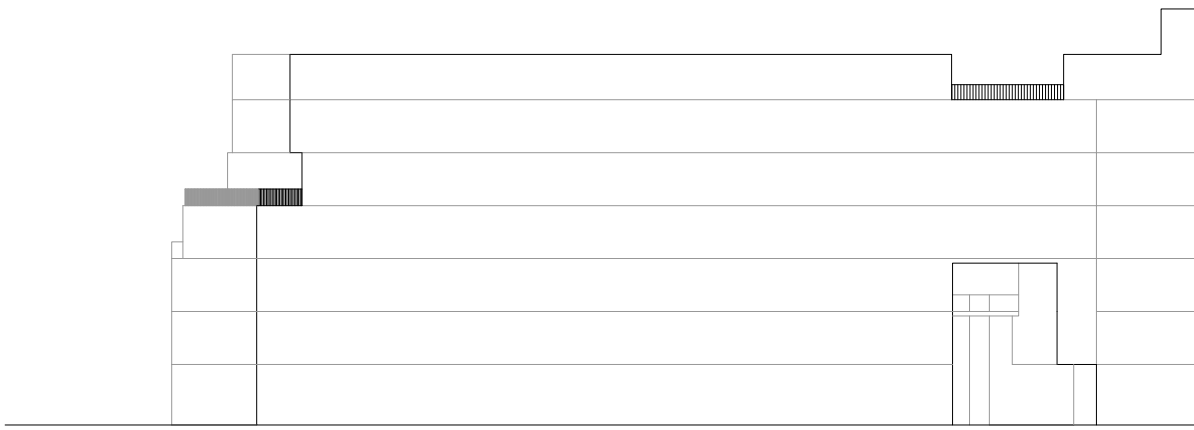

0 m
10 m

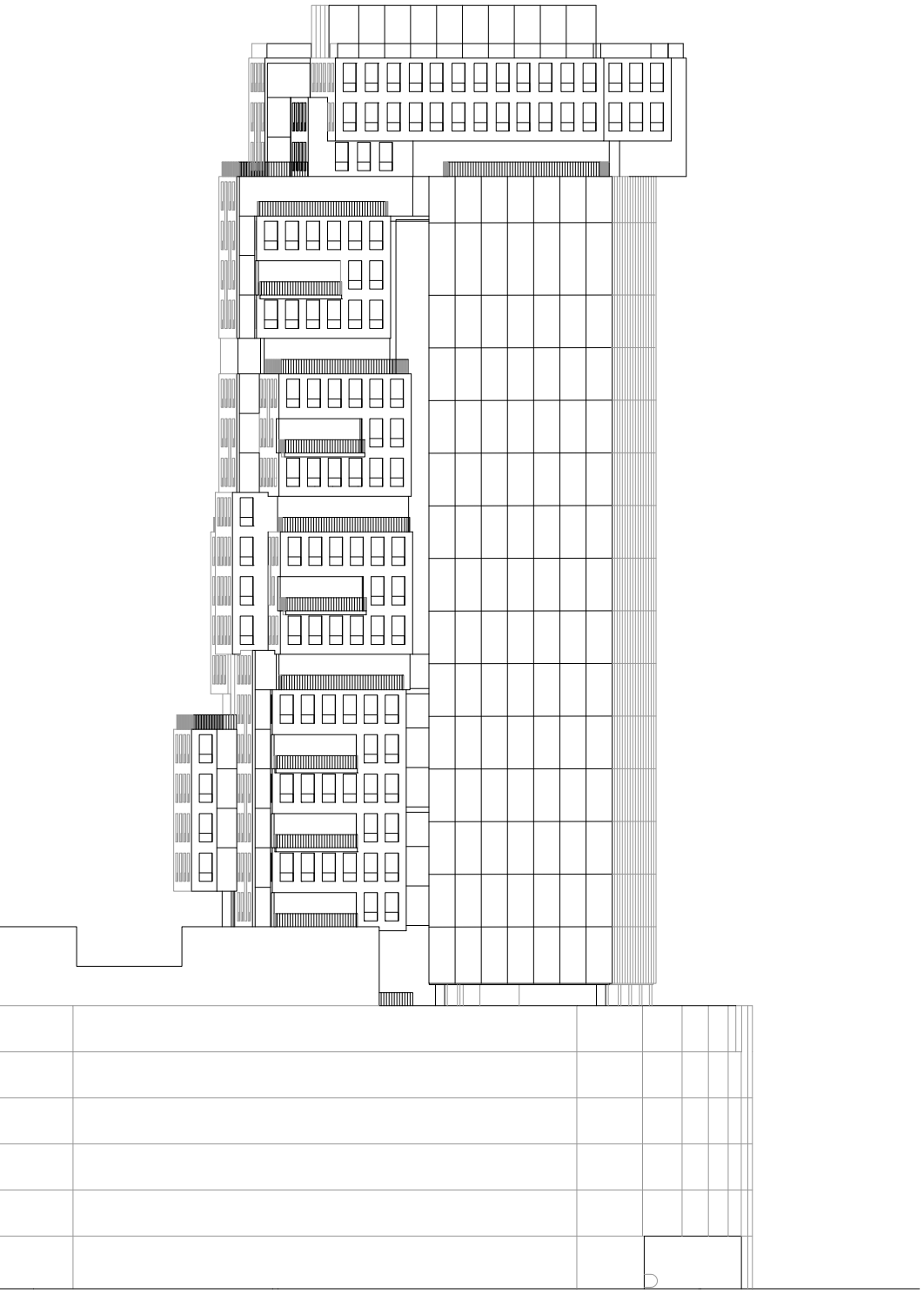












5

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