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Report No 05292/10

September 2020

WASTE RECOVERY PLAN
for
FORMER SAPPI PAPER MILL
BLACKBURN

Prepared for

Blackburn Waterside Regeneration Limited
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Queen Victoria House
41-43 Victoria Street
Douglas
Isle of Man
IM1 2LF

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1. INTRODUCTION

1.1 The Arley Consulting Company Limited (TACCL) has been commissioned by Blackburn Waterside Regeneration Ltd (BWR) to prepare a waste recovery plan for land at the former Sappi Paper Mill in Feniscowles, Blackburn, Lancashire. The WRP is to be submitted to the Environment Agency (EA) for pre-application advice.

1.2 The site comprises an area of brownfield land which previously housed two paper mills (Star Mill and Sun Mill). Paper operations ceased in 2008 and all mill buildings have been demolished. Outline planning permission (Ref 10/15/0496) has been granted by Blackburn with Darwen Borough Council (BDBC) for the redevelopment of the site for a mixed residential and commercial use up to a maximum of:

- 500 dwellings
- 3,224 m^2 of B1a employment use
- 9,192 m^2 B1c employment use
- 333 m^2 commercial use
- 1110 m^2 community building, landscaping and open space

1.3 A copy of the planning permission is contained in Appendix A.

1.4 As part of the development, importation of material is required to raise the level of the valley floor to provide a suitable level building platform.

1.5 Importation of material commenced in 2017 to backfill excavated relic foundations and ground slabs to provide a level site to carry out site investigation and for machine access for remediation works. Material was imported under a materials management plan (MMP) following the Definition of waste Code of Practice (DoWCoP) produced by CL:AIRE.

1.6 In March 2019 the EA informed the site operator that they do not consider that importation of waste has been carried out in full accordance with the DoWCoP.

1.7 Following an EA request, BWR carried out an investigation of the imported material which revealed that the material was uncontaminated. BWR reported that a total of 88,000 m^3 had been imported.

1.8 Advice is being sought as a precursor to an application for a bespoke environmental permit for the deposit for recovery of waste for use in construction.

1.9 Instead of using non-waste materials such as primary or recycled aggregate for this purpose, it is proposed to use construction, demolition and excavation waste as a direct substitute. This includes crushed brick and concrete and excavated soil and stones.

1.10 This WRP demonstrates that this is a waste recovery operation in accordance with the well-defined legal criteria for 'recovery' set down in the relevant authoritative judgments of the Court of Justice of the European Union (CJEU) which were codified in Article 3(15) of the Waste Framework Directive (WFD) and most recently applied in English law by the Court of Appeal.

1.11 The WRP also includes information required which is outlined in EA guidance Waste Recovery Plans and Permits as published at www.gov.uk. EA guidance states that there are 3 main ways of showing evidence of using waste in place of non-waste. These are:

(i) Financial gain by using non-waste.

(ii) Funding to use non-waste.

(iii) Obligations to do the work.

1.12 This proposal includes evidence according to (i) above of net financial gain by carrying out the work with non-waste. The following information is also provided in line with EA guidance:

- Evidence the waste is suitable.
- Purpose of the work.
- Quantity of waste used.
- Quality standards applicable.

2 SITE DETAILS

2.1 Site Location

2.1.1 The site is situated in Feniscowles, Blackburn, Lancashire approximately 3 miles from the centre of Blackburn. It is located between Moulden Brow and Livesey Branch Road with the site entrance located off Star Drive. The national grid reference (NGR) for the site is SD 645 249. A site location plan is contained in Appendix D.

2.1.2 The residential area of Feniscowles is situated to the north and north-east of the site.

2.1.3 The Leeds Liverpool Canal forms a boundary to the east and south-east. Beyond the canal lies farmland and the M65 motorway.

2.1.4 Immediately to the south of the development area is a power station operated by Scottish Power. Beyond that is a former landfill site which was used for disposal of industrial waste produced by the paper mills. Beyond the landfill site is the canal and motorway.

2.1.5 Wrapping around the site from the south the north-west are Stanworth Woods, which is a local wildlife site. The Sun Reservoir is to the north-west of the site.

2.2 Site Description

2.2.1 The development site has been separated into a number of phases shown on the restoration master plan. Phase 1 covers the north and east of the site and sits either side of the access road. The surface consists of subsoil which has been levelled in preparation for building. This area does not require any additional material to be deposited.

2.2.2 Phase 4A (formerly phase 2) covers the footprint of the demolished mills along the valley floor and the partially infilled Mill Lodge reservoir, with the culverted River Roddlesworth running through the centre. This is at a lower elevation than Phase 1 and covers approximately 82,230 m^2. This area requires a substantial volume of fill to construct a platform for building.

2.2.3 The topography of the site has been established by surveying and a copy of the survey is presented in Appendix D.

2.3 Hydrology

2.3.1 Detailed information on the hydrology of the site is contained within the flood risk assessment[1] (FRA) presented in Appendix B.

2.3.2 The River Roddlesworth flows through the site from south to north. Just inside the southern boundary it enters a 290 m long culvert. The river emerges from the culvert at the north-eastern boundary, from where it flows beneath Moulden Brow and into the River Darwen to the north.

2.3.3 Finnington Brook flows into the Sun Reservoir to the north-east of the site, and then out of the reservoir via a spillway and then into the River Roddlesworth close to the northern boundary of the site.

2.3.4 Two reservoirs were constructed to serve the paper mills: the Mill Lodge Reservoir and the Sun Reservoir. The Mill Lodge has been decommissioned and partially infilled. The Sun Reservoir has been recommended for decommissioning by the panel engineer. It is proposed to partially infill this reservoir following decommissioning to provide public amenity space for use by residents of the new housing development. Figures for the volume of infill required are included in this waste recovery plan.

2.3.5 The Leeds-Liverpool canal loops around the southern and western boundaries of the site and passes over the River Roddlesworth in aqueduct to the south.

2.3.6 Phase 4B of the site is largely within flood zone 3. To reduce the risk of flooding measures have been proposed including opening up the culverted River Roddlesworth and diverting it around the western boundary of the site, as detailed in the FRA. The measures proposed reduce the risk to that of flood zone 1.

2.4 Geology / Hydrogeology

2.4.1 Online British Geological Society data shows that superficial drift strata beneath the site consist of alluvium and glacial till deposits, with solid strata comprising sandstone (Lower Haslingdon Flags) and mudstone/siltstone/sandstone (Rossendale Formation).

2.4.2 On site investigations undertaken as part of site investigation works to develop the remediation method statement[2] confirmed the presence of alluvium and glacial till deposits. The bedrock was identified as sandstone of the (weathered) Pennine Lower Coal Measures and sandstone of the Millstone Grit Formation.

[1] Sappi Mill Flood Risk Assessment, Edenvale Young Associates, November 2018.
[2] SAPPI Phase 2 Remediation Strategy, CAPITA, March 2017

2.4.3 The underlying strata are defined as a Secondary A aquifer by the EA. A 'Secondary A' aquifer is described by the EA as consisting of '*permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers*'.

2.4.4 The site is not located within a groundwater source protection zone.

2.5 Ecology

2.5.1 There are no European habitat sites within 2 km of the site. There is one Local Nature Reserve within 2 km: Pleasington Old Hall Woods approx. 1 km to the north of the site.

2.5.2 There are 11 non-statutory wildlife sites within 1.5 km of the site. The closest is Stanworth Woods and Reservoir (Sun Reservoir) which is within the development site.

2.6 The Proposed Development

2.6.1 A copy of the design and access statement submitted with the 2015 planning application is contained in Appendix C. This contains the masterplan for development of the site including residential and commercial areas, public open space, transport links and cycle paths.

2.6.2 The development has been amended slightly since the original application was granted by application 10/18/1191 which includes the river diversion to reduce the flood risk, but the construction proposals remain the same.

2.6.3 The valley floor, which was occupied by the paper mills, requires importation of engineering fill to bring the site up to a level building platform. The proposed profile of the site is contained within a series of drawings produced by Inspire Design and Development Ltd with the references BWR-1357-01-EW-002 to 009. These consist of a number of cross-sections showing the original ground level and the proposed finished level and are contained within Appendix E.

2.6.4 Cut and fill calculations from cross sections referenced above indicate that 195,771 m^3 of infill material will be required to raise the building platform from the original base level to the design level. This figure does not include material already imported under MMP, this will be subtracted from this total.

2.6.5 The Sun Mill Reservoir will be partially infilled to reduce the volume of water, creating a public amenity area. The required infill is 92,661 m^3. The layout and cross-sections of the proposed infill are shown on drawings contained in Appendix E.

3. DEMONSTRATION OF RECOVERY

3.1 Quantity of Waste Material

3.1.1 The areas to be infilled are shown on the Proposed Masterplan, Drawing No 17 5150 86 contained in Appendix E.

3.1.2 The amount of infill required for phase 4A equates to 195,771 m^3 over an area of 82,230 m^2. 88,000 m^3 has already been imported under the MMP. That leaves a balance of 107,771 m^3 to be imported to complete the development. This equates to an average depth of fill of 1.3 m.

3.1.3 The Sun Mill Reservoir will be partially infilled to reduce the volume of water, creating a public amenity area. The required infill is 92,661 m^3.

Phase	Area (m^2)	Fill (m^3)	Already Deposited (m^3)	Balance (m^3)	Balance (tonnes*)
4A	82,230	195,771	88,000	107,771	193,987
Sun Reservoir	20,007	92,661	0	92,661	166,789
Total	102,237	288,432	88,000	200,432	360,776

Table 1: Materials Balance
* Using density of 1.8

3.1.4 This is the minimum necessary to construct the development platform in accordance with the design. The material will only be deposited in the proposed areas as shown on the Proposed Masterplan drawing

3.2 Evidence the Waste is Suitable

3.2.1 Waste used will need to be suitable both physically and chemically. Table 2 lists waste types by EWC codes which are listed as potentially suitable for recovery by EA guidance.

3.2.2 Waste acceptance procedures will be developed for the full permit application which will include:

- Waste input criteria
- Source evaluation assessment of suitable fill;
- Review of site investigation reports and chemical analysis to assess whether the soils are uncontaminated and suitable for use;
- Monitoring of imported materials by way of verification testing.

3.2.3 Material will be deposited and dozed out in layers and rolled in accordance with an Earthworks Specification, detailed further in section 3.5.

EWC Code	Description
17 01	**Concrete, bricks, tiles and ceramics**
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixture of concrete, bricks, tiles and ceramics
17 03	**Bituminous mixtures, coal tar and tarred products**
17 03 02	Bituminous mixtures other than those mentioned in 17 03 01
17 05	**Soil (excluding excavated soil from contaminated sites) stones and dredging spoil**
17 05 04	Soil and stones

Table 2: Waste Types Proposed for Recovery

3.3 Evidence of Financial Gain by Using Non-Waste Materials

3.3.1 The outline planning permission allows construction of 500 houses and some commercial development. For simplicity, just the value of the housing development will be considered at this point, not the value of the commercial and industrial land.

3.3.2 HM Land Registry publishes house price data for England and Wales. Properties in Feniscowles had an overall average price of £209,100 over the last year[3]. As a very conservative value it can be estimated that each housing plot that is developed will have an estimated market value of 10% of the eventual sale price of the constructed property. That equates to £20,901 per plot. If this is multiplied by 500 (the maximum number of houses that can be constructed) it equates to £10,450,500.

3.3.3 The development of the industrial and commercial land will bring additional capital gain, but this is more difficult to quantify and so has been excluded from the current cost model. Notwithstanding, there will be a gain which will provide an additional buffer to the costs of the development.

3.3.4 BWR has supplied information as to the cost of development of the site, detailed in Table 3. This details the cost of the operation under two scenarios: using waste and non-waste.

3.3.5 There is a significant net financial gain to carrying out the operation with non-waste, demonstrating that it would be commercially worthwhile to use non-waste.

[3] https://www.rightmove.co.uk/house-prices/feniscowles.html

Element	Details	Non-waste Cost (£)	Using Waste Cost (£)
Permit application	EA costs for bespoke deposit for recovery application	0	9,207
Staff welfare	Mess facilities including toilet, kitchen £400 pw x 3 years	62,400	62,400
Equipment and manpower	Dozer, operator and banksman £3000 pw x 48 working weeks x 3 years	432,000	432,000
Sampling and validation testing	£1,500 pw x 48 x 3 years	0	216,000
Non-waste material importation	Supply of Highways Specification Class 1A fill from nearby Brinscall Quarry (4 miles) by Armstrong Aggregates Limited. £11/tonne (delivered)[4] x 360,776	3,968,536	0
Permit subsistence fees	Approx £2000 pa	0	6000
Permit administration	Administrative assistant to collate and organise waste transfer notes, monitoring results, other permit records Salary of £15,000 pa x 3	0	45000
Technically Competent Manager	Staff training: Wamitab qualifications	0	1500
Permit surrender	Surrender report and application	0	10,000
Total Operating Cost		**4,462,936**	**782,107**
Capital Gain	The planning permission allows construction of 500 houses. Each plot that is developed has a market value of £20,901.	10,450,500	
Net Financial Gain		**5,987,564**	**9,668,393**

Table 3: Operating Costs and Financial Gain

3.4 Purpose of the Work

3.4.1 There is a recognised housing shortage in the UK and a political drive to increase house building across the country. The 2017 autumn budget[5] contained the following commitment:

The government is determined to fix the dysfunctional housing market, and restore the dream of home ownership for a new generation. The only sustainable way to make housing more affordable over the long term is to build more homes in the right places. Government action has already increased housing supply to 217,000 in 2016-17.

The Budget goes further and announces a comprehensive package which will raise housing supply by the end of this Parliament to its highest level since 1970s, on track to reach 300,000 per year, through:

[4] Telephone quote provided by Armstrongs Aggregates, 18 May 2020
[5] https://www.gov.uk/government/publications/autumn-budget-2017-documents/autumn-budget-2017

- *making available £15.3 billion of new financial support for housing over the next five years, bringing total support for housing to at least £44 billion over this period*

- *introducing planning reforms that will ensure more land is available for housing, and that maximises the potential in cities and towns for new homes while protecting the Green Belt*

3.4.2 The development is in accord with the Government's commitment and this was confirmed in the March 2020 Budget[6] with:

£10.9 billion increase in housing investment to support the commitment to build at least 1 million new homes by the end of the Parliament, and an average of 300,000 homes a year by the mid-2020s.

3.4.3 The site is located within an area identified within the Blackburn with Darwen Local Plan[7] as *'an attractive urban area suitable for high quality executive housing'*. The area has well established transport links, including access to a cycle path along the canal towpath into Blackburn town centre. In addition, the proposal is to bring into use a redundant piece of brownfield land to provide housing which is in accordance with the core strategy, stating that 65% of new housing should be on brownfield land.

3.4.4 The local authority has recognised these factors in granting outline planning permission for the mixed use development with a significant number of residential houses to be constructed on the site.

3.5 Quality Standards Applicable

3.5.1 The development of the site will be undertaken utilising standard earthworks plant, and materials will be placed in a manner that ensures both stability and the required physical properties of the engineered fill in readiness for construction. Details of the operation will be agreed in accordance with condition Nos 28 to 31 of the planning permission which includes site remediation requirements, validation of works undertaken and raising site levels. Engineering of the site will be carried out under regulation of the planning authority via these conditions and a submission for approval has been made to the planning authority.

3.5.2 The submission includes an earthworks specification (BWR Earthworks Specification, November 2019) which details the method of infill and controlling measures. This is contained in Appendix D.

[6] https://www.gov.uk/government/publications/budget-2020-documents/budget-2020
[7] Blackburn with Darwen Core Strategy, Adopted January 2011

3.5.3 Validation reports will be provided for each phase of the development to ensure all work has been undertaken in accordance with planning conditions. Integrity testing will be carried out by an independent consultant and independently verified. All work will be validated by a suitably qualified engineer.

3.5.4 The proposed scheme will be undertaken in accordance with permit conditions and in line with an Environmental Management System (EMS). The EMS will include waste acceptance procedures, waste placement procedures and environmental controls such as noise and dust procedures. UK Construction and Health and Safety Standards will be adhered to and the project will be managed and completed to a high professional standard and to achieve the requirements of the planning permission.

4. LEGAL FRAMEWORK

4.1 The legal framework that underpins the proposal is the UK's Treaty obligations to advance the core objectives of the WFD[8].

4.2 It is established in EU law that a purposive approach is taken by the CJEU to the interpretation of directives, and this requires therefore that this same approach is to be taken by the courts and regulatory authorities. In this context, this means that the application in practice of the definition of recovery must be that which best achieves the relevant purposes of the WFD, as demonstrated by legal precedent[9].

4.3 The purpose of the WFD is stated in Article 1 as '*this directive lays down measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste by reducing the overall impacts of resource use and improving the efficiency of such use*'.

4.4 Member states are obliged to apply the waste hierarchy according to article 4, promoting recycling and re-use above disposal. Waste recovery is defined in article 3 as *'any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function'*.

4.5 Application of an unnecessarily demanding test for recovery, which is not required in order to ensure a high level of environmental protection, would run counter to the objectives of the WFD.

4.6 The proposed development fulfils the definition of recovery in all aspects. The waste proposed for use '*replaces other materials'* as the proposed material and will have the same chemical and physical properties of non-waste. It serves a '*useful purpose'* by enabling a brownfield site to be returned to use for the construction of houses in line with local and UK government requirements.

[8] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives

[9] ARCO Chemie Nederland v Minister Van Volkhuisvesting (Case C-418/97); Case C-188/07 Commune de Mesquer [2008] ECR I-4501

5. CONCLUSION

5.1 The information provided in this WRP demonstrates that the proposed activity is 'recovery' in accordance with the WFD.

5.2 The development will provide a net financial gain if carried out using non-waste and construction work will go ahead with non-waste if waste material cannot be used.

5.3 The significant benefits from the proposed development scheme are:

- to bring derelict brownfield land into beneficial use;
- enable the construction of 500 residential dwellings and develop land ready for commercial and employment units;
- enable the creation of public open space and open up the River Roddlesworth from culvert;
- reduce the flood risk posed by the Sun Reservoir by decommissioning and partial infilling; and
- recover waste and contribute to the circular economy.

5.4 The proposed wastes are suitable for recovery and will not present an unacceptable risk to human health or the local environment.

5.5 The proposed quantity for deposit represents the minimum amount of material to achieve the key benefits of the scheme.

5.6 The proposals are compliant with the WFD in that the operation will move waste up the waste hierarchy by enabling reuse instead of disposal. The use of waste as a replacement for non-waste materials will conserve natural resources in line with Article 1 of the WFD.

Claire Gettinby
BSc (Hons) PhD MCIWM
Director

APPENDIX A

Planning Permission

TOWN AND COUNTRY PLANNING DECISION NOTICE

TOWN AND COUNTRY PLANNING ACT
1990

THE APPLICATION

Applicant:
Blackburn Waterside Regeneration Ltd
4th Floor
Queen Victoria House
41-43 Victoria Street
Douglas
Isle of Man
IM1 2LF

Agent:
How Planning LLP
40 Peter Street
Manchester
Greater Manchester (Met County)
M2 5GP

Outline Planning Application
FOR:
Outline planning permission with all matters reserved save for access for a mixed use development of a maximum of the following: 500 dwellings, 3,224m2 of B1a employment use, 9,192m2 of B1c employment use, 333m2 of A1 commercial use, 1,110m2 community building, structural planting and landscaping, informal open space and associated ancillary works

AT:
Former Sappi Paper Mill, Livesey Branch Road, Feniscowles, BB2 5HX

APPLICATION REFERENCE NUMBER: **10/15/0496**

The application was received: **15 May 2015**

THE DECISION

Date of Decision: **19 November 2015**

In pursuance of their powers under the above Act, the Council

PERMITS

The above development in accordance with the details given on the application form and submitted plans. Permission is given subject to the following CONDITIONS:

1 Application for approval of all reserved matters must be made not later than the expiration of three years beginning with the date of this permission. The development hereby permitted shall be begun not later than the expiration of two years from the date of the approval of the last of the reserved matters to be approved.
REASON: Required to be imposed pursuant to Section 51 of the Planning and Compulsory Purchase Act 2004.

2 Details of the following matters (subsequently referred to as the reserved matters) shall be submitted to and be approved in writing by the Local Planning Authority before the commencement of any works:-

a) Appearance.
b) Landscaping.
c) Layout
d) Scale.
REASON: Because the application is in outline only and no details have yet been furnished of the matters referred to in the Condition, these are reserved for subsequent approval by the Local Planning Authority.

3 Either prior to the commencement of the construction of the dwellinghouses and buildings hereby approved or as part of each reserved matters application the following information shall be submitted to and approved in writing by the Local Planning Authority:

- Samples of all external walling, roofing materials and their colour, to be used in the construction of the building work
- Full details, including colour and manufacturer, of the proposed hardsurfacing materials
- Full details of all fences, walls and gates including their location to be erected on site.

The development shall be implemented in accordance with the approved details.
REASON: To ensure that the external appearance of the development is satisfactory in accordance with Policy HD1 of the Blackburn with Darwen Borough Local Plan, and the adopted Blackburn with Darwen Design Guide Supplementary Planning Document.

4 Either prior to commencement of each phase of the development hereby approved, or as part of each reserved matters application, a Construction Method Statement shall be submitted to, and approved in writing by the Local Planning Authority. The approved Statement shall be adhered to throughout the construction period. The Statement shall provide for:
I) the parking of vehicles of site operatives and visitors

II) loading and unloading of plant and materials
III) storage of plant and materials used in constructing the development
IV) the erection and maintenance of security hoarding including decorative displays and facilities for public viewing, where appropriate
V) wheel washing facilities
VI) measures to control the emission of dust and dirt during construction
VII) a scheme for recycling/disposing of waste resulting from demolition and construction works
REASON: In order to avoid the possibility of the public highway being affected by the deposit of mud/or loose materials which could create a potential hazard to road users, in order to protect the amenity of the occupiers of the adjacent properties, in order to protect the visual amenities of the locality and to comply with saved Policies T9 and T10 of the Blackburn with Darwen Borough Local Plan.

5 No development (excluding site preparation and ground work) shall occur until a scheme detailing the provision of a new vehicular access, signalised junction and pedestrian crossing, at the Moulden Brow site access/egress point has been submitted to and approved in writing by the Local Planning Authority. The cost of the approved scheme shall be borne entirely by the developer. The approved scheme shall be implemented fully in accordance with a phasing and construction management plan to be agreed writing by the Local Planning Authority.
REASON: In the interests of the safe, efficient and convenient movement of all highway users in accordance with requirements of saved Local Plan Policies T9 and T10 of the Blackburn with Darwen Borough Local Plan

6 No development (excluding site preparation and ground work)shall occur until a scheme detailing the following works to the Finnigton Lane/Moulden Brow traffic signal junction has been submitted to and approved in writing;

- provision of an upgrade of the existing traffic signal control to a MOVA system to provide improved local network performance
- white lining to provide 2 lane entry on the Moulden Brow arm of the junction

The cost of the approved scheme shall be borne entirely by the developer. The approved scheme shall be implemented fully in accordance with a phasing and construction management plan to be agreed writing by the Local Planning Authority.

REASON: In the interests of the safe, efficient and convenient movement of all highway users in accordance with requirements of saved Local Plan Policies T9 and T10 of the Blackburn with Darwen Borough Local Plan

7 Prior to the construction of the dwellinghouses and/or commercial units a Travel Plan for the site shall be submitted to and approved in writing by

the Local Planning Authority. The plan shall accord with, but not be limited by, the Framework Travel Plan prepared by JMP Consultants Ltd, received 23rd June 2015. The development thereafter shall be undertaken in accordance with the approved details unless otherwise approved in writing by the Local Planning Authority.
REASON: To reduce the reliance upon the use of private motor vehicles and to promote the use of public transport and other alternative modes of travel, in accordance with the requirements of saved Policies T9 and T10 of the Blackburn with Darwen Borough Local Plan

8 No development (excluding site preparation and ground work) shall occur until a scheme detailing an amended layout to the existing vehicular and pedestrian access/egress at the Junction with Livesey Branch Road has been submitted to and approved in writing by the Local Planning Authority. The cost of the approved scheme shall be borne entirely by the developer. The approved scheme shall be implemented fully in accordance with a phasing and construction management plan to be agreed in writing by the Local Planning Authority.
REASON: To ensure the safe, efficient and convenient movement of all highway users, for the free flow of traffic, in accordance with saved Policies T9 and T10 of the Blackburn with Darwen Borough Local Plan.

9 At the same time or prior to the submission of the First Reserved Matters application for the development hereby permitted, a Phasing Plan shall be submitted to and approved in writing by the Local Planning Authority. The Phasing Plan shall include details of the maximum number of dwellings and other development to be implemented within each phase of the development. The development shall only be implemented in accordance with the approved Phasing Plan.

[The Phasing Plan may be amended from time to time with the written approval of the Local Planning Authority unless the proposed phasing is likely to give rise to any significant environmental effects which have not been assessed under the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 then such amended Phasing Plan shall be accompanied by an Environmental Statement prepared in accordance with the said 2011 Regulations.]

Reason: To ensure the satisfactory phasing of the development and to ensure that the development, including affordable housing, open space, employment, community uses and utility infrastructure is delivered in a coordinated, planned way.

10 At the same time as the submission of the First Reserved Matters application for a phase or part of a phase of the development hereby permitted a Foul and Surface Water Drainage Strategy for the entire site shall be submitted to the Local Planning Authority for approval (in consultation with United Utilities Limited) such strategy to include the following details as a minimum:

a. unless otherwise agreed in writing, the foul connection point shall

be to the 375mm / 450mm combined sewer in Preston Old Road for the entire site;

b. the details of any additional off-site drainage infrastructure required as a result of the entire development; and

c. any drainage infrastructure connections (foul and surface water) between the different phases of the development defined by condition 1. Where drainage infrastructure connects development from different phases, it will be necessary to show how much development will be served by the connecting drainage infrastructure.

Reason: To ensure a holistic approach to the construction of the detailed drainage infrastructure for the site so that the drainage infrastructure which is constructed is able to cope with the foul and surface water discharges from the entire development site. This condition is imposed in light of policies set out within the National Planning Policy Framework (NPPF)

11 At the same time as the submission of each subsequent Reserved Matters application for a phase or part of a phase, an updated Foul and Surface Water Drainage Strategy shall be submitted to the Local Planning Authority for approval (in consultation with United Utilities Limited), such Strategy to include as a minimum the details listed within condition 10
REASON: To ensure a holistic approach to the construction of the detailed drainage infrastructure for the site so that the drainage infrastructure which is constructed is able to cope with the foul and surface water discharges from the entire development site. This condition is imposed in light of policies set out within the National Planning Policy Framework (NPPF)

12 Unless otherwise agreed with the local planning authority (in consultation with United Utilities Limited), there shall be no foul and surface water connections between phases of development defined (and as may be amended from time to time) by condition 9 other than in accordance with the connections identified and approved under condition 10 criterion C. The detailed drainage schemes for each phase of development required by conditions 15 and 16 shall be submitted for approval in accordance with the foul and surface water drainage details approved under this condition.
REASON: To ensure a holistic approach to the construction of the detailed drainage infrastructure for the site so that the drainage infrastructure which is constructed is able to cope with the foul and surface water discharges from the entire development site. This condition is imposed in light of policies set out within the National Planning Policy Framework (NPPF)

13 No development shall be commenced on any phase or part of any phase of the development hereby permitted unless and until the Foul and Surface Water Drainage Strategy submitted with the relevant Reserved

Matters application has been approved in writing by the Local Planning Authority in consultation with United Utilities Limited.
REASON: To ensure a holistic approach to the construction of the detailed drainage infrastructure for the site so that the drainage infrastructure which is constructed is able to cope with the foul and surface water discharges from the entire development site. This condition is imposed in light of policies set out within the National Planning Policy Framework (NPPF)

14 For the avoidance of doubt, surface water shall drain separately from the foul. Unless otherwise agreed in writing, no surface water shall discharge directly or indirectly into the public foul, combined or existing surface water sewerage systems in accordance with the Foul and Surface Water Drainage Strategy submitted and approved pursuant to conditions 10/11/12/13 and with the details contained in the submitted application form, flood risk assessment prepared by Edenvale Young dated 7 May 2015, and the Drainage Report prepared by Bright Young Consulting ref: 1872/DR001 Rev 1 dated 14 May 2015

Reasons: To promote sustainable development, secure proper drainage and to reduce the risk of flooding and pollution.

15 Prior to commencement of any phase or part of any phase of the development hereby permitted, full details of the foul drainage scheme for that phase including full details of any connections to the foul sewer network and any necessary infrastructure shall be submitted to and approved in writing by the local planning authority (in consultation with United Utilities Limited). The details for each part or phase must be consistent with the Foul and Surface Water Drainage Strategy submitted and approved pursuant to the above conditions 10/11/12/13. No housing or other development shall be occupied for that phase until the approved foul drainage scheme for that phase has been completed in accordance with the approved details and written notice of this fact has been sent to the Local Planning Authority.

Reason: To promote sustainable development, secure proper drainage and to reduce the risk of flooding and pollution. This condition is imposed in light of policies set out within the NPPF.

