

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
All sources of flooding considered?	NPPF Paragraph 170, 181 PPG Paragraph 051 SDNSTS S10 <i>Policy NE7: Reducing Flood Risk, (North Herts Local Plan),</i> <i>Policy SP11: Natural Resources and Sustainability (North Herts Local Plan)</i>	Provide updated information within an amended FRA on: ☐ Fluvial flooding from the ordinary watercourse ☐ Surface water flow path originating offsite ☐ Groundwater flooding ☒ Rainwater surcharged sewer flooding ☒ Historic flood information	Informative: The whole site is within Flood Zone 1. Within the red line boundary (as defined by the Site Location Plan), there are some small low-risk areas of surface water ponding located along the proposed cycle/pedestrian access route and possibly also encroaching onto the 'Storage 2' pond. Outside of the red line boundary (as defined by the Site Location Plan), but within the grounds of Reed House, it is also noted that there are two small areas of low-risk surface water ponding to the rear of Reed House and two areas of low-medium risk surface water ponding at the front of Reed House associated with existing ponds. The FRA states that there were no groundwater seepages during site investigation. However, a review of the trial pit logs reveals that there was some slight water ingress. However, it is agreed that groundwater flood risk is low due to the presence of clay and very minimal water ingress. Action required: Although flooding from sewers is considered, the FRA states that Thames Water manhole cover levels (quoted 152.5m AOD) are at least 2.5m lower than the site. However, a review of the site topographic survey indicates that site ground levels are between c. 152.8 and c. 153.2m AOD (assuming that 'site' refers to the area contained within Reed House and its immediate surrounds). Clarity should be given as to whether 'site' in this instance refers to the area shown in the location plan by the redline boundary or the wider area. If 'Site' in this instance refers to the red line boundary in the location plan, then ground levels are typically between c. 154 and c. 154.9m AOD in the lower parts. Historic flooding on site and the surrounding areas has not been addressed or discussed in the FRA. Historic flooding should be assessed.
		☐ Address concerns that there is not	Sufficient room has been left for open above ground SuDS within the development layout.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		sufficient room within the development boundary to address flood risk mitigation and also achieved the suggested density of the development.	
Mitigation not appropriate	NPPF Paragraph 170, 176, and 181 PPG Paragraph 004, 023, 037, 041, 042, 043 and 044 <i>Policy NE7: Reducing Flood Risk, (North Herts Local Plan)</i>	☒ Use sequential approach with the following hierarchy. I. how can the development first avoid the risk of flooding II. how will it be mitigated (with evidence) III. how will flood resistance and resilience be employed	The master site plan layout indicates that a small portion of the proposed storage in the southeast corner of the site (Storage 2) (and its associated ditch/swale) may lie within an area of low-risk surface water ponding. An accurate drawing or figure with the surface water flood extents overlaid, should be provided which either shows that Storage 2 (and its associated swale/ditch) does not lie within surface water ponding, or it should be moved to be outside of surface water ponding, or detailed calculations should be provided justifying that the storage provided is sufficient to attenuate/store the surface water ponding as well runoff from the site.
		☒ The proposal increases the risk of flooding to existing infrastructure, dwellings or property. Mitigation should be reassessed to show how flood risk can be reduced overall.	The proposals rely on discharging into an existing pond to the immediate southeast of the site. There is no discussion/evidence that the existing pond can accommodate the attenuated site flows, as site topographic survey suggests ground levels fall in a south westerly direction (i.e. there is potential that more runoff will be directed to this pond post development). There is also uncertainty as to whether there is permission from the riparian owner. The proposed drainage strategy given in Appendix I shows that there will be some land raising to alter the topography of the site (which currently drains from the northeast to the southwest) so that the developed area will now all drain to the southeast corner to the location of the open attenuation basin (labelled Storage 2). The applicant should confirm whether cross catchment drainage is caused due to the proposed land raising and design to mitigate this accordingly.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
			It is inferred from the Causeway Flow manhole schedule that the areas of the basins and the swale (as well as the permeable paving areas) are included in the calculations, although the catchment plan given in Appendix I of the FRA does not indicate where each sub catchment enters the drainage system. It is also inferred that the proposed drainage system will only drain the estimated 0.6ha of impermeable area i.e. it does not include runoff contributions from the permeable areas. Thus, given that the natural greenfield catchment is proposed to be altered to direct all flow to the southeast corner of the site, it is likely that the proposed attenuation systems will be undersized.
		☒ Provide information on safe access and egress to show how the development will be safe for its lifetime. This may include assessment of how proposals will not increase the number of people living and working in areas of flood risk and if there is any additional burden placed on the emergency services. An emergency plan may also form part of this assessment (see www.adeptnet.org.uk).	There is no information regarding safe access and egress. It is noted that a small part of the proposed cycle/pedestrian access route is subject to low-risk surface water flooding. This is not addressed or discussed.
Long term sustainability of the development	NPPF Paragraph 176 and 181 PPG Paragraph 004, 036, 061, 068 and 069	☐ Provide site specific ordinary watercourse or surface water flow path hydrological and hydraulic modelling.	N/A
		☐ Demonstrate that any residual risk is managed with	N/A

