OPDC
OLD OAK AND PARK ROYAL DEVELOPMENT CORPORATION

Education and Health Needs Study

LOCAL PLAN SUPPORTING STUDY

2017

MAYOR OF LONDON

15. Education and Health Needs Study

Document Title	Education and Health Needs Study
Lead Author	Aecom
Purpose of the Study	To update and refine the information in the DIFS regarding: • the infrastructure requirements for education and health; • an understanding of demands in regards to scheduling and delivery of the health and education infrastructure across the area.
Key outputs	• Prepare revised projections for education needs (to cover ages 0-19). • Assess and identify spare capacity in existing schools and health facilities in the surrounding area. • Provide a clear approach to population and child yield for health and education and how this relates to what OPDC seeks from developers in terms of floorspace provision or S106/CIL contributions. • Provide advice on funding and delivery routes for health and education and OPDC's role in each method/route. • Advise on consequential changes to the infrastructure requirements for education and health, including identification of locations in the OPDC development area for education and health infrastructure facilities • Provide case studies of successful delivery of modern health and education facilities.
Key recommendations	• There is the ability to expand some off-site facilities to meet the needs in early years for education and health infrastructure. • Population projections give rise to a significant need for on-site health facilities. The study identifies that the preferred route, based on discussions with CCGs, is to deliver this within one central hub facility. • Development gives rise to the need for 2 primary schools, one secondary school and an all-through school. The primary and secondary school needs arise during the plan period and sites are identified for their delivery. • There are now many examples of schools and health facilities built in London that optimise use of space and given the high densities promoted in the Local Plan, this form of provision should be explored further in the OPDC area
Relations to other studies	Outputs cross relate to the Development Infrastructure Funding Study (DIFS), the Development Capacity Study (DCS) and the Infrastructure Delivery Plan (IDP)
Relevant Local Plan Policies and Chapters	• Policy SP2 (Good Growth), SP3 (Improving Health and Reducing Health Inequalities) and SP4 (Thriving Communities) • Policy P1 (Old Oak South), P2 (Old Oak North), P7 (North Acton and Acton Wells) • Town Centres and Community Uses policies TCC4 (Social Infrastructure)

Old Oak Common

Infrastructure Advisor – Stage 2 Report

Education and Health Strategy

Old Oak and Park Royal Development Corporation

Project Number: 60518178

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1. Executive Summary

AECOM has been appointed by Old Oak and Park Royal Development Corporation (OPDC) as Infrastructure Advisor to develop site-wide strategies for infrastructure, liaising with relevant stakeholders to understand the current capacity, proposed expansions and define the primary infrastructure requirements to support future development and possible locations for facilities and interventions. This report presents the findings of a Stage 2 commission focussed on education and health facilities. This report defines the study objectives, context, assumptions, analysis, options and recommended strategic approach that has been developed with OPDC officers in order to inform the Local Plan, masterplan and planning application determination.

Table 1 summarises the education and health facility projects required to support the anticipated 26,967 homes in the OPDC development area and the resulting total population of up to 59,349 people[1]. Candidate sites for these facilities have been identified based on a criteria-based assessment of deliverability, lifetime neighbourhoods and environment.

Education and Health Facilities	Super Nurseries	Primary Schools	Secondary Schools	All-through Schools	Health Centres
Old Oak North	#1 2020 #2 2022 #3 2025 #4 2030 #5 2035 Sites to be identified	#1 Cargiant site, 4FE, 2026		#1 4FE, 2039 Site to be identified	#1 Cargiant site, 596m^2 in 2025 expanding to 4,483 m^2 by 2050
North Acton			#1 Sword & Shield site, 9FE, 2028		
Old Oak South		#2 Crossrail depot or HS2 station site, 4FE, 2032			
Park Royal					

Table 1. Summary of Education and Health Projects by Sub-area

OPDC will use the results of this Stage 2 analysis and the identified facilities details listed in the following town planning activities:

- OPDC Local Plan – the consultation draft Local Plan will include the above projects and the site assessment results as an indication of needs and to secure sites for future provision;
- Planning application negotiations – the above projects will form the basis of OPDC requirements and CIL & S106 negotiations to ensure that development proposals meet the demands of the growing population in Old Oak and Park Royal.
- Duty to cooperate – OPDC will ensure that the assumptions underpinning the Stage 2 analysis are consistent with the assumptions used in Local Plan reviews by the partner Boroughs and in the London Plan review.

OPDC are currently appointing a masterplan team to deliver a vision and spatial masterplan for Old Oak and Park Royal. The masterplan team will develop the spatial infrastructure design based on the requirements and evolving layout of development. This Stage 2 report will become the starting point for the masterplan team to work from and develop further as part of the masterplan commission. The Infrastructure Advisor will engage with the masterplan team to ensure that the implications of the masterplan process are captured in future updates to the site-wide infrastructure strategies.

This report is set out as follows:

- Section 2 explains the general context to this work including the results of previous studies, current political and development issues, the objectives of the Stage 2 study and the assumptions underpinning the analysis.

[1] Assuming a 50% affordable housing target and 25% family housing (defined as 3 bed or larger) across the site.

- Section 3 explains the policy context, population analysis, key assumptions, facility requirements and site selection for Early Years provision.
- Section 4 explains the policy context, consultation & engagement, population analysis, key assumptions, service models, facility requirements, site selection results and procurement routes for Education provision for ages 4 to 19.
- Section 5 explains the policy context, consultation & engagement, population analysis, key assumptions, service models, facility requirements, site selection results and procurement routes for Primary Healthcare provision.
- Section 6 sets out the conclusions from this Stage 2 report and next steps of future work.

2. General Context

2.1 Background

AECOM has been appointed by Old Oak and Park Royal Development Corporation (OPDC) as Infrastructure Advisor (IA) to develop site-wide strategies for infrastructure, liaising with relevant stakeholders to understand the current capacity, proposed expansions and define the primary infrastructure requirements to support future development and possible locations for facilities and interventions. This report presents the findings from a second stage commission focussed on education and health facilities. This report defines the study objectives, context, assumptions, analysis, options and recommended strategic approach that has been developed with OPDC officers in order to inform the Local Plan, masterplan and planning application determination.

2.2 Context - Previous Studies

2.2.1 DIFS Study

In February 2016 OPDC published the Development Infrastructure Funding Study (DIFS) prepared by Peter Brett Associates as a Local Plan supporting study. This report sought to explain the infrastructure requirements of growth at Old Oak, when the demands for infrastructure arise, how much those infrastructure requirements cost; and how those infrastructure requirements might be paid for. The study considered a range of transport, social infrastructure (including open space) and utilities provision.

The bulk of the primary research work was carried out in the summer of 2014 and completed by March 2015. The report reflected the position at that point in time with regard to infrastructure costs and funding, and development costs and values.

A list of the health and education projects identified in the DIFS study is included in Appendix A.

2.2.2 AECOM Stage 1 Study

In July 2016 AECOM delivered stage 1 study analysis of social infrastructure, including: Schools, Health Facilities, Emergency Services, Green Infrastructure, Community and Sports Facilities and Socio-Economic Regeneration. The stage 1 work established the quantum, triggers, costs and project delivery programme required to support the growth anticipated at Old Oak.

It was assumed that the infrastructure required to support the proposed development has been predominantly identified in three existing studies[2]. AECOM undertook high-level gap analysis to identify infrastructure project themes that may be missing from the above. These themes included early years education provision; use of existing school places off-site; dentists provisions; and acute hospital bed requirements. AECOM compared the cost assumptions in the existing studies to the AECOM in-house benchmarks used when undertaking comparable studies and provided additional cost information for gaps in the cost information and for the projects identified as part of the gap analysis.

The stage 1 work produced a level 1 programme to align with the sources identified above and define the major lead-in activities involved in delivering the social infrastructure projects, showing the sequence of activities, timescales, dependencies and key dates. The activities included the following step. AECOM made assumptions on these lead-in times to identify a notional ‘year’ in which concept development of a project should start. AECOM provided high-level commentary on education, health and emergency facility procurement. This identified the role of OPDC in procurement, key agencies and authorities the OPDC would need to engage with and framework options for procurement. It also concluded a need for additional health and education projects to those identified in the DIFS.

A list of the health and education projects identified in the AECOM Stage 1 report is included in Appendix A.

[2] PBA Old Oak Infrastructure Schedule: Plots released 2016 to 2026, version V2 May 2016 provided by OPDC; OPDC Local Plan Delivery – Infrastructure Delivery: list of infrastructure projects dated 27 January 2016 provided by OPDC; and, OPDC Development Infrastructure Funding Study (DIFS), prepared by PBA, dated March 2015 provided by OPDC

2.3 Political and Development Context

The assumptions of health and education delivery in this report may change because of outside factors:

- **The Mayor's review of the Old Oak and Park Royal Development Corporation,** including ongoing negotiation on the Memorandum of Understanding to transfer land holdings to OPDC; ongoing lobbying on the funding for infrastructure to ensure the development is properly integrated with surrounding communities; ongoing lobbying for new power and value capture mechanisms to meet the cost of infrastructure funding; phasing implications of review of the timetable and delivery constraints for HS2 and Crossrail; and recommendations from the Mayor on the nature of development being proposed, including the levels of affordable housing.
- **Government policy on schools:** the 2017 budget announced £320 million to fund 140 new Free Schools. A new Education White Paper will be published in the coming months that will explain how this funding will work. Other themes expected in the white paper include: an overhaul of post-16 education with new T-levels designed to provide 16-year-olds with 15 routes into industry areas such as engineering, design and construction; and, new selective free 'grammar' schools aimed at the top 10%.
- **Government spending on health:** the 2017 budget announced an additional £325 million to allow the first NHS Sustainability and Transformation Plans to proceed. The second draft of the North West London Sustainability and Transformation Plan was published in October 2016. The STP recognises that In NW London there is currently significant pressure on the whole system, which must be addressed by a number of factors including the transformation of general practice, with consistent services to the whole population ensuring proactive, co-ordinated and accessible care. This will be delivered through primary care operating at scale through networks, federations of practices or super-practices, in order to ensure it responds to the needs of local communities, provides opportunities for sustainability and drives quality and consistency. Primary care providers, working jointly with social care and the wider community, is at the heart of the new system to deliver integrated care.

2.4 AECOM Stage 2 Objectives

The agreed scope of work for Stage 2 for the social infrastructure themes of Education and Health is as follows[3]:

2.4.1 Education

1. Prepare revised projections for education needs (to cover ages 0-19 i.e. early years to secondary school leaving aged).
2. Assess and identify spare capacity in the surrounding area in light of updated advice from the surrounding local authorities that there is no surplus or spare capacity in the surrounding schools.
3. Advise of consequential changes to the DIFS project list in light of 1 and 2 above.
4. Set out a route map for OPDC on options for securing funding for school place delivery on site.
5. Provide case study examples of models for school funding and delivery and high-quality high-density schools.

2.4.2 Health

1. Identify existing health facilities, their current capacity/ and their appropriateness for expansion/enhancement to meet the health needs of early development phases*;*
2. A clear approach to population yield and child yield and how this relates to what OPDC seek from developers in terms of floorspace provision or S106/CIL contributions;

[3] The following are excluded from the AECOM Stage 2 analysis: All other social infrastructure themes (Emergency Services, Green Infrastructure, Community and Sports Facilities and Socio-Economic Regeneration) will be based on the AECOM stage 1 outputs or updates from OPDC officers; and, updates to cost details and assumptions used in stage 1 work are excluded from the stage 2 scope.

3. Identification of potential locations in the OPDC development area for health infrastructure facilities, which would supersede and update the projects identified in the DIFS and the OPDC Local Plan Delivery – list of infrastructure projects;

4. Advise OPDC on health facility delivery mechanisms, procurement options, funding options including securing funding from development, Central Government and health agencies, and the role of OPDC in the delivery process alongside other stakeholders; and

5. Advise on appropriate design standards for health facilities and provide case study examples of high-density health facilities and opportunities for co-location with other community uses and mixed-use development.

2.5 Study Assumptions

There are a number of assumptions that have been made in undertaking this work. The key assumptions are described below with more detail provided in Appendix B. Some of these assumptions have been investigated and tested as part of the work.

2.5.1 Development Trajectory

The Development Trajectory[4] used to generate the housing units and associated population and school age children is based on an early scenario of delivery linked to the OPDC Local Plan.

2.5.2 Affordable Housing Targets, Affordable Housing Tenure Mix and Unit Size Mix

The following scenarios, tests and assumptions[5] are applied to the Development Trajectory.

- Two affordable housing targets are tested; 50% and 35%[6];
- The affordable housing tenure mix reflects a blend of 25% Affordable Rent (social rent), 37.5% London Living Rent and 37.5% Intermediate Housing (shared ownership);
- The unit size mix[7] applied to the market/private homes and the split of affordable homes by tenure type is blended in order to achieve 25% family housing, i.e. 3 bed units or larger, across the site[8].

Housing Unit Size Mix	Market/Private	London Affordable Rent (Social Rent)	London Living Rent	Shared Ownership
1 bed	38.75%	23%	39.20%	39.20%
2 bed	38.75%	28%	39.20%	39.20%
3 bed	22.50%	34%	21.60%	21.60%
4 bed	-	15%	-	-

Table 2. Site-wide Housing Unit Size Mix

[4] 280217_v2.1_JS_Phasing Trajectory v7.10 Early Scenario for Social Infrastructure Planning_AecomP2 provided by OPDC on 16 March 2017 at 09:14.
[5] Agreed by OPDC on 21 February 2017 16:24
[6] To reflect advice in Homes for Londoners Draft Affordable Housing and Viability SPG 2016 (November 2016) the calculations are based on affordable housing expressed as habitable rooms.
[7] The Market/Private, London Living Rent and Shared Ownership housing unit size mix is based on a blended London picture of submitted applications determined by a review of the London AMR. The London Affordable Rent housing unit size mix is based on the OPDC Strategic Housing Market Assessment (SHMA).
[8] Appendix B.2.4 shows comparable results of education and health needs and triggers based on a sensitivity test of 30% family housing across the site.

· A special housing unit size mix has been applied to 50% of the units to be delivered in North Acton[9].

Housing Unit Size Mix (North Acton special assumptions)	Market/Private	London Affordable Rent (Social Rent)	London Living Rent	Shared Ownership
1 bed	52.54%	52%	49%	49%
2 bed	41.34%	32%	41%	41%
3 bed	5.78%	16%	10%	10%
4 bed	0.34%	0%	-	-

Table 3. North Acton Special Assumptions for Housing Unit Size Mix

2.5.3 Population, Child Yield and Household Characteristics

The GLA Child Yield Calculator has been used to derive the average household size and age range characteristics to apply to the housing assumptions in Section 2.5.2[10]. Appendix B provides detail on these assumptions and any discounts applied or observations about their use in generating results.

[9] This is to reflect the unit mix being proposed in early planning applications and pre-application discussions with the OPDC in this sub-area. Excluding student housing

[10] Appendix B.2 explains the process used to test various model outputs to arrive at a total population and child yield arising from the Development Trajectory.

2.6 Total Population by Development Phase & Development Sub-area

Table 4 identifies the total population results from the assumptions set out in this chapter. Subsequent chapters of this report look in detail at aspects of these results for early years, school and health facility provision.

- The 26,967 homes in the development trajectory result in a total population of up to 58,558 at a 35% affordable housing target or up to 59,349 total population at a 50% affordable housing target.
- Old Oak North and North Acton together contribute 73% of the total population, in comparison to Old Oak South and Park Royal which together contribute 27%.
- The anticipated population build-up shows strong and sustained delivery over the first 20 years of the development programme. 34% of the total population will arrive in the first 10 years of the development (between 2017 and 2026). The next 10 years will contribute 43% of the total population. This sustained level of build and occupancy will drive the need for expanded and new build facilities.

Affordable Housing Test	**35% Affordable Housing**						**50% Affordable Housing**					
Phase	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**	**Total %**	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**	**Total %**
Years	**2017 - 2021**	**2022 - 2026**	**2027 - 2036**	**2037 - 2050**	**2017 - 2050**	**2017 - 2050**	**2017 - 2021**	**2022 - 2026**	**2027 - 2036**	**2037 - 2050**	**2017 - 2050**	**2017 - 2050**
Old Oak North	2,112	5,265	11,510	5,653	24,540	42%	2,145	5,349	11,694	5,743	24,931	42%
North Acton	3,624	4,095	8,617	2,056	18,392	31%	3,654	4,129	8,688	2,073	18,545	31%
Old Oak South	883	1,017	5,249	5,762	12,911	22%	897	1,033	5,333	5,853	13,116	22%
Park Royal	883	1,831	-	-	2,714	5%	897	1,861	-	-	2,757	5%
Whole Scheme	7,501	12,208	25,377	13,471	58,558		7,593	12,371	25,715	13,670	59,349	
Whole Scheme %	13%	21%	43%	23%			13%	21%	43%	23%		

Table 4. Total Population by Development Phase and Development Sub-area

2.7 General Context - Summary

- This report represents the continued efforts by OPDC to understand the social infrastructure facilities that will be needed to support the anticipated population growth at Old Oak and Park Royal.
- The study assumptions used to generate the total population, school and health needs in this report have been tested with relevant stakeholders and include adjustments where necessary to reflect the unit mix being proposed in early planning applications and pre-application discussions with the OPDC.

3. Early Years

3.1.1 Early Years Context

The London Plan[11] is the strategic plan for London, which considers issues from economics, environment, transport and London's social framework. The London Plan identifies that due to population growth and increasing levels of diversity, there will be increased demand on social infrastructure, particularly schools, libraries, health facilities and spaces for local groups to ensure and support a high quality of life. Policy 3.18 (Education Facilities) states that "The Mayor will support provision of childcare, primary and secondary school and further and higher education facilities adequate to meet the demands of a growing and changing population and to enable greater education choice, including in parts of London with poor educational performance".

Two key policy changes are planned for the early years in 2017: the introduction of the 30-hour entitlement and the implementation of the early years national funding formula (EYNFF). Both of these will have significant implications for the provision of high quality early education and care in London. From September 2017, the entitlement to free childcare for 3 and 4 year-olds will be doubled for working parents from 15 to 30 hours per week. It has been estimated that 42 per cent of 3 and 4 year-olds will be eligible for this extended entitlement, although this proportion will clearly vary at the local level[12]. THE EYNFF will replace the current system, which is based on how much a council has historically spent rather than how much it actually costs to meet the local need. The new formula is based on three factors: a 'universal base rate' of funding for each child; an 'additional needs factor', to support children with additional needs; and the cost of providing childcare in different parts of the country. The intention is that organisations providing early years care have the financial support they need to deliver the 30-hour free childcare offer to working families. Local authorities, working in partnership with providers, are now able to bid for capital grant funding to support 30 hours delivery - linked to the £50 million announced in the 2016 spending review[13].

The Mayor's Education and Youth Team advise that the 2017 policy changes will mean a future trend of nursery chains coming together and providing larger-scale facilities that benefit from the increased intake from the 30-hour entitlement and the economies of operating at scale to access EYNFF funding.

3.2 Early Years Population Figures

The 26,967 homes in the development trajectory result in total early years population (aged 0-4) of between 4,037 and 4,211 (depending on the affordable housing target). The majority (73%) of early years population are generated by Old Oak North and North Acton sub areas.

Affordable Housing Test	**35% Affordable Housing**	**50% Affordable Housing**
Age	**Early Years 0-4**	**Early Years 0-4**
Old Oak North	1,710	1,796
North Acton	1,238	1,272
Old Oak South	900	945
Park Royal	189	199
Whole Scheme	4,037	4,211

Table 5. Early Years Spaces Requirement by Development Phase

[11] The London Plan: The Spatial Development Strategy for London consolidated with alterations since 2011 (March 2016)
[12] National Audit Office, 'Entitlement to free early education and childcare', March 2016.
[13] To enable the doubling of free childcare for 3- and 4-year-olds with working parents, the government will invest at least £50 million of capital funding to create additional places in nurseries and over £300 million a year to increase the average hourly rate paid to childcare providers.

3.3 Early Years Key Assumptions

Applying key assumptions of early years take-up depending on age results in a need for between 777-811 places for those aged 3-4 and between 130-136 places for those aged under 3 (depending on the affordable housing target).

- Total children aged 0-4 are assumed to be split equally by ages 0-1, 1-2, 2-3 and 3-4.
- Take-up of early years places increases with age: 9% aged 0-1; 18% aged 1-2, 40% aged 2-3 and 77% aged 3-4.

Affordable Housing Test	35% Affordable Housing		50% Affordable Housing	
Age	**Ages 3-4 in pre-school**	**Ages 0-3 in nurseries**	**Ages 3-4 in pre-school**	**Ages 0-3 in nurseries**
Old Oak North	329	55	346	58
North Acton	238	40	245	41
Old Oak South	173	29	182	30
Park Royal	36	6	38	6
Whole Scheme	777	130	811	136

Table 6. Early Years Spaces Requirement by Development Phase

3.4 Early Years Provision Types

Early Years projects are derived based on the following assumptions:

- The primary schools will provide pre-school classes for ages 3-4; and
- The model of provision outside of schools will be in super-nurseries for ages 0-4 and which cater for circa 120 children rather than the 50FTE standard used in the DIFS and AECOM stage 1 work. This is to meet the population needs of the development and make efficient use of space.

The specification requirements for a super nursery are based on the site search requirements of the following operator: https://www.daynurseries.co.uk/daynursery.cfm/searchazref/65432204282 https://www.daynurseries.co.uk/news/article.cfm/id/1565593/super-nurseries-onsite-yoga-pilates

Facility	Site Size	Floorspace
120 place super nursery	2,000 sq.m	800sq.m

Table 7. Early Years Facility Size Assumption

3.5 Early Years Requirements

Table 8 specifies the number and phasing of super-nurseries, in addition to the early years places to be provided in primary schools (explained in Section 4.6), which will be required in order to meet the 50% affordable housing needs in Table 6.

Affordable Housing Test	50% Affordable Housing Trigger Year
Early Years Super Nursery #1 (120 places)	2020
Early Years Super Nursery #2 (120 places)	2022
Early Years Super Nursery #3 (120 places)	2025
Early Years Super Nursery #4 (120 places)	2030
Early Years Super Nursery #5 (120 places)	2035

Table 8. Early Years Super-Nurseries

3.6 Early Years Site Selection

The site requirements for super-nurseries are less restricted than search requirements for schools. Super-nurseries can be incorporated within a number of development types including: office/commercial uses; residential schemes; mixed-use schemes; community hubs including churches/healthcare/other D1 use classes such as community halls. Super-nurseries can also provide active frontages at ground floor uses.

Super-nurseries will be delivered by commercial operators on either leasehold or freehold terms and it is expected that developers will approach operators as part of creating mixed-use proposals. In light of the above, there is less need to identify site locations for super-nurseries as a result of this report and within the OPDC Local Plan.

3.7 Early Years – Summary

- All ages from 0-4 are assumed to require some form of early years care, increasing with age. This report assumes a mix of early years provision in pre-school classes for ages 3-4 in primary schools and super-nurseries for ages 0-4.
- The facility size used in this report (super nurseries which cater for circa 120 children) reflect the trend for nursery chains coming together and providing larger-scale facilities that benefit from the increased intake from the 30-hour entitlement and the economies of operating at scale to access EYNFF funding.
- Five super-nurseries and eight pre-school classes in the two 4FE primary schools will be required in order to meet the early years needs from a 50% affordable housing target.

4. Education

4.1 Education Political/National Context

The National Planning Policy Framework (NPPF)[14] provides guidance on 'promoting healthy communities' under Chapter 8 in which it identifies an important role for planning to facilitate social interaction and create healthy, inclusive communities. This should involve all sections of the community, with a focus on neighbourhood planning. In paragraph 72 the government attaches great importance to ensuring that a sufficient choice of school places is available to meet the needs of existing and new communities. Local planning authorities should take a proactive, positive and collaborative approach to meeting this requirement, and to development that will widen choice in education. They should: give great weight to the need to create, expand or alter schools; and, work with schools promoters to identify and resolve key planning issues before applications are submitted.

The London Plan[15] is the strategic plan for London, which considers issues from economics, environment, transport and London's social framework. The London Plan identifies that due to population growth and increasing levels of diversity, there will be increased demand in social infrastructure, particularly schools, libraries, health facilities and spaces for local groups to ensure and support a high quality of life. Policy 3.18 (Education Facilities) states[16]:

> *A The Mayor will support provision of childcare, primary and secondary school, and further and higher education facilities adequate to meet the demands of a growing and changing population and to enable greater educational choice, including in parts of London with poor educational performance.*
>
> *B The Mayor strongly supports the establishment of new schools, including free schools and opportunities to enable local people and communities to do this.*
>
> *C Development proposals which enhance education and skills provision will be supported, including new build, expansion of existing or change of use to educational purposes. Those which address the current and projected shortage of primary school places and the projected shortage of secondary school places will be particularly encouraged. Proposals which result in the net loss of education facilities should be resisted, unless it can be demonstrated that there is no ongoing or future demand.*
>
> *D In particular, proposals for new schools, including free schools should be given positive consideration and should only be refused where there are demonstrable negative local impacts which substantially outweigh the desirability of establishing a new school and which cannot be addressed through the appropriate use of planning conditions or obligations.*
>
> *E Development proposals which maximise the extended or multiple use of educational facilities for community or recreational use should be encouraged.*
>
> *F Development proposals that encourage co-location of services between schools and colleges and other provision should be encouraged in order to maximise land use, reduce costs and develop the extended school or college's offer. On-site or off-site sharing of services between schools and colleges should be supported.*
>
> *G Development proposals that co-locate schools with housing should be encouraged in order to maximise land use and reduce costs.*
>
> *H LDFs and related borough strategies should provide the framework:*
>
> *a for the regular assessment of the need for childcare, school, higher and further education institutions and community learning facilities at the local and sub-regional levels; and*
>
> *b to secure sites for future provision recognising local needs and the particular requirements of the education sector.*

[14] National Planning Policy Framework (NPPF) (2012)
[15] The London Plan: The Spatial Development Strategy for London consolidated with alterations since 2011 (March 2015)
[16] The underlining emphasises key these relevant to this chapter.

The vast majority of applications for free schools are now put forward by professional school providers e.g. academies opening another academy or multi-academy trusts, very few are parent led groups seeking parental choice to open a new school. There are increasing concerns about under-occupancy and the impact on budgets where a new school opens very close to an existing school and pulls pupils from local schools in its first years of operating. Section 4.9 explains the procurement routes for new schools.

4.2 Education – Engagement

The following meetings have been held with the strategic and local Education agencies to inform the education modelling:

- Education Funding Agency: with the Regional Head for North West London and South Central;
- Tri-Borough Education Team based at Hammersmith & Fulham: with the Director of Schools Commissioning, the Head of Asset Strategy and Head of School Admissions;
- Royal Borough of Kensington & Chelsea: with the School Place Planning Data Analyst from Children's Services;
- London Borough of Ealing: with the Assistant Director Schools Planning and Resources and the Principal Research and Statistics Officer;
- Greater London Authority Economics: with the Demography Manager and Senior Research & Statistical Analyst;
- Greater London Authority Education and Youth Team: Head of the unit and School Places Strategy Delivery Manager; and
- London Borough of Brent: with the School Place Planning Officer, Children and Young People.

4.3 Education Assumptions

4.3.1 Primary & Secondary Schools

School sizes are explained in terms of multiples of Forms of Entry (FE). One Form of Entry (FE) means there is one class of 30 pupils in each year group in the school.

Primary Schools have 7 year groups covering the national curriculum from Early Years to Key Stage 2.

- A one FE primary school is therefore 7 classes x 30 pupils = 210 pupils.
- A two FE school would have two classes in each year group, i.e. 14 classes x 30 pupils = 420 pupils. The same process is followed to size a 3 FE or a 4 FE primary school.
- Primary school sizes can range from 1FE-5 FE. The norm in terms of school building outside metropolitan cities would be 1 FE- 2 FE with 3 FE in exceptional areas of high demand or restricted land availability. The norm for school building in London is a minimum of 2 FE, a standard of 3 FE and a trend to move toward 4 FE in exceptional areas of high demand or restricted land availability. 5 FE is a highly exceptional size of new school[17].

Secondary Schools have 5 years groups covering national curriculum from Key Stage 3 to 4.

- A one FE secondary school is therefore 5 classes x 30 pupils = 150 pupils.
- A two FE school would have two classes in each year group, i.e. 10 classes x 30 pupils = 300 pupils. The same process is followed to size larger schools.
- Secondary school sizes can range from 5 FE- 10 FE. The norm in terms of school building outside metropolitan cities would be 5 FE- 6 FE with 8 FE in exceptional areas of high demand or restricted land availability. The norm for school building in London is a minimum of 6 FE, a standard of 8 FE in new school building and a trend to move toward 10 FE in exceptional areas of high demand or restricted land availability.

[17] The Byron Court Primary School, Wembley has been expanded from a 3 FE to a 5 FE school in response to an increase in demand for school places and a lack of suitable sites to build new schools.

The larger sizes above are generally the maximum school size that heads and governors will consider on the basis that they can ensure the school operates well and delivers quality outcomes. A simple way to understand this is to consider that a 4 FE primary school has 840 pupils aged 4-10/11 arriving at, moving around and being educated at one site; a 10 FE secondary school means 1500 pupils aged 11-18 on the one site.

All-through schools are an emerging model of school provision in the state-maintained sector. All through schools currently comprise 8% of all academy, free schools and local authority maintained secondary schools in London. Of the 46 free schools for ages 11-19 that have opened in London since 2011/12 a total of 9 are all-through schools. Of the 41 free schools for ages 11-19 that are in pipeline development in London a total of 5 are all-through schools.

