

BRILLIANT BUILDINGS

DUDLEY HOUSE

Blueprint for a connected community

How a flagship mixed-use project with 100% affordable housing was delivered in the heart of London



1. INTRODUCTION

Dudley House in central London is a blueprint for how the public sector can harness its strengths to deliver affordable homes and community infrastructure within a constrained urban location. It is also a prime example of the resurgence in council-led housing – built as part of Westminster City Council’s aim to deliver more than 22,000 homes by 2040, 35% of which will be affordable. Importantly, it provides homes that are accessible to the majority of middle-earning Londoners.

Housing with a mission

Dudley House is focused on one thing – being the beating heart of a vibrant and successful neighbourhood community in Paddington.

Every inch of space has been maximised within its 22 storeys to provide 197 much-needed homes at intermediate rent for people living or working in Westminster – people who are essential to sustaining the local economy.

However, Dudley House is much more than homes. Neatly designed within this urban footprint is a nine-storey secondary school – a permanent home for Marylebone Boys’ School, which had spent its first four years in several temporary locations.

The ambition does not stop there. The facility gives a new lease of life to the local Central Pentecostal Church, replacing an outdated, poorly converted terraced house, as well as a new retail unit.

Dudley House is a key ingredient of the council’s City for All programme to connect communities, and it’s a vision realised by Willmott Dixon with the support of Child Graddon Lewis Architects (CGL).

Homes for local residents

Westminster’s challenge is to provide affordable quality homes for its residents. As Dudley House is owned by Westminster, the council can retain a greater mix of residents within the borough, as residents benefit from a discount of around 30% on the local market equivalent, making the homes affordable to local people on middle and lower incomes.

“DUDLEY HOUSE COMPLETES ONE OF THE MISSING PIECES OF PADDINGTON BASIN’S JIGSAW, DELIVERED ON A TIGHT, CHALLENGING SITE. ITS VIBRANT MIX OF USES ENSURES PADDINGTON BASIN IS MUCH MORE THAN JUST A PLACE WHERE PEOPLE WORK.”

JAMES FELSTEAD, DIRECTOR, CHILD GRADDON LEWIS



Great things happen on small sites: Despite the 0.4ha site footprint, Westminster City Council worked with the Willmott Dixon team and CGL to ensure an 840-pupil school, a 197-home block, a church and retail were all comfortably accommodated.



Non-combustible insulation: During construction, the tragic fire at Grenfell Tower broke out. Dudley House’s cladding design and specification had already been passed by Building Regulations, but Willmott Dixon decided to undertake a detailed review. To ensure that the insulation behind the cladding was 100% non-combustible, the specified solid insulation was changed to mineral wool. This was all done without cost or programme implications.



Green for go: Maximising programme speed and minimising environmental impact were high on Willmott Dixon’s agenda. Prefabrication played a part, including a plant room and offsite manufacturing of four-storey flue sections. The structural steel framing system was also manufactured offsite, reducing construction-related vehicle movements by a quarter.



All quiet on the western front: Given the busy location, next to the A40 flyover, acoustics were vital. To get this right, Willmott Dixon fitted out a dedicated prototype flat and tested the acoustics and airtightness over time. This prototype avoided the retrospective addition of acoustic changes. The result was that external sounds are completely blocked out.



Access granted: Mark Chamberlain, project director at Willmott Dixon, says: “We had to maintain close and continuous coordination with contractors on the adjacent projects, along with embedding extensive, tightly controlled health and safety measures. We also made sure that local resident and business groups were always kept fully informed and involved.”

“THIS DELIVERS ALMOST 200 FLATS AT A RENT AFFORDABLE TO THOSE ON A HOUSEHOLD INCOME STARTING FROM £31,000. WESTMINSTER IS ABSOLUTELY COMMITTED TO ENSURING THAT ANYONE, WHATEVER THEIR INCOME, IS ABLE TO LIVE AND WORK IN WESTMINSTER AND DUDLEY HOUSE REPRESENTS A HUGE PART OF DELIVERING THAT.”



