

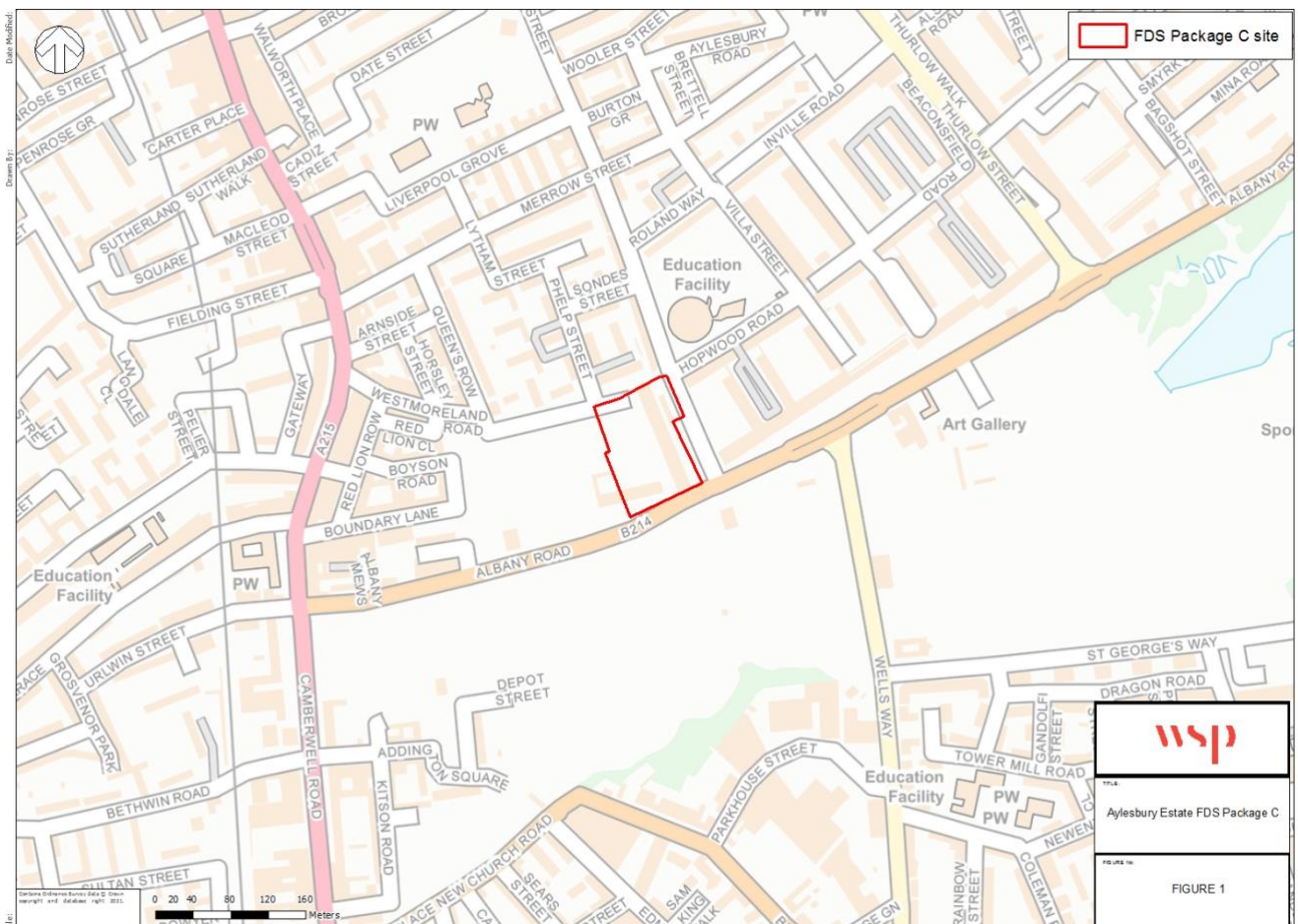
TECHNICAL NOTE 1

DATE:	10 March 2022	CONFIDENTIALITY:	Confidential
SUBJECT:	Impact on proposed design changes of 2014 ES: Water Resources, Water Quality, Flood Risk and Drainage		
PROJECT:	70081852 Aylesbury Estate FDS Package C	AUTHOR:	Tess Mahar
CHECKED:	Kate Mackay	APPROVED:	Kate Mackay