4.3.2 Ages 16-19

At the end of key stage 4 pupils can leave school if they are 16 by the end of the summer holidays. However, they must do one the following until they are 18: a) stay in full-time education, for example at a college; b) start an apprenticeship or traineeship, or c) spend 20 hours or more a week working or volunteering, while in part-time education or training. This is commonly referred to as “the extended school leaving age”. It is important to note the choices available and the fact that staying in mainstream education is not the only option. The secondary schools sizes referred to above will generally also provide sixth form capacity in additional to the places in the five age groups to age 15/16. The proportion of sixth form places to KS4 places is determined on a school-by-school basis looking at the trends for children staying on to do A levels as opposed other types of training and the particular offer at the school i.e. specialism and whether this would attract more pupils to stay on past 16.

4.4 Types of School Service Model

There are two main types of mainstream i.e. publically provided, school:

- Separate primary and secondary schools, catering for age groups 4-10 and 11-18 in individual managed institutions generally located on separate sites;
  - For the purposes of this analysis a four FE (840 pupils) primary school with associated four early-years groups (26 places each) has been assumed. Stand-alone primary schools are assumed to be triggered when 1 FE of children (210 places) are generated.
  - For the purposes of this analysis a ten FE (1500 pupils) secondary school (encompassing 8 FE for ages 11-15 and two FE for ages 16-18) has been assumed. Stand-alone secondary schools are assumed to be triggered when 3 FE of children (450 places) are generated.
- All-through schools, catering for age groups 3-18 in a combined managed institution, generally located on one site or on linked sites.
  - The OPDC DIFS Study assumed a four FE all-through school for ages 3-19. This model has been retained as an option comprising our early years groups (26 places each/104 places), four FE primary (840 pupils aged 4-9), four FE secondary (600 pupils aged 10-18/19). This is a total school roll of 1544 children. All-through schools are triggered when either 1 FE of primary or secondary age children are generated.

In addition, primary and secondary schools which are managed as individual institutions can be co-located on one site and two primary schools could be co-located on the one site. However the management and governance of the schools is separate.

To ensure the efficient use of the OPDC development area and adhere to school space standards & models of provision a combination of school types is recommended. The analysis in Section 4.7 incorporates both separate and all-through schools. Appendix E provides a review of the advantages, weakness and challenges to delivery of the different school service models.

The following site sizes have been determined based on advice in Building Bulletin 103. Appendix D explains the modelling process and the variables used (such as building storeys and types of outdoor space) which have been included in these assumptions. The site sizes exclude soft outdoor playing pitches.

Facility	Site Size
3FE Primary	0.49 Ha
4FE Primary	0.58 Ha
6FE Secondary (assuming 5FE 10-16 1FE 16+)	0.88 Ha
7FE Secondary (assuming 6FE 10-16 1FE 16+)	0.94 Ha
8FE Secondary (assuming 6.5FE 10-16 1.5FE 16+)	0.98 Ha
9FE Secondary (assuming 7FE 10-16 2FE 16+)	1.03 Ha
10FE Secondary (assuming 8FE 10-16 2FE 16+)	1.09 Ha
All-through 3FE (630 primary) and 4FE (450 secondary school)	1.2 Ha
All-through 4FE (840 primary) and 4FE (600 secondary school)	1.36 Ha

Table 9. School Facility Size Assumption

4.5 Offsite School Expansion

As part of this Stage 2 analysis AECOM have sought advice from the London Boroughs of Hammersmith & Fulham, Ealing and Brent on existing schools in the area of influence to the Old Oak and Park Royal development area that could have surplus places or the potential to expand in future years in order to contribute towards meeting needs arising in the early phase of development. Proposals for the expansion of these facilities is not yet committed and OPDC will be working with the relevant service providers to further investigate the potential for these facilities to be expanded. On this basis, the OPDC Local Plan needs to model for on-site requirements based on the education needs as set out in Section 4.7.

Table 10 illustrates the net additional capacity that is assumed to be available from surplus capacity and expansion projects identified by the Borough representatives. A total of 4FE primary school places are assumed to be provided through a combination of take up of surplus places and expansion projects.

School	Type of school	Current Capacity	Current School Roll	Current Surplus Places	Nursery provision	Sixth form	Proposed capacity	Cost Estimate (£000)[1]
Primary Schools								
West Twyford Primary School	Community	445 places	364	81	Yes	N/A	Expansion by 210-420 places	4,500 – 9,000
Harlesden	Community	630 places	327	303	Yes	N/A	Use forecast surplus places	TBD
St Mary's RC	Voluntary aided	420 places	323	97	Yes	N/A	Use forecast surplus places	TBD
Old Oak Primary School	Community	470 places	375	95	Yes	N/A	Use forecast surplus places	TBD
Kenmont Primary School	Community	240 places	236	4	Yes	N/A	Use forecast surplus places	TBD
Total Primary Places		2205	1625	580			840 places	TBD
Secondary Schools								
Phoenix High School	Academy	1,160 places	TBC	TBC	N/A	Yes	Expansion by 300 places	8,000
The Ellen	Foundation	1,416	1,348	68	N/A	Yes	Expansion	4,000

[1] Costs estimates are taken from the OPDC Infrastructure List dated 27/1/16

School	Type of school	Current Capacity	Current School Roll	Current Surplus Places	Nursery provision	Sixth form	Proposed capacity	Cost Estimate (£000)[1]
Wilkinson School for Girls		places					by 150 places	
Total Secondary Places		1,910	TBC	TBC			450 places	12,000
Equivalent New Schools							1 Primary 0.3 Secondary	TBD

Table 10. Recommended School Expansions

Based on the location of these off-site expansions in relation to the OPDC development area a series of assumptions have been used for how this capacity would be taken up by the OPDC sub areas:

- 4 FE primary: Old Oak North 1 FE, North Acton 1.5 FE, Old Oak South 0.5 FE, and Park Royal 1 FE.
- 3FE secondary: North Acton 1.5FE, Old Oak South 1.5FE.

Figure 1 illustrates the proximity of these recommended off-site school expansion projects to the OPDC Development Area.

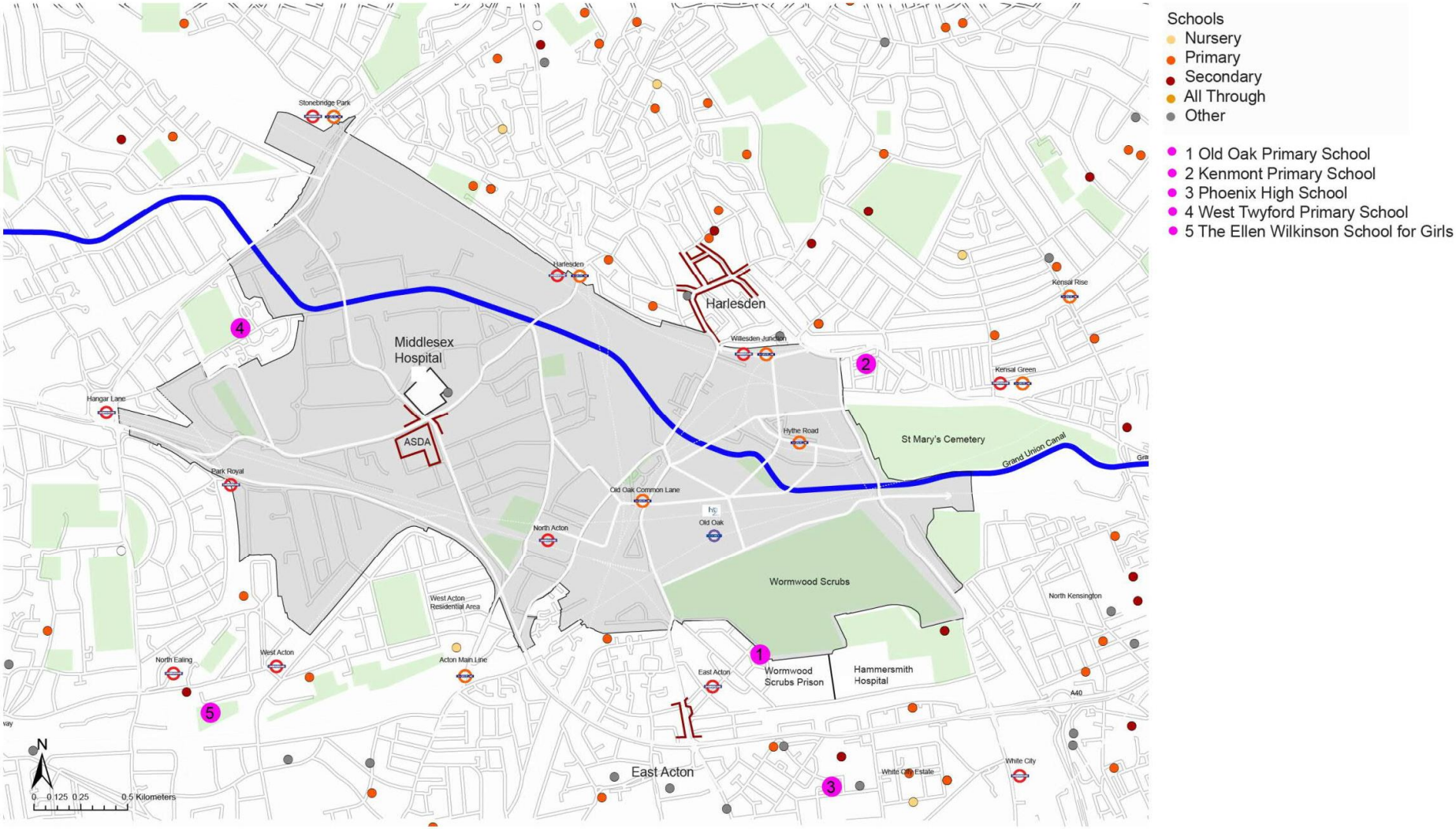


Figure 1. Map of the Existing School Surrounding the OPDC Development Area (AECOM)

Appendix C.1 includes more detail on the off-site expansion projects.

4.6 School Place Analysis (Pupils and Forms of Entry)

4.6.1 School Places

The 26,967 homes in the development trajectory result in a need for between 3,061 and 3,193 primary school places[18] (depending on the affordable housing target) assuming all needs are met by on-site facilities and between 2,231 and 2,363 places if the off-site expansion school projects are assumed to be delivered. Between 2,083 and 2,357 secondary school places (depending on the affordable housing target) would be required if all needs are met by on-site facilities and between 1,633 and 1,907 places if the off-site expansion school projects are assumed to be delivered.

Affordable Housing Test	**35% Affordable Housing**				**50% Affordable Housing**			
Without/with use of off-site schools	**Without off-site**	**Without off-site**	**With off-site**	**With off-site**	**Without off-site**	**Without off-site**	**With off-site**	**With off-site**
Primary ages 4-9/Secondary ages 10-18	**Primary**	**Secondary**	**Primary**	**Secondary**	**Primary**	**Secondary**	**Primary**	**Secondary**
Old Oak North	1,297	927	1,087	927	1,362	1,063	1,152	1,063
North Acton	939	565	624	340	964	618	649	393
Old Oak South	682	488	577	263	717	559	612	334
Park Royal	143	103	- 67	103	151	118	- 59	118
Whole Scheme	3,061	2,083	2,231	1,633	3,193	2,357	2,363	1,907

Table 11. Recommended School Expansions

4.6.2 School Forms of Entry

Table 12 translates the school places into school forms of entry (FE). The 26,967 homes in the development trajectory result in a need for between 14.6 and 15.2 primary school FE (depending on the affordable housing target) assuming all needs are met by on-site facilities and between 10.6 and 11.3 FE if the off-site expansion school projects are assumed to be delivered . Between 13.9 and 15.7 secondary school FE (depending on the affordable housing target) would be required if all needs are met by on-site facilities and between 10.9 and 12.7 FE if the off-site expansion school projects are delivered.

[18] Please refer to Appendix B for the child yield assumptions and any discounts applied to this to arrive at school place needs.

Affordable Housing Test	35% Affordable Housing				50% Affordable Housing			
Without/with use of off-site schools	Without off-site	Without off-site	With off-site	With off-site	Without off-site	Without off-site	With off-site	With off-site
Primary ages 4-9/Secondary ages 10-18	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
Old Oak North	6.2	6.2	5.2	6.2	6.5	7.1	5.5	7.1
North Acton	4.5	3.8	3.0	2.3	4.6	4.1	3.1	2.6
Old Oak South	3.2	3.3	2.7	1.8	3.4	3.7	2.9	2.2
Park Royal	0.7	0.7	- 0.3	0.7	0.7	0.8	- 0.3	0.8
Whole Scheme	14.6	13.9	10.6	10.9	15.2	15.7	11.3	12.7

Table 12. School Forms of Entry Need by Development Sub-area

Table 13 illustrates how the school forms of entry build-up cumulatively across the development phases. This is only included for the 50% affordable housing test as the maximum scenario of need and to remain in line with Local Plan Policy position. This shows how the capacity of off-site facilities is taken up in the early years of the development and at which point this would be exhausted and can be used to identify the points when 4 FE primary and 10FE secondary met.

50% Affordable Housing Test	Phase 1		Phase 2		Phase 3				Phase 4				
PRIMARY SCHOOL FE	2016	2021	2022	2026	2027	2031	2032	2036	2037	2041	2045	2046	2050
Whole Scheme (Without use of off-site)		*1.9*	*2.7*	*5.1*	*5.8*	*8.5*	*9.1*	*11.7*	*12.2*	*13.8*	*14.9*	*15.1*	*15.2*
Whole Scheme (With use of off-site)	*- 4.0*	*- 2.0*	*- 1.3*	*1.1*	*1.8*	*4.6*	*5.2*	*7.7*	*8.2*	*9.8*	*11.0*	*11.2*	*11.3*
SECONDARY SCHOOL FE													
Whole Scheme (Without use of off-site)		*1.9*	*2.7*	*5.2*	*5.9*	*8.7*	*9.3*	*12.0*	*12.4*	*14.2*	*15.4*	*15.6*	*15.7*
Whole Scheme (With use of off-site)	*- 3.0*	*- 1.1*	*- 0.3*	*2.2*	*2.9*	*5.7*	*6.3*	*9.0*	*9.4*	*11.2*	*12.4*	*12.6*	*12.7*

Table 13. School Forms of Entry Build-up by Development Phase and Development Sub-area

4.7 School Requirements and Trigger Years

Table 14 explains the number, size and trigger year of schools required in order to meet the needs arising from the 35% and 50% affordable housing scenarios, based on meeting all needs through on-site facilities or through the use of off-site expansion school projects. Six schools are needed under both affordable housing scenarios if all needs are met on-site, with the first schools required to be open in 2020. Four schools are needed if use is made of the off-site expansion projects, with the first school required to be open in 2026. 50% affordable housing with use of off-site capacity is the scenario that is tested for site requirements as this shows the maximum scenario, in line with Local Plan Policy.

Affordable Housing Test	35% Affordable Housing				50% Affordable Housing			
Without/with use of off-site schools	Without off-site	Without off-site	With off-site	With off-site	Without off-site	Without off-site	With off-site	With off-site
Primary ages 4-9/Secondary ages 10-18	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
Whole Scheme	14.6	13.9	10.6	10.9	15.2	15.7	11.3	12.7
School service model	Three 4FE primary schools - 2020, 2027, 2033 One 3FE primary school - 2041 One 7FE secondary school - 2024 One 7FE secondary school - 2035 6 schools in total		Two 4FE primary schools – 2027, 2033 One 7FE secondary school - 2029 One 3FE primary & 4FE secondary all-through school – 2037[19] 4 schools in total		Four 4FE primary schools – 2020, 2026, 2032, 2039 One 10 FE secondary school - 2023 One 6FE secondary school - 2039 6 schools in total		Two 4FE primary schools – 2026, 2032 One 9FE secondary school - 2028 One 4FE all-through school – 2039[20] 4 schools in total	

Table 14. Number of Schools and School Triggers Years

[19] The primary 1FE trigger is three years later in 2040: both age groups could open at the same time, or the secondary could open in a temporary site or within ANother school site.
[20] The primary and secondary 1FE triggers occur in the same year: therefore both age groups could open at the same time in the new school.

4.8 School Site Selection

OPDC's Local Plan includes a 50% affordable housing policy with 25% family housing, subject to viability. The Local Education Authorities (LEAs) have identified the existing schools that may have the potential for off-site expansion to meet the needs of the development in early phases (refer to Section 4.5 and Appendix C.1). Proposals for the expansion of these facilities is not yet committed and OPDC will be working with the relevant service providers to further investigate the potential for these facilities to be expanded. On this basis, the OPDC Local Plan needs to model for on-site requirements based on the education needs as set out in Section 4.7.

Using the needs analysis and Local Plan Policy position, the trigger years for required on-site facilities have been matched against OPDC's phasing trajectory in order to derive which sites are likely to be being constructed in the year the facility is required and by virtue, which sites would be capable of delivering the facility. In order to identify the most appropriate site, OPDC, in collaboration with AECOM, have defined criteria against which to score the sites. Please refer to Appendix G for details of the criteria and the site selection and scoring results.

4.8.1 Primary School 1: Trigger Date 2026

The first primary school is required in 2026. The analysis in Appendix G shows the most appropriate site for the first primary school is the Cargiant site. It is therefore recommended that the Local Plan identify the need for this site to deliver the primary school.

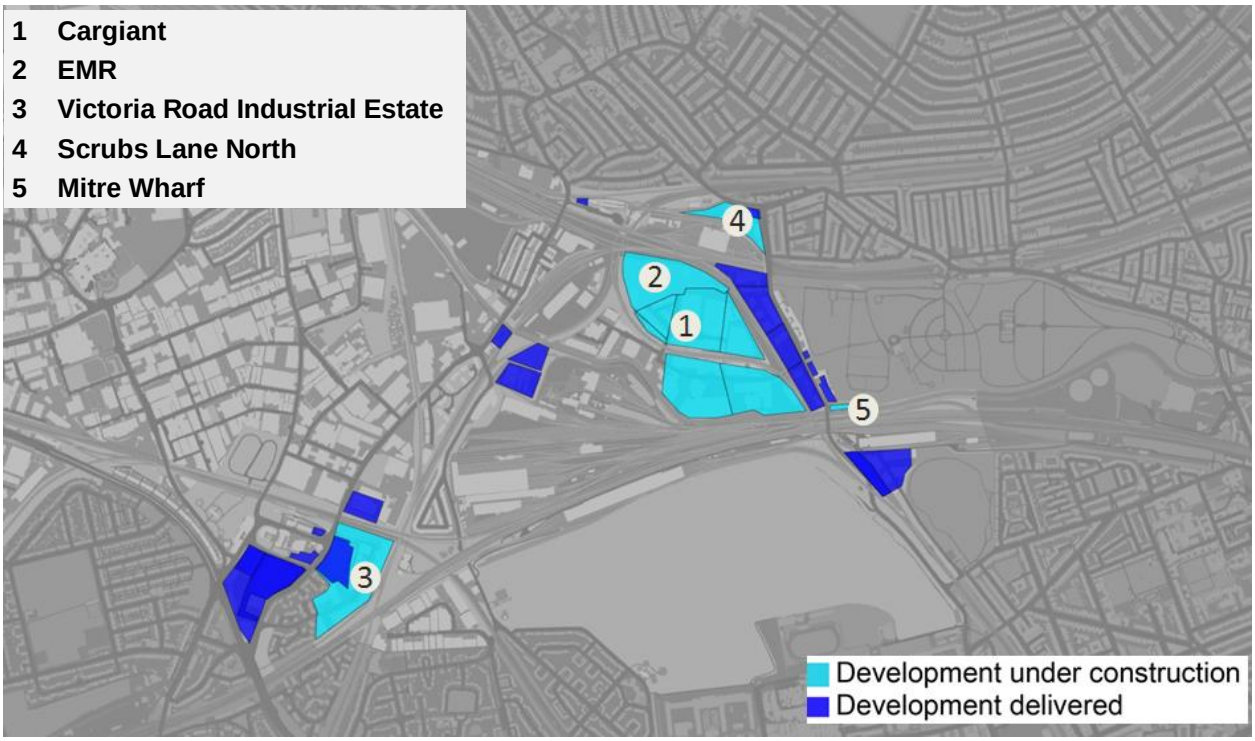


Figure 2. Candidate Sites for Primary School 1

4.8.2 Secondary School 1: Trigger Year 2028

The secondary school is required in 2028. The analysis in Appendix G shows that the sword and shield sites are the most appropriate sites[21] for the delivery of the secondary school and should be allocated for this purpose in OPDC's Local Plan.

[21] The majority of these sites are being acquired by HS2 for construction. Parts of the sites are required for track ventilation but there is sufficient space within these sites to provide a secondary school.

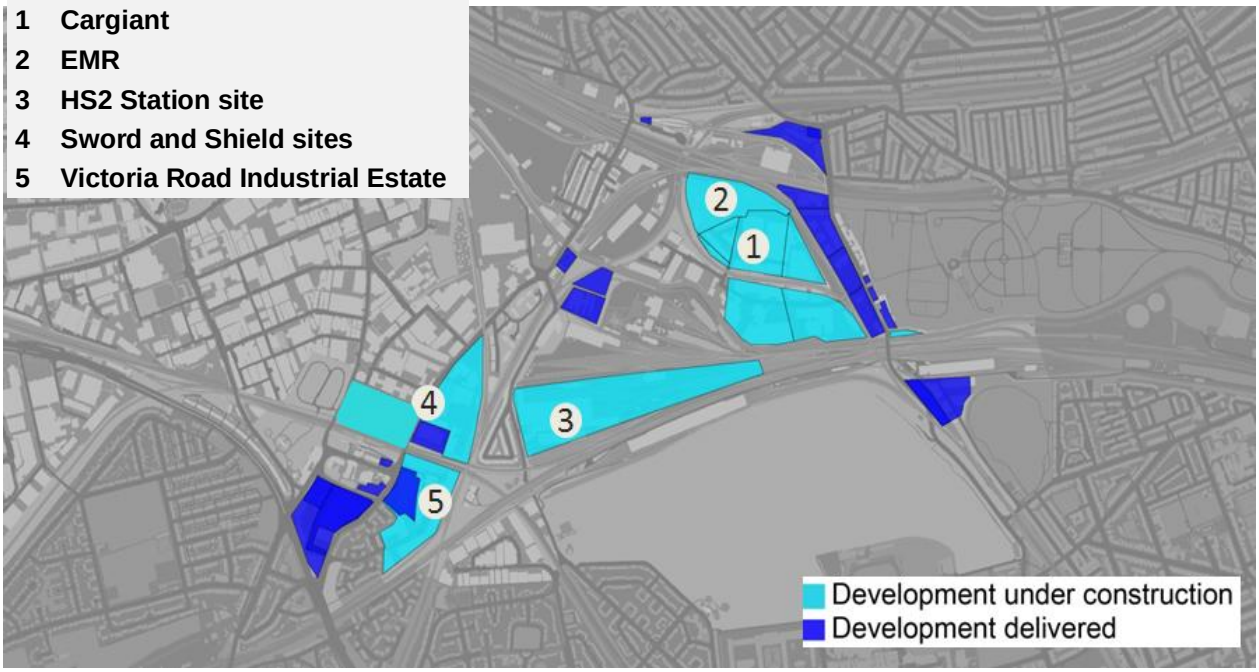


Figure 3. Candidate Sites for Secondary School 1

4.8.3 Primary School 2: Trigger Year 2032

The second primary school is required in 2032. The analysis in Appendix G shows the Crossrail depot or HS2 station site are identified as the most appropriate sites[22].

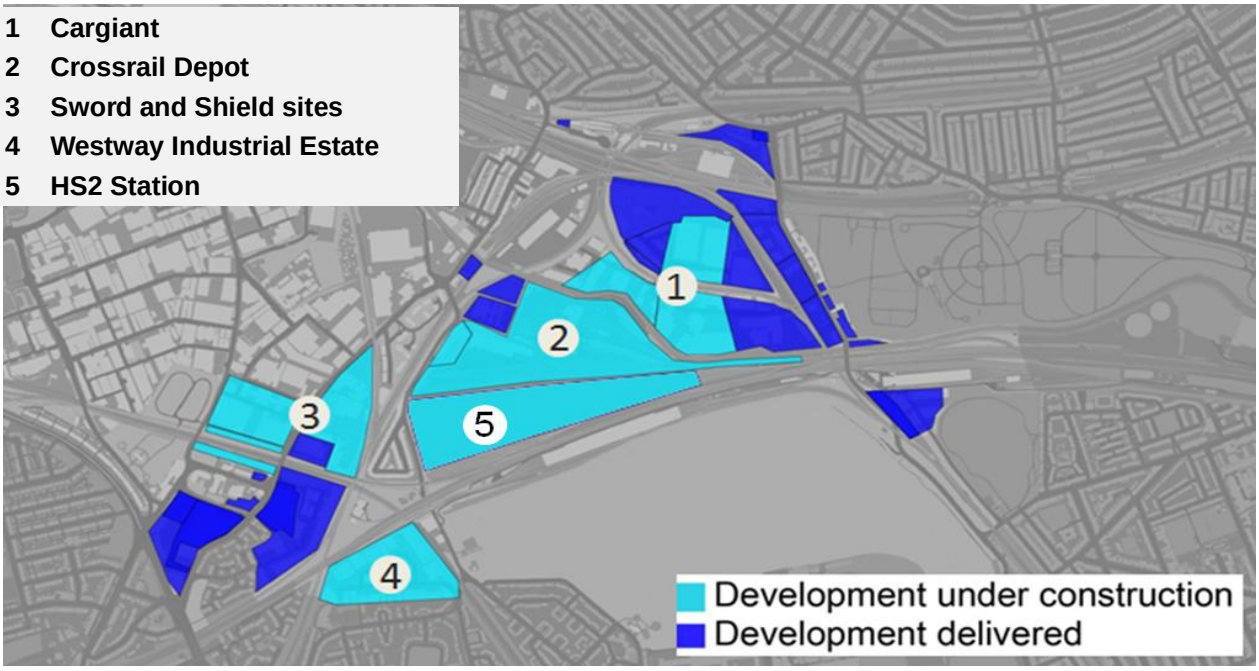


Figure 4. Candidate Sites for Primary School 2

[22] Both sites are in the ownership of one landowner (public sector) and are well located to serve the needs of future communities and provide opportunities for the co-location of other social infrastructure.

4.8.4 All-through School: Trigger Year 2039

The last trigger is for the all through school is 2039. Figure 5 identifies the sites capable of delivering the school. As the trigger year for this school and the majority of development that is contributing towards its need for delivery fall outside the Local Plan period, it is considered that the Local Plan does not need to allocate a site for the delivery of this facility at this stage.

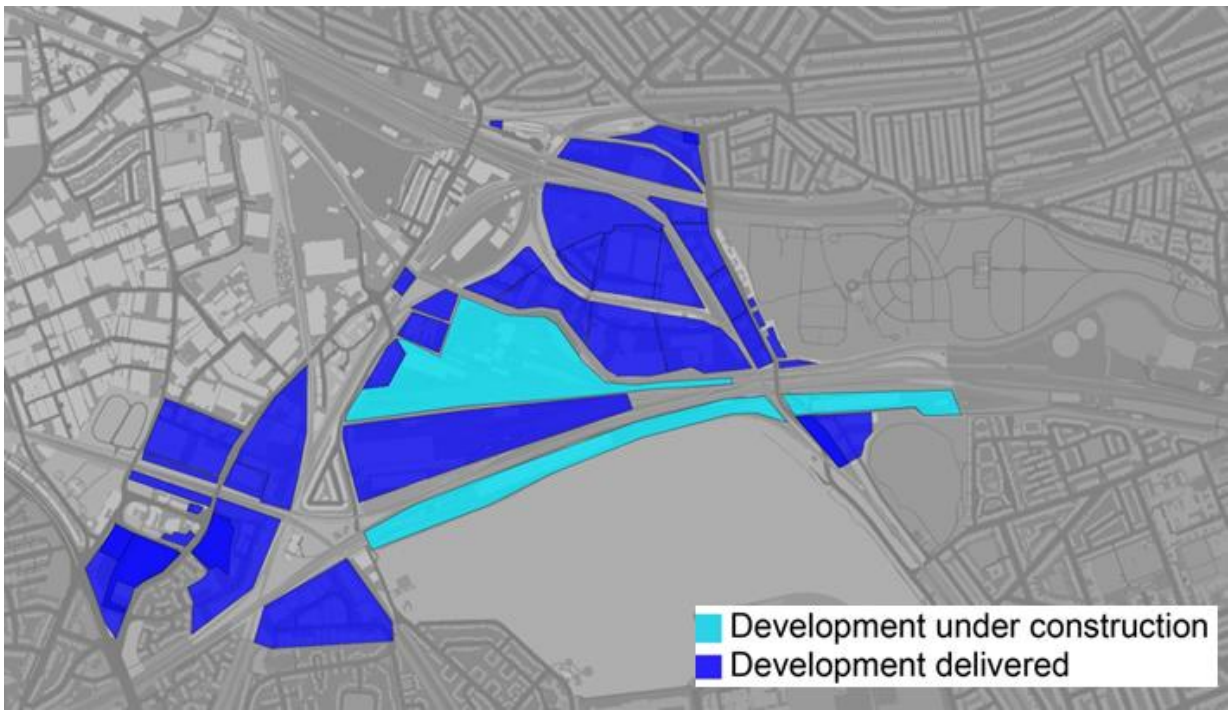


Figure 5. Candidate Sites for the All-through School

4.9 Education Facilities Procurement[23]

- The key agencies involved in education procurement are as follows:
- The **Education and Skills Funding Agency** (ESFA) brings together the existing responsibilities of the Education Funding Agency (EFA) and Skills Funding Agency (SFA), creating a single funding agency accountable for funding education and training for children, young people and adults. The EFSA is accountable for £61bn of funding for the education and training sector.
- The main role of the **Local Authority** (LA) is to: Ensure sufficient school places are available by building or extending schools; get rid of surplus places by closing or reorganising schools; assess and provide home to school transport; provide support services for schools; assist the government in implementing initiatives and legislation relating to schools, children and families and allocate finance to schools. LAs are responsible for school place planning to forecast expected population trends. The **GLA** assist the LAs by providing projections of the number of pupils who will be at schools in the future.
- **Academies**: LAs used to manage all state schools in its area; this is no longer the case following the Learning and Skills Act 2000 and the Academies Act 2010. Academies are state-funded schools in England which are directly funded by the Department for Education and are independent of local authority control. Academies are self-governing non-profit charitable trusts. A number of private and charitable organisations run groups of academies. These major operators include ARK Schools, Academies Enterprise Trust, E-ACT (formerly Edutrust Academies Charitable Trust), Emmanuel Schools Foundation, Harris Federation, Oasis Trust, Ormiston Academies Trust, LSSAT Academies Trust and United Learning Trust. Academies are subject to inspection by Ofsted.