16 Prior to the commencement of each phase or part of the development hereby permitted, full details for a surface water regulation system and means of disposal for that phase or part phase, based wholly on sustainable drainage principles and evidence of an assessment of the hydrological and hydrogeological context of the development for that phase shall be submitted to and approved by the local planning authority (in consultation with United Utilities Limited) in writing. The drainage scheme shall demonstrate that the surface water run off generated up to and including the 1 in 100 year critical storm including 30% climate change allowance will not exceed the run-off from the existing undeveloped site and following the corresponding rainfall event. The details for each phase must be consistent with the Foul and Surface

Water Drainage Strategy submitted and approved pursuant to the above conditions 10/11/12/13 and with the principles established in the submitted application form, flood risk assessment prepared by Edenvale Young dated 7 May 2015, and the Drainage Report prepared by Bright Young Consulting ref: 1872/DR001 Rev 1 dated 14 May 2015.

Reason: To promote sustainable development, secure proper drainage and to reduce the risk of flooding and pollution. This condition is imposed in light of policies set out within the NPPF.

17 Prior to the commencement of each phase or part phase of the development hereby permitted, a sustainable drainage maintenance and management plan for the lifetime of that phase or part phase of the development shall be submitted to and approved in writing by the Local Planning Authority (in consultation with United Utilities PLC). Unless otherwise agreed in writing by the Local Planning Authority, the plan shall include arrangements for permanent adoption by a SuDs approving body (SAB), Statutory Authority or other relevant party of any sustainable drainage features including any outfalls into local water courses, structures, ponds and bridges. Each phase shall be completed maintained and managed in accordance with the approved details.

Reason: To promote sustainable development, secure proper drainage and to reduce the risk of flooding and pollution. This condition is imposed in light of policies set out within the NPPF.

18 The development permitted by this planning permission shall only be carried out in accordance with the approved Flood Risk Assessment (FRA) and the following mitigation measures detailed within the FRA:
- Confirmation of the opening up of the existing culvert across the site, demonstrating that the 1 in 100 year return period capacity can be accommodated within the open channel.

The mitigation measures shall be fully implemented prior to occupation and subsequently in accordance with the timing / phasing arrangements embodied within the scheme, or within any other period as may subsequently be agreed, in writing, by the local planning authority.

REASON: to reduce the risk of flooding to the proposed development and the general locality, in accordance with the requirements of saved Policy ENV2 of the Blackburn with Darwen Borough Local Plan and the NPPF

19 No development shall occur until a scheme detailing the design for the inlet/outlet arrangements in order to provide water level management within the Star Reservoir has been submitted to and approved in writing by the Local planning Authority. The approved scheme shall be implemented prior to first construction of the residential development and thereafter retained.
REASON: To ensure the development will not increase the risk of flooding, or be at risk itself from flooding, in accordance with the

requirements of saved Policy ENV2 of the Blackburn with Darwen Borough Local Plan

20 The construction of the development hereby permitted, including deliveries, shall only take place between the hours of;

8:00 and 18:00 - Monday to Friday
9:00 and 13:00 - Saturdays
No work to occur - Sundays and Bank Holidays

REASON: To safeguard the amenities of the adjoining premises and the area generally in accordance with saved Policy ENV4 of the Blackburn with Darwen Borough Local Plan.

21 Earthworks and construction shall not commence until a dust management plan to control the development hereby approved has been submitted to and approved in writing by the Local Planning Authority. The development shall be undertaken in accordance with the approved details.
REASON: To ensure the development does not unacceptably impact upon air quality, in accordance with the requirements of saved Policy ENV10 of the Blackburn with Darwen Borough Local Plan

22 No development shall occur until a scheme to mitigate adverse air quality impacts associated with the development hereby approved has been submitted to and approved in writing by the Local Planning Authority. The scheme shall incorporate, but not be limited to, proposals outlined in the Air Quality Assessment Update Note (ref:620001856-002) received 2nd September 2015. The development shall be undertaken in accordance with the approved details.
REASON: To ensure the development does not unacceptably impact upon air quality, in accordance with the requirements of saved Policy ENV10 of the Blackburn with Darwen Borough Local Plan

23 No demolition, earthworks or construction shall be undertaken until a scheme detailing the protection of surrounding neighbouring properties from dust, noise and vibration from the site during these works has been submitted to and approved in writing by the Local Planning Authority. The development shall be undertaken in accordance with the approved details.
REASON: To safeguard the residential amenity standards of neighbouring properties and the locality in general in accordance with saved Policies ENV4 and ENV10 of the Blackburn with Darwen Borough Local Plan

24 Prior to the commencement of the construction of each residential phase of the development hereby approved, a scheme detailing how the residential properties hereby approved will be protected from the noise sources on and around the site shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include details relating to the layout, soundproofing and other mitigation measures. The approved scheme shall be implemented and thereafter retained.

REASON: To ensure the development provides for appropriate residential amenity standards for future occupants, in accordance with the requirements of saved Policy ENV4 of the Blackburn with Darwen Borough Local Plan.

25 The noise emitted from the employment uses hereby approved, including any fixed plant or equipment, shall not exceed the following limits as LAeq,T (where T is the assessment period and is equal to 1 hour during the day and 15 minutes at night) at the boundary of any residential premises;

Day-time level - 45dB
Night-time level - 35dB

REASON: To ensure that the development does no unacceptably affect the residential amenity of residential properties, in accordance with saved Policy ENV4 of the Blackburn with Darwen Borough Local Plan

26 There shall be no deliveries to or dispatch of goods from the employment area outside of the following times;

Monday to Friday 7:30am to 20:00pm
Saturday 8:00am to 18:00pm
No delivery or dispatch on Sundays and Bank Holidays

REASON: To safeguard the amenities of the neighbouring residential properties and the area generally in accordance with saved Policy ENV4 of the Blackburn with Darwen Borough Local Plan.

27 No class A1 retail unit, hereby permitted, shall have a gross floor area exceeding 200 square metres. The maximum amount of A1 retail space across the whole development shall not exceed 333 square metres.
REASON: To ensure the development does not adversely affect existing retail centres as defined in the retail hierarchy set out in Policy CS12 of the Blackburn with Darwen Core Strategy

28 Prior to the commencement of development hereby approved, the developer must submit to the Local Planning Authority for written approval:
(i) Two copies of a comprehensive desk study report, including a preliminary conceptual site model (CSM) in text, plan and cross-section form. Where necessary, detailed proposals for subsequent site investigation should also be included, clearly based on the CSM.
(ii) Two copies of the findings of the approved site investigation work (where necessary), including an appropriate assessment of risks to both human health and the wider environment, from contaminants in, on or under the land (including ground gas). If unacceptable risks are identified, a remedial options appraisal and detailed remediation scheme should be presented, along with an updated CSM. No deviation shall be

made from this scheme without the written agreement from the Local Planning Authority.
REASON: To ensure that all reasonable steps have been taken to identify contamination at the site in accordance with Policy ENV3 of the adopted Blackburn with Darwen Borough Local Plan.

29 Prior to the occupation of the development hereby approved, two copies of a comprehensive Validation Report shall be submitted to and approved in writing by the Local Planning Authority. The Validation Report shall demonstrate effective remediation in accordance with the agreed remediation scheme and updated CSM. All the installed remediation must be retained for the duration of the approved use, and where necessary, the Local Planning Authority should be periodically informed in writing of any ongoing monitoring and decisions based thereon.
REASON: To ensure that all reasonable steps have been taken to identify contamination at the site, that the risks it presents have been appropriately assessed, and that the site can be made 'suitable for use', as such, does not pose a risk to future users of the site or the wider environment in accordance with Policy ENV3 of the adopted Blackburn with Darwen Borough Local Plan.

30 Should contamination be encountered unexpectedly during redevelopment, all works should cease, and the LPA should be immediately informed in writing. If unacceptable risks are identified, a remedial options appraisal and detailed remediation scheme should be presented, and agreed in writing by the LPA. No deviation shall be made from this scheme without the written express agreement of the LPA.
REASON: To protect the health of future occupiers of the site in accordance with Policy ENV3 of the Blackburn with Darwen Borough Local Plan.

31 Either prior to the commencement of each phase of the development hereby approved or as part of each reserved matters application, a scheme detailing the existing site levels and proposed site and floor levels shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall be completed in accordance with the approved plans.
REASON: To ensure a safe form of development that poses no unacceptable risk of flooding to water resources in accordance with Policy ENV1 of the Blackburn With Darwen Borough Local Plan.

32 Prior to any on site works, an arboricultural method statement and tree protection plan shall be submitted to and agreed in writing by the Local Planning Authority. The method statement shall clearly state how the tree(s) to be retained on site and overhanging the site will be protected during demolition and/or construction works. The agreed method statement shall be implemented in full prior to the undertaking of any on

site works.
REASON: Trees represent a public benefit by way of visual amenity and should therefore be protected at all times in accordance with Saved Policy HD8 of the Blackburn with Darwen Borough Local Plan.

33 Protective fencing shall be installed around all trees being retained within the application site, in accordance with British Standard 5837: Guide for trees in relation to construction. This fencing should be installed prior to the commencement of any building works, ground works, demolition works or storage of any machinery, equipment or materials on site. This fencing should remain intact and in place until all works are completed on the site. This fencing should be considered sacrosanct and no soil levels should be altered within the perimeter of this fence and no building materials or waste products should be stored inside the fence line.
REASON: The existing trees represent a public benefit by way of visual amenity and should therefore be protected at all times in accordance with saved Policy HD8 of the Blackburn with Darwen Borough Local Plan.

34 No existing trees or hedges within the development site shall be lopped, topped, felled, uprooted, pruned, or sustain root severance, without prior written consent from the Local Planning Authority. Any tree works undertaken with written consent should be in line with British Standards 3998.
REASON: Trees represent a public benefit by way of visual amenity and should therefore be protected at all times and replaced when necessary in accordance with Saved Policies HD8 and HD9 of the Blackburn with Darwen Borough Local Plan.

35 All planting, seeding or turfing comprised in the approved details of landscaping shall be carried out in the first planting and seeding seasons following the occupation of any buildings or the completion of the development within the relevant Phase or Sub-Phase, whichever is the earlier, and any trees or plants which within a period of 5 years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species.
Reason: In the interest of the appearance of the locality and in accordance with Policy HD9 of the Blackburn With Darwen Borough Local Plan.

36 No development shall occur until a habitat management report and plan has been submitted to and approved in writing by the Local Planning Authority. The report shall include all measures of habitat conservation and enhancement necessary to mitigate the impact of the development. The development shall be undertaken in accordance with the approved details.
REASON: To ensure the proposal safeguards ecological features and protected species in accordance with saved Policies LNC8 and LNC9 of

the Blackburn with Darwen Borough Local Plan

37 Prior to the commencement of development an assessment of recreational access, including the formation of new woodland walkways, to the existing habitats and Biological Heritage Sites within the site shall be undertaken and submitted to and approved in writing by the Local Planning Authority. The report should provide sufficient information to assess whether the development is likely to impact on the integrity of these sites and identify mitigation measures, where appropriate. The development shall be undertaken in accordance with the agreed details.
REASON: To ensure the proposal safeguards ecological features and protected species in accordance with saved Policies LNC8 and LNC9 of the Blackburn with Darwen Borough Local Plan

38 Should the development commence more than two active seasons from the date of the initial bat surveys, as detailed in the Bowland Ecology: Ecological Appraisal: April 2015, further bat surveys will be required to provide current information on the location of bat roosts and species and numbers of bats associated with individual roosts. The assessment shall include, but not be limited to, the survey of any buildings or structures with potential to support bat roosts that are to be demolished or have previously been identified as mitigation for the loss of existing roosts. The development thereafter shall be carried out in accordance with any necessary mitigation measures identified.
REASON: To ensure the proposal safeguards ecological features and protected species in accordance with saved Policies LNC8 and LNC9 of the Blackburn with Darwen Borough Local Plan and the National Planning Policy Framework.

39 The development hereby approved shall be undertaken in accordance with the precautionary working practices outlined in paragraphs 2.36.1 to 3.43, (pages 16 and 17) of the Bowland Ecology: Ecological Appraisal Addendum: September 2015, received 23rd September 2015. Unless alternative working practices are approved in writing by the Local Planning Authority.
REASON: To ensure the proposal safeguards ecological features and protected species in accordance with saved Policies LNC8 and LNC9 of the Blackburn with Darwen Borough Local Plan and the National Planning Policy Framework.

40 A badger survey must be undertaken no more than 6 months prior to the commencement of works at the site and be submitted to and approved in writing by the Local Planning Authority. The survey shall identify whether there are any active badger setts present on site and as appropriate how impacts to badgers will be avoided, managed and mitigated. The development thereafter shall be carried out in accordance with the agreed measures.
REASON: To ensure the proposal safeguards ecological features and protected species in accordance with saved Policies LNC8 and LNC9 of the Blackburn with Darwen Borough Local Plan and the National Planning Policy Framework.

41 Notwithstanding the details hereby approved, in accordance with the findings of the Bowland Ecology: Ecological Appraisal: April 2015 and the Bowland Ecology: Ecological Appraisal Addendum: September 2015, where trees are identified for removal they shall be inspected to identify features with roosting potential, including the presence of bat activity or bats themselves, prior to works commencing. This survey should be undertaken and the results submitted to the local planning authority for written approval.
REASON: In order to ensure the protection of ecological features and protected species in accordance with the requirements of saved Policies LNC8 and LNC9 of the Blackburn with Darwen Local Plan.

42 All tree removal should be occur outside of the bird nesting season (March to August) unless the works are undertaken in accordance with the working methods outlined in Paragraph 3.41 on page 16 of the Bowland Ecology: Ecological Appraisal Addendum: September 2015.
REASON: To ensure the proposal safeguards ecological features and protected species in accordance with saved Policies LNC8 and LNC9 of the Blackburn with Darwen Borough Local Plan and the National Planning Policy Framework.

43 Prior to the commencement of the development and the submission of reserved matters a scheme for the provision of public open space and equipped play areas shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include full details of all play and other equipment to be provided. The development thereafter shall be carried out in accordance with the approved details prior to the practical completion of 100 dwellings.
REASON: To ensure adequate provision for public open space and play areas within the development

44 Prior to the commencement of the first phase of the development details of the proposed arrangements for future management and maintenance of all of the open space, including the equipped play area, within the site shall be submitted to and approved by the local planning authority. The open space shall thereafter be managed and maintained in accordance with the approved management and maintenance details.
REASON: To ensure the on-site open space is managed and maintained to an acceptable standard.

45 Prior to the commencement of the development a movement strategy shall be submitted to and approved in writing by the Local Planning Authority. The strategy shall include details of the road hierarchy through the site and the footpath/ cycle linkages through the site. The development thereafter shall be carried out in accordance with the approved movement strategy unless otherwise agreed in writing by the Local Planning Authority.
REASON: To ensure that the development supports sustainable transport measures and communities cycling and pedestrian movements are catered for on suitable desire lines as part of the development. This condition ensures that these important linkages are provided as part of

the whole scheme at a reasonable time

46 This consent relates to the submitted details marked received 23rd June 2015 (location plan reference: 4014_027/0001 OPA and site access plan NW91205-100), the Noise Report technical note received 28th August 2015, the Air Quality Assessment update note received 2nd September 2015, the Highways Response Discussion Note received 11th September 2015, the Parameters Plan (reference: 4014_027/0003 OPA, received 23rd September 2015, the Sun Reservoir Draw-Off Methodology_revision B received 24th September 2015, the Ecological Appraisal Addendum submitted 23rd September, the HCA DAT submission received 21st October 2015, and to any subsequent amendments approved in writing by the Local Planning Authority. REASON: To clarify the terms of this consent.

REASONS FOR GRANTING PLANNING PERMISSION:

1	Section 38 (6) of the 2004 Act	Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that applications be determined in accordance with the development plan unless material considerations indicate otherwise. The proposed mix use is acceptable in principle on this development opportunity site. The proposal will not unacceptably ecological assets, nor contribute to flood risk. The development will not unacceptably affect the amenity of neighbouring or future residents. The proposed access arrangements are satisfactory and would not compromise highway safety. the proposal therefore accords with Core Strategy Policies Cs1, CS5, CS6, CS7, CS8, CS11, CS12 and CS15. Saved Policies H4, H5, H6, T9, T10, HD8, HD9, EC3, RA3, ENV1, ENV2, ENV3, ENV4, ENV6, ENV10, TRL1, LNC6, LNC8, LNC9 and LNC10 of the Blackburn with Darwen Local Plan (April 2002) and emerging policies 3, 28, 29 and 38 of the Blackburn with Darwen Local Plan Part 2 (Site allocations and development plan policies)
2	Requirement to say how we have worked with the applicant in a positive and proactive way	The Local Planning Authority operates a pre-planning application advice service. All applicants are encouraged to engage with the Local Planning Authority at pre-planning application stage. As part of the determination of this planning application the Local Planning Authority has worked pro-actively and positively with the applicant ensuring all the issues have been resolved. The Local Planning Authority has considered the application and where necessary considered either the imposition of planning conditions and/or sought reasonable amendments to the

		application in order to deliver a sustainable form of development in accordance the NPPF.

Your attention is drawn to the NOTES attached and to the following:

1	A process has been introduced by The Department for Communities and Local Government for dealing with material and non-material amendments to planning permissions. For more information please contact the case officer or consult the Planning Portal website www.planningportal.gov.uk
2	This permission refers only to that required under the Town and Country Planning Acts and does not include any consent or approval under any other Enactment, Byelaw, Order or Regulation. Before commencing development you are advised to check the requirements of the Building Regulations. Section 31 of the County of Lancashire Act 1984 (access for the Fire Brigade) also applies. For information please contact the Building Surveyors, telephone 01254 505022. Additionally, if you wish to carry out building work which involves work along a party boundary the Party Wall Etc Act 1996 comes into force. You must find out whether your works falls within the Act by contacting your Solicitor, and if it does, you must notify all affected neighbours.
3	The Construction (Design & Management) Regulations 2015 The development hereby approved may be subject to the Construction (Design and Management) Regulations 2015 which govern health and safety through all stages of a construction project. The Regulations require clients (i.e. those, including developers, who commission construction projects) to appoint a planning supervisor and principal contractor who are competent and adequately resourced to carry out their health and safety responsibilities. Clients have further obligations. Your designer will tell you about these and your planning supervisor can assist you in fulfilling them. Further information is available from the Health and Safety Executive Infoline 0845 345 0055.
4	The applicant is advised to contact the Pollution Control Section of the Environmental Health Division to discuss the requirements of the Acoustics Report/Acoustic Criteria. Where appropriate, acoustic glazing and mechanical ventilation to the standard of the Noise Insulation Regulations 1975 (as amended) or equivalent will be required. The required sound level for the indoor ambient noise environment is a level not exceeding 30dB(A)Leq daytime or night time in all habitable rooms and a maximum level not exceeding 45dB(A) LMAX in bedrooms at night.
5	This consent is granted subject to conditions and it is the owner and the person responsible for the implementation of the development who will be fully responsible for their compliance throughout the development and beyond. If there is a condition that requires work to be carried out or details to be approved prior to the commencement of the development this is called a "condition precedent". The following should be noted with regards to conditions precedent: (a) If a condition precedent is not complied with, the whole of the development will be unauthorised and you may be liable to enforcement action. (b) In addition if a condition precedent is breached, the development is

	unauthorised and the only way to rectify the development is the submission of a new application. If any other type of condition is breached then you will be liable to a breach of condition notice.
6	There are fees associated with the discharge of planning conditions. These fees apply to all requests for (1) the discharge of one or more conditions on the same permission, or (2) the written confirmation of compliance with a condition or conditions. Any number of conditions may be included on a single request. Fees are: £28 for householder developments, and £97 for all other developments. There is no fee relating to the discharge of conditions imposed on Listed Building applications. Please send your fee with your request, as requests that are received without the appropriate fee will be returned unanswered. To request a discharge of condition please use the forms on www.blackburn.gov.uk or apply to the Council in writing. Please ensure that your letter or form clearly identifies the relevant permission and the condition(s) concerned. Local Planning Authorities have to deal with all requests within 8 weeks. Fees will be refunded if a response is not sent within 12 weeks from the date of receipt.
7	All reports shall be prepared in accordance with BS10175:2001, CLR 11, PPS23, and any other relevant, appropriate and authoritative publications. The Local Planning Authority will not accept any liability for remediation works. The responsibility for the safe development and occupancy of the site, at all times, rests with the developer. Failure to comply with the above condition may result in enforcement action being taken by the Local Authority under the Environmental Protection Act 1990. You are strongly advised to contact the Pollution Control Section of the Environmental Health Division to discuss the requirements of the Contaminated Land Condition by telephoning 01254 222520). The guidance documents entitled 'Contaminated Land Planning Guidance' & ' Validation Policy Document' should be read before you investigate the site. This guidance is available on the Council web site. These hyperlinks will give you direct access:www.blackburn.gov.uk/upload/pdf/Contaminated_Land_Guidance.pdf www.blackburn.gov.uk/upload/pdf/Validation_Policy_Document_FINAL.pdf A suitably qualified, competent and impartial person shall fulfil the requirements of the condition.
8	Commercial properties that have Waste/recyclables, which are collected and disposed of, have a legal duty to demonstrate that waste from their business is collected and disposed/recycled, using licenced operators. For free local advice you are recommended to contact the Environment Dept (Stuart Hammond, Environmental Sustainability Manager), via 01254 585921 or for write to the Department marking it for his attention via e mail at cleansing@blackburn.gov.uk.
9	This permission refers only to that required under the Town and Country Planning Acts and does not include any consent or approval under any other Enactment, Byelaw, Order or Regulation. Before commencing demolition you are advised to check the requirements of Section 80 of the Building Act 1984. For information please contact the Council's Building Control Section, telephone 01254 505022, with respect to your obligations and associated notice procedures under this piece of separate legislation. Section 31 of the County of Lancashire Act 1984 (access for the Fire Brigade) also applies. Additionally, if you wish to carry out building work

	which involves work along a party boundary the Party Wall Etc Act 1996 comes into force. You must find out whether your works falls within the Act by contacting your Solicitor, and if it does, you must notify all affected neighbours.
10	The Council has a statutory duty to provide collection of `waste? from households within the Borough. The Council also has enforcement powers where waste is not managed correctly, to support the duties placed upon the Council to protect public health and the environment. Fly tipping (or dumping) of waste for instance can have a significant impact on the health, safety, environment and economy of a neighbourhood. Under Section 46 of the Environmental Protection Act 1990, Councils can require householders to provide a wheeled bin of a type and specification determined by the Council. The legislation also allows Councils to specify a location to facilitate the emptying of the wheeled bin. The Environmental Protection Act also renders the occupier liable for prosecution should they fail to comply with any of these requirements The Council strongly encourages developers to ensure suitable containers are provided for each new property, from the moment of occupation, in order to ensure a) A facility for refuse/recycling is immediately available to householders b) Correct management and disposal of domestic `waste? by householders Further information can be obtained from: http://www.blackburn.gov.uk/Pages/bins.aspx
11	This consent requires the construction, improvement or alteration of an access to the public highway. Under the Highways Act 1980, Section 184, the Highway Authority must specify the works to be carried out. Only the Highway Authority or its appointed agent can carry out these works, and therefore, before any access works can start, you must contact the Highway Authority by telephoning 01254 273487, or by writing to the Capita Property Consultancy Section, Highways & Transportation, Capita Blackburn Business Centre, Castleway House, 17 Preston New Road, Blackburn BB2 1AU quoting the planning application number above.
12	The granting of planning permission does not entitle a developer to obstruct, move, or disturb the surface of any public footpath, bridleway, byway open to all traffic or a road used as a public path. Any proposed stopping-up or diversion of a public right of way should be the subject of an Order under the appropriate Act. Failure to comply with the above may render the developer liable to action by the Highway Authority.
13	The developer must comply with the requirements of Blackburn with Darwen Borough Council in relation to land arrangements, design, assessment, construction and maintenance of all existing or new highway structures included in, or affected by, the proposed scheme. Further information can be obtained by contacting Civil Engineering on 01254 273442, or by writing to the Civil Engineering, Highways & Transportation, Capita Blackburn Business Centre, Castleway House, 17

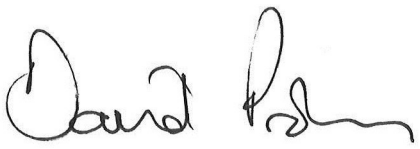
	Preston New Road, Blackburn BB2 1AU quoting the planning application number above.
14	Roads and footways will be subject to a Section 38 Agreement under the Highways Act 1980, and should be designed in accordance with Manual for Streets (published by Department for Transport) in conjunction with the Residential Road Design Guide (1985) (published by Lancashire County Council). The Specification will be the Specification for the Construction of Estate Roads (1992) (published by Lancashire County Council). Note: Access Ways and Drives must have a 2 metre service verge free from bushes, trees, etc.
15	Carriageways must be constructed in Hot Rolled Asphalt (HRA)/Stone Mantic Asphalt (SMA). Footways may be constructed in HRA or alternatively 3mm close graded wearing course. New estate/access roads must be constructed to at least base course level before any development commences within the site.
16	Capita Highways and Transportation, Castleway House, 17 Preston New Road, Blackburn must be consulted regarding the approval of street works details.
17	The frontage footway must be (re) constructed to adoption standard.
18	The developer must comply with the requirements of Blackburn with Darwen Borough Council in relation to land arrangements, design, assessment, construction and maintenance of all existing or new structures associated with areas of public open space included in, or affected by, the proposed scheme. Further information can be obtained by contacting Civil Engineering on 01254 273442, or by writing to the Civil Engineering, Highways & Transportation, Capita Blackburn Business Centre, Castleway House, 17 Preston New Road, Blackburn BB2 1AU quoting the planning application number above.

PLEASE NOTE:

Town and Country Planning (Written Representations) Regulations 1987

In accordance with the provisions of these Regulations, in the event of an appeal, the Local Authority's copy of the completed appeal form should be sent to:

The Director of Growth & Prosperity, Blackburn with Darwen Borough Council, Town Hall, Blackburn. BB1 7DY



David Proctor
Head of Service (Planning & Transport)
Blackburn with Darwen Borough Council.

APPENDIX B

Flood Risk Assessment

SAPPI Mill Flood Risk Assessment

Blackburn Waterside Regeneration

Final

Edenvale Young Associates

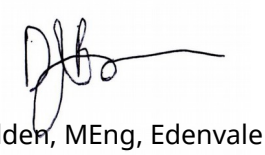
30, Queen Charlotte Street,
Bristol,
BS1 4HJ

Blackburn Waterside Regeneration Ltd

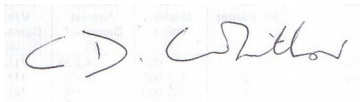
4th Floor,
Queen Victoria House,
41-43 Victoria Street,
Douglas,
IM1 2LF,
Isle of Man

Quality Assurance

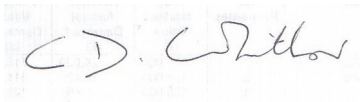
Project Name:	SAPPI Mill development
Project Number:	EVY0716
Report Version/Revision:	Final
Client:	Blackburn Waterside Regeneration Ltd

Author  12th November 2018

Daniel Boulden, MEng, Edenvale Young Associates

Checked  12th November 2018

Chris Whitlow, BSc PhD, Edenvale Young Associates

Authorized  12th November 2018

Chris Whitlow, BSc PhD, Edenvale Young Associates

Document	**Rev.**	**Date**
FRA_BWR_SAPPIMill_final.pdf	Final	12/11/18

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1 Introduction

Edenvale Young have been commissioned by Blackburn Waterside Regeneration Ltd (BWR) to undertake a Flood Risk Assessment (FRA) in order to support an outline planning application for the regeneration of SAPPI paper mill site in Feniscowles, Blackburn.

1.1 Site location

The proposed development lies on the site previously occupied by the SAPPI (Sun and Star) paper mill on Livesey Branch Road, Feniscowles, Blackburn.

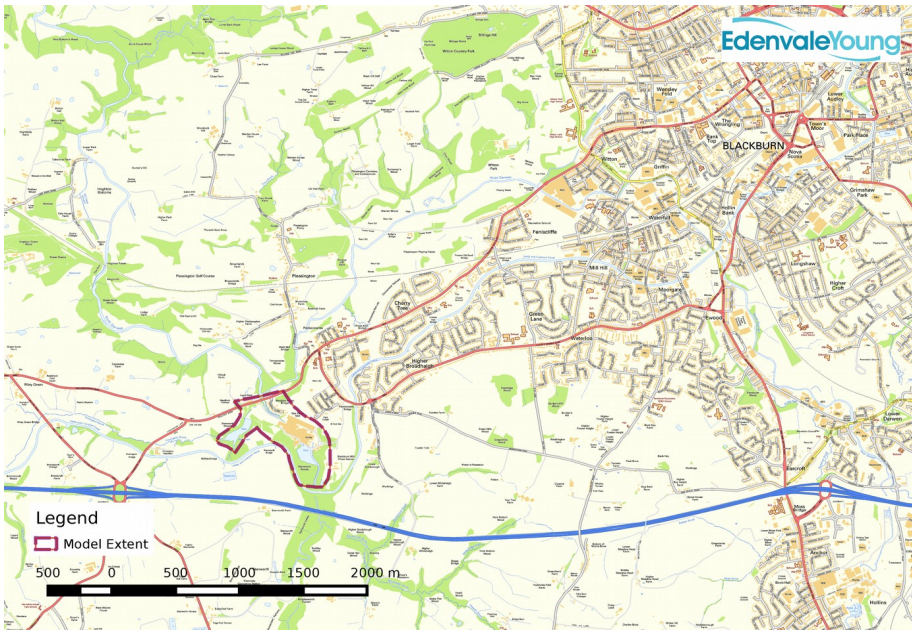

Figure 1.1: Site location plan

1.2 Site description

At time of writing, the demolition of all mill buildings has been completed and the areas previously occupied by these building has been levelled.