INTRODUCTION

This technical note considers the potential impacts of the proposed changes to the consented Aylesbury Estate First Development Site (FDS) development ('the consented development') on the conclusions drawn in 2014 Environmental Statement Chapter 16: Water Resources, Water Quality, Flood Risk and Drainage.

Figure 1 shows the location of the FDS Package C site, which is bounded by the B214 Albany Road to the south, Westmoreland Road to the north, Portland Street to the east, and the wider Aylesbury Estate development to the west. The site is located in the London Borough of Southwark (LBS).



PLANNING HISTORY

The FDS was granted detailed planning permission by the LBS (Ref No:14-AP-3843) on 5 August 2015. The development comprised:



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“Demolition of existing buildings and redevelopment to provide a mixed use development comprising a number of buildings ranging between 2 to 20 storeys in height (9.45m - 72.2m AOD), providing 830 residential dwellings (Class C3); flexible community use, early years facility (Class 01) or gym (Class D2); public and private open space; formation of new accesses and alterations to existing accesses; energy centre; gas pressure reduction station; associated car and cycle parking and associated works.”

The Environmental Statement (ES, dated 8 October 2014), as part of the planning submission, addressed impacts on water resources, water quality, flood risk and drainage within Volume 1 Chapter 16. The chapter considered the *“likely significant effects that may arise during construction and operation in terms of surface water drainage and flood risk, surface water quality and surface water / foul water sewerage capacity.”*

For the FDS, the ES Volume 1 Chapter 16 determined that following the implementation of the recommended mitigation measures, no significant residual effects in terms of hydrology, drainage or flood risk are anticipated during demolition, construction or operation. The specific details of the receptors and residual effects are summarised below:

Demolition and Construction Activities:

- Effects due to the alteration of the drainage regime on the offsite infrastructure were found to be negligible with the application of appropriate mitigation (set out in a Construction Environmental Management Plan).
- Effects relating to the potential contamination of water resources on groundwater and public sewerage infrastructure were found to be negligible with the application of appropriate mitigation (including but not limited to measures set out in a Construction Environmental Management Plan).
- Effects relating to flood risk to construction works and construction plant were found to be negligible with the application of appropriate mitigation.
- Effects on water bodies due to leak or breakage of the temporary sewerage system was found to be negligible with the application of appropriate mitigation (set out in a Construction Environmental Management Plan).

Operational:

- Effects due to the alteration of the drainage regime on the offsite infrastructure were found to result in a direct, permanent, long term minor positive effect on the TWUL combined public sewer network and offsite development areas with the application of appropriate mitigation.
- Effects on surface water drainage were found to result in a negligible effect on the TWUL combined public sewer network with the application of appropriate mitigation.
- Effects due to the increased potable water demand were found to result in a negligible effect on the local potable water supply.
- Effects due to the increased foul water discharge were found to result in a negligible effect on the existing TWUL assets.
- Effects of increased flood risk to the site users were found to result in a negligible effect on the site users with the application of appropriate mitigation.

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A submission for minor amendment to include an additional 12 residential units (from 830 to 842 units) was then granted by LBS on 14 February 2019 (Ref No: 17/AP/3885). This submission was accompanied by an ES Addendum (dated February 2015), which determined the following:

“The proposed will not significantly affect the building footprints or construction activities and as such the proposed mitigation measures as controlled by planning conditions remain valid, and no further assessment needs to be carried out or mitigation measures recommended. Furthermore, the landscape strategy remains unchanged for both the FDS and Masterplan Applications.

