Britannia mill site
Spring Street, Rishton
Hyndburn

Drainage assessment
for proposed housing

NGR SD 728 308
Postcode BB1 4NA

Michael Lambert Associates
1 Partridge Close
Winsford
Cheshire
CW7 1PY

T/F 01606 862373
Mobile 07958 964054

Emails floodriskengineer@gmail.com
sudsengineers@gmail.com

Howard & Seddon
64 Washway Road
Sale
Cheshire
M33 7RE
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1.0 Introduction.
The Britannia Mill site is at Spring Street, Rishton, near Blackburn and is between Spring Street and the Leeds Liverpool canal. The site used to be a mill and is currently cleared. Housing is proposed and this report covers the drainage aspects of the proposal.

2.0 Executive summary
The site has been almost all mill roof and yard areas from the late 1890's until the recent demolition. The adjacent Bridgewater Mill redevelopment papers show evidence of some contaminated ground and former mill basements and the existing site is likely to be similar. Subject to a site specific ground investigation the options for new surface water drainage are to drain to the canal subject to Canal Trust acceptance, or a new offsite surface water sewer requisition along Spring Street to the public surface water sewer under the canal. If a requisition is not feasible due to lack of fall or cost and the Canal Trust does not agree to a new discharge then a connection to the public combined sewer system may be necessary.

Should an outfall to the canal be feasible then the new surface water discharge rate will be reduced by 50% compared to existing and this complies with Hyndburn Policy DM17.

3.0 Existing site, flood risk, history, area drainage mode, Canal Trust canal.
The existing site is between Spring Street and the Leeds Liverpool canal and is approx 9200 m2 in area. Two mills were here in the past and the Bridgefield Mill has been redeveloped for housing with Seddons as the contractors. The 1997 development is Bridgefield Close/ Well Street and the planning application number was 11/97/0487.

The Britannia site has an approx level of 130 AOD. At the north end of the site is Tottleworth bridge over the canal which allows access to the northern Rishton fields. The southern boundary is at Sands Road with sett paved rear ginnels to the rear of the Spring street houses and a stone boundary wall showing on Streetview. Just north of the site is more new housing at Alan Critchlow Way.

Viewing the 1997 11/97/0487 documents on the Hyndburn planning website showed much correspondence with regard to mill basements and contamination. Rutter Johnsons were involved and a 300mm thick clay capping layer was agreed for the sewer works, also the 17th September 1998 Rutter letter refers to 4 boreholes alongside the canal to a depth of 4m which did not show groundwater. Trial hole 32 showed metals contamination and proposed rear garden areas were excavated to a depth of 1m and the existing ground replaced. Whilst this is not on the Britannia site it is indicative of mill basement areas and on the Britannia site basements are likely to be encountered with the original floors still in situ and these conditions are not likely to be suitable for soakaways.
Ian Farmer Associates carried out a walkover and desk study and commented that there is the potential for contamination associated with the mill use and also the more recent uses as car breakers, metal spinners, paint/varnishing, and garage services.

The existing mill roof was valley gutters and will have drained to the canal. Downspouts should be visible on a historic photo. A short Rishton storm of approx 1 hour duration will have produced a runoff rate of

\[ 8000 \text{m}^2 \times 74 \text{mm/hr divided by 3600} = 164 \text{ l/sec} \]

Reducing this by 50% to comply with the ethos of Hyndburn Policy DM17 gives a new limiting surface water runoff rate of 82 l/sec.

An internet search for 'rishton flooding' gave no results. There is a flood history in the area and it is recent with serious flooding at Whalley last December 5/6 and December 25/26. Whalley is downstream on the Calder and this flooded badly over Christmas. The first flood on December 5/6 was due to a culvert blockage part way up the main street, the second flood was the effect of the extreme storms December 25/26. The relevance of this is that Rishton drains into Hyndburn brook which flows into the Calder and any redevelopment in Rishton or in the UK has to comply with DEFRA guidelines which are set down in SC030219 rainfall runoff management for developments -current version E. This is relevant if a canal outfall proposal is turned down or not proceeded with.

The area river system for the former mills area is a small stream on the eastern side of the canal which outfalls into Hyndburn Brook. There is a reservoir to the west of Rishton which outflows into Shaw Brook which becomes Hyndburn Brook. Hyndburn Brook flows into the Calder and there are thus 3 river systems all with different response times. Shaw Brook 1.1 hour length storms produce peak flow, Hyndburn Brook 4.75 hour length storms produce peak flow, and Calder 9.5 hour length storms produce peak flow at Whalley.

The Leeds Liverpool canal borders the site. There are locks downstream at Grimshaw Park Bridge SD 68 27 and upstream at Barrowford SD 86 39 and the length of the canal 'pound' is approx 30 km.