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
	<i>Policy NE7: Reducing Flood Risk, (North Herts Local Plan), Policy SP11: Natural Resources and Sustainability (North Herts Local Plan), Policy SP1: Sustainable Development in North Hertfordshire (North Herts Local Plan),</i>	appropriate flood resistance and resilience measures.	
		☒ Include evidence of appropriate freeboard to finished floor levels from the design flood level.	This should be clarified. Ground floor finished floor levels (FFLs) should be a minimum of 300mm above the maximum design water levels from any source and 150mm above proposed external ground levels (whichever is more precautionary). It is noted that freeboards are considered for the two storage basins and for the results provided for the critical 1% plus 40% climate change event, the top water level simulated in storage 1 is 154.511m (providing a freeboard of 0.689m) and in storage 2 is 152.677 (providing a freeboard of 0.523m). A minimum of 300mm freeboard on elements designed to hold water should be maintained within the proposed design.
		☒ Include appropriate climate change allowance on modelling scenarios for assessment of the lifetime of the development (including the 3.33% AEP design flood event).	Drainage modelling results have only been provided for the 1 in 100yr (1% AEP) plus 40% climate change. Draining modelling results for all events (e.g. 1 in 1 year (100% AEP), QBAR, 1 in 30 year (3.3% AEP), 1 in 30 year (3.3% AEP) plus climate change, 1 in 100 year (1% AEP), 1 in 100 year (1% AEP) plus climate change, 1 in 1000 year (0.1% AEP to provide information on exceedance flows) must be provided. The site lies within the Upper Lee Management Catchment and the relevant upper end peak rainfall allowances should be applied. The correct climate change allowance of 40% has been applied to the 1 in 100 year event (1% AEP). However, for the 1 in 30 year event (3.3% AEP), a climate change allowance of 35% should be used.
		☒ Use up to date FEH2013 or 2022 rainfall data for all design flood events.	FSR has been used in simulations. FEH13/22 must be used. Drainage modelling must be re-calculated using FEH13/22 data.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		☒ Identification is required of those structures which require consent for works on an ordinary watercourse (from the LLFA), this extends to works required within 8m from the top of the bank (see HCC LLFA website).	The FRA does not discuss which structures will require consent. Consent will be required to discharge to the existing pond in the southeast (with riparian owner identified) and consent will be required to discharge into the 'ditch' running along High Street as well as consent to discharge ultimately to an ordinary watercourse further downstream. In addition, there is an ordinary watercourse along the northern boundary of the site – while no discharge is proposed to this watercourse, development will need to demonstrate that works do not encroach within 8m of the ordinary watercourse or appropriate consent and measures are in place.
How does the site currently drain?	NPPF Paragraph 182 PPG Paragraph 059 SDNSTS S1, S2, S3, S4, S5, S6 <i>Policy NE7: Reducing Flood Risk, (North Herts Local Plan)</i>	☒ Evidence required on ground conditions / BRE365 or similar infiltration testing / dissolution potential / seasonally high groundwater levels. ☒ Greenfield runoff rates and volumes are missing or need to be recalculated (incorrect input parameters).	Infiltration testing has been completed according to BRE365, dated February 2014 and confirmed site geology primarily consists of clay. Recorded infiltration rates range between 10^{-7} – 10^{-9} m/s. However, as the infiltration testing is greater than 10 years old, up to date infiltration testing is required to confirm if infiltration rates have changed. This should include a sufficient number of trial pits to be representative of the whole site. <u>Greenfield Rates</u> Estimated greenfield rates need to be consistent: Greenfield rates have been calculated using the IH 124 method, with Table 1 of the FRA indicating that greenfield runoff rates have been calculated using a site area of 2.07ha, resulting in a QBAR of 8.65l/s. However, Table 3 of the FRA indicates that greenfield rates have been calculated using 0.6 ha (the proposed impermeable area), resulting in a QBAR of 2.51 l/s. For ease of clarity and consistency, Table 1 should be amended in line with Table 3. It is understood that it is proposed to restrict post-development discharge to below this calculated QBAR to 2l/s for all events up to the 1% AEP event. This should be confirmed. In addition, post-development discharge should be restricted up to and including the 1% AEP event plus climate change. It is understood that the 0.6ha of proposed impermeable area (the area that the greenfield rates have been calculated on) includes the swales and the 2 basins but