The schemed changes are not considered significant enough to alter the significant of residual effects identified in the 2014 Water Resources Assessment. Therefore, the original assessment of water resources, water quality, flood risk and drainage reported in the 2014 ES remains valid and no further assessment is considered necessary.”

PROPOSED CHANGES TO THE CONSENTED DEVELOPMENT

The proposed changes to the consented development relate to FDS Package C and comprise:

- An increase of 60 residential units across Plots 3 & 4 (from 842 to 902 units);
- An overall uplift of 9 social rent units and 53 social rent habitable rooms;
- An overall uplift of 18 shared ownership units and 63 shared ownership habitable rooms;
- An overall provision of affordable housing (social rent and shared ownership) across the FDS of 65.70% (which has increased from 64.40%) when measured by habitable rooms;
- Proportional increase to both shared ownership and social rent provision when measured by habitable rooms;
- The tower (Block 4A) on Plot 4 is proposed to increase from 20 storeys to 23 storeys (AOD increase from 72m to 82.65m), plus an increase in the footprint to accommodate an additional home per floor;
- The building line of Block 4B has been altered to accommodate the increased width of Block 4A. The depth of the west wing of Block 4B has increased within the courtyard.
- Plot 3 has increased in height from a maximum of 6 storeys to 7 storeys;
- Reduction in both the number and proportion of single bedroom units and the delivery of a greater number of larger family-sized units (primarily 2B4Ps); and
- Significant uplift in the provision of cycle parking to meet the requirements of the new London Plan standards for the entirety of FDS C; and
- Additional bin storage provided at ground floor level in line with the increase in quantum of accommodation; and
- Minor alterations to the landscape design.

With respect to impact on the water resources, water quality, flood risk and drainage aspects of the development, the proposed changes that may impact on these aspects is outlined below:

- Increase in foul water discharge from increase in 60 units (using 4000l/dwelling/day this equates to increase of 2.8l/s);

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- Increase in the green roof area for both Plots 3 and 4 which can be used to provide some additional source control for the surface water system;
- Increase in impermeable area for both Plots 3 and 4 which results in an increase in the proposed surface water runoff from the site, using methods from the original drainage strategy this is estimated to be approximately 6.7 l/s.

CHANGES TO LEGISLATION, POLICY AND GUIDANCE

Legislative

The legislative framework, as presented in paragraph 16.2.1 of the 2014 ES has had some updates to documents. However, none of these changes would result in changes to the assessment methodology nor the conclusions of the 2014 ES. The changed legislative documents include:

- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 has been updated in 2017;
- The Environment Act 1995 has been updated in 2021;
- The Water Act 2003 has been updated in 2014;
- The Groundwater Regulations 1998 has been updated in 2009.

National Policy

National Planning Policy Framework (NPPF), July 2021

The NPPF was revised on 20th July 2021 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous NPPF published in March 2012, revised in July 2018 and updated in February 2019.

Whilst there have been some changes to this document, none of the changes would change the assessment methodology nor the conclusions of the 2014 ES.

Planning Practice Guidance (PPG), last update June 2021

The NPPF Technical Guidance 2014 has been updated to become the PPG (published 2016, last updated June 2021), but as for the NPPF, the changes to this document do not change the assessment methodology nor the conclusions of the 2014 ES.

Environment Agency Policy

New EA guidance "Flood risk assessments: climate change allowances" issued in 2016 and updated on 6th October 2021 provides up to date information on expected changes in rainfall, river flows and sea level rise as a consequence of climate change.

A key change from the previous guidance is that the climate change allowances for peak river flows now are shown as variable on a regional basis; allowances are also now based on percentiles, whereby a



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percentile is a measure used in statistics to describe the proportion of possible scenarios that fall below an allowance level (e.g. a 50% percentile means that the allowance has 50% chances of not being exceeded). This change may result in differences in the extent of flooding predicted for an EA Main River when considering allowance for climate change. However, the methodology for the ES assessment relating to the risk of fluvial flooding to the development has not changed.