Integrated into the City

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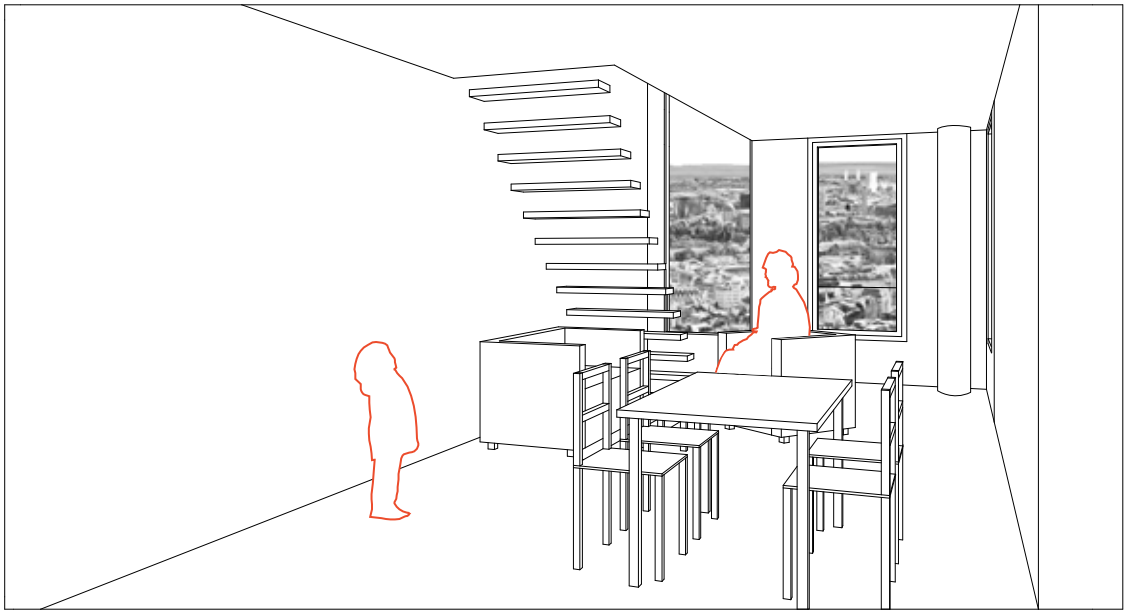