The mill buildings occupied the centre and west of the site with the areas in the east and north-east of the site currently being used for agricultural purposes. An access road orientated in a north-south direction which served the mill buildings and the Combined Heat and Power (CHP) plant lies to the east of the site.

The eastern and southern boundaries of the site are adjacent to the Leeds-Liverpool canal which is elevated above the site.

Two large raised reservoirs are located within or adjacent to the site along with three ordinary watercourses also crossing the site. Details of these are given in the sections below.

1.2.1 *Watercourses*

The main river running through the site is the River Roddlesworth with a tributary, the Finnington Brook, joining just upstream of Moulden Brow.

The River Roddlesworth enters the site from the south, passing beneath the Leeds-Liverpool canal, flowing north adjacent to the infilled and now discontinued Mill Lodge reservoir. Shortly after it enters a 290m long brick arch culvert of varying construction which flows west beneath the area historically occupied by the Star mill. The river then exits the culvert and continues to flow west adjacent to the Star mill area to the confluence with the Finnington Brook just upstream of the bridge carrying the Blackburn Old Road (or Moulden Brow) and onward to the confluence with the River Darwen.

The Finnington Brook originates to the west of the site and enters into a bywash culvert which flows adjacent to the Sun reservoir. It then passes down a steep stepped spillway through another short culvert and then to the confluence with the River Roddlesworth.

An unnamed ordinary watercourse flows from south of the Sun reservoir and directly into the reservoir.

None of the above mentioned watercourses, on the site, are classified as Main River by the Environment Agency.

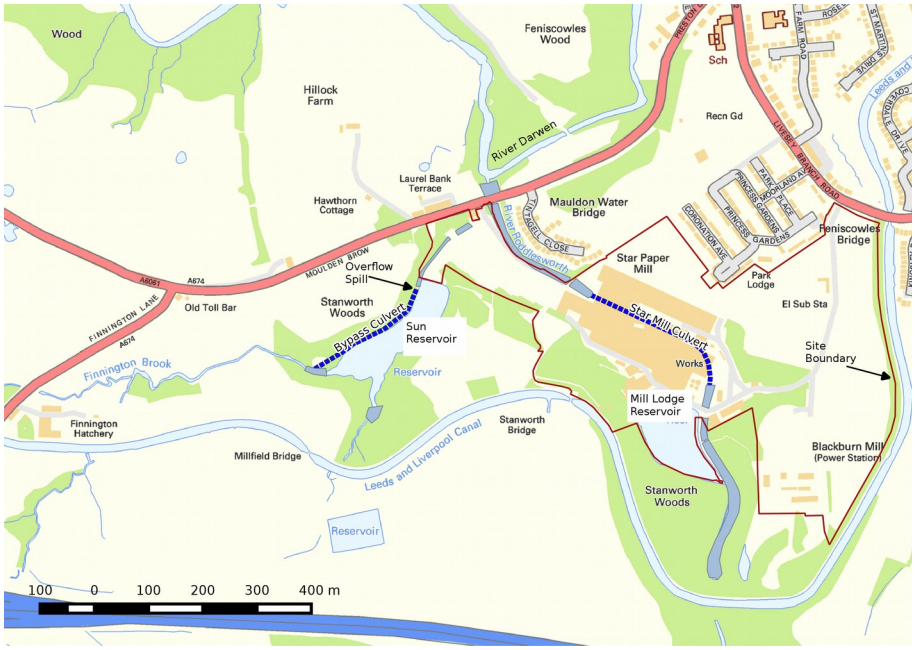

Figure 1.2: Existing site layout

1.2.2 *Reservoirs*

During the demolition of the mill buildings, the Mill Lodge reservoir was infilled and subsequently decommissioned. The reservoir was officially removed from the register on 18th October 2018.

A further reservoir, the Sun reservoir lies above the north-west corner of the site but outside of the red line development boundary.

These reservoirs have been used historically in order to provide water power to the mill buildings. Later a Combined Heat and Power (CHP) plant was constructed to the east of the site in order to provide (steam) power to the mills. The CHP plant is still operated by Scottish Power and historically took water by pumping from the Mill Lodge reservoir.

A new borehole has now been dug to enable Scottish Power to abstract cooling water directly from the ground.

2 Background and previous studies

2.1 Previous Flood Risk Assessments (FRAs)

A number of studies and FRAs have been produced for this site in the past. A list of the most recent documents is provided below:

- Blackburn Mill Hydraulic modelling Report, Edenvale Young, May 2015
- Blackburn Mill FRA revision B, Edenvale Young, May 2015
- Blackburn Mill Addendum to FRA, Edenvale Young, April 2016
- Blackburn Mill FRA revision C, Edenvale Young, April 2017

This report continues to use the baseline modelling work described in Blackburn Mill Hydraulic Modelling report (EVY, 2015) and later amended in Blackburn Mill FRA revision B. For details regarding the baseline modelling please refer to these documents which are included in Appendix B.

2.2 Strategic flood risk assessment (SFRA)

The Blackburn with Darwen Borough Council Level 2 Strategic Flood Risk Assessment (SFRA) was undertaken in September of 2012 by Capita Symonds. Volume 2 of the SFRA Potential Allocation Site Assessments presents more detailed analysis for specific sites.

Site number 10 in Volume 2 of the SFRA encompasses a majority but not all of the proposed development. The findings of the SFRA are summarised in the relevant sections and briefly below:

- The Sun and Star mill sites are largely within Flood Zone 3 according to Environment Agency Flood Zone Mapping. The remainder of the site to the east lies in Flood Zone 1.
- Surface water flooding affects the existing mill sites with additional water collecting on the access roads.
- The mill sites are at risk of flooding from up to 5 reservoirs. The associated extent of flooding mirrors that of the fluvial flood outline.
- Modelling of a canal breach was undertaken and shows flooding with a hazard rating of Significant – Danger to Most for the Star mill site.
- The SFRA concludes that the site is suitable for development if the sequential test is applied in order to steer More Vulnerable development away from Flood Zones 2 and 3.

3 Sources of flood risk

3.1 Fluvial and tidal flood risk

3.1.1 Recent flooding (26/12/15)

In December 2015, Lancashire and Cumbria experienced a major flood event. The Ewood gauge on the River Darwen recorded it's second highest ever level since the gauge was installed 43 years ago.

The proposed development site experienced significant flooding consistent with both historical flood events and the baseline modelling work undertaken. As predicted therein, the main source of flood risk to the site was caused by insufficient capacity or more likely blockage to the long culvert. The culvert surcharged during the event and flood water subsequently overtopped the culvert parapet. It is unknown whether the culvert surcharged as it's maximum capacity was exceeded or whether it became blocked during the event thus reducing it's maximum capacity. During a site visit in February 2016, a member of the Scottish Power staff on site advised that they removed three trees from the inlet of the culvert during the flood event after receiving requests to do so from the site manager.

Figure 3.1: Culvert before surcharging

Figure 3.2: Culvert surcharging (Dec, 2012)

3.1.2 Climate change

In order to ensure that the effects of climate change are being considered for the lifetime of the project it is necessary to simulate increased river flows as a result of climate change.

The latest climate change allowances according to the Environment Agency involve applying the increases shown in Table 3.1 to the estimated flows.

District	Allowance	2015-2039	2040-2069	2070-2115
North-west	Upper end	20%	35%	70%
	Higher central	20%	30%	35%
	Central	15%	25%	30%

Table 3.1: Climate change allowances (Environment Agency)

For a development of this nature, which is classified as *More vulnerable* under the National Planning Policy Framework (NPPF), the EA guidance suggests that Central to Higher central should be used for developments in flood zone 2. For properties in flood zone 3 the Higher central to upper end should be used. Therefore the *Higher central* climate change allowance has been used as an average of these ranges.

As the design life of a residential development is assumed to be 100 years, this results in a climate change allowance of 35%.

3.1.3 *Existing scenario*

As shown in Figure 3.3 the most recent flood zone mapping shows that a large portion of the site is within Flood Zone 3 (dark blue).

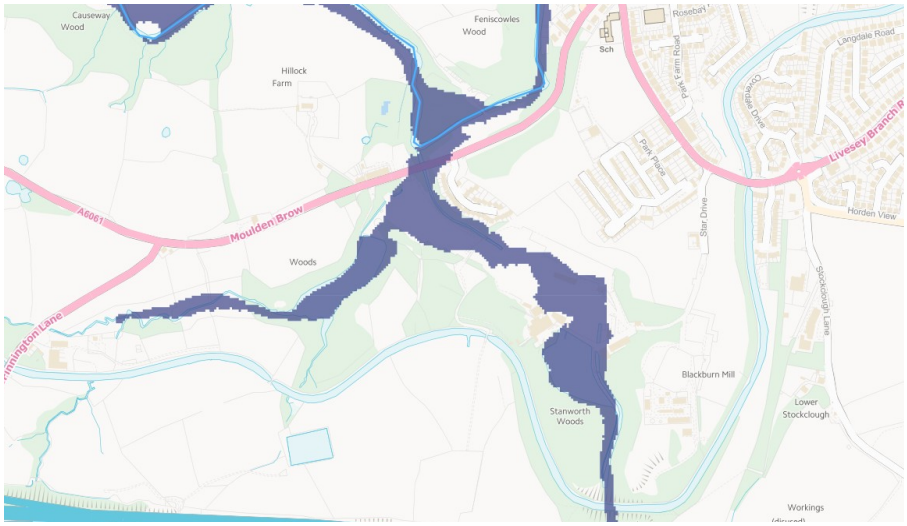

Figure 3.3: EA flood zone mapping

Whilst this is thought to be broadly representative the mapping is considered to be inaccurate as the long 290m culvert beneath the site is

omitted from the modelling. Additionally it can be seen that water is passing through the aqueduct at the south of the site and through the Moulden Brow bridge at the north, neither of which are expected to overtop.

It is understood that the existing EA flood zones are calculated by the national generalised mapping software JFLOW which does not include river cross section data or site specific hydrology.

The existing flood mechanisms however are broadly correct in that flood water flows in a north-westerly direction across the site and re-enters the River Roddlesworth.

3.1.4 Proposed scenario

The proposed development involves construction of residential properties on the existing (brownfield) mill sites and to the north east of the site on an area of higher ground currently used for agricultural purposes.

A number of changes have been proposed in order to prevent the site from flooding for return period events up to a 1 in 1000 year return period (0.1% annual exceedence probability). A copy of the latest design drawings are included in Appendix A and the main elements are summarised below and in Figure 3.4:

- Demolition of the existing 290m long brick arch culvert;
- Realignment of River Roddlesworth to the West of the historic Mill Lodge reservoir location and across the flood plain to reconnect just downstream of the existing 290m culvert outlet;
- Construction of a fish pass structure to enable variation in channel gradient, to reduce excavation/fill and to increase the passibility of the channel to relevant fish species;
- Provision of a new purpose built fluvial flood storage area (FSA) to compensate for the existing on site attenuation (Mill Lodge reservoir and flood plain attenuation due to culvert surcharging and spilling into the site);
- Demolition of culverts at downstream end of Finnington Brook and realignment of channel to the East to meet the Roddlesworth;
- Decommissioning and infilling of Mill Lodge reservoir;
- Construction of a new open span road bridge crossing.

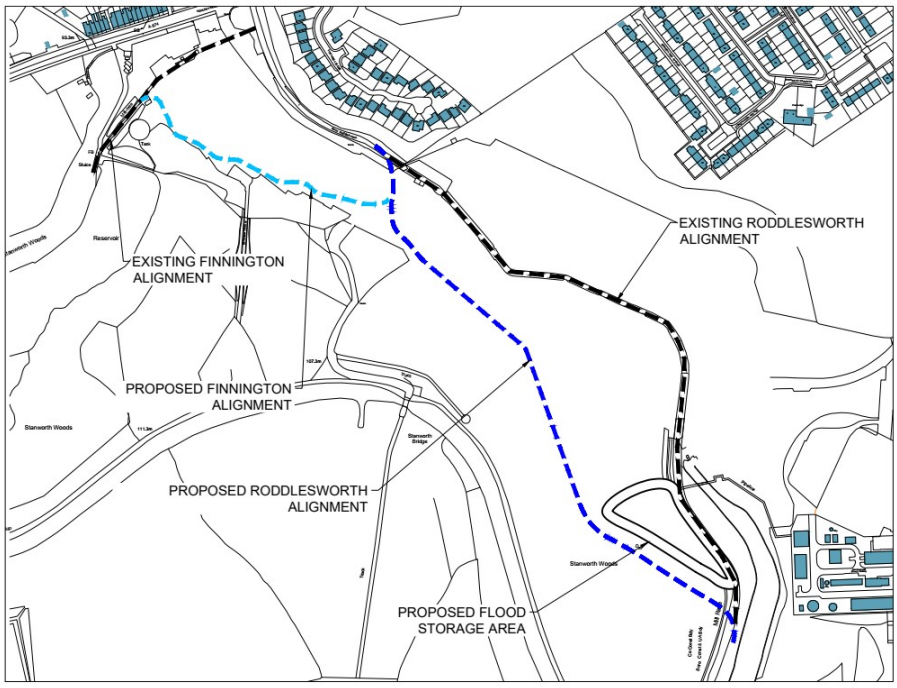

Figure 3.4: Changes to channel alignment

3.1.5 *Hydraulic modelling*

Modelling of the fluvial network undertaken as part of this FRA builds upon the baseline model undertaken by Edenvale Young (May 2015). The work previously undertaken by Edenvale Young is presented in Appendix B.

This FRA document discusses only details of the implementation of the proposed scenario.

Hydrology

The hydrological inflows to the model remain unchanged and are presented in Appendix B. A brief summary is given below:

- Flood flow estimates are provided for a range of return periods on three tributaries of the River Darwen near Feniscowles to the west of Blackburn in Lancashire. The River Roddlesworth north of the M65 where it flows under the canal and the Finnington Brook and its tributary where these flow from the west and south into an unnamed reservoir.
- The calculation of flood flows is based on the methods detailed in the Flood Estimation Handbook (FEH) and the Environment Agency's FEH Guidelines (Version 4) June 2012. This include the Revised Statistical Method, based on a donor adjusted QMED and the construction of a pooling group, and the Revitalised

Flood Hydrograph Method (ReFH). Extension to the 1000 year return period is also undertaken.

- A comparison of flood estimates shows the two methods have similar flood growth curves and it is the choice of QMED which is a key considerations in deciding on the preferred method. There are uncertainties in extending ReFH beyond the 150 calibration limit. However there is reasonable confidence in the Statistical method estimates, based on a donor adjusted QMED and a pooled growth curve using the most recent HiFlows data set. The recommended flows are therefore based on the FEH Statistical method simply extended to the 1000 year return period.

In order to check that the previously derived peak flow estimates were still valid, an analysis was undertaken. Catchment descriptors for both the River Roddlesworth as well as the Finnington Brook were extracted from CEH-Web Server. This data was applied within the ReFH2 software, using the most up-to-date DDF data (DDF 2013) to derive peak flow estimates.

	Peak flow estimate (m^3/s)							
	20 year		**50 year**		**100 year**		**1000 year**	
	Statistical	ReFH2	Statistical	ReFH2	Statistical	ReFH2	Statistical	ReFH2
River Roddlesworth	23.05	27.52	29.04	33.62	34.48	38.79	60.76	62.37
Finnington Brook	6.83	4.70	8.60	5.91	10.22	6.91	18.03	11.09

Table 3.2: Comparison of hydrological estimates

As can be seen from the above results the increase in peak flow on the Roddlesworth can be considered negligible (2.6% for the 1000 year event). The Finnington Brook however, shows a much more significant change. As the modelled flows are greater than the ReFH2 estimates the current design can be considered to be conservative.

Implementation of proposed scheme

The following changes to the baseline model have been made in order to represent the proposed scenario presented in Appendix A:

- River Roddlesworth channel re-alignment – removal of channel cross-sections, including the long culvert, and replacing with design sections. Design cross-section involving 2-stage channel with natural bank slopes. Increased overall channel length to represent new alignment;

- Fish pass structure modelled as a steep gradient reach with increased roughness to represent larger diameter bed material;
- Finnington Brook channel has been re-aligned involving removal of culverts and cross-sections at the downstream end of the brook before it enters the River Roddlesworth and replacement with design open channel cross sections. The design cross-section involve natural bank slopes. There is an increased overall channel length to represent the new alignment. The revised confluence location is located upstream of the proposed open span bridge;
- Provision of a new purpose-built fluvial flood storage area – modelled using a Flood Modeller reservoir unit with a spill unit to represent the inlet and an orifice to represent the outlet. The dimensions of the emergency spillway have been calculated using the Flood Modeller spill unit;
- Decommissioning of Mill Lodge reservoir – Mill Lodge reservoir has been removed from the model entirely.
- New road bridge – the bridge was modelled using open channel sections as the soffit of the bridge was situated 1.0m above the 1 in 100 year +35% climate change peak level.

3.1.6 Modelling results

Existing flood mechanisms

As concluded in the previous work undertaken by Edenvale Young (May 2015) the main flood mechanism on the site is the surcharging and backing up of the long Roddlesworth culvert through the site. This flood water then flows across the site and re-enters the Roddlesworth channel downstream of the culvert.

Additional flooding occurs on the Finnington Brook immediately downstream of the Sun reservoir. This is due to the insufficient capacity of the existing culverts at this location.

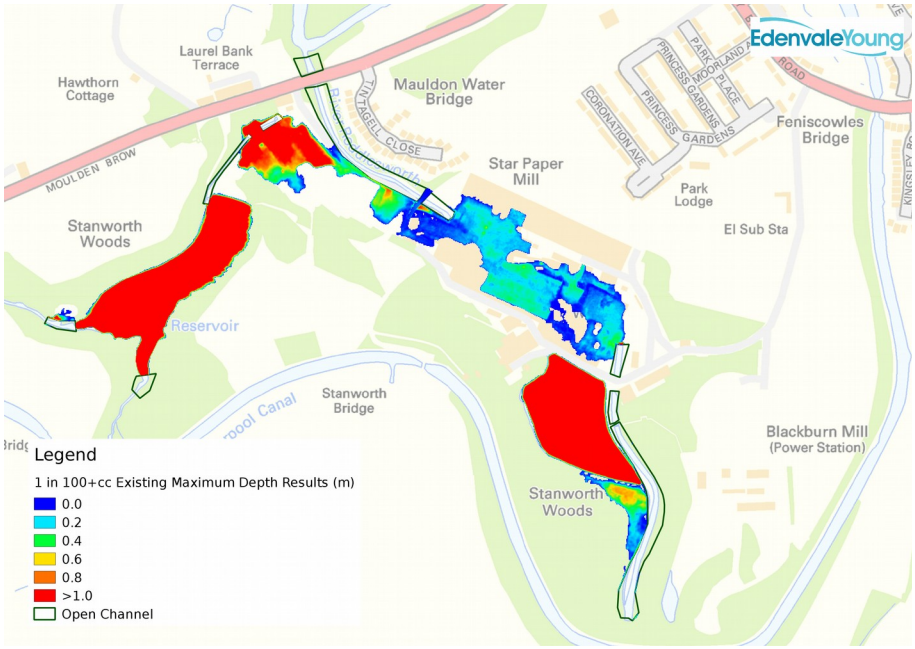

Figure 3.5: Baseline model results (1 in 100 year + 35% climate change)

<u>On site water levels – proposed scheme</u>

The new Roddlesworth channel sections, new Finnington Brook channel sections and new purpose-built fluvial flood storage area have been designed in order that the site remains flood free during a 1 in 1000 year return period fluvial design event. As can be seen from the long section plot below the measures are successful in preventing on-site fluvial flooding up to the 1 in 1000 year event.

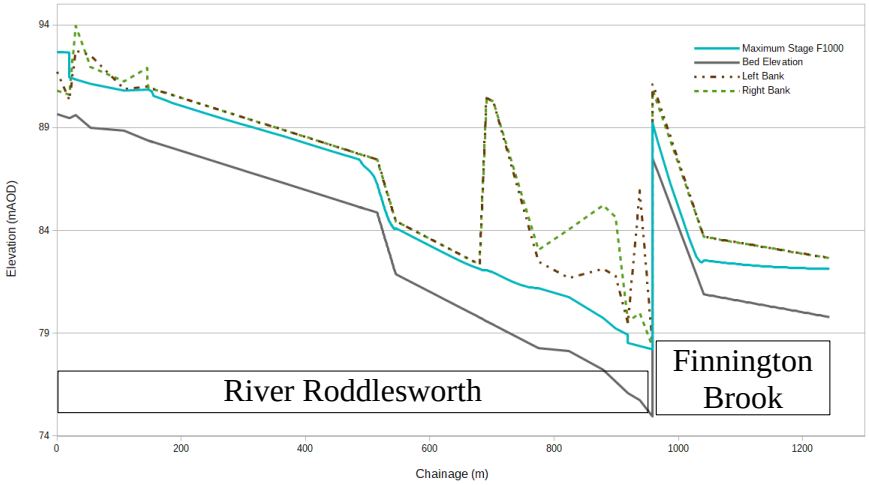

Figure 3.6: 1 in 1000 year flood level through the site

Downstream flood risk

As shown in Figure 3.7 the flow rate at the downstream boundary of the site does not increase following implementation of the development for the 1 in 100 year event (1% annual exceedance probability) including an appropriate allowance for climate change. It is shown that the development results in a slight reduction of 0.03m^3/s in peak flow rate at the downstream section of the River Roddlesworth downstream of Moulden Brow.

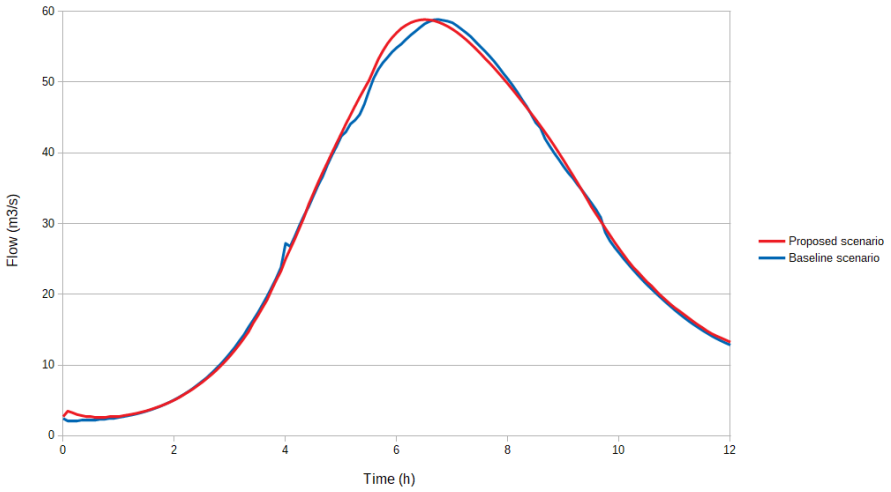

Figure 3.7: Downstream boundary flow hydrograph (1in 100 year +35% climate change)

3.1.7 *Conclusions*

The proposed new purpose-built fluvial flood storage area provides sufficient flood storage to compensate for the removal of attenuation in the Mill Lodge reservoir and on the flood plain around the culvert. This storage volume combined with increased channel capacity of the River Roddlesworth successfully mitigates the previous causes of flooding throughout the site.

As it is now shown that the proposed development lies entirely in Flood Zone 1 the *More Vulnerable* type of development being proposed is thus permitted according to NPPF Tables 2 and 3. Additionally, due to the flood zone classification for the development, there are no restrictions imposed on the finished floor levels of the development.

3.2 Surface water (pluvial) flood risk

3.2.1 *Risk of flooding from surface water mapping (EA)*

The current risk from surface water flooding has been estimated by the Environment Agency and is presented in Figure 3.8.

Figure 3.8: EA Surface Water Flood Mapping

As can be seen in Figure 3.8 a number of surface water flow routes and ponding occurs on the site. The flooding around each reservoir can be considered to be fluvial flooding as the water entering each reservoir does so from the respective watercourse.

The main solely surface water flow route occurs from the north-east and flows down Livesey Branch Road and enters the site previously occupied by the Star Mill. This flow route will be intercepted by the road drainage system being installed as part of the development. It will be necessary

when designing the drainage system to ensure that this volume of surface water is fully accounted for.

3.2.2 *Surface water drainage strategy*

In order to restrict the surface water discharge generated from the proposed development site a surface water drainage strategy has been prepared.

The surface water drainage strategy has been prepared by Inspire Design & Development Ltd and is presented in Appendix C.

In summary, the document concludes that the surface water discharge from the site will be limited using permeable paving and three detention basins which will serve separate phases of the development.

3.2.3 *Conclusions*

The main surface water flow route entering the site will be intercepted by the proposed surface water drainage network and so will pose no flood risk to the proposed development.

Additionally, a surface water drainage strategy has been proposed involving permeable paving and detention basins to limit the discharge from the site to that which would occur during a greenfield condition.

3.3 Flooding from artificial sources – Reservoirs

3.3.1 *Reservoir classification and status – Mill Lodge reservoir*

As of 18/10/2018, the Mill Lodge reservoir was officially removed from the register of reservoirs. The reservoir has been gradually infilled during the demolition of the mill buildings. As the reservoir no longer has the capability to hold 25,000m^3 of water it is longer deemed a reservoir under the Reservoirs Act (1975).

As the reservoir has been completely infilled it no longer poses a flood risk to the site.

3.3.2 *Reservoir classification and status – Sun reservoir*

The Sun reservoir currently is under joint ownership between Blackburn Waterside Regeneration and the Feniscowles Estate. The latest S10 report from the reservoir panel engineer recommended a number of measures that needed to be undertaken in order to ensure the ongoing safety of the reservoir.

At the time of writing, no agreement has been reached between the joint undertakers that these measures should be undertaken. It is consequently understood that the default position recommended by the panel engineer is that the reservoir will also be decommissioned in the near future. For the purpose of this report the Sun reservoir has not

been altered and as such attenuates flood water during a fluvial flood event.

3.3.3 *Reservoir inundation mapping*

Reservoir inundation mapping has been undertaken for the Mill Lodge reservoir. Given that the Mill Lodge reservoir is now decommissioned this is no longer relevant.

No inundation mapping has been provided for the Sun reservoir.

3.3.4 *Conclusions*

The Mill Lodge reservoir no longer poses a flood risk to the site as it has been decommissioned.

In its current form, in common with any raised reservoir, the Sun reservoir currently poses a risk of failure, albeit low. It is important to note however that the panel engineer has also recommended that this reservoir should be decommissioned as it serves no current purpose.

3.4 Flooding from artificial sources – Canals

3.4.1 *Canal breach modelling*

A canal breach scenario for the site was modelled as part of the Blackburn with Darwen Borough Council Level 2 Strategic Flood Risk Assessment (SFRA). A breach was modelled to the Leeds-Liverpool canal at the aqueduct as it passes over the River Roddlesworth.

The hazard mapping is shown in Figure 3.9 with a large part of the site shown to have a hazard rating of *Significant – Danger to most*, shown in orange.

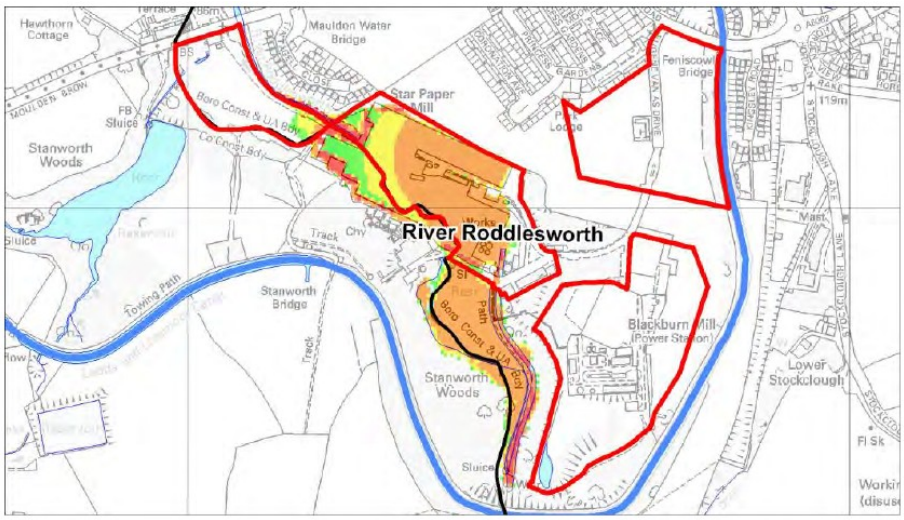

Figure 3.9: SFRA Canal breach mapping

3.4.2 *Mitigation measures*

Several measures being proposed as part of the revised site layout will greatly reduce the consequence of a canal breach above the site. These are outlined below:

- *Improved channel conveyance.* The new channel being proposed is designed to convey the a 1 in 1000 year (0.1% AEP) event and the long culvert is being demolished. Both of these measures will vastly improve the channel conveyance and therefore minimise the flood extent caused by a canal breach.
- *New purpose-built fluvial flood storage area*. The new flood storage area on the site will attenuate water during a breach event (assuming that the stage in the river is sufficiently high) and this will aid in reducing flood volumes.