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
			excludes other green spaces. However, the drainage strategy only includes the 0.6 ha of impermeable area and excludes the other green areas which positively drain to the system. Greenfield runoff rates should be re-calculated based on the total proposed contributing area that will positively drain to drainage infrastructure and all these areas (i.e. permeable and impermeable) must be included in the drainage simulations. Currently only impermeable areas are included in the drainage simulations – the drainage simulations must be updated to include all contributing areas (i.e. permeable as well as impermeable). Evidence for 0.6ha of the developed area becoming impermeable is provided in Appendix I (proposed drainage layout). Clear information needs to be provided to address this, and calculation of greenfield rates must include all areas which would positively drain to the proposed infrastructure (including permeable and impermeable areas). It should also be noted that in the drainage strategy, all of the contributing area (i.e. permeable and impermeable areas) must be accounted for – at present only impermeable area is accounted for in the drainage strategy. <u>Greenfield Runoff Volumes</u> Greenfield runoff volumes have not been calculated. Volume calculations must be provided.
		☐ Pre-development brownfield runoff rates are missing or need to be recalculated (incorrect input parameters).	N/A – the site is greenfield
		☐ Drawing required to show where existing drainage network and outfall/s are, plus confirmation if will	N/A – the site is greenfield

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		they be retained or removed.	
		☒ Drainage survey required to provide evidence of existing discharge rate and condition (may include detailed asset or CCTV survey and estimation of discharge from an existing pipe diameter/slope).	Informative: There is an ordinary watercourse along the northern red line boundary (as defined in the site location plan). However, based on a review of the site's topographic survey, it is agreed that surface water runoff will not drain to this ordinary watercourse. Instead, it is agreed that runoff will fall in a south westerly direction, with (at least part of) the site draining to the existing ditch located along the western site boundary. Action required: However, it is noted that in the existing drainage plan contained within Appendix D of the FRA, that there is a comment stating that it is not believed that the outfall from this existing ditch is positively drained. There is no further discussion to justify this, and it is required that the existing drainage scenario regarding the ditch's connectivity to wider watercourses is adequately investigated to definitively confirm or disprove this assumption. The FRA also states that the private pond to the southeast of Reed House (but within its grounds) is connected to a ditch to the south via a 225mm diameter culvert. However, there is no evidence provided to support this, and no information provided on riparian ownership and whether discharge is permitted.
Where will the site drain to?	NPPF Paragraph 182 PPG Paragraph 055, 056, 059, 060, 061, 062 and 063 SDNSTS S12, 13 and S14	Drainage location hierarchy has not been followed, further information is required on: ☒ Evidence why rainwater reuse can't be included.	The proposals are not considered to be in accordance with the National Standards for SuDS (June 2025) as: -The highest priority for runoff destination is "collected for non-potable use". However, the FRA has discounted rainwater re-use without appropriate evidence that it has been "utilised to the maximum extent practicable". It is agreed that the next highest priority, infiltration, is not likely to be considered viable as historic infiltration tests undertaken suggest poor infiltration rates due to the presence of clay, however as per the above

