

## Formal Observations of Linby & Papplewick Parish Councils – Objection

Application Ref: 2013/1406

Application by The Co-operative Group

Outline Application for demolition of three properties on Papplewick Lane to provide access for a residential development, education provision, public open space and attenuation ponds with Access defined and all other matters reserved

### *Impact on Flooding, Drainage and Water Quality*

1. RLP Policy **ENV1** (Development Criteria) states that all developments must incorporate best practice in the protection and management of water resources, whilst RLP Policy **ENV40** (River Environment) states that planning permission will not be granted for development that would have an adverse effect on water quality. **ACS Policy 1** (Climate Change) states that development proposals will be expected to deliver “*high levels of sustainability*” in order to mitigate against and adapt to climate change, including flood risk and sustainable drainage. Similar objectives are sought by the Framework.
2. The application is accompanied by a number of reports seeking to deal with issues of flooding and drainage, prepared in the main by Hyder Consulting (UK) Limited. Analysis of various documents submitted in support of the application highlights a number of serious shortcomings associated with the proposed development, as highlighted below.
3. By way of background, a report on the Greater Nottingham Strategic Flood Risk Assessment (GNSFRA) prepared by GBC Planning Policy Manager and tabled at GBC Cabinet meeting on 4th September 2008 and subsequent Planning Committee on 9th Sept 2008 concluded: -  

*“For Gedling Borough, the SFRA primarily consolidates and expands upon existing flooding information to provide a more complete picture of flood risk and its impact on planning. As such, there are no significant changes from existing flooding information, with the exception of less flooding predicted in Netherfield and greater flooding around Stoke Bardolph.”* (Para 9)
4. Taking the above into account, the Parish Councils are of the opinion that the existing Framework (section 10) and Policy 1 of the ACS are not being properly applied.
5. The Framework requires that “*Local Plans should be supported by Strategic Flood Risk Assessment and develop policies to manage flood risk from all sources, taking account of advice from the Environment Agency and other relevant flood risk management bodies.*”
6. In the Parish Councils’ opinion, by having failed to put in place a SFRA, GBC will not be able to properly judge the cumulative impact of the proposed development of this site. In addition, the deletion of RLP Policy ENV41 (Flooding) and the lack of an evidence-based replacement policy puts areas of the bordering districts (for example, Ashfield and Nottingham City along the River Leen) at increased risk of flooding. However successful the onsite management of surface water may be (once attenuation ponds are full all water will pass through into the river), in the absence of such policy controls informed by an overall SFRA, it is difficult to envisage how GBC can ensure that this flood management simply does not displace the problem to areas further downstream.
7. To illustrate the point, we can consider two sections of the site-specific Flood Risk Assessment that has been presented in support of this proposal. At para 3.5 it states - “*R Leen & Daybrook SFRA are ‘located on geology which is part of the Sherwood sandstone and can hold a lot of water’ ...*” However, the proposal is not within the Daybrook catchment, nor is this land underlain by the Sherwood Sandstone formation. The assumption that there is enormous groundwater capacity is ill-founded in this part of the basin. At para 3.7 it states that the development brief from the Papplewick Grange development suggested that surface water sewers are at capacity (this must have been at least 10 years ago, but no date is given). Given that the Papplewick Grange estate has been largely completed without installation of

the agreed attenuation lagoons since that statement was made, and that the subsurface geology is not what the developers claim in their FRA, it is difficult to envisage how GBC can be certain that the proposed development will not cumulatively impact upon communities downstream.