[23] Appendix F includes commentary on recent education procurement examples

- **Free Schools** are new independent state-funded schools. They provide a way for groups of parents, teachers, charities, existing schools or other organisations to respond to a need for a new school in their community – whether for extra places, to raise standards or offer choice. The ESFA currently have 2 wave rounds a year inviting applications from free school sponsors. Applicant groups have to demonstrate that they have excellent educational expertise and a strong team that is capable of responsibly governing a school. They also have to prove that there is demand for the school in their community and show that they have developed a detailed education plan that will meet the needs of their students. Once established, free schools are legally Academies so have independent governance: free schools are run by an Academy Trust, independent of Local Authority oversight.

The AECOM Stage 1 Infrastructure Advisor analysis included an overview of the process to procure new schools. The commentary below has been updated based on engagement with the ESFA.

- Step 1: Agree the number, type, location and phasing of the new schools and school expansions:
  - Contact the Departments for Children's Services in the Boroughs of Hammersmith & Fulham, Brent and Ealing. The LAs will compare the population projections for OOC with their expected demand for school places and decide if new schools or expansions are necessary.
  - If it is agreed that new schools are needed, the relevant LA must notify the Secretary of State that they plan to seek proposals from sponsors and free school proposers to operate the school. It is also advisable to notify the Regional Schools Commissioner (RSC) for NW London and South Central England and set out the proposals. The remit of RSCs is to uphold the quality of education in their region which includes advising on proposals for new free schools and to deciding on applications from sponsors wishing to operate in a region.
  - The Governors of the schools that are scheduled for expansion must also agree the plans.
- Step 2: Agree which organisation will operate the schools
  - The LAs will run a competitive process for Academy sponsors and free school proposers to operate the schools. The preferred party will be recommended to the Secretary of State but they will have the final decision, albeit delegated through the Regional School Commissioner.
- Step 4: Agree how the capital works will be funded
  - Route 1 - Local Authority run competition/presumption route.
    - Local Authority (LA) identify site for a new school and need for a new school. LA run a mini-procurement exercise to select the academy sponsor, they assess the responses and make a decision.
    - Under route 1, the LA is responsible for funding the site and development of the school.
    - In the case of schools linked to growth from new development, the LA would usually have the site from the developer (at no cost) and use capital to fund the school which is usually predominantly sourced from developer contributions.
    - In the case of schools linked to normal population growth, the LA will access Basic Need funding for the school, this is based on annual pupil growth projections with annual birth rate and GLA projections based on planning permissions (i.e. not Planning Policy allocations as at OPDC).
  - Route 2 - Free School Wave route:
    - Anyone can make an application to run a free school. Applications are increasingly made by academy chains e.g. Harris, ARK, DRET, and West London Free School Trust.
    - The ESFA will assess the applications; the views of the LA will be sought on the best fit of school sponsor to the education need in the area. If an application is successful it will be approved for pre-opening. The DfE will then work with the successful applicant to identify as suitable site for the free school.
    - Under route 2, the DfE are responsible for funding the site acquisition and building the school.
    - Applicants can name S106 sites or development sites/regeneration areas in their applications.
    - If the LA owns the potential school site they will be expected to provide it on a peppercorn rent.

4.9.1 OPDC's Role in Education Facilities Procurement

Figure 6 demonstrates the role of OPDC alongside Local Education Authorities, School providers or proposers and the ESFA in the procurement of new schools. The OPDC are the Plan Making Authority responsible for the regular assessment of the need for childcare, school, higher and further education institutions and community learning facilities and securing sites for future provision recognising local needs and the particular requirements of the education sector. The Local Authorities remain the school place planning authority and the ESFA are responsible for funding for the education and training sector.

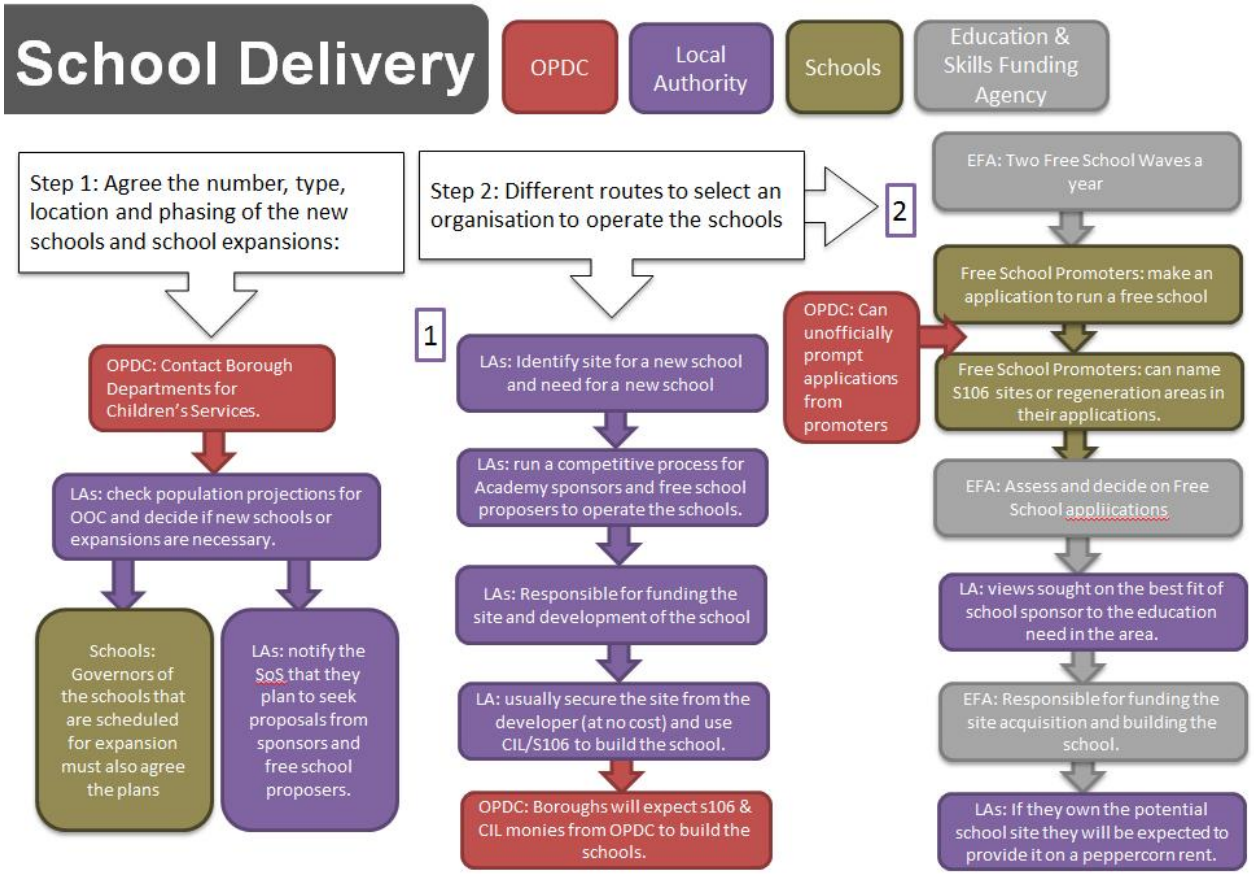


Figure 6. School Delivery & Procurement Steps based on Advice from the ESFA.

4.10 Case Study Examples of High Density & Mixed Use School Designs

Appendix H includes case study examples of primary, secondary and all-through schools which have been built with space savings due to high-density designs or the benefits of co-location, integration and adjacency with other land uses. Table 15 compares the building floorspace, play space and sports provision, other site components and the overall site areas from these examples to the Building Bulletin 103 guidelines.

Key themes emerging from a review of the examples include:

- Minimal or no car parking and use of cycle and scooter parking.
- Residential above primary schools.
- Integrated play/sports spaces at upper storeys within the building.
- Shared school/community use of sports facilities out of school hours.
- Use of off-site sports pitches and arrangements with sports clubs where development site are constrained.

		The buildings		The site – net site area (sq.m)			The site – non net site area	Site Area
Source	**No: of pupils**	**GIA (sq.m)**	**Building Storeys**	**1. Hard informal & social area**	**2. Outdoor PE MUGA[24]**	**3. Soft informal & social area**	**- Entrance paths & roads - Parking - Refuse & Recycling**	
Primary Schools								
Building Bulletin 103	840	3,987	3	1,040	799	2,280	350	5,798 sq.m 0.58 Ha
Byron Court Wembley	1050	4,992	2	Sports provision is extensive and beyond that envisaged on OOC! 3no. under 7/8 football pitches, 1no. under 11/12 football pitch, and 1no. athletics track including a 100m running track. MUGA as an all-weather sport pitch for netball, basketball and mini soccer. The central play area space provides opportunities for tennis and netball, alongside everyday play. The proposals also include a hard surfaced, 80m running track and a long jump sand pit.				18,300 sq.m 1.83 Ha
Avenue Primary School Newham	840	5,163	1-2	3,184	975	3,240		14,450 sq.m 1.44 Ha
QEOP PDZ4 school (Bobby Moore Primary)	420	2,289	2	1,456	741 Also 7,540 Soft Outdoor MUGA on adjacent plot to be shared with Bobby Moore Secondary	816		5,726 sq.m 0.57 Ha
Ark Priory	450	2,422	2-3	1,389	408	376	468	6,650sq.m 0.66 Ha

[24] Multi-Use Games Area.

		The buildings		The site – net site area (sq.m)			The site – non net site area	Site Area
Source	**No: of pupils**	**GIA (sq.m)**	**Building Storeys**	**1. Hard informal & social area**	**2. Outdoor PE MUGA[24]**	**3. Soft informal & social area**	**- Entrance paths & roads - Parking - Refuse & Recycling**	
Holy Trinity Dalston	420	3,213	2-3	Included in total building GIA of 12,979sq.m				4,550 sq.m 0.45 Ha
Plimsoll Building Kings Cross	420 + nursery	4,647*	1	The school playground is contained within the building envelope and forms the lower part of a sequence of terraced amenity spaces				1,170sq.m 0.12 Ha
Secondary Schools								
Building Bulletin 103	1500	11,818	5	1,400	2,178	3,000	2,000	10,942 sq.m 1.09 Ha
Westminster Academy	1175	13,100	5	1,150	1,302			
QEOP PDZ12 school Bobby Moore Academy	1140	9,461	6	2,100	The school will have access to the Olympic Stadium community track and infield area which will extend to 13,698sqm of space during the school day. The Secondary School will also have use of the 7,540 Soft Outdoor MUGA on adjacent plot to be shared with Bobby Moore Primary	359		7,500 sq.m 0.75 Ha
Bridge Academy Hackney	1050	10,250	7	15,500sq.m total building size includes 450-seat performance hall, the base of the building is a sports hall, sixth form study space and a 180-seat lecture theatre. Sports pitches are provided offsite on Haggerston Park				6,000 sq.m 0.6 Ha

		The buildings		The site – net site area (sq.m)			The site – non net site area	Site Area
Source	**No: of pupils**	**GIA (sq.m)**	**Building Storeys**	**1. Hard informal & social area**	**2. Outdoor PE MUGA[24]**	**3. Soft informal & social area**	**- Entrance paths & roads - Parking - Refuse & Recycling**	
Cardinal Pole Catholic School Hackney	1000	9,600	3	2 on site MUGA				12,900 sq.m 1.29 Ha

Table 15. Building Floorspace and Site Area Comparisons from Recently Built Primary, Secondary and All-through Schools

4.11 Education -Summary

- The study assumptions used to generate the school needs in this report have been tested with relevant stakeholders. The London Boroughs of Hammersmith & Fulham, Ealing and Brent have identified the existing schools in the area of influence to the Old Oak and Park Royal development area that may have the potential for off-site expansion to meet the needs of the development in early phases. Proposals for the expansion of these facilities is not yet committed and OPDC will be working with the relevant service providers to further investigate the potential for these facilities to be expanded
- Four on-site schools are needed if the off-site expansion projects can be delivered: two 4FE primary schools, opening in 2026 and 2032; one 9FE secondary school opening in 2028; and, one 4FE all-through school opening in 2039.
- Using a criteria based approach to site selection OPDC have identified candidate sites for the four on-site schools which would be capable of delivering the facility. These are the Cargiant site, the Sword and Shield sites, and the Crossrail depot or HS2 station site.

5. Health

5.1 Health National Context

In 2014 the NHS Five Year Forward View described the need for a higher proportion of healthcare to be undertaken in community rather than hospital settings, and the need to make best use of available assets including more flexible approaches to how facilities are used. It is important to ensure that existing and planned new health infrastructure supports and facilitates change to enable models of care to evolve in the future.

There are currently three broad types of health infrastructure provision:

- Primary Care: GP practices, plus community pharmacists, dentists and opticians;
- Community Healthcare: covering a wide range of diagnostic and healthcare services , including non-acute mental health services; and
- Acute and Specialist Provision.

The NHS General Practice Forward View[25] supports the provision of primary care at scale, including larger practices and/or more joined up networks of GPs that can offer a wider range of services to patients, including extended opening hours. Community healthcare services provide a means of delivering care closer to home than from a hospital setting. Models of community healthcare are based around larger population catchments or localities (50,000 or more people).

The second draft of the North West London Sustainability and Transformation Plan was published in October 2016[26]. The STP recognises that In NW London there is currently significant pressure on the whole system, which must be addressed by a number of factors including the transformation of general practice, with consistent services to the whole population ensuring proactive, co-ordinated and accessible care. This will be delivered through primary care operating at scale through networks, federations of practices or super-practices.

5.2 Health – Engagement

The OPDC Health Advisor has been actively engaging with the various Clinical Commissioning Groups and Directors of Public Health with the result that a project meeting was held which involved the following partners:

- Ealing CCG
- Ealing Council Public Health
- H&F CCG
- Central London, H&F, Hounslow & West London CCGs
- Brent, Harrow, Hillingdon and Ealing CCGs

[25] https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf
[26] https://www.healthiernorthwestlondon.nhs.uk/sites/nhsnwlondon/files/documents/nwl_stp_october_submission_v01pub.pdf

- London Healthy Urban Development Unit (HUDU)
- Triborough Public Health

Following engagement with the CCGs:

- It was agreed that the CCGs will work with partners to develop the service model for the new population in the OPDC area in order to determine the longer-term health facilities required to deliver the service model.
- The CCGs confirmed a preferred high level long-term strategic vision for the health infrastructure required as one large Hub/health centre for Old Oak and two spokes. The Hub/health centre would be a new facility preferably integrated and/or co-located with other public sector providers i.e. education, libraries, social care to drive collaborative working and derive economies of scale. The spokes may be existing or new sites; commentary in Section 5.5 considers the enhancement to two potential spokes at Central Middlesex Hospital and Hammersmith Centre for Health.
- OPDC will then include the CCGs high-level long-term strategic vision for the provision of health facilities in the Draft Local Plan before it goes out for Regulation 19 consultation in Summer 2017. This will allow OPDC to start the process of negotiating the provision of health facilities with developers. However, this will not prevent the CCGs from subsequently choosing an alternative option following their more detailed work to develop the service model.
- The more detailed work by the CCGs and partners on the service model and facilities required will feed into the OPDC master planning process on an ongoing basis.

5.3 Health Assumptions

The assumptions of patient list size per GP and floorspace per GP are taken from the HUDU Planning Contributions Model. This is a comprehensive tool to assess the health service requirements and cost impacts of new residential developments.

- Patient list size per GP: 1,800. Existing list sizes vary between the relevant CCGs, e.g., Ealing 1,971, Hammersmith & Fulham 1,584, Brent 1,827, Hounslow 2,067 and Kensington & Chelsea[27] 1,569;
- Primary Care space per GP: 165sq.m. The basic GP related floorspace requirements are generated from the average space per patient between a 3 GP and a 9 GP Primary Healthcare Centre. The calculation includes provision for: patients' reception spaces; consulting / examination / treatment spaces; office accommodation; staff facilities; and, Utility space and stores. The standard used assumes the changing role of Primary Care in providing a wider range of health services closer to the community.

5.4 Health Service Model Options

Health service models focus around the scale of the health facility and the associated community health services that can be provided alongside primary healthcare based on the different facility sizes. There are two options which have been considered as part of this analysis:

- Option 1: One centrally located facility to serve the OPDC Development Area (circa 50,000 patient list size).

[27] NHS West London Clinical Commissioning Group (CCG) is made up of London Borough of Kensington and Chelsea and Queen's Park and Paddington.

- Option 2: Two facilities, one to serve Old Oak North and one to serve Old Oak South (circa 25,000 – 30,000 patient list size each)

Appendix E provides a review of the advantages, weakness and challenges to delivery of the different health service models. To remain in line with CCG preferences and NHS policy to deliver primary care at scale the modelling is based on option 1. A facility is assumed to be triggered when a three GP patient list size is generated.

The following site size has been determined based on advice in the HUDU model. The list size relates to the population results in Section2.6.

Facility	List Size or GP capacity	Floorspace
Health Centre	59,400 list size (33 GPs)	5,440 sq.m

Table 16. Health facility size assumption

5.5 Off-site Expansion[28]

As part of this Stage 2 analysis the OPDC have sought advice from the Heads of Strategic Estate Development for Brent, Harrow, Hillingdon and Ealing CCGs; and Central London, Hammersmith and Fulham, Hounslow and West London CCGs who clarified that the CCGs would **not** be supportive of the development of five new GP practices (with around 10,000 patients per practice) in the OPDC Area as identified in the DIFS Study. Instead the strategic aim of Brent, Ealing and Hammersmith and Fulham CCGs is to deliver primary care at scale. H&F CCG's longer term strategy is to create one large health facility (shared public sector community hub) in OPDC (likely to be in Old Oak North or Old Oak South) to provide primary care services for the majority of residents in the Hammersmith & Fulham part of the OPDC area. The CCG anticipate that the facility would support a population of 40,000 – 50,000 residents.

The CCGs did identify expansions and relocation to existing health facilities within the vicinity of the OPDC development area which could help contribute toward meeting the needs of the new population:

- Under the North West London (NWL) Shaping a Healthier Future programme the Central Middlesex Hospital (CMH) site has been identified as a Health and Wellbeing Hub+ with a particular focus on elective care. In addition to the hub+ services, Brent CCG and NHSE London primary care team have been working with London North West Hospital Trust (LNWHT) to explore the option of moving primary care into void space at CMH. Two existing GP contracts, currently located in premises within a mile radius of the CMH site, are to be re-procured as part of the national Personal Medical Services (PMS) contract review. (Acton Lane Surgery and Harness Harlesden practice at 150 Hilltop Avenue). NHSE London and Brent CCG are exploring combining these two contracts into one new PMS contract with a list of circa 6,000 patients to be located at the CMH site[29].
- Hammersmith and Fulham CCG have identified that Hammersmith Centre for Health (HCfH) in Hammersmith Hospital is the most suitable site for expansion to support early population growth within OPDC. The expansion could provide additional capacity for circa 2,000 patients. The site is a 25-minute walk from the Oaklands and North Kensington Gate (NKG) developments (1.3 miles).

[28] Appendix C.2 includes more detail on the off-site expansion projects
[29] Brent CCG and NHSE conducted public engagement in November 2016 regarding the proposal to procure one GP list and base it at CMH. The aim is to commence the contract at CMH but if there was a delay in delivery of the premises the service would operate from Hillside temporarily.

Practice name	Current Patient List Size	Proposed Patient List Size	Net additional capacity	Proposed Floor space	Cost Estimate (£000)	Estimated date of delivery	Location of new / expanded site	Current practice catchment area	Walk distance from OPDC
Acton Lane Surgery	3,854	6,000 in new facility at CMH (Initial capacity 12,000 with ability to increase to respond to future growth, up to 15,000)	6,000 (up to 9,000)	600 sq.m	1,900	October 2017	Central Middlesex Hospital Health and Wellbeing Hub+ NW10 7NS	Includes full OPDC area.	0.8 miles/ 16 mins from First Central and Portal Way 1.2 miles/ 24 mins from Oaklands
Harness Harlesden	2,521								
Hillside Primary Care Centre	4 practices currently operate from this site.	When Harness Harlesden moves to CMH there will be potential for the remaining practices to expand.	2,500				NW10 8RY	Covers part of OPDC area	1.7 miles/ 35 mins from Oaklands
Acton Health Centre	3,393	20,000 Several local practices to be relocated here	TBC	2,800 sq.m	16,500	2019/20	W3 8QE	Does NOT include North Acton	1.4 miles /28 mins from Portal Way (16 mins by bus)
Hammersmith Centre for Health	3,000	5,000	2,000		500 to 600		W12 0HS		1.3 miles/ 25 mins from Oaklands* and North Ken Gate+
Total			**10,500**		**19,000**				
Equivalent GPs			**5.8**						

Table 17. Recommended Health Centre relocations & expansions

*(*circa 18 -22 mins by bus + circa 14 mins by bus)*

Based on the location of these off-site expansions in relation to the OPDC development area a series of assumptions have been used for how the equivalent 5.8 GP capacity would be taken up by the OPDC sub areas:

- CMH 4.7 GPs (8,500 list size) is assumed to benefit Old Oak North, North Acton and Park Royal; and HCfH 1.1 GP (2,000 list size) is assumed to benefit Old Oak South.

Figure 7 illustrates the proximity of these recommended health relocations and expansions related to the OPDC Development Area.

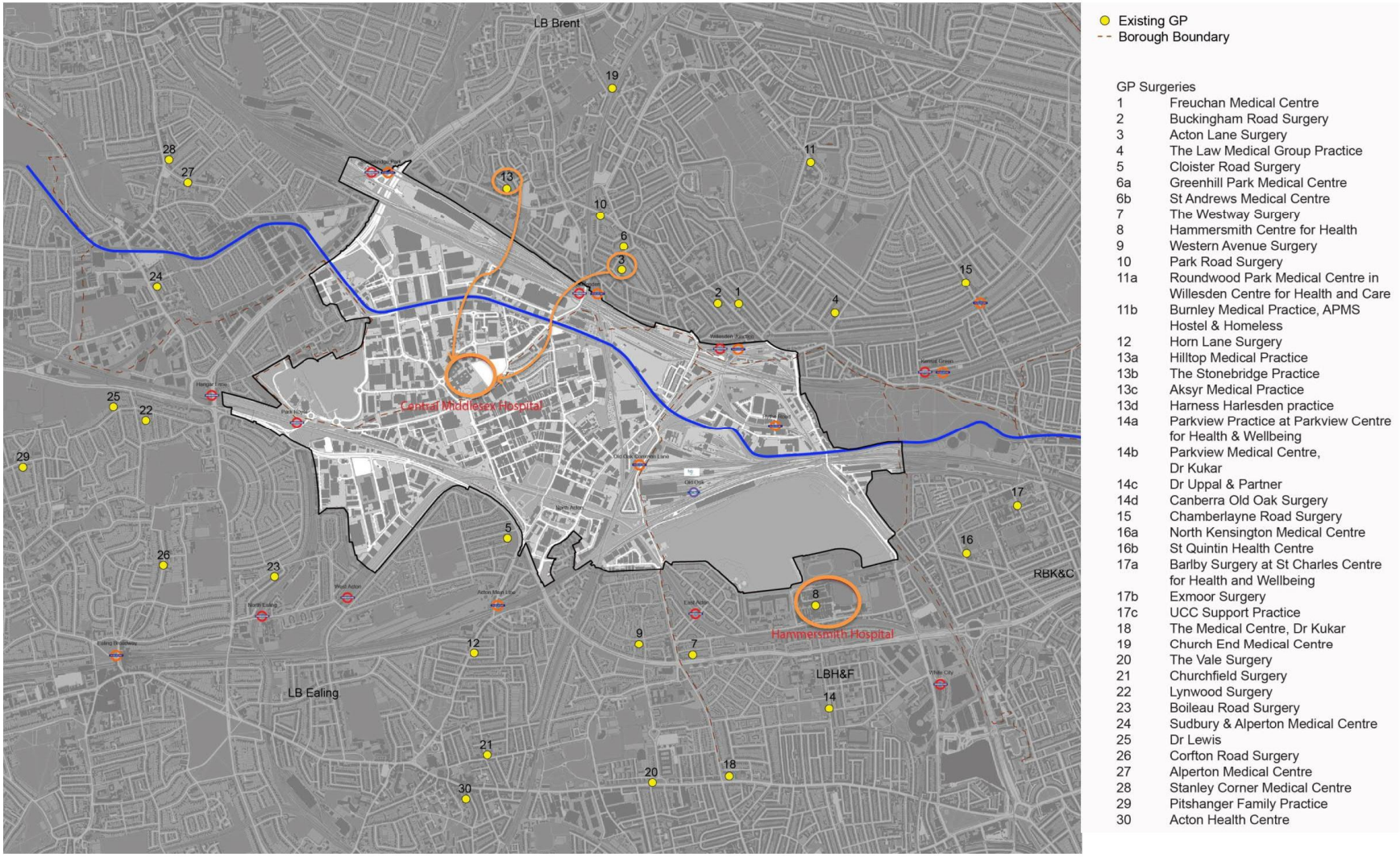


Figure 7. Map of the GP Practices Surrounding the OPDC Development Area

(AECOM (based on OPDC information))

5.6 Number of GPs Build-up by Sub-area and Development Phase

5.6.1 Number of GPs

Table 18 and Table 19 illustrate the number of GPs that would be required to meet the needs arising from 58,558 residents at a 35% affordable housing target or 59,349 residents at a 50% affordable housing target, and the difference in making use of off-site expansion projects. Up to 33 GPs would be needed in the event that all needs are met by on-site facilities and up to 27 GPs would be required if off-site projects are assumed to be delivered.

Affordable Housing Test	35% Affordable Housing					50% Affordable Housing				
Phase	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**
Years	**2017 – 2021**	**2022 - 2026**	**2027 - 2036**	**2037 - 2050**	**2017 - 2050**	**2017 - 2021**	**2022 - 2026**	**2027 - 2036**	**2037 - 2050**	**2017 - 2050**
Old Oak North	1.2	2.9	6.4	3.1	13.6	1.2	3.0	6.5	3.2	13.9
North Acton	2.0	2.3	4.8	1.1	10.2	2.0	2.3	4.8	1.2	10.3
Old Oak South	0.5	0.6	2.9	3.2	7.2	0.5	0.6	3.0	3.3	7.3
Park Royal	0.5	1.0	-	-	1.5	0.5	1.0	-	-	1.5
Whole Scheme	4.2	6.8	14.1	7.5	32.5	4.2	6.9	14.3	7.6	33.0

Table 18. Number of GPs (1 per 1800 People[30]) without use of Off-site Facilities

Affordable Housing Test	35% Affordable Housing					50% Affordable Housing				
Phase	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**
Years	**2017 - 2021**	**2022 - 2026**	**2027 - 2036**	**2037 - 2050**	**2017 - 2050**	**2017 - 2021**	**2022 - 2026**	**2027 - 2036**	**2037 - 2050**	**2017 - 2050**
Old Oak North	- 0.4	2.9	6.4	3.1	12.1	- 0.4	3.0	6.5	3.2	12.3
North Acton	0.4	2.3	4.8	1.1	8.6	0.5	2.3	4.8	1.2	8.7
Old Oak South	- 0.6	0.6	2.9	3.2	6.1	- 0.6	0.6	3.0	3.3	6.2
Park Royal	- 1.1	1.0	-	-	- 0.1	- 1.1	1.0	-	-	- 0.0
Whole Scheme	- 1.6	6.8	14.1	7.5	26.7	- 1.6	6.9	14.3	7.6	27.2

Table 19. Number of GPs (1 per 1800 People) with use of Off-site Facilities

[30] 1GP per 1,800 patients is based on the HUDU Model.

5.7 GP and Surgery Floorspace Yearly Build-up by Sub-area and Development Phase

Table 20 illustrates how the number of GPs and health centre floorspace build-up cumulatively across the development phases. This is only included for the 50% affordable housing test as the maximum scenario of need and to remain in line with Local Plan Policy position. This shows how the capacity of 5.8 GPs at CMH and HCfH is taken up in the early years of the development and at which point this would be exhausted.