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
	Standard 1, 2 of National Standards for SuDS (June 2025) <i>Policy NE7: Reducing Flood Risk (North Herts Local Plan), Policy NE8: Sustainable Drainage Systems (North Herts Local Plan), Policy NE9: Water Quality and Environment (North Herts Local Plan), Policy SP11: Natural Resources and Sustainability (North Herts Local Plan).</i>		comment, as the infiltration testing is greater than 10 years old, further infiltration testing is required to confirm this. The next highest priority, discharge to a watercourse, is proposed. It is proposed to discharge firstly to an existing pond immediately southeast of the site (but there is no discussion as to whether the existing pond has capacity to receive the attenuated site flows, as site topographic survey suggests ground levels fall in a south westerly direction), then discharge from this existing pond, via a 225mm diameter pipe to a ditch c. 10m south of the site on High Street. The FRA states that this ditch then discharges to an ordinary watercourse maintained by HCC c. 130m to the south. However, the FRA also states that the ditch along High Street does not appear on OS mapping, and it is 'believed' to be owned by Highways although no evidence is provided. It is unclear who the riparian owner of the ditch is and whether permission to discharge is possible. It is also unclear at what location this 'ditch' discharges into an HCC maintained, ordinary watercourse. Please note that HCC is only responsible for maintaining ordinary watercourses on or adjacent to its land.
		☒ Source control and interception has not been provided by the provision of vegetated SuDS.	As per Standard 2 of the National Standards for SuDS (June 2025), all developments must provide evidence of interception of the first 5mm of rainfall via a 'SuDS approach'. This has not been considered in the FRA. In addition, there is limited consideration for source control methods, with many source control options discounted without substantive evidence/justification.
		☒ Infiltration proposals – re Groundwater Source Protection Zone I restrictions (only clean roof water in a sealed system may be discharged).	Infiltration testing has been completed according to BRE365, dated February 2014 and confirmed site geology primarily consists of clay. Recorded infiltration rates range between 10^{-7} – 10^{-9} m/s. However, as the infiltration testing is greater than 10 years old, up to date infiltration testing is required to confirm if infiltration rates have changed. This should include a sufficient number of trial pits to be representative of the whole site.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		☒ Surface watercourse – does it connect to the wider network and is there permission and there are agreed access locations for proposed outfalls with the riparian owner?	It is proposed to discharge firstly to an existing pond immediately southeast of the site, but there is no discussion as to whether the existing pond has capacity to receive the attenuated site flows, as site topographic survey suggests ground levels fall in a south westerly direction (i.e. there is potential that more runoff will be directed to this pond post development); there is also no discussion on who the riparian owner is and whether there is permission to discharge to the pond. Discharge from this existing pond is proposed via an existing 225mm diameter pipe to a ditch c. 10m south of the site on High Street. The FRA states that this ditch then discharges to an ordinary watercourse maintained by HCC c. 130m to the south. However, the FRA also states that the ditch along High Street does not appear on OS mapping, and it is 'believed' to be owned by Highways although no evidence is provided. It is unclear who the riparian owner of the ditch is and whether permission to discharge is possible. It is also unclear at what location this 'ditch' discharges into an HCC maintained, ordinary watercourse. To provide more confidence with the onward connectivity to the wider watercourse network, dye testing (or similarly appropriate evidence) is recommended. Please note that HCC is only responsible for maintaining ordinary watercourses on or adjacent to its land.
		☐ Surface water sewer – no in principle agreement from owner of the asset.	N/A – not proposed
		☐ Combined sewer – no in principle agreement from owner of the asset.	N/A – not proposed
		☐ In principle objection - proposing to connect surface water runoff to foul sewer.	N/A – not proposed

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		☐ Detailed justification required why the application cannot be drained via gravity and a pump is required.	N/A – not proposed
		☐ Full impact assessment of failure of a pumped system and emergency procedures to store 24 hours of water is required.	N/A – not proposed
		☐ Justification is required as to why a deep bore infiltration feature has been proposed prior to shallow infiltration or connection to a surface watercourse.	N/A – not proposed
Are the 4 pillars of SuDS provided and are they multifunctional?	NPPF Paragraph 182 PPG Paragraph 036, 055, 056, 059, 060, 061, 062 and 063 Standards 4,5 & 6 of National Standards for SuDS (June 2025)	☒ The application must provide water quantity benefits in open and above ground SuDS.	Although, permeable paving, a dry swale, a detention basin (with geo-cellular underground storage) and an open attenuation basin are proposed, given that the proposed drainage system has only been modelled to include impermeable areas only and not permeable areas, and that there is uncertainty in greenfield rates, it is believed that water quantity may not be sufficiently addressed.
		☒ The application must provide water quality benefits. Appropriate water quality assessment is absent / incorrect.	An insufficient water quality assessment is provided. At least three treatment steps are required due to the presence of Source Protection Zone III. In addition, it should be noted that the site's runoff will eventually discharge into a chalk stream c. 2.5km southeast of the site (near Rushing Wells). Tables 4 and 5 of the FRA do not clearly demonstrate how the proposed SuDS features can provide the required mitigation, nor does it demonstrate how the required mitigation indices were determined based on land-use etc..

