From: Yarnton Flood Defence <yarntonflooddefence@gmail.com>
Sent: 08 September 2021 22:06
To: Development Brief <developmentbrief@cherwell-dc.gov.uk>
Subject: PR9 Development Brief - Yarnton Flood Defence Response

[redacted]

Hello Development Brief Team,

Please find attached our letter in response to the draft development for PR9 - Land West of Yarnton.

We welcome the opportunity to consult with you further on the comments and information provided.

Kind regards,

YARNTON
FLOOD DEFENCE

YARNTON FLOOD DEFENCE

Development Briefs Project Team
Planning Policy, Conservation and Design
Cherwell District Council
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OX15 4AA

Ref: Local Plan Partial Review Draft Development Briefs for PR9 (Land West of Yarnton)
Date: 08.09.2021

Dear whom it may concern,

Thank you for the opportunity to comment on the development briefs recently released for public response with particular focus on the development PR9 – Land West of Yarnton. On behalf of the village residents, we have concerns regarding several points outlined below and believe these should be taken into careful consideration within the planning of the proposed development.

Our primary concerns are:

1. No acknowledgement or consideration of the combined flood risk from groundwater and flash flooding at the development site or existing village both of which have been shown to be at real risk and not just hypothetical with recent evidence to showcase this
2. No acknowledgement or consideration to address existing flood risk from foul sewage, again, which has occurred recently and historically
3. Limited understanding of historic drainage channels and local topography with disconnected development leading to a heightened flood risk for the whole community
4. Inadequate drainage assets both historical and part of development sites which have not considered the wider community context and been neglected for many years

What we are seeking is a well-planned and empirically evidenced proposal from the developers that addresses the existing flooding risk to the wider village of Yarnton and not just the site of development with an adequate surface water and drainage strategy in place. The overall risk of flooding should not be increased either during development or post development. Given the known flooding risk to the village, both of which ODC and CDC are fully aware of, we believe an in-depth flood survey across the full village should be undertaken as part of the project and a condition placed on the development to achieve it so that the risk of flooding is mitigated against through design and maintenance. We believe that the local flood authority has a duty to protect our community and may even consider extending the flood assessment and management to PR8 due to its close proximity and likely connected influence.

We would very much welcome the opportunity to engage with you and the planning team on these matters and look forward to receiving your response.

We have extensive evidence of the flooding that occurs in our community and have spent time mapping all water courses within the village to identify the issues and possible solutions all of which we can make available should they be beneficial to the development brief. Below is further evidence and information to support our response.

Local context:

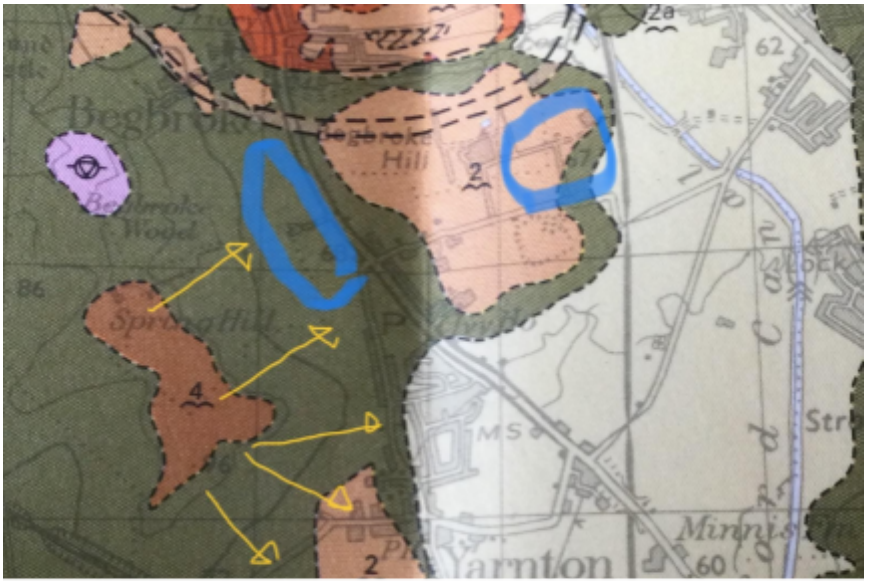
Yarnton is a historic village with human settlement dating back 3000 years with a permanent settlement being recorded here in the Doomsday book. Over time the village has grown from five farms at or near the junction of Cassington Road, Rutten Lane, and Church Lane to the village it is today with hundreds of properties with thousands of residents.