4.0 Proposals, new drainage.
The proposals are to build approx 50 houses on the site. The new access will be from Spring Street/Shuttleworth Street. New drainage will be separate system and foul drainage will drain to the local public foul network in Spring Street at a point to be agreed with United Utilities. Surface water will be stored on site and discharged at the 82 l/sec reduced runoff rate to either the canal or the existing public surface water system located between Brook Street and School Street which will mean a surface water sewer requisition along Spring Street- the surface water limiting flow rate will need discussion with United Utilities and may need to reduce. Onsite surface water storage will be oversize pipes to deal with storms up to 1 in 30 year + climate change and storm runoff from storms up to 1 in 100 year + climate change will be stored in cellular storage at points to be determined at the post consent detail design stage.
view of the history of the next door site and contamination risks plus the risk of the former mill basement slabs still being in existence despite demolition soakaways are not considered to be feasible. Should consent be granted for the redevelopment then on site ground investigations will take place and the suitability for soakaways will be assessed.

We have contacted the Canal Trust and obtained the Trust's guidelines. An outfall to the canal would be set into the canal wall just downstream of Tottleworth Bridge and the discharge velocity would be limited to Canal Trust criteria to avoid boats being put off course. Oil interception will be needed. For the Trust to consider whether it will permit an outfall, the proposal has to be investigated and an application payment of £456 has to be made also a cost undertaking to meet the Canal Trust's professional costs for assessing if the proposal is acceptable which may well be £2000 or so.

The second option for new surface water drainage is to connect to the public sewer system. The preferred method to comply with Building Regulations Approved Document H (soakaway, watercourse, sewer) and Planning Practice Guidelines para 080 (soakaway, water body, sewer) is to construct an offsite sewer along Spring Street to the public surface water sewer shown on the records between Brook Street and School Street- if this is not practical due to lack of fall or cost then a connection to the newish 1200 combined sewer system could be agreed with United Utilities.

5.0 Strategic Flood Risk Assessments
Hyndburn's 2010 SFRA lists Spring Street as suffering recurrent flash flooding from the drainage systems and the new sewer mentioned in the 0487 application documents was no doubt the 1200 mm dia public sewer under the canal. Policy DM17 asks for a reduction in flood risk area wide which means that existing surface water runoff flows should be reduced.

6.0 LASOO practice guidance.
This recommends that drainage strategies and ground investigations plus evidence of third party agreements to discharge accompany both outline and full planning applications. This is a long lead in time for this specific site and will require significant expenditure with the Canal Trust plus time for the Canal Trust to conduct its own feasibility study. We do expect that the Canal Trust will allow an outfall as the Leeds Liverpool canal stretch is popular with much lock movement and canal feedwater should be welcome. If the applicant is able to run planning consent matters in parallel this will assist the site's development. The site will be able to drain as the Spring Street area has public sewers.

7.0 Attachments

<table>
<thead>
<tr>
<th>Attachment</th>
<th>Number</th>
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<tbody>
<tr>
<td>Location plans, aerial photo</td>
<td>1 to 5</td>
<td>A4</td>
</tr>
<tr>
<td>LLFA comments</td>
<td>6 to 11</td>
<td>A4</td>
</tr>
<tr>
<td>Bridgefield Mill</td>
<td>12 to 17</td>
<td>A4</td>
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<table>
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<tr>
<th>redevelopment papers</th>
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<tr>
<td>Canal plans</td>
<td>18 to 22</td>
<td>A4</td>
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<td>Proposals landscaping</td>
<td>23</td>
<td>A4</td>
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<tr>
<td>FEH data for 3 catchments</td>
<td>24 to 29</td>
<td>A4</td>
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<tr>
<td>Canal application papers</td>
<td>30 to 45</td>
<td>A4</td>
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<tr>
<td>Hyndburn SFRA extract/DM17</td>
<td>46 to 49</td>
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<tr>
<td>LASOO extract</td>
<td>50, 51</td>
<td>A4</td>
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<tr>
<td>OS extract</td>
<td>52</td>
<td>A3</td>
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<tr>
<td>Former mills plan</td>
<td>53</td>
<td>A3</td>
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<tr>
<td>Proposals</td>
<td>54</td>
<td>A3</td>
</tr>
<tr>
<td>Public sewers</td>
<td>55, 56</td>
<td>A3</td>
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<tr>
<td>Ian Farmer desk study extracts</td>
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All queries please email floodriskengineer@gmail.com
Together with the Aire & Calder Navigation, which it meets at Leeds, it offered a coast to coast route between the Irish Sea and the North Sea, though not a proper connection until the Stanley Dock branch in Liverpool opened in 1846.