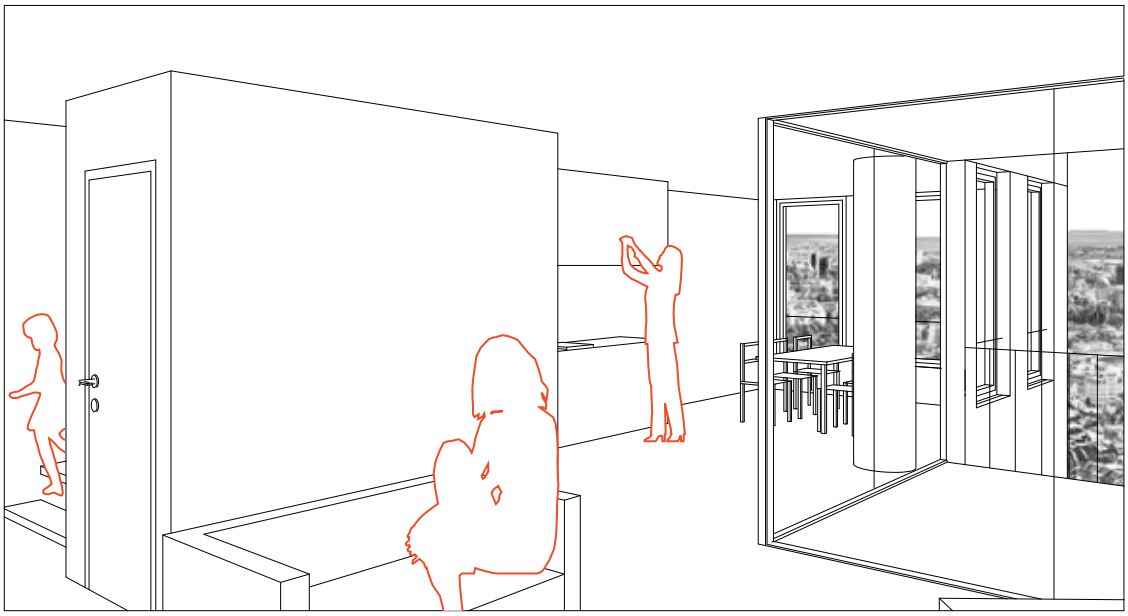

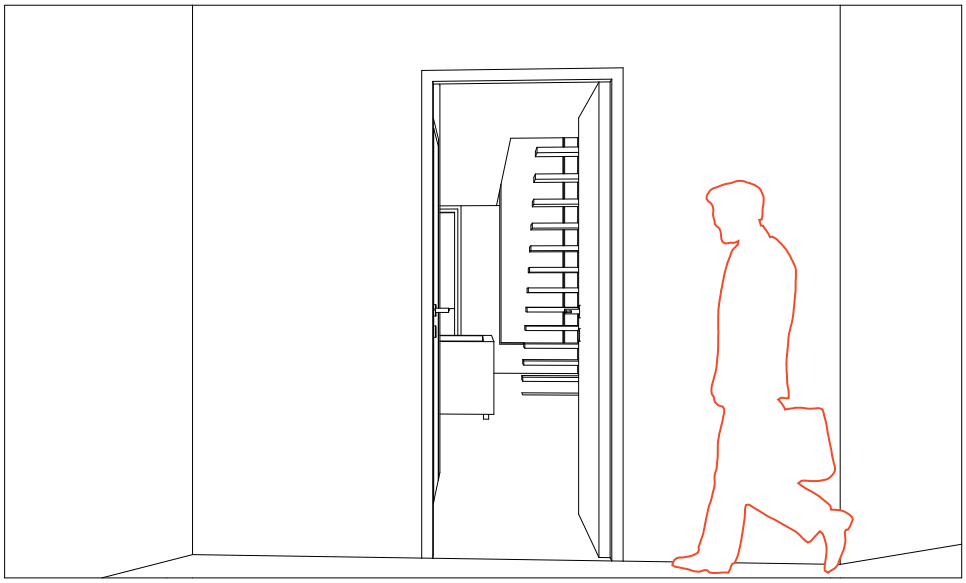

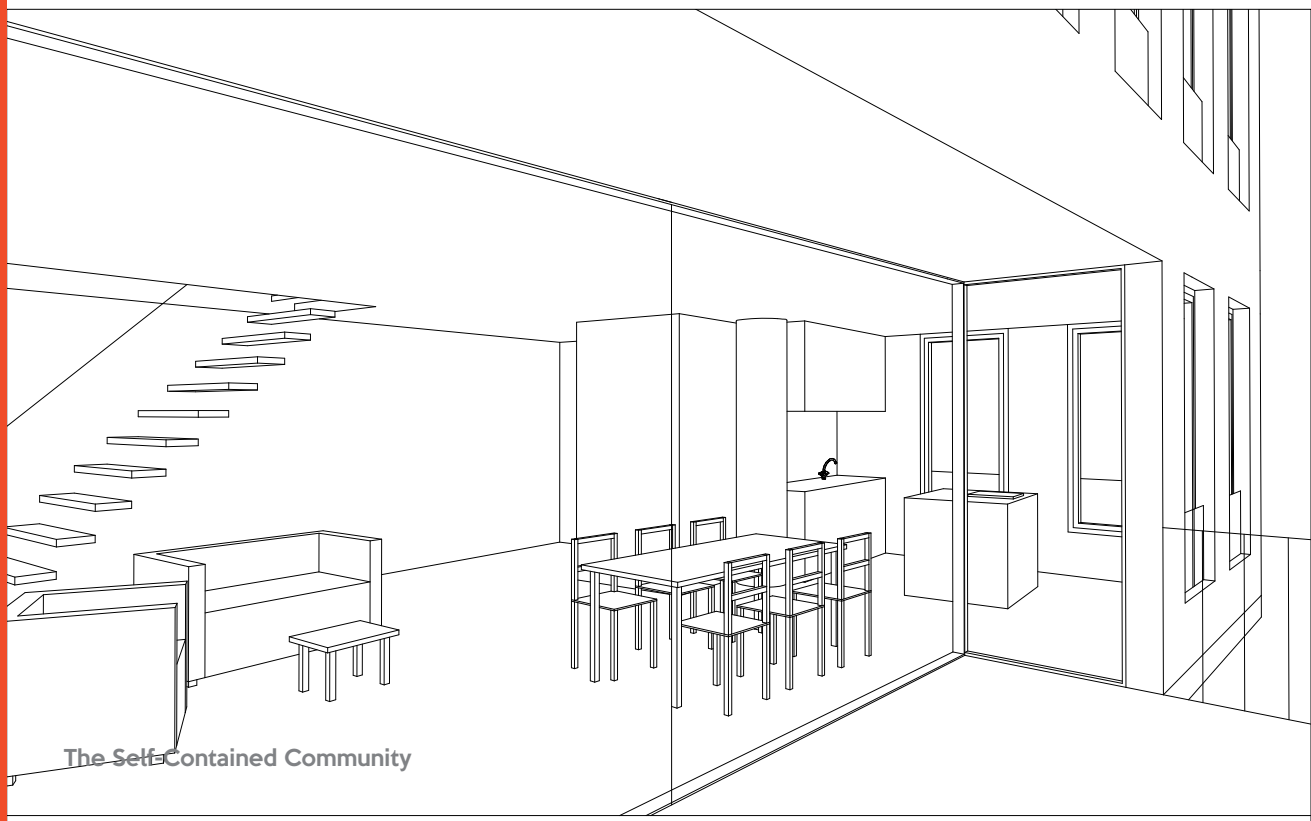

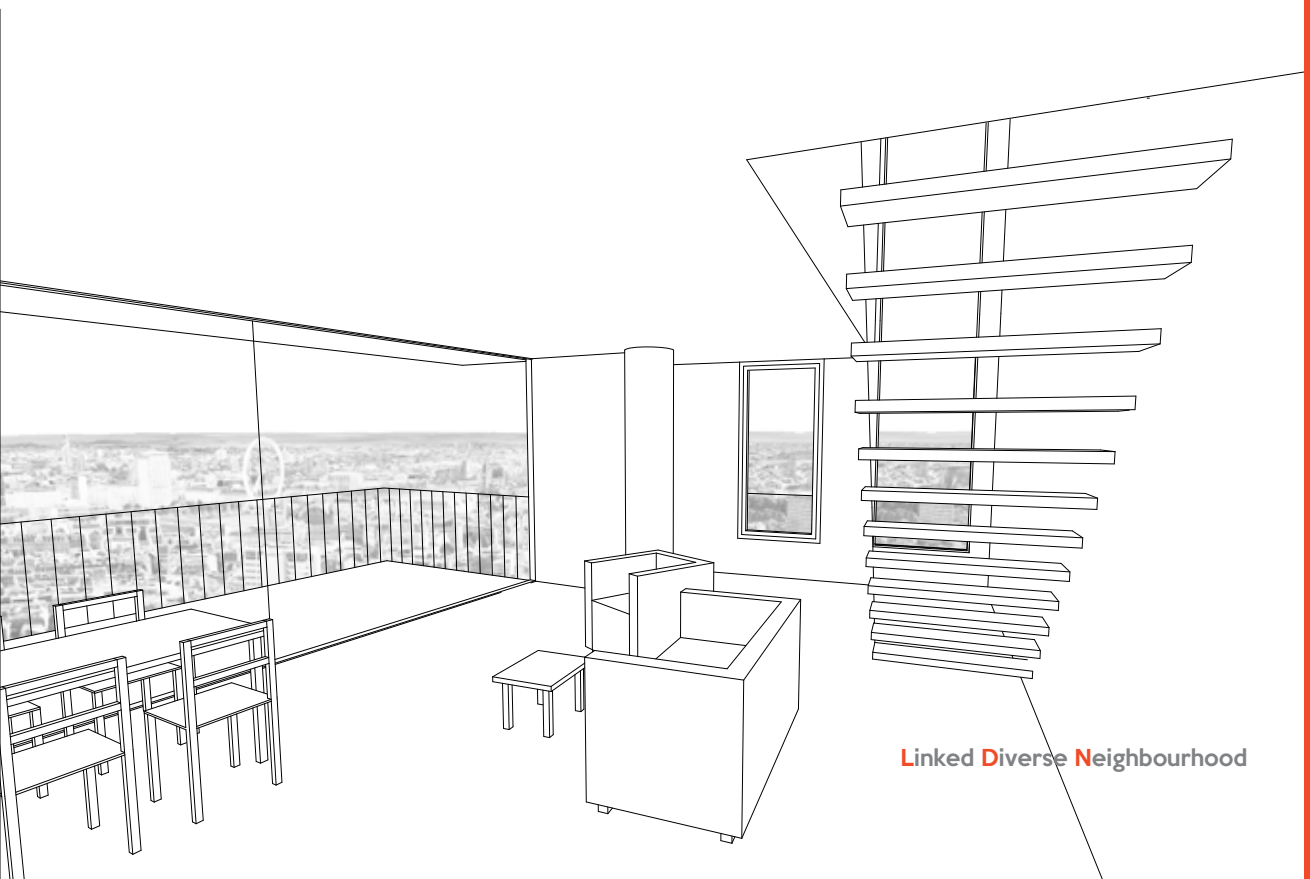

