

Application details

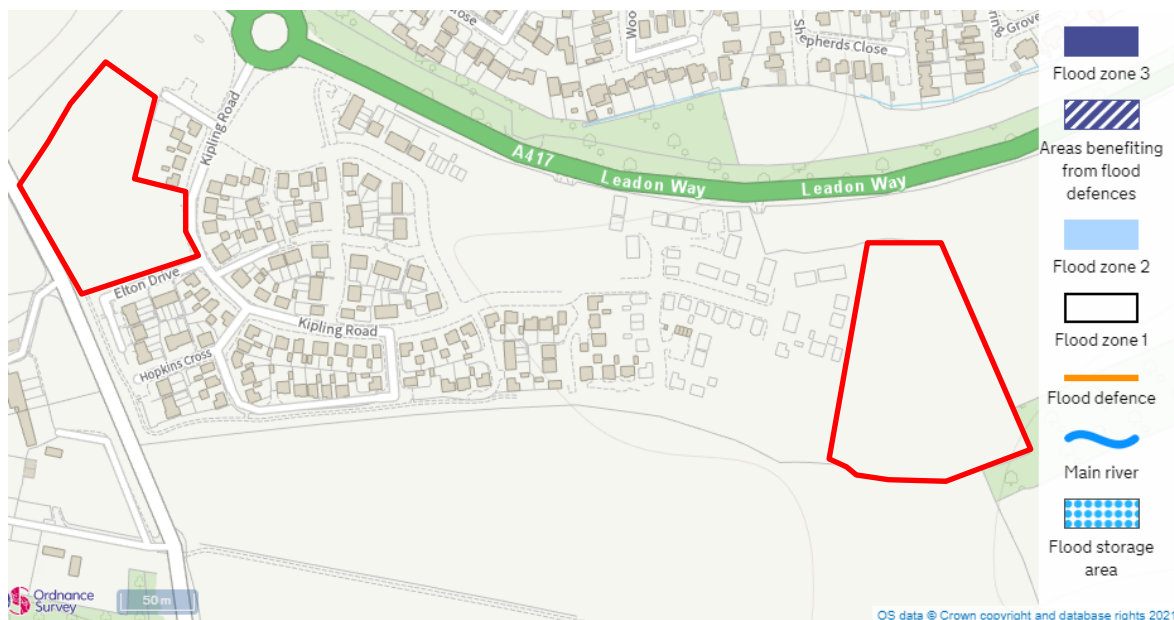
SITE: South of Leadon Way, Ledbury, Herefordshire HR8 2HT
TYPE: Discharge of Condition
DESCRIPTION: Application for approval of details reserved by conditions 3 4 5 6 & 7 attached to planning permission 212375.
APPLICATION NO: 221893
GRID REFERENCE: OS 370732, 236495
APPLICANT: Mrs Olivia Wishart

This response is in regard to flood risk and drainage aspects, with information obtained from the following sources:

- Covering Letter (07.06.2022);
- Phase 3 Drainage Layout (Rev E);
- Phase 3 Drainage Areas Layout (Rev C);
- Phase 2 Private Drainage Layout – Sheet 2 (Rev A);
- Private Drainage Layout Sheet 1 (Rev K).

Site location and extract of flood map(s)

Figure 1: Environment Agency Flood Map for Planning (Rivers and Sea), July 2022



Relevant Conditions

Condition 3 - With the exception of site clearance and groundworks, no further development shall take place until the following has been submitted to and approved in writing by the local planning authority:

- Detailed drawings of the proposed surface water drainage system and proposed features such as attenuation features and outfall structures;
- Detailed drawing demonstrating the management of surface water runoff during events that may temporarily exceed the capacity of the drainage system;
- If discharge to the public sewerage system is proposed, confirmation that this has been agreed with the relevant authority; and
- Confirmation that the adoption and maintenance of the drainage systems has been agreed with the relevant authority.

Reason: In order to ensure that satisfactory drainage arrangements are provided and to comply with Policy SD4 of the Herefordshire Local Plan – Core Strategy and the National Planning Policy Framework.

Surface Water Management Strategy

A surface water management strategy should be submitted that includes the following information:

✓ Information provided is considered sufficient

✗ Information provided is not considered sufficient and further information will be required

