

REPORT ON OCC(22/03078/FUL) FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY 5/01/2023

This report is in three main sections:

- . A summary of key impacts of the applicant's FRA and Drainage Strategy with an additional local focus informed by site visits and interviews with neighbours downstream of Land at Meadow Lane.
- . A list of Oxford City Council Policies that the proposal is likely to fail and as such are potentially grounds for refusal.
- . Further detail of the key impacts of the applicant's submission identified in the summary and found in the final section of the document.

An EXPERT REVIEW of OxPlace's FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY by Dr Harvey Rodda of Water Resource Associates has been consulted in when preparing this report. Dr Rodda has confirmed that its content is accurate.

1 SUMMARY OF IMPACTS OF THE PROPOSAL'S FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY, The applicant's FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY, identified by Dr Rodda's scrutiny and calculations as being deeply flawed and inadequate is likely to lead to:

INCREASED RIVER POLLUTION

- MORE sewage discharges into the Thames through more pressure on Oxford Sewage Treatment Works. This is because the Foul Water Management Plan is shown not to be fit for purpose and Thames Water HAS NOT confirmed adequate capacity at Oxford Sewage Treatment Works to process waste water from 161 occupants (it has only 61% of processing capacity needed for the city now, even in current weather conditions).

Fails Policy NE.14

- MORE river pollution from increased nutrient loading and soluble contaminants in surface run-off and sediment from site.

These include:

- hydrocarbons from fuel leakage/spillage and combustion emissions from multiple vehicle movements
- toxic chemical and biological domestic household and garden products, pet urine and faeces
- VERY POOR contaminant-management measures, limited to a bypass separator mostly to filter-out particulate matter.

Fails NE13.

- IMPACT of river pollution Iffley Meadows SSSI

This will occur from two outlets into the Thames from the planned development:

- from the brook: its contaminated surface water joins the main river channel OPPOSITE AND ABOVE much of the SSSI less than 300m away.

The applicant has admitted twice, in the Planning Statement, that a 'hydrological connection with the brook' has this potential impact on Iffley Meadows SSSI and its biodiversity

- from the Highways Drain along the western boundary, which passes through 11 gardens downstream and joins the river opposite Iffley Lock - again above much of the SSSI.

This fails the SP42 allocation requirement in Local Plan 2036 of 'no impact on Iffley Meadows SSSI'.

Rivermead Nature Park downstream of both outlets is also a candidate for river-borne pollution.

INCREASED LOCAL FLOOD RISK AND POLLUTION

The Flood Risk Assessment's calculations are an unreliable basis for an accurate assessment of risk for housing proposed on-site, for existing homes on Meadow Lane, and for Church Way and Mill

Lane neighbours downstream of the proposed site, whose land is likely to flood from the Highways Drain that crosses their property and is likely to deliver water-borne soluble contaminants too; housing built near the field's western boundary will be likely to flood.

This fails the 'no increase in flood risk nearby/to neighbouring property' requirement of development.

FAILURE TO PROVIDE ENVIRONMENTAL AND BIODIVERSITY ASSESSMENTS

There is no Environmental Impact Assessment or adequate Biodiversity Impact Assessment for aquatic or land-based wildlife on site and the protected areas mentioned above. The three wildlife corridors and Blue-Green Infrastructure of which the fields are a central part, linking wildlife and more distant parts of the City, have been totally ignored.

Fails NE.6, NE.11.

FAILURE TO MAINTAIN A HEALTHY FUNCTIONING WATERCOURSE AND NO FUTURE MANAGEMENT PLANS

OxPlace and its predecessor have persistently failed to meet the responsibilities of riparian landowners set out in 'Living on the Edge' and UK Government Guidance on Owning a Watercourse – England. As a result water on site is currently environmentally dead and toxic. It must NOT be passed on to neighbours in this condition but only in 'its natural quantity and quality'.

Further information from an observation/discussion visit to the first neighbour downstream is in part 3 of this report, and expands on the current state of water from the applicant's land on a neighbour's property.

There is NO comprehensive plan to manage the Brook or Highways Drain in future.

Fails NE.11- no restoration plan.

THE EXTENT OF BANK WORK INTENDED IS RUDIMENTARY AND CONTRADICTIONARY

'Minor' work is mentioned in the applicant's submission but major bank work will be necessary to manage water on the western boundary of the site as a functioning healthy channel in order to include it as described in the plan's layout.