RACHAEL ROBATHAN, CABINET MEMBER FOR FINANCE, PROPERTY & REGENERATION, WESTMINSTER CITY COUNCIL



Key outcomes

840-pupil secondary school – tallest in the UK

197 affordable rent homes

New church

Prominent retail space

BREEAM Very Good

Code for Sustainable Homes Level 4

Largest design-and-build contract scheme in Westminster

BIM level 2 used throughout

Considerate Constructors Gold national site award

Replaces 1935 block that provided just 50 affordable homes

Adds residential element to Paddington Basin masterplan

2. BUILDING ON A TIGHT SITE

Space for a school

One of the more innovative aspects of Dudley House is what it packs into a relatively small 0.4ha footprint. That includes a state-of-the-art school, providing vital learning space for Paddington Basin's growing community.

Marylebone Boys' School needed a permanent home as it had outgrown its temporary site. However, creating a new school in central London is not easy, given the severe site constraints.

This was a challenge that Westminster City Council neatly solved by including provision for an 840-place school within the Dudley House footprint. Designed within its urban context to make the most of available space, the school optimises the constraints by being clustered around a bright central atrium next to the residential tower. With the roof cleverly adapted to provide an outdoor play and sports area, it's a vision of how to provide facilities for music, drama, art and design, food technology and a library within flexible space that's easily adapted for different uses.

The school was the first element of Dudley House to be completed. While constructed concurrently with the homes, it was delivered one year earlier, in time for the 2018 academic year, to the delight of headteacher Richard Ardron. "It means a lot to be in a permanent home," he says. "We are able to plan more effectively, which enhances education, and the students have familiar systems and

routines, which is better for their welfare and wellbeing."

The school is also designed to meet future needs for secondary school spaces, and includes a sixth form, which it hadn't had before. "This school really works," Ardron continues. "It's giving our pupils the best opportunities and environment, and plays a crucial role in their development, education and life success."

The project required the skills and know-how of a build team who could blend housebuilding with educational space. Such a team was led by Willmott Dixon's Mark Chamberlain, who at one time had

more than 100 people within his core team to make sure that the exacting specifications of both homes and school were met. He says: "All those involved – including the council and their consultants, architects, supply chain and stakeholders – worked together as one team with no hierarchy."

High-quality homes

With the school opened, Willmott Dixon focused its attention on finishing the second stage, which was the 197 homes, along with a church and retail space.

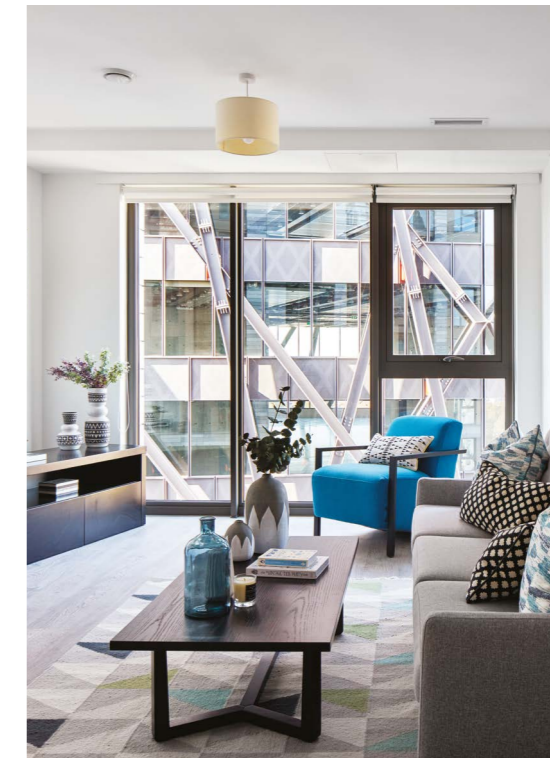
The homes were arranged in a mix of studios, one and two bedrooms, all equipped



Top: The school roof has been adapted to provide an outdoor play area.

Above: At nine storeys, including the basement and games area, it is the tallest secondary school in the UK.

Left: The school was the first phase of Dudley House to complete, opening in time for the 2018 academic year.



Left: The homes are a mix of studios, one- and two-bedroom flats. They have high ceilings and draw in an abundance of natural light.

with good storage space and everything needed for the demands of tech-savvy living. This is council-developed housing for the 21st century. Each home provides residents with generously proportioned space, high ceilings and an abundance of natural light.

Given the busy location, next to the A40 flyover, acoustic protection was vital. To get this right, Willmott Dixon fitted out a dedicated prototype flat and tested the acoustics and airtightness over time. Every element was checked and rechecked, with refinements made where needed.