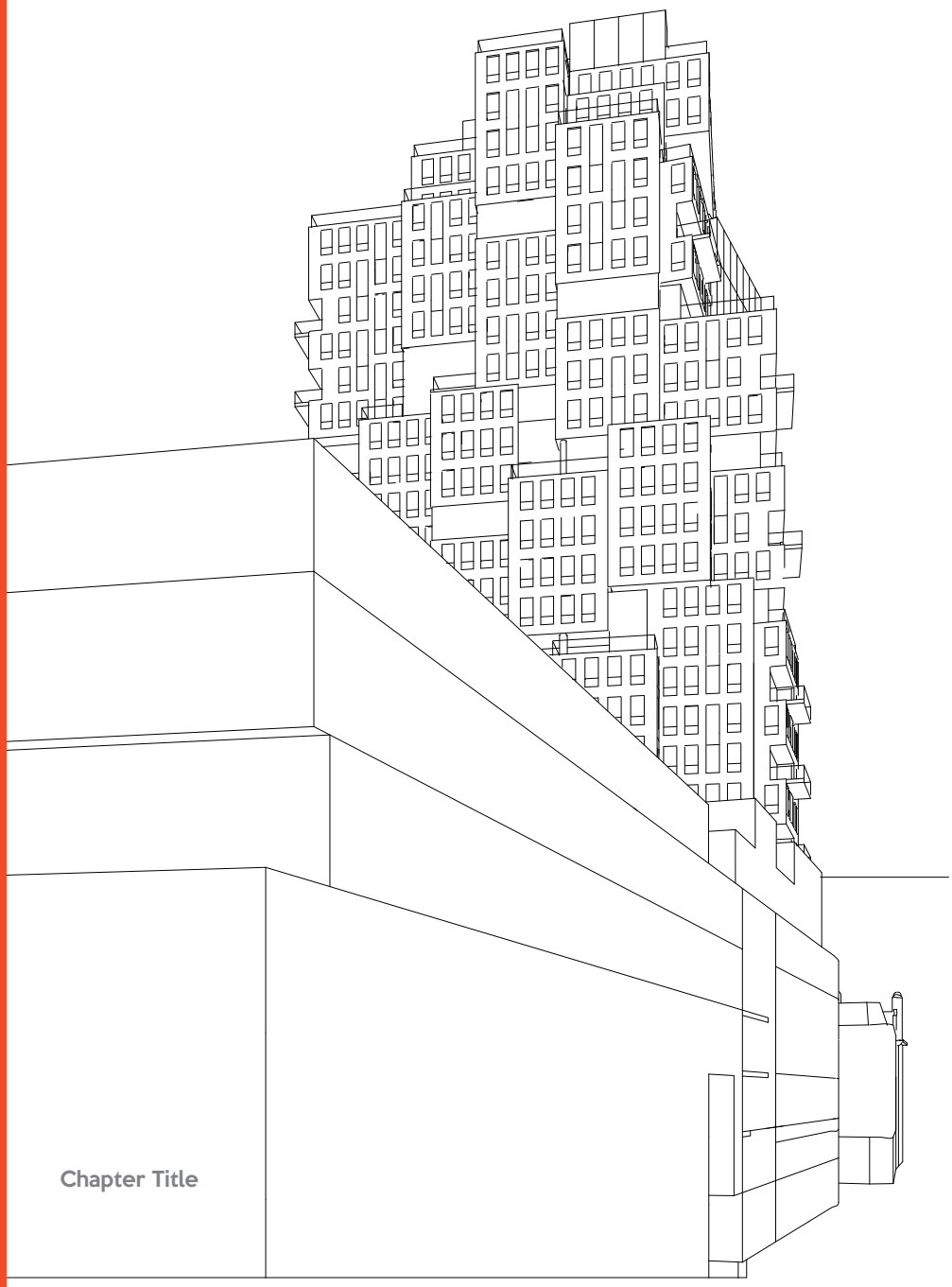

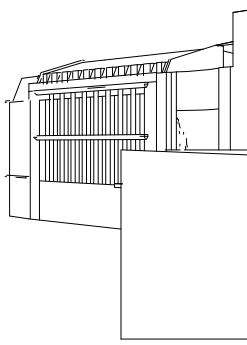

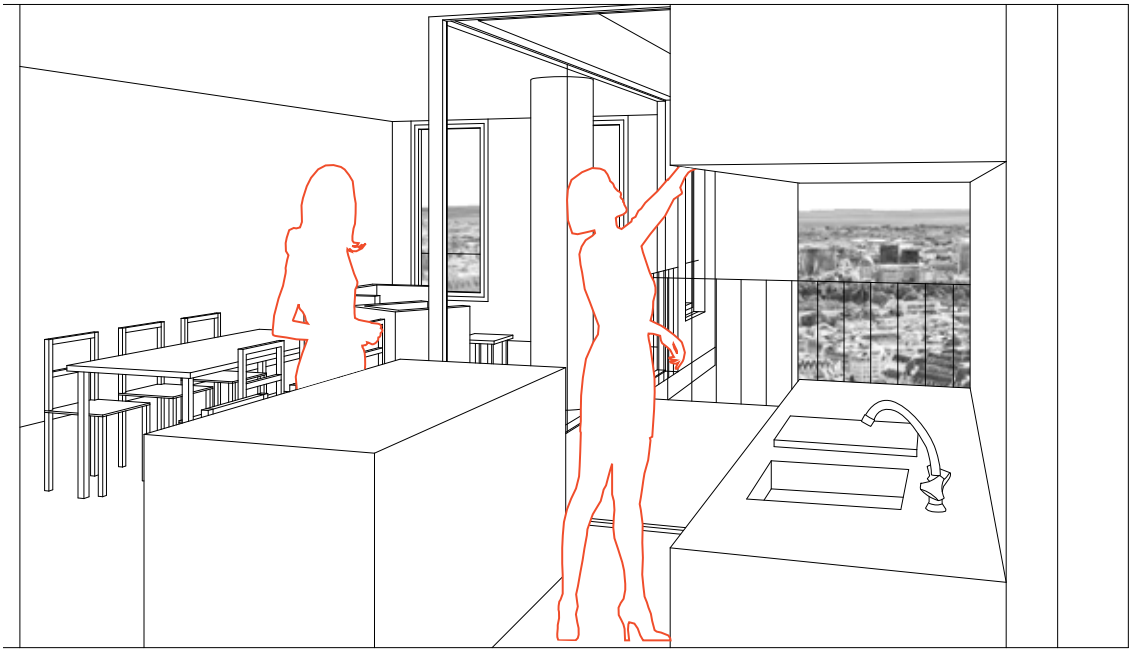