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
	<i>Policy NE8: Sustainable Drainage Systems (North Herts Local Plan), Policy NE9: Water Quality and Environment (North Herts Local Plan), Policy SP11: Natural Resources and Sustainability (North Herts Local Plan).</i>	☒ Additional water quality treatment using surface SuDS is required due to the sensitivity of the discharge location (including groundwater, designated surface watercourses or deep infiltration features).	As the site lies wholly within Source Protection Zone III, all SuDS must demonstrate that there will be sufficient surface water quality treatment by implementing an appropriate amount of water quality treatment stages using SuDS. An appropriate water quality assessment specific to and for each of the proposed surface water drainage networks is required to demonstrate the suitable water quality management arrangements are in place to prevent pollution from any potential contaminants. The site is in Groundwater Source Protection Zone III; and hence surface water quality runoff must be considered in the proposed drainage for the site. There must be a least 3 treatment steps before discharge off site due to SPZ III. It should be noted that the site's runoff will eventually discharge into a chalk stream c. 2.5km southeast of the site (near Rushing Wells).
		☒ The application must provide biodiversity benefits or demonstrate why this is not achievable (lack of space will not be accepted).	Permeable paving offers minimal benefit and the proposed detention basin has minimal benefit owing to the fact that the majority of water will be stored within the underground geo-cellular storage system. It is recognised that the dry swale will provide some benefits but as this covers a small area, only the open attenuation basin in the south east corner will provide meaningful benefit.
		☒ The application must provide amenity benefits or demonstrate why this is not achievable (lack of space will not be accepted).	Permeable paving offers minimal benefit and the proposed detention basin has minimal benefit owing to the fact that the majority of water will be stored within the underground geo-cellular storage system. It is recognised that the dry swale will provide some benefits but as this covers a small area, only the open attenuation basin in the south east corner will provide meaningful benefit.
How will the site drain without adversely effecting flood risk elsewhere?	NPPF Paragraph 181, 182 SDNSTS S2, S3, S4, S5, S6	☐ The most precautionary infiltration rate should be used in the design of the attenuation feature.	N/A – assuming infiltration remains unfavourable

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
	<i>Policy NE7: Reducing Flood Risk (North Herts Local Plan), Policy NE8: Sustainable Drainage Systems (North Herts Local Plan)</i>	☐ Infiltration rates are shown to be favourable and should be used in the drainage design (where appropriate).	N/A – assuming infiltration remains unfavourable
		☐ Infiltration storage drainage design should be recalculated to either only discharge through the sides of the structure or apply the appropriate factor of safety.	N/A – assuming infiltration remains unfavourable
		☐ Infiltration drainage storage has half drain down time greater than 24 hours and an alternative design or mitigation is required.	N/A – assuming infiltration remains unfavourable
		☒ The post development 100% AEP (or 1 in 1 year) rainfall event runoff rate should also be controlled to the equivalent pre-development rate.	Current proposals are to discharge all events (including the 100% AEP event (1 in 1 year event) to 2l/s. However, as there is uncertainty in greenfield runoff rates it is not possible to confirm this. Further information and updates are required as mentioned previously.
		☒ Proposed discharge rates and volumes are greater than greenfield with no justification.	As greenfield volumes have not been calculated, it is not possible to comment on whether proposed discharge volumes exceed greenfield volumes. Greenfield volumes must be estimated with details provided alongside the estimation for proposed runoff volumes.
		☐ Proposed discharge rates include future allowances for climate change and / or urban creep. These must be removed, and all	N/A – the proposed discharge rate correctly does not include future allowances for climate change and / or urban creep.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025



FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		calculations resubmitted.	
		☐ Require justification and supporting calculations for brownfield % betterment and why this can't be closer to the predevelopment greenfield scenario.	N/A – the site is greenfield
		☒ Proposed discharged rates would increase flood risk elsewhere and need to be re-assessed.	Current proposals are to discharge all events (including the 100% AEP event (1 in 1 year event) to 2l/s. However, as there is uncertainty in greenfield runoff rates it is not possible to confirm this. Further information and updates are required as mentioned previously.
		☒ A minimum runoff rate between 1 to 2 l/s/ha should be applied in groundwater dominated areas if infiltration cannot be undertaken.	The applicant needs to confirm whether the site is a groundwater dominated area.
		☒ How will the development not increase the volume of runoff as only pre and post calculations of greenfield runoff rate have been provided?	As greenfield volumes have not been calculated, it is not possible to comment on whether proposed discharge volumes exceed greenfield volumes. Greenfield volumes must be estimated with details provided. Proposed discharge volumes should be estimated with details also provided.
		☐ A complex control for runoff rate with long term storage provided, is required, if the drainage proposal	N/A – complex control for runoff is not proposed