50% Affordable Housing Test	**Phase 1**		**Phase 2**		**Phase 3**			**Phase 4**			
Number of GPs (1 per 1,800 people)	2016	2021	2022	2026	2027	2031	2036	2037	2041	2045	2050
Whole Scheme (Without use of off-site)		*4.2*	*5.9*	*11.1*	*12.5*	*18.5*	*25.4*	*26.4*	*29.9*	*32.3*	*33.0*
Whole Scheme (With use of off-site)	*- 5.8*	*- 1.6*	*0.1*	*5.3*	*6.7*	*12.7*	*19.6*	*20.6*	*24.1*	*26.5*	*27.2*
Floorspace (165sq.m per GP)	2016	2021	2022	2026	2027	2031	2036	2037	2041	2045	2050
Whole Scheme (Without use of off-site)		*696*	*968*	*1,830*	*2,066*	*3,049*	*4,187*	*4,359*	*4,939*	*5,337*	*5,440*
Whole Scheme (With use of off-site)	*- 957*	*- 261*	*11*	*873*	*1,109*	*2,092*	*3,230*	*3,402*	*3,982*	*4,380*	*4,483*

Table 20. GP and Health Facility Floorspace Build-up by Development Phase and Development Sub-area

5.8 Health Facility Requirements and Phasing

Table 21 explains the trigger year and size of the health facility on the assumption that it is built in phases to match the build-up of population on site. The 50% affordable housing test and making use of off-site capacity is the scenario that is tested for site requirements. This would require the facility to open in 2025 at 596sq.m, expand to 3,230sq.m at the end of Phase 3 (2036) and expand to a final size of 4,483sq.m at the end of Phase 4 (2050). 50% affordable housing with use of off-site capacity is the scenario that is tested for site requirements as this shows the maximum scenario, in line with Local Plan Policy.

Affordable Housing Test & Without/with use of off-site surgeries	**35% Affordable Housing - Without off-site surgeries**		**35% Affordable Housing - With off-site surgeries**	
Facility size	**Trigger facility size**	**Expanded facility size at end of later phases**	**Trigger facility size**	**Expanded facility size at end of later phases**
1 GP facility (to serve circa 50,000+patient list size)	2021 – 688sq.m	Phase 2 - 1,807sq.m Phase 3 – 4,133sq.m Phase 4 – 5,368sq.m	2025 – 576sq.m	Phase 3 – 3,176sq.m Phase 4 – 4,411sq.m
Affordable Housing Test & Without/with use of off-site surgeries	**50% Affordable Housing - Without off-site surgeries**		**50% Affordable Housing - With off-site surgeries**	
Facility size	**Trigger facility size**	**Expanded facility size at end of later phases**	**Trigger facility size**	**Expanded facility size at end of later phases**
1 GP facility (to serve circa 50,000+patient list size)	2021 – 696sq.m	Phase 2 – 1,830sq.m Phase 3 – 4,187sq.m Phase 4 – 5,440sqm	2025 – 596sq.m	Phase 3 – 3,230sq.m Phase 4 – 4,483sq.m

Table 21. Health Facility Initial Build Size and Subsequent Expansion Floorspace

5.9 Health Site Selection

OPDC's Local Plan includes a 50% affordable housing policy with 25% family housing, subject to viability. The Clinical Commissioning Groups and local authority public health departments have confirmed the ability to expand sites identified for off-site expansion in Section 5.5 and Appendix C.2. On this basis, the OPDC Local Plan needs to model for on-site requirements based on the health facility needs as set out in Section 5.8.

Using the needs analysis and Local Plan Policy position, the trigger years for required on-site facilities have been matched against OPDC's phasing trajectory in order to derive which sites are likely to be being constructed in the year the facility is required and by virtue, which sites would be capable of delivering the facility. In order to identify the most appropriate site, OPDC, in collaboration with AECOM, have defined criteria against which to score the sites. Please refer to Appendix G for details of the criteria and the site selection and scoring results.

The CCG's preferred delivery approach is for a central hub facility. Based on current phasing, this facility is likely to be needed in 2025, the same year as the first primary school. The figure below shows the sites available for the delivery of this facility and the table scores these sites against the criteria. The assessment shows that the Cargiant site scores the highest and should be allocated for the provision of this facility.

As stated in Section 5.8, this hub facility would be delivered in phases. The floorspace provided from the outset would support the needs of the site's planning application. As the population of the wider area increases over time, space would be 'drawn down' from other floorspace in the building and fitted out through planning contributions secured through other development sites. A retrospective pooling contribution mechanism could be employed to facilitate this.

Figure 8. Candidate Sites for the Central Health Hub Facility

5.10 Health Facilities Procurement

The key agencies involved in health facilities procurement are as follows:

- The **Clinical Commissioning Groups** (CCGs) were created following the Health and Social Care Act in 2012, and replaced Primary Care Trusts on 1 April 2013. CCGs are clinically-led statutory NHS bodies responsible for the planning and commissioning of health care services for their local area. Commissioning is about getting the best possible health outcomes for the local population, by assessing local needs, deciding priorities and strategies, and then buying services on behalf of the population from providers such as hospitals, clinics, community health bodies, etc. CCGs are membership bodies, with local GP practices as the members; led by an elected Governing Body made up of GPs, other clinicians including a nurse and a secondary care consultant, and lay members; responsible for healthcare commissioning such as mental health services, urgent and emergency care, elective hospital services, and community care; and, independent, and accountable to the Secretary of State for Health through NHS England.
- **Local Authorities** have, since 1 April 2013, been responsible for improving the health of their local population and for public health services including most sexual health services and services aimed at reducing drug and alcohol misuse. In addition to public health responsibilities, local authority social services have existing duties to provide welfare services such as residential accommodation for those who are in need of care, because of age, illness or disability, which they cannot otherwise obtain. CCGs and Local Authorities work together through health and wellbeing boards to achieve the best possible outcome for the local community, by developing a joint needs assessment and strategy for improving public health.
- **NHS Trusts** - Acute hospitals, mental health services and ambulance services are managed by NHS trusts or NHS foundation trusts. Some acute trusts are regional or national centres for more specialised care, and some are attached to universities and help train health professionals. Hospital trusts can also provide services in the community – for example, through health centres, clinics, or in people's homes
- **Building new facilities** – the responsibilities for estate management are not clear cut. NHS Property Services manages, maintains and improves the properties and facilities within its portfolio which represents around 10 percent of the entire NHS estate. Community Health Partnerships (CHP) is supporting the NHS and wider public sector to develop and implement Local Estate Strategies and is responsible for the overall management of 305 primary and community healthcare buildings across England. Over 300 new integrated community facilities have been developed by 49 LIFT companies which are joint ventures between CHP and a range of Private Sector partners. These are just one of the procurement routes & available frameworks identified in Figure 9.

The AECOM Stage 1 Infrastructure Advisor analysis included an overview of the process to procure new health facilities:

For primary healthcare facilities (i.e. GP surgeries and NHS Dentists facilities) the first step is to contact the relevant Clinical Commissioning Group (CCG) for the area. There are 32 CCGs in London. Each CCG is a statutory NHS body with its own governance arrangements; they are responsible for meeting the health needs of their populations and their main focus is on local issues. There are CCGs for Hammersmith & Fulham, Brent and Ealing.

- The relevant CCG will decide which procurement route is appropriate for the new built primary care facilities and manage the procurement process with OPDC.

Hospitals adjacent to the OPDC development area

For secondary health care facilities: OPDC should ensure that the relevant NHS Hospital Trusts are aware of the projected population growth in the OPDC Area and that they consider this increase in population when planning the future delivery of services.

Table 22 shows hospitals within 5 miles of the Oaklands site, NW10 6DU (representative of the centre of the OPDC core development area). Urgent care centres (UCC) are an alternative to accident and emergency (A&E) and can treat a range of urgent medical problems and minor injuries. Patients who need to be seen quickly, but who do not have life-threatening illnesses or injuries, can walk into UCCs and be seen without an appointment.

	Hospital	Postcode	Distance (miles)	Services
1	Central Middlesex Hospital	NW10 7NS	0.9	UCC (No A&E)
2	Hammersmith Hospital	W12 0HS	0.9	UCC (No A&E) Specialist hospital includes renal, haematology, cancer and cardiology care. Regional specialist heart attack centre. (LAS takes patients with suspected MI direct to Heart Assessment Centre.)
3	Queen Charlotte's & Chelsea Hospital	W12 0HS	0.9	No A&E. Maternity, women's and neonatal care hospital with specialist services for complicated pregnancies, foetal & neonatal care. Midwife-led birth centre.
4	Charing Cross Hospital	W6 8RF	3.1	A&E and hyper acute stroke unit (HASU)
5	St Mary's Hospital	W2 1NY	3.3	A&E and major trauma centre
6	Western Eye Hospital	NW1 5QH	3.7	Specialist eye hospital with a 24-hour eye accident and emergency service.
7	Royal Free Hospital	NW3 2QG	4.0	Provides A&E and general and specialist hospital services
8	Chelsea and Westminster Hospital	SW10 9NH	4.2	Provides A&E and general and specialist hospital services
9	The Royal Marsden Hospital	SW3 6JJ	4.2	Specialist cancer hospital
10	Royal Brompton Hospital	SW3 6NP	4.3	Specialist hospital treating heart and lung disease
11	Ealing Hospital	UB1 3HW	4.4	A&E for adults only
12	Northwick Park Hospital	HA1 3UJ	4.6	A&E and HASU
13	St Mark's Hospital	HA1 3UJ	4.6	Specialist hospital for intestinal and colorectal disorders
14	Royal National Orthopaedic Hospital	W1W 5AQ	4.6	Specialist orthopaedic hospital
15	University College Hospital	NW1 2BU	4.8	Provides A&E and general and specialist hospital services
16	West Middlesex University Hospital	TW7 6AF	4.9	A&E

Table 22. Hospitals within 5 miles of the Oaklands site, NW10 6DU

Source: NHS Choices website www.nhs.uk/pages/home.aspx (accessed 15.05.17)

- Imperial College Healthcare NHS Trust is one of the largest acute Trusts in the country and, in partnership with Imperial College London, is the UK's first Academic Health Science Centre (AHSC). The Trust operates from five sites: Charing Cross Hospital, Hammersmith Hospital, Queen Charlotte's & Chelsea Hospital, St Mary's Hospital and Western Eye Hospital.
- London North West Healthcare NHS Trust is one of the largest integrated care trusts in the country, bringing together hospital and community services across Brent, Ealing and Harrow. The Trust looks after: Central Middlesex Hospital, Ealing Hospital, Northwick Park Hospital, St Mark's Hospital and Community services across Brent, Ealing and Harrow, including Clayponds Rehabilitation Hospital, Meadow House Hospice, Denham Unit and Willesden Centre.

5.10.1 OPDC's Role in Health Facilities Procurement

Figure 9 demonstrates the role of OPDC alongside the Clinical Commissioning Groups in the procurement of new health facilities.

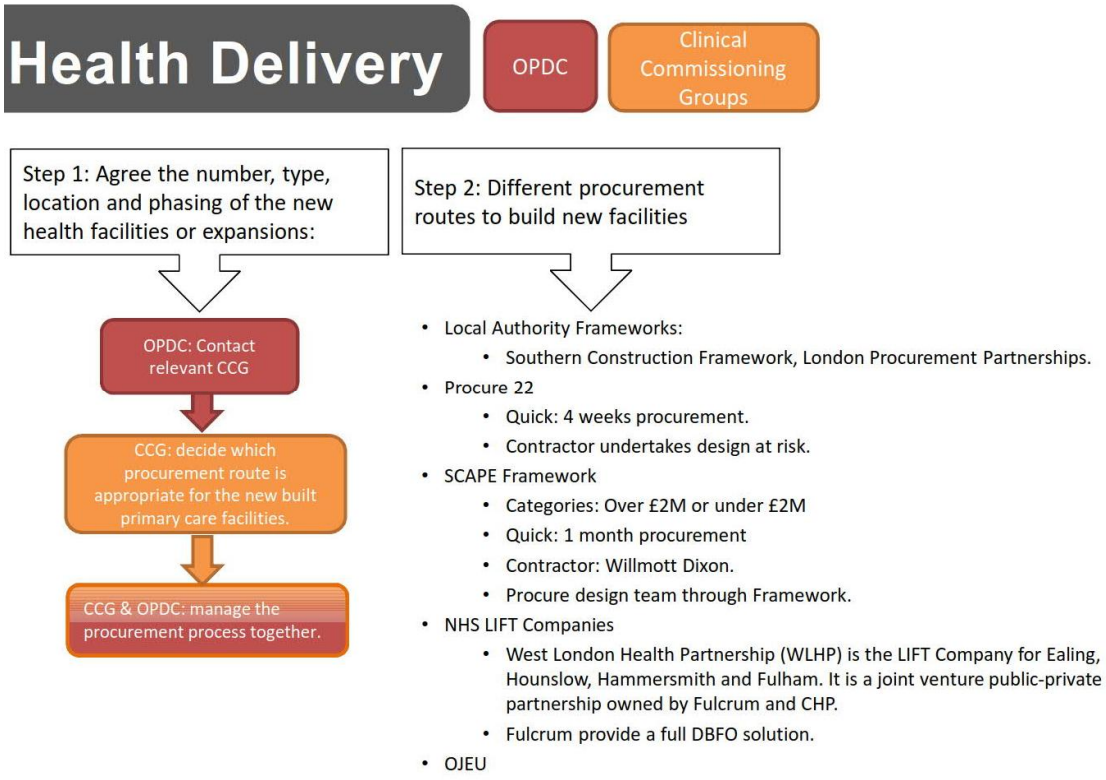


Figure 9. Health Delivery & Procurement Steps

5.11 Case Study Examples of High Density & Mixed Use Health Designs

Appendix H includes case study examples of health facilities which have been built with space savings due to high-density designs or the benefits of co-location, integration and adjacency with other land uses. Table 23 compares the overall site areas from these examples to the HUDU guidelines.

Key themes emerging from a review of the examples include:

- Minimal or no car parking and use of cycle and scooter parking.
- Residential above health facilities.
- Integrated health and social services provision with community based access to screening services and other clinics.
- Health services co-located with sports/leisure centre and/or retail, cafe, pharmacy.

Source	List Size	Floorspace
HUDU Model	59,400 list size	5,525 sq.m
HUDU Model	48,600 list size	4,568 sq.m
The Bloom	18,326 patients	3,400 sq.m
Sir Ludwig Guttmann	10,194 patients	3,800 sq.m
West Norwood	6,032 patients	2,705 sq.m
Hillside Medical Practice	16,437 patients	8,504 sq.m*

Table 23. Building Floorspace and Site Area Comparisons from HUDU Model and Recently Built Primary Care Facilities

** This includes the residential, community and health floorspace.*

5.12 Health - Summary

- The study assumptions used to generate the needs for health facilities in this report have been tested with relevant stakeholders. The Clinical Commissioning Groups and local authority public health departments have confirmed the ability to expand sites identified for off-site expansion to meet the needs of the development in early phases. Proposals for the expansion of these facilities is not yet committed and OPDC will be working with the relevant service providers to further investigate the potential for these facilities to be expanded
- The CCG's preferred delivery approach is for a central hub facility. Based on current phasing, this facility is likely to be needed in 2025. Using a criteria based approach to site selection OPDC have identified the Cargiant site for the central hub facility.
- The assessment shows that this facility can be delivered in phases starting with 596sq.m in 2025, expanding to 3,230sq.m at the end of Phase 3 (2036) and to a final size of 4,483sq.m at the end of Phase 4 (2050). As the population of the wider area increases over time, space would be 'drawn down' from other floorspace in the building and fitted out through planning contributions secured through other development sites. A retrospective pooling contribution mechanism could be employed to facilitate this.

6. Conclusion

6.1 Summary of Overall Needs

Table 24 summarises the education and health facility projects by development sub-area. This indicates the size of the facility, the trigger year for provision and the most suitable site location for the facility (where this has been identified).

Education and Health Facilities	Super Nurseries	Primary Schools	Secondary Schools	All-through Schools	Health Centres
Old Oak North	#1 2020 #2 2022 #3 2025 #4 2030 #5 2035 Sites to be identified	#1 Cargiant site, 4FE, 2026		#1 4FE, 2039 Site to be identified	#1 Cargiant site, 596m^2 in 2025 expanding to 4,483 m^2 by 2050
North Acton			#1 Sword & Shield site, 9FE, 2028		
Old Oak South		#2 Crossrail depot or HS2 station site, 4FE, 2032			
Park Royal					

Table 24. Summary of Education and Health Projects by Sub-area

6.2 Next Steps

6.2.1 OPDC Town Planning Activities

OPDC will use the results of this Stage 2 analysis and the identified facilities details listed in the following town planning activities:

- OPDC Local Plan – the consultation draft Local Plan will include the above projects and the site assessment results as an indication of needs and to secure sites for future provision;
- Planning application negotiations – the above projects will form the basis of OPDC requirements and CIL & S106 negotiations to ensure that development proposals meet the demands of the growing population in Old Oak and Park Royal.
- Duty to cooperate – OPDC will ensure that the assumptions[31] underpinning the Stage 2 analysis are consistent with the assumptions used in Local Plan reviews by the partner Boroughs and in the London Plan review.

6.2.2 2017-2018 Old Oak & Park Royal Masterplan - Parameters & Recommendation for Further Work

OPDC are currently appointing a team that will deliver a vision and spatial masterplan for Old Oak and Park Royal. AECOM's Infrastructure Advisor (IA) role defines the technical requirements for infrastructure and constraints and opportunities to inform the masterplan development. The masterplan team will develop the spatial infrastructure design based on the requirements and evolving layout of development. This AECOM Stage 2 report will become the starting point for the masterplan team to work from and develop further as part of the masterplan commission.

[31] Refer to Section 2.5.

6.2.2.1 Key elements for the masterplan to develop

Support the GLA in their development of a bespoke population modelling approach for the OPDC area which will model the population over time across both public and private development sites from the point at which a new household moves into the site to their forecast characteristics at the end of the development build-out programme in 2050. (Refer to Appendix B.1).

Develop designs for the health and education facilities on the OPDC selected sites as set out in Sections 4.8 and 5.9 alongside proposals for emergency services, green infrastructure, community and sports and socio-economic regeneration.

Create design solutions for the delivery of social infrastructure which develop the good practice identified in Appendix H and embrace the potential for co-location, integration and adjacencies in facility location, design and operation.

Appendices

Appendix A Previous Social Infrastructure Project Lists (Health and Education)

A.1 DIFS Study

Table A.1 summarises the projects identified in the DIFS study.

Project Category	Description	Infrastructure needed in which phases?	What priority attached?	Gross Infrastructure Cost (£000)
Schools	One-form expansion of existing primary school - 210 pupils. Some expansion capacity of existing schools to the north of the area will be required.	Phase 1	2) essential mitigation	4,500
Schools	Two form entry primary school - 480 pupils. Could be located around North Acton. A specific site to be confirmed	Phase 2	2) essential mitigation	8,300
Schools	Two-form expansion of secondary school (off-site; school to be agreed on)	Phase 2	2) essential mitigation	9,800
Schools	All through school - 4FE primary, 4FE secondary and Sixth Form provision	Phase 3	2) essential mitigation	44,015[32]
Schools	Two form entry primary school - 450 pupils. This might be best located in or around North Acton Shield Site	Phase 4	2) essential mitigation	7,800
Schools	Two form entry primary school - 450 pupils. This might be best located in or around IEP depot site	Phase 4	2) essential mitigation	7,800
Health Facilities	Primary health care facilities, generic GP surgery - project 1. The funding line assumes that provision would be built by a developer, but leased back to the NHS to at least cover the developer's costs.	Phase 2	2) essential mitigation	5,027
Health Facilities	Primary health care facilities, generic GP surgery - project 2.	Phase 2	2) essential mitigation	5,027
Health Facilities	Primary health care facilities, generic GP surgery - project 3.	Phase 3	2) essential mitigation	5,027
Health Facilities	Primary health care facilities, generic GP surgery - project 4.	Phase 4	2) essential mitigation	5,027
Health Facilities	Primary health care facilities, generic GP surgery - project 5.	Phase 4	2) essential mitigation	5,027

Table A.1. DIFS Health and Education Project List

[32] The 4FE all-through school for children aged 3-19) costs include the cost of land on which the facility is to be built.

A.2 AECOM Stage 1 Report

Table A.2 show the projects identified in the AECOM stage 1 report including: unit trigger; funding assumption; trigger year and phase; cost estimate; lead-in time in months; and, project "start" year. The tables are sorted by project start.

Project Category	Project Reference	Description	DIFS Unit Trigger Red: AECOM assumptions	S106, CIL or Developers Own Expense Red: AECOM assumptions	OPDC Phasing Trajectory V3		Cost Estimate (£000) Source: Black: OPDC Red: AECOM NYC: Not Yet Costed	Project lead-in time (months)	Project "Start" Year
					Revised Trigger Year	Phasing assumption			
Schools	SS01	One-form expansion of primary school (off-site; school to be agreed on)	3,500	CIL	2022	2	4,500	22.5	2020
Health Facilities	SH01	Health Centre # 1 (Old Oak North)	4,500	S106	2023	2	5,027	32	2020
Schools	SS12 (new)	Early Years Phase 1 (3 x 50 place nurseries)	3,500	DOE	2022	2	2,400	12.5	2021
Schools	SS07 (new)	60 primary school places taken up in existing schools DIFS Phase 1 (off-site)	3,500	CIL	2022	2	839	6	2022
Schools	SS08 (new)	141 secondary places taken up in existing schools DIFS Phase 1 (off-site)	3,500	CIL	2022	2	2,970	6	2022
Health Facilities	SH06 (new)	Dentists Phase 1 (2 dentists)	4,500	S106	2023	2	184	0	2023
Health Facilities	SH10 (new)	Acute Hospital Beds Phase 1 (8 beds)	4,500	CIL	2023	2	4,000	0	2023
Health Facilities	SH11 (new)	Acute Hospital Beds Phase 2 (22 beds)	8,600	CIL	2027	3	11,000	35	2024
Health Facilities	SH02	Health Centre # 2 (Old Oak South – town centre)	8,600	S106	2027	3	5,027	32	2024

Project Category	Project Reference	Description	DIFS Unit Trigger Red: AECOM assumptions	S106, CIL or Developers Own Expense Red: AECOM assumptions	OPDC Phasing Trajectory V3		Cost Estimate (£000) Source: Black: OPDC Red: AECOM NYC: Not Yet Costed	Project lead-in time (months)	Project "Start" Year
					Revised Trigger Year	Phasing assumption			
Schools	SS02	Two-form expansion of secondary school (off-site; school to be agreed on)	8,600	CIL	2027	3	8,000	26.5	2025
Schools	SS03	Two-form primary school Old Oak North	8,600	S106	2027	3	8,300	22.5	2025
Health Facilities	SH07 (new)	Dentists Phase 2 (6 dentists)	8,600	S106	2027	3	487	17	2026
Schools	SS13 (new)	Early Years Phase 2 (6 x 50 place nurseries)	8,600	DOE	2027	3	4,800	12.5	2026
Schools	SS09 (new)	98 primary school places taken up in existing schools Phase 2 (off-site)	8,600	CIL	2027	3	1,370	6	2027
Health Facilities	SH12 (new)	Acute Hospital Beds Phase 3 (45 beds)	13,000	CIL	2031	3	22,500	35	2028
Health Facilities	SH03	Health Centre # 3 (Old Oak South – Wormwood Scrubs)	13,000	S106	2031	3	5,027	32	2028
Health Facilities	SH08 (new)	Dentists Phase 3 (13 dentists)	13,000	S106	2031	3	980	17	2030
Schools	SS06	All-through (3-19 years) four-form school (site to be identified)	16,000	CIL	2034	3	44,015	34.5	2031
Schools	SS14 (new)	Early Years Phase 3 (4 x 50 place nurseries)	16,000	DOE	2034	3	3,200	12.5	2033
Health Facilities	SH13 (new)	Acute Hospital Beds Phase 4 (39 beds)	18,000	CIL	2036	4	19,500	35	2033
Health Facilities	SH04	Health Centre # 4 (Old Oak South – Mitre Way)	18,000	S106	2036	4	5,027	32	2033
Health Facilities	SH09 (new)	Dentists Phase 4 (11 dentists)	18,000	S106	2036	4	854	17	2035

Project Category	Project Reference	Description	DIFS Unit Trigger Red: AECOM assumptions	S106, CIL or Developers Own Expense Red: AECOM assumptions	OPDC Phasing Trajectory V3		Cost Estimate (£000) Source: Black: OPDC Red: AECOM NYC: Not Yet Costed	Project lead-in time (months)	Project "Start" Year
					Revised Trigger Year	Phasing assumption			
Health Facilities	SH05	Health Centre # 5 (Old Oak West)	22,600	S106	2043	4	5,027	32	2040
Schools	SS04	Two-form primary school Old Oak South	24,000	S106	2044	4	7,300	22.5	2042
Schools	SS05	Two-form primary school Old Oak West	24,000	S106	2044	4	7,300	22.5	2042
Schools	SS15 (new)	Early Years Phase 3 10 x 50 place nurseries)	24,000	DOE	2044	4	8,000	12.5	2043
Schools	SS10 (new)	62 primary places taken up in existing schools Phase 4 (off-site)	24,000	CIL	2044	4	867	6	2044
Schools	SS11 (new)	438 secondary places taken up in existing schools Phase 4 (off-site)	24,000	CIL	2044	4	9,226	6	2044

Table A.2. AECOM Stage 1 Health and Education Project List

Appendix B Population and Child Yield Assumptions

B.1 Assumptions Extracted from and Applied to the GLA Child Yield Calculator

B.1.1 Child yield by age group, total child yield, yield aged 19 and over and total population yield

The extracted assumptions of average household size and age range based on a 15 sites sample drawn from the borough selections of Hammersmith & Fulham, Brent and Ealing are set out in Table B1.

	Market Units (beds)				Social Units (beds)			
Age Range	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Yield 0-9	0.12	0.38	0.39	0.63	0.06	0.79	1.15	0.73
Yield 10-18	0.01	0.06	0.22	0.43	0.02	0.22	1.02	1.07
Total Child Yield	0.13	0.44	0.60	1.06	0.08	1.01	2.17	1.80
% Yield 0-9	92%	86%	64%	60%	78%	78%	53%	41%
% Yield 10-18	8%	14%	36%	40%	22%	22%	47%	59%
Yield 19+	1.49	1.83	2.08	2.59	1.24	1.62	1.94	3.24
Total Yield (AHS)	**1.63**	**2.27**	**2.68**	**3.66**	**1.32**	**2.63**	**4.11**	**5.04**

Table B.1. GLA Child Yield Calculator AHS and Population Assumption

The GLA calculator and sample size choices are delivering higher average household sizes for market homes than would normally be presented by developers. These results are driven by real-world sample sizes included in the tool, but we are not able to determine which sites these are, whether they are comparable to the Old Oak development area or whether they represent recently completed/occupied dwellings or more mature developments. These factors will need to be considered by subsequent work to be undertaken by the Old Oak and Park Royal Masterplan Team and by OPDC.

B.1.2 Applying Population Characteristics to Different Tenures

GLA Advice

- Intermediate (shared ownership) units should be included as market tenure and not social tenure. This is because the underlying census data include households in shared ownership under the owner occupied heading which forms a large part of the market tenure grouping.

AECOM Assumption

- London Living Rent units are assumed to have intermediate (shared ownership) characteristics and therefore use the market tenure assumptions.

Applying Discounts to Child Yield

- A 30% discount on child yield is applied to arrive at the number of school places needed. This discount is 'leakage' to private education or home-schooling and is based on Tri-Borough use of the Wandsworth tool.

Differentiating Early Years Yield from Primary Age Yield

The GLA calculator tool does not allow the separation of early years places from primary places. In reality not all of the children aged 0-4 will require or take-up an early years place. Take-up does increase with age with an expected 77 - 80% take-up by the age of 3-4. The DIFS results show a 48:52 ratio of early years:primary age in the age 0-9 results. This ratio has been applied to the yield 0-9 to differentiate between early years and primary school ages.

Accounting for How Households Mature over Time and How Children Age through the School Years

The assumptions in table B1 are applied to the units at each year of the development trajectory. It has not been possible in this exercise to age the household through the remaining years of the development trajectory. This means that the population results use an assumed age range of occupancy from the first year they are occupied and for each subsequent year. The ability to age residents and account for lifetime living and moving around the development over time will need to be considered by subsequent work to be undertaken by the Old Oak and Park Royal Masterplan Team and by OPDC.

B.2 Comparison of Child Yield Results

There have been three outputs of child yield analysis modelling the development. The results are included for comparison and to capture early engagement with partners, including the boroughs and the GLA. The assumptions of affordable housing and unit size mix used to generate these outputs are different.

B.2.1 RBKC for the Tri-Borough Education Schools Authorities

RBKC undertook child yield analysis and population projections for that part of the development trajectory[33] within LB Hammersmith and Fulham.

Scenario & Test	Unit Type	H&F Primary Total Yield	H&F Secondary Total Yield
40% Affordable	Private (Flats and Houses)	*2,621*	*3,280*
40% Affordable	Affordable	*12,402*	*12,402*
	Sub Total	*15,023*	*15,682*
	Less 30%	***10,516***	***10,977***
	Contribution	***£127,620,518***	***£203,550,998***

Table B.2. RBKC Child Yield Results

B.2.2 GLA using the GLA Child Yield Calculator

GLA Economics used the indicative residential growth for the Old Oak site and tested this against three affordable housing scenarios: 20% affordable, 30% affordable and 40% affordable. In each instance the affordable split is 60% social rent, 40% intermediate housing. For the purposes of the yield model intermediate housing is treated the same as market housing. For the estimates provided below no information on unit size was available and so a single average rate was applied to all units. Results are shown below for 40% affordable housing for consistency with the RBKC analysis.