Flooding in the village is not new and has been occurring over many years. The Environment Agency has issued flood alerts and warnings for large areas to the south of the village on many occasions which often coincide with perfect flooding conditions, a high water table and heavy surface water run off, events we have experienced far too frequently.

The hap-hazard expansion of the village without careful consideration of local topography and drainage has without doubt contributed to the increased risk of flooding to the whole community with the historic core at greatest risk. We fear that further development will exacerbate this issue, increasing the frequency of large flooding events without careful planning and consideration.

Proposed development site:

The proposed PR9 development site is located on the eastern slope of Spring Hill and falls sharply towards the A44. The top of the hill comprises an ancient river gravel terrace which overlays the Oxford Clay band. The terrace gravel is known to store groundwater and there is a spring-line on the slope at the junction with the clay band, hence the name Spring Hill. To the east of the Oxford Clay is the River Cherwell/Thames alluvial drift deposits mostly consisting of sandy clays which is relatively permeable in comparison to the heavy clay. The topography and geology of the area would suggest the ancient surface water and groundwater regime was for the terrace gravel to discharge at the spring-line onto the surface of the clay band and flow across land to meet the alluvial drift deposits and from there into open channels feeding into the Thames.

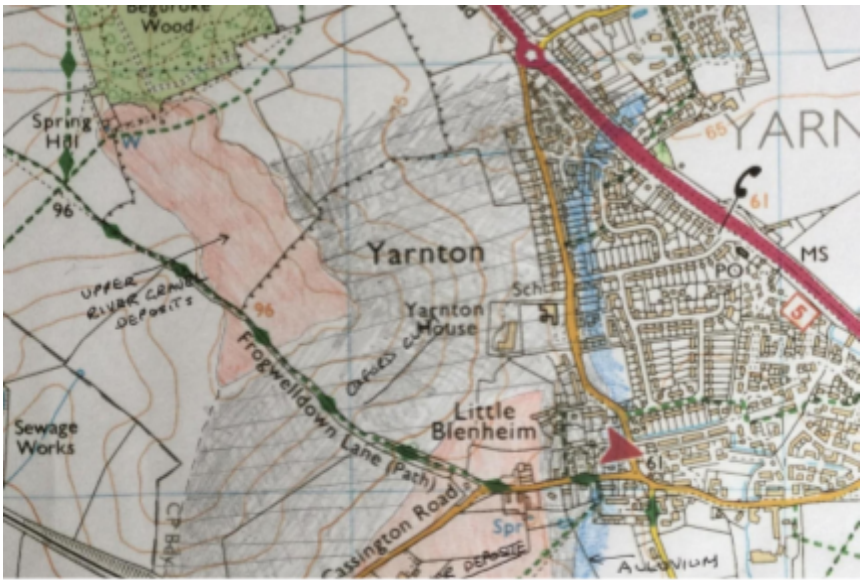


BGS extract showing ancient river terraces, Oxford Clay and alluvial drift deposits. The blue indicate areas which were under standing water for an extended period over the winter months in 2021

We suspect that Rutten Lane was at first an un-metalled track connection to Begbroke, its route being along the bottom of the Spring Hill slope. The track bed lays mostly on the impermeable Oxford Clay probably leading to it becoming rutted and virtually unpassible in winter. The metalling of Rutten Lane enabled the village to expand northwards first by speculative frontage development on both sides of the road and later by infill development.

The impact of this has been to disrupt the original flow pattern off of Spring Hill, training it towards a constantly reducing number of open gaps in the now continuous dwelling frontage. There is still an open ditch in parts on the west side of Rutten Lane which we think was originally intended to cut off the flow from Spring Hill keeping the road dry and channel the water to crossing points under the lane. With the now continuous dense frontage development the ditch has largely been made redundant with perhaps the exception of being used as an open soak-away for the school roofs and hard paving which is particularly noticeable.

