CHELTENHAM FLOOD AND DRAINAGE PANEL
(previously Charlton Kings Flood Action Group)

COMMENTS

It is very disappointing to note that similar to earlier FRAs for this site, this latest FRA - "Revision M"- is still inadequate, unsafe, and non-compliant with national policy and guidelines.

We urge the Council to take into consideration all the very material and valid neighbourhood concerns voiced about flood risks relating to this development site.

We cannot support approval of this proposal at this stage of the process because the FRA is not yet fit for purpose.

The plan has not demonstrated satisfactorily that the drainage and SuDS structure proposed conforms with legislation and DEFRA standards and consequently - until it does so - it should be deemed unsafe to adjacent neighbouring properties and downstream communities.

The Water Management Act requires the planning proposal to be declined if the FRA and drainage plans are not acceptable.

KEY FRA PLAN AND DRAINAGE POLICY DEFECTS

OVERLAND FLOWS NOT PROPERLY CONSIDERED

As in previous submissions, overland Flows have been completely ignored in the calculations made by the FRA authors.

- No allowance has been made for the control and attenuation of overland surface water flows onto the site's built drainage (the "positively drained" area) from the slopes above the development onto the respective roads and pavements - or for water flowing from the green spaces of the site onto the built area that is positively drained.
- This omission is in breach of the Non Statutory Technical Standards for Sustainable Drainage which requires under Paragraph 3.4 that any drainage proposal must accommodate surface water flows from the entirety of the site, including both permeable and impermeable areas so as to not increase flood risk to neighbours or residents and it also requires that any drainage proposal must consider overland flows on to the site.
- Because of this omission, the pre-development run off measures applied are understated and unreliable and this also invalidates the model calculations that are used to select the safe level of attenuation storage capacity.
- To calculate run off the consultants have only input into their model the surface area covered by the "impermeable" built area of the development which they state is 7,500 square meters.
- It is unclear how the consultants have arrived at this figure for the drained surface area.
- The FRA is misleading when it states in para 4.3 of the FRA that the remaining area of the development site will be made of permeable soft landscaping and planting . The site is not permeable and no allowance has been made by the consultants for this in their calculations.

STORAGE CAPACITY PLAN IS INADEQUATE

- The omission highlighted above means that the planned attenuation storage tanks capacity will not be adequate for the site drainage requirement in storm conditions, and are also not yet designed to deliver capacity levels that allow a proper statutory climate change allowance to be applied to the entire developement site surface water running onto, falling onto, and draining from the site.
- The model used for calculating surface water run- off and storage needs also does not allow the input of any adjustment that allows the slope of the site to be taken in to consideration. This is a known weakness of this model.
- Because this site is a steeply sloping site, the velocity of run off is an important factor to be considered when considering flood risk safety. It is important that this velocity is properly considered in the design of the drainage and storage capacity to ensure the control mechanisms are not overwhelmed and to make sure that neighbouring properties are not endangered and put at increased risk of flooding post development.

The failure to adjust the model outcomes and storage capacity to correct for the sloping site, run off velocity, and impermeability of the slope geology represents a serious and potentially dangerous weakness of the current design and drainage strategy.

CLIMATE CHANGE FACTOR CONSIDERATIONS

The FRA recommends an inadequate storage capacity for run off; the storage tank capacity currently proposed for the site is very unlikely to be adequate to accommodate climate change factors over the 100 year lifetime of the project .

- The developer has not disclosed any justification to reduce the lifetime of this development to a shorter period - therefore the lifetime of this residential development must be considered to be 100 years.
- This development is located within the within the Severn River Basin. This is highly relevant because we have a responsibility not only to local residents but to all residents living downstream in the Severn River basin catchment area to reduce the risk of flooding to their properties where possible.
- Climate Change Allowances have recently been updated by the Environment Agency in March 2020
- If we want to protect neighbouring and downstream properties from the risk of flooding for the 90th percentile of the current rainfall projections for the next 100 years, then prudence requires that a 70% climate change allowance should be applied to this development. This 70% allowance is the current total percentage climate change anticipated by DEFRA for the years 2070 to 2015 for the Severn River Basin.
- This allowance recommendation is especially important given the very specific characteristics of this site and its neighbourhood. Because this development is located on a sloping impermeable site neighbours located adjacent to, below, and in proximity to this development are at increased risk of flooding as the storm frequency and intensity increases with Climate Change. In these conditions the velocity of surface water flowing can be very rapid such that any SuDS structure with inadequate storage capacity or drainage infrastructure is highly likely to be overwhelmed.
- The SUDS agency CIRIA acknowledged that the model used to calculate run off does not make any allowances for slopes. Slopes generate increased flood risk in storm conditions because the velocity of run off is accelerated and no allowance has yet been made for this model shortcoming in the pan.