Information required	Reviewer comments	✓ ✗
Strategy		
Summary and illustration of the proposed surface water drainage system including location of SuDS features, manholes, external pipework, attenuation features, pumping stations (if required) and discharge locations	The development comprises two sections. One is a small infill development of 5 properties in the western part of the site. These properties will connect directly to the existing surface water sewer system for the surrounding development. The second section is to the east of the site, comprising 45 properties on currently greenfield land. The Applicant proposes to drain the area to two sets of below ground storage crates. In the north of the section the applicant proposes the construction of a 30year adoptable tank sewer (volume 13.96m³) with an uncontrolled outflow to the previous development phase. It is unclear how water will fill the tanks if there is an uncontrolled outflow to the previous phase? Without flow control the tank will only fill if the downstream network is at capacity? This should be clarified. If the intent is to simply extend the phase 1 catchment by connecting some properties on to it, then it will be necessary to demonstrate that that the operation of the balancing pond is not compromised in all storm simulations. The Applicant also proposes a 100 year private tank with a 50m³ capacity, which connects to the 1 in 30 year crates via an overflow manhole with weir and flap valve. The tanks are both at the same level, so both will fill together. We are unclear why the 30 year tank stores only 9% of the attenuated flow from a 100 year + CC rainstorm. The ground levels in the vicinity of both tanks is very low. We note that the two tanks are positioned beneath the only available access road for properties 327 – 322 and that future repair or replacement of these tanks would cause significant nuisance to the property owners. The Applicant should consider whether these tanks can be re positioned to not impact of access to properties should replacement be required. To the south of the site the applicant proposes the construction of another 30 year adoptable tank sewer with a flow control device connected to the previous development phase. The flow control device has been proposed to have an outflow rate of 14.0l/s, however it is unclear how this value has been reached and whether or not it has been accounted for in the modelling for the previous phase. The balancing pond was sized based on the phase 1 catchment. There was no provision made for additional flow from phase 2. The Applicant will need to substantiate their proposals for discharging water into the adjacent catchment and demonstrate that the pond can still operate with the agreed freeboard. The assessment should consider a series of storm simulations.	✗

Information required	Reviewer comments	✓ x											
	On review of the proposed design, initial thoughts are that the attenuation at the south could be made to work if the discharge rate was reduced. The Applicant would need to demonstrate that the performance of the attenuation pond would not be compromised as explained above, using a low phase 2 discharge rate. The orifice size would need to be at least 100mm to mitigate blockage risk, noting that the flow control would not be visible. If a lower discharge rate was used, then more attenuation would be required. We note that the adjacent dwellings are much higher than the ground level at the proposed tanks. It may be possible to raise ground levels so that the top of the tanks is slightly lower than the road. This would allow larger tanks to be installed. The flow control would need to be positioned lower down, in the vicinity of manhole S111, this would allow the hydrobrake to be installed lower down. Hydrobrakes operate most effectively when under a minimum of 300mm hydraulic head, so if manhole S111 were lowered then this would be achieved.												
Demonstration that best practice SuDS have been promoted, appropriate to the size and nature of development	The Applicant proposes to hold all attenuation below ground rather than make use of a green attenuation feature with wider amenity value. We recognise that the first phase of the development has created a pond, however there are opportunities to explore additional pond/swale features within this phase of the development to provide treatment and amenity value. We recommend that this issue is considered and await the developers proposals to develop the strategy to feature green SuDS rather than using tanks.	x											
Confirmation that the system will be designed to prevent any flooding of the site in all events up to an including the 1 in 30 annual probability storm event with supporting preliminary calculations	The Applicant provided MicroDrainage calculations under Application No. 212375, however these are from 2014 and based on the original outline application which saw the current land proposed to contain 45 homes as being public open space and the land where the infill development is as being purely residential. The first phase of the development has not been constructed according to that strategy and so the influence of the new connections cannot be properly determined until new, representative, calculations can be tested with the phase two development.	x											
For discharge to a watercourse, sewer or local authority asset, detailed calculations of greenfield and, if relevant, current runoff rates calculated using the methods outlined in The SuDS Manual 2015 for the 1 in 1 year, Qbar, 1 in 30 and 1 in 100 year events	The Applicant has provided the below table of greenfield runoff rates. These apply to the entire phase 1 and phase 2 site. Table 4: Existing Runoff Rates <table><tr><th rowspan="2">Total Developable Area (ha)</th><th colspan="3">Greenfield Runoff Rates</th></tr><tr><th>1 Yr (l/s)</th><th>30 Yr (l/s)</th><th>100 Yr (l/s)</th></tr><tr><td>10.05</td><td>16.1</td><td>32.3</td><td>39.9</td></tr></table> These were deemed acceptable at the planning stage and for phase one. We request a breakdown of greenfield runoff rates for phase 1 and phase 2.	Total Developable Area (ha)	Greenfield Runoff Rates			1 Yr (l/s)	30 Yr (l/s)	100 Yr (l/s)	10.05	16.1	32.3	39.9	x
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For discharge to a watercourse, sewer or local authority asset, detailed calculations of proposed discharge rates and volumes calculated using the methods outlined in The SuDS Manual 2015 for the 1 in 1 year, Qbar, 1 in 30 and 1 in 100 year events	The Applicant has stated that the discharge rate will be limited to the greenfield runoff rate, but has not stated which rate. The Applicant should clarify the final discharge rate used in the approved design of the pond.	x											