3.4.3 *Conclusions*

Canal breach modelling undertaken as part of the SFRA shows a significant area of flooding on site. However, mitigation measures associated with the development will significantly reduce the consequence of a breach failure.

The analysis undertaken in the SFRA does not consider the probability of failure, which is very low, and so is not an assessment of risk, only of consequence.

3.5 Groundwater flooding

3.5.1 *Areas susceptible to ground water flooding*

As part of the Lancashire Preliminary Flood Risk Assessment (PFRA) the Environment Agency's Areas Susceptible to Groundwater Flooding data set is presented. In Figure 3.10 it can be seen that the site, immediately south-west of Blackburn does not fall within a susceptible area (shown in red).

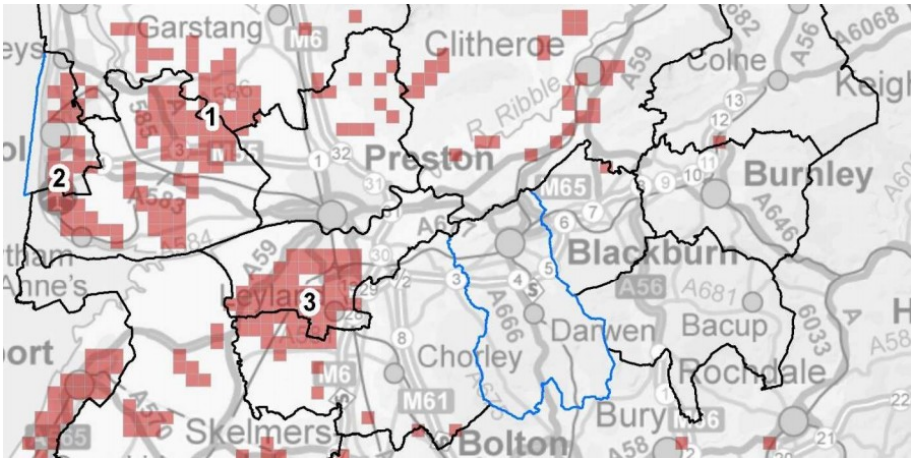

Figure 3.10: Areas susceptible to groundwater flooding mapping (EA)

3.5.2 Conclusions

Similarly to the conclusion drawn from the Blackburn with Darwen SFRA, due to lack of more detailed data it is concluded that the site does not suffer from groundwater flooding.

4 Conclusions

The following conclusions can be drawn from this Flood Risk Assessment for the proposed development:

- **Fluvial flooding** – Environment agency mapping showed that a large portion of the site was in Flood Zone 3. The proposed mitigation measures involved demolition of a long 290m culvert, channel realignment and widening as well as the construction of a new, purpose built, fluvial flood storage area. Hydraulic modelling has shown that these measures are effective in removing the proposed development area from flood zones 2 and 3 so that the site now lies entirely in flood zone 1. Additionally, these measures have been designed to reduce the peak flow discharged to the River Darwen during a 1 in 100 year plus climate change flood event.
- **Flooding from artificial sources – Reservoirs** – Historically two large raised reservoirs have been positioned on or adjacent to the site and posed significant hazard following a (highly unlikely) breach. In order to minimise this hazard the Mill Lodge reservoir has been decommissioned and Sun reservoir has been recommended to be decommissioned by the panel engineer.
- **Flooding from artificial sources – Canals** – The River Roddlesworth culvert which passes beneath the Leeds-Liverpool canal has been identified as a possible canal breach location. The risk to the site from canal breach has been greatly reduced as the daylighting of the River Roddlesworth significantly improves channel conveyance through the site and the provision of the new purpose-built fluvial flood storage area will enable a greater storage capacity following a breach of this nature.
- **Surface water flooding** – Due to the increase in hard surface area, the site runoff rates and volumes are considerably greater than the greenfield equivalent values. A Sustainable Drainage System (SuDS) has been proposed in order to address this issue. The proposed drainage system consists of three detention basins and the use of permeable paving in order to limit discharge into the River Roddlesworth to that which would occur during a greenfield condition.
- **Groundwater flooding** – Available Environment Agency mapping suggests that the site and surrounding area are not susceptible to groundwater flooding.
- It is therefore concluded that the mitigation measures set out in the development application satisfactorily reduces the flood risk to the site from all forms of flooding. The proposed

development would lie in Flood Zone 1 where both residential and commercial development is permitted according to NPPF tables 2 and 3.

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APPENDIX C

Design and Access Statement

Design and Access Statement

May 2015_Submission Version B

SAPPI masterplan

contents

1.0 introduction

1.1 purpose of the document

This document has been prepared in support of an outline planning application for the development of the SAPPI site off Livesey Branch Road, Feniscowles, Blackburn, Lancashire and follows the guidance set out by CABE in; Design and Access Statements - How to write, read and use them.

The preparation of this document have had input from an extensive design and technical team as listed and it should be considered alongside the reports, surveys and the other information being submitted in support of this planning application.

The application site is outlined in red on the adjacent aerial map. The site is owned by Blackburn Waterside Regeneration Ltd and is being promoted for a residential led mixed use development.

1.2 layout

Following a brief description of the background to the site and its current status in section 2.0, and a summary of the planning context in section 3.0, the design related elements of the document have been set out in three parts:

Analysis

Sections 4.0 and 5.0 provide an analysis of the site and its wider setting to establish the considerations that will need to be taken into account when developing a design approach.

Section 6.0 draws together the findings from the analysis of the site, its setting and landscape providing an analysis diagram describing the key design considerations and constraints for the site.

fig 1: aerial view of the site

introduction

Landscape, including ecology, arboriculture and watercourses play a significant role in the setting and character of the site and the existing landscape framework is an integral part of the overall analysis. The design development has been one of a landscape led approach resulting in proposals that safeguard, integrate and make more accessible the existing landscape assets, and uses them as a positive setting for development.

Design

The design proposals have been structured around a development framework in Section 7.0 which responds to the constraints and provides a means of connecting the development with the surrounding community. This framework sets out the principle access and circulation routes, infrastructure and developable areas which result in a series of development parcels and land uses.

Section 8.0 takes the development framework a stage further and illustrates how these design principles translate into a masterplan and looks at the different character areas within the masterplan. Each character area study includes a plan, a detailed sketch study, reference images and a set of development principles which will provide the basis for a design code to guide the detailed development proposals. The design code will be formalised following approval.

Section 9.0 provides a similar, more detailed design study of the landscape elements of the scheme describing how it will be delivered and managed, and as guidance for the subsequent detailed design.

Information

As background to the key considerations that influenced the development of the scheme proposals, some additional supporting information has been included in this DAS taken from the other reports that accompany the planning application. Section 10.0 summarises the consultation process, in particular the local consultation event that was held to get feedback on the proposals and options.

A section on access has also been included in section 11.0 to explain how accessibility has played a key role in the generation of the masterplan proposals and the benefits they will bring to the wider community.

Key points and summary

The development of this site will bring back into use a derelict brownfield site which has considerable technical issues, abnormals and design challenges. It will create a high quality mixed use scheme that will be a positive addition to the surrounding area and community. It will also deliver a significant area of publically accessible open space, landscape and ecological enhancements for the enjoyment of the surrounding community.

The proposals are in accordance with relevant planning policy and will deliver a mix of uses including; C3 and C2 residential, B1a and B1c employment, A1 retail and D1 community uses on a gross site area of 26.80 hectares.

The site owners have shown a commitment to bringing this challenging site back into use, undertaking works to make the site deliverable including demolitions and remediation, and have explored a number of options including an energy village. The proposals set out in this document represent a deliverable mixed use residential led scheme that is supported by the local community as the preferred option.

2.0 background

2.1 a brief history

Prior to 1844 Feniscowles was a small village without any paper mills, its location however was excellent for paper manufacturing as the Roddlesworth Valley had a high rainfall and rapidly flowing rivers along with access to waste textiles from the many cotton mills and access to the canal system. The founding of paper mills became characteristic of the Roddlesworth Valley from the1870s.

In 1875 The Star Paper Mill of Feniscowles was built on a 118 acre plot in the centre of the site around the River Roddlesworth. The Sun Paper Mill followed shortly afterwards and was built on the north western part of the site before being closed in 1992 and then demolished.

The Star Paper Company was founded on the site in 1875 and expanded through the acquisition of the failed Withnell Paper Mill in 1881, which was consequently levelled allowing a second reservoir to be built on the site of the old mill, ensuring a larger water supply for increased paper production. In the early 1880's the mill then made news printings and long elephants (wallpaper base) from rags, straw and esparto grass. The OS mapping opposite for 1849 shows the site and the River Roddlesworth prior to the development.

Between 1893 to1896 the mill prospered and two traction engines were purchased to transport the finished paper to the railway yards at Feniscowles. During the First World War the key product was 'Hercules', a strong, greaseproof imitation parchment. When the war ended improvements began and the whole site was walled and fenced. The name of the company changed in 1920 to "The Star Paper Mill Co. (1920) Ltd.

In 1930 Kymmene, a Finnish company purchased a majority stake in Star Paper Mills. The mill then became the major producer of cast coated board and paper. In 1939 at the outset of World War II the mill to be temporarily closed and machinery was covered over for preservation until the end of the war in 1945.

By the latter part of the 1960's Star Paper Mills had become the market leader in coated papers. The M65 which was completed in 1997 and runs just to the south of the site, with junction 3 a mile from the site along the A674.

In 1990 due to changes within the company profile for Kymmene, they sold Blackburn Paper Mill to Sappi (South African Pulp and Paper Industries). In November 2008 all production was ceased at Blackburn and on the 29th December 2011, Blackburn was sold to BPCP (Black Pearl Capital Partner's).

A Heritage Assessment; Land at Livesey branch road Feniscowles' was prepared by CgMs consulting and submitted in August 2014 along with an Archaeological Building Survey in May 2012 for the standing buildings associated with the Star Paper Mill which were recorded as a condition of planning consent for demolition.

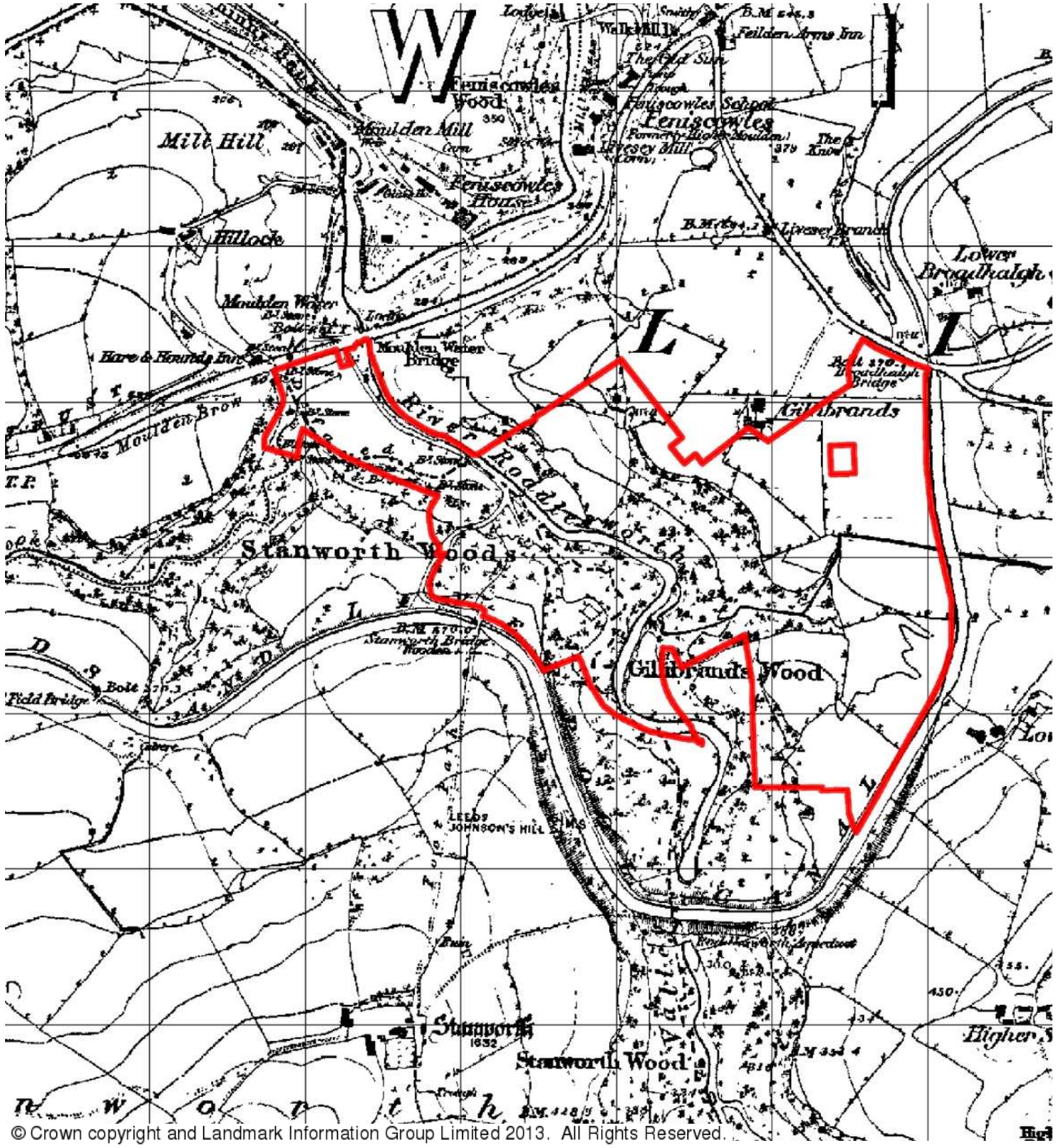

fig 2: OS of site, 1849

background

2.2 the site today

Blackburn Mill Commissioned a CHP plant on the site in 2002 to serve the paper mill. The plant featured a gas turbine and a steam turbine that work together as a Combined Cycle Gas Turbine (CCGT) plant to supply up to 28 tonnes per hour of process steam for the paper mill while trading any additional electricity output. Since Sappi's closure in November 2008, the plant has continued to be operated by ScottishPower supplying 60 MW of electricity to the National Grid.

Since the sale of the site in 2011 alternative uses have been explored as a basis for its redevelopment. A 'Renewable Energy Park' building on the existing CHP use was considered with a waste to energy plant providing the nucleus for an employment led scheme. However, this option proved to be unviable.

The site today is a combination of greenfield and brownfield areas which make up the developable parts of the site as follows;

Greenfield:

With the exception of a small electricity sub station and a temporary construction compound, the Greenfield areas comprising the open fields to the north and northeast, have remained as open fields used for grazing. These fields lie between the canal to the east and the southern developed edge of Feniscowles to the west. They slope gently to the south and include areas of soft ground and marshslope where small pools of standing water have been observed in areas of low ground surface.

Brownfield:

With the exception of the CHP plant and associated uses, the Brownfield areas comprise the previously developed platforms along the valley floor which were occupied by the paper mills. The mills were constructed on a relatively level platform formed by cutting into valley sides of the River Roddlesworth. This area is now vacant and largely covered by hardstanding and low scrub.

The remainder of the site is a combination of the steep wooded sides to the river valley sides and water bodies including the river Roddlesworth, its tributaries and the reservoirs formed to serve the paper mills, all of which are unsuitable for development.

The OS mapping opposite shows the site in 1913 with the two mills along the valley floor, the two reservoirs and the Greenfield area on the eastern part of the site.

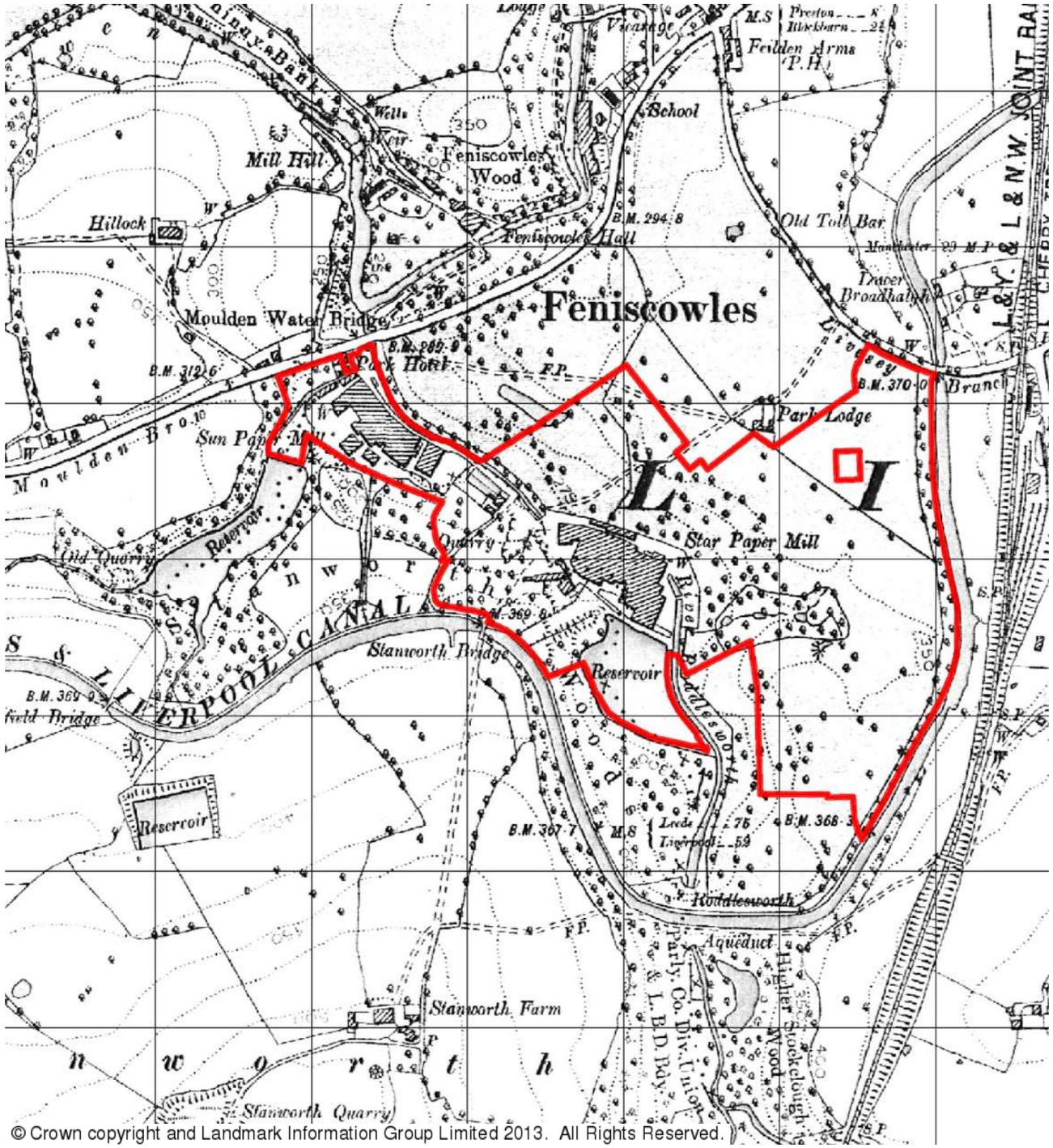

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Fig 3: OS of site, 1913

background

fig 4: view north past the substation to the Livesey Branch Road main entrance

fig 5: view south across the valley floor toward the Boiler building

fig 6: view north east from the main entrance road across the open fields

fig 7: view north across the valley floor toward the embankment

3.0 planning

3.1 Planning History

The planning application 10/12/0048 was approved on 30th March 2012 for the complete demolition of former Sappi Paper Mill including all outbuildings, tanks and enclosure down to the slab level of each structure. These works have now been completed leaving a redundant and disused brownfield site. There is no other planning history of relevance to the determination of the application.

3.2 Planning Policy

The National Planning Policy Framework (NPPF) and the supporting National Planning Practice Guidance (NPPG) set out best practice design guidance for new development and the design principles have been embraced as part of the design strategy.

A detailed assessment of the planning policy framework is set out in the Supporting Planning Statement, which accompanies the planning application. This section focuses on the local planning policies relevant to the design and access proposals for the development.

The majority of the site is located within the Settlement Boundary of Blackburn with Darwen, however the south western part of the site falls within Chorley. Policies from both of these authorities relevant to design and access proposals will be considered.

3.3 The National Planning Policy Framework

The NPPF sets out the Government's planning policies for England and how these are expected to be applied.

At the heart of the NPPF is a presumption in favour of sustainable development. Paragraphs 56 and 57 of the NPPF make specific reference to good design as a key aspect of sustainable development.

> *"56. The Government attaches great importance to the design of the built environment. Good design is a key aspect of sustainable development, is indivisible from good planning, and should contribute positively to making places better for people."*
>
> *"57. It is important to plan positively for the achievement of high quality and inclusive design for all development, including individual buildings, public and private spaces and wider area development schemes".*

3.4 Adopted Blackburn with Darwen Core Strategy (2011)

The Blackburn and Darwen Core Strategy was adopted in 2011 and is the borough's overarching planning document. It sets out priorities for future planning and development of the borough and is used when determining planning applications. The policies from this document which are relevant to this Design and Access Statement include:

Policy CS16: Form and Design of New Development

The Council will require new development to be of a high standard of design, and to respect and reinforce local character.
Particular attention must be paid to all of the following:

i. Character

ii. Townscape

iii. Public realm

iv. Movement and legibility

v. Sustainability

vi. Diversity

vii. Colour

Development in prominent locations, in areas of major change and on transport gateways will be required to demonstrate particularly high standards of design.

Policy CS18: The Borough's Landscapes

New development will be required to take advantage of its landscape setting by maximising the availability of local and distant views for users of buildings and public spaces, and by creating and/or improving networks of routes between urban and rural areas.

Policy CS19: Green Infrastructure

The Council will seek the protection, enhancement, extension and creation of networks of green and open spaces between major land uses and between urban and rural areas, which will be connected by a variety of forms including new and improved off-road walking / cycling routes, enhancing the roles of the canal and riverside walkways, and streetscape improvements, such as tree planting.

Adopted Central Lancashire Core Strategy (2012)

The Central Lancashire Core Strategy is jointly produced by Chorley, South Ribble and Preston Councils and was formally adopted by Chorley Borough Council in July 2012. The plan sets out the long term spatial vision for Central Lancashire and the overall strategy for delivering this.

Policy 17: Design of New Buildings

The design of new buildings will be expected to take account of the character and appearance of the local area.

Policy 18: Green Infrastructure

Manage and improve environmental resources through a Green Infrastructure approach to:
(a) protect and enhance the natural environment where it already provides economic, social and environmental benefits;
(b) invest in and improve the natural environment,
(c) secure mitigation and/or compensatory measures where development would lead to the loss of, or damage to, part of the Green Infrastructure network.

Policy 21: Landscape Character Areas

New Development will be required to be well integrated into existing settlement patterns, appropriate to the landscape character type and designation within which it is situated and contribute positively to its conservation, enhancement or restoration or the creation of appropriate new features.

3.5 summary

The Supporting Planning Statement demonstrates that the proposal is in accordance with the strategic policies and provisions of the Blackburn with Darwen development plan and the Chorley Borough Council development plan.

The site's redevelopment will provide a significant boost to the delivery of housing and employment land in the Boroughs and will provide significant benefits to the existing community of Feniscowles.

The Masterplan has been devised to ensure that the scheme provides an attractive and spacious development which is in-keeping with the character of the surrounding area and its setting within the landscape.

The economic, social and environmental benefits arising as a result of the development, coupled with the lack of any significant or demonstrable harm in this respect, mean that the proposal constitutes sustainable development for the purposes of paragraph 14 of the National Planning Policy Framework.

4.0 the wider context

KEY

1. Blackburn with Darwen Borough Council
2. Chorley Borough Council
3. Livesey Branch Road
4. Feniscowles
5. River Roddlesworth
6. River Darwen
7. Leeds and Liverpool canal
8. M65 motorway
9. A674
10. Feniscowles Primary School
11. Pleasington Sports and Social Club
12. Tintagel Close
13. Local shops

fig 8: the wider context

the wider context

4.1 spatial context and designations

The site straddles two administrative boundaries, Blackburn with Darwen Borough Council and Chorley Borough Council. The majority of the site is within Blackburn with Darwen Borough Council who will be the authority responsible for processing the planning application for the whole site. The site is adjacent to the south west edge of the village of Feniscowles which in turn sits adjacent to the south west edge of Blackburn. The site is 3 miles from the centre of Blackburn.

4.2 the rivers and canal

A combination of natural and manmade landscape features have shaped the site and will influence its development. The Roddlesworth Valley is the most locally significant natural feature running north south through the site with wooded embankments either side of the River Roddlesworth which connects to the River Darwen to the north of the site. It was a combination of these features and the local meteorology that made the site so suitable for paper mills.

In addition to the rivers, the Leeds and Liverpool canal which was constructed over a fifty year period with the main line completed in 1816, forms a significant feature along the western, southern and eastern boundaries of the site looping around the south of the site to negotiate the topography of the Roddlesworth Valley with an elevated section crossing the river on an aqueduct. The canal continues northwards along the western boundary of the site, under Livesey Branch Road adjacent to the site entrance and then north east through Feniscowles into the centre of Blackburn 4 miles with towpaths providing pedestrian and cycling connectivity.

4.3 landforms

Either side of the Roddlesworth Valley the topography is flatter, with open fields and woodlands surrounding the site, and Feniscowles occupying the flatland alongside the canal to the north east of the site. The topography of the setting creates two distinct landforms within the site that could be considered for development; the valley bottom which provides level development platforms that are a result of their previous use as paper mills, and the higher level fields on the north eastern part of the site. The valley sides are generally too steep and wooded to be considered for development.

4.4 transport

The completion of the M65 in 1997 improved east west access and travel times, and connections to major conurbations with links to the M6 and M61 motorways. The M65 runs to the south of the site with junction 3 approximately 1 mile to the south west. From this junction the A674 passes the site and continues through Feniscowles into Blackburn. There are two existing vehicle access points into the site, the first off the A674 Moulden Brow and the second off the Livesey Branch Road.
Pleasington railway station is 1 mile to the north of the site with local connections to Blackburn and Preston.

A public right of way crosses the site and links with the canal towpaths at Stanford Bridge. The site adjoins the canal along its eastern boundary with the potential for access to the canal towpath.

4.5 adjoining settlements

The main body of Feniscowles sits to the north east of Livesey Branch Road which the site has a frontage to and access from. To the east of the site a pocket of residential development around Kingsley Close has back gardens facing the site across the canal. A larger pocket of residential development around Princess Gardens to the south west of Livesey Branch Road shares a boundary with the site and is adjacent to Feniscowles Primary School, the recreation ground and the Feniscowles and Pleasington Sports and Social Club. There is a further pocket of around 30 houses around Tintagel Close overlooking the north western part of the site across the River Roddlesworth, and a terrace of 15 workers cottages to the north of the site across Moulden Brow.

As well as the school, recreation and social facilities next to the site, the site has good access to other local facilities including the local shops and St Pauls Primary School, and to the more comprehensive amenities of Blackburn.

4.6 conclusions

The landscape setting and framework define the site and the character of its different areas which should be used to inform any design proposals. There are also a number of landscape features that are of value in themselves and as a means for creating an attractive setting for development. These should be recognised, protected and enhanced.

The site has good transport links and connectivity to local amenities and further afield. At the local level there are opportunities to provide pedestrian and cycle links using existing footpaths, bridges and the canal towpaths. Any development proposals should consider how these opportunities could be used to serve the site and the wider community.

The site also has a close relationship with the settlement pattern and amenities of Feniscowles. Any development proposals should consider opportunities for re connecting the site to Feniscowles so that it becomes a positive extension and not a separate addition.