For peak rainfall the EA Guidance provides an upper end and central allowance depending on epoch; the guidance recommends assessing both the central and upper end allowances to understand the range of possible impacts. These allowances are detailed in Table 2 (Peak rainfall intensity allowance in small and urban catchments) of the EA guidance.

For the FDS Package C site, based on the typical lifespan for a residential development being 100 years, the contingency peak rainfall allowances for climate change that are potentially applicable to this Site are:

Upper End – 40% increase in peak rainfall by 2115;

Central – 20% increase in peak rainfall by 2115.

Previously, the contingency peak rainfall allowances for climate change that were used for the drainage strategy were 30%. To meet the new EA Policy, the attenuation storage on the proposed development Site needs to be determined using the upper end estimates of 40%. However, the key principals for the surface water drainage strategy, including how water is attenuated, treated and discharged are still maintained, only the size of the attenuation features will change slightly due to this policy change. This change is akin to changes that may be required during detailed design and can be considered minor. Therefore, based on this, the methodology used for the 2014 ES has not changed.

Regional Policy

The Greater London Authority - The London Plan (2021)

The Greater London Authority – The London Plan (2021) replaces the previous London Plan (2016) and London Plan (2011). The changes to this document do not change the assessment methodology nor the conclusions of the 2014 ES.

The only change that provides additional information to the Aylesbury FDS Site is Figure 9.4, which provides a spatial illustration of the wastewater drainage capacity across London, this indicates the Aylesbury FDS Site is located in an area with a sewer flow capacity utilisation of between 81-90 % (mapping from 2015).

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Local policy

New Southwark Plan (2020)

The Southwark Plan (2007) will be updated with the New Southwark Plan (2020) once it is finalised and adopted (planned February 2022).

Previously, the Southwark Local Plan consisted of the Southwark Plan (2007) and the Southwark Core Strategy (2011). The New Southwark Plan (2020) will supersede both of these documents.

In general, the changes to this document do not change the assessment methodology nor the conclusions of the 2014 ES. The only policy updated which may impact the development is:

- Ref MM78, Policy 67 Reducing Flood Risk, Point 2: Finished floor levels are set to no lower than 300mm above the predicted maximum water level where they are located within an area at risk of flooding;

Guidance

London Borough of Southwark Strategic Flood Risk Assessment (SFRA) (2017)

The London Borough of Southwark (LBS) SFRA (2008) was updated first in 2016, then in 2017. The changes to this document that are applicable to the FDS Application site include:

- Updated mapping of flooding history;
- Updated flood maps for flood risk for rivers and sea, surface water, groundwater and reservoirs;
- Updated breach mapping for tidal flood risk for the River Thames;
- Updated mapping of Emergency Flood Planning;
- Updated mapping of vulnerable sites for flood risk from surface water and groundwater;
- Updated mapping of SuDS suitability;
- Updated SuDS guidance;
- Developers Guide for Surface Water management.

These changes to the updated SFRA will be outlined further in the Changes to Baseline Section.

Aylesbury Area Action Plan 2010

The Aylesbury Area Action Plan (AAP) (2010) document has not been updated since the 2010 issue, however, some of the policies and sites from the Aylesbury AAP will be replaced by the New Southwark Plan. None of these changes impact water resources, flood risk or drainage.

Other guidance

- SuDS Manual 2007 has been updated in 2015 with the latest research, industry practice and guidance on sustainable drainage. However, the changes to this document do not change the assessment methodology nor the conclusions of the 2014 ES.

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- Sewers for Adoption 7th Edition (August 2012) has been replaced with the Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England (DCG) (May 2021). However, the core guidance from this document used within the proposed drainage strategy have not changed, therefore there is no change the assessment methodology nor the conclusions of the 2014 ES.
- Code for sustainable homes Tech Guide 2010 was withdrawn in 2015 and replaced with a new set of national technical standards. A planning written ministerial statement was also published which outlined the government's policy on the application of these technical standards for plan making and decision-taking.