This prototype proved a masterstroke, allowing Willmott Dixon to roll out tested refinements in the fit-out of all the apartments rather than adding changes retrospectively. The result was that external sounds are completely blocked out.

Collaboration and support

Great relationships and a fantastic spirit of collaboration were at the heart of the project from cradle to completion.

"We worked hard to build unity, mutual trust and respect, and this ethos remained strong all the way through," says Mark Chamberlain at Willmott Dixon. "Everyone was focused on delivering a successful project, which meant that any unforeseen factors or new issues were always resolved quickly and positively."

Teamwork at the design stage paid

dividends. "Willmott Dixon was brought into the project during the planning process," explains James Felstead, director at CGL, the project's architect. "It was unusual for a contractor to get involved at this very early stage and their technical and buildability input was invaluable. They highlighted practical issues that could have an impact down the line, and being so embedded early on was key to keeping an extremely tight programme on track."

Understanding and supporting the needs and concerns of every stakeholder, right through to the residential building management company, also characterised the project. The school was involved in the design process from the start, with its buy-in gained for every decision to ensure that the needs of pupils and staff were being reflected. Throughout the build, Willmott Dixon facilitated regular site visits for the school team and the pupils, and ran pupil-focused workshops to get their views. It also invited staff to visit well ahead of handover, and helped the school to bring all the equipment in from their temporary home.

Two of the boys attending the school had lived in the old flats that had been demolished to make way for Dudley House. Willmott Dixon invited both of them to the groundbreaking and topping-out ceremonies, and to complete the circle, they will be among the first graduates.



Considering Grenfell Tower

During construction, the tragic fire at Grenfell Tower broke out. Dudley House's cladding design and specification had already been passed by Building Regulations; however, given the harrowing events just two miles away, Willmott Dixon decided to take action.

Project director Mark Chamberlain explains: "We carried out a complete review, going through every element with a fine-tooth comb. To make sure that the insulation behind the cladding was 100% non-combustible, we decided to change the specified solid insulation to mineral wool; all done without cost or programme implications."

To maintain the spotlight on quality, Chamberlain's team also introduced a raft of ultra-robust checking and quality assurance processes, including having every step inspected, verified and certified by independent external specialists and consultants.

3. MEETING URBAN CHALLENGES

Constructing 22 storeys of housing in this dense, extremely busy area on a very constricted site was a huge challenge. Surrounded on all sides, the site is bordered by North Wharf Road and Harrow Road. With an established residential block, nursery school and retail units next door, plus high numbers of pedestrians and cyclists using the area, the potential for disruption was high.

Also, two other projects were being built simultaneously on neighbouring sites, with all three contractors sharing a single, one-way road for access and deliveries.

Teamwork, planning and coordination

Willmott Dixon went to extraordinary planning lengths to make sure that the project had little – if any – local impact, especially on traffic flow, businesses, neighbours, pedestrians and cyclists.

The company worked closely with Westminster’s highways department and appointed three of its team as full-time traffic marshals, who were positioned at key points along the adjoining roads. With vehicles using the busy approach roads to reach the site, this was vital, not least as some stages of the build involved particularly high traffic levels. For example, when the site was cleared, 20,000m³ of earth needed to be removed, and during excavation of the basement level, there were 60-70 lorry movements per day removing material.

Mark Chamberlain picks up the story: “We had to maintain close and continuous coordination with contractors on the adjacent projects, along with embedding extensive, tightly controlled health and safety measures. We also made sure that local resident and business groups were always kept fully informed and involved.”

When you build in busy locations, planning and coordination defines overall success. The delivery team took no chances – every factor was considered to ensure that it did not affect delivery. These included:

- Extensive survey work carried out around the perimeter to ensure that other structures above and below ground weren’t impacted. A large Victorian sewer was identified as running along a road next to the site and Willmott Dixon modified construction methods to ensure that it wasn’t affected.

- A site office and welfare facilities to accommodate the 350 people working on the project. With no space on the site itself and neighbouring locations fully built up, the contractor had to set up a four-storey building on a grass verge alongside the busy Harrow Road. Given the location, this entailed



“I’M OVERJOYED AT HAVING PURPOSE-BUILT PREMISES WITH DEDICATED AMENITIES FOR THE FIRST TIME. IT’S A MARKED IMPROVEMENT ON OUR FORMER HOUSE CONVERSION, WHICH WAS SPREAD OVER THREE FLOORS RATHER THAN ONE.”