EXCEEDENCE MANAGEMENT

The FRA and Drainage Plans do not show how surface water flood flows will be safely directed off the site in the case of Capacity Exceedence or SuDS failure. It is a fundamental requirement of sound SuDs design that Exceedence routes to channel surface water safely off a site must be shown on the drainage plan.
- There are no contingency plans disclosed in the FRA to manage water safely away from neighbouring properties in the event of the blockage or failure of the system or storage structures - this dangerous omission is not compliant with SuDS Policy.
- Exceedence (overflow) flood water management safely off the development is not disclosed - an essential Suds component and basic requirement for all sustainable drainage models.
- Because no Exceedence strategy has been considered or disclosed, neighbouring properties to the development site residing in and on Oakhurst Rise, Charlton Ct Road, and properties "downhill" from the development site are all potentially being put at risk of increased surface water flooding in storm conditions.
- Neighbours need to know where this overflow surface water will be discharged from the development site so that they can assess whether the proposal is safe. Since the plans do not disclose this they are clearly not yet fit for purpose and should be rejected as it is important this matter is clearly disclosed and agreed to be safe and acceptable before allowing any plans to proceed.

POTENTIAL RISKS TO NEIGHBOURS, AND THE SCHOOL,

The omission of an Exceedence management strategy is a serious shortcoming and very material as the plan does not disclose what the contingency plans are to make sure that the adjacent (downhill) property. This omission is particularly concerning given that a prep school is located immediately below the planned location for the SuDs structure.

- We note that the plans include the building of a pond at the foot of the development site on the shared open boundary with St Edwards School it is not clear how any storm overflow from this pond (for whatever reason) will be channelled safely away from the school grounds.
- We also note that the SuDs flood control and storage units are also proposed to be situated just above the boundary adjacent to the St Edwards School grounds.
- In the event that the pond, and or the SUDS storage capacity fails to accommodate storm water flows due to insufficient capacity, or a failure of the SUDS infrastructure controls, the flood waters may suddenly flow directly downhill onto and over the St Edwards School property and if this flood water is travelling at speed the personal safety of children and staff could be significantly compromised and the property of the school may also be very vulnerable to sudden inundation.
- Given these tangible potential risks we would strongly recommend that the School Trustees/Governors who are supportive of the development consider appointing their own expert flood risk consultant to advise them as to the safety of the drainage scheme proposed for the development above them to satisfy themselves that the plans are robust and will not endanger the school children or community.
- The point that we make below regarding maintenance of this installation is also very relevant to the school's risk assessment process.

NO DETAILS OF SUDS MAINTENANCE PLANS

No details have been provided about who will maintain and pay for the repair and upkeep of the proposed SUDS drainage structure, tanks, and flow control equipment over the expected 100-year lifetime of the development.

- The plan, similar to all the previous FRAs for this site, is completely silent on specifying the planned lifetime of the structure, another breach of planning requirements and policy for SuDs.
- The LLFA in their comments on this plan has explicitly stated that it is up to the Council to deal with who will be responsible for the future safe management of the proposed SuDs systems.
- Maintenance requirements will include regular checking, service and clearing of the storage tanks of silt and settlement that would otherwise reduce storage capacity. It also requires regular servicing of all related connections keeping them free from blocking and silting up to ensure all the devices installed can reliably manage and control drainage and flow velocity.
- The maintenance costs provisions, resources and ongoing responsibilities for the safe maintenance of storage structures are not disclosed in the FRA or the documents accompanying the application. The costs of this maintenance over the lifetime of the development will be material.
- Before approving a plan like this the community deserves to have absolute clarity as to whether it is intended that the Cheltenham Council (and its taxpayers) will take on responsibility for these currently unbudgeted and unfunded costs. We should also know what those costs will be so that a properly informed decision can be made about how these will be funded.
- Given that the school is particularly exposed to potentially elevated surface water flood risk if these structures proposed are not well maintained, the Trustees of the School who support this development should share our concern that this matter be resolved before plans are approved and progressed. This is especially relevant because a subsequent failure of the structure arising from maintenance shortcomings might expose the school to considerable flood risk, dangers to its students and staff safety, and potentially significant flood rebuilding costs.

LOCAL FLOOD EVENT HISTORY

The LLFA and planning function do not appear in the past to have properly properly considered the impact of this development on the neighbouring areas that have experienced flooding in the past .

The developer states in Para 5.14 The CBC has shown that 3 incidents of flooding from sewers have occurred in the vicinity of the site when looking at the postal area GL52 6. It is assumed that due to the low number of occurrences the site is at low risk of sewer flooding.

