

Our Ref: C85102/MV/FRA/R001A

4th October 2016

Redrow Homes Limited
Unit 1
Faraday Office Park
Basingstoke
Hampshire
RG24 8QQ

Dear Sir,

Re: Pollards Nursery, Lake Lane, Barnham – Drainage Statement following previous JNP Addendum ref: C85102/MV/FRA/R001 to Flood Risk Assessment Ref: 2585 by CEC.

jnp group have been appointed to prepare a drainage statement following the previous jnp group addendum (ref: C85102/MV/FRA/R001) to the original Flood Risk Assessment produced for the above site by Col Easdon Consultants and August 2012 (report reference Ref: 2585).

Outline planning permission was granted for 107 residential units under original planning application ref: BN/16/12 and subsequently appeal ref: APP/C3810/A/13/2193942.

The original FRA determined that the entirety of the residential development was located in Flood Zone 1 (classified as low risk), where the annual probability of river or sea flooding is less than 1 in 1000. The site was assessed to be at medium risk of flooding from groundwater and reservoir failure.

Redrow Homes Ltd are now proposing to re-plan parts of the development and Pegasus have prepared a revised layout which is detailed on drawing reference P16-0421_03 Sheet No. 1 Rev C. The purpose of this addendum is to assess the effect, if any, that this re-plan will have on flood risk to the site.

The Environment Agency's (EA) indicative flood maps (available online) have been utilised during the preparation of this addendum and are considered to provide the most up to date fluvial and tidal flood risk data for the site (Appendix A).

The latest data confirms that the flood risk associated with the site is the same as identified within the original FRA. Therefore, there is no increased risk to the site from river, sea, groundwater or surface water flooding as a result of the proposed re-plan works.

The original FRA highlighted that given the low flood risk to the proposed development area of the site from river and tidal flooding, physical mitigation is not necessary for these sources.

Residential • Industrial • Commercial • Retail • Leisure • Education • Health • Rail • Drainage • Highways • Contaminated Land • Renewable Energy

Partners

Alan N Brackley
Senior Planning & Design Director
Andrew I. Lee
Senior Planning & Design Director
Michael K Hamilton
Senior Planning & Design Director
Peter L Hurd
Senior Planning & Design Director

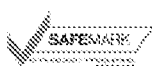
Senior Associates

Tony Davies
Senior Planning & Design Director
Andrew K Dawson
Senior Planning & Design Director
Mark Doody
Senior Planning & Design Director
Tim Gauden
Senior Planning & Design Director

Associates

Anthony McNevin
Senior Planning & Design Director
Colin Cook
Senior Planning & Design Director
Gareth Stephenson
Senior Planning & Design Director
James Seabrook
Senior Planning & Design Director

Jeff Mosforth
Senior Planning & Design Director
Khair Tran
Senior Planning & Design Director
Martin Hitchcock
Senior Planning & Design Director
Neil Goodman
Senior Planning & Design Director



Registered Office:
Bourbon Coast
Highgate Corner
Little Chertsey
Surrey

Registered in England No. 00388391
jnp group is the trading name of jnp group LLP

The FRA highlight a medium risk from groundwater and reservoir flooding and proposed the following measures:

Groundwater Mitigation

- *Finished floor levels within dwellings should be raised by 150mm above existing ground level to allow a degree of protection from floodwater ingress.*

Reservoir Mitigation

- *In the event of catastrophic failure of reservoir 2, water will spread out and flow in westerly and northern directions towards the development, eventually dissipating in the direction of Lake Lane. In order to mitigate this risk, a 1.5m wall will be constructed along the eastern boundary of the application site. Reservoirs 1 & 3 do not present a flood risk to the site.*

jnpgroup consider that the proposed measures to mitigate against groundwater flooding are still appropriate. However, in line with current best practice and our experience with mitigating against groundwater flooding on previous sites, it is recommended to increase the minimum FFL to 300mm above existing ground level.

To achieve adequate cover to the proposed drainage system, site levels will be raised by approximately 1.8m in the southern area and 0.5m in the northern area, with boundary retaining walls proposed along the eastern boundary (to the rear of plots 17-34).

Reservoir 2 has a capacity of approx. 2493m³ (the equivalent 1in100yr+20% run off volume of the adjacent glass house roof). In the event of overtopping or catastrophic failure, this will spread out and flow in a westerly and northern direction, until it reaches the development site boundary where it will be held by the raised site levels/ retaining walls.