It is not entirely clear how the drainage of the village between Rutten Lane and the A44 is now supposed to work. We have been reliably informed that there are no public surface water sewers in the village and it is entirely drained by a patchwork of highway drains and riparian ditches. Many of these seem to have been abandoned or backfilled resulting in their continuity having not been



Extract of OS map showing the topography of Spring Hill and the limits (in grey) of the impermeable Oxford Clay

maintained. There seems to have been a disjointed and only rudimentary consideration of how a combination of flash flows and groundwater runoff will reach the River Thames through this system which has further exacerbated the problem faced in the village of seasonal flooding.

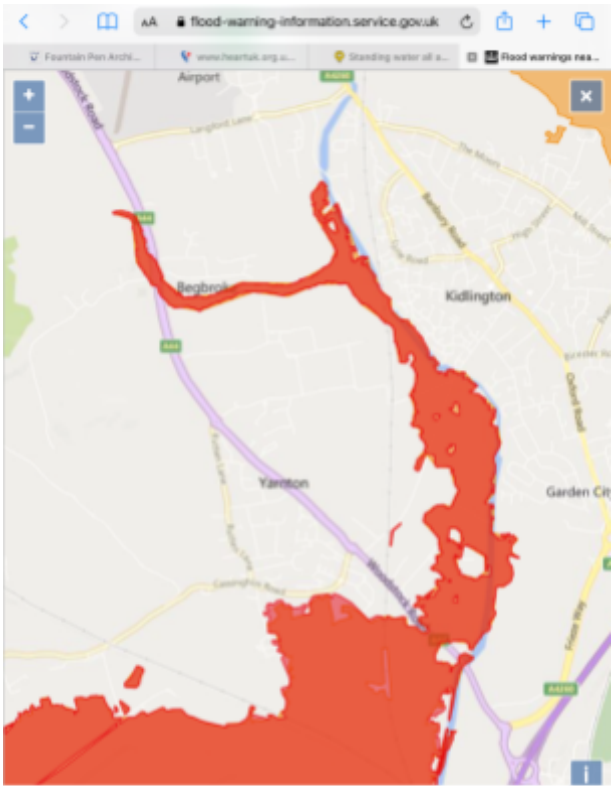
Having extended north over the past 50 years the village has gradually cut off the natural combination of groundwater and surface water flows from the higher ground overlooking the village. The proposed PR9 development will continue this trend extending the village yet further north and more or less fill the remaining drainage corridor between Spring Hill, the Cherwell and Thames flood plains.

One of the most recent extensions north along Rutten Lane has been the construction of the Yarnton Medical Practice. The site does include a SUDS attenuation pond, which was quickly overwhelmed by the Christmas 2020 surface water flash flows off the fields onto which the PR9 development adjoins, with the excess water freely flowing through the nearby streets to the dual carriageway.

The two principle flash flood routes now seem to be; the Cassington Road and Church Lane to the south and the north section of Rutten Lane into Aysgarth Road, effectively the north and south extremities of the current village.

It has also put new areas at risk including the most recent large development off of Cassington Road. Residents were assured that sufficient measures had been designed into the scheme to safeguard it from up to 1 in 100 year flood. What was observed was the attenuation ponds were already partially filled with groundwater from the Thames water-table in advance of the Christmas flash flood event. It is our understanding the ponds were at one point during the Christmas event perilously close to being overtopped.

Considering the close proximity of the River Thames water-table outline, we would like to know what allowance was made for the possible presence of groundwater in the SUDS design? At the same time the Environment Agency had put the area on a red warning for groundwater flooding. The Agency's flood warning zone abuts the southern fringe of the village.



Extract of Environmental Agency Flood Warning map abutting Cassington Rd

It seems this opens the possibility of a number of combinations of high groundwater levels in the Spring Hill gravel terrace. High intensity rainfall over the local catchment and a high water table in the River Thames could all combine to bring the flood risk to areas of the village well short of the 1 in 100 year gold standard quoted in early consultation information.

It is our contention that the planning brief for PR9 should contain a requirement for a full investigation of how the existing village will be protected from flooding including the PR9 and also perhaps PR8 at a strategic level. This of course may highlight the need for additional "off-site" works that the planning and drainage authorities will need to decide how they would be funded. It is also our contention that the local drainage authority has a duty to protect from flash flooding the existing population as a consequence of the development, particularly considering its scale.