- Please can the LLFA or Council advise if this is an acceptable average, how many people and households were affected by these "incidents" and how and who decides that this evidence demonstrates a low risk of flooding and if the LLFA have records of what happened? The council must reject the notion that this data can be used in any way to justify the conclusion drawn that flood risk is low?
- The Letter from 12 Haywards Road also describes in significant detail the history of flood events in this area that needs to be taken into consideration.

FAULTY DRAINAGE PLAN SPECIFICATIONS

Highlighting how poorly drafted these plans are, the drainage strategy mapped out in the Document titled Drawing 1 - Drainage Strategy dated 28 April 2020 the

consultants have planned a surface water drainage pipeline under Road 2 which will require water to "drain" uphill.

- The drainage plan shows surface water draining uphill under road 2 which has a particularly steep gradient of up to 8%. The surface water drainage pipe also appears to signal run off moving in the opposite direction to the exceedence flow path. Ref drainage emanating from map reference point CL.111.29,IL109.69.
- Map reference point CL. 106.90, IL 102.32 shows the location of the planned hydrobrake control. If this control fails or is bypassed (e.g. if it has a blockage or silts up) the plan shows no detail of how the flood water will be safely drained away from the site without inundating the school and neighbouring properties located downhill from the development site.

SEVERN TRENT WATER (STW) LETTER ATTACHED TO FRA

Where will the Surface water go? A STW surface water sewer, land drainage or a watercourse?

- The Developer's consultant is misreporting the validity and the position of Severn Trent Water (STW) and their willingness to accept these new surface water flows into their drainage infrastructure. The STW letter concerning this proposed development is out of date and invalid as the validity of the STW advice expired in 2017.
- Furthermore, the STW letter was conditioned that all surface water from the development had to be drained in a sustainable way to the nearest watercourse or "land drainage channel"- and this means NOT to their sewerage network.
- There was no explicit acceptance of surface water flows to their structures. So, in fact the STW has not yet accepted in any way the drainage of the surface water run off to their sewerage infrastructure and they have not yet confirmed whether or not their drains have the capacity to accept these additional flows.
- In the STW letter of 28 November 2016 the section dealing with Surface Water Drainage states very explicitly that STW expect all surface water from the development to be drained in a sustainable way to the nearest watercourse or land drainage channel.
- STW states in Para 3.5 of their code of practice that they are not responsible for maintaining road gullies, highway drains, land drainage, ground water, watercourses, culverted watercourses or rivers.
- STW's letter states - In this connection the LLFA is accountable for ensuring that a climate factor is applied to the full run off of water from the site.
- As the developer has not yet properly calculated or estimated the quantity run off onto the entire site from overland flows the LLFA cannot be in a position to validate the developer's claim that pre development run off rate had been properly calculated as they claim.
- And, because they do not have a reliable or sensible starting point to calculate post development surface water run off rates, it follows they also do not yet have a reliable climate change factor estimate to be applied to control flows from the site.

STW SURFACE WATER SEWER CONNECTION

If the water is discharged to a STW sewer, which sewer will be used?

- The STW Letter also refers to the location of Surface Water Sewers in the vicinity. The Developer's plan states that they intend to connect the surface water run off through one pipe to a Severn Trent Structure that on their drainage drawing appears to plan to connect the surface water run off drains to a structure titled "EXTG STW SMH S096213402".

- The Severn Trent Letter refers to their records showing sewers running along Oakhurst Rise MH ref S096213601 that might be used (by the developer) as a last resort.
- As the development plan and the Severn Trent Water letter have two completely different references for surface water drainage sewers it is clearly not possible to state with any certainty that the STW will accept the connection to a different referenced structure to the one referred to in their letter even as a last resort.

STW SEWER CAPACITY IMPACT

Surface Water Sewer Capacity - It is also not clear whether or not the STW installation that the developer wants to connect to has the capacity for their new additional flows.

- The parish council and another respondent to this plan residing at 4 Charlton Court Road have told the planning function that Severn Trent confirmed the sewer capacity was already fully utilized in 1971. And that no capacity increase has been put in place since then. This feedback further undermines the developer's suggestion that the drainage infrastructure is adequate or that STW have agreed to any use of their drainage assets for this development. The letter from 4 Charlton Court Road raises a number of extremely detailed concerns about the capacity of the local drainage infrastructure to cope with the additional volumes pressure created by this development.
- Letters from 19 Oak Avenue and 21 Charlton Court road also highlight the lack of consideration of this very important matter.
- We are disappointed that the LLFA have not looked at this proposal against the backdrop of the historic flood database and this vital local knowledge The drainage capacity issue for this development and also the development from Cromwell Rise must be reviewed together to ensure that a clear view can be taken as to whether the infrastructure can accommodate these additional flows.