To estimate the approx. depth of water in the event of catastrophic failure of Reservoir 2, the volume stored has been spread over the surrounding land (less the footprint of existing buildings). See below:

Volume Stored: 2,493m³

Area of surrounding land (less the footprint of existing buildings) 26,170m²

$2,493\text{m}^3 / 26,170\text{m}^2 = 0.12\text{m}$

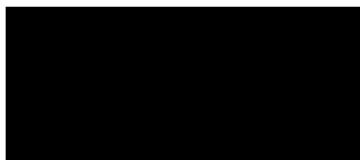
The simplistic approach above indicates that in the event of reservoir failure, assuming the nursery building itself is impenetrable, the surrounding pathways and access road would have approx. 120mm depth of stored water. Any dwellings not surrounded by the proposed retaining wall will be at least 300mm above existing ground, providing a min. 180mm buffer above estimated flood water levels.

By raising site levels as described above, the risk of flooding to dwellings as a result of catastrophic failure of Reservoir 2 will be mitigated and the separate 1.5m high reservoir wall (specified within the original FRA) is not considered to be necessary.

A separate surface water drainage strategy confirms that there will be no increase in surface water runoff rates leaving the site post development and consequently, the development will have no negative impact on flood risk in the area.

In conclusion, the EA modelling/mapping that informed the original FRA at the site is still current and there is no increased risk of flooding to the site as a result of the proposed re-plan works. The main principles outlined within the original FRA still stand.

Yours Sincerely

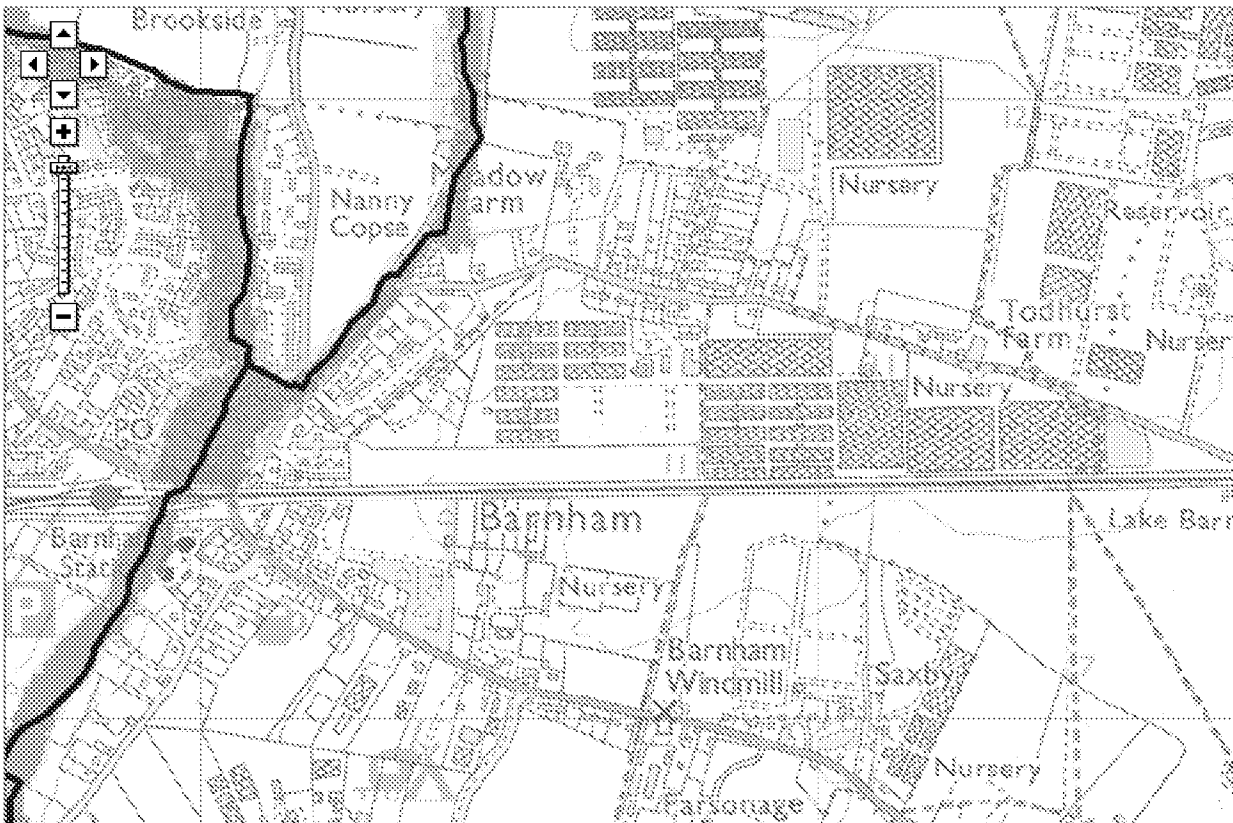


Mike Verity MCIHT, MILT
Principal Civil Engineer

Appendix A

EA Online Flood Map for Planning





EA Online Flood Map for Planning (Rivers and Sea)

Scale: 1:10,000