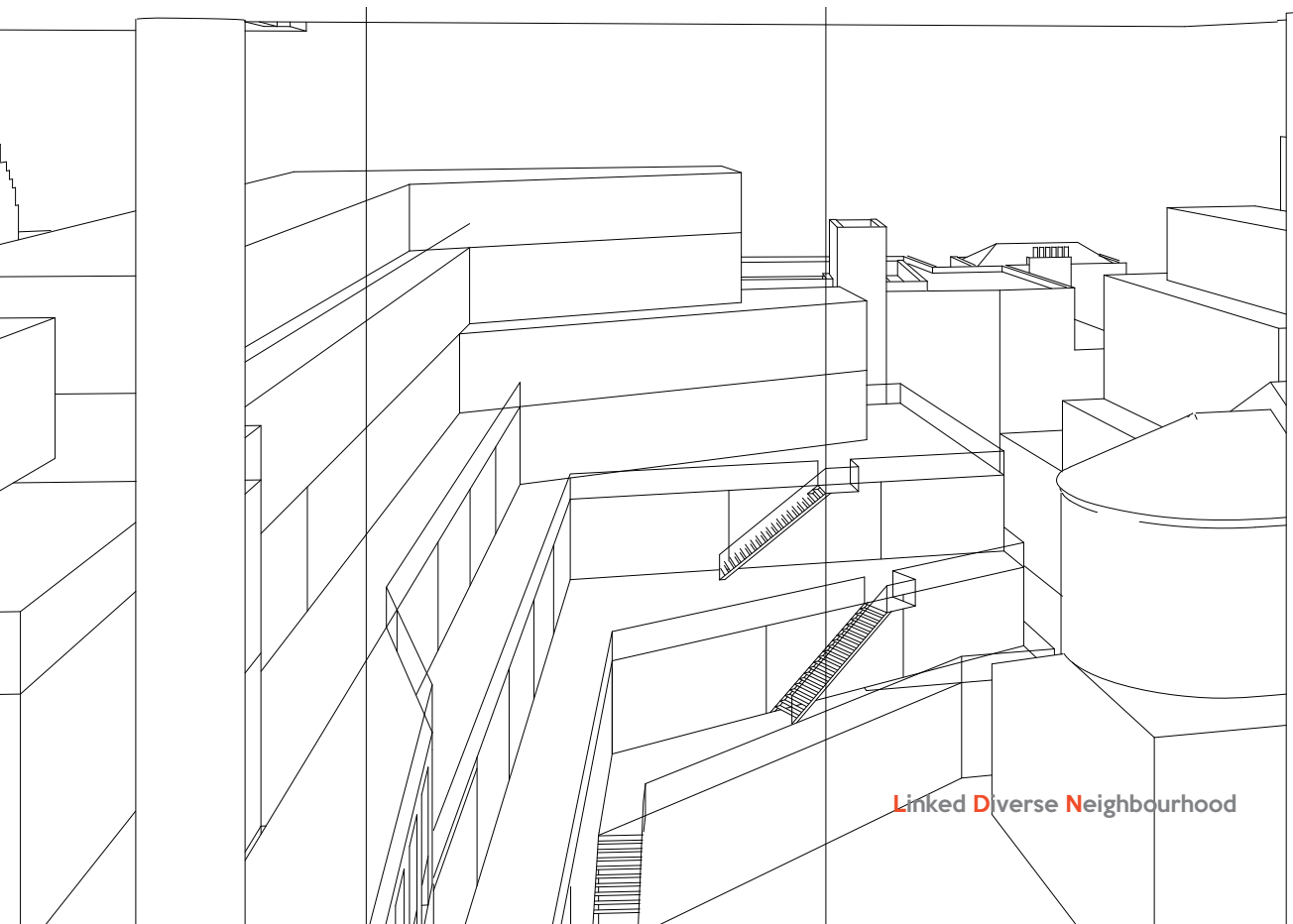

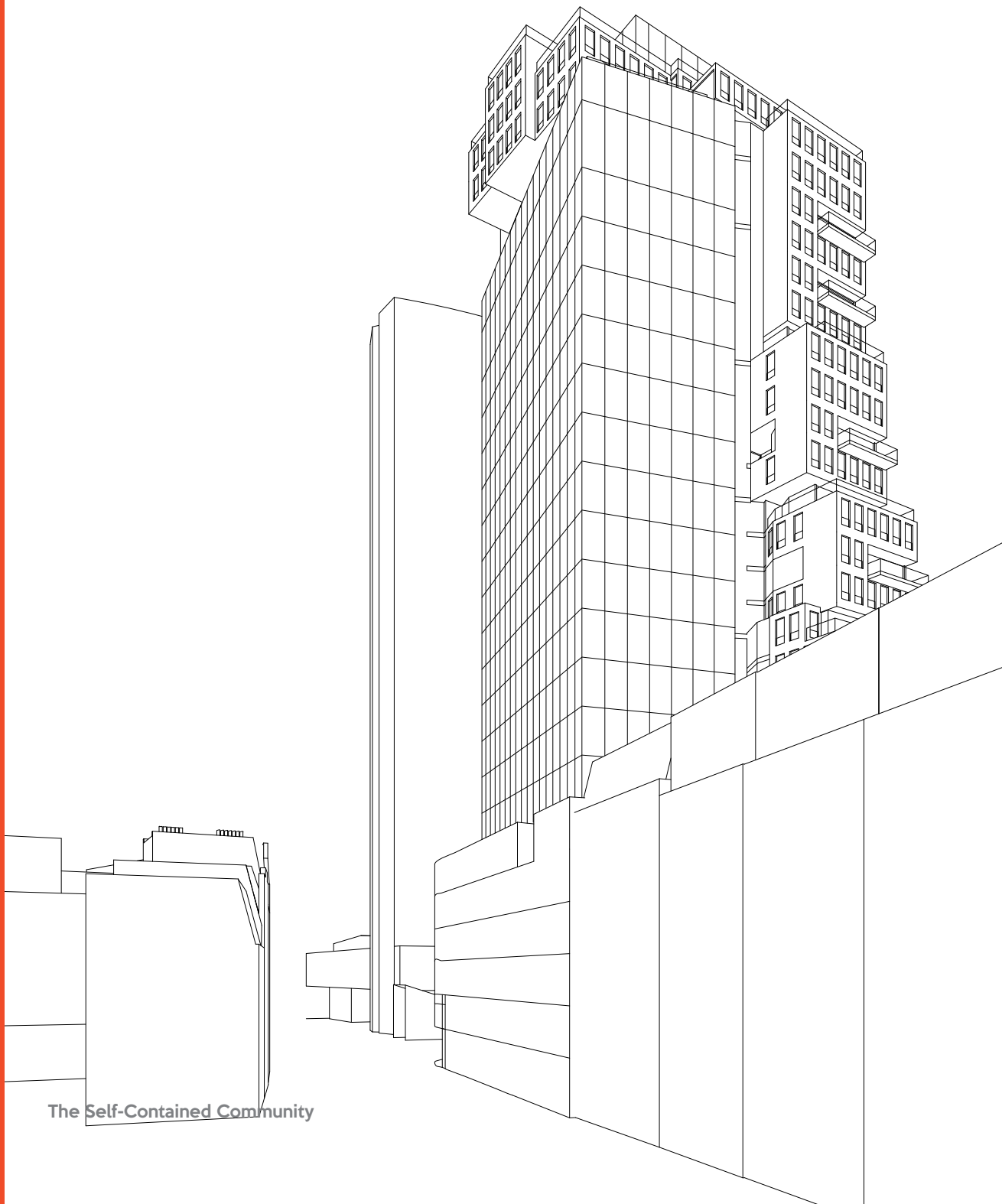

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Acknolegements

I would like to thank my parents for giving me the opportunity to explore my interests in architecture and supporting me throughout my studies.
Further I would like to thank all the great friends who helped me get to this point. Special thanks to Alex, Eva, Jul, Marika, Leo, Rene, Toni and Christian. A very special thanks to Manijeh for getting me to finish my diploma in time.
Finally I would als like to thank my supervisor prof. Andreas Lichtblau for the mentoring.