CHANGES TO THE BASELINE CONDITIONS

Flood Risk

- Flood maps from the LBS SFRA and the EA Flood Map for Planning and Risk of Flooding from Surface Water Map have been updated. However, while these updated maps may show minor changes to flood locations, extents and depths, they do not indicate any increased risk of flooding to the site from sources such a surface water, sewer, water mains or groundwater flooding. As per the original baseline conditions, for any localised flood risk from retained sewers, surface water flooding or water main burst, the flow route would be along the existing public highway network.
- Fluvial Flooding: The FDS Application Site was found to lie wholly within defended Flood Zone 3a. Th EA data indicated that the River Thames flood defences provide adequate defence against flooding from events up to and including the 1 in 1000 year flood event. Based on this the direct impact of fluvial flooding was considered negligible, however there was a residual risk resulting from a breach/overtopping of flood defences. Further assessment of nine strategic breach/overtopping locations along the reach of the Thames has been undertaken since the 2014 ES. However, examination of the results from this assessment confirms that none of the nine modelled breach/overtopping locations would individually inundate the FDS Application Site.

Drainage

- The previous drainage strategy included as an appendix in the 2014 ES applied 30% climate change to the peak rainfall intensity as recommended by the NPPF at that time. However, during further design stages, this climate change allowance was uplifted to 40% as required for the drainage strategy design.

IMPLICATIONS OF THE PROPOSED CHANGES TO THE CONSENTED DEVELOPMENT

The changes to the consented development with respect to the water resources, water quality, flood risk and drainage aspects that could result in changes to the previous 2014 ES Assessment consist of increases to the proposed foul and surface water flows generated by the Site.

The proposed discharge rates for the FDS Package C Site have been agreed with Thames Water Utilities Limited (TWUL) based on a Capacity Impact Assessment undertaken for the Site prior to planning. These rates include a combined foul and surface water discharge to the TWUL network. The proposed surface water discharge has been limited (achieved via on-site attenuation) to provide 65% betterment on existing peak 1 in 2 year brownfield discharge rates once peak foul flow adjustments were considered. This equated to an agreed rate of 111 l/s. The required on-site storage has been designed for the critical 1 in 100 year

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plus 40% allowance for climate change rainfall event, with the required storage volumes provided by below slab off-line storage tanks located under two of the plots, one of which is Plot 4.

During the detailed design of the FDS Package C Site drainage strategy, the surface water and foul water drainage systems will be required to be adapted to accommodate the increases to the proposed foul and surface water flows generated by the Site. This will result in an increased storage volume requirement for the storage tank located under Plot 4. This storage will need to be increased sufficiently to account for the increased surface water runoff from the changes to impermeable area, along with a reduction in the surface water discharge rate to account for the increases to the peak foul flow discharge from the site also. With the changes to the on-site storage design, the proposed surface and foul water discharge from the FDS Package C Site to the TWUL combined sewer will continue to be limited to that agreed with TWUL during planning. On this basis, the proposed changes to the consented development will not affect the ES assessment findings for the effects on the off-site infrastructure.

Table 1 below summarises the change in effects identified in the 2014 ES as a result of the changes to the consented development.