Information required	Reviewer comments	✓ x											
For discharge to a watercourse, sewer or local authority asset, detailed calculations of proposed attenuation volume to manage the rate and volume of runoff to greenfield or current rates and volumes, allowing for climate change effects and demonstrating sufficient space within the site	To the west of the development site, 5 dwellings are proposed that will discharge directly into the surface water drainage network approved under Application No 182628. The Applicant should confirm whether the additional impermeable area for these dwellings was considered when the attenuation features were originally sized. The attenuation volume for the phase 1 pond has been provided as below. However, it is unclear whether this volume was what was consequently constructed. The Applicant should clarify the final constructed volume of the pond and demonstrate that this has capacity to manage flows from the phase 2 development. Please provide as-built surveys. <table><tr><th rowspan="3">Estimated Impermeable Area (ha) 50% of Developable Area</th><th colspan="3">Attenuation Volumes based on Return Period Storm Events with Greenfield Discharge Rate in Brackets</th></tr><tr><th>Approximate Attenuation Volume for 1yr Storm Event (16.1 l/s)</th><th>Approximate Attenuation Volume for 30yr Storm Event (32.3 l/s)</th><th>Approximate Attenuation Volume for 100yr Storm Event + 30% CC (39.9 l/s)</th></tr><tr><td>5.025</td><td>714m³</td><td>2272m³</td><td>2989m³</td></tr></table>	Estimated Impermeable Area (ha) 50% of Developable Area	Attenuation Volumes based on Return Period Storm Events with Greenfield Discharge Rate in Brackets			Approximate Attenuation Volume for 1yr Storm Event (16.1 l/s)	Approximate Attenuation Volume for 30yr Storm Event (32.3 l/s)	Approximate Attenuation Volume for 100yr Storm Event + 30% CC (39.9 l/s)	5.025	714m³	2272m³	2989m³	x
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	5.025	714m³	2272m³	2989m³									
For discharge to a watercourse, sewer or local authority asset, consideration of the risk of water backing up the drainage system from any proposed outfall and how this risk will be managed without increasing flood risk to the site or to people, property and infrastructure elsewhere, noting that this also includes failure of flap valves	As the outfall from the pond was approved during the phase 1 development it is assumed that the addition of phase 2 will not change the risks. This needs to be confirmed as discussed above.	x											
Pollution													
Confirmation of the proposed methods of treating surface water runoff to ensure no risk of pollution is introduced to groundwater or watercourses both locally and downstream of the site, especially from proposed parking and vehicular areas	Although the pollution risks from residential development is low, the Applicant should still seek to provide some treatment within the system. The attenuation pond will provide some small amount of treatment but the Applicant should also consider other methods such as vegetated swales etc to provide some treatment to the phase 2 runoff.	x											
General													
Description and drawings demonstrating the management of surface water runoff during events that may exceed the capacity of the drainage system (including temporary exceedance of inlet features) up to the 1 in 100 annual probability event with climate change (including assessment of where water is likely to emerge) and noting that surface water should be retained	The Applicant has not indicated how water will be managed in the event of exceedance.	x											

Information required	Reviewer comments	✓ x
within the site boundary and not pose risk to the development		

Foul Water Management Strategy

A foul water management strategy should be submitted that includes the following information:

✓ Information provided is considered sufficient

x Information provided is not considered sufficient and further information will be required

Information required	Reviewers comments	✓ x
Discharge to sewerage network		
Demonstration that the suitability and capacity of the public sewerage system has been explored in consultation with the relevant authority, and that a viable connection can be made	An agreement in principle was provided for the phase 1 application however one has not been provided for the phase 2 development.	x

Overall Comment

As discussed above, we recommend that the following information is provided prior to the Council granting planning permission for this development:

- Updated surface water strategy that represents the amendments made to phase one of the development and demonstrates that the proposed phase 2 surface water can be adequately accommodated within the existing phase one drainage system.
- Calculations to demonstrate that the proposed surface water drainage system has been designed to prevent the surcharging of any below ground drainage network elements in all events up to an including the 1 in 2 annual probability storm event. FEH 2013 rainfall data is expected.
- Calculations that demonstrates that the proposed drainage system will have sufficient capacity to cater for up to the 1 in 100 year event and allowing for the potential effects of climate change. FEH 2013 rainfall data is expected.
- Detailed drawings of the proposed surface water drainage system and proposed features such as attenuation features and outfall structures.
- Detailed drawing demonstrating the management of surface water runoff during events that may temporarily exceed the capacity of the drainage system.
- If discharge to the public sewerage system is proposed, confirmation that this has been agreed with the relevant authority.
- Confirmation that the adoption and maintenance of the drainage systems has been agreed with the relevant authority.