The site will benefit from access to the existing local facilities and amenities, and given the mixed use nature of the proposed development, any development proposals should consider opportunities improving the range of amenities available to the local community.

the wider context

fig 9: view north towards the site from the M65

fig 10: view across the recreation ground toward the school

fig xxx view xxxxxxxxx

fig 11: approaching the site from the west along Moulden Brow

fig 12: the sports and social club adjacent to the northern boundary

the wider context

fig 13: Moulden Brow access on the left as seen from the east

fig 14: view along Princess Gardens towards the site

fig 15: the Leeds and Liverpool canal alongside the eastern boundary of the site

fig 16: houses along Tintagel Close

5.0 the site

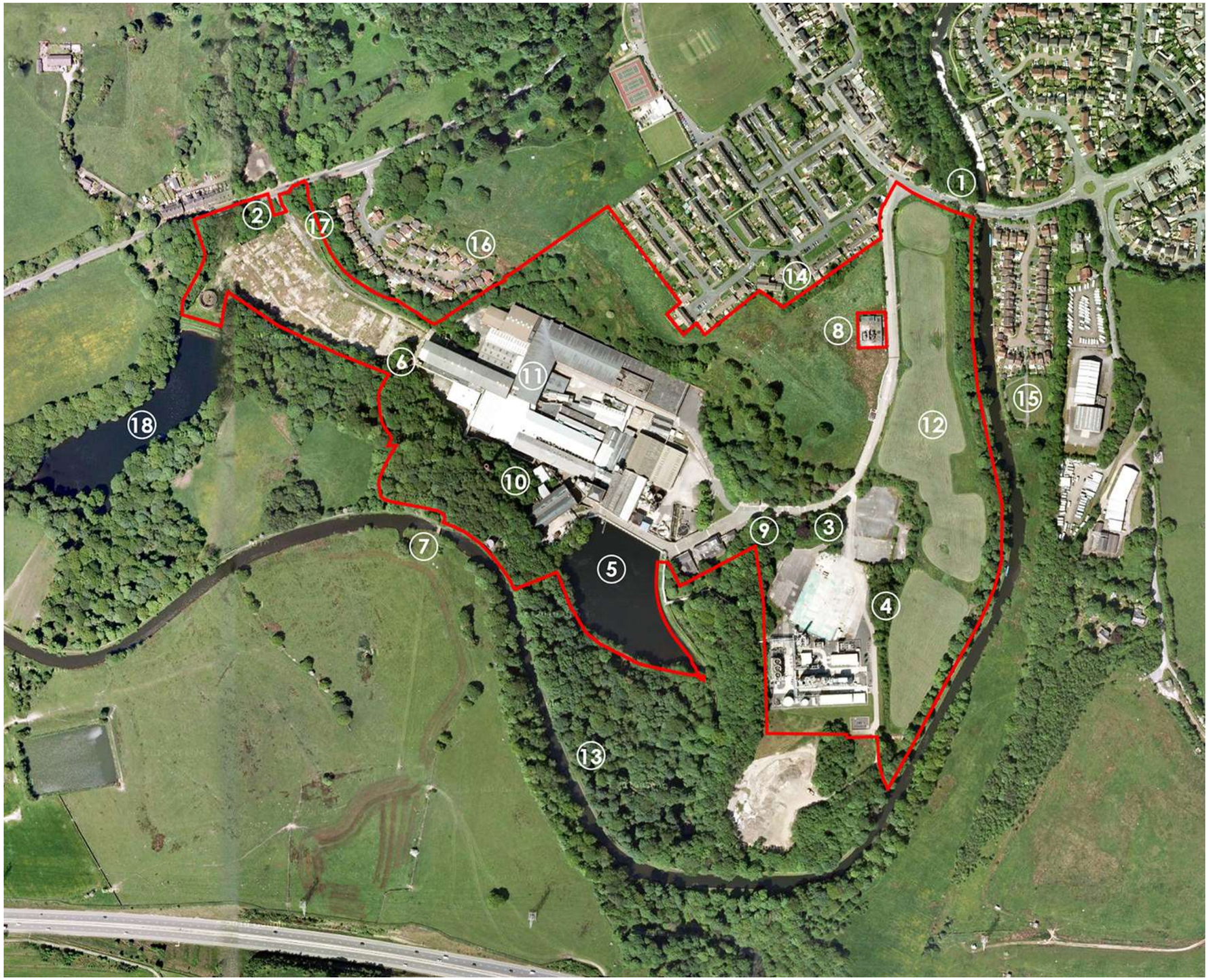


fig 17: site aerial

KEY

1 Livesey Branch Road access
2 Moulden Brow access
3 CHP access road
4 CHP plant
5 Lodge reservoir
6 Public right of way
7 Stanworth bridge
8 Substation
9 Mill office
10 Boiler house
11 Valley floor
12 Upper fields
13 Canal towpath
14 Princess Gardens
15 Kingsley Close
16 Tintagel Close
17 River Roddlesworth
18 Sun reservoir & mill race

the site

5.1 access and connections

The landscape setting, topography and previous uses of the site have established a number of areas within the site that have the potential for development as described in the previous section. This section looks at these areas in more detail and considers how the other features of the site may constrain or influence the layout and design of development.

The two points of vehicle access from Livesey Branch Road (1) and Moulden Brow (2) are relatively fixed in their location with little scope to alter their position due to the site boundaries and topography. The Livesey Branch Road junction has been the main vehicular access into the site although both accesses should be considered and assessed against opportunities for minimising local traffic loads and impacts.

The route through the site from the Livesey Branch Road access (3) serves the CHP plant (4) and then drops down through a wooded screen onto the valley floor level where it splits into two giving access to the previous operational areas of the paper mill, with the lower route continuing alongside the Lodge reservoir (5) and the southern side of the mill.

From Moulden Brow the existing road access drops down the embankment and runs alongside the River Roddlesworth to meet the rear of the old Star mill buildings, this route is also a public right of way (6) which returns south up through the woodland to meet the canal towpath and the Stanworth Bridge footbridge (7).

5.2 existing uses

There is an electricity substation (8) alongside the main road that runs through the site which will be retained and may pose a noise issues for residential development. The CHP plant which is owned by Scottish Power is operational and requires vehicle access. The CHP site includes underused parking and hardstanding areas. The operation of the plant does pose noise and air quality issues for residential development. Site infrastructure to serve the CHP plant includes electricity, gas and water with the Lodge reservoir used to provide water for cooling.

5.3 retained buildings

There are two buildings remaining on site; the Mill office building (9) and the Boiler House (10).

5.4 landscape

The site's landscape, ecological and arboricultural assets are generally outside the developable areas, but are nonetheless important and are addressed separately in the next section.

5.5 ground form

The two different landforms types that result from the topography and are suitable for development as set out in the previous section have different qualities and characteristics. The valley floor(11) is enclosed by tree screens giving them a sheltered, enclosed and secluded feel with the tree belts defining the horizon line and views. The upper fields (12) have a more open aspect and a stronger relationship to the existing settlements adjoining the site to the west and on the other side of the canal to the east. These fields are also adjacent to the canal towpath (13) and Livesey Branch Road giving direct access for pedestrians and cyclists to the village amenities.

5.6 edge conditions

There is a wide variety of edge conditions across the site. The higher level fields area shares a boundary with the back gardens of properties along Princess Gardens and Coronation Avenue on the western side (14), and with the canal the properties along Kingsley Close opposite on the eastern side (15).

The valley floor although more secluded is overlooked by the properties along Coronation Avenue and Tintagel Close (16), although views are more incidental and screened by existing tree belts. The valley sides are also different with a softer profile along the northern side which becomes more dramatic as it runs alongside the River Roddlesworth, and a steeper profile along the southern side which includes exposed rock faces. Both sides have retaining structures which are a legacy of the mill buildings. The CHP area sits separately to these two areas in the southern loop of the canal, enclosed by the valley slope and an existing tree screen on all sides.

5.7 infrastructure

Apart from the infrastructure mentioned above and that relating to the CHP plant, there are a number of other features relating to the Paper mills including the River Roddlesworth (17) and its culverted section beneath the old mill, the Sun reservoir and mill race (18) connecting the Sun reservoir to the River Roddlesworth.

5.8 conclusions

There are a number of elements that have been identified through the analysis of the site that will influence the development of proposals for the site both as constraints and opportunities. These are summarised in Section 7.0 as a constraints plan and set of development principles which include the findings of the landscape analysis in section 6.0 that follows. Particular points that should be noted:

- The opportunity for developing character areas that respond to the different landscape settings across the site
- The relationship to existing settlement edge and community facilities
- The potential for the integration and use of the retained buildings
- The contribution of the water related mill infrastructure to character and setting

the site

fig 18: view south towards the entrance on Livesey Branch Road

fig 19: view of the CHP plant from the north

fig 20: view south towards the entrance on Livesey Branch Road

fig 21: view of the sub station from the north

the site

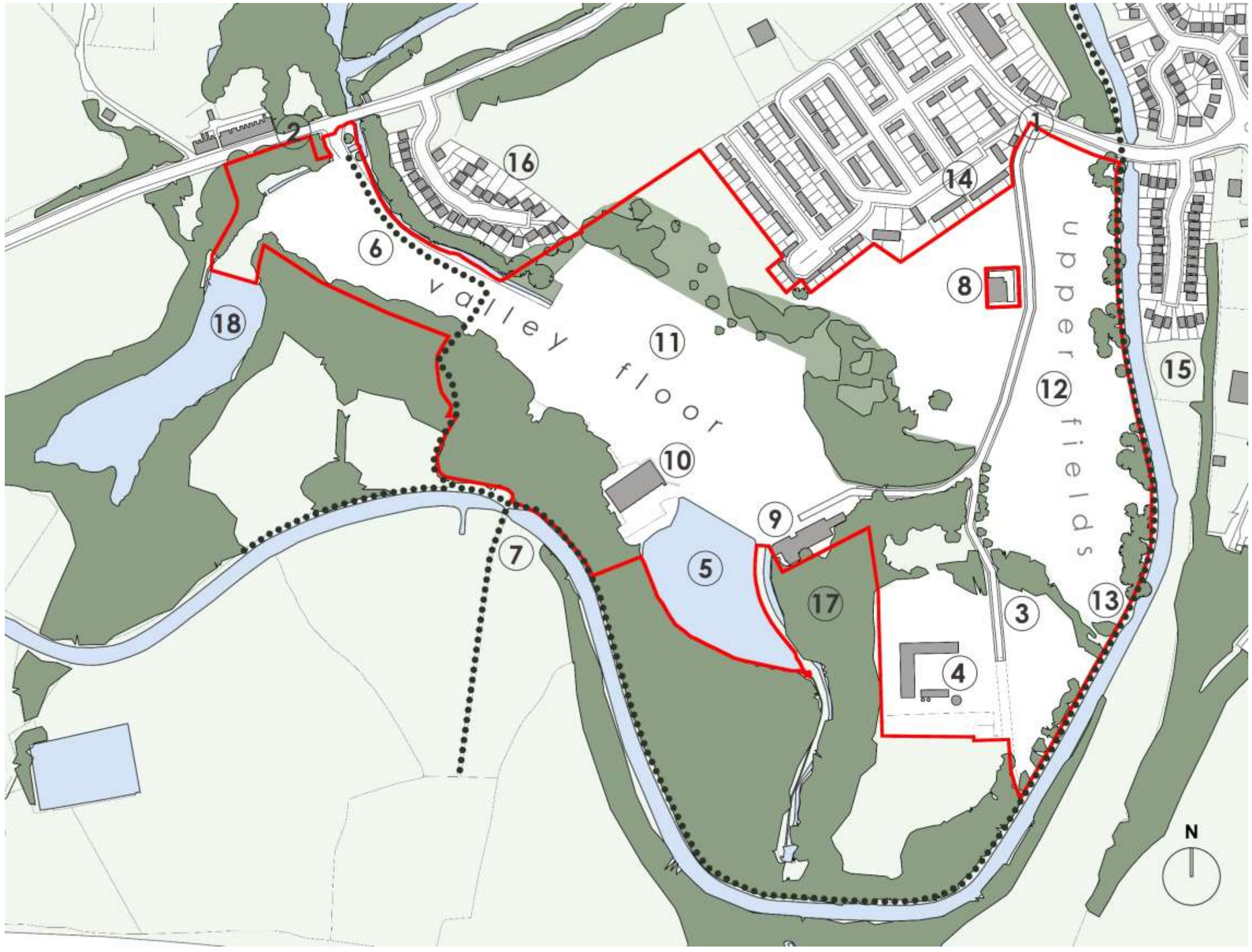
fig 22: view of back garden edge along western boundary

fig 23: view of the valley floor and Star mill site

fig 24: view of houses along canal opposite the eastern boundary

fig 25: public footpath through site

the site



KEY

1 Livesey Branch Road access
2 Moulden Brow access
3 CHP access road
4 CHP plant
5 Lodge reservoir
6 Public right of way
7 Stanford bridge
8 Substation
9 Mill office
10 Boiler house
11 Valley floor
12 Upper fields
13 Canal towpath
14 Princess Gardens
15 Kingsley Close
16 Tintagel Close
17 River Roddlesworth
18 Sun reservoir & mill race

fig 26: site analysis diagram

6.0 constraints

This section draws together the analysis from the preceding sections of the wider setting, the site and the landscape into a constraints plan and a series of design considerations that have been used to inform a development framework for the site.

6.1 access and connections

The two points of vehicle access, from Livesey Branch Road (1) and Moulden Brow (2) will need to be retained and used to serve the development. The route of the Livesey Branch Road route is fixed in its position (3) until it reaches a point past the Lodge reservoir by a combination of the existing services, landscape and topography, and the Lodge reservoir and retaining structures. Beyond this, there is flexibility to design the circulation to serve the layout of the development.

The point of access from Moulden Brow is also fixed by a combination of the mill race, topography and the layout of Moulden Brow. This access needs to negotiate a drop of around 6m into the site and achieve acceptable gradients and run offs. Within the site there is flexibility in its routeing, although this route is currently also a public right of way which will need to be retained or re-routed. The remaining section of this public right of way up (4) the southern side of the valley to the canal towpath will also need to be retained or re-routed.

6.2 infrastructure

The re-engineering of the Roddlesworth River to serve the paper mills has had impacts on the site in terms of drainage, flood risk and ecology. There are four areas that will need to be addressed for the successful development of the site; the culverted section of the river beneath the old mill (5), the star reservoir and mill race (6), the existing retaining structures to the river embankment along the open course of the river (7) adjacent to the north western boundary of the site, and the Lodge Reservoir (20).

With the retention of the CHP plant there will be noise issues. A noise survey has been carried out and established acceptable offsets (8) and construction methods relating to residential development in proximity of the CHP plant. A noise survey has also been carried out for the substation which is to be retained to establish acceptable offsets (9) and construction methods for residential development.

6.3 boundaries

Both the Livesey Branch Road (1) and Moulden Brow (2) entrances to the site have limited street frontages and it will be necessary to create a sense of presence along these frontages.

The treatment of the canal edge boundary (10) will also need to create a sense of presence to the canal towpath that protects the existing trees, and a suitable relationship with the back gardens of the dwellings along Kingsley Close opposite.

There is also a back garden condition along the northern boundary where the properties along Princess Gardens and Coronation Avenue back onto the site. Any development in this area will need to respect the privacy and amenity of these dwellings and gardens (11).

An open area of land (12) adjacent to Coronation Avenue and the site boundary has recently been turned into a sports pitch as an extension to the sports and social recreation facilities with footpaths leading down toward the site boundary with the potential to link into the site.

The dwellings around Tintagel Close (13) have back gardens overlooking the north western part of the site, and although they are more remote from the site, located on the other side of the River Roddlesworth and in an elevated position with woodland screening, the amenity of these dwellings and gardens will need to be considered.

6.4 the southern edge

Although the development footprint on the southern part of the site will be limited by the topography of the valley side with its steep slopes, rock faces and woodland, the sensitivity of the landscape and ecology in this area will require any development proposals to be sympathetic to this setting (14). In addition, the management of these open spaces will need to maintain a naturalistic boundary and setting to the canal edge and river.

6.5 landscape and ecology

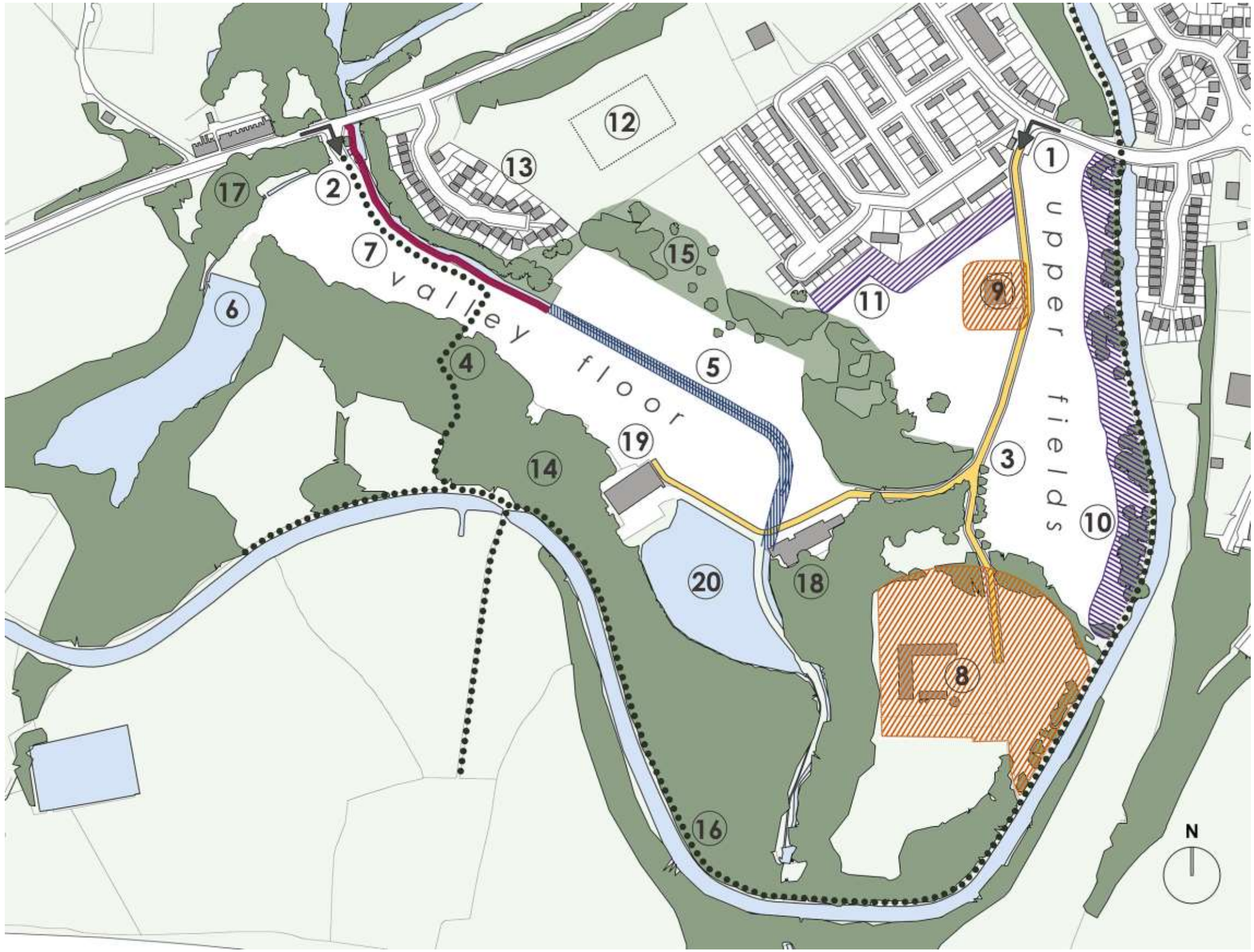
Landscape and ecology will play an important role in shaping the development of the site as set out in section 8 and 9, and the following will need to be considered:

- The southern valley side (14) as described above, which has the potential to provide amenity but is also ecologically sensitive
- The northern valley side (15) which includes individual and groups of trees that are of value and retaining structures relating to previous development
- The canal edge and towpath (16) including the tree belt (10) along the eastern boundary
- The River Roddlesworth which will need to be integrated into any development proposals and remain accessible for maintenance
- Western boundary embankment (17) including the sun reservoir and mill race which form part of the river system

6.6 retained buildings

Two buildings have been retained with potential for inclusion in the development the Mill office building (18) and the Boiler House (19).

constraints



KEY

1 Livesey Branch Road access
2 Moulden Brow access
3 Fixed roadway
4 Public right of way
5 Culvert
6 Sun reservoir and mill race
7 River embankment
8 CHP noise offset
9 Sub station noise offset
10 Canal boundary and tree belt
11 Residential back gardens
12 Sports pitch & footpaths
13 Tintagel Close
14 Southern valley side
15 Northern valley side
16 Canal towpath
17 Western embankment
18 Mill office
19 Boiler house
20 Lodge Reservoir

fig 27: constraints diagram

constraints

fig 28: the start of the culverted section of the River Roddlesworth

fig 29: connection between the mill race and the River Roddlesworth

fig 30: canal towpath along the eastern and southern boundaries

fig 31: steep sides and rock faces along the southern embankment

7.0 development framework

Taking into account the constraints and the conclusions from the analysis of the site, its wider context and landscape setting, a development framework for a masterplan is proposed based on the following principles:

7.1 access and movement

The vehicle access from Livesey Branch Road (1) will be retained in its current position and re-designed as a more generous width avenue (2) creating a setting for development on either side. The existing spur (3) to the CHP plant will also be retained and continue to serve this site as it operates currently and for its future use as an employment site. Landscaping and the tree belts either side of this route as it drops down to the valley floor area will be improved and managed to retain the attractive wooded character of the approach. The route will continue in its current layout as the main vehicular and connect with the Moulden Brow access via the proposed street alongside the River.

From Moulden Brow, the route (4) will run alongside the River Roddlesworth providing access to the River for maintenance and creating an accessible, attractive and pedestrian friendly environment.

The public right of way from Moulden Brow which runs alongside the River Roddlesworth will be retained and extended. A new connection will be made at (5) which will link the site with the sports and recreation facilities, the social club and the school. The existing footpath will be upgraded (6) providing a north-south link across the site to the canal towpath and Stanworth Bridge (7). A new east-west footpath (8) through the site will complete the circuit with opportunities for additional links through to the canal towpath and on to the centre of Feniscowles and Blackburn (9). This proposed new network will improve accessibility for the new development and the existing community, linking together existing facilities and making accessible new ones including significant areas of landscape and community uses proposed as part of the development of the site.

7.2 infrastructure

Significant parts of the infrastructure put in place to serve the construction and operation of the mills will need to be re-engineered in order to make the site acceptable for redevelopment and safe for residential use. The culverted section of the River Roddlesworth (10) will be opened up to improve flows and reduce flood risk, and the embankment along the western section (11) will be upgraded and stabilised.

In order to reduce flood risk, the Sun reservoir will be returned to its natural state as tributaries to the River Roddlesworth (12) and these works will include improvements to the capacity of the mill race and its connection to the River. There will also be stabilisation works to the northern and southern valley sides and the existing retaining structures, which will be re-engineered to be more sympathetic to the setting.

7.3 development platforms

Given the various site conditions and constraints, the proposed development framework creates three main development platforms that are the basis for the illustrative masterplan and character area studies. These are:

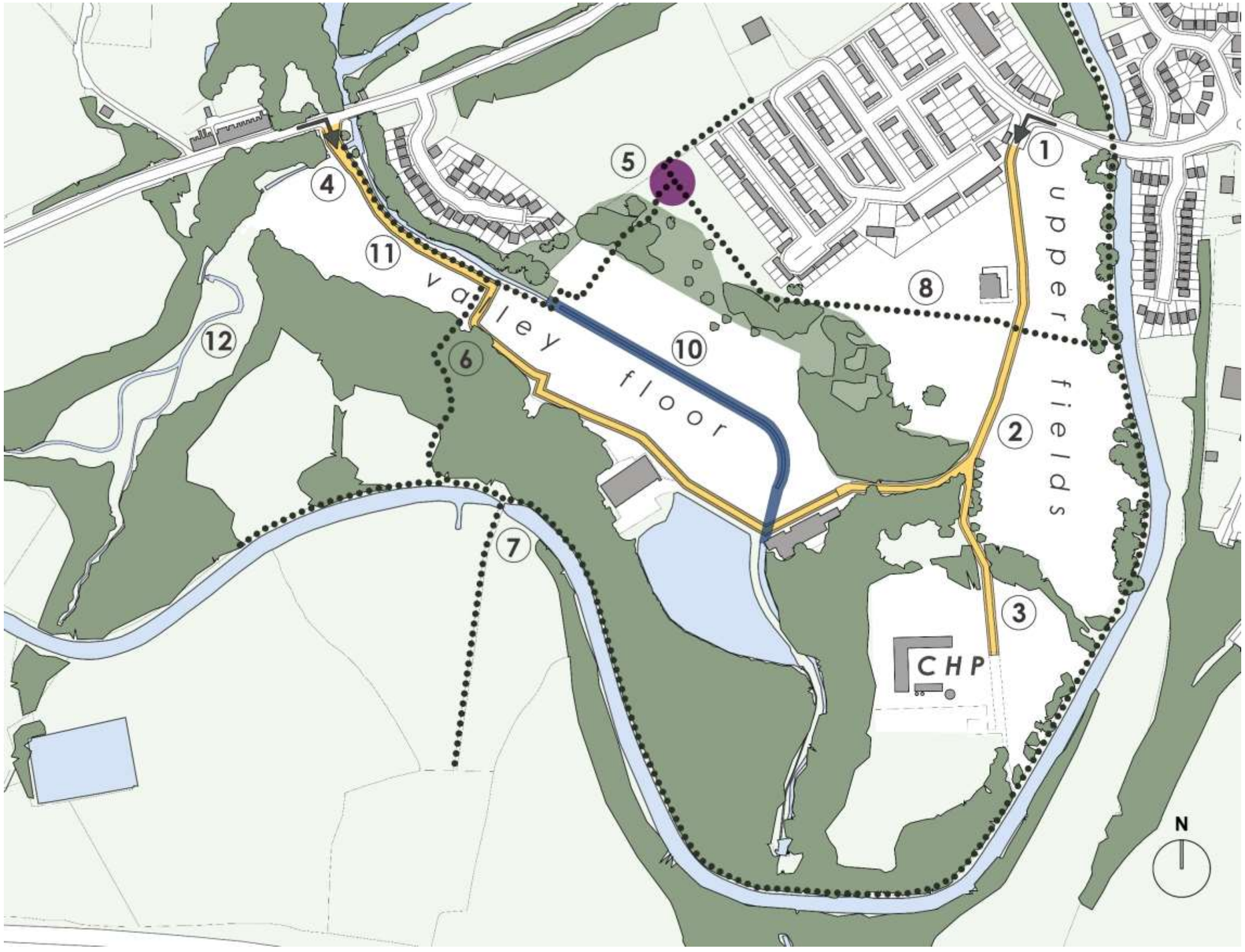
- The upper fields, and
- The valley floor,

  Together having a gross area of 15.8 hectares

- The employment area

  With a gross area of 3.50 hectares

development framework: movement and infrastructure



KEY

1 Livesey Branch Road access
2 Avenue
3 CHP access
4 Moulden Brow access
5 New pedestrian and cycle link
6 Upgraded footpath
7 Canal towpath & Stanford Bridge link
8 East-west pedestrian & cycle link
9 Footpath to Feniscowles and Blackburn
10 Opening up the culverted section of the River Roddlesworth
11 Embankment stabilisation
12 Reinstated tributaries and improved mill race capacity

fig 32: site analysis diagram

7.3 placemaking

The proposed movement framework for the site is further defined by four key placemaking elements that help articulate movement through the site and build on the characteristics of the site to create a setting for development.

At the intersection of the east-west route across the site and the Avenue, the road network opens up to give a space (1) that provides a focus along the Avenue and a means of managing traffic movements to help create a safe and attractive link to the canal and canal towpath. Landscape elements will be used as part of the visual and acoustic screening of the substation, and as a backdrop to the open space and possible local play provision.

The arrival onto the valley floor a space has been created in front of the retained mill office building (2) as a point of arrival with elevated views across the valley floor and across the Lodge reservoir and up river section of the Roddlesworth. The mill office could provide for community or other uses that would benefit from and contribute to this location and setting.

There is also an area around the base of the retained boiler house building (3), which is a landmark at the centre of the valley floor and on key route through the site. This space associated with the boiler house building also has the potential to support employment and community related uses.

A further public realm space is proposed at the intersection of the proposed north-south pedestrian & cycle link across the site and the River Roddlesworth (4), where three routes come together; the continuation of the footpath up the southern valley side to the canal, the proposed riverside walk up to Moulden Brow and the proposed greenway alongside the opened up section of the River.

7.2 landscape

In addition to the above public realm spaces, there are a number of proposed landscape spaces that are also part of the site wide 'placemaking' strategy and that build on the site's existing landscape assets making them more useable and accessible.

The landscape framework has been designed to provide amenity and setting for the development. The underlying principle is to retain the qualities, extent and character of the landscape and make it accessible to the existing and new residents without harming its biodiversity or ecology. This will require some aboricultural works and the clearing of the understorey and embankments in order to create a safe residential environment and an accessible landscape. A more comprehensive description of these works and the management implications are set out in Section 10.

Detailed landscape proposals will be worked up as part of any reserved matters application and guidance for these is provided in the character area studies that follow in section 9.0 and the landscape character studies in section 11.0.

The landscape strategy proposes the creation of a number of key landscape spaces as part of the placemaking strategy and movement network. These landscape 'pockets' respond to the character and opportunities of their particular setting and comments arising from the consultation.