LLFA ROLE IN PLANNING MEETING

It is not clear why the LLFA has not raised or responded to previous and current flood risk concerns voiced about this development given the well-known flood issues associated with this site.

- The last occasion when a development plan for this site was scrutinized the flood risks were discussed at some length by Councillors but the LLFA did not attend the planning meeting - the Councillors were unable to hear how the LLFA got comfortable with the plans presented back then and also were unable to hear how the LLFA intended to address the community concerns that they raised.
- Inexplicably, despite the concerns flagged in numerous flood risk comments on the plan, and discussed in that meeting (which remained unanswered) the council did not cite flood risk as a reason for declining the proposal. It now has an opportunity to correct this oversight.
- If the Council now approve the plan unchanged then in the event that subsequent surface water flooding at this location causes loss, injury or damage to people and or neighbouring properties it will be difficult for the LLFA or the Council to deny liability given that the flaws in the current flood risk management plans have been voiced repeatedly and are now so very well documented.

LLFA COMMENTS ON THIS PLAN VERSION

How should the public and the council interpret the LLFA's latest comments on the developer's plans?

- The LLFA choice of words is non-committal and provides no evidence to substantiate their comments.
- In this plan the LLFA statement says "...Information supplied .... adequately describes a feasible strategy for the management of surface water on and from the development site".
- By calling the plan "feasible" the LLFA asserts that they believe the developer might be able to construct to this design - nothing more and nothing less.
- The LLFA does not state whether or not this design is fully compliant with public policy or planning guidelines, or whether the calculations have been checked and are reliable, or that the models used are up to date and fit for purpose, or that the design is SuDs compliant as outlined in CIRIA, or that the planned structure is safe to neighbours, or that if the design fails overflow water management will still be safe, or that the drainage infrastructure has capacity to cope with increased volumes and more surface water flooding velocity. The plan has not described any safe exceedence management strategy. The LLFA comments also do not provide any warranty or confidence that immediate neighbours living adjacent to or close to the development will not be exposed to the potential dangers arising from increased surface water flooding risk if this plan is progressed without significant amendment.
- All points that that the community have challenged in this process and previous reviews of plans for this site that to this day remain unanswered by the LLFA or the CBC planning function.
- The LLFA then state that the strategy described will require further detail before development commences including a description of the maintenance strategy during and following construction for the lifetime of the development and a schedule for the implementation of the drainage scheme relative to the rest of the development.

If the committee follows the LLFA advice and allows deferring settlement of this matter into the future for post approval discussions this allows these matters to be decided later behind closed doors . This is undemocratic and carries the risk that the existing already inadequate controls and safeguards may be further diluted by the developer and agreed to by the LLFA beyond the scrutiny of the public or planning committee.

CONCLUSION AND RECOMMENDATION

Our panel is not opposed to sustainable development or house building in Cheltenham, we support the development of good quality homes to meet our community's needs and our growing population.

We have no doubt that a sound, sustainable, and safe FRA and Drainage strategy can be presented and put in place for this development site. The plan to hand fails to do this.

All that is required is for the developer's consultants to follow national SuDs policy, and use best practice to present a sound plan and build a robust flood control infrastructure which takes proper account of the very specific characteristics of this site and the impact of this proposed development design on its neighbours. It is also essential that , if the neighbourhood drainage infrastructure is not upgraded, any development for this site is scaled to be of a size that does not overwhelm the existing drainage infrastructure.

Because the current plan is not yet fit for purpose, we recommend that Councillors refuse any further progress of this application until an FRA and drainage plan is presented that:

- complies with national, county and council policy and the spirit of that policy,
- applies sensible and site-appropriate surface area details for the calculation of all surface water run-off and drainage storage capacity
- uses appropriate EA recommended model methodology,
- has storage tank volume capacity adequate to hold a 90%th percentile scenario level of stormwater which applies a 70% climate change factor to ensure to a high degree of confidence that the school and neighbouring properties will not be inundated in storm conditions
- provides betterment to relieve the town's overburdened and aging drainage infrastructure ,
- clarifies and documents safe exceedence management arrangements to prevent accidents happening at the prep school downhill from the site and to other properties adjacent or in the neighbourhood of the development ,
- calculates run off for the whole impermeable area of the site including overland flows into the site from uphill,
- complies with SUDs best practice as per CIRIA,
- clarifies ownership and management and demonstrates robust - ring fenced - funding arrangements for the SuDs structure post development for the lifetime of the development (100years at least)
- complies with latest SWT requirements who must confirm they have the capacity to manage any resultant additional flows to their sewers if there is no alternative available.
- demonstrates convincingly that run off flows from the development site do not put neighbours or other areas at increased risk of flooding.