Scenario	Local Authority	Age 0-9 Primary Total Yield	Age 10-18 Secondary Total Yield
40% Affordable	Hammersmith & Fulham	9,520	3,800
	Ealing	1,080	430
	Brent	410	170
	Total	***11,010***	***4,400***

Table B.3. GLA Child Yield Results

[33] Provided by OPDC on 21 October 2016.

B.2.3 AECOM & OPDC Use of the GLA Child Yield Calculator

The GLA recommended to OPDC that the GLA Child Yield Calculator should be used to test the development trajectories as part of this Stage 2 analysis. AECOM and OPDC have used the calculator to test the early development trajectory. The results are shown in table B.4. These are based on the same affordable housing, tenure mix and unit size mix assumptions as in Section 2.5:

	Age Range	50% Affordable Housing Test	35% Affordable Housing Test
Child Yield	Yield 0-9/10	8,773	8,411
	Yield 11-18	3,367	2,976
	Total Child Yield	12,140	11,384
Schools Need Analysis	0-9/10 places (30% disc)	6,141	5,887
	11-18 places (30% disc)	2,356	2,083
	0-9/10 Forms of Entry	29	28.0
	11-18 Forms of Entry	15	13
	Early Years & Primary schools (4FE)	**7.25**	**7**
	Secondary schools (8FE)	**1.9**	**1.6**

Table B.4. AECOM Child Yield Results[34.]

The GLA calculator tool does not allow the separation of early years places from primary places. In reality not all of the children aged 0-4 will require or take-up an early years place. Take-up does increase with age with an expected 77-80% take-up by the age of 3-4. Therefore the assumption of up to 7 early years & primary school facilities in table B.4 is an overestimate. The DIFS results show a 48:52 ratio of early years: primary age in the age 0-9 results. If this ratio was applied to the 50% affordable housing test it would result in a need for up to 3,193 primary school places, equivalent to 15 forms of entry or 3.8 primary schools. Table B.5 shows the results from use of the GLA calculator tool applying the 48:52 ratio to ages 0-9.

	Age Range	50% Affordable Housing Test	35% Affordable Housing Test
Child Yield	Yield 0-9/10	8,773	8,411
	Yield 11-18	3,367	2,976
	Total Child Yield	12,140	11,384
Schools Need Analysis	5-9/10 places (30% disc)	3,193	3,061
	11-18 places (30% disc)	2,356	2,083
	5-9/10 Forms of Entry	15.2	14.6
	11-18 Forms of Entry	15.7	13.9
	Primary schools	**3.8**	**3.6**
	Secondary schools	**1.9**	**1.7**

Table B.5. AECOM Child Yield Results (with Adjusted Primary School Age Children)

Summary – Comparing Results for the End-state of Development

The results using the GLA Child Yield Calculator are showing a significant increase on the number of children and the number of schools required compared to that in the DIFS[35]. The AECOM modelled numbers would require four 3FE primary schools and two 8FE secondary schools. This is an increase of one primary schools and one secondary schools on the projects identified in the DIFS.

[34]The number of Early Years & Primary schools are based on 4 forms of entry school size (i.e. 840 places). The number of Secondary schools are based on 8FE school size (i.e. 1200 places)
[35] The DIFS scenario was modelled on 35% Affordable Housing, 60:40 social rented and shared ownership and 25% 1-bed, 50% 2-bed and 25% 3-bed equally apportioned over the different tenures.

	DIFS March 2015 35% Affordable	GLA 40% Affordable	AECOM (50% Affordable)	Maximum difference
Age 0-9/10	5,861	11,010	8,773	+ 5,149
Age 11-15/18	1,574	4,400	3,367	+2,826
Net of 15% leakage to private sector (30% for AECOM test)	2,390 early years 2,591 Primary 1,338 Secondary	9,358 Primary 3,740 Secondary	4,211 early years 3,193 Primary 2,356 Secondary	+1,149 Primary +2,402 Secondary
Forms of Entry	1,196 early years places 12.34 FE Primary 8.92 FE Secondary	44 FE Early Years & Primary 24 FE Secondary	15 FE Primary 15 FE Secondary	+3 FE Primary +6 FE Secondary
Number of Schools	3 Primary schools 1 all through 3-19 school	14 Early Years & Primary 3 Secondary	3.8 Primary 1.9 Secondary	+ 1 Primary + 2 Secondary

Table B.6. Comparison of Child Yield Results

B.2.4 30% Family Housing Sensitivity Test Results

Sensitivity testing has considered the implications of 30% family housing. The results below show the impact of this test on the total population and the requirements for early years, school and health facilities.

Total Population by Development Phase & Development Sub-area

Affordable Housing Test	35% Affordable Housing						50% Affordable Housing					
Phase	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**	**Total %**	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**	**Total %**
Years	**2017 - 2021**	**2022 - 2026**	**2027 - 2036**	**2037 - 2050**	**2017 - 2050**	**2017 - 2050**	**2017 - 2021**	**2022 - 2026**	**2027 - 2036**	**2037 - 2050**	**2017 - 2050**	**2017 - 2050**
Old Oak North	2,150	5,360	11,719	5,756	24,985	42%	2,184	5,446	11,907	5,848	25,385	42%
North Acton	3,658	4,134	8,698	2,076	18,566	31%	3,689	4,168	8,771	2,093	18,722	31%
Old Oak South	899	1,036	5,345	5,866	13,145	22%	913	1,052	5,430	5,960	13,355	22%
Park Royal	899	1,865	-	-	2,763	5%	913	1,894	-	-	2,807	5%
Whole Scheme	7,605	12,394	25,762	13,698	59,459		7,699	12,561	26,108	13,901	60,269	
Whole Scheme %	13%	21%	43%	23%			13%	21%	43%	23%		

Table B.7. Total Population by Development Phase and Development Sub-area (30% Family Housing)

Early Years Requirements

Affordable Housing Test	50% Affordable Housing
	Trigger Year
Early Years Super Nursery #1 (120 places)	2020
Early Years Super Nursery #2 (120 places)	2022
Early Years Super Nursery #3 (120 places)	2025
Early Years Super Nursery #4 (120 places)	2030
Early Years Super Nursery #5 (120 places)	2035

Table B.8. Early Years Super-Nurseries (30% Family Housing)

School Requirements and Trigger Years

Affordable Housing Test	35% Affordable Housing				50% Affordable Housing			
Without/with use of off-site schools	**Without off-site**	**Without off-site**	**With off-site**	**With off-site**	**Without off-site**	**Without off-site**	**With off-site**	**With off-site**
Primary ages 4-9/Secondary ages 10-18	**Primary**	**Secondary**	**Primary**	**Secondary**	**Primary**	**Secondary**	**Primary**	**Secondary**
Whole Scheme	**14.9**	**15.0**	**10.9**	**12.0**	**15.5**	**16.9**	**11.6**	**13.9**
School service model	Three 4FE primary schools - 2020, 2026, 2033 One 3FE primary school - 2040 One 8FE secondary school - 2023 One 7FE secondary school - 2026 6 schools in total		Two 4FE primary schools – 2026, 2032 One 8 FE secondary school - 2028 One 3FE primary & 4FE secondary all-through school – 2038* 4 schools in total		Four 4FE primary schools – 2020, 2026, 2032, 2039 One 10 FE secondary school - 2023 One 7FE secondary school - 2037 6 schools in total		Two 4FE primary schools – 2026, 2032 One 10FE secondary school - 2027 One 4FE all-through school – 2039** 4 schools in total	

** Primary 1FE trigger is two years later in 2040: both age groups could open at the same time, or the secondary could open in a temporary site or within ANother school site.*

*** Primary and Secondary 1FE triggers occur in the same year: both age groups could open at the same time.*

Table B.9. Number of Schools and School Triggers Years (30% Family Housing)

Health Facility Requirements and Phasing

Affordable Housing Test & Without/with use of off-site surgeries	35% Affordable Housing - Without off-site surgeries		35% Affordable Housing - With off-site surgeries	
Facility size	**Trigger facility size**	**Expanded facility size at end of later phases**	**Trigger facility size**	**Expanded facility size at end of later phases**
1 GP facility (to serve circa 50,000+patient list size)	2021 – 697sq.m	Phase 2 - 1,833sq.m Phase 3 – 4,195sq.m Phase 4 – 5,450sq.m	2025 – 599sq.m	Phase 3 – 3,238sq.m Phase 4 – 4,493sq.m
Affordable Housing Test & Without/with use of off-site surgeries	**50% Affordable Housing - Without off-site surgeries**		**50% Affordable Housing - With off-site surgeries**	
Facility size	**Trigger facility size**	**Expanded facility size at end of later phases**	**Trigger facility size**	**Expanded facility size at end of later phases**
1 GP facility (to serve circa 50,000+patient list size)	2021 – 706sq.m	Phase 2 – 1,857sq.m Phase 3 – 4,250sq.m Phase 4 – 5,525sqm	2025 – 629sq.m	Phase 3 – 3,293sq.m Phase 4 – 4,568sq.m

Table B.10. Health Facility Initial Build size and Subsequent Expansion Floorspace (30% Family Housing)

Appendix C Off-site Expansion Projects Commentary

C.1 Education Facilities: Existing Capacity and New-build Projects

The OPDC Development Infrastructure Funding Study (DIFS) March 2015 recommendations were for six school projects to be provided across phases 2, 3 and 4 of the development as essential mitigation. These recommendations were incorporated into the AECOM Stage 1 Infrastructure Advisor analysis alongside additional projects identified through gap analysis and the assumed details, trigger point and cost of the projects are indicated in Table C.1.

Project Reference	Description	DIFS Unit Trigger	Trigger Year	Phasing assumption	S106, CIL or Developers Own Expense	S106 Zone Source: OPDC Infra list 27/1/16	Cost Estimate (£000) Source:: OPDC
SS01	1FE expansion of primary school (off-site)	3,500	2022	2	CIL		4,500
SS02	2FE expansion of secondary school (off-site)	8,600	2027	3	CIL		8,000
SS03	Two-form primary school Old Oak North	8,600	2027	3	S106	OON	8,300
SS04	Two-form primary school Old Oak South	24,000	2044	4	S106	OOS	7,300
SS05	Two-form primary school Old Oak West	24,000	2044	4	S106	OOW	7,300
SS06	All-through (3-19 years) four-form school (site TBC)	16,000	2034	3	CIL		44,015
SS07 (new)	60 primary places take up in existing schools (off-site)	3,500	2022	2	CIL		839
SS08 (new)	141 secondary places take up in existing schools (off-site)	3,500	2022	2	CIL		2,970
SS09 (new)	98 primary places take up in existing schools (off-site)	8,600	2027	3	CIL		1,370
SS10 (new)	62 primary places take up in existing schools (off-site)	24,000	2044	4	CIL		867
SS11 (new)	438 secondary places take up in existing schools (off-site)	24,000	2044	4	CIL		9,226
SS12 (new)	Early Years (3 x 50 place nurseries)	3,500	2022	2	DOE		2,400
SS13 (new)	Early Years (6 x 50 place nurseries)	8,600	2027	3	DOE		4,800
SS14 (new)	Early Years (4 x 50 place nurseries)	16,000	2034	3	DOE		3,200
SS15 (new)	Early Years 10 x 50 place nurseries)	24,000	2044	4	DOE		8,000

Table C.1. Schools Project Recommendations from DIFS Study and AECOM Stage 1 Report

As part of the Stage 2 analysis AECOM have sought advice from the London Boroughs of Hammersmith & Fulham, Ealing and Brent on existing schools in the wider area of influence to the Old Oak and Park Royal development area that have either surplus places or the potential to expand in order to contribute towards meeting needs arising in the early phase of development.

C.1.1 London Borough of Hammersmith & Fulham (LBHF)

The LBHF School Organisation Plan forecasts to 2023 and already includes assumptions derived from the DIFS. On the basis of this plan LBHF has available primary school places for the next 10 years and enough secondary places to 2022. Therefore the assumptions in the DIFS to expand existing schools to accommodate the early phase needs arising from the OPDC development area remain sound.

AECOM have sought advice from the London Borough of Hammersmith on existing schools in the area of influence to the Old Oak and Park Royal development area that could have surplus places or the potential to expand in future years in order to contribute towards meeting needs arising in the early phase of development.

The potential approach to school expansion in LBHF in the early phases of the OPDC development area would be to use surplus places in primary schools such as Old Oak and Kenmont to absorb the initial localised increase in demand, while working with OPDC and school governors to identify schools suitable for expansion in the longer term. Proposals for the expansion of these facilities is not yet committed and OPDC will be working with the relevant service providers to further investigate the potential for these facilities to be expanded:

- Old Oak Primary School http://www.oldoakprimary.co.uk/
- Kenmont Primary School http://www.kenmont-primary.org/
- Phoenix High School http://www.phoenixhighschool.org/ is identified at this early stage as a school suitable for expansion 5FE to a 7FE secondary school (i.e. additional 300 places).
- Special Education Needs (SEN) units of 20 place provision (3 classes) linked to autism associated with one of the primary schools to be provided to meet the needs of the development.

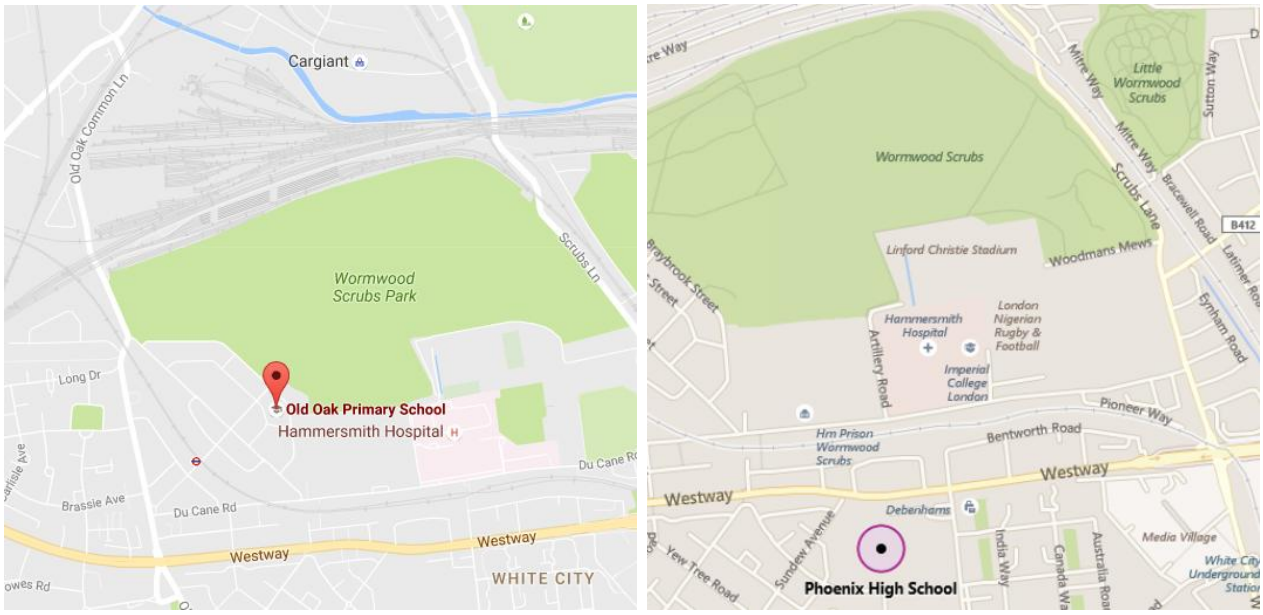


Figure C.1. London Borough of Hammersmith & Fulham (LBHF)

C.1.2 London Borough of Ealing

AECOM have sought advice from the London Boroughs of Ealing on existing schools in the area of influence to the Old Oak and Park Royal development area that have either surplus places or the potential to expand in order to contribute towards meeting needs arising in the early phase of development.

The potential approach to school expansion in LB Ealing in the early phases of the OPDC development area is as follows. Proposals for the expansion of these facilities is not yet committed and OPDC will be working with the relevant service providers to further investigate the potential for these facilities to be expanded:

- West Twyford Primary School http://www.west-twyford.ealing.sch.uk/ was expanded by 1FE in 2013-2014. The school is located on a large site with the potential to expand by a further 1-2 FE.
- Other options include: John Perryn Primary School http://www.johnperryn.ealing.sch.uk , while closer to the site is on a smaller site that would struggle to expand further.
- The Ellen Wilkinson School for Girls http://www.ellenwilkinson.ealing.sch.uk expanded from 7FE to an 8FE secondary school (i.e. additional 150 places).

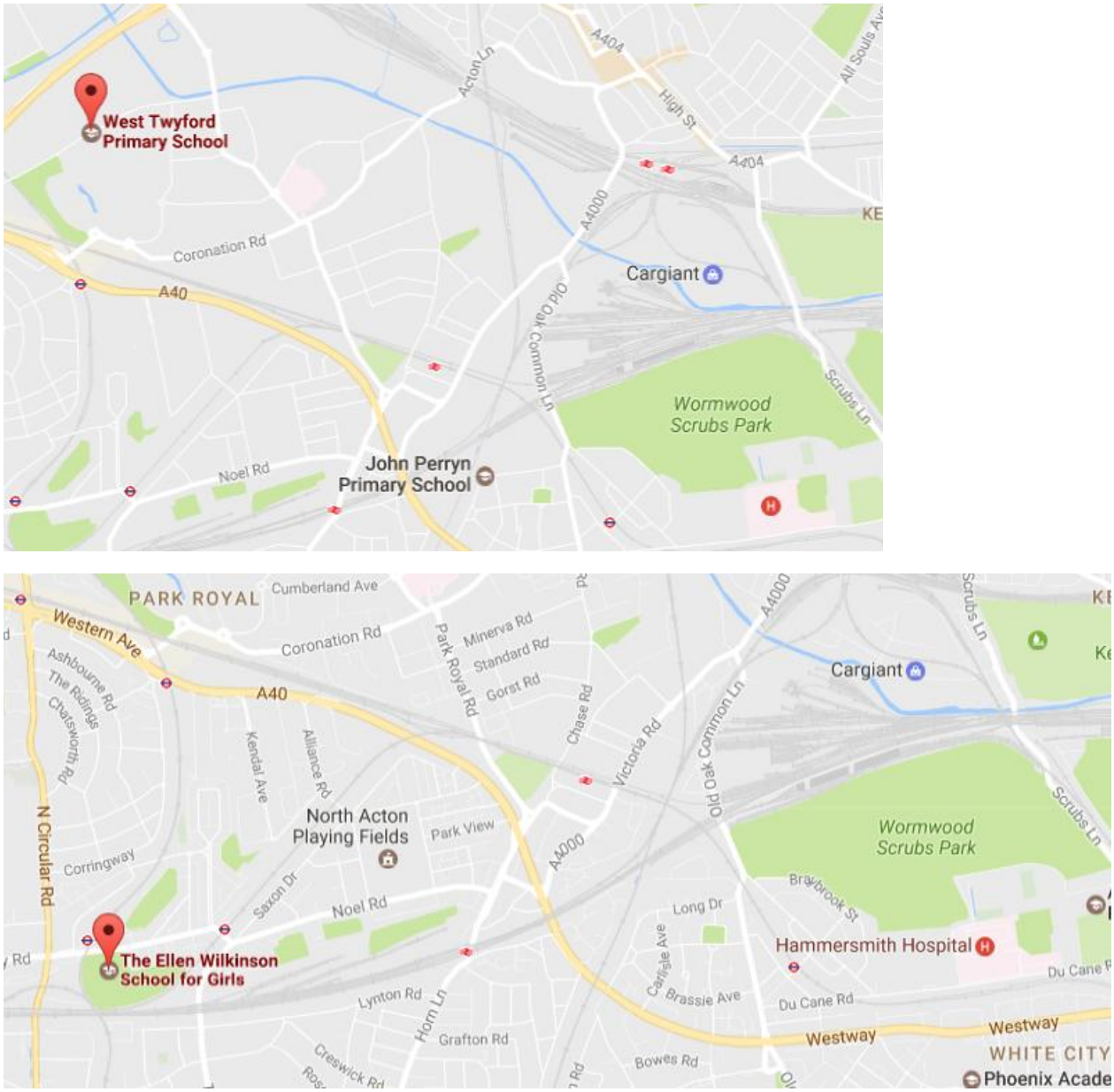


Figure C.2. London Borough of Ealing

C.1.3 London Borough of Brent

The LB Brent has confirmed that there are no options for school expansion projects which could benefit the OPDC development area. The preferred approach is to take advantage of potential surplus places in existing schools. LB Brent has provided details of surplus places in primary and secondary schools in the school place planning area which is closest to the OPDC development area. AECOM have focussed on those schools with a significant number of spare places rather than include all the surplus places provided by LB

Brent. As at October 2016 there are a total of 177 primary places and 247 secondary places. These allows for a retention of 5% surplus places to allow for churn in school numbers in line with good practice and only highlights those schools with a significant number of spare places. Table C2 identifies these places and the equivalent number forms of entry (FE).

	Total places Reception to Year 6	Spare capacity as at October 2016	Spare capacity allowing 5% for churn	Forms of Entry
Primary admissions capacity for the 2016/17 academic year				
Harlesden	450	89	66.5	0.3
St Mary's RC	420	132	111	0.5
Total			**177.5**	**0.8**
Secondary admissions capacity for the 2016/17 academic year				
Ark Elvin Academy	1080	231	177	1.2
Newman Catholic College	600	100	70	0.5
Total			**247**	**1.6**

Table C.2. LB Brent Spare Capacity in Existing Schools in School Place Planning Area 4

C.1.4 Emerging CarGiant Proposals

The emerging proposals currently under development by Cargiant, London & Regional Properties, and PLP Architecture are testing options for accommodating a 3 form entry (3FE) Primary School within the Old Oak Park masterplan.

The required internal accommodation is to be provided over five storeys:

- Ground floor early years and community use
- First floor shared teaching and support spaces
- Three floors of classrooms in groups of 3 form entry, with an external terrace per floor
- Roof top enclosed play space

The design approach provides:

- The required hard play area through the roof top area and terraces
- The soft play area is under the requirements however the site area could increase dependent on the residential requirements
- The Nursery external area can be separate to the school
- The terraces and hall act as a buffer from the existing noise sources to the teaching spaces

In front of the school site will be a park, which is connected with a bridge over the railway line to the eastern most part of the masterplan. At five minutes' walk from the school site is an existing birchwood area, next to Paddington Branch, which will be retained within the masterplan. This area could be used for educational purposes. The school will be located at ten minutes' walk from Wormwood Scrubs park, which could also be used for education.

C.2 Health Facilities: Existing Capacity and New-build Projects

The OPDC Development Infrastructure Funding Study (DIFS) March 2015 recommendations were for five health centres to be provided across phases 2, 3 and 4 of the development as essential mitigation. These recommendations were incorporated into the AECOM Stage 1 Infrastructure Advisor analysis and the assumed details, trigger point and cost of the projects are indicated in Table C.3.

Project Reference	Description	DIFS Unit Trigger	Trigger Year	Phasing assumption	S106, CIL Developers Own Expense	S106 Zone Source: OPDC Infra list 27/1/16	Cost Estimate (£000) OPDC
SH01	Health centre # 1 (Old Oak North)	4,500	2023	2	S106	OON	5,027
SH02	Health centre # 2 (Old Oak South – town centre)	8,600	2027	3	S106	OOS	5,027
SH03	Health centre # 3 (Old Oak South – Wormwood Scrubs)	13,000	2031	3	S106	OOS	5,027
SH04	Health centre # 4 (Old Oak South – Mitre Way)	18,000	2036	4	S106	OOS	5,027
SH05	Health centre # 5 (Old Oak West)	22,600	2043	4	S106	OOW	5,027

Table C.3. Health Centres Recommendations from DIFS Study and AECOM Stage 1 Report

As part of this Stage 2 analysis the OPDC have sought advice from the Head of Strategic Estate Development for Brent, Harrow, Hillingdon and Ealing CCGs and Head of Strategic Estate Development for Central London, Hammersmith and Fulham, Hounslow and West London CCGs who clarify that the CCGs would **not** be supportive of the development of five new GP practices (with around 10,000 patients per practice) in the OPDC Area. Instead the strategic aim of Brent, Ealing and Hammersmith and Fulham CCGs is to deliver primary care at scale by investing in new premises that support the delivery of services to a minimum of 20,000 registered patients with an indicative floor space of circa 1000 sq.m., and to deliver out of hospital and local services closer to where people live.

The aim of the Brent CCG Estates Plan is to maximise the use of the existing health care estate in the Borough by reconfiguring space to support the delivery of newly commissioned services and by relocating some existing services to a more appropriate health care setting. Brent CCG has identified the need for creating three out of hospital Hubs:

- Central Middlesex Hospital (CMH)
- Willesden Centre for Health and Care
- Wembley Centre for Health and Care

Under the North West London (NWL) Shaping a Healthier Future programme the CMH site has been identified as a Health and Wellbeing Hub+ with a particular focus on elective care. The Brent out of hospital strategy sets out a range of services that will be provided at the Hub+.

- Major hub for primary care and community services including additional out-patient clinics and relocation and expansion of community rehabilitation beds from Willesden.
- Elective Orthopaedic Centre.
- Brent's Mental Health Services from Park Royal Centre for Mental Health.
- Regional genetics service relocated from Northwick Park Hospital.

In addition to the hub+ services, Brent CCG and NHSE London primary care team have been working with London North West Hospital Trust (LNWHT) to explore the option of moving primary care into void space at CMH. Two existing GP contracts, currently located in premises within a mile radius of the CMH site, are to be re-procured as part of the national Personal Medical Services (PMS) contract review. (Acton Lane Surgery and Harness Harlesden practice at 150 Hilltop Avenue). NHSE London and the CCG are exploring combining these two contracts into one new PMS contract with a list of circa 6,000 patients to be located at the CMH site[36].

The cost to refurbish the space to meet the requirements of a primary care facility is estimated to be £1.9m. As CMH is a PFI building the works to the site must be undertaken by the PFI Project Co. The build cost would be tendered to demonstrate value for money. LNWHT has identified a space, adjacent to the Urgent Care Centre, of circa 600 sq.m which can be converted to provide sufficient accommodation to service this GP list with adequate space for growth to accommodate the high number of new residential developments in the area. The aim is to create the primary care facility at CMH by October 2017. The initial capacity will be for 12,000 patients with the ability to increase to respond to growth in the future by using a flexible design and increasing operational hours in line with the NHS Five Year Forward View.

Ealing CCG has confirmed that it does not wish to set up a new GP practice in North Acton. The Ealing CCG Estates Plan has identified two practices close to the OPDC Area that are suitable for expansion:

- Cloister Road Surgery. 41-43 Cloister Road, Acton, W3 0DF. Current List size on NHS choices on 31/10/16: 8954 patients. 9 GPs. Ealing CCG and the practice applied for investment from NHSE's 2016/17 Estates and Technology Transformation Fund to expand the size of the practice at a cost of circa £1.1 million. However, the surgery was not successful in securing funding from NHSE.
- Acton Health Centre 35-61 Church Road, Acton, W3 8QE. Current list size on NHS choices on 31/10/16: 3393 patients. 1 GP plus a locum. The CCG is planning to expand the size of this practice and develop it as an out of hospital local services hub with primary care services for circa 20,000 patients, community services and outpatient services. It should be noted that this practice is 1.4 mile walk from W3 6RS (approximately a 28 min walk). The nearest station to the practice is Acton Central.

Hammersmith and Fulham CCG have identified that Hammersmith Centre for Health (HCfH) in Hammersmith Hospital is the most suitable site for expansion to support early population growth within OPDC. HCfH is a primary care facility with a current list size of circa 3,000 patients. The expansion could provide additional capacity for circa 2,000 patients at an estimated cost of £500k to £600k. The CCG has already discussed this strategy with Imperial College Healthcare NHS Trust (ICHT), which includes Hammersmith Hospital and four other hospitals across NW London, and agreed that there is space available for expansion of HCfH. The site is a 25 minute walk from the Oaklands and North Kensington Gate (NKG) developments (1.3 miles).

H&F CCG's longer term strategy is to create one large health facility (shared public sector community hub) in OPDC (likely to be in Old Oak North or Old Oak South) to provide primary care services for the majority of residents in the Hammersmith & Fulham part of the OPDC area. The CCG anticipate that the facility would support a population of 40,000 – 50,000 residents. The CCG have highlighted that a mechanism will be required to scale up the size of the facility as the population increases in Old Oak because the NHS cannot fund the full size facility from day 1.

On Tuesday 24th January 2017, the OPDC held a Health Infrastructure Workshop with attendees from: Ealing CCG, Ealing Council Public Health, Central London, H&F, Hounslow & West London CCGs, Brent, Harrow, Hillingdon and Ealing CCGs, H&F CCG, the London Healthy Urban Development Unit, and Triborough Public Health. The details in Table 17 were discussed and agreed as working assumptions for this stage 2 AECOM report. Following the meeting it was agreed that the CCGs need to work with health partners to develop the service model for the new population in the OPDC area in order to determine the health facilities required to deliver the service model. The service model will consider changes that are likely to occur in the next 20 – 25 years, such as how people will use health care, including use of digital facilities, and changes to health care estate. The CCGs and health partners agreed to form a project group to work with OPDC on these points and alongside the Old Oak and Park Royal Masterplan Team when they start their work in the Spring.

[36] Brent CCG and NHSE conducted public engagement in November 2016 regarding the proposal to procure one GP list and base it at CMH. The aim is to commence the contract at CMH but if there was a delay in delivery of the premises the service would operate from Hillside temporarily.