The amount of soil erosion involved has not been assessed and there is no Construction Environmental Management Plan for its different phases or their impact on contamination of water passing downstream.

FLAWS AND INADEQUACIES IN OXPLACE'S FLOOD RISK ASSESSMENT AND WATER MANAGEMENT SCHEMES

These can be summarised as:

- outdated 1970s methods used to calculate greenfield surface runoff, when Oxford City Council itself recommends the use of ReFH2, which succeeded the earlier method in 1999
- no proper climate change allowances to assess volumes of water flowing to the Thames
- omission of Environment Agency data on predicted rainfall in climate change
- inadequate groundwater level assessment and infiltration data
- outdated and inadequate Sustainable Drainage System (SUDS) - proposes underground storage and fails to apply the SuDS hierarchy
- a rudimentary, inadequate and infrequent SuDS maintenance plan

The impacts and inadequacies summarised above together all raise serious questions about the role ascribed to water as a central element and feature in the proposal, including from a public health and safety perspective.

IN CONCLUSION: the plan as submitted is fundamentally unviable from a Flood Risk and Drainage perspective.

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2 LIST OF POLICIES FROM OXFORD CITY COUNCIL'S FLOOD RISK STRATEGY

It is likely that the proposal fails to meet a number of these and they could constitute grounds for considering to refuse consent.

NE.6- Oxford's Watercourses: Planning permission is only to be granted for waterside development proposals that complement and enhance the waterside setting, whilst protecting wildlife habitats and maintaining public access

NE.11- Land Drainage and River Engineering Works: Planning permission will only be granted for river management, flood protection works and land drainage schemes that are designed to protect the flora and fauna of Oxford's flood meadow and other wetland habitats. Planning permission will not be granted for proposals to culvert watercourses or ditches. As part of new development proposals the City Council will, in suitable locations, seek opportunities to remove existing culverts and restore the watercourse to a more natural state

NE.12- Groundwater Flow: Planning permission will not be granted for developments that will have an adverse impact on groundwater flow. Where necessary, effective preventative measures will be implemented to ensure that groundwater flow is not obstructed. Oxford City Council Level 1 SFRA www.hydrosolutions.co.uk

NE.13- Water Quality: Planning permission will only be granted for development that will not cause a deterioration in surface or ground water quality. Appropriate measures to prevent pollution will be required, and site investigation details along with precautionary measures will need to be submitted by the applicant.

NE.14- Water and Sewerage Infrastructure: Planning permission will only be granted for developments that would increase the demand for on and off-site service infrastructure where: a. Sufficient capacity already exists; or b. Extra capacity can be provided in time to serve the development that will ensure that the environment and the amenities of local residents is not adversely affected. Certain elements of the local plan have already been superseded by Oxford City Council's Core strategy which was adopted by the council in March 2011. The core strategy is the Council's overarching strategy for future development in the city up to 2026. It identifies areas for potential development, as well as areas requiring regeneration and new housing. In terms of flood risk the core strategy sets out a series of guidelines which are related to the now superseded planning policy statement 25 (PPS25).

The main guidelines include: • no development in the Functional Floodplain (Flood Zone 3b), with the exception of water compatible structures; • a full flood risk assessment for any development in excess of 1 hectare which is sited in Flood Zone 2 or above; and • the integration of SuDS into the design of all new developments to limit runoff to acceptable rates. Once adopted, the Oxford Local Plan 2036 will replace the Local Plan 2001-2016, and the Core Strategy 2026.

The 2016-2036 local plan for Oxford will shape how Oxford grows, guiding new developments whilst looking to improve the environment and people's quality of life.

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3 DETAILED INFORMATION ON THE IMPACTS OF THE PROPOSAL SUMMARISED EARLY IN THE REPORT

FLAWS AND INADEQUACIES IN OXPLACE'S FLOOD RISK ASSESSMENT AND WATER MANAGEMENT SCHEMES

The Applicant's FRA:

- uses outdated 1970s methods to calculate greenfield surface runoff and design rainfalls without proper climate change allowances so volumes of water flowing to the Thames are not assessed reliably
- does not include Environment Agency data on predicted climate impacts on rainfall
- fails to assess groundwater levels adequately, potentially increasing flood risk to existing homes on Meadow Lane, neighbours downstream and some in the proposed development - housing built near the western boundary is likely to flood.
- fails to support an adequate Surface Water Management Plan: could cause pooling and marshy areas on

site and impact flow via neighbouring properties downstream

- fails to provide a robust Sustainable Drainage System (SUDS) - proposing outdated underground detention crates and fails to follow the SUDS hierarchy
- provides only a rudimentary, inadequate and infrequent maintenance plan for the SuDS design
- fails to provide a full Foul Water Management Plan Thames Water has NOT confirmed adequate capacity at Oxford Sewage Treatment Works to process waste water from 161 occupants (it meets only 61% of even current needs with inadequate climate allowances) increasing the risk of sewage releases into the Thames and raising its nutrient content to potentially unacceptable levels.

FAILURE TO MEET RESPONSIBILITIES OF RIPARIAN LANDOWNERS TO MAINTAIN A HEALTHY FUNCTIONING WATERCOURSE

Oxplace has persistently failed to meet its responsibilities to maintain all water gathering and flowing through its land ('Living on the Edge' and UK Government Guidance on Owning a Watercourse - England).

These include:

- passing-on water-flow without obstruction, pollution or diversion, affecting the rights of others to receive water in its natural quantity and quality
- keeping bed and banks clear of matter that could cause obstruction, either on this land or downstream if washed away.

Failures to do so have affected the rights of Church Way and Mill Lane neighbours immediately downstream of the fields to receive environmentally healthy water 'in its natural quantity and quality' as it passes through their properties via the Highways Drain. This therefore increases the risk of pluvial flooding as well as of significant water-borne pollution of their land during an overflow scenario. There are oil and petrol slicks and choking orange algal growth in the stagnant water where it passes from the fields to the first neighbour downstream [80 Church Way]. The owner also recalled a past incident of sewage contamination of the Highways Drain on his property from a Meadow Lane foul sewer but could not give the year.

MISSING ENVIRONMENTAL AND BIODIVERSITY ASSESSMENTS AND FUTURE MANAGEMENT PLANS

Water on site is currently static, environmentally dead and toxic. Its environmental impact on aquatic and land-based wildlife on site and in nearby protected sites – the SSSI and Rivermead Nature Park, for example - has been virtually ignored, as have the impacts on wildlife corridors and Blue-Green Infrastructure of which the fields are a central part, linking wildlife and more distant parts of the City. There is no Environmental Impact Assessment, adequate Biodiversity Impact Assessment or comprehensive plan to manage the brook or Highways Drain in future.

RUDIMENTARY AND CONTRADICTIONARY ACCOUNT OF THE EXTENT OF BANK WORK INTENDED

'Minor' work is mentioned in the application but major bank work will be necessary to manage water and to include it as a key element and feature in the plan's layout.

The amount of soil erosion involved has not been assessed and there is no Construction Environmental Management Plan for the different construction phases or their impact on contamination of water passing downstream through neighbouring land and entering the river.

There are two admissions by the applicant in the Planning Strategy of a risk of pollution via the brook of Iffley Meadows SSSI, as mentioned in the summary earlier.

This aspect of the proposal contributes to failing the SP42 allocation requirement not to pollute the SSSI.

CONTAMINATION ISSUES - THERE IS JUST ONE SENTENCE ON THIS IN THE APPLICANT'S FRA

The issue of contaminant transport from surface water from the developed site is dealt with only by referring to a by-pass separator - largely limited to filtering-out particulate and non-soluble matter. No attention is given to the different types and sources of soluble contaminants nor are any appropriate measures detailed in the design to deal with:

- hydrocarbons from fuel leakage/spillage and combustion emissions from multiple vehicle movements into and on the site;

- the potential impact and management of toxic chemical and biological domestic household and garden products, pet urine and faeces in surface run-off sediment that will pass through gardens downstream and ultimately into the River Thames and towards the SSSI as well as Rivermead Nature Park;

- household rubbish and other debris that is likely to follow gradient, accumulate downhill at the field's western boundary and enter the Highways Drain, neighbours' land and ultimately the Thames.

The very rudimentary, inadequate and infrequent maintenance plan outlined by the applicant for the SuDS proposed is unlikely to manage these contaminants.

CONCLUSION

The multiple harmful consequences of the applicant's Flood Risk Assessment and Drainage Strategy cast serious doubt on the viability of the way water is included and managed as a key element and feature of the design and layout of the proposed 'development'

Katrina Robinson,

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