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		is not limiting runoff to QBAR or 2 l/s/ha.	
		☒ Include appropriate climate change allowance for the lifetime of the development (including 3.33% AEP design) for drainage modelling storage volumes.	Drainage modelling results have only been provided for the 1 in 100yr (1% AEP) plus 40% climate change. Draining modelling results for all events (e.g. 1 in 1 year, QBAR, 1 in 30 year, 1 in 30 year plus climate change, 1 in 100 year, 1 in 100 year plus climate change, 1 in 1000 year to provide information on exceedance flows) must be provided. The site lies within the Upper Lee Management Catchment and the relevant upper end peak rainfall allowances should be applied. The correct climate change allowance of 40% has been applied to the 1 in 100 year event (1% AEP). However, for the 1 in 30 year event (3.3% AEP), a climate change allowance of 35% should be used. It is also noted that the drainage simulation results provided are for the critical storm duration for the 1% AEP plus 40% climate change only i.e. the results for individual storms are not provided. It is also not clear what parameter the critical storm has been ranked to i.e. is the critical storm ranked based on highest water level? Or highest discharge rate etc.?
		☒ Drainage modelling calculations should be resubmitted and demonstrate how 10% urban creep has been included in the volume of SuDS storage required.	The FRA states that 10% urban creep has been applied. However, if the total impermeable area is 0.6ha, then 10% of this would be 0.06ha. Hence, one would expect the total impermeable area including 10% urban creep to be 0.66ha. However, Appendix I shows that the total impermeable area to enter the drainage system is 0.633ha. Clarity on how this was obtained should be given. If only residential roof areas have had urban creep applied to them (as referenced in the FRA), this should be clearly indicated on a drawing so area calculations and urban creep application can be checked.
		☒ Use up to date FEH2013 or FEH2022 rainfall parameters in any drainage modelling scenarios.	FSR has been used in simulations. FEH13/22 must be used. Drainage modelling must be re-calculated using FEH13/22 data.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025



FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
Location of SuDS		☑ Layout and/or drainage layout drawings need to show all the drainage features (storage and conveyance), with labels the same as those in the submitted supporting calculations.	Master site plan layout indicates that a small portion of the proposed storage in the southeast corner of the site (Storage 2) (and its associated ditch/swale) may lie within an area of low-risk surface water ponding. An accurate drawing or figure with the surface water flood extents overlaid, should be provided which either shows that Storage 2 (and its associated swale/ditch) does not lie within surface water ponding, or it should be moved to be outside of surface water ponding, or detailed calculations should be provided justifying that the storage provided is sufficient to attenuate/store the surface water ponding as well runoff from the site.
		☑ Drawings need to show the detailed design (not preliminary issue).	It is noted in the proposed drainage strategy drawing that the proposed manhole cover levels are indicative and are 'subject to detailed hard-standing design'.
		☑ Drawings of cross sections and long sections of all the network and structures such as ponds, basins and swales need to be supplied.	Cross section and long section drawings of all the network is not provided. Cross section of typical pond and dry swales is provided but no long sections provided.
What is the impact of flood risk on the development?	NPPF Paragraph 182	Updated supporting calculations required to show;	
	SDNSTS S7, S8, S9, S10 and S11	☑ revised modelling calculations to use a CV value of 1.	CV is currently set to 0.75 for summer storms and 0.84 for winter storms in the simulation settings. These must both be changed to 1.
	<i>Policy NE7: Reducing Flood Risk (North Herts Local Plan),</i>	☑ 50% AEP rainfall event does not surcharge in the drainage network if it is to be adopted by a responsible authority.	The 50% AEP event drainage simulation results have not been provided so it is not possible to confirm whether the network surcharges or not. The results for the 50% AEP event must be provided.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
	<i>Policy NE8: Sustainable Drainage Systems (North Herts Local Plan)</i>	☒ 3.33% AEP rainfall event plus climate change does not flood outside the drainage network which is designed to hold water.	The 3.33% AEP event plus climate change drainage simulation results have not been provided so it is not possible to confirm whether the network floods or not. The results for the 3.33% AEP even plus 35% climate change must be provided.
		☒ 1% AEP rainfall event plus climate change does not leave the application boundary or flood any part of a building, utility plant susceptible to water (e.g. pumping station or substation) within the development boundary.	Although the critical storm events for the 1% AEP event plus 40% climate change is provided, these are currently based on FSR data and CV < 1. These will need to be re-submitted with FEH13/22 data used and with a CV value of 1. It is also noted that the drainage simulation results provided are for the critical storm duration for the 100yr plus 40% climate change only i.e. the results for individual storms are not provided. It is also not clear what parameter the critical storm has been ranked to i.e. is the critical storm ranked based on highest water level? Or highest discharge rate etc.?
		☒ the appropriate climate change allowance must be updated.	Drainage modelling results have only been provided for the 1 in 100yr (1% AEP) plus 40% climate change. Draining modelling results for all events (e.g. 1 in 1 year, QBAR, 1 in 30 year, 1 in 30 year plus climate change, 1 in 100 year, 1 in 100 year plus climate change, 1 in 1000 year to provide information on exceedance flows) must be provided. The site lies within the Upper Lee Management Catchment and the relevant upper end peak rainfall allowances should be applied. The correct climate change allowance of 40% has been applied to the 1 in 100 year event (1% AEP). However, for the 1 in 30 year event (3.3% AEP), a climate change allowance of 35% should be used.
		Additional information is required showing: ☒ above ground flooding (extent, depth and velocity) at the 1% AEP rainfall event plus	Whilst it is recognised that currently there is no above ground flooding predicted for the 1% AEP plus 40% climate change event, as per the above, FSR and CV values < 1 are used. These must be re-submitted using FEH13/22 data and CV set to 1. If with the above changes results in above ground flooding for the 1% AEP plus 40% climate change, then this must be shown on a drawing