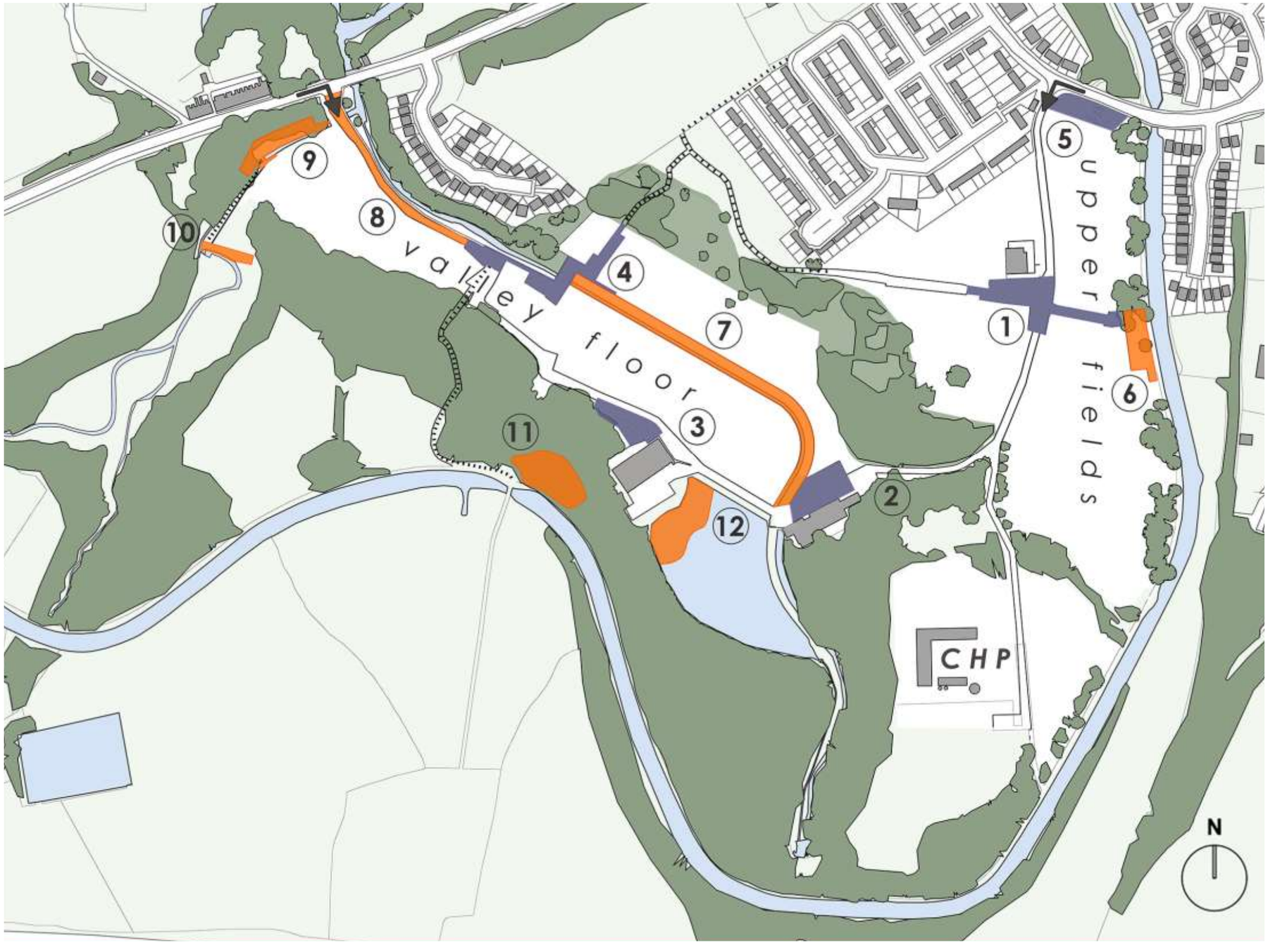
Landscape will be used as part of the built form layout and design to create an active street frontage to Livesey Branch Road (5) and pedestrian link to the northern reaches of the canal beyond the site. A landscape space will also be created around the junction with the canal with the east-west link (6) for connectivity and amenity.

The greenway alongside the opened up section of the River Roddlesworth (7) will have ecological benefits and create a key landscape and movement structure as a focus to the part of the site. Hard and soft landscape will play an important part on the design of the embankment works alongside the River Roddlesworth and the creation of the riverside walk (8) up to Moulden Brow.

At the northern end of the site works will be carried out to Moulden Bank to create a landscape amenity space (9) and make the mil race accessible as a heritage and landscape feature.

In addition, there will be a series of connected pockets around the site including the head of the mill race (10), a woodland pocket by the canal at Stamworth Bridge (11), and a vantage point overlooking Lodge reservoir (12).

development framework: placemaking and landscape



KEY

1 East-West link and avenue intersection
2 Entrance to valley floor
3 Boiler house setting
4 River intersection
5 Livesey Branch road frontage and canal link
6 East-West link to canal
7 Greenway alongside the River Roddelsworth
8 Riverside walk
9 Moulden Bank
10 Head of the mill race
11 Stanworth bridge pocket
12 Lodge reservoir point

Place making spaces

Key landscape spaces

footpaths

fig 33: place making and landscape diagram

8.0 illustrative masterplan + design

The illustrative masterplan takes the development framework a stage further demonstrating how the design principles could be applied and translated into detailed proposals for the development parcels, and provide a the basis for a design code to guide the subsequent detailed design proposals and reserved matters applications.

There are five character areas proposed by the illustrative masterplan each of which is subject to a separate study in the following sections. The character area studies include a more detailed layout showing an illustrative building and street layout, a thumbnail sketch plan zoomed in on a key area, a thumbnail sketch section showing the relationship to the context such as boundary features and topography, and reference images to convey a sense of the place, scale, character and materials.

Each study is summarised as a set of development principles which will provide the basis for a design code to guide the detailed development proposals. The design code will be formalised following approval. A similar exercise for the landscape elements of the scheme is set out in sections 9.0.

8.1 Character Area 1: The Meadows

Description: The Meadows is located on the north eastern part of the site and occupies the majority of the upper fields area. Its defining features are its relatively flat topography and relationship to the existing built edges along Livesey Branch Road and princess Gardens. It also includes the main access and site entrance.

- *Current condition:* This area is currently greenfield and undeveloped apart from the substation and access road.
- *Key constraints:* The relationship to the existing built edges and the impacts of the substation and CHP plant.
- *Proposed uses:* Predominantly residential development with the potential for some small scale commercial, retail or community uses.

8.2 Character Area 2: Canalside

Description: Canalside is located on the eastern part of the site adjacent to the Meadows. Its defining features are its relatively flat topography and relationship to the canal.

- *Current condition:* This area is currently greenfield and undeveloped.
- *Key constraints:* The relationship to the canal edge and towpath and the impact of the CHP plant.
- *Proposed uses:* Residential development.

8.3 Character Area 3: Mill Valley

Description: Mill Valley is located on the eastern part of the valley floor. Its defining features are the valley sides and landscape, Lodge reservoir and the retained buildings.

- *Current condition:* The majority of the buildings have been demolished and remediation works are underway.
- *Key constraints:* The culverted section of the River Roddlesworth, the valley sides and retaining structures.
- *Proposed uses:* Predominantly residential development with the potential for some small scale employment and community uses.

8.4 Character Area 4: Woods Valley

Description: Woodland Valley is located on the western part of the valley floor. Its defining features are the valley sides and landscape, the mill race and River Roddlesworth.

- *Current condition:* All buildings have been demolished and remediation works are underway.
- *Key constraints:* The Star reservoir, mill race and River Roddlesworth embankment.
- *Proposed uses:* Residential

8.5 Character Area 5: Employment

Description: The Employment area is located on the southern part of the site. Its defining features are the existing landscape enclosure and topography.

- *Current condition:* The CHP plant is in operation.
- *Key constraints:* CHP and employment uses in proximity to residential development.
- *Proposed uses:* Employment

illustrative masterplan + design

KEY

Character areas

Area 1: The Meadows

Area 2: Canalside

Area 3: Mill Valley

Area 4: Woodland Valley

Area 5: Employment

Residential

Employment

Public open space

fig 34: illustrative masterplan

8.1 the meadows

8.1 the meadows

The Meadows character area along with the Canalside area form the largest developable parcel within the scheme. Although predominantly greenfield, this area will have abnormals to deal with including the retention of the substation and providing infrastructure connections to the other areas of the site.

As the main entrance to the whole site, this area will need to establish a presence and set the quality of the overall scheme. The key public realm element which will help achieve this is the Avenue which has two distinct aspects to reinforce the scheme's identity and the connections across the site. The western side of the Avenue will be more formal including; tree planting, houses set out to a consistent building line, and frontages with shared boundary and landscape character. The eastern side of the Avenue will be more informal with broader verges designed to accommodate incidental parking and landscape that could include SUDs planting and finishes. This more informal layout provides the opportunity for marker buildings and public realm spaces to articulate the route along the Avenue, providing traffic calming and creating a pedestrian and cycle friendly environment.

East-west connections across the Meadows will play an important part in delivering the wider connectivity that is a key element of the overall development framework as described in section 7.0. The main east – west link provides a connection through the site between the recreation ground, social club and school and the canal towpath which will be attractive and safe for cyclists and pedestrians.

At its intersection with the Avenue, hard and soft landscape finishes will be used to articulate this as a space that prioritises cyclists and pedestrians and to use this as part of the wider traffic calming strategy. Secondary east west links will also be created between the Avenue and canal towpath as part of the more informal character of the eastern side of the Avenue and the Canalside area.

Access and road layouts will be designed around a series of Lanes to reinforce the pedestrian friendly environment with secondary through routes limited to pedestrian and cycle links and parking layouts in small pockets integrated into the layout.

Public open space for play, setting and amenity will be provided to take advantage of the existing landscape features and the views, and will include the junction around the substation between the Avenue and the main east- west link.

A footpath will also be provided from the western end of the east-west link connecting down onto the valley floor and to the existing public footpath to the canal and Stanworth Bridge.

Tree planting on the western side of the Avenue will be a continuation of the embankment tree belts extending the character of the treed approach to the valley floor and providing a means for controlling and screening the access to the CHP and employment area. Landscape will also be used as a buffer between the southern edge of this residential area and the employment uses in Character Area 5.

the meadows

KEY

a) Livesey Branch Road entrance
b) Avenue
c) Sub-station
d) Landscape screen to sub-station
e) Public open space
f) East-west pedestrian/cycle link
g) Lanes to canalside
h) Informal footpaths
i) Public open space
j) Landscape screen to existing gardens
k) Landscape buffer and acoustic screen
l) Access road to valley
m) Woodland

footpaths

illustrative study area

fig 35: the meadows illustrative character area plan

fig 37: illustrative section study

KEY

A Avenue
B Vegetated verges and SUDs
C Pedestrian and cycle paths
D Garden along Lane
E Back garden
F Landscape boundary to Princess Gardens

fig 36: illustrative character sketch of a Lane

the meadows

fig 38: illustrative building typologies

BUILDING TYPOLOGIES

the meadows

Based on the analysis and this design approach, the following principles are proposed as the basis for the development of detailed design proposals for this character area:

built form: layout, massing, scale and character

i. Building scale and massing will be used to create a positive frontage and sense of arrival at the Livesey Branch Road entrance
ii. Building layouts will be designed to create active street frontages to the Avenue
iii. Building layout, scale and massing will be used to create landmarks along the Avenue as part of the placemaking and a traffic calming measures
iv. Building layouts will be offset from the existing residential edge to maintain privacy and amenity to the existing back gardens
v. Building layouts will be designed to provide surveillance and oversight of public routes, footpaths and cycleways
vi. Building layouts will be designed to accommodate parking for residents and visitors on plot and in small pockets so as not to compromise the character of the setting or the pedestrian environment
vii. An appropriate offset will be provided between the substation and residential uses which will include landscape screening that is sympathetic to the character of the setting
viii. A landscaped treatment that is sympathetic to the character of the setting and achieves the required acoustic and visual separation will be used to create a clearly defined boundary between the residential development and the CHP/employment area
ix. Building layouts will be designed to support a passive design approach and maximise opportunities for beneficial solar orientation

connectivity

i. The Avenue will be designed to provide a pedestrian and cycle friendly character and environment
ii. An attractive and safe east-west pedestrian and cycle connection will be provided linking the recreation ground, school and social club to the Avenue and canal towpath
iii. A public realm space will be provided at the junction between with the east-west route and will be designed to provide traffic calming and create a safe crossing point
iv. Smaller scale east west links will be provided to the east of the Avenue linking through to the canal and towpath
v. Road layouts will be designed to control traffic movements, manage parking and create an attractive pedestrian environment
vi. Additional pedestrian and cycle links will be considered to improve local accessibility
vii. A footpath will be provided connecting the east-west link to the valley floor and to the existing public footpath to the canal and Stanford Bridge
viii. The access to the CHP and employment area will be designed to manage impacts on residential traffic

landscape, open space and setting

i. The Livesey Branch Road entrance and frontage will be designed around hard and soft landscape to create a character that is sympathetic to the setting of the canal bridge and the link to the canal towpath
ii. The Avenue will be designed with a formal and informal character to create a sense of place, articulate movement through the site, and to contribute to traffic calming and management
iii. Suds will be incorporated into the hard and soft landscape design
iv. The treed embankments will be maintained and managed to continue the landscape character of the link to the valley floor
v. Public open space and play provision will be incorporated into the development layout as part of the movement network and connection to the canal
vi. Hard and soft landscape will be incorporated into the development layout to manage the visual impacts of parking and provide traffic calming
vii. Landscape elements including bunds, trees and planting will be used to provide visual and acoustic screening between the substation, the CHP and employment area, and the residential uses

8.2 canalside

8.2 canalside

The Canalside character area forms the remaining part of the Greenfield area of the site and sits on the north eastern part of the site alongside the canal. The integration of this area with the Meadows area will be important in achieving east west connectivity across the site and access to the canal and canal towpath.

As with the Meadows area, the Canalside area has a frontage to the Livesey Branch Road and will need to contribute to the character of the main entrance and establishing a presence for the overall scheme. This frontage also offers the opportunity for making the connection to the canal towpath more accessible by providing a pedestrian/cycle link similar to the one on the northern side of the Livesey Branch Road.

The Canalside area has an interface with a key public realm element where the east west link from the school, recreation ground and social club crosses the Avenue. The extension of this route to the canal towpath will provide the principle link across the site, and the landscape treatment of this in terms of hard and soft finishes will help create a pedestrian friendly environment and establish a character that will extend along the canal frontage.

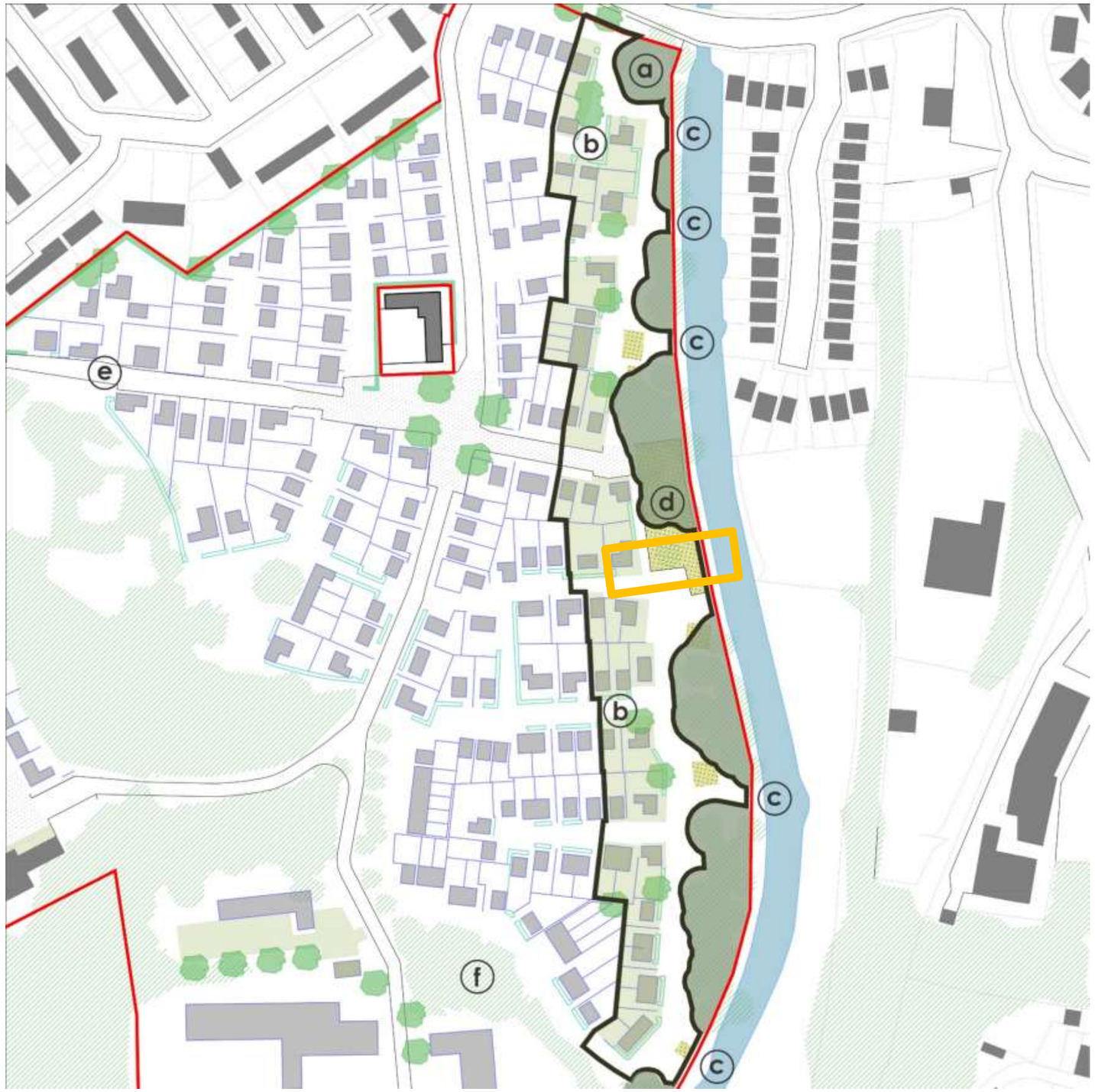
Secondary east west links to the canal frontage and towpath will break up the scale of this character area giving it a finer grain and more informal layout than the western side of the Avenue.

The existing tree belt along the canal edge will be managed to retain the better quality specimens and groups, and to open up the canal edge making it more accessible. The management plan will secure the function of this edge as an ecological corridor whilst allowing it to be used to create an appropriate setting for public open space, pedestrian and vehicle movements, parking and development.

This setting will provide the opportunity for housing layouts that will create interest and value. In terms of urban design principles, the housing layouts in this area will need to provide oversight of the routes and links to the canal, define open spaces along the canal edge that respect the retained tree belt, manage traffic movements and parking, and establish a positive relationship with houses and open spaces on the opposite side of the canal.

In terms of how this translates into building design, the dwellings will need to create a positive edge to the canal with active frontages and consideration will need to be given to the scale and massing with the opportunity for architectural elements including balconies, larger scale openings, terraces and decks in response to the canal setting.

8.2 canalside



KEY

(a) Tree belt to Livesey Branch Road
(b) Lanes
(c) Pedestrian/cycle links to canal towpath
(d) Public open space alongside canal
(e) Pedestrian/cycle link to recreation and school
(f) Landscape buffer and acoustic screen

Canal side tree belt

Footpaths

illustrative study area

fig 39: canalside illustrative character area plan

KEY

A Balconies with views towards tree belt & canal
B House forecourts
C Informal play spaces
D Tree belt
E Canal towpath

fig 40: illustrative section study

canalside

fig 41: illustrative character sketch of Canalside

fig 42: illustrative building typologies

Based on the analysis and this design approach, the following principles are proposed as the basis for the development of detailed design proposals for this character area:

built form: layout, massing, scale and character

i. Building scale and massing will be used to contribute to the Livesey Branch Road entrance and frontage
ii. Building layouts will be designed to create an accessible, attractive and safe link to the canal towpath and pedestrian gateway to the scheme
iii. Building layout, scale and massing will be used to create landmarks and vistas from the Avenue to reinforce east west links across the site
iv. Building layouts will be designed as part of a wider site strategy for placemaking and traffic calming
v. Building layouts will be designed to provide surveillance and oversight of public routes, footpaths and cycleways with active street frontages and clear delineation of the public realm
vi. Building layouts will be designed to accommodate parking for residents and visitors on plot and in small pockets so as not to compromise the character of the setting or the pedestrian environment
vii. An appropriate offset will be provided between buildings and the retained elements of the tree belt to allow for management and ensure the long term health of the trees
viii. Building layouts, massing and scale will be used to create a positive edge to the canal with active frontages and architectural detailing appropriate to the canal setting
ix. Building layouts will be designed to support a passive design approach and maximise opportunities for beneficial solar orientation

connectivity

i. The canal edge will be designed to provide a pedestrian and cycle friendly character and environment
ii. An attractive and safe primary east-west pedestrian and cycle connection will be provided linking to the Avenue, recreation ground, school and social club
iii. A public realm space will be provided where the primary east-west connection meets the canal edge as an amenity space and as a key space within the site wide movement framework
iv. Smaller scale east west links will be provided linking through to the canal and towpath
v. Road layouts will be designed to control traffic movements, manage parking and create an attractive pedestrian environment along the canal edge
vi. Vehicle access and movements along the canal edge will be planned to serve the development effectively whilst minimising traffic movements along this edge

landscape, open space and setting

i. The Livesey Branch Road frontage will be designed around hard and soft landscape to create a character that is sympathetic to the setting of the canal bridge and the link to the canal towpath
ii. Hard and soft landscape treatments that are sympathetic to the character of the canal edge setting and the retained elements of the tree belt will be used
iii. Landscape elements, including lighting will be designed so as not to compromise the function of this edge as an ecological corridor
iv. The canal edge will be designed with an informal character to create a sense of place, and with clearly defined public and private delineation to contribute to a sense of ownership and the security of this space
v. Suds will be incorporated into the hard and soft landscape design
vi. The tree belt will be maintained and managed to secure the quality and ecological function of this area
vii. Public open space and play provision will be incorporated into the development layout and to benefit from the canal edge setting
viii. Hard and soft landscape will be incorporated into the development layout to manage the visual impacts of parking and provide traffic calming
ix. Landscape elements including bunds, trees and planting will be used to provide visual and acoustic screening between the CHP and employment area, and the residential uses

8.3 mill valley

8.3 mill valley

There is a distinct separation between the character areas that sit in the valley floor and the upper Greenfield character areas. As well as being at a lower level, the valley floor is enclosed by the tree belts along the valley sides making it a more secluded and enclosed environment. The main route onto the valley floor will be via the Avenue following the route of the existing access road, sweeping down between the treed embankments and entering in front of the retained mill office building. The existing tree belts to the embankments along this approach will be retained and managed and there will be no development along the embankments reinforcing the distinction between the upper and lower character areas.

The layout creates a distinct arrival point into the valley floor with the mill office building providing a backdrop and set against a view across the Star reservoir and the River Roddlesworth entering the site alongside. This arrival point is part of a wider placemaking and public realm framework that is proposed as a way of organising the valley floor area and as a structure for the character areas.

The design approach to the valley floor is led by the re-engineering works which will return the waterways, including the River Roddlesworth and the Sun reservoir to something nearer their natural state before they were industrialised to serve the paper mills. Opening up the culverted section of the River Roddlesworth which runs through the centre of this character area is a key part of this strategy. Works will be required for flood risk management purposes, and although there may be cheaper options, the approach proposed offers additional ecological benefits and placemaking opportunities. Re-establishing it as part of the open river system will restore its function as an ecological corridor for fish, amphibians and aquatic flora.
In design terms it will reflect the proposals for the Avenue, with a hard embanked side and a softer gently sloping side, which would be south facing and vegetated. This is illustrated in the following illustrative sketches.

To serve this area the road layout has two branches; the lower branch continues along the southern edge, whilst a higher branch serves the upper level platform of the old mill footprint and runs along the northern side of the opened up section of the river creating a new river frontage and access for maintenance.

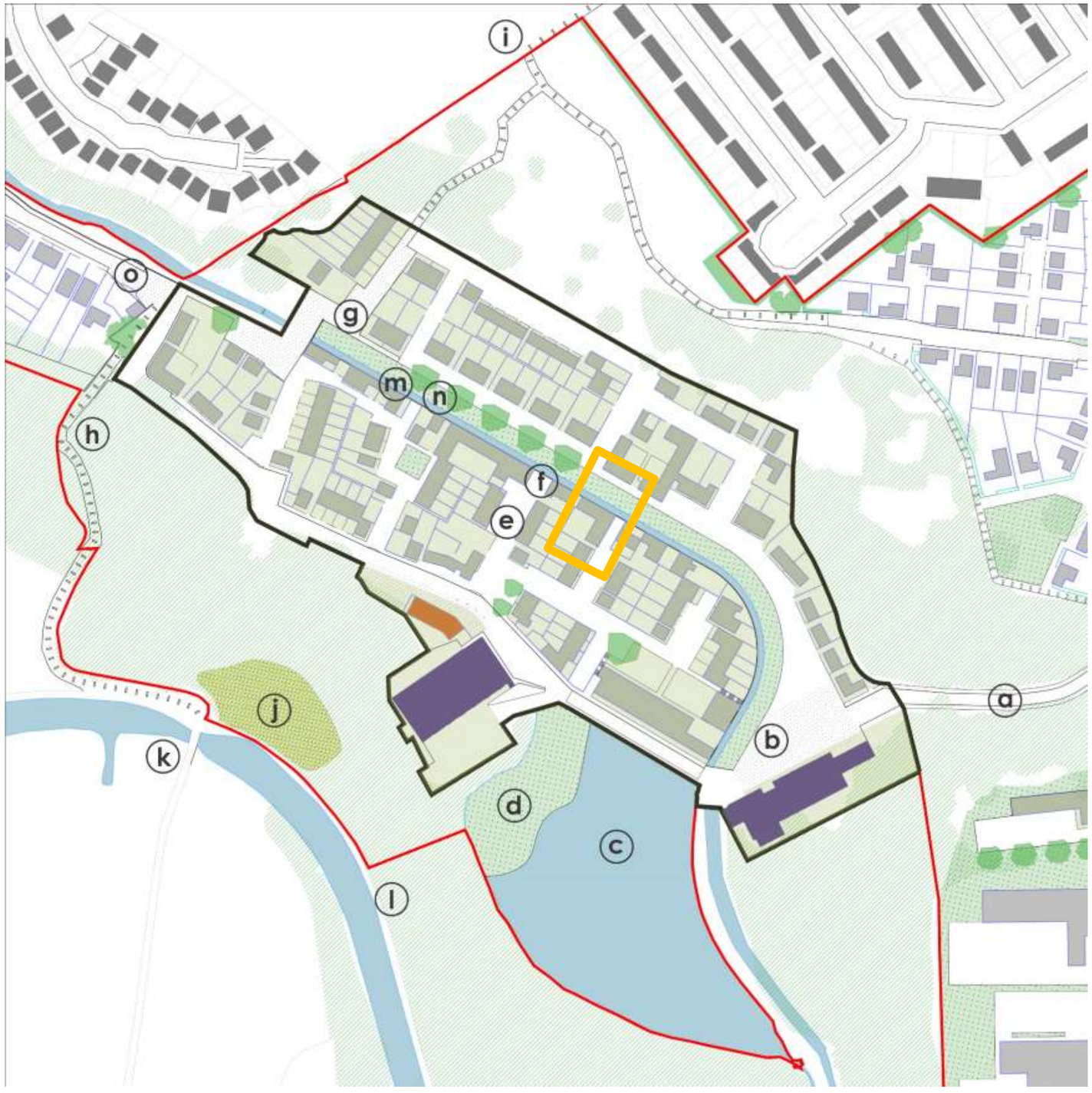
The existing tree belts, open spaces and landscape features outside of the development footprint will be managed and integrated into the design as public open space and landscape amenity.

To help make them accessible to the wider community a footpath link will be provided from the western end of the east-west pedestrian/cycle route that crosses the Meadow area as part of a wider loop around the site that takes in the canal towpath and bridges.

Two buildings have been retained; the mill office and boiler house which will be integrated into the layout as heritage features which will contribute to the character of the setting. The locations and layout of these buildings makes them suitable for community and non-residential uses that might include crèche, café, community hall and small scale employment space.