Table 1: Summary of change in effects as a result of scheme changes

Significant Effects Identified in Previous ES	Change in Magnitude or Significance of Effects as a result of scheme changes	Supporting Information
Construction Phase Impacts		
Alternation to Drainage Regime on the Off-site Infrastructure	No Change – mitigated effects continue to be negligible	No change to type or nature of construction activities due to changes in development. Minor changes to the scale of the proposed development do not result in an increased footprint to the construction site and will not result in a change to the mitigation measures proposed during construction and will not therefore change the significance criteria.
Effects relating to the potential contamination of water resources (groundwater and public sewerage infrastructure)	No Change – mitigated effects will continue to be negligible	No change to type or nature of construction activities due to changes in development. Minor changes to the scale of the proposed development do not result in an increased footprint to the construction site and will not result in a change to the mitigation measures proposed during construction and will not therefore change the significance criteria.
Effects relating to flood risk to construction works and construction plant	No Change – mitigated effects will continue to be negligible	No change to the risk of flooding to the Site based on the changes in development. Effects will continue to be as assessed previously.
Effects on water bodies due to leak or breakage of the temporary sewerage system	No Change – mitigated effects will continue to be negligible	No change to type or nature of construction activities due to changes in development. Effects will continue to be as assessed previously.



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Significant Effects Identified in Previous ES	Change in Magnitude or Significance of Effects as a result of scheme changes	Supporting Information
Operational Phase Impacts		
Effects due to the alteration of the drainage regime on the offsite infrastructure	No Change - mitigated effects continue to be direct, permanent, long term minor positive effect on the TWUL combined public sewer network and offsite development areas	Increases to the surface and foul water flows proposed from the Site will be accommodated within the on-site surface water storage volume, ensuring that the proposed discharge rate is limited to that agreed with TWUL during planning. On this basis, the effects to the offsite infrastructure will continue to be as assessed previously.
Effects on surface water drainage	No Change – mitigated effects will continue to be negligible	Increases to the surface water runoff from the Site will be accommodated within the on-site surface water storage volume, ensuring that the proposed discharge rate is limited to that agreed with TWUL during planning. On this basis, the effects to the surface water drainage will continue to be as assessed previously.
Effects due to the increased potable water demand	No Change – mitigated effects will continue to be negligible	While an additional 60 dwellings will increase the water demand, the strategy for this supply follows that agreed in outline planning. TWUL confirmed during planning that no upgrade works were required to supply the FDS Site or the full Comprehensive Development of which the FDS is a part of. As this water demand increase is likely to be negligible in comparison to the demand for the full Comprehensive Development, it is expected that the effects to the potable water system would continue to be as assessed previously.
Effects due to the increased foul water discharge	No Change – mitigated effects will continue to be negligible	An additional 60 dwellings has been estimated to increase the foul water discharge by approximately 2.8 l/s. The foul and surface water flows from the Site discharge to the combined TWUL sewer network. The combined discharge rate from the Site for foul and surface water flows have been agreed with TWUL during planning. Increases to the foul water (and surface water) flows proposed from the changes to the development will be accommodated within the on-site surface water storage volume, ensuring that the proposed discharge rate is limited to that agreed with TWUL during planning. On this basis, the effects to the offsite TWUL infrastructure will continue to be as assessed previously
Effects of increased flood risk to the site users	No Change – mitigated effects will continue to be negligible	No change to the risk of flooding to the Site based on the changes in development. Effects will continue to be as assessed previously.



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ADDITIONAL EFFECTS NOT PREVIOUSLY IDENTIFIED

There are no additional effects which were not previously identified during the 2014 ES.

INCORPORATION OF MITIGATION IDENTIFIED

The only additional mitigation identified beyond that in the original 2014 ES is the requirement that during the detailed design of the FDS Package C Site drainage strategy, the surface water and foul water drainage systems will be required to be adapted to accommodate the increases to the proposed foul and surface water flows generated by the Site. This will result in an increased storage volume requirement for the storage tank located under Plot 4 to ensure that off-site discharge to the TWUL combined sewer is limited to that agreed with TWUL during planning.

CONCLUSIONS

From the review undertaken, it is clear that the nature of the proposed changes to the consented FDS Package C development do not materially alter the conclusions drawn in the 2014 ES, Volume 1, Chapter 16 'Water Resources, Water Quality, Flood Risk and Drainage' and the 2015 ES Addendum. The original assessment in Chapter 16 remains valid and no further assessment into these aspects is necessary to support the application for the changes to the consented development.