8. In accordance with the Framework, the Flood Risk Assessment (at paragraph 3.1) considers risks of all flooding to and from the site. The Assessment does not, however, do this in a comprehensive or appropriate manner for the type of land in question.
9. Paragraph 3.2 of the report sets out historical flooding in the area. This is incorrect. In the last five years (May 2008, November 2012 and July 2013) Papplewick Lane (to the south of the application site) at the point identified as “emergency” access has been flooded to the extent of it being impassable to most vehicle and pedestrian traffic. This is more frequent than the one in 30 year predictions used to calculate capacities of Plot Tanks and Attenuation Ponds. This area is shown as being within the predicted 1:100 year extent of flooding (Modelled extents Map [ER2574] as submitted).
10. Sewer Record plans (included in the ‘Conceptual Drainage Strategy’ report) identify two Surface Water Gravity Sewers with existing catchments outside, and not including this site discharging directly into the River Leen. There is no evidence of modelling to assess the impact of these on the river and the ability of the existing culvert under Papplewick Lane to allow unimpeded passage of high flows. The frequency of flooding would suggest this is an issue.
11. Paragraph 3.6 of the report (entitled Flooding and Groundwater) describes the River Leen and Day Brook catchments as being located on geology, which is part of the Sherwood Sandstone, and can hold a lot of water. This is true lower down the Catchment, but the proposed development area is “limestone Cadeby formation”, and land adjacent to the River Leen as “sandy/peaty soils affected by ground water” (as stated in the ‘Geophysical Survey’). Furthermore, the ground survey states that the land is unsuitable for soak away drainage due to “impermeable strata”. Thus the site cannot be assumed to be capable of holding water as storage.
12. Paragraph 3.5 of the report (entitled ‘Flooding from Land’) states that “*there is no surface water drainage infrastructure associated with the site apart from a land drainage ditch*”. This is on account of the mechanisms of agricultural land drainage being different to those of drainage from urban and impermeable areas. Agricultural land retains water for crop growth, the Geophysical Survey identifies a network of land drains, the purpose of these is to transport excess soil water to a discharge point, usually a ditch (identified within the site) or directly to a water course. Thus, it is expected that there are subsurface drainage connections to both the ditches and river. However, the submitted reports do not confirm or deny this. Field drains transport “excess” water over a period of time after the rainfall event and stop running at a point of equilibrium known as “field capacity”, not when all the water has drained from the soil as it does from impermeable surface such as concrete. Accordingly, any modification of the land will change the rate of discharge of water to the main water conduit (River Leen). To avoid negative impacts and disruption of flows, any attenuation or other structures to restrict surface water drainage discharge rates should be consistent with those expected from the existing agricultural land, i.e. 48 hours.
13. The Conceptual Drainage Strategy does not recognise these aspects. It assumes only 50% of the site as being impermeable over 9.9ha of the 15.03ha site. There are no calculations presented to confirm or otherwise if 50% is the true area to be transformed to impermeable. Any development of the site will disturb and render inoperative any land drains. Gardens and other non-paved areas within an urban setting are not as permeable as good quality agricultural land such as found on this site, which grows high value arable crops and managed to encourage rapid infiltration of water. Any water entering the soil will drain to lower strata very slowly (according to the submitted soil survey report) and therefore for the purposes of runoff calculations and drainage requirements, the whole developed site should be considered impermeable.

14. The "Plot Tanks" and associated system capacity has been calculated on a 1:30 year and 24 hour basis. However, this is insufficient given the matters raised above. The stated capacity is 970m<sup>3</sup>.
15. Capacity of the "Attenuation Ponds" is considered inadequate for the intended purposes. The ponds need to be capable of buffering water from the site and discharging at a rate consistent with existing land and ditch drainage system. The stated capacity of the ponds is 2495m<sup>3</sup>, there is no distinction between overall and buffer capacity. The combined capacity of all proposed plot tanks and ponds is 3565m<sup>3</sup>.
16. The design standard quoted in the Conceptual Drainage Report of 2l/s/ha for agricultural land for a 24 hour period amounts to 25mm over 9.9ha, not 15ha as stated. Conversion from permeable agricultural land to impermeable developed land will increase the rate of runoff to the Receptor, in this case "Plot Tanks" and "Attenuation Ponds". Thus the proposals are inadequate for any event greater than 25mm over 24 hours across the entire proposed site area. Water will still fall on the ponds and ecology park and so should have been included in any calculations.
17. A simple calculation of a typical 48hour, 5 year return period rainfall event in the Midlands of 50mm will generate 7500m<sup>3</sup> of surface water from this site, or three times the design capacity. Larger events such as 100mm as becoming increasingly common, or over a longer period will overwhelm the ponds and impact the River.
18. The presence of sandy/peaty soils adjacent to the River also brings into question the suitability of the site for the construction of the proposed site infrastructure.
19. In light of the above, the Parish Councils' are of the opinion that the proposed drainage strategy is inadequate for the site and could impact its residents and downstream neighbourhoods and ecology, including the habitats of protected species e.g. White Clawed Crayfish. For these reasons, the proposals also conflict with the advice in the Framework relating to flood risk and drainage, to RLP Policies ENV1 and ENV40 and to Policy 1 of the ACS.