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		climate change must be provided on a drawing with proposed external ground levels and proposed finished floor levels of buildings.	with the proposed external ground levels and proposed finished floor levels of the buildings.
		☒ above ground flooding (extent and depth) at the 1% AEP rainfall event plus climate change should be designed to be held in the least vulnerable areas of the site e.g. open space.	Whilst it is recognised that currently there is no above ground flooding predicted for the 1% AEP plus 40% climate change event, as per the above, FSR and CV values < 1 are used. These must be re-submitted using FEH13/22 data and CV set to 1. If with the above changes results in above ground flooding for the 1% AEP plus 40% climate change, then it should be clearly demonstrated that the overland flows can be designed to be held in least vulnerable areas of the site.
		Flood resistance and resilience must be shown to be included in the design. ☒ A minimum of 300mm must be provided between any design flood event and the finished ground floor level. ☒ A minimum of 150mm above external ground levels and show that they are sloping away from vulnerable areas such as doorways.	Whilst it is recognised that currently there is no above ground flooding predicted for the 1% AEP plus 40% climate change event, as per the above, FSR and CV values < 1 are used. These must be re-submitted using FEH13/22 data and CV set to 1. If with the above changes results in above ground flooding for the 1% AEP plus 40% climate change, then it must be demonstrated that there is at least 300mm between the maximum design water levels from any source and finished ground levels. Clarification into whether finished floor levels are at least 150mm above proposed external ground levels across the site is required.
		☒ Exceedance of the design 1% AEP rainfall event plus climate change (or failure of the drainage network) must be shown on a drawing, minimising	Exceedance flow direction is indicated on the proposed drainage strategy drawing. However, the drawing only currently shows the existing ground levels which currently drain from the northeast to the southwest. The exceedance flows drawn currently go against the existing site slope – proposed ground levels should be provided to justify the direction of the exceedance flow arrows.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		impacts to people and property. This drawing will include proposed external ground levels, finished floor levels and any designed slopes on impermeable surfaces such as highways or car parks.	
		☒ ½ drain down times need to be submitted and show that they are within 24 hours (or within 48 hours for features that are lined e.g. lined tanks or lined basins).	½ drain down times have not been provided.
		☒ Any drainage network showing storage features with ½ drain down time greater than the 24 hours (or 48 hours for lined structures) must be redesigned to show how it can meet this standard or be increased in size to accommodate a subsequent storm event of 3.33% AEP flood event plus climate change allowance.	½ drain down times have not been provided.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		☒ The drainage calculations must be shown to include a surcharged outfall to a watercourse or culverted watercourse or watercourse within a sewer. This surcharge level must be the 1% AEP flood event of the receiving watercourse if known or bank full if not already hydraulically modelled.	No evidence has been provided that a surcharged outfall has been applied during the Causeway Flow simulations.
How will the drainage and watercourse features be managed and maintained?	NPPF Paragraph 182 PPG Paragraph 055, 057 and 058 SDNSTS S10, S11, S12, S13 and S14	☒ High level assessment of the maintenance of any SuDS features and structures and who will be adopting these features for the lifetime of the development.	Whilst a high-level assessment of maintenance for each proposed SuDS feature has been provided, there is no discussion of who will be adopting these features.
		☒ Appropriate easements (to the adopting authority standard) to SuDS features should be shown on a drawing, this will be a minimum of 3m.	Easements are not shown on the proposed drainage strategy drawing.
		☒ Vehicular access route and off-road parking needs to be provided to ponds, basins and swales.	Whilst it appears that there is vehicular access to the two basins and the swale, it is not clear whether off-road parking has been considered.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		☒ Provide an easement of a minimum of 3m from the top bank of any watercourse is required for maintenance. This should be on both banks, but justification should be provided if access is proposed from only one side of the bank or is less than 3m (e.g. 2.5 times the width of any plant likely to be used (from the top of bank with maintenance plant parallel to the watercourse)).	Whilst it is acknowledged that there is no discharge to any watercourses on site, there is an ordinary watercourse along the northern site boundary. Evidence should be provided that the minimum easement requirements are met during construction of the development.
		☐ Due to the likely long duration build out time (including phased development proposals), supporting drainage calculations and drawings are required to show a timeline of how temporary measures will be put in place to protect the water environment and any newly built SuDS features. This will include any temporary water quality and water quantity flow control devices required.	N/A – long duration build out is not expected for this proposed development.