We can perhaps forgive previous generations of planners for lack of knowledge and foresight about the hydrological implications of the ribbon development that took place in the village and perhaps hampered by lack of statutory powers to appropriately control it. Now, through the emergence of the unintended consequences of their past decisions we have seen first hand, ignorance will be no defence.

Sewage Management:

Your draft document references pumping mains crossing the development site. Is it serving Begbroke and linking it to the now derelict Yarnton sewage works, or is it linked to discharges from the Cassington sewerage works? Cassington works seem much too large for Cassington alone. Can we therefore assume it also treats sewage from Eynsham?

We would also like to know if the treated effluent is then pumped east into the Cherwell catchment and discharges into an open watercourse presumably on the east side of the A44.

Another question is whether Thames Water is currently licensed to discharge untreated sewage from Cassington sewage works (in storm conditions when capacity of the works is exceeded) into the natural environment and if so, then where does it outfall?

Carterton and Witney in the Windrush Valley have been allowed to expand at a pace with very little consideration of the risk of untreated sewage overflow due to insufficient sewage storage capacity in the catchment. I'm sure you are well aware of the ongoing campaign to stop the continuing pollution of the River Windrush. We are very keen to avoid the same situation with the Rover Cherwell.

We have concerns about the public foul sewerage and its ability to cope with 540 additional homes. Our concern for Yarnton is that foul sewage flooding already occurs simultaneously with groundwater flooding and flash flooding. This resulted in village residents having to endure their gardens filling with untreated sewage on a regular basis when the water table rises.

Thames Water operatives who attended the most recent incident stated they were unable to offer practical assistance because of groundwater infiltrating and filling the foul sewerage, similarly

overwhelming it as it does the surface water drainage system – foul drainage should be a self contained system, not subject to fluctuations in groundwater levels, however we do appreciate the circa +20% extra capacity Thames Water have to pump away excess surface water that enters their system.

Our fear is that the connection of 540 new homes (and eventually the addition of PR8) will make a repeat of this event far more likely and more extensive in years to come. There seems to be a similar picture developing across the country. We have already mentioned Witney – Oxford City also has a problem with the inundation of the foul sewerage when the River Thames is in flood, which Thames Water is unable to fully explain or offer a remedy to. A large part of the Public Health Legislation was aimed to ensure proper drainage and a healthy environment free of filth in urban areas. We can't lose sight of that in the current dash for growth.

SUDS and Surface Water Management:

Developers put great faith in the provision of SUDS that comply with national guidance. However, designing to a 1 in 100 year return does not in itself provide assurance for the next 100 years. That requires an appropriate level of maintenance over the same time period. The development will create new infrastructure that residents will rely upon to protect their homes for the next 100 years. Previous SUDS schemes the liability to maintain this capacity has not been made entirely clear (via a planning condition or covalent on the development) and we suspect many will look to the local District or Parish Councils as the responsible body of last resort.

As we have seen in recent flooding events there is minimal planned maintenance carried out on the existing drainage assets. Intervention has simply been to respond after the event when it is too late to be of practical help. There is no flood warning system in operation for flash flooding. A suitable method of guaranteeing, or ring-fenced funding must be put in place to ensure maintenance activities do regularly happen, not left at risk of economic austerity forced upon local councils. Maintenance of the physical environment (roads, drainage, public parks and open spaces) is usually the prime target to budget cuts.

Our final point is that however sophisticated or robust the SUDS designs submitted by the developer might be, it will rely to some degree on assumptions about probable rainfall profiles, water-table levels and infiltration rates over weeks and months prior to a localised torrential downpour. We are sure the risks will be designed out as far as practicable, but we will inevitably be left with a residual risk.

We would like to know who will be liable for this risk and do they propose to secure an appropriate level of flood insurance cover for losses that the existing village and possibly the proposed development might suffer? If not; can you tell us with whom the residual risks will finally rest?

We will look forward to hearing from you in response to the above.

Best regards,

YARNTON
FLOOD DEFENCE

yarntonflooddefence@gmail.com

Yarnton Flood Defence is a voluntary organisation run by residents from the Village of Yarnton. Supported by Yarnton Parish Council the aim of the group is to reduce the flooding risk to the entire community of Yarnton collaborating with Oxfordshire County Council, Cherwell District Council, The Environment Agency and Thames Water.

Photos of flooding in Yarnton during winter 2020