The canal was so successful that the reservoirs built to supply it were never adequate, with water shortages in dry summers. Despite this, the canal continued to carry large tonnages into the 1950s.

The local cargo craft were known as ‘short boats’, broad-gauge vessels capable of carrying around 45 tons. The larger payload of the short boats - around twice that of a standard narrow-boat - enabled the line to prosper for many years, the last cargo of coal along the Leigh Branch to Wigan Power Station ended in 1972.

Today it provides a way of life for canal residents; a leisure and tourism route for canal boats, walkers and cyclists and a destination for local people to enjoy.

**Rishton Today**

Rishton has suburban extensions to the south and west that provide larger family properties, although the predominant house type in the east and surrounding the Canalside is older terraced properties.

The formerly distinctive canalside environment with mills clustered together next to open rural areas has significantly changed as the mills have been demolished. This change provides opportunities for new uses, particularly alongside the canal. Although there is currently a mix of housing and employment development, the balance is likely to shift towards housing with job opportunities in nearby major business parks at Whitebirk and Clayton-le-Moors.

The Rishton Ward has a population of just over seven thousand people (7,086) and just under three thousand households, the majority of which are in the town. The 1901 census indicated that 7,301 people lived in Rishton, the population remaining largely unchanged over the last 100 years. The ward has a reasonable split of age bands, generally reflecting the pattern across the Borough. However, the ward has an ageing population profile. The only age band not to experience a decline is the over 65's with a 22.5% rise.

**FIG 4:** The Former Victoria Mill

**FIG 5:** Ordnance Survey map (1893) showing former mills
APPLICATION CONSULTATION RESPONSE

<table>
<thead>
<tr>
<th>Application Number:</th>
<th>11/15/0347</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Former Britannia Mill Spring Street Rishton BB1 4LL</td>
</tr>
<tr>
<td>Proposal:</td>
<td>Major Full: Erection of 55 no houses and 8 no apartments with associated access and landscaping.</td>
</tr>
</tbody>
</table>

Thank you for inviting the Lead Local Flood Authority (LLFA) to comment on the above application. The Flood and Water Management Act 2010 sets out the requirement for LLFAs to manage 'local' flood risk within their area. 'Local' flood risk refers to flooding or flood risk from surface water, groundwater or from ordinary watercourses.

Comments provided in this representation, including conditions, are advisory and it is the decision of the Local Planning Authority (LPA) whether any such recommendations are acted upon. It is ultimately the responsibility of the Local Planning Authority to approve, or otherwise, any drainage strategy for the associated development proposal. The comments given have been composed based on the current extent of the knowledge of the LLFA and information provided with the application at the time of this response.

**Lead Local Flood Authority Position**

The Lead Local Flood Authority objects to the development proposal on the basis of:

1. **Proposal contrary to National Planning Guidance: Runoff Destinations**

The Lead Local Flood Authority objects to this application and recommends refusal of planning permission until robust evidence has been submitted to the local planning authority demonstrating why higher priority discharge points for the runoff destination of surface water are not reasonably practicable, in line with Planning Practice Guidance.
Reason

It is evident from the application form that the applicant intends to discharge surface water to a mains sewer. The Planning Practice Guidance requires applicants for planning permission to discharge surface water runoff according to a hierarchy of runoff destinations. The Planning Practice Guidance states that 'sustainable drainage systems should be provided unless demonstrated to be inappropriate' and 'the aim should be to discharge surface run off as high up the...hierarchy of drainage options as reasonably practicable.' The hierarchy for surface water runoff destinations is as follows:

- into the ground (infiltration);
- to a surface water body;
- to a surface water sewer, highway drain, or another drainage system;
- to a combined sewer.

The proposed development appears to be contrary to Paragraph 80 of the PPG as the hierarchy for surface water runoff destinations does not appear to have been given adequate consideration. The submitted application form states that surface water will be disposed of via a main sewer and no evidence has been provided as to why other preferable run off destinations cannot be utilised. The absence of this evidence is contrary to policy and therefore sufficient reason in itself for a refusal of planning permission.

Overcoming our objection

The LLFA objection may be overcome by submitting further evidence of the chosen runoff destination and robust justification of this runoff destination over preferable destinations set out in the hierarchy contained in the Planning Practice Guidance (as identified above). If robust justification or evidence is provided as to why preferable runoff destinations cannot be achieved is not provided, in line with Planning Practice Guidance, we will consider whether there is a need to maintain our objection to the application.

The LLFA asks to be re-consulted with the results of further evidence on runoff destinations and our objection will be maintained until adequate evidence has been submitted. The LLFA will provide further comments within 21 days of receiving formal re-consultation.