Appendix D Building Bulletin 103 Assumptions

Guidance on space standards for primary and secondary schools can be found in Building Bulletin 103: Area guidelines for mainstream schools[37]. The document sets out simple, non-statutory area guidelines for mainstream school buildings (part A) and sites (part B) for all age ranges from 3 to 19. This guidance can be used to estimate the area needed for new schools, as well as the extra building area that may be needed for schools increasing in size. The guidance is generally written to apply to new buildings in primary and secondary schools. The recommended area in square metres (sq.m) for various categories of space and individual types of spaces, or rooms, are shown on graphs and based on simple formulae. All formulae use a 'base' area and an area per pupil place.

Part A: The buildings

This part sets out how to establish the floor area requirements for spaces within primary and secondary school buildings. For middle schools and all age schools the sizes of spaces can be established by referring to the relevant areas for primary and secondary schools, as explained in annex A.

Part A is in three sections, as shown in figure 1 below:

- **Net area**, which is the usable area and comprises basic teaching area; halls, dining and PE spaces; learning resource areas; staff and administration; and storage;
- **Non-net area**, which supports the functioning of the building, and includes toilets and personal care, kitchen facilities, circulation, plant and internal walls;
- **Supplementary area** (including net and non-net), which is used for non-school or support functions such as specially resourced special needs facilities.

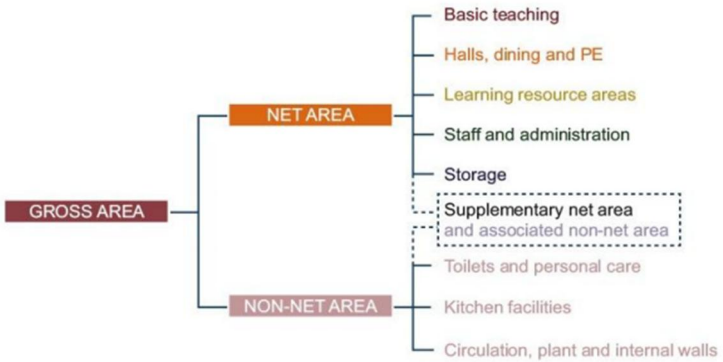


Figure 1: Categories of space that make up gross and net area

Part B: The site

This part of the guide sets out how to establish the site area requirements for a school. For middle schools and all age schools the sizes of spaces can be established by referring to the relevant areas for primary and secondary schools, as explained in annex B. It is in three sections: net site area; non-net site area; and, supplementary area.

Part A is in three sections, shown in figure 19 below:

- **Net site area**, which is the usable site area available to pupils, and is also known as the 'playing field area' when considering land disposals (*Section 77 of the School Standards and Framework Act 1998*);
- **Non-net site area**, which supports the functioning of the site and includes the footprint of buildings and access areas such as paths, roads and parking;
- **Supplementary area,** which is used for non-school or support functions such as specially resourced special needs facilities.

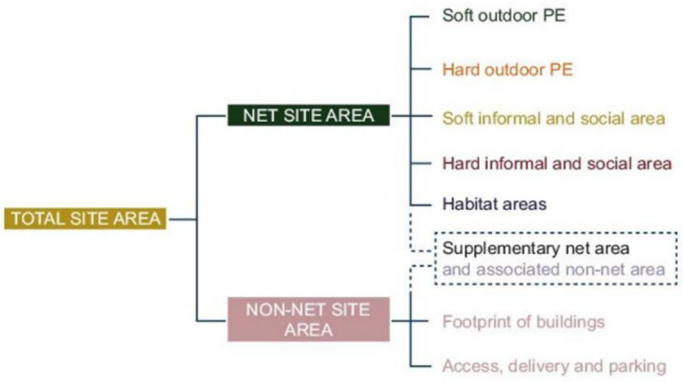


Figure 19: Categories of space for net and non-net site area

[37] DfE and EFA Area guidelines for mainstream schools Building Bulletin 103 (June 2014)

The following assumptions have been used to determine the site sizes set out in Section 4.4.

- **Mid Point** - To achieve the recommended minimum overall net area, which is greater than the sum of the individual minimum areas, the area of each category of space should average around the middle of the recommended range.
- When added together, the recommended minimum for each category of space (the 'sum of minima') will be less than the overall recommended minimum net area. This difference is the 'float' that can be used to enhance some areas, depending on the priorities of the school, for example providing different variations of teaching spaces.
- Some schools will be on restricted sites and will not have enough **Outdoor Space** to meet requirements on site. In these situations pupils will need to be provided with access to suitable off-site provision. On restricted sites, where space will be at a premium, a flexible approach to the site area and the management of the use of that area will be needed, and consideration should be given to providing the following, in priority order (BB103 page 36):
  - firstly, space for hard informal and social area including outdoor play area immediately accessible from nursery and reception classrooms (zone Y);
  - then some hard outdoor PE space to allow some PE or team games to be played without going off site, ideally in the form of a multi-use games area that can also be used as hard informal and social area (zone X);
  - then soft informal and social area for wider range of outdoor educational opportunities and social space (zone W);
  - finally some soft outdoor PE can be provided. If this is in the form of an all-weather pitch, it can count twice towards the recommended minimum (zone U or u).
- **Outdoor space assumptions** the facility sizes in Section 4.4 assume the inclusion of: hard informal and social area space adjacent to the nursery & reception classes, outdoor PE Multi-Use Games Area (MUGA) and soft informal and social areas. The sizes do not assume soft outdoor PE provision.
- **Building heights:** Primary Schools are assumed to be a minimum of three storeys and Secondary/6th Form Schools are assumed to be a minimum of five storeys.
- **All-through schools** above 750 places use the total of the primary and secondary base areas (BB103 page 5).
- A base minimum assumption of 350sq.m for primary schools and 2,000sq.m for secondary schools has been assumed for the **non-net site area**. This would traditionally include the building footprint, paths, roads and parking. To avoid double-counting the footprint the base minimum assumptions have been used.
- School site sizes do not include an allowance for specialist uses including early years or Special Education Needs.

D.1 Building Bulletin 103 AECOM Assumptions

Primary			No: of Pupils 840
The buildings	**Min**	**Max**	**Mid Point**
Net Area			
Learning resources	10+0.1N	30+0.2N	
	94	198	146
Storage Zone	20+0.15N	40+0.25N	
	146	250	198
Staff & Admin	30+0.2N	50+0.3N	
	198	302	250
Halls, dining & PE	100+0.3N	125+0.35N	
	352	419	386
Basic teaching	2N	30+2.2N	
	1,680	1,878	1,779
Total Net Area (inclu *Float)*	240+2.9N	275+3.1N	
	2,676	2,879	2,778
Gross Internal Floor Area (inclu *non-net uses)*	350+4.1N	400+4.5N	
	3,794	4,180	3,987
The site	**Min**	**Max**	**Mid point**
Net site area			
1. Hard informal & social area adjacent to nursery & reception	200+1N	400+1.5N	
	1040	1660	1,350
2. Outdoor PE MUGA	22mx33m (plus 10% margin)		
	799		
3. Soft informal & social area	600+2N	800+2.5N	
	2280	2900	2,590
Non net site area	Non net site area per pupil space		
Footprint of all buildings	Nursery	1	
Access for people & deliveries	KS1	1	
- Entrance paths & roads	KS2	5	
- Parking	5-11	3.3	2772

Secondary ages 11-16			No: of Pupils 1200
The buildings	**Min**	**Max**	**Mid Point**
Learning resources	75+0.15N	125+0.25N	
	255	425	340
Storage Zone	125+0.25N	200+0.4N	
	425	680	553
Staff & Admin	100+0.2N	175+0.35N	
	340	595	468
Halls, dining & PE	300+0.6N	600+0.7N	
	1,020	1,440	1,230
Basic teaching	2.9N	150+3.3N	
	3,480	4,110	3,795
Total Net Area (inclu *Float)*	750+4.5N	875+4.9N	
	6,150	6,755	6,453
Gross Internal Floor Area (inclu *non-net uses)*	1050+6.3N	1270+7.1N	
	8,610	9,790	9,200
The site	**Min**	**Max**	**Mid point**
Net site area			
1. Hard informal & social area	200+1N	400+1.5N	
	1400	2200	1,800
2. Outdoor PE MUGA	60mx33m (plus 10% margin)		
	2178		
3. Soft informal & social area	600+2N	800+2.5N	
	3000	3800	3,400
Non net site area	Non net site area per pupil space		
Footprint of all buildings	KS3-4	5	6000
Access for people & deliveries			
- Entrance paths & roads			
- Parking			

Primary			No: of Pupils	840
- Refuse & Recycling				
Base area (to avoid building footprint double count)				350
Total Built & Site Size				
GIA				3,987
Building Footprint	Storeys	3		1,329
MUGA, hard & soft informal				4,119
Parking, circulation, servicing				350
Site Area (sq.m)				**5,798**
Site Area (Ha)				**0.58**

Secondary ages 11-16			No: of Pupils	1200
- Refuse & Recycling				
Base area (to avoid building footprint double count)				2,000
Total Built & Site Size				
GIA				9,200
Building Footprint	Storeys	5		1,840
MUGA, hard & soft informal				6,578
Parking, circulation, servicing				2,000
Site Area				**10,418**
Site Area (Ha)				**1.04**

Table D.1. AECOM Interpretation of Building Bulletin 103 Guidelines – Primary & Secondary schools

Post 16 ages 16-18/19			No: of Pupils	300
The buildings	**Min**	**Max**		**Mid Point**
Learning resources	50+0.4N	75+0.5N		
	170	225		198
Storage Zone	25+0.3N	50+0.4N		
	115	170		143
Staff & Admin	0.2N	25+0.3N		
	60	115		88
Halls, dining & PE	75+0.6N	125+0.8N		
	255	365		310
Basic teaching	32.N	150+3.5N		
	960	1,200		1,080
Total Net Area (inclu *Float)*	250+5.5N	300+5.4N		
	1,900	1,920		1,910
Gross Internal Floor Area (inclu *non-net uses)*	350+7N	430+7.85N		
	2,450	2,785		2,618
The site				
Net site area				N/A
Non net site area	Non net site area per pupil space			
Footprint of all buildings	Post 16		5	1500
Access for people & deliveries				

Post 16 ages 16-18/19		No: of Pupils	300
- Entrance paths & roads			
- Parking			
- Refuse & Recycling			
Base area (to avoid building footprint double count)			-
Total Built & Site Size			
GIA			2,618
Building Footprint	Storeys	5	524
MUGA, hard & soft informal			-
Parking, circulation, servicing			-
Site Area			**524**
Site Area (Ha)			**0.05**

Table D.2. AECOM Interpretation of Building Bulletin 103 Guidelines – Post 16

Appendix E SWOT analysis of Service Delivery Models

E.1 Benefits and Challenges to Delivery of the Different Education Delivery Options

Option	Explanation	Benefits	Risks
1. Separate primary and secondary schools.	In this option all schools are provided as stand-along separate primary or secondary schools · 4 FE primary school = 840 children aged 4-9 and four early years groups (26 places each) per school · 8 FE secondary school = 1200 children aged 10-18 per school	· This is the standard form of new school provision. · EFSA baseline school designs use separate designs and DfE Building Bulletin guidelines are explained as separate schools.	· The separation of school age phases can involve daunting changes for pupils moving from early years, to primary and to secondary. Commentary indicates that up to a year of learning can be lost as a result of this transition. · Stand-alone school designs require separate schools support services (e.g. hall, library, sports, kitchens, canteens) which can mean a duplication of space if schools are located close to each other. · Stand-alone primary schools may not be able to provide the all the facilities that would be found at an all-through school also catering for older pupils, e.g. a greater variety of sport facilities. · Stand-alone schools can take a number of years to fill-up from a development and are generally less able to flex around the changing demographics of place.
2. All-through schools for ages 3-19.	In this option all schools are provided as all-through schools for ages 3-19. · Each school would have: – Four early years groups (26 places each) per school – 4 FE primary places = 840 children aged 4-9 per school – 4 FE secondary places = 600 children aged 10-18 per school	· All-through schools can ease the traditional transition process between key stages, early years, primary and secondary education and ensure smoother adaptation to later key stages. · There are advantages of economies of scale from central services such as catering, caretaking and central facilities e.g. sports' hall, swimming pool, theatre etc.	· This is still a relatively emerging model of school delivery – currently only 8% of all academy, free schools and LA maintained secondary schools in London are all-through. · The design of an all-through school still needs to provide separation so that age groups do not compete for space e.g. in playgrounds. · Teaching staff need to be able to cover all key stages of learning: Commentary from all-through heads indicates that primary-trained leaders are perceived to be less confident in leading all key stages of learning.

Option	Explanation	Benefits	Risks
3. A combination of separate primary and secondary schools and all-through schools	In this option schools are provided through a combination of stand-alone separate primary and secondary schools and all-through schools. For example: · Two 4 FE primary schools, one 7-8 FE secondary school and one 4FE all-through school.	· This would involve the standard form of new school provision; plus · A model that eases the transition between key stages, and fosters role-models and buddies between older and younger children.	· Stand-alone school designs require separate schools support services (e.g. hall, library, sports, kitchens, canteens) which can mean a duplication of space if schools are located close to each other. · This is still a relatively emerging model of school delivery. · Design of all-through schools still needs to provide separation so that age groups do not compete for space e.g. in playgrounds. · Staff in all-through schools will need to be able to cover all phases of learning.

Table E.1. Education Service Delivery Options - Benefits and Challenges to Delivery

E.2 Advantages, Weakness and Challenges to Delivery of the Different Health Service Delivery Options

Option	Advantages	Weaknesses	Challenges to delivery
1. One centrally located facility to serve the OPDC Development Area (circa 50,000 patient list size).	· More cost effective delivery of primary care services · Gives the CCG the opportunity to provide a range of community services closer to patients homes · Supported by the CCGs	· Greater travel distances for residents to GP services	· Difficulties funding one very large facility · Difficulties securing land for one very large facility · A mechanism will be required to scale up the size of the facility as the population increases in Old Oak because the NHS cannot fund the full size facility from day 1. · Needs to be in Old Oak North if required before 2026.
2. Two facilities, one to serve Old Oak North and one to serve Old Oak South (circa 25,000 – 30,000 patient list size each)	· Delivers primary care services at scale · Shorter travel distances for residents to GP services than option 1 · Enhances place making · Less challenging to deliver (funding and land)	· Likely to be less cost effective for CCGs than option 1	· Likely to require mechanism to scale up the size of each facility as the population increases (although less challenging than option 1) · CCGs would prefer option 1 to option 2.

Option	Advantages	Weaknesses	Challenges to delivery
3. Smaller scale facilities delivered at a neighbourhood level as the development builds-out (circa 7-10,000 patient list size each)	· Shortest travel distances for residents to GP services · Enhances place making · Less challenging to deliver (funding and land)	· Does not deliver primary care services at scale (not cost effective) · Not supported by CCGs / health stakeholders · Does not allow CCGs to provide a range of community services closer to patients homes	· Not supported by CCGs / health stakeholders. OPDC is unlikely to be able to deliver this without their support.
4. Phased facility opening to match the population build-up over time or short-term use of meanwhile floorspace while the population builds-up and sites for facilities become available.	· Health facilities provided from the first phase of development · Potentially shortest travel distances for new residents to GP services. · Potentially allows CCGs to provide a range of community services closer to patients homes · Enhances place making (establishing a community) · Efficient use of land & buildings (contributes to economic vibrancy & a start-up/grow-on/move-on economic strategy)	· Does not deliver primary care services at scale (not cost effective) · Service model potentially not supported by CCGs / health stakeholders. · Cost burden of temporary or phased delivery and move/scale up to final facility would need to be managed between CCG, OPDC and developers.	· Potentially not supported by CCGs / health stakeholders. · Will require implementation of phased planning approvals with developers. · Will require proactive use of OPDC landholdings.

Table E.2. Health Service Delivery Options - Advantages, Weakness and Challenges to Delivery

Appendix F Recent Education Procurement Examples

F.1 Funding & Delivery

The London Legacy Development Corporation (LLDC) has brought forward the early delivery of the Legacy Community Scheme (LCS) schools, which comprise:

- Mossbourne Riverside Primary Academy - a three-form entry primary school at East Wick, due to open at this site in September 2016 with the Mossbourne Academy Trust as education provider; and
- DRET London Free School - an All-through Free School at Sweetwater and Stadium Island, scheduled to be opened in September 2017 by the David Ross Education Trust (DRET).

Mossbourne Riverside Academy was delivered under Route 1 as described in Section 4.9. The Legacy Corporation and the LB Hackney were successful in their joint bid to the DfE for Targeted Basic Needs Funding (TBNF) to support the delivery of a three-form entry primary school in the East Wick neighbourhood via LB Hackney's pre-procured Local Education Partnership (LEP). The amount awarded by DfE was £6.8m, with LLDC providing an additional £5.6m by way of a grant to ensure the school was of a quality befitting its location.

DRET London Free School is being delivered under Route 2 as described in Section 4.9. In light of the DfE's decision in May 2013 to approve the David Ross Education Trust (DRET) all-through sports specialist Free School, and in particular the desire to locate that school on or adjacent to Queen Elizabeth Olympic Park, a decision was taken by the Legacy Corporation and LB Newham together to work with DfE to explore options to locate the DRET school on a site which would enable it to serve as the LCS secondary school and second primary school. The projected cost of the whole school is £41m, which is made up of EFA Free School capital funding and grant contributions from the LLDC and the David Ross Education Foundation for £3.7m and £1.9m respectively, to enhance design quality. The EFA takes all construction and funding risk on this project.

Figure F.1. Mossbourne Riverside Primary Academy

Figure F.2. Bobby Moore Academy – Primary School

Figure F.3. Bobby Moore Academy – Secondary School

Appendix G Site Selection Criteria & Assessment Results

G.1 Social Infrastructure – Assessment of Sites Against Criteria

OPDC's Local Plan includes a 50% affordable housing policy with 25% family housing, subject to viability. The Local Education Authorities (LEAs), Clinical Commissioning Groups and local authority public health departments identified the existing schools and health facilities that may have the potential for off-site expansion to meet the needs of the development in early phases. Proposals for the expansion of these facilities is not yet committed and OPDC will be working with the relevant service providers to further investigate the potential for these facilities to be expanded. On this basis, the OPDC Local Plan needs to model for on-site requirements on the basis of the education needs as set out in Section 4.7 and health facility needs as set out in Section 5.8.Using the needs analysis and Local Plan Policy position, the trigger years for required on-site facilities have been matched against OPDC's phasing trajectory in order to derive which sites are likely to be being constructed in the year the facility is required and by virtue, which sites would be capable of delivering the education or health facility. In order to identify the most appropriate site, OPDC, in collaboration with AECOM, have defined criteria against which to score the sites. The criteria are set out below.

G.1.1 Deliverability

Criteria	Commentary
Size/shape of the site	The adequacy of the size of the site for the required education facility, with the larger the site the more flexibility the site offers and the more deliverable the facility would be. The size of the site is also considered in the context of the size requirements set out in national space standard guidance. Consideration of appropriate shape arrangements and guided by national infrastructure design standards.
Land use designations	Is the land use identified for the site appropriate for social infrastructure uses? For example, a development site within Strategic Industrial Location (SIL) would score negatively against this criteria.
Public or private land	Social infrastructure facilities may well be more readily deliverable on public land than on private, though some schemes on private land will be of a scale which requires provision of social infrastructure facilities on-site on private land
Other designations	If there are other designations to consider, e.g. metropolitan open land (MOL) or rail freight safeguarding
Other infrastructure requirements	Are there significant infrastructure burdens which would affect the development of the site (either alone or in a reasonable combination) which would be likely to render the delivery of the facility unviable

Table G.1. Site Assessment Criteria - Deliverability

G.1.2 Lifetime Neighbourhoods

Criteria	Commentary
Accessibility by walking, cycling and by public transport	Prioritise sites that are easy to get to on foot, by bicycle and are located near/with easy access to public transport nodes
Accessibility to public open space	The ability to use nearby public open space to meet leisure and recreational needs of school
Proximity to delivered and soon to be delivered (during the Local Plan period) housing, particularly family housing	Minimise the need to travel for new residents
Proximity to existing school/health centre facilities	
Colocation, integration and adjacency	Co-located facilities are single service facilities which are located adjacent to each other on the one plot. Integrated facilities are single service facilities located together on the one plot, in the same complex with shared central services. Adjacent facilities are single service facilities located on adjacent plots. Each provides the ability to cost save and support the function of other social infrastructure

Table G.2. Site Assessment Criteria – Lifetime Neighbourhoods

G.1.3 Environment

Criteria	Commentary
Impact of air and noise polluting sources	Try to ensure education uses are located away from polluting sources
Amenity (including daylight and sunlight, wind etc.)	Education uses should be located in areas with a good standard of amenity.
Ability to appropriately manage any traffic associated with the facility and ensure that access to the facility is safe	Although travel plans would try to ensure that people access the facilities by sustainable transport modes, some will still access the facility by car drop-off. There is also a need to consider the safety of visitors to a facility.

Table G.3. Site Assessment Criteria – Environment

The respective sites have been scored by OPDC against these criteria to identify the most appropriate site for the delivery of the facility. The sites have either been scored as 'positive' (+), 'neutral' (0) or 'negative' (-) against each of the criteria.

It is recognised that the identification of sites for on-site provision are based on current assumptions on affordable housing, family housing and on the likely phased delivery of sites. OPDC will need to monitor delivery on an ongoing basis, to ensure that the facilities proposed are the right size to meet needs and that the sites identified for their delivery are the most appropriate.

Given the timescales over which the plan is proposed and the complexity of delivery, there is a need for a degree of flexibility in the approach to on-site infrastructure. It is therefore recommended that as part of any policy for on-site delivery, OPDC identifies that the on-site facility can be provided on an alternative site, if this is agreed:

- By the developer/landowner on the allocated site;
- By the developer/landowner of the alternative site;

- By the appropriate social infrastructure service provider; and
- By OPDC itself.

Further, the exact size of the facility may need to flex based on population projections. Therefore, the Local Plan should also recognise this and state that the starting point for the size of the facility should be the assumptions within this study, but that the exact size will be dependent on population projects and that an alternative size for the facility may be appropriate, but would have to be agreed by OPDC and the appropriate service provider.

G.2 Education

G.2.1 Primary School 1: Trigger Date 2026

The first primary school is required in 2026. Table G4 below assesses the sites capable of delivering this school and the score for each of the sites based on the scoring criteria. This shows the most appropriate site for the first primary school is the Cargiant site. It is therefore recommended that the Local Plan identify the need for this site to deliver the primary school.

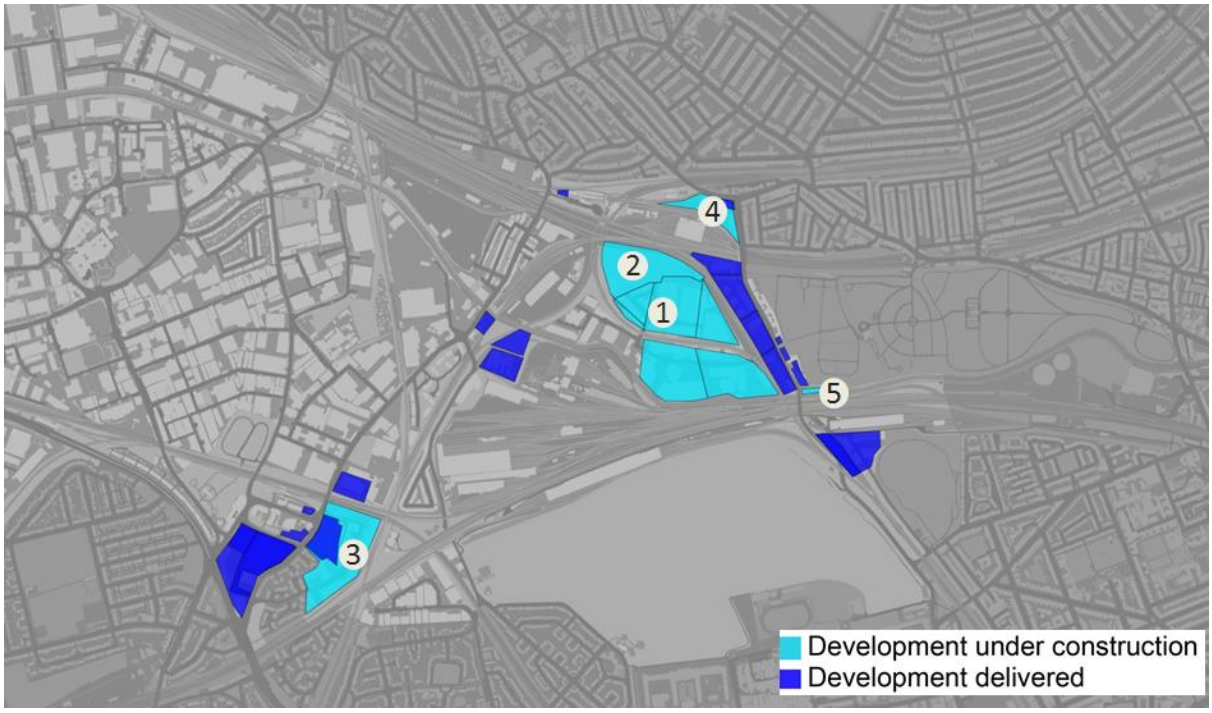


Figure G.1. Candidate Sites for Primary School 1

Criteria	1. Cargiant	2. EMR	3. Victoria Road Industrial Estate	4. Scrubs Lane North	5. Mitre Wharf
Deliverability					
Size/shape of the site	+	0	0	-	-
	Large site, single ownership	Medium sized site, single ownership	Medium sized site, single ownership	Small site and multiple ownership	Small site, poor width to the site and multiple ownership

Criteria	1. Cargiant	2. EMR	3. Victoria Road Industrial Estate	4. Scrubs Lane North	5. Mitre Wharf
Land use designations	+	+	0	+	+
	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development
Public or private land	0	+	0	-	-
	Private land but significant development potential	Public land	Private land but significant development potential	Private land, limited need arising from site	Private land, limited need arising from site
Other designations	+	-	+	+	+
	None	Designated as a strategic rail freight site	None	None	None
Other infrastructure requirements	0	0	+	+	+
	Other on-site social infrastructure requirement and transport infrastructure to unlock the site	Other on-site social infrastructure requirement and transport infrastructure to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site
Lifetime neighbourhoods					
Accessibility by walking, cycling and by public transport	+	+	0	0	0
	High public transport access and well connected to core development area	High public transport access and well connected to core development area	Good public transport access but on the periphery of the core development area	High public transport access, but on the periphery of the core development area	Average public transport access and on the periphery of the core development area
Accessibility to public open space	+	+	0	-	-
	Close to planned delivery of local parks	Close to planned delivery of local parks	Close to planned delivery of small open spaces	Not close to planned delivery of sizeable open spaces	Not close to planned delivery of sizeable open spaces
Proximity to housing	+	+	0	0	0
	Close to planned delivery of housing and family homes	Close to planned delivery of housing and family homes	On the edge of the core development area	On the edge of the core development area	On the edge of the core development area
Proximity to existing schools	+	+	+	-	+
	Not close to any existing primary schools	Not close to any existing primary schools	Not close to any existing primary schools	Close to Kenmont Primary School	Not close to any existing primary schools
Colocation,	+	+	0	-	-

Criteria	1. Cargiant	2. EMR	3. Victoria Road Industrial Estate	4. Scrubs Lane North	5. Mitre Wharf
integration and adjacency	Good potential	Good potential	Reasonable opportunities given the size of the site	Poor potential due to the small size of the site	Poor potential due to the small size of the site
Environment					
Air quality/noise pollution	+	0	0	-	0
	Located away from busy roads and major rail routes	Away from busy roads but close to the WCML tracks	Close to Victoria Road and A40, but could be located to the rear of the site to minimise impacts	Close to Harrow Road and Scrubs Lane which suffer from poor air quality	Close to Scrubs Lane, which suffers from poor air quality
Amenity	0	0	0	+	+
	High density development proposed, which could impact on amenity	High density development proposed, which could impact on amenity	High density development proposed, which could impact on amenity	Medium density development proposed.	Medium density development proposed.
Traffic management	+	+	0	0	0
	Large site in core development area capable of managing impacts of traffic	Large site in core development area capable of managing impacts of traffic	Large site, but outside of core development area and off Victoria Road which is heavily congested	Large site, but outside of core development area and off Scrubs Lane which is heavily congested	Large site, but outside of core development area and off Scrubs Lane which is heavily congested
SCORE	**10**	**7**	**3**	**-1**	**1**

Table G.4. Criteria Assessment of Candidate Sites for Primary School 1

G.2.2 Secondary School 1: Trigger Year 2028

Table G.5 and Figure G.2 identify the sites capable of delivering the school and the assessment of those sites. This shows that the sword and shield sites are the most appropriate sites for the delivery of the secondary school and should be allocated for this purpose in OPDC's Local Plan. The majority of these sites are being acquired by HS2 for construction. Parts of the sites are required for track ventilation but there is sufficient space within these sites to provide a secondary school.