The setting and structure for this character area provides an opportunity for buildings of different types and scale in key locations on the site. The larger scale setting of the reservoir, the boiler house and the valley embankments would accommodate building massing of four storeys or so, and larger scale built form such as a care home.

mill valley



KEY

(a) Approach through woodland
(b) Arrival space
(c) Lodge reservoir
(d) Open space for Fishing Club
(e) Streets opening onto the Roddlesworth
(f) Vantage spaces overlooking Roddlesworth
(g) North-south footpath link
(h) Footpath to Stanworth Bridge & Towpath
(i) Footpath to Sports & Social club
(j) Woodland public open space
(k) Stanworth bridge
(l) Canal towpath
(m) De-culveted River Roddlesworth
(n) Vegetated river bank
(o) Pedestrian/cycle link to Moulden Brow

potential community use

potential retail use

footpaths

illustrative study area

fig 43: mill valley illustrative character area plan

fig 44: illustrative section study

KEY

A Public open space
B Vegetated river bank
C Houses overlooking river
D Back gardens
E Tree belt to Tintagel Close

fig 45: illustrative character sketch of Mill Valley

fig 46: illustrative building typologies

Based on the analysis and this design approach, the following principles are proposed as the basis for the development of detailed design proposals for this character area:

built form: layout, massing, scale and character

i. Building layout, scale and massing will be used to create landmarks and vistas for the arrival into this area, the opened up section of the river, the reservoir and at the intersection with the north south public footpath route across the site
ii. Building scale and massing will be used in key locations on the site to create a public realm that is in keeping with the scale of the setting and the retained buildings
iii. Building layouts will be designed to create an accessible, attractive and safe pedestrian and cycle route alongside the opened up section of the river
iv. Building layouts will be designed as part of a wider site strategy for placemaking and traffic calming
v. Building layouts will be designed to provide surveillance and oversight of public routes, footpaths and cycleways with active street frontages and clear delineation of the public realm
vi. Building layouts will be designed to accommodate parking for residents and visitors on plot and in small pockets so as not to compromise the character of the setting or the pedestrian environment
vii. An appropriate offset will be provided between buildings and the retained elements of the embankment tree belts to allow for management and ensure the long term health of the trees
viii. Building layouts, massing and scale will be used to create a positive edge to the opened up section of the river with active frontages and architectural detailing appropriate to the river setting
ix. Building layouts will be designed to support a passive design approach and maximise opportunities for beneficial solar orientation

connectivity

i. The opened up section of the river will be designed to provide a pedestrian and cycle friendly character and environment
ii. Vehicle access and movements alongside the opened up section of the river will be planned to serve the development effectively whilst minimising traffic movements along this edge
iii. Road layouts within the area generally will be designed to control traffic movements, manage parking and create an attractive pedestrian environment
iv. An attractive and safe north - south pedestrian connection will be provided linking to the western end of the east-west route through the Meadows area to the canal towpath via the existing footpath on the southern embankment
v. Smaller scale footpaths will be provided within the existing woodland areas for amenity and leisure
vi. Movement within this character area will be defined by four key public realm spaces: at the eastern entrance in front of the retained mill offices, around the retained boiler house and reservoir, along the opened up section of the river and at the intersection between the footpath and river

landscape, open space and setting

i. The tree belts along the embankments either side of the approach road will be maintained and managed and any new landscape finishes including footpaths, lighting and signage and soft landscaping will be designed to create a character that is sympathetic to this setting
ii. Hard and soft landscape treatments that are sympathetic to the character of the opened up river section and the wooded embankment setting will be used
iii. Landscape elements, including lighting will be designed so as not to compromise the function of the opened up river section as an ecological corridor
iv. The opened up river section will be designed with an informal street character to create a sense of place, and with clearly defined public and private delineation to contribute to a sense of ownership and the security of this space
v. Suds will be incorporated into the hard and soft landscape design
vi. The tree belts along the embankments will be maintained and managed to secure the quality and ecological function of these areas
vii. Public open space and play provision will be incorporated into the development layout and as an integral part of the woodland embankments, proposed footpaths and reservoir setting
viii. Hard and soft landscape will be incorporated into the development layout to manage the visual impacts of parking and provide traffic calming
ix. Soft engineering solutions will be used where existing retaining structures need to be replaced to provide a more natural landscape edge to the development and boundary to private residential open spaces

8.4 woods valley

8.4 woods valley

The Woodland valley character area forms the remaining part of the Brownfield area of the site and sits on the western part of the valley floor alongside the Mill valley character area. The integration of this area with the Mill valley is not so critical in terms of design and layout, although there is a need to create a link road through this area to Moulden Brow.

As with the Mill valley area, the Woodland valley area includes a section of the River Roddlesworth which is an open river course downriver of the Mill valley area. In this area the River runs along the site boundary and the proposal is for the access road to be routed alongside the River using the existing entrance from Moulden Brow. This will meet the need for providing access to the River for maintenance and an opportunity for placemaking and the creation of an attractive setting for development which will overlook the existing route of the public right of way.

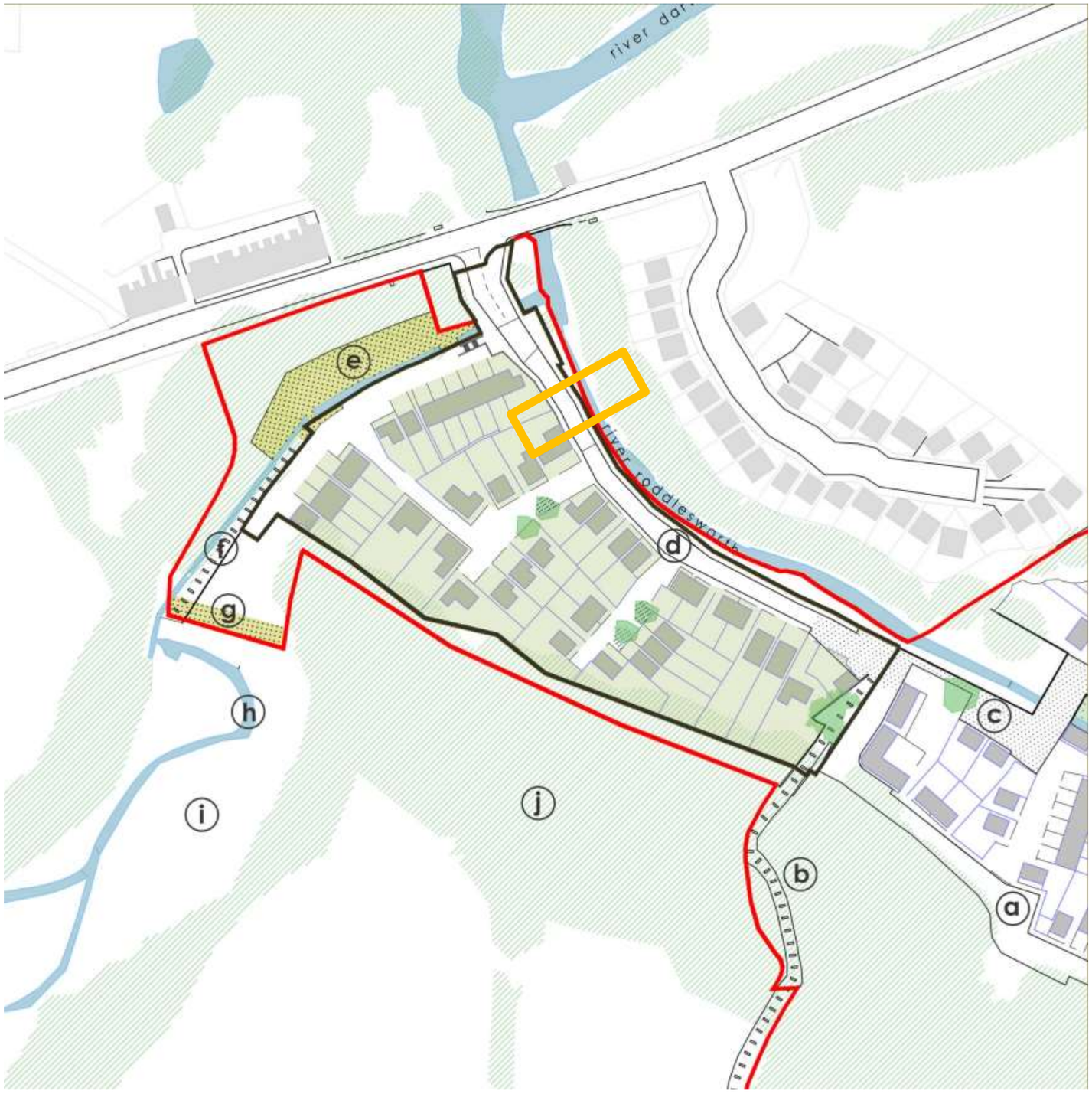
The existing River embankment, which is in a poor condition, will need to stabilised which provides the opportunity for restoring the river to increase capacity and flows, and to create a more attractive riverside walk. The walk will continue as a public right of way to link up with the Mill valley footpaths and the wider footpath and cycle network which is proposed.
Along the southern boundary the existing tree belt, embankments and rock faces will be managed to retain the better quality specimens and groups, and to stabilise any embankment faces making them suitable for development. Buildings will need to be offset from this edge making it more likely to be planned for private open space and gardens.

Draining the Sun reservoir and returning it to its natural state as tributaries to the River Roddlesworth will create an ecological basin within the reservoir footprint. The mill race will be retained and upgraded as an attractive landscape and heritage feature which will be part of the proposed public open space along the northern boundary. A new connection will be made between the mill race and the River Roddlesworth beneath the entrance off Moulden Brow.

This setting will provide the opportunity for creating interest and value. In terms of urban design principles, the housing layouts in this area will need to provide definition to and oversight of the route along the River edge. They will also need to create a satisfactory relationship with the southern edge and the retained trees. Internal road layouts, traffic movements and parking should be designed to minimise impacts on the River walkway and maintain a pedestrian friendly environment.

In terms of how this translates into building design, the dwellings will need to create a positive edge to the River with active frontages and consideration will need to be given to the scale and massing with the opportunity for architectural elements including balconies, larger scale openings, terraces and decks in response to the River setting.

woods valley



KEY

(a) Access from Livesey Branch Road
(b) Footpath to canal towpath & Stanworth Bridge
(c) Footpath link to sports & social club
(d) Riverside access lane
(e) Public open space beside mill race
(f) Footpath to re-formed Roddlesworth tributary
(g) Public open space at head of mill race
(h) Tributary
(i) Ecology basin
(j) Wooded embankment

footpaths

illustrative study area

fig 47: mill valley illustrative character area plan

KEY

A Active frontage
B Side door and parking
C Back gardens
D Riverside walk
E Embankment below Tintagel Close
F Moulden Bank

fig 48: illustrative section study

woods valley

fig 49: illustrative character sketch of woodland valley

BUILDING TYPOLOGIES

fig 50: illustrative building typologies

Based on the analysis and this design approach, the following principles are proposed as the basis for the development of detailed design proposals for this character area:

built form: layout, massing, scale and character

i. Building scale and massing will be used to create a sense of arrival at the Moulden Brow Road entrance
ii. Building layouts will be designed to create an accessible pedestrian gateway and an attractive, safe route alongside the River Roddlesworth
iii. Building layout, scale and massing will be used to create landmarks and vistas along the River Roddlesworth route and to reinforce links to the Mill valley footpaths
iv. Building layouts will be designed as part of a wider site strategy for placemaking and traffic calming
v. Building layouts will be designed to provide surveillance and oversight of public routes, footpaths and cycleways with active street frontages and clear delineation of the public realm
vi. Building layouts will be designed to accommodate parking for residents and visitors on plot and in small pockets so as not to compromise the character of the setting or the pedestrian environment
vii. An appropriate offset will be provided between buildings, the embankments and the retained elements of the tree belt to allow for residential amenity, management and to ensure the long term health of the trees
viii. Building layouts, massing and scale will be used to create a positive edge to the River with active frontages and architectural detailing appropriate to the River setting
ix. Building layouts will be designed to support a passive design approach and maximise opportunities for beneficial solar orientation

connectivity

i. The route alongside the River Roddlesworth will be designed to provide a pedestrian and cycle friendly character and environment
ii. The route alongside the River Roddlesworth will have a clearly defined link to the north - south pedestrian connection across the Mill valley area
iii. Road layouts will be designed to control traffic movements, manage parking and create an attractive pedestrian environment along the canal edge
iv. Vehicle access and movements along the River edge will be planned to serve the development effectively whilst minimising traffic and parking impacts along this edge

landscape, open space and setting

i. The Moulden Brow entrance will be designed around hard and soft landscape to create an identifiable entrance that is sympathetic to the setting
ii. Hard and soft landscape treatments that are sympathetic to the character of the River edge setting will be used
iii. Landscape elements, including lighting will be designed so as not to compromise the function of the River as an ecological corridor
iv. The northern embankment alongside Moulden Brow will be renovated and made accessible as public open space with play provision
v. The Mill race will be integrated into the design of the public open space
vi. Suds will be incorporated into the hard and soft landscape design
vii. The southern embankment and tree belt will be maintained and managed to secure the quality and ecological function of this area
viii. Hard and soft landscape will be incorporated into the development layout to manage the visual impacts of parking and provide traffic calming

8.5 employment

8.5 employment

It is proposed to make employment provision across the whole development as set out under the illustrative masterplan in section 8.0. This section considers only the main employment provision which will be made in this character area. This area comprises the existing CHP plant, its operational areas and other hardstanding areas which are not in use giving an overall net area of 2.3 hectares available for employment uses.

The CHP operates under a lease which expires in 2032 and may remain operational up to this date. For the purposes of this planning application, the employment capacity of the whole of this area has been considered based on the land occupied by the CHP plant becoming available.

A phased development is possible with the CHP remaining in operation. Illustrative masterplanning work suggests that around 8,200 m2 GEFA of employment space could be delivered in the employment area, out of a total of 10,800 m2 GEFA that would be available across the whole site without adding the CHP GEFA.

Employment uses on the site have been considered in terms of demand and viability, and have been discussed with both the local authority and the community through the consultation event. A common consensus emerged that the employment should concentrate on providing for B1c uses for which it is believed there may be a (local) demand.

B1c uses are by definition "for any industrial process which can be carried out in any residential area without causing detriment to the amenity of the area." In practice this may include a wide range of businesses from simple manufacturing through to higher tech enterprises. The qualification of not "causing detriment to the amenity of the area…" provides a safeguard against unsuitable uses and the traffic generation associated with B1a is generally lower than B1a office uses.

On this particular site there is an opportunity to create a niche scheme that makes the most of the benefits of the setting and motorway access and could offer a flexible range of premises for incubators, start-ups and established businesses looking to relocate or expand.

The secluded landscape setting and separate access off the Avenue make this site a discreet parcel that will allow it come forward through its own programme and with minimal impact on the residential development. Although it is a separate landscape pocket, the site does include a Greenfield area next to the canal which will have to be sensitive to this setting and the enhancements to footpaths and accessibility proposed, and has a boundary with the Canalside and Meadows character areas which will need to take account of their residential amenity.

employment

KEY

(a) Access road
(b) Woodland
(c) B1c & B1a workspace
(d) Residential development
(e) Landscape buffer and acoustic screen
(f) Canal towpath
(g) Slope

fig 51: employment illustrative character area plan

fig 52: illustrative building typologies

employment

Based on the analysis and this design approach, the following principles are proposed as the basis for the development of detailed design proposals for this character area:

built form: layout, massing, scale and character

i. Building layout scale and massing will be designed to minimise visual impacts on the adjacent residential areas
ii. Building layout, scale, massing and materials will be designed to respect the setting of the canal and canal towpath
iii. Building layout will be designed to maximise the benefits of the landscape setting, the canal setting and access to the canal towpath

connectivity

i. The access road to the area will be designed as a secondary spur and include landscape screening to reduce its presence
ii. Parking and traffic movements within the area will be laid out to minimise impacts on residential amenity and the pedestrian environment along the canal edge
iii. Pedestrian and cycle links will be provided to the canal towpath

landscape, open space and setting

i. Landscape will be used as the predominant element of any visual or acoustic screen between the employment and residential areas
ii. The existing tree belt along the canal boundary will be retained and managed
iii. Lighting, and hard and soft landscape finishes to areas adjacent to the canal boundary will sympathetic to the character of the canal setting and not compromise the function of the canal as an ecological corridor

9.0 landscape character + design

9.1 introduction

The Landscape design is an integral part of the development scheme to assimilate a high quality external environment which incorporates green corridors, pedestrian links and public open spaces. The Masterplan aims to contribute to the character of the area and remain sensitive to local designations, ecological opportunities, existing site features, topography of the land, street scenes, planting, public open spaces, play and leisure. These will be achieved through providing well considered spaces which frame views, provide interest, act as gateway markers and focal points and create useable and simple spaces which are low maintenance.

fig 53: footpath and cycleway

9.2 landscape principles and design concept

The landscape principals aim to ensure sufficient space is dedicated within the Masterplan to develop a green network allowing for the incorporation of suitable hard and soft landscaping to the residential development along with the creation of a series of public open spaces within appropriate locations and opportune spaces. The primary ones been along the Leeds-Liverpool canal side setting and de-culverted River Roddlesworth which both builds upon the sites existing landscape character and also developing a new distinct character to accommodate the various functions associated with a residential community.

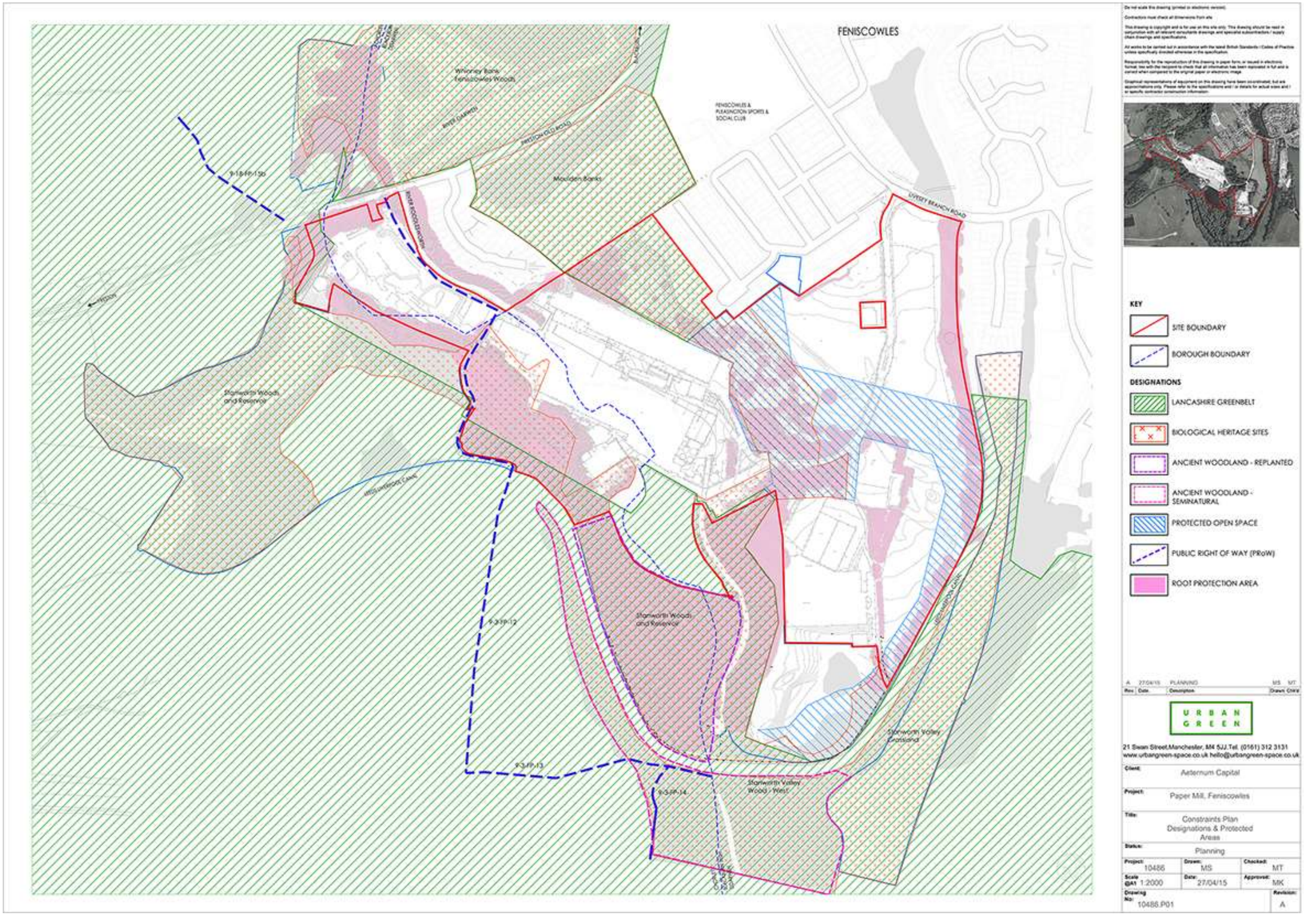
The landscape approach has multiply objectives, the primary aim being to improve the environment for people through creating an attractive place to live and work. Additionally integrating and enhancing biodiversity, sustainable drainage and habitat creation.

The Masterplan therefore consists of a number of key spaces which form and contribute to the Landscape these include; Improved ecology and habitats within the Biological Heritage Site, de-culverting of the River Roddlesworth, implementation of Leeds-Liverpool Canal-side public open spaces, connective green corridors, restoration of former features of historic reference where appropriate, main roads and streets, private gardens and drives.

The arrangement of these proposed open spaces, green corridors and landscaping is shown in the Framework diagram and these spaces have been informed by the following criteria:

- Working with the natural topography, landform, drainage
- Understanding the site constraints and opportunities
- Incorporating Masterplan objectives
- Making key connections to adjacent communities and designations including
- existing public open space, play and leisure facilities, canal and residential areas
- Observing the local authority objectives for provision of space for recreation which is both functional and accessible

landscape character + design



landscape character + design

9.3 landscape strategy

The Landscape Strategy has been developed to enhance existing features and character and minimise adverse landscape and visual effects through the delivery of a high quality landscape concept.

The vision for the site is to create an approach which is welcoming and responds positively to the local landscape context and character. To enhance ecological value and green networks through the creation of new public open spaces. Create legible way marking through easy access and egress for both pedestrian and vehicle movement. Promote views through framing and orientation of layout to enhance site features and ensure holistically that the development is sensitive to the sites wider setting and landscape backdrop through selective tree removal and soft boundary treatments that merge into the existing.

- Spine roads into and around the development will provide strong linkages and this will be further enhanced with tree avenue planting.
- Private drives to be treated at a pedestrian scale with appropriate surfacing, street trees and ornamental planting to help define garden plots and boundaries.
- Creation of Public Open Spaces provide amenity use for residents within the development and will enrich wildlife friendly planting of the locality.
- Canal-side enhancements will improve linkages through the site and connect green spaces and link green infrastructure and habitats.
- Sustainable drainage to provide opportunities for habitat creation to benefit the overall ecology of the site
- Vegetation used to frame views

entrance, approach and arrival

The main entrances from Livesey Branch Road and Preston Old Road will be detailed to create a gateway and threshold to slow traffic and create a more pedestrian friendly environment leading into the main roads of the housing estate. Avenue Tree planting will encouraged to the main spine roads to enclose and create green links through the development. Residential routes will be treated appropriate to their location. Streets off these main spine roads are to be designed to consider pedestrians, cyclists and vehicle users. Low speed limits are further encouraged through potential careful treatment of surfaces, junctions and crossings.

private gardens and drives

Private front gardens to be designed to ensure semi-private space with appropriate boundaries and use of ornamental shrub or hedging, which is both attractive and wildlife friendly, to define ownership. Drives to be detailed to compliment the housing and provide an attractive outlook which is pedestrian in scale.

fig 54: Avenue planting

landscape character + design

Recreational Facilities

Improved footpath linkages throughout the site provide opportunities to strengthen connectivity to existing community facilities such as the Feniscowles and Pleasington Sports and Social Club, which is situated on the edge the northern site boundary. Through the proposal of new footpaths this offers the development a series of sport and leisure facilities in easy access of the future residents.

Canal-side public open space

The extension and development of the canal side provides an opportunity for a distinctive linear green space and activity route for walkers and cyclists. The quality and value of the space is aimed at providing a cohesive link for pedestrians and visual frontage to wider residential communities.

Public Rights of Way

Better access and connectivity to the Public Rights of Way that cross through the site, allow for linkages to historic paths and public access to the Tow path forming opportunities for circular walks to the wider setting benefitting the local community.

Sustainable Drainage

Opportunities for sustainable drainage across the scheme will be promoted through the inclusion of attenuation ponds and associated swales. These features can take surface water from the development and look to attenuate and store it until it's dispersed. In addition creating important new habitats for wildlife, increasing on site biodiversity.

Fencing and Boundary Treatments

External site boundaries will complement local character where possible. Boundaries to properties will be clear and unambiguous. Public and private space will be designed to delineate ownership and defensible space. Rear gardens will most commonly be arranged back to back providing secure perimeters surrounding private areas inaccessible to the public. Use of boundary walling will be used for corner plots or adjacent to highly frequented pedestrian footways in prominent boundaries across the street scene. Hedges both native and ornamental will be used where possible to separate frontages.

Designing out crime will be addressed as follows:

- Routes and public areas are direct with good visibility and capable of being well used with increased activity by non-car users.
- A landscape design for pedestrians that is conscious of the need for clear views providing surveillance.
- Clear definition and demarcation and legibility within open spaces and
- Appropriate boundary treatments to the open spaces, road, pedestrian and cycle ways.

Lighting

External lighting will be designed to facilitate the main pedestrian and vehicle routes associated with the functioning appreciation and accessibility of the development. All proposed lighting will be concentrated around the main roads, streets and main pedestrian footpaths. It will be directed away from the surrounding boundary edges to maintain existing conditions within the outer context of the site
Signage:
Signage will generally form part of the 'common' suite of street furniture and at all times will be clear, unambiguous, and respectful of RNIB guidelines albeit unobtrusive in construction and colour

fig 55: canal towpath

9.4 hard landscape materials

Roads and avenues will benefit from been designed to work well for pedestrians, cyclists and vehicle users. Low speed limits will be encouraged through the careful treatment of surfaces, junctions and crossings. Consistency across the scheme will be proposed through a simple palette of hard materials comprising of asphalt, concrete block paving flags and setts.

Main Roads and Streets

A combination of Hot Rolled Asphalt on main carrier roads is proposed with prominent areas proposed in block paving patterns pattern's and raised tables to slow traffic and provide pedestrian crossing points.

Private Drives

All private drives are to be designed in block paving patterns with solider course to the edge. This material compliments the block paving proposed within the road surface materials.

Boundary Fences

Private gardens will be treated with close board fencing to define ownership boundaries. Close board fencing with trellis detail will be used around more prominent locations to reduce the impact.

Furniture

A simple suite of matching bollards, cycle stands, seats and benches are proposed throughout the development.

Public Open Spaces:

Pedestrian routes and footpaths through the public open spaces will be hard bound or loose bound surfacing appropriate to their location. Key pathways will generally be in tarmac with informal optional routes in a natural coloured 6mm self-binding gravel.

fig 56: Boundaries

9.5 public open space

Public Open space within the site has been calculated based on Blackburn with Darwen Borough Councils 'Supplementary Planning Guidance Notes' Dec 2002; using table 1&4 Summary of open space/commuted sum requirements for new residential developments, based on the development site been 40 plus units.

The requirements for the public open space have been proportioned across the site to provide distributed access for all and to diversify their setting.

The proposal for LAPs, LEAPs and NEAPs across the site have been considered based on the access available to other similar facilities within the sites wider context. The locality of the adjacent Feniscowles and Pleasington Sports and Social Club which offers varying range of sport facilities and also adjoining Play Pathfinder scheme is considered to provide sufficient NEAP facilities to the new development. In addition the new development sets out to provide improved connectivity to this facility.

The existing facilities consist of the following:

- Indoor Social Club
- Football Pitch
- Tennis Courts
- Cricket Pitch and additional practice wickets
- Bowling Green
- Natural Play Facility

However the topography of the site was taken into account when assessing the requirements for a LAPs and LEAPs. It was considered that access would be less practical for the regular users with smaller aged children and pushchairs. With this consideration a LEAP and LAPs have been proposed at a suitable location within the site development which offers ease of access but retains connectivity to the other Public Open Spaces and neighbouring NEAP facility.

Informal public open spaces will be located where possible on none developable land across the development. Appropriate areas of existing woodland and Biological Heritage Site have been identified as public open space due to their accessibility and as minimal management required.

Typical location been around park lodge which is of high value specimens consisting of predominantly sessile oak and sycamore but are trees of scattered and open appearance. On the east boundary along Leeds - Liverpool Canal is also proposed as a Public Open Space. Many of the trees in this area are mature and of significant value from an arboriculture perspective. They form a good screen to the adjacent local housing and will act as a natural corridor that is enhanced by the presence of the water way. The inclusion of public space within this location would create an attractive area. This will be achieved by removing sections of understorey but respecting the RPAs of the more mature trees. Work in this area should aim to retain the understorey where possible to encourage natural succession to ensure the long term future of the boundary group.

The wooded area adjacent to Preston Old Road consists of some good large specimens situated on a steep topography leading up to the road. These species consist of predominantly sycamore, horse chestnut and ash. The Trees have significant deadwood with physiology only considered to be fair. Through management in order to prolong the woodland and to ensure safety within the location it has been identified as an area of public open space.

fig 57: Playspaces

9.6 ecology strategy

The landscape concept looks to have a positive impact on the ecological value of the site. Therefore to further enhance the ecology the following opportunities are available to be incorporated within the design; sustainable urban drainage, bio-diverse grass meadow planting, native and ornamental tree and shrub planting, creation of new habitats along the de-culverted River Roddlesworth embankment and the natural regeneration of the drained reservoir basin. These opportunities aim to create ecologically rich habitats, increasing the overall site biodiversity and enhancing the environment.

The development of existing features, particularly the de-culverting of the River provide both the need and the opportunity for enhancements to the Bat roosting locations across the site.

Sustainable urban drainage systems (SUDS) such ponds and swales will be incorporated into the proposed development. These will be planted with wildlife friendly planting to maximise its ecological potential. Areas of species rich grassland and wildflower planting are to be incorporated around appropriate locations of the development. These will further enhance the ecological value of the site.