2. Insufficient information provided

The Lead Local Flood Authority objects to this application and recommends refusal of planning permission until further supporting information is provided.
Reason

The LLFA is unable to ensure paragraph 103 from the NPPF can be satisfied as the applicant has not provided sufficient information for the LLFA to assess this application. A copy of our validation checklist which highlights the information we require in order to be able to provide a substantive response is provided below, the crosses indicate which information has not been provided. In particular the LLFA would request information regarding the existing surface water runoff rates in order to ensure that there will be no increase post development. This information should also identify any attenuation storage requirements which are required on the site and therefore allow the LLFA to ensure any proposed attenuation is adequate.

<table>
<thead>
<tr>
<th>LLFA Information Checklist</th>
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<tbody>
<tr>
<td><strong>Site and Drainage Layout</strong></td>
</tr>
<tr>
<td>Proposed site plan showing exceedance routes and identification of catchment area(s)</td>
</tr>
<tr>
<td>Drainage layout plan, to include:</td>
</tr>
<tr>
<td>• Sustainable drainage system</td>
</tr>
<tr>
<td>• Sewers</td>
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<tr>
<td>• Drains</td>
</tr>
<tr>
<td>• Watercourses</td>
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<tr>
<td>Site investigation report, including the results for each SuDS feature of:</td>
</tr>
<tr>
<td>• Boreholes or Trial Pits</td>
</tr>
<tr>
<td>• Infiltration (Permeability) Testing</td>
</tr>
<tr>
<td>• Factual Ground Investigation Report (GIR)</td>
</tr>
<tr>
<td>• Geotechnical Design Report (GDR)*</td>
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<tr>
<td><strong>Drawings and Calculations</strong></td>
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<tr>
<td>Detailed design drawings, including:</td>
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<tr>
<td>• Details of inlets, outlets and flow controls</td>
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<tr>
<td>• Long and cross section drawings of proposed drainage system(s), including design levels</td>
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<tr>
<td>• Details of appropriate water quality treatments</td>
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<tr>
<td>Sustainable drainage system flow calculations (PDF files showing the input and output data for flow calculations) and storm simulation plan for:</td>
</tr>
<tr>
<td>• 1 in 1 year;</td>
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<td>• 1 in 2 year;</td>
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<tr>
<td>• 1 in 30 year, and;</td>
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<tr>
<td>• 1 in 100 year + 30% climate change</td>
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</table>

*indicates this information should be supplied where applicable. This is often on a site-specific basis and the local planning authority or applicant may wish to discuss with the LLFA whether this information is required for the development proposal.
2 Information available from British Geological Survey website: [http://mapapps.bgs.ac.uk/geologyofbritain/home.html](http://mapapps.bgs.ac.uk/geologyofbritain/home.html)
Overcoming our objection

The LLFA objection may be overcome by submitting further information in support of this application, please refer to the table above.

Sustainable Drainage Systems: General Advice

Paragraph 103 of the National Planning Policy Framework (NPPF) and Written Statement on Sustainable Drainage Systems (HCWS161) requires that surface water arising from a developed site should, as far as it is practicable, be managed in a sustainable manner to mimic surface water flows arising from the site prior to the proposed development, whilst reducing flood risk to the site itself and elsewhere, taking climate change into account.

The Lead Local Flood Authority encourages that site surface water drainage is designed in line with the Non-Statutory Technical Standards for Sustainable Drainage Systems and Planning Practice Guidance, including restricting developed discharge of surface water to greenfield runoff rates making suitable allowances for climate change and urban creep, managing surface water as close to the surface as possible and prioritising infiltration as a means of surface water disposal where possible.

Regardless of the site’s status as greenfield or brownfield land, the Lead Local Flood Authority encourages that surface water discharge from the developed site should be as close to the greenfield runoff rate as is reasonably practicable in accordance with Standard 2 and Standard 3 of the Non-Statutory Technical Standards for Sustainable Drainage Systems.

Sustainable drainage systems offer significant advantages over conventional piped drainage systems in reducing flood risk by attenuating the rate and quantity of surface water run-off from a site, promoting groundwater recharge absorbing diffuse pollutants and improving water quality. Ponds, reedbeds and seasonally flooded grasslands can be particularly attractive features within public open space.

The wide variety of available sustainable drainage techniques means that virtually any development should be able to include a scheme based around these principles and provide multiple benefits, reducing costs and maintenance needs.

Further information and advice on SuDS can be found in:

- CIRIA C687 – Planning for SuDS – Making it Happen
- CIRIA C697 – The SuDS manual
- CIRIA C635 - Designing for exceedance in urban drainage: good practice
- CIRIA C698 – Site handbook for the construction of SUDS
- HR Wallingford SR 666 - Use of SuDS in high density developments
- National Planning Policy Framework and Planning Practice Guidance