WILLIAM MORSON, PASTOR,
CENTRAL PENTECOSTAL CHURCH

Above: The tight site is neighboured by an established residential block, while two other new developments were built concurrently with Dudley House.

Right: Paddington Basin’s regeneration is creating a diverse and vibrant community.



liaising extensively with the council’s highways department and using carefully sequenced cranes to bring in building materials to keep traffic disruption to a minimum.

Innovation

Finding ways of reducing traffic to the site to minimise local and environmental impact, while also increasing programme speed, was high on Willmott Dixon’s agenda.

Prefabrication played a part, including a plant room and the offsite manufacture of four-storey flue sections. The structural steel framing system was also manufactured offsite. This meant that just one lorry was needed to deliver panels, rather than three or four to deliver system components, as well as a faster onsite process.

Other innovations included using a bespoke-designed slipform to create the cores, both for speed and to allow the lifts in the 22-storey scheme to be installed without the floor plates being completed first. This enabled quicker and easier movement up and down the structure from an early stage.

Live environment

Once the school was open, the crucial last 12-month programme for the residential, retail and church elements involved construction within a live environment. To add to the challenge, all of the scheme’s buildings are in very close proximity to each other, and in

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RICHARD ARDRON,
HEADTEACHER, MARYLEBONE
BOYS’ SCHOOL

some places physically linked, which increased the potential for impact.

The basement-level plant room, which serves the entire Dudley House development, was already fully commissioned and operational so the new buildings had to be connected to it without affecting services to the school. This required very precise and careful planning.

Safeguarding the children during this time was an absolute priority and stringent protective measures were put in place. Providing the school with a clear route for emergency access and deliveries was also vital, further constraining the already tight site.

Willmott Dixon continually communicated and liaised with the school. If activities were likely to cause disruption, the contractor scheduled them for out-of-school hours or at weekends.

“We always felt they understood any concerns that we raised and they responded straight away,” says headteacher Richard Ardron. “We were particularly worried about noise around GCSE exam times, so they made sure of silent work only during that period. They were friendly and approachable and a great company to work with. We were delighted with them.”

4. INSPIRING LEGACY FOR THE FUTURE

Dudley House is a central element of the ongoing success of Paddington Basin’s regeneration, with the wider community benefiting from the homes, school for 840 pupils and other facilities skilfully contained within a footprint that’s half the size of a football pitch.

The mix of high-quality homes for those on moderate incomes with excellent education opportunities and community assets is a blueprint for how property can rejuvenate urban environments, with the right vision and leadership of the local authority.

Nickie Aiken, leader of Westminster City Council, says:

“We need diverse and mixed communities, not just enclaves for the super-rich and ghettos for the poor. Cities thrive if they are places where working families can live comfortably, and they die if people desert them. That is why Westminster’s priority is to put residents first and to encourage mix and diversity – that’s the challenge of liveability.”

The success of Dudley House will also determine the approach for other schemes. Westminster City Council is now encouraging other local authorities to look at the scheme, and sharing knowledge, with lessons already being applied on another project in London.

Investing in the community

£1,450,000
Total social value

21
work experience opportunities for 15-17 year olds

220
mock interviews and feedback workshops with pupils at Marylebone Boys’ School

64
apprentice weeks supported

934
school/college workshops



WILLMOTT DIXON

SINCE 1852

**BRILLIANT
BUILDINGS**

Willmott Dixon is a privately-owned contracting and interior fit-out group. Founded in 1852, we are family-run and dedicated to leaving a positive legacy in our communities and environment. Being a large company means we can create a huge and lasting positive impact on our society. This is not only done through what we build and maintain; it's achieved through the fantastic efforts of our people who make a major contribution to enhancing their local communities.

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If you want to find out more about Dudley House or how Willmott Dixon can help to accelerate your housing plans, please contact:

Charlotte Johnson: charlotte.johnson@willmottdixon.co.uk

Richard Sterling: richard.sterling@willmottdixon.co.uk



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AND OF MARYLEBONE BOYS' SCHOOL COURTESY OF ANTHONY COLEMAN