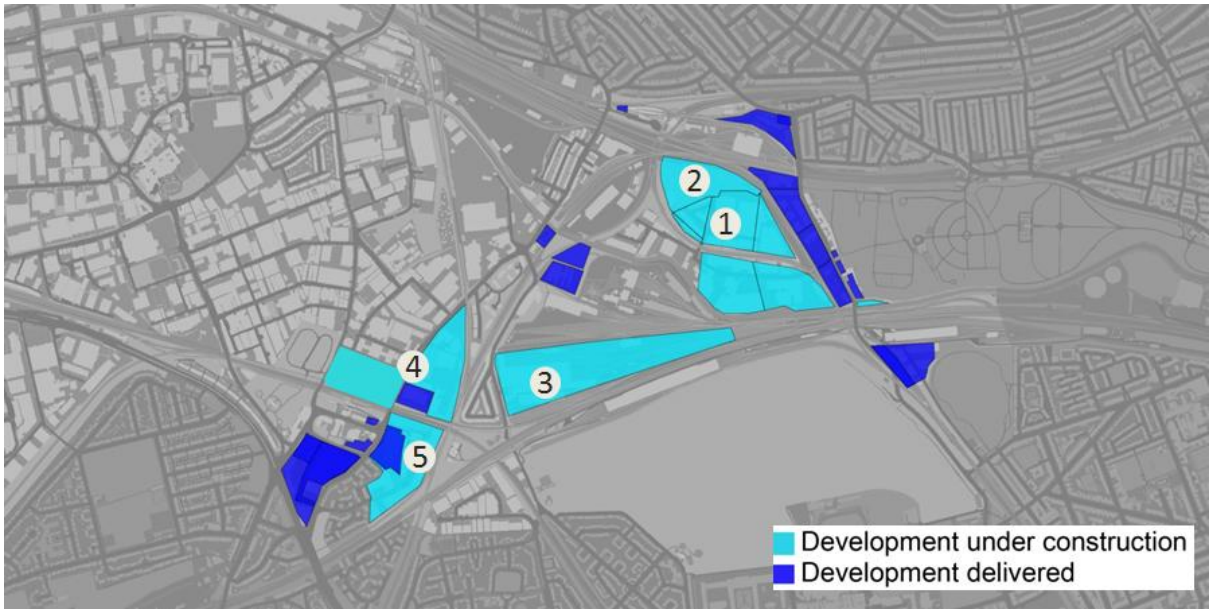


Figure G.2. Candidate Sites for Secondary School 1

Criteria	1. Cargiant	2. EMR	3. HS2 station site	4. Sword and shield sites	5. Victoria Road Industrial Estate
Deliverability					
Size/shape of the site	+	0	+	+	0
	Large site, single ownership	Medium sized site, single ownership	Large site, single ownership	Large site, single ownership	Medium sized site, single ownership
Land use designations	+	+	+	+	0
	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development
Public or private land	0	+	+	+	0
	Private land but significant development potential	Public land	Public land	Public land	Private land but significant development potential
Other designations	+	-	+	+	+
	None	Designated as a strategic rail freight site	None	None	None

Criteria	1. Cargiant	2. EMR	3. HS2 station site	4. Sword and shield sites	5. Victoria Road Industrial Estate
Other infrastructure requirements	0	0	+	+	+
	Other on-site social infrastructure requirement and transport infrastructure to unlock the site	Other on-site social infrastructure requirement and transport infrastructure to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site
Lifetime neighbourhoods					
Accessibility by walking, cycling and by public transport	+	+	+	+	0
	High public transport access and well connected to core development area	High public transport access and well connected to core development area	High public transport access and well connected to core development area	High public transport access and well connected to core development area	Good public transport access but on the periphery of the core development area
Accessibility to public open space	+	+	+	+	0
	Close to planned delivery of local parks	Close to planned delivery of local parks	Close to planned delivery of local parks	Close to planned delivery of local parks	Close to planned delivery of small open spaces
Proximity to housing	+	+	+	+	0
	Close to planned delivery of housing and family homes	Close to planned delivery of housing and family homes	Close to planned delivery of housing and family homes	Close to planned delivery of housing and family homes	On the edge of the core development area
Proximity to existing schools	+	+	+	+	+
	Not close to any existing secondary schools	Not close to any existing secondary schools	Not close to any existing secondary schools	Not close to any existing secondary schools	Not close to any existing secondary schools
Colocation, integration and adjacency	+	+	+	+	0
	Good potential	Good potential	Good potential	Good potential	Reasonable opportunities given the size of the site
Environment					
Air quality/noise pollution	+	0	0	0	0
	Located away from busy roads and major rail routes	Away from busy roads but close to the WCML tracks	Away from busy roads but close to the GWML and HS2 tracks	Close to Victoria Road, but if located to the rear of the site this could be mitigated	Close to Victoria Road and A40, but could be located to the rear of the site to minimise impacts
Amenity	0	0	-1	0	0
	High density development	High density development	Very High density development	High density development	High density development

Criteria	1. Cargiant	2. EMR	3. HS2 station site	4. Sword and shield sites	5. Victoria Road Industrial Estate
	proposed, which could impact on amenity	proposed, which could impact on amenity	proposed, which could impact on amenity	proposed, which could impact on amenity	proposed, which could impact on amenity
Traffic management	+	+	+	+	0
	Large site in core development area capable of managing impacts of traffic	Large site in core development area capable of managing impacts of traffic	Large site in core development area capable of managing impacts of traffic	Large site in core development area capable of managing impacts of traffic	Large site, but outside of core development area and off Victoria Road which is heavily congested
SCORE	**10**	**7**	**10**	**11**	**3**

Table G.5. Criteria Assessment of Candidate Sites for Secondary School 1

G.2.3 Primary School 2: Trigger Year 2032

Table G.6 and Figure G.3 identify the sites capable of delivering the school and the assessment of those sites. The Crossrail depot or HS2 station site are identified as the most appropriate sites, given that they are both large sites, in the ownership of one landowner (public sector) and are well located to serve the needs of future communities and provide opportunities for the co-location of other social infrastructure.

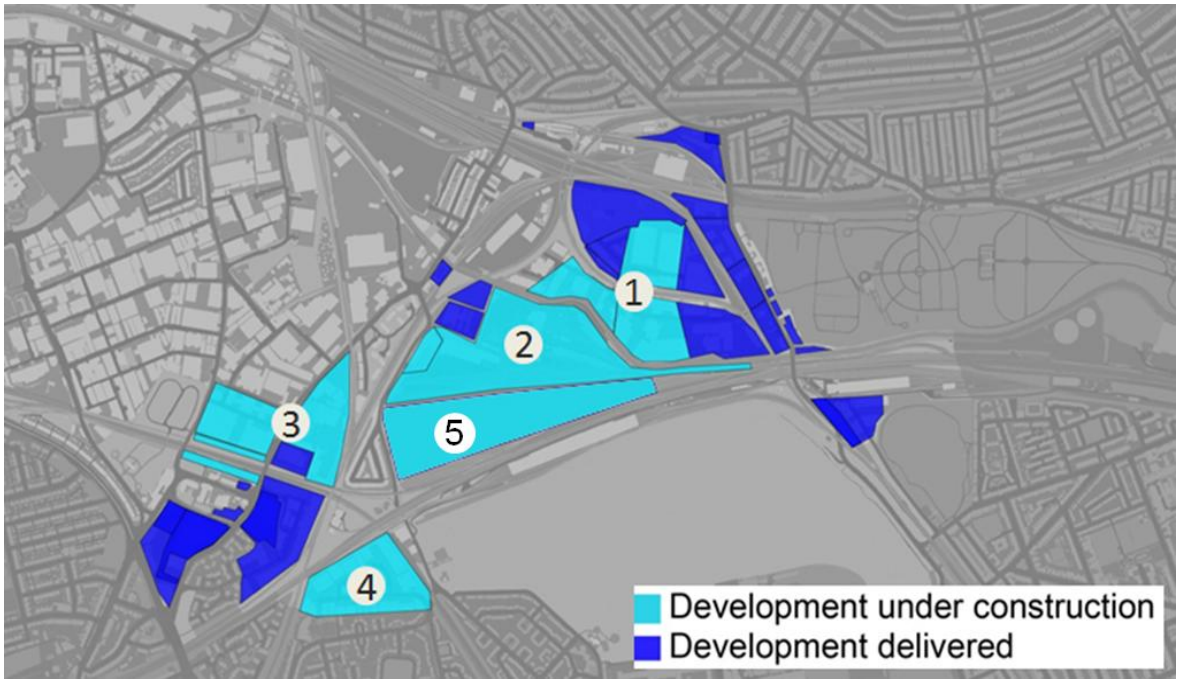


Figure G.3. Candidate Sites for Primary School 2

Criteria	1. Cargiant	2. Crossrail depot	3. Sword and shield sites	4. Westway Industrial Estate	5. HS2 station site
Deliverability					
Size/shape of the site	+	+	+	+	+
	Large site, single ownership	Large site, single ownership	Large site, single ownership	Large site, single ownership	Large site, single ownership
Land use designations	+	+	+	+	+
	Appropriate for mixed use	Appropriate for mixed use	Appropriate for mixed use	Appropriate for mixed use	Appropriate for mixed use

Criteria	1. Cargiant	2. Crossrail depot	3. Sword and shield sites	4. Westway Industrial Estate	5. HS2 station site
	development	development	development	development	development
Public or private land	0	+	+	+	+
	Private land but significant development potential	Public land	Public land	Public land	Public land
Other designations	+	+	+	+	+
	None	None	None	None	None
Other infrastructure requirements	0	0	-	+	+
	Other on-site social infrastructure requirement and transport infrastructure to unlock the site	Other on-site social infrastructure requirement and transport infrastructure to unlock the site	Required to deliver the secondary school, making the delivery of an additional primary school challenging	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site
Lifetime Neighbourhoods					
Accessibility by walking, cycling and by public transport	+	+	+	0	+
	High public transport access and well connected to core development area	High public transport access and well connected to core development area	High public transport access and well connected to core development area	Good public transport access but on the periphery of the core development area	High public transport access and well connected to core development area
Accessibility to public open space	+	+	+	+	+
	Close to planned delivery of local parks	Close to planned delivery of local parks	Close to planned delivery of local parks	Close to Wormwood Scrubs Common	Close to planned delivery of local parks
Proximity to housing	+	+	+	0	+
	Close to planned delivery of housing and family homes	Close to planned delivery of housing and family homes	Close to planned delivery of housing and family homes	On the edge of the core development area	Close to planned delivery of housing and family homes
Proximity to existing schools	-1	+	+	+	+
	Would be close the first primary school	Not close to any existing primary schools	Not close to any existing primary schools	Not close to any existing primary schools	Not close to any existing secondary schools
Colocation, integration and adjacency	+	+	+	+	+
	Good potential	Good potential	Good potential	Good potential	Good potential
Environment					
Air quality/noise pollution	+	+	0	+	0
	Located away from busy roads and major rail routes	Located away from busy roads and major rail routes	Close to Victoria Road, but if located to the rear of the site this could be mitigated	Close to the GWML, but away from major vehicular routes	Away from busy roads but close to the GWML and HS2 tracks
Amenity	0	-1	0	0	-1
	High density development proposed, which	Very High density development proposed, which	High density development proposed, which	Medium to high density development	Very High density development proposed, which

Criteria	1. Cargiant	2. Crossrail depot	3. Sword and shield sites	4. Westway Industrial Estate	5. HS2 station site
	could impact on amenity	could impact on amenity	could impact on amenity	proposed, which could impact on amenity	could impact on amenity
Traffic management	+	+	+	0	+
	Large site in core development area capable of managing impacts of traffic	Large site in core development area capable of managing impacts of traffic	Large site in core development area capable of managing impacts of traffic	Large site in core development area but only accessible from Old Oak Common Lane.	Large site in core development area capable of managing impacts of traffic
SCORE	**8**	**10**	**9**	**9**	**10**

Table G.6. Criteria assessment of candidate sites for Primary School 2

G.2.4 All-through School: Trigger Year 2039

The last trigger is for the all through school in 2039. Figure G4 identifies the sites capable of delivering the school.

The child yield contributing to the requirement for this school is generated from development coming forward in 2037-2050. The period of the Local Plan covers 2018-2038. Table G.7 shows the profile of the build-up in need for the all-through school, by year and shows the 1FE trigger for both primary and secondary in 2039. As the trigger year for this school and the majority of development that is contributing towards its need for delivery fall outside the Local Plan period, it is considered that the Local Plan does not need to allocate a site for the delivery of this facility at this stage. The Local Plan should however identify that the modelling shows a need for this facility and that this need will be kept under review as part of future iterations of the Local Plan.

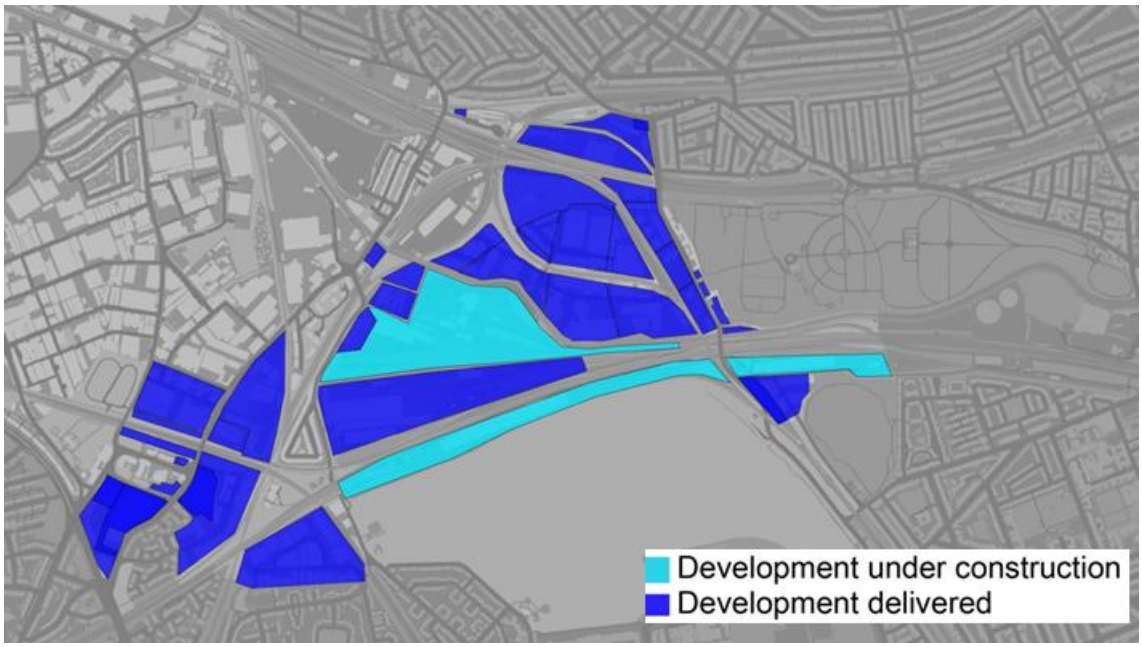


Figure G.4. Candidate Sites for the All-through School

Year	Primary FEs	Primary FEs (cumulative)	Secondary FEs	Secondary FEs (cumulative)
2037	0.5	0.5	0.5	0.5
2038 [Plan period end	0.3	0.8	0.3	0.8
2039	0.5	1.3	0.6	1.4
2040	0.5	1.8	0.5	1.9
2041	0.3	2.1	0.3	2.2
2042	0.3	2.5	0.4	2.6
2043	0.3	2.8	0.3	2.9
2044	0.2	3.0	0.3	3.2
2045	0.2	3.2	0.3	3.4
2046	0.2	3.5	0.2	3.7
2047	0.1	3.5	0.1	3.8
2048	-	3.5	-	3.8
2049	-	3.5	-	3.8
2050	-	3.5	-	3.8

Table G.7. Profile of the Build-up in Need for the All-through School, by Year

G.3 Health

The CCG's preferred delivery approach is for a central hub facility. Based on current phasing, this facility is likely to be needed in 2025, the same year as the first primary school. The figure below shows the sites available for the delivery of this facility and the table scores these sites against the criteria. The assessment shows that the Cargiant site scores the highest and should be allocated for the provision of this facility.

As stated in Section 5.8, this hub facility would be delivered in phases. The floorspace provided from the outset would support the needs of the site's planning application. As the population of the wider area increases over time, space would be 'drawn down' from other floorspace in the building and fitted out through planning contributions secured through other development sites. A retrospective pooling contribution mechanism could be employed to facilitate this.

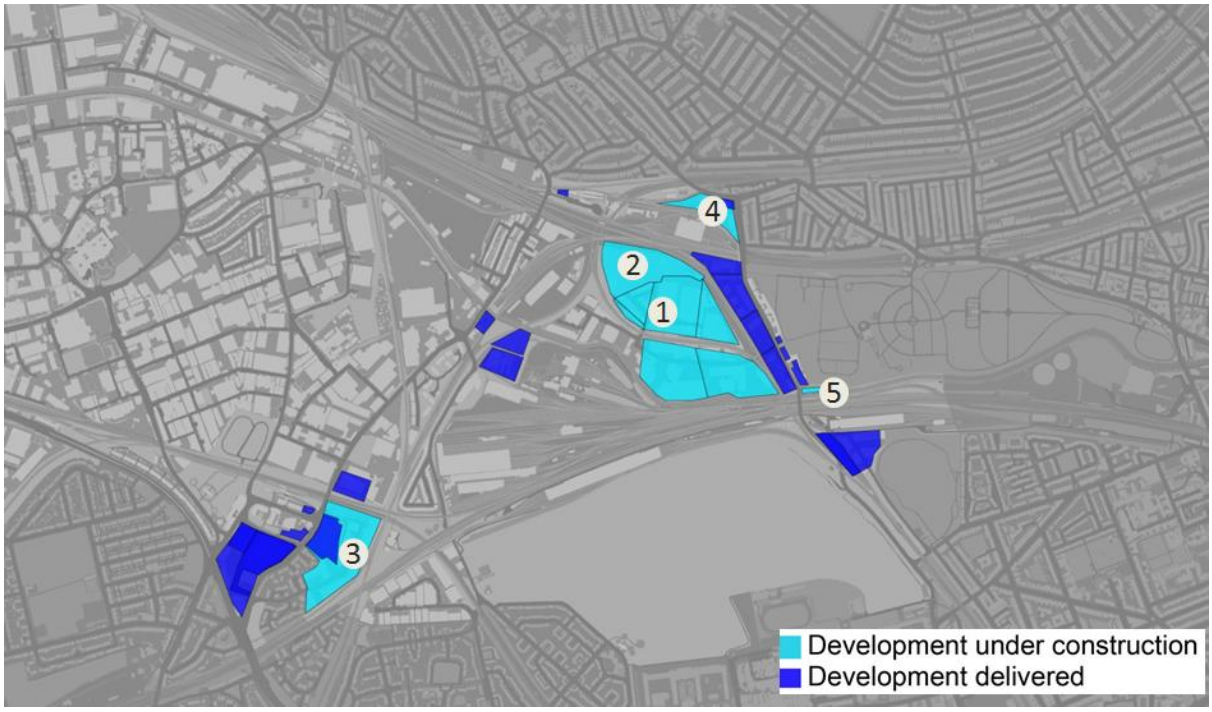


Figure G.5. Candidate Sites for the Central Health Hub Facility

Criteria	1. Cargiant	2. EMR	3. Victoria Road Industrial Estate	4. Scrubs Lane North	5. Mitre Wharf
Deliverability					
Size/shape of the site	+	0	0	-	-
	Large site, single ownership	Medium sized site, single ownership	Medium sized site, single ownership	Small site and multiple ownership	Small site and multiple ownership
Land use designations	+	+	0	+	+
	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development	Appropriate for mixed use development
Public or private land	0	+	0	-	-
	Private land but significant development	Public land	Private land but significant development	Private land, limited need arising from site	Private land, limited need arising from site

Criteria	1. Cargiant	2. EMR	3. Victoria Road Industrial Estate	4. Scrubs Lane North	5. Mitre Wharf
	potential		potential		
Other designations	+	-	+	+	+
	None	Designated as a strategic rail freight site	None	None	None
Other infrastructure requirements	0	0	+	+	+
	Other on-site social infrastructure requirement and transport infrastructure to unlock the site	Other on-site social infrastructure requirement and transport infrastructure to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site	No other on-site social infrastructure requirements or significant on-site transport infrastructure required to unlock the site
Lifetime neighbourhoods					
Accessibility by walking, cycling and by public transport	+	+	0	0	0
	High public transport access and well connected to core development area	High public transport access and well connected to core development area	Good public transport access but on the periphery of the core development area	High public transport access, but on the periphery of the core development area	Average public transport access and on the periphery of the core development area
Accessibility to public open space	+	+	0	-	-
	Close to planned delivery of local parks	Close to planned delivery of local parks	Close to planned delivery of small open spaces	Not close to planned delivery of sizeable open spaces	Not close to planned delivery of sizeable open spaces
Proximity to housing	+	+	0	0	0
	Close to planned delivery of housing and family homes	Close to planned delivery of housing and family homes	On the edge of the core development area	On the edge of the core development area	On the edge of the core development area
Proximity to existing health centres	+	+	+	0	+
	Not close to any existing health centres	Not close to any existing health centres	Not close to any existing health centres	Health centres in Harlesden (Freuchan / Buckingham Road) are reasonably close	Not close to any existing health centres
Potential for colocation	+	+	0	-	-
	Good potential	Good potential	Reasonable opportunities given the size of the site	Poor potential due to the small size of the site	Poor potential due to the small size of the site

Criteria	1. Cargiant	2. EMR	3. Victoria Road Industrial Estate	4. Scrubs Lane North	5. Mitre Wharf
Environment					
Air quality/noise pollution	+	0	0	-	0
	Located away from busy roads and major rail routes	Away from busy roads but close to the WCML tracks	Close to Victoria Road and A40, but could be located to the rear of the site to minimise impacts	Close to Harrow Road and Scrubs Lane which suffer from poor air quality	Close to Scrubs Lane, which suffers from poor air quality
Amenity	0	0	0	+	+
	High density development proposed, which could impact on amenity	High density development proposed, which could impact on amenity	High density development proposed, which could impact on amenity	Medium density development proposed.	Medium density development proposed.
Traffic management	+	+	0	0	0
	Large site in core development area capable of managing impacts of traffic	Large site in core development area capable of managing impacts of traffic	Large site, but outside of core development area and off Victoria Road which is heavily congested	Large site, but outside of core development area and off Scrubs Lane which is heavily congested	Large site, but outside of core development area and off Scrubs Lane which is heavily congested
SCORE	**10**	**7**	**3**	**-1**	**1**

Table G.8. Criteria Assessment of Candidate Sites for the Central Hub Health Facility

Appendix H Case Study Precedents of High-density Facility Design and Mixed Use Proposals

H.1 Primary Schools

Ark Priory Primary is a new two-form entry primary academy on Acton Lane which opened in September 2013 and will cater for approx 450 pupils when full.

Site Size	95 metres length, 70 metres width 0.33 hectares
Surrounding uses	Two storey terraced houses with short rear gardens to the North. Modern three storey residential flats to the South. A rail corridor (North London Loop Line) to the East. Three storey residential development to the West.
Building size	The new building extends 53 metres along the frontage of the site and extends a maximum of 26.5 metres East, into the site. GIA 2,442 sq. m FAR 0.36
Internal configuration	Single storey component contains a kitchen with a servery, a large hall that can be divided using bi-fold doors and ancillary facilities. Main building: · Ground floor: a music/cookery room, library, staff room, special education needs room, an administration room, 1 nursery classroom, 2 reception classrooms, a small group room and ancillary facilities. · First & second floors: 6 classrooms, 2 group rooms, an office and ancillary facilities including toilets and stores.
External areas	· Rubber play surfaces and play equipment in the nursery and reception play areas; · A social courtyard with tables, chairs and food garden planter boxes; · Large hard play areas with painted games; · A multi-use games area with two courts surrounded by a 3 metre sports fence; · An adventure playground and astro turf 'story

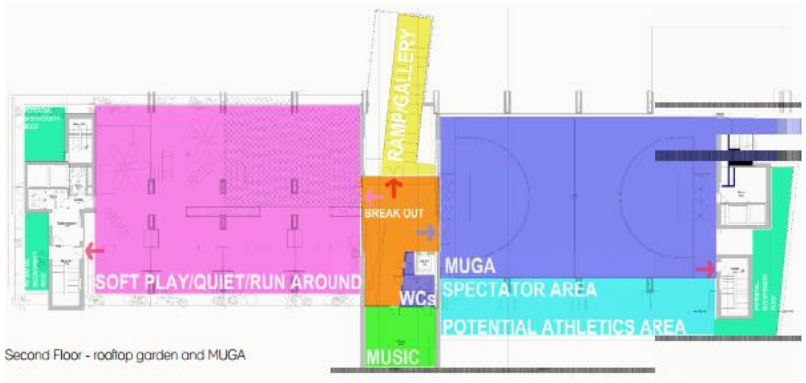
Schedule of External Areas (in square metres)

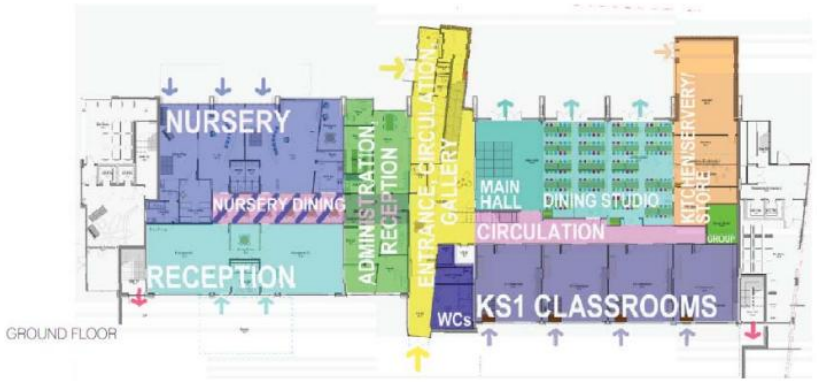
	BB99 Guidelines	Proposed
Games Courts	1500	408
Informal Hard Play	1075	1349
Informal Soft play	1925	376
Habitat	650	102
Circulation Area / Float	2250	366

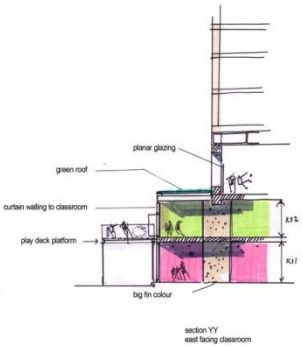
	lawn'.
Car Parking/ cycle parking provision	· One disabled car space. · 48 cycle parking spaces.
S106 contributions	£45,000 · To raise the existing Zebra Crossing. · To introduce 'school keep clear' markings. · To implement a new 20 MPH zone.

Holy Trinity School, Dalston is a Voluntary Aided CofE School in Hackney, with capacity for 460 pupils. Given the lack of funding available to the school, the primary school site was redeveloped as part of a mixed-use approach; a 2 form entry primary school was built at ground and first level, with a double height play deck on the second, and 101 new apartments above.

Site Size	87.5 metres length, 52 metres width 0.45 hectares
Surrounding uses	Predominantly 2 and 3 storey residential buildings to the south and east, with the Holy Trinity Church. A new development to the west and north means that storeys start at 10 and rise to 19 storeys.
Building size	The new building extends 80 metres from north to south and 35 metres east to west at its widest. GIA 12,979m2
Internal configuration	The school has a gross area of 3,213 sq.m · Ground floor: Main Hall, Dining Studio and Kitchen, 4 KS1 Classrooms, Administration, Reception Classrooms, Nursery and ancillary facilities including toilets. · First floor: 6 classrooms, 8 KS2 Classrooms, Group working rooms, Learning Resource Centre, Staff Rooms and Specialist Learning Facilities. · Second floor: Music Room and breakout spaces.
External areas	Relating to the school, the ground floor spaces are divided into 4 distinct functions: · Nursery Play Space – consists of tricycle track, interactive and sensory planting areas. · Reception Play Space – consists of educational/nature discovery play, spill out space for classrooms and covered outdoor learning areas. · KS1 Play Space – Active space for physical exercise, mounding and seating areas and covered outdoor learning space · Hard landscape area capable of accommodating chairs and tables for outdoor lunches. · Although the space on the second floor is covered by the residential soffit above, there is a 'sky-gap' which allows for natural light and ventilation. Additionally, it is worth noting that the second floor relates closely to KS2. On the Second Floor the following has been provided: · A multi-use games area with two courts surrounded by a glazed screens with a soffit to allow fresh air;



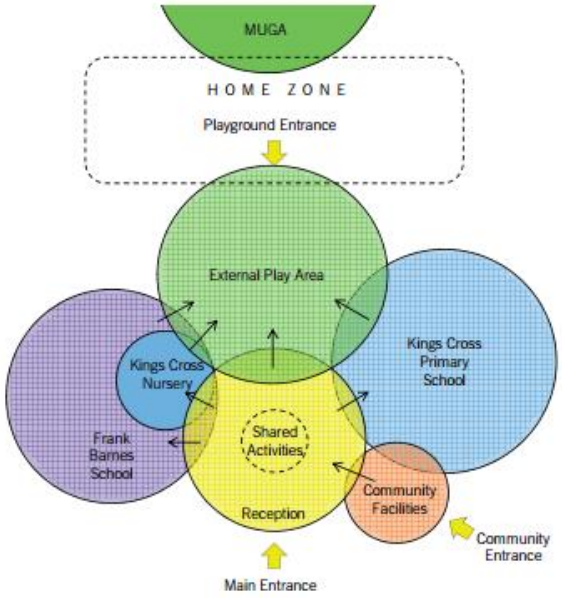


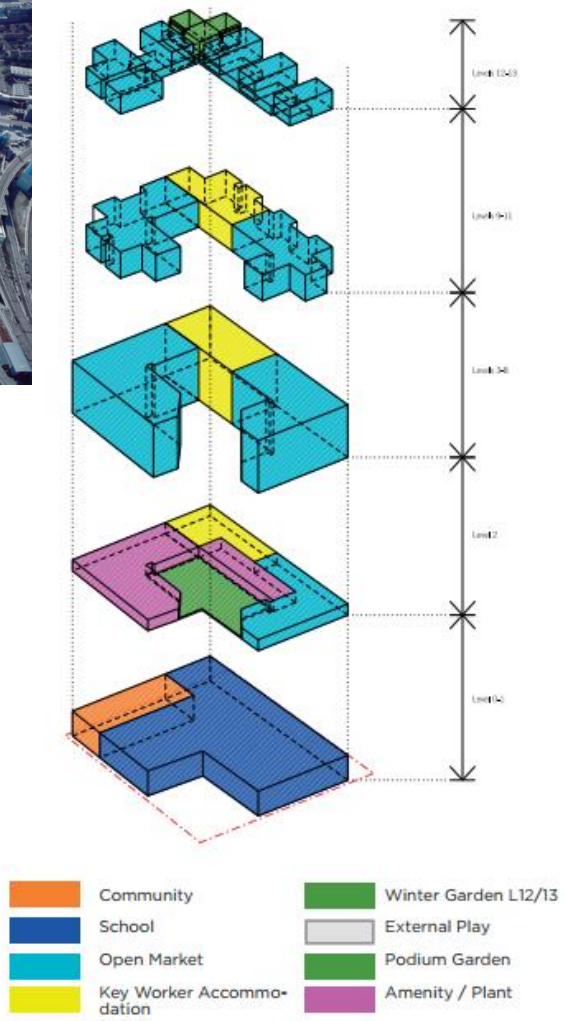


	· Spectator area for the MUGA alongside an athletics area, and; · An informal play area bound by planters.
Car Parking/ cycle parking provision	· 36 designated cycle parking spaces.
S106 contributions	· s278 to address highway contributions to the immediate area.

