



Planning Committee Date Report to	16 June 2022 South Cambridgeshire District Council Planning Committee
Lead Officer	Joint Director of Planning and Economic Development
Reference Site	S/2553/16/CONDQ Land Off Horseheath Road
Ward / Parish Proposal	Linton/Linton Submission of details required by condition 12 (Foul water drainage) of outline planning permission S/2553/16/OL for 42 dwellings and allotments (not less than 0.45 hectares)
Applicant Presenting Officer Reason Reported to Committee	Croudace Homes Stephen Kelly/Karen Pell-Coggins The proposed drainage solution crosses Council owned land for which an easement has been granted
Member Site Visit Date Key Issues	N/A 1. Foul water drainage 2. Neighbour amenity
Recommendation	APPROVE

1.0 Update to report

Paragraph 6.1 Consultations

1.1 Linton Parish Council – Objects to the application. Comments as follows:

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The details submitted to discharge Condition 12 are identical to those refused by the SCDC Planning Committee on 13th April 2022. This is unsurprising given that the scheme presented was implemented “at risk” before approval of this pre-commencement condition was granted and several houses are now occupied on the development site.

LPC concerns are for both the residents moving onto the site, with regard to the maintenance issues and associated costs of the scheme proposed, and for residents immediately downstream of the connection on Lonsdale due to the existing foul sewer flooding experience that is not acknowledged by Anglian Water and that will be exacerbated by this development.

The foul water drainage scheme will not be adopted by Anglian Water and they have made no technical assessment of the “on-site” scheme. LPC do not believe that the scheme is adoptable for the reasons presented in the April 13th Committee Meeting.

It appears that the Sustainable Drainage Engineer responding as the “Drainage Consultant” has not sought to clarify why there are discrepancies between the drawings and calculations presented.

A request was made by LPC in September 2021 to understand these issues in the network. It is material that the LLFA and Capita acted on the same concerns raised regarding the surface water scheme, but no statutory body has, to date, explained the inconsistencies in the foul scheme. The following response was received from Croudace in October 2021 (via Stephen Kelly):

- i) The foul water drainage network shown on drawing 035-032G corresponds with the MicroDrainage calculations that have been submitted.
- ii) We have used MicroDrainage to check the minimum gradients required in the new foul sewers to provide sufficient flow capacity and the minimum self-cleansing velocity. For small networks such as this it is usually (but not always) the case that the self-cleansing velocity is the limiting factor rather than the flow capacity. MicroDrainage checks both.
- iii) The actual gradients of the sewers are generally steeper than the minimum gradients, so the network that is being constructed as per drawing 035-032G will have a greater capacity than the MicroDrainage model. This is a conservative design methodology and it does not imply that the drawings are inaccurate. We usually build spare capacity in to our drainage designs to allow for unforeseen problem during construction. This is just a sensible design approach.

Our concerns centre on the following:

- No pipes have been numbered on drawing 035-032G, only manhole numbers, and
- No manhole numbers are presented in the MicroDrainage calculations, only pipe numbers.

Given the statement in point 2. above – that the calculations check the minimum gradients required for the system to be self-cleaning, LPC would like to raise particular issues with the following:

Pipe 6.005 that we believe runs between manhole F18a and F19 has been presented in the calculations with a diameter of 150mm. This pipe appears to have a diameter of 100mm in the drawings and runs with a gradient of 1 in 102. If this pipe has been constructed as per the drawings as stated in point 3. above, then this is much shallower than the Building Regs requirement of a 1 in 80 gradient for effective self-cleansing in a pipe of 100mm diameter.

In the drawing, pipe 10.001 that we believe runs between F32 and F34 has a gradient of 1 in 103 (instead of the 1 in 41.4 modelled) – again, this is much shallower than the required 1 in 80 gradient for a 100mm diameter pipe.

Four other pipes run with shallower gradients in the drawing than those modelled implying a reduction in the self-cleansing velocity at these points in the network.

Pipes that run with exceptionally steep gradients can also cause problems for foul only sewers as the liquids ‘out-run’ the solids, leaving them in the pipes and eventually resulting in blockages. Pipe 4.002 (between F9 and F9a) is a particular concern with a gradient on the drawings of 1 in 5.6 – much steeper than the 1 in 77.7 shown in the calculations (and, indeed, much steeper than personal experience with Building Control shows is wise and the 1 in 10 starting gradient on any Building Control graphs).

There are many other pipes in this scheme that have a very different gradient in the model compared with the gradient in the drawings (Please see the Table 1 below for the pipes referred to in the comments).

If the pipes do not self-clean effectively, they risk blockages and expense for the future residents of this site. As most of the sewage pipes run through private garden space, identifying and rectifying problems has the potential to be inconvenient and risks individual residents being on the receiving end of and responsible for problems caused by others “upstream”.

The sharp bends in the rising main present another concern to LPC (and were one of the main concerns of the SCDC Planning Committee Councillors with experience of problems caused by similar looking networks). Any rising main presented for adoption would “as far as

practicable be laid in straight lines ... and where bends are used they should be of long radius" (Sewers for adoption guidance). This is to both minimise the risk of blockage, and to ensure that if a blockage occurs, standard equipment can be used to resolve the issue as quickly and easily as possible.

In addition, the pumping station and part of the rising main are much closer to the nearest habitable buildings than recommended, so any blockages or issues with the pump will result in nuisance to the nearest homeowners.

As the pumps have been blocked twice with less than ¼ of the site occupied in the last 4 months, LPC have major concerns about the long-term operation of this scheme and particularly the potential additional costs to residents for its maintenance.

We are not reassured by the discovery of the pipe between F36 and F37 that had not been properly connected despite Croudace asserting that Building Control have raised no concerns with the system – what testing had been done? And what sign-off given?

The foul sewer that this site pumps into connects to the parlous Bartlow Road sewer. Anglian Water assert that this is a "foul only" sewer; yet the experience of residents in the village is that, even in moderate rainfall, surface water enters this sewer in large volumes (much greater than the 25% "seepage" allowed in Anglian Water calculations).

The picture below (Image 1) shows the state of a garden on Finchams Close at the low point of the sewer that runs down from Bartlow Road. This garden is immediately to the south of the point at which the Lonsdale sewer joins the network. The water in this picture had risen very quickly into the garden from the foul sewer manhole – it is a mixture of foul water and surface water that had entered the Bartlow Road foul sewer within the first 30 minutes of the rainfall on 20th July 2021. This was reported to Anglian Water on 20th July and an incident number was given to the resident.

Foul flooding incidents in a number of other village properties were also reported to both Anglian Water and LPC during this flood event. To date, no action has been taken by Anglian Water regarding any of the issues raised and, of much greater concern, Anglian Water has not provided the LLFA with any of the information relating to the flooding from the foul network for their Flood Investigation report for the July 20th event. Unless the parlous situation of our foul sewers is at least recognised, nothing will be done to rectify the problems and residents will continue to be put at risk.

- 1.2 Further information is being sought from the applicants with regards to the comments from the Parish Council. These will be reported verbally at the meeting.

Background Papers:

The following list contains links to the documents on the Council's website and / or an indication as to where hard copies can be inspected.

- South Cambridgeshire Local Plan 2018
- South Cambridgeshire Local Development Framework SPDs