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
		☐ As it is a phased development, a surface water management and construction phasing plan is required. This must show how each phase can be provided independently (in terms of surface water drainage) and how any infrastructure which is relies on will be constructed prior to any housing or commercial development.	N/A – phasing is not expected for this proposed development
		☒ A high-level assessment of how water quantity and water quality will be managed during the construction phase is required. Identifying high level assumptions such as need to discharge to a sewer or watercourse with appropriate pollution measures.	The applicant must provide this information.
Other	National standards for sustainable drainage systems (SuDS)	☒ Bespoke advice	The FRA uses old SuDS standards. The new National Standards for SuDS published 19 June 2025 must be used. The FRA and drainage strategy is not considered compliant with the new standards: https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds. There is inconsistency in what is defined as the redline boundary of the site. The site location plan and master site plan layout defines the red line boundary to exclude

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025

FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
			Reed House and its immediate environs. However, the drainage strategies in the FRA define the red line boundary to include Reed House. Section 1 of the FRA states that the total red line boundary is 2.07ha – however the LLFA have reviewed this and estimated this to be c. 1.6ha. The LLFA have also reviewed the blue boundary and have estimated this to be c. 2.1ha. It is advised that this is checked as there is uncertainty in areas mentioned. Section 1 of the FRA also states that 0.13ha of the red line boundary is classed as impermeable area – as per the above, it is unclear as to what impermeable area is being referred to, as according to the red line boundary in the site location plan there is no impermeable area. The FRA and drainage strategy should use a consistent red line boundary with respect to the masterplan site location. An additional storage of 20m³/ha has been applied in the Causeway Flow simulations. This must be removed as it will be providing additional storage which will not be present in reality. Plan areas of the 2 storage basins and permeable paving areas have not been provided on the drainage strategy. These should be provided so that they can be cross-checked with the area used in Causeway Flow simulations and to check that there is sufficient room for the basins and permeable paving on the site. It is noted that the areas of permeable paving have not been modelled in Causeway Flow. The catchment plan should also clearly indicate the sub catchment areas (and their values) which drain to each manhole. With regards to the storage 1 basin, it is understood from the proposed drainage strategy drawing and pond schematic drawing that there is a gap between the detention basin's invert level and the top of the geo-

Planning Application Technical Response

Site:	Reed House Jacksons Lane Reed Royston Hertfordshire SG8 8AB
LPA Reference:	25/00886/FP
Date Assessed:	07/08/2025



FULL APPLICATION	Related Policy or Standard	Applicant Action Required	LLFA Specific Comment
			cellular storage of 0.45m suggesting that water will enter the structure via pipes connected in at the geo-cellular storage's invert level and will need to be able to rise up through the 0.45m gap to enter the detention basin. Given that the geology indicates the soil is clay, it needs to be clarified what soil material will be used to allow water to enter the detention basin. However, a review of the Causeway Flow network details indicated that the drainage model has put the invert level of the detention basin at the cover level of the geo-cellular storage. In addition, the top water level is stated in the proposed drainage strategy as 154.8m whereas the Causeway Flow details show this as 154.7m. The proposed drainage and pond schematic drawings must match the details input into the Causeway Flow model. This should be reviewed and corrected. It is also unclear as to how the geo-cellular storage located beneath the detention basin has been modelled in Causeway Flow. The storage 1 details provided references ring diameter, pit width and pit length. It is requested that a diagram indicating how Causeway Flow models the geo-cellular storage is provided. It is unclear as to how the swales have been modelled in Causeway Flow. The proposed drainage strategy indicates that conduits 1.006 and 1.008 represent the swales but the network details suggest that 1.006 and 1.008 are pipes as it is believed that roughness is applied via ks (mm) values (i.e. using the Colebrook White equation) as all conduits are set to 0.6 in the 'ks (mm) /n' field. A ks of 0.6mm is a standard value to use for conduits where velocity is expected to exceed 1m/s, hence this is appropriate for surface water drainage pipes. However, a ks of 0.6mm is not appropriate for swales where the velocity is not expected to exceed 1 m/s. It is usually best practice to use the Manning's n regime when modelling flow through conduits that are not pipes (i.e. ditches and swales). Thus, it is advised to confirm how Causeway Flow is modelling the swales and to update ks or n values accordingly.