The Plimsoll Building, Kings Cross opened in September 2015 and contains 2 schools on the ground and first floors; Kings Cross Academy and Frank Barnes School for Deaf Children. The schools are co-located together and share integrated, inclusive facilities. The Academy will serve 420 primary school pupils, plus a nursery.

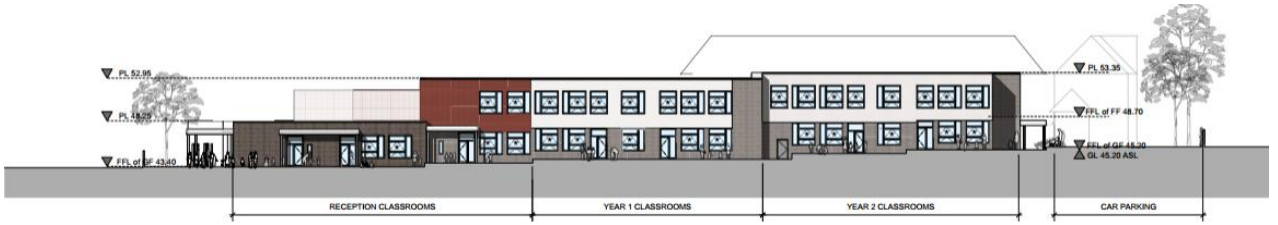
Site Size	39 metres length, 30 metres width 0.12 hectares
Surrounding uses	To the west is primarily residential, with a MUGA and multi-storey car park. To the east a cultural building is proposed, whilst to the south the Regents Canal can be found, with Gasholder Structures. The maximum building height of the Kings Cross redevelopment is set at 72.5m AOD
Building size	The new building is 14 storeys providing 255 residential units above a new primary school, community facilities, a nursery, retail shop and basement level car parking
Internal configuration	The school comprises of 4,647m2 GEA · At ground level, the school accommodation is arranged around a double height 'street' that forms a communal central spine linking through the building from the school main entrance on the east elevation to the playground on the west. · The plan arrangement allows the mainstream classroom accommodation to be broken up into three sections: reception classrooms at ground floor and two groups of six classrooms at first floor.
External areas	The school playground is contained within the building envelope and forms the lower part of a sequence of terraced amenity spaces along with the podium 'courtyard' and residential balconies that overhang it. The location of the primary school means that it benefits from the close proximity of the MUGA on an adjacent lot.
Car Parking/ cycle parking provision	· Dedicated car parking for the school is not provided · 46 spaces in 2 different locations will be for school staff and visitors to the residential aspect of the scheme
S106 contributions	The schools were an obligation of the site wide Kings Cross S106 Agreement





The expansion of **Byron Court Primary School, Wembley** from a 3FE to a 5FE (1,050 pupils) has contributed to the identified need for additional primary school places in Brent. Whilst the primary school does not form part of a mixed-use development it does show how a 5FE primary school can be implemented in a constrained site.

Site Size	158 metres in length, at the longest point, 150 metres in width at the widest point. 1.83 hectares, 2,581m2 current buildings footprint.
Surrounding uses	The Primary School site sits within a residential neighbourhood with most houses 2 storeys in height There are also 2 golf courses to the North. The site is approximately 7 minutes from South Kenton Station.
Building size	There is currently 2,534m2 of existing buildings on site, of which 829m2 will be demolished. The proposed scheme is for an additional 3,217m2. The Building is over 2 storeys.
Internal configuration	The school comprises of 4,922.6m2 GIA · 5 clusters of 5 classrooms each, and a core group space in a 2 storey high new building · A new hall and kitchen · Main reception, administration and years 5 & 6 cluster to remain in the existing building
External areas	The playing field has been consolidated into a multi-use space, allowing students vital access to open soft sports provision. The sports field includes line markings and equipment for 3no. under 7/8 football pitches, 1no. under 11/12 football pitch, and 1no. athletics track including a 100m running track. The MUGA alongside is designed to be an all-weather sport pitch for netball, basketball and mini soccer. The central play area space between the two buildings provides opportunities for tennis and netball, alongside everyday play. The proposals also include a hard surfaced, 80m running track and a long jump sand pit.
Car Parking/ cycle parking provision	· 26 car parking spaces, including 2 disables spaces and 3 electric vehicle charging spaces · 62 cycle spaces & 80 scooter spaces



H.2 Secondary Schools

The **Westminster Academy at the Naim Dangoor Centre** opened in September 2007 as 1,175 pupil secondary school.

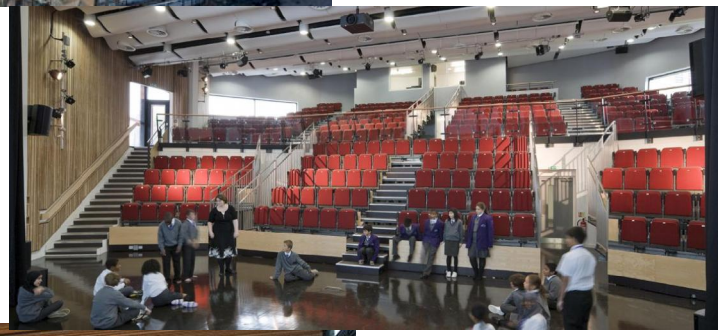
Site Size	3.57 hectares
Surrounding uses	Adjacent to the site is a 21 storey residential tower. To the east is a four-storey post-war block of shops with three floors of residential above. To the north are two 21 storey residential tower block. To the west is Carlton Tennis Club and Murphy's Yard. The site is also crossed by a public right of way and houses several public sports pitches.
Building size	The school is a 5-storey building located along one edge of the site lining the Harrow Road housing all facilities except the 2-storey sports hall separated to allow for year round community use after school hours. · GIA 13,100 sq.m.
Internal configuration	· Lower ground: car park · Ground floor: entrance lobby and library · Levels 1 to 5: teaching areas, dining, halls.
External areas	· The landscape around the two main buildings is one large terraced space leading to seven sport pitches located under the Westway for weather protection. · Westbourne Green sports facilities are arranged in three areas: · Dedicated academy use: MUGA, student habitat zone, school habitat garden and informal play area. · Shared academy/community use: Five 6-a-side football pitches, informal kick-around space, five fitness stations and one informal basketball hoop. · Dedicated community facilities: two 8-a-side pitches, six fitness stations, skate park and one informal basketball hoop.
Car Parking/ cycle parking provision	· 62 car parking spaces (12 for visitors). · 130 cycle spaces (10 for staff and 40 for users of the community sports hall).
S106 contributions	£200,000 bus service improvement contribution.

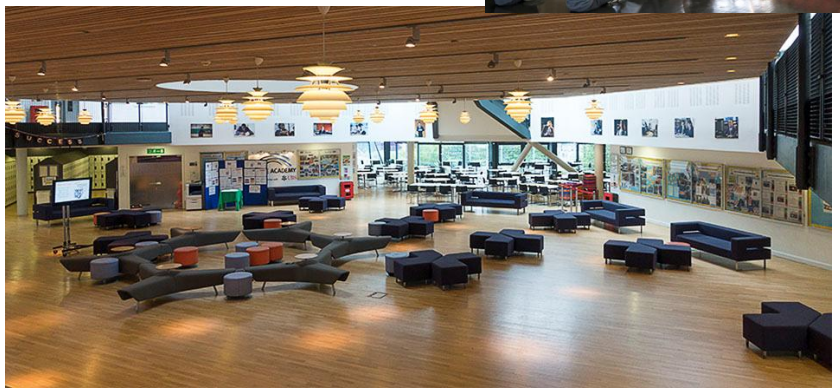
KEY

1 Main Buidling
2 Academy Sport
3 External Sports Pitch
4 Terraces
5 MUGA
6 External classroom

Bridge Academy, Hackney is a secondary school and sixth form for 1,150 pupils aged 11-18. The school is designed as a seven level interactive learning environment in a dense inner city location, adjacent to the Regent's Canal. The school is sponsored by financial services company UBS.

Site Size	6,000m^2 inner city site.
Surrounding uses	The site is bounded to the north by the Regents Canal, and sits within a predominantly residential area, made up of large high rise flats. To the south-east of the site is Haggerston Park.
Building size	· 10,250m^2 with a maximum of 7 storeys (15,500m^2 of learning and recreational space).
Internal configuration	· The academy is built around a Central Square which forms the hub of the building. This is a flexible space accommodating students at break and lunchtimes, as well as concerts, art exhibitions and group tuition. · The learning spaces and classrooms are on upper floors and comprise of standard teaching facilities and specialist curriculum subjects such as Science labs, Design Technology and ICT. There are Art studios at the top of the building. · In the base of the building is a sports hall, sixth form study space and a 180-seat lecture theatre. · A separate 450 seat performance hall with sound, lighting and theatre facilities.
External areas	· Due to the constrained nature of the site, sports pitches are provided offsite on Haggerston Park · The terraces extend the internal learning space on the northern elevation and can be used as either outdoor classrooms or playground areas.
Car Parking/ cycle parking provision	· 30 car spaces · 90 cycle spaces
S106 contributions	MUGA and pavilion on the Haggerston Park Depot Site which is available to the local community outside of school hours, and a S278 to address highway contributions to the immediate area.





H.3 All-through Schools

The David Ross Education Trust (DRET) London Free School is an all-through free school at Sweetwater and Stadium Island, scheduled to be opened in September 2017. The school will have places for primary students through to 6th formers. It is expected that around 1200 pupils will attend the school; this will comprise of 420 (2FE) primary pupils, 600 (4FE) secondary pupils and 120 places for those undertaking post-16 qualifications. The students will benefit from the range of sporting facilities available in the Queen Elizabeth Olympic Park. The primary school building has been designed to allow for future extension to a part - three storey building to accommodate expansion to a 3 FE school should demand arise.

Site Size	The primary school site including the playing field and permanent Loop Road extends to 16,136sqm. The secondary school site is 0.75 hectares in size and occupies a roughly triangular shaped plot of land approximately 100m south east of the Olympic Stadium.
Surrounding uses	Primary school – To the north will be new housing, prior to which a footbridge across the canal to connect with Fish Island; to the west by the canal towpath, and subsequently by the Lee Navigation canal itself; to the south a private access road serving Lock Keeper's Cottage; and to the east the River Lea. Secondary school - to the north and east by the City Mill River and immediately, a riverine strip of planting. To the south by a retaining wall fronting onto the Loop Road. To the west by undeveloped land which is committed to becoming a community running track.
Building size	Primary school - two storey, 2,469sqm (GEA) building. Secondary school – six storey, 10,045sqm (GEA) building.

Internal configuration	The purpose of locating DRET London Free School within Queen Elizabeth Olympic Park is to deliver an inspiring transformative sporting aspect to the education provision for local children. Sport will be the academy's major specialism and a key aspect of its identity. · Education, sports and social facilities will all be accessible to the wider community outside of school hours. · The shared spaces of the primary school, including the halls, library, and service spaces, can all be accessed outside of school hours for community use whilst keeping the main teaching spaces secure. The specialist teaching spaces of art and science can also be used by the community without impinging on the rest of the school. · DRET intends to have a Business manager and a site supervisor for both the primary and secondary school sites.
External areas	· Reception classes have their own outdoor teaching and play spaces separated from the rest of KS1. · Year 1 have direct access to ground floor play space while Year 2 have their own external play terrace at first floor. · The KS2 classes share a hard play area which is directly accessed from the KS2 entrance to the south of the building. · The primary school will have access to total outdoor space of 7,093sqm, including the playing field, to be provided as a 3G pitch MUGA. · The MUGA has changing rooms for 16 male and 16 female participants. · Both hard and soft informal and social areas will be provided on the secondary school site. 2,100sqm hard informal and social area in the form of spill out space to the front of the school, roof terrace and learning platforms, and 359sqm soft informal and social area which can be used for a wide range of outdoor

	educational opportunities. · The Olympic Stadium Community Track (6,282sqm) will be available for the school's sole use during the school day. 7,407sqm of soft PE space will be provided at the Olympic standard community track and infield. · The school is also exploring opportunities to utilise the existing world class sporting facilities on QEOP, including the Copper Box and the Aquatics Centre and has discussed the potential of using these with the operator, Greenwich Leisure Limited. The School has also discussed using the facilities at the Lee Valley Hockey and Tennis Centre at Eton Manor. DLFS is liaising with the London Borough of Hackney in timetabling and coordinating the use of the existing sports pitches at Hackney Marshes and Victoria Park to provide additional outdoor sporting facilities. There are 82 sports pitches at Hackney Marshes, with a 3G facility at neighbouring Mabley Park.
Car Parking/ cycle parking provision	· Primary school - Parking is restricted on the site to two staff parking spaces. Two blue badge parking spaces are provided on site. A further two parking spaces are provided for minibus parking. 50 cycle parking spaces. · Secondary school - No on-site student pick up and drop off facilities are provided. Three blue badge car parking spaces will be provided. 168 long-stay secure cycle parking spaces

H.4 Health Facilities

The Bloom' White City, by Penoyre & Prasad Architects, is a mixed use development of 170 shared ownership residential units above basement car-parking, retail units and 3,400m² of primary healthcare and social services facilities which was opened in 2014.

<table>
<tr><td>Site Size</td><td>· 140 metres length, 54 metres width
· 0.764 hectares</td><td>Delivery & funding arrangement</td><td>· The health centre was cross-funded through the sale of the apartments.
· The scheme was part of the LIFT programme, with Fulcrum.
· The scheme was delivered via two stage D&B following financial close.</td></tr>
<tr><td>Surrounding uses</td><td>The Bloom forms one edge of a 2.9 hectare urban park. The surrounding urban area is primarily residential with the 4-5 storey White City estates to the east and smaller Victorian and 1930's terraces to the south and west. Some local shopping units are located opposite the site.

Queens Park Rangers football ground is located approximately 400m to the east and the BBC white City development is approximately 800m to the east.</td><td rowspan="3">Health services that are provided in addition to general practice and any co-located services</td><td rowspan="3">Health and Social Services provided across two floors.
· Space for four separate GP practices on the ground floor.
· Specialist child development services including occupational therapy and speech and language therapy.
· Community and specialist dental services
· Diabetes Services
· Community Rehabilitation Service
· Adult Social Care Service - assessments and service provision
· Respiratory service
· Stop Smoking Service
· Anticoagulation services
· Podiatry
· Leg Ulcer Clinic
· School Nursing
· Sexual Health
· Health Visiting
· District Nursing
· Community social work services
· Nutrition and Dietetics
· Learning disabilities services

The GP's and community health teams work alongside social services to offer joined up care for the local community. There is a shared reception and waiting areas overlooking Wormholt Park. The centre has shared treatment spaces and offices, with rooms and clinics designed as shared resources.

In additional to the health centre there are 170 residential units and two retail units one of which has been identified for a local pharmacy.</td></tr>
<tr><td>Building size</td><td>· 3,400m² primary healthcare and social services facilities
· 170 one, two and three bedroom shared ownership apartments and low cost market discount apartments.
· 600m² of retail in two units.
· 4,796m² basement including car parking, bike storage and plant.
· GIA 17,957m² (including the basement)
· FAR 2.35.1 (this uses the GIA above)</td></tr>
<tr><td>Car Parking/ cycle parking provision</td><td>· 89 car parking spaces
· 27 disabled car spaces
· 12 motorcycle spaces
· 254 cycle parking spaces with visitor racks outside the Centre
· No visitor car park, bookable access to disabled bays.</td></tr>
</table>

Internal configuration	Main building: · Basement: carpark for residents and health centre staff / plant / cycle parking · Ground & first floor (north): Parkview Centre for Health and Wellbeing, provides a range of services across the two floors · Ground floor (south): Two retail units, one of which is a basket (local) supermarket. · Second to seventh floors: five storey residential section of the development sits above the health centre and retail units as a defined block. The apartments can be reached via four cores each with two lifts and their own secure entrance.	**Design standards / Overcoming constraints (site, co-location and the like)**	· The health centre has a BREEAM rating of Excellent. · The residential units have been designed to Code for Sustainable Homes Level 4. · Lifetime Homes compliant scheme with 24 of the units designed for wheelchair users. · Each apartment has Mechanical Ventilation Heat Recovery Unit technology, whilst the heat load itself is met by a centralised CHP system. · Photovoltaic panels are installed on 80m² of roof. · The health centre was designed to meet the latest HBN and HTM standards based around HBN 11-01. · The design considered the need for acoustic and security separation for each of the separate elements.
External areas	· The Bloom forms the eastern boundary to Wormholt Park and has created a new public piazza along Bloemfontein Road with a grand civic gateway through to the Park.	**Number of patients registered with the GP practices**	· Parkview Medical Centre: 1,939 · Dr. Uppal & Partner: 6,934 · Parkview Practice: 5,660 · Canberra Old Oak Surgery: 3,793 Total = 18,326

The Bloom' White City, by **Penoyre & Prasad Architects**

Sir Ludwig Guttmann Health & Wellbeing Centre, by Penoyre & Prasad Architects, is a polyclinic for London 2012 Olympics reconfigured into a community health centre for legacy use. It is a hub for innovative healthcare, wellbeing and community services, comprised of 3,800m² state-of-the-art NHS primary care facility and an additional 1,500m² East Village Community Development Trust. It was completed in December 2011.

<table>
<tr><td>Site Size</td><td>· 74 metres length, 74 metres width (site is triangular in shape)
· 0.333 hectares</td><td>Delivery & funding arrangement</td><td>· The project was funded by a direct grant from the Department of Health to the ODA.
· The scheme was built out as an enabling works package followed by D&B from the main build.</td></tr>
<tr><td>Surrounding uses</td><td>The site sits at the edge of the East Village development, used as the Athletes Village for the 2012 Games. The unique promontory site sits between the railway cuttings and retaining structures on three sides with the nine and ten storey residential neighbours of the East Village to the South and East.</td><td rowspan="3">Health services that are provided in addition to general practice and any co-located services</td><td rowspan="3">Following the games, the interior was re-configured to convert the building from games to legacy use. The Centre now provides a wide range of NHS services including:

· Abdominal aortic aneurysm screening
· Allergy services for children
· Gastroenterology
· General surgery
· Gynaecology services
· Hernia service
· Mammography
· Maternity and fertility services
· Nose, sinus and throat clinic for children
· Neurology
· Opthalmology for adults and children
· Phlebotomy
· Physiotheraphy and sports exercise medicine
· Respiratory service
· Talking therapies
· Urology services

Plus a range of community facilities including; a café; and a pharmacy.</td></tr>
<tr><td>Building size</td><td>· The Centre has 4 floors and a basement area.
· 3,800m² - accommodation for NHS primary care needs
· 1,500m² - East Village Community Development Trust
· GIA 5,320m² including the basement carpark
· FAR 1.60.1 (this uses the GIA above)</td></tr>
<tr><td>Car Parking/ cycle parking provision</td><td>· 20 car parking spaces in the basement
· 2 disabled car spaces in the basement
· 3 motorcycle spaces
· 40 cycle spaces in the basement with visitor racks outside the Centre
· No visitor car park, but with 2 disabled bays in front
· Limited public car parking in East Village and Olympic Park
· Westfield Stratford City is a 5-minute walk from the Centre and has parking for 5,000 cars</td></tr>
</table>

Internal configuration	· A dramatic four-storey atrium creates a unifying heart for the disparate activities within the building · Around the atrium, a continuous ribbon of double-loaded accommodation on each floor are different types of flexible clinical rooms · During the Olympic Games, the centre was equipped to treat sports injuries. Physiotherapists, podiatrists, osteopaths and dentists would see as many as 200 people a day. · The facility was designed to incorporate future proofing so it could be reconfigured to fulfil its legacy role as an NHS primary care centre for the local community	**Design standards / Overcoming constraints (site, co-location and the like)**	· The Centre has been designed to allow each tenant use of its own shop front and identity, while health and community areas share the use of the unifying atrium and courtyard. · As a visitor, this non-institution feels like a single place, and it benefits from the efficiencies of operating as such. · The unique promontory site between railway cuttings and retaining structures posed practical challenges, but also allows the building to sit sculpturally upon a pedestal. · The health centre has a BREEAM Excellent rating due to sustainable features such as the electricity and cooling fed from the energy efficient combined heat and power plant scheme that supplies the Olympic Park.
External areas	A simple courtyard podium with planting to its edge provides an extension to, and backdrop for the building atrium. Creeping plants are intended to colonize the vertical concrete retaining walls which define the site on two sides.	**Number of patients registered with the GP practice**	· Liberty Bridge Road Practice: 10,194 patients

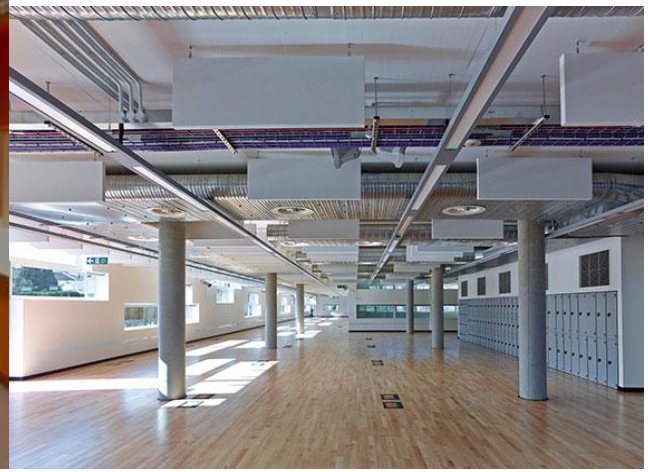
Sir Ludwig Guttmann Health & Wellbeing Centre, by **Penoyre & Prasad Architects**

West Norwood Health and Leisure Centre, by Allford Hall Monaghan Morris, is a 5,430m² mixed used facility, which provides a state-of-the-art Lambeth Council customer service centre, as well as an unorthodox mix of community and health facilities to deliver well-being services and improved open space to the Norwood residential population. It was completed in 2013.

Site Size	· 5,430sq.m	**Delivery & funding arrangement**	· The scheme was part of the LIFT programme, with Fulcrum. · The scheme was delivered via two stage D&B following financial close.
Surrounding uses	Adjacent bungalow housings on one side of the site are the closest existing buildings to the development; consequently deserving the most sympathetic relationship. Therefore the building along this edge has been restricted to a single storey height. The parapet level closely corresponds to the ridgeline of the bungalows. From this point the building rises up in half-storey steps to the railway boundary, where the tallest four storey element of the building is akin to the height of the four storey mansions on the opposite side of the railway.	**Health services that are provided in addition to general practice and any co-located services**	The WNHLC is a new community facility which brings together: · Leisure provision (6-lane 25m pool, 100 station fitness gym, dance studio, community meeting venue) · GP services · Kings College University Dental Academy and KCH community dental services · London Borough of Lambeth customer service centre · Commissioned community health services including heath visitor team, speech and language therapy, health trainers, diabetes services, substance misuse and smoking cessation services.
Building size	· The building steps up on site from 1 to 4 storeys high. · Total GIA of 5,430sq.m. 2,705sq.m health centre facilities, 2,609sq.m sport and leisure and 115sq.m customer services.		
Car Parking/ cycle parking provision	· Parking is not available on site, but with 4 disabled bays · 44 spaces for bike storage · The area is well served with great transport link		

Internal configuration	· The building is cut into the slope of the site so that the gym accommodation at the top is a single storey high element that sits comfortably with the height of the bungalows opposite · The GP and dentist waiting areas and the dance studio span over the central space · The floor beneath the ground floor level houses office space, staff facilities, plant, and facilities management areas. · The pool hall roof is stepped, falling to meet the wooded landscape area of the north of the site · The stepped roof of the 'street' space rises up to the height of the wing of the healthcare accommodation · Both the pool hall and shared 'street' space are situated on ground floor, in the middle of the slope	**Design standards / Overcoming constraints (site, co-location and the like)**	· The principle of the massing of the building has been developed as a reaction to the topography of the site and the surrounding buildings. · The steeply sloping site may have been regarded as problematic, but it has been embraced and turned to an opportunity that has informed the layout of the scheme. Utilising this sloped part of the site necessitated cutting and building into the ground. The cut earth excavated from the below-ground portion of the building is used to re-grade the remainder of the site, levelling out the ground around the existing Norwood Hall. This requires none of the excavated earth to be carted elsewhere. · The cutting of the building into the landscape served also to minimise the impact of the building on the existing context; much of the building is effectively underground.
External areas	Using the sloping part of the site as the position of the new building, unlocks the 'better' part of the site for new landscaping. This strategy, not only consolidates the open space and improves the amenity of the area, but also creates a new landscaped setting for the building. The idea of a form emerging from the landscape has been reinforced by conceiving the building as a series of strata, resembling a sediment rock formation.	**Number of patients registered with the GP practice**	· Knights Hill Surgery: 6,032 patients

West Norwood Health and Leisure Centre, by **Allford Hall Monaghan Morris**



Hillside Primary Care Centre, by Cullinan Studio, is part of Stonebridge Estate Hillside Hub. The hub is a flagship development that formed the heart of the Stonebridge regeneration project in the London Borough of Brent. The scheme comprised 59 mixed tenure apartments, health centre and community centre, café and convenience store, private car parking, garden and a public piazza. It was completed in 2009.

Site Size	· The site has a frontage of 65 metres to Hillside and 85 metres to the access road to the West. · 0.49 Ha	**Delivery & funding arrangement**	· The health centre was cross-funded through the sale of the apartments, a government grant, private finance and a Housing Corporation grant. · Client: Hyde Housing Association / Hillside Action Trust
Surrounding uses	The site was immediately adjacent to residential dwellings and a large children's play nursery. This meant extensive muck-away operations to build the below ground floor car park had to be carefully coordinated, giving additional consideration to Hillside, a major route into London.	**Health services that are provided in addition to general practice and any co-located services**	· The health centre provides comprehensive care including: > General practice > Dentistry > Podiatry > District nursing > Women's services, and > A baby clinic · Currently includes 4 GP practices: > Hilltop Medical Practice > The Stonebridge Practice > Aksyr Medical Practice, and > Harness Harlesden Practice · Also includes a Sexual and Reproductive Health Clinic run by Central and North West London NHS Foundation Trust
Building size	· Three-storey community & health centre providing a range of activities including: Primary Care Centre, the Stonebridge Training and Employment Project; IT training; after-school support to help children and young people in their educational attainment; a dance studio; and space for all types of social events. · 8,504m2 GIA		
Car Parking/ cycle parking provision	· 2-storey car park is available at the rear · Basement car parking		
Internal configuration	· The building is split into 2 wings joined by a strongly articulated central section. · The top 4 floors of the wings contain a mixture of shared ownership and privately owned apartments. · Below the apartments in the west wing is the 3-storey health centre; below the apartments in the east wing is a new Tesco Express · Between the 2 wings is a 3-storey Community Centre with a public piazza at the front and a private landscape garden	**Design standards / Overcoming constraints (site, co-location and the like)**	· The building is purposely designed so that, from the outside, a visitor can clearly identify individual elements of the overall scheme. · The Community Centre Hall's zinc roof, formed as a graceful curve in cross and long section, has an extremely high sound attenuation in order to prevent local residents being disturbed by evening events and has been carefully calculated to ensure generous amounts of daylight into all adjacent flats. · Coloured panels between the Primary Care Centre's windows respond to the neighbouring Fawood Children's Centre · During the construction programme, adjacent premises were cleared for demolition necessitating a close working relationship with neighbouring contractors and a phased programme of handover, accommodating the health centre facility in advance of the residential accommodation. · VRF comfort cooling/mixed mode natural ventilation has been provided to the Primary Care Centre's medical and administration areas. · The project also included the provision of two wind turbines, solar hot water

			heating and rain water harvesting to offset some of the community centre building energy demands. · The apartments were designed and constructed to achieve an Ecohomes Very Good rating.
External areas	The development provides a small courtyard garden area which can be accessed by the residents and sited behind the community centre.	**Number of patients registered with the GP practices**	· Hilltop Medical Practice: 3,039 · The Stonebridge Practice: 4,648 · Aksyr Medical Practice: 6,325 · Harness Harlesden Practice: 2,425 Total = 16,437

Hillside Primary Care Centre, by **Cullinan Studio**

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