The development aims to deliver biodiversity gains and contribute to local Biodiversity Action Plan targets through the following general measures;

- Use of native and wildlife-friendly plant species
- Enhancement of green corridors
- Creation of neutral grassland habitats
- Buffer planting to the site boundaries
- SUDS features such as ponds and swales to create diverse habitats

9.7 planting strategy

The planting strategy seeks to provide a mix of native and ornamental species to provide ecological and aesthetic qualities to the external built environment by:

- Creating an attractive environment with year round colour and interest for the residents
- Helping to define boundaries and public areas
- Act as a buffer from unattractive views and noise pollution
- Planting native / indigenous species which enhance biodiversity. As well as incorporating a more formal style to enhance aesthetics including; specimen trees in avenues, tree groups clustered in open spaces, amenity and neutral grassland, marginal aquatic plants and spring flowering bulbs.

fig 58: Protecting biodiversity

landscape character + design

9.8 management and maintenance

The success of a scheme is dependent upon the quality and frequency of the maintenance it receives during its lifetime. The following aims and objectives will be recommended as part of the regime:

- To ensure the successful establishment and continued growth to maturity of the soft landscape scheme.
- To ensure that the design intentions of the scheme are fulfilled
- To ensure the effects of the different elements within the scheme such as the hedgerow, tree planting and the ornamental public planting are both successful and effective.
- To enhance the ecological potential of all planting and provide not only successful landscape planting but achieve habitat potential for wildlife and increased overall biodiversity.
- To maintain a safe environment for site users by maintaining visibility splays and removal of dead, dying or diseased tree branches

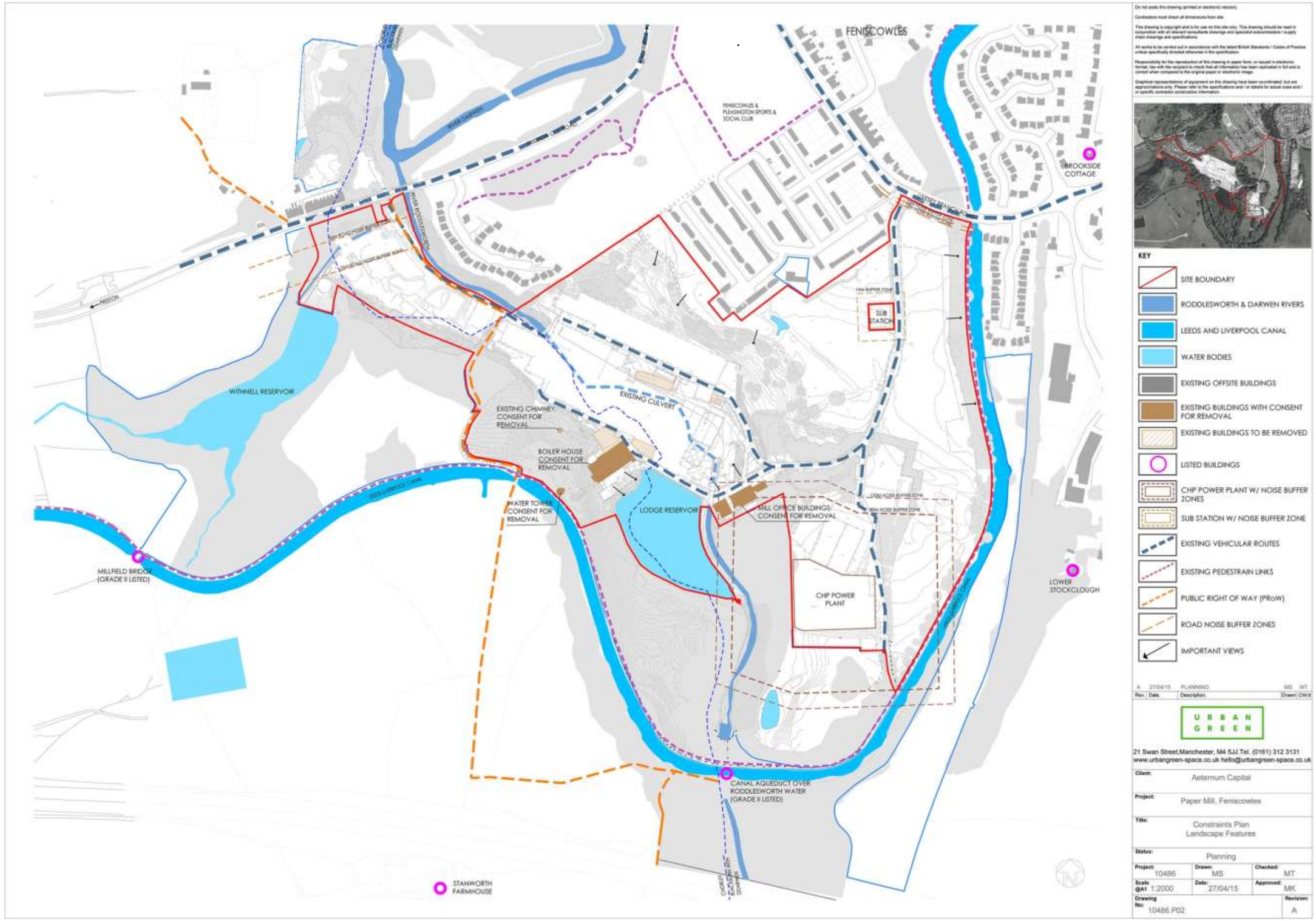
fig 59: SUDs and ecology

9.9 summary

Through analysis of the site and its wider setting a number of opportunities and constraints have been identified, which have been considered within the development of the Masterplan framework. These have been summarised within the Landscape character and design plans. Points that should be noted are as follows:

- Enhancements to existing site features such as the de-culverted River, Canal side and Reservoirs.
- Creation of legible way marking throughout the site to ensure easy access and egress for both pedestrian and vehicle movement.
- Utilise existing wider community facilities such as Feniscowles and Pleasington Sports and Social Club through the creation and improvements of connective routes.
- Enhance the ecological value and green networks through the creation of new public open spaces.
- Promote views through framing and orientation of layout to enhance site features.
- Ensure the development is sensitive to the sites wider setting and landscape backdrop through selective tree removal.
- The contribution of sustainable urban drainage solution to further enhance bio-diversity within the site.
- Enhancement of existing features to create new bio-diversity habitats.

landscape character + design



landscape character + design

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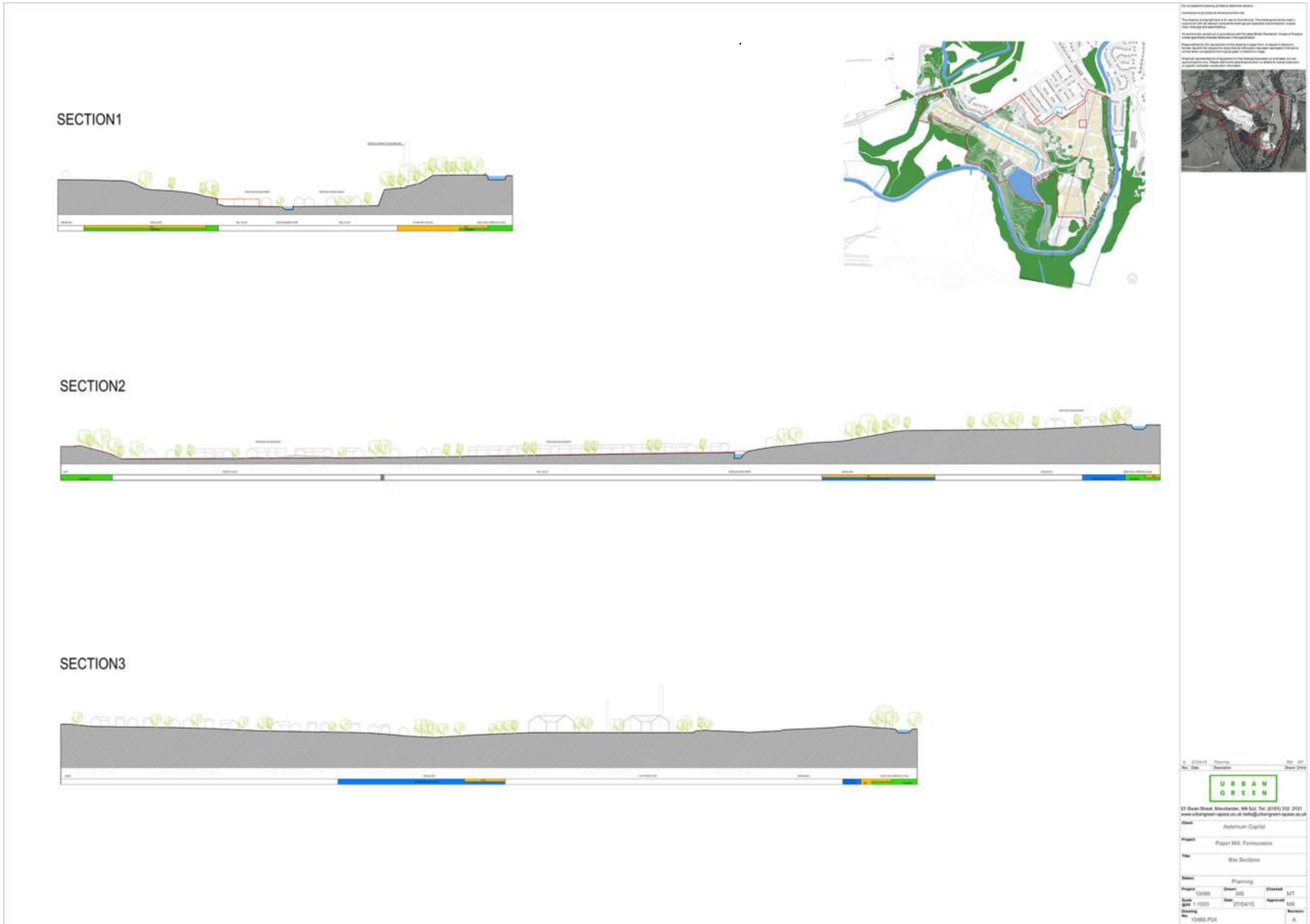

10.0 consultation

10.1 background

There has been consultation with the statutory authorities including planning, highways and economic development, and the outcomes of this process are recorded in the Consultation Statement that forms part of the supporting material for this planning application. The main consultation with the local community was carried out through a public event which is also recorded in more detail in the Consultation Statement.

The public event was held on 17th March 2015 at Feniscowles Sports & Social Club and over 100 people attended. A draft masterplan along with some of the illustrative material contained in this design and access statement were used to explain the design approach and for exploring options. A questionnaire was used to record views and opinions, and members of the design team were present to answer questions on specific issues including transport, design, ecology and engineering.

10.2 feedback

The questionnaire offered the opportunity for the local community to express their views on a number of areas which could be addressed in the design before the planning application was finalised, and to gather information that will help direct the detailed development of the scheme. Questionnaires completed provided the following suggestions and preferences which were grouped under four headings;

- **Landscape and open space**

Access to the River, canal and woodland were considered as being of near equal importance with less preference for access to the reservoir. Children's play, walking, dog walking and leisure were also considered as being of similar importance as activities that should be accommodated in these areas.

- **Local facilities**

Both a small supermarket/local shop and community hall with workspace were the preferred options , with a care home as the third most popular use considered appropriate for the site and the local area. There was also some more limited support for a crèche.

- **Employment**

There was a clear preference for office, small trade and retail businesses as employment uses with less support for workshop and manufacturing. Storage and warehouse uses were the least popular.

- **Design**

There was a fairly even spread of views on the type of houses most needed for the site and the local area with an equally diverse views on the style and design of the new homes.

10.2 the design response

Following the consultation, the design was developed further and the planning application proposals were finalised to reflect these views and preferences through the following:

- **Landscape and open space**

Access to the River, canal and woodland areas will be improved by opening up and improving the existing River course and through an extensive network of new footpaths and cycleways that connect to the existing footpaths.

The existing landscape will be opened up and a series of pockets created for play, leisure and recreation which will be linked together by the new footpath network providing an accessible amenity for the existing local and the new residents.

- **Local facilities**

Provision has been made in both the spatial plan and the application for non residential uses on the site to support the local community including: a small supermarket/local shop and community hall. These uses could be accommodated in the retained buildings and will have the flexibility to accommodate a range of other uses including workspace and a crèche.

There rae a number of locations within the development framework that would be suitable for a care home use.

- **Employment**

A layout and uses that are compatible with the canal side location and setting are proposed for the employment area which could include smaller scale start up space as well as provision for established businesses.

- **Design**

The illustrative material in the character area studies provides an indication of the potential for placemaking and the development framework has the flexibility to accommodate a range of different architectural styles.

What is of primary importance is the relationship of built form to the landscape and setting, and the creation of an attractive public realm. The design Principles included in each of the character area studies are proposed as the basis for Design Coding and the development of a detailed design that will deliver a high quality public realm.

11.0 access

11.1 proposed access arrangements

The site is currently accessed via an existing priority controlled 'T' junction, located to the east of the site on the A6062 Livesey Branch Road. This provides direct access to the existing CHP Plant and the remaining undeveloped land in the lower portion of the site. Livesey Branch Road is a single carriageway road subject to a 30mph speed limit. The road is residential in nature with pedestrian crossing facilities and footways provided on both sides.

This existing priority junction will be enhanced to improve access to the southern section of the site, the form of priority control will be retained. However the junction will be reduced in size and the large expanses of carriageway on the development arm reduced to form a more compact, safer and formalised priority junction.

A second new access point will also be provided on Moulden Brow (the A674), to the north of the proposed site. The A674 Moulden Brow is a wide single carriageway road, subject to a 40mph speed limit, with footways provided on both sides of the road from the site access towards Feniscowles.

This second point of access will be provided next to the bridge over the River Roddlesworth, in the location of a former point of access to the development site, which is currently gated and closed off. The new junction will take the form of a traffic signal controlled junction with pedestrian crossing facilities, to allow pedestrians to safely cross both the A674 and access arm of the junction. The junction will also include advanced stop lines for cyclists, to provide safe and priority access for cyclists.

In addition to providing direct access from the north to the proposed development, the introduction of traffic signal control and the formation of a new junction on the A674 will in itself assist in controlling vehicular speeds on this section of 'A' road. It is anticipated that this increased control and subsequent speed reduction will greatly improve safety for all road users in the vicinity of the junction and particularly pedestrians along this section of the A674.

A new internal road running through the site will connect these two points of access and form a new link between the A674 and Livesey Branch Road. This internal road will also provide access to the various areas of the development.

The link road will not only provide access to the highway network for the site and facilitate internal development vehicular movements it will also provide a new route for other "non development related" trips to travel between these two existing highway routes. This link will offer benefits to the mini roundabout junction of A674 and Livesey Branch Road, in the form of congestion relief, through the provision of alternative route choice.

The new link road will include new footways along its entire length, which will link in with existing pedestrian infrastructure on both Livesey Branch Road and Moulden Brow and allow pedestrians to move between these two routes, access the development and gain accessibility to the areas surrounding the site.

11.2 wider accessibility

The location of the proposed development site within the Feniscowles area means that there is a wide range of community facilities and amenities within a 10-minute walk or a short cycle ride.

The location of the site in close proximity to schools, shopping areas, open spaces, and public transport links are positive characteristics and provides good opportunities for travel by sustainable modes of transport. The site has been designed to make the most of these features through provision of safe, convenient and desirable walking routes and strong connections to existing infrastructure.

The provision of an element of retail space on site presents the opportunity for a local shop or convenience store for use by residents and employees. This reduces the need to travel by car by providing more amenities locally.

The connectivity of the site to the wider area is further enhanced by regular bus services available from existing stops within a five minute walk. These stops provide links to local destinations within Fensicowles and Blackburn, as well as other locations such as Chorley, Burnley and Preston.

There are several bus stops located on Livesey Branch Road and the A674 Moulden Brow. The closest bus stops are located on Moulden Brow, are directly adjacent to the northern edge of the site, and on Livesey Branch Road, adjacent to the existing site access. Both stops provide shelter and are equipped with seating and timetable information.

The provision of the internal spine road offers the potential in the future to re-route/divert existing bus services through the site, or for a new route to be provided subject to demand. This will serve to promote the use of sustainable transport options and reduce car mode share of people travelling to and from the site.

The Transport Assessment (TA), prepared by JMP Consultants, supporting the application provides further information on the wider accessibility to the site, the sustainability of the proposal, the impact on the wider highway network and the measures proposed to encourage travel by sustainable modes of travel. Reference should be made to the TA for further details.

12.0 summary

Key points and summary

The proposals outlined in this planning application and this design and access statement, detail and illustrate an opportunity to bring into beneficial use a substantial and complex brownfield site which poses considerable challenges to development. Setting aside widespread technical issues and abnormal costs associated with ground stability and contamination, the challenge of flood risk alone requires very substantial works to enable development to be brought forward.

These challenges are mirrored by the opportunities represented by the rich landscape, ecology and built heritage of the site. It is only through working with and enhancing these characteristics, and by providing a positive and complementary addition to the surrounding community, that a scheme of sufficient quality and value will be created sufficient to meet these challenges.

Accordingly these proposals are for a high quality mixed use scheme, providing the basis for development of new housing and employment uses, of type and character that reflect local need and aspiration, and delivering significant areas of newly accessible public open space and landscape, together with ecological enhancement, for the benefit and enjoyment of the surrounding community.

The proposals are in accordance with the planning policy of both Blackburn with Darwen, and Chorley Borough Councils, and will deliver up to 500 new homes together with employment space across B1a and B1c commercial, A1 retail, and D1 community uses classes, and within a gross site area of 26.80 hectares. The economic, social and environmental benefits arising as a result of the development, coupled with the lack of any significant or demonstrable harm, demonstrate that the proposal constitutes sustainable development in accordance with the requirement of National Policy.

The site owners have shown a continuing commitment to bringing this challenging site back into use, including the commencement of considerable demolition and remediation works to make the site deliverable. Alongside these works, over a four year period, the owners have explored a number of options to bring the site back into beneficial use, including proposals for a domestic and commercial waste processing centre.

The proposals now set out in this document represent a deliverable mixed use residential led scheme that is supported by the local community as the preferred option.

rCOH

design access + sustainability statement | may 2015

APPENDIX D

Earthworks Specification

Blackburn Waterside Regeneration Ltd

Livesey Branch Road, Blackburn

Earthworks Specification

November 2019

Revision Schedule

Livesey Branch Road, Blackburn

Eathworks Specification

November 2019
Doc Ref: BWR-1357-01-ES-001

Rev	Date	Status	Prepared by	Reviewed by	Approved by
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CONTENTS

1 SITE INFORMATION

1.1 Site Description

The site comprises the former SAPPI Paper Mills (Star Mill and Sun Mill) at Star Drive, Livesey Branch Road, Feniscowles, Blackburn, BB2 5HX. As shown on the Drawings, the site runs from Moulden Brow/Preston Old Road in the west to Livesey Branch Road in the east. The site consists of a central area of former industrial buildings, now demolished, with open fields to the east and two reservoirs, the Sun to the west and Mill Lodge to the south. The total land area is 26.8 ha.

1.2 Ground Information

Reference should be made to the following documents:

- E3P – Former Sappi Works, Feniscowles, Blackburn – Remediation Contractor Works – September 2016, together with all Previous Reports cited therein (Section 1.4).
- Capita – Sappi Site near Feniscowles – Slope Stability Assessment of Southwest Facing Slopes – June 2018, together with all Surveys Undertaken cited therein (Section 3).

2 WORKS INFORMATION

2.1 Purpose of Works

The Employer proposes to redevelop the site for residential use. The proposals require an earthworks operation to create suitable platforms for housing development with formation levels as shown on the Drawings.

2.2 General Specification

The General Specification shall be the current edition of the Specification for Highway Works (SHW) published by The Stationery Office, with particular reference to Series 600 Earthworks.

2.3 British Standards

All materials and workmanship used shall comply with the latest British Standards where applicable unless the description shall specifically deviate from these standards, and shall be fit for their intended use and shall be compatible with the other materials with which they are intended to function. Any proprietary materials shall be used strictly in accordance with the manufacturer's specification and requirements.

2.4 Personnel and Relevant Experience

Prior to commencement of the works, the Contractor shall provide a list of the key personnel he proposes to employ together with a resume of their experience and qualifications. The list of key personnel shall include the name of a full-time Contractor's Agent or representative.

2.5 Records of the Works

The following records shall be made on sheets with an agreed layout. Two copies of each record signed by the Contractor shall be delivered to the Supervisor's office by the following stated times:

Record	Frequency	Time for Delivery
• Labour, plant and equipment.	Weekly	Noon of the following Monday.
• Progress report and monitoring results	Monthly	Last working day of the month.

Results of all records, tests, instrument measurements and calibrations made during the Contract shall be supplied to the Supervisor at times or intervals to be agreed unless specified. The Contractor shall provide the Supervisor with a list of samples taken for

laboratory testing (both soil and groundwater) on each day. In particular, records shall be kept and delivered to the Supervisor for:

- All materials imported to the site;
- All materials disposed of off site, including all waste transfer notes;
- Final ground levels.

The Contractor shall keep the following earthworks records on a daily basis:

- Quantity of each type of material excavated and deposited,
- Layer thicknesses,
- Compaction plant used,
- Number of passes for each type of material,
- Obstructions, delays and weather conditions, and
- Plant and personnel on site.

The Contractor shall present these records to the Supervisor each week.

2.6 Tests and Testing Facilities

Before the work begins on site, a list of quality control tests, the facilities and equipment to be used and the names of independent testing laboratories for these and all other tests called for by the Specification shall be submitted to the Supervisor. The list shall be based on the various testing and frequency requirements contained in the Specification. All testing equipment shall be calibrated and re-calibrated at regular intervals by a NAMAS accredited organisation and calibration certificates shall be provided upon request.

2.7 Existing Made Ground

The Contractor shall excavate the existing Made Ground as shown on the Drawings and process it to create an acceptable fill material. During excavation, the Contractor shall inform the Supervisor whenever it is apparent that original ground has been reached. Care shall be taken to maintain stable side slopes to all excavations and not to disturb or damage the utility services crossing the site. Suitable stand–off distances and depths from these services shall be agreed with the Supervisor.

All excavated Made Ground shall be passed through a series of crushers to reduce it to a maximum size of 75mm and screened and re-mixed so as to create an acceptable fill material generally according with Class 6F2 of Table 6/1 of the Specification. All hard materials from buried structures and foundations shall be processed separately and stockpiled for use as a hardcore surface layer. The created acceptable fill material shall be placed in the void formed by the excavation in suitable layers and compacted in accordance with the Specification. Any unacceptable material shall be disposed of off-site.

2.8 Stockpiled/Imported Materials

The site levels shall be raised to final formation levels by placing and compacting acceptable fill. Acceptable fill shall be either taken from stockpiles on site or from the Contractor's own source. Preference shall be given to the stockpiles with the Contractor's own source only being used if there is no acceptable material available from the stockpiles. General fill from the Contractor's own source shall comply with Class 6F2 of Table 6/1 of the Specification. The Contractor shall excavate the stockpiled material and place and compact it over the replaced processed made ground fill.

2.9 Compaction

Filling and compaction shall be carried in such a manner as to achieve the site contours shown on the Drawings. Compacted backfilled material shall achieve a minimum relative density of 95% for all layers placed, which will be verified by sand replacement tests and Nuclear Test Gauge (NTG).

Particular attention shall be given to:

a) Classification of materials according to their physical and engineering properties including examination of the field characteristics of the materials and the carrying out of laboratory tests in accordance with the British Standard BS 1377:1990, in order that the materials can be placed into one or more of the categories identified in SHW Table 6/1, generally Class 6F2.

b) Types and methods of operator of compaction plant to be used, the condition of the plant provided, the appropriate layer thickness and the number of passes required to meet the stipulated objectives as outlined in SHW Table 6/4.

c) Control of water and site activities such that damage to compacted materials is avoided.

Prior to commencement of compaction works, field trials shall be undertaken with the plant proposed for the compaction operations and sampling and testing of the earthworks materials shall be carried out to establish the required degree of application for the compaction plant approved by the Supervisor. SHW Series 600 Tables 6/1 and 6/4 shall be used to determine acceptable methods of compaction for materials to be placed on the Site. The results of the field trials and laboratory testing will be used by the Supervisor to determine the acceptability limits of the fill materials.

Should the source or the nature of the fill material change significantly for whatever reason, further compaction trials and laboratory testing will be required to establish new compaction parameters. No filling and compaction within the permanent works shall be carried out until

the results of the laboratory and field trials are known and the acceptability limits of the fill materials have been established.

The Supervisor's approval of all areas of prepared formation shall be obtained by the Contractor prior to the commencement of any filling operations. All areas of the Site shall be surveyed and levelled by the Contractor before any material is deposited and at the final completion of compaction works. The Contractor shall so arrange his work as to allow the Supervisor the opportunity to carry out such surveys himself or to check any survey performed by the Contractor.

Before the placing of any fill, the natural ground shall be compacted by the number of passes of the compaction plant appropriate to the classification of the natural ground, assuming a layer 125mm in thickness. All fill shall be spread in uniform horizontal layers of the requisite thickness and shall be compacted as soon as possible after deposition by approved compaction plant. Earthmoving equipment shall not be accepted as suitable compaction plant but where possible it shall be routed across the Site to give a uniform compactive effort.

Any necessary adjustments to the natural moisture content of the material to be compacted will be made in order to comply with the acceptability limits of the fill materials. The necessary adjustments shall be made by either water sprinkling and/or materials selection and mixing techniques prior to compaction.

Special care shall be taken around the margin of the fill to ensure that these areas are properly compacted. If necessary, special compaction machinery shall be used but in no case will a lower standard of compaction be accepted. Each area of compacted backfill shall be properly integrated with adjacent or previously backfilled areas. The weathered, loose or partially compacted material accumulated on the side slopes of such areas shall be removed and replaced with suitably layered and compacted materials.

The backfilling and compaction works will be supervised and monitored by the Supervisor to ensure compliance with the Specification. The monitoring will involve field measurement of the density and moisture content of the fill materials using an approved nuclear density/moisture test gauge on all layers placed. The results so obtained in the field will be monitored as necessary by sand replacement tests, moisture content determination, laboratory compaction tests and other laboratory tests carried out in accordance with British Standards.

The Supervisor may direct that certain areas be subject to final re-grading and levelling, such as in areas which, due to prevailing site traffic, have been affected by the concentrated passage of site vehicles.

2.10 Bearing Capacity

In addition to the achievement of 95% relative density on each of the layers of fill, a bearing capacity of at least 120 kN/m^2 shall be achieved on the final surface level as measured by plate bearing tests. Any areas which fail to achieve this figure shall be re-excavated and re-compacted until they comply.

2.11 Testing Frequency

The following in-situ and laboratory testing of the compacted earthworks materials shall be carried out.

TEST	FREQUENCY OF TEST
Nuclear Density Gauge Tests	1 test/50m^3/material type
Moisture Content	1 test/250m^3/material type
Specific Gravity	1 test/2,000m^3/material type
Moisture/Density Relationship (2.5kg)	1 test/2,000m^3/material type
Sand Replacement Density	1 test/2,000m^3/material type
Particle Size Distribution	1 test/2,000m^3/material type
Plate Bearing Tests	1 test/500m^2 of final surface area
CBR Testing for Hardcore (if required)	1 test/2,000m^3/material type

2.12 Temporary Drainage

An adequate fall shall be maintained on the compacted fill surface at all times so that surface water may be shed rapidly. If any ponding or surface erosion shall occur, the Contractor shall, at his own expense, immediately take steps to remedy the situation. Water ponding as a result of any run-off or from any cause shall be allowed only to such a depth and extent as may from time to time meet with the approval of the Supervisor. The method of disposal of ponded water shall be approved by the Supervisor.

2.13 Weather Conditions

Tipping, spreading and compacting shall cease when conditions are such that the mechanical plant which is tipping, spreading or compacting shall, in the opinion of the Supervisor, start to damage the already deposited and compacted material and cause the surface to deteriorate. These operations shall only re-commence by agreement with the Supervisor. In the event of the work being suspended by prolonged wet weather, filling operations shall not be resumed until the surface has drained and inspections have shown it still to be in a satisfactory state of compaction. If considered necessary, re-excavation and/or further compaction shall take place to restore the surface to its previous condition

before any new fill is deposited. Records shall be kept of the periods when work is disrupted by adverse weather.

2.14 Noise Control and Nuisance

The Contractor shall during the course of the Contract take every precaution to prevent nuisance in the form of noise, dust and water from occurring. In organising the operations to be carried out within the Site, the Contractor shall take into consideration the nuisance effect of his proposals and employ any economically viable means to reduce such effects as necessary. The Contractor shall undertake background noise, air and dust monitoring prior to the commencement of the works as well as monitoring throughout the entire duration of the works, all as agreed by the Supervisor.

2.15 Health & Safety

The Contractor's attention is drawn to all appropriate Health and Safety legislation, guidance and advice including:

- *The Health and Safety at Work etc. Act 1974 (HASAWA)*
- *The Management of Health and Safety at Work Regulations 1999 & 2006 (MHSR Regs.)*
- *The Control of Substances Hazardous to Health Regulations 2002 (COSHH Regs.)*
- *The Construction (Design and Management) Regulations 2015 (CDM)*
- *The Noise at Work Regulations 2005*

The Contractor shall ensure that all personnel follow a signing in/out procedure when entering or leaving the Site. The Contractor shall ensure that all personnel attend a site safety induction before commencing work on Site.
Construction workers will be likely to come into contact with contaminated soil via dermal contact and possible ingestion and shall take all suitable precautions including the wearing of appropriate PPE.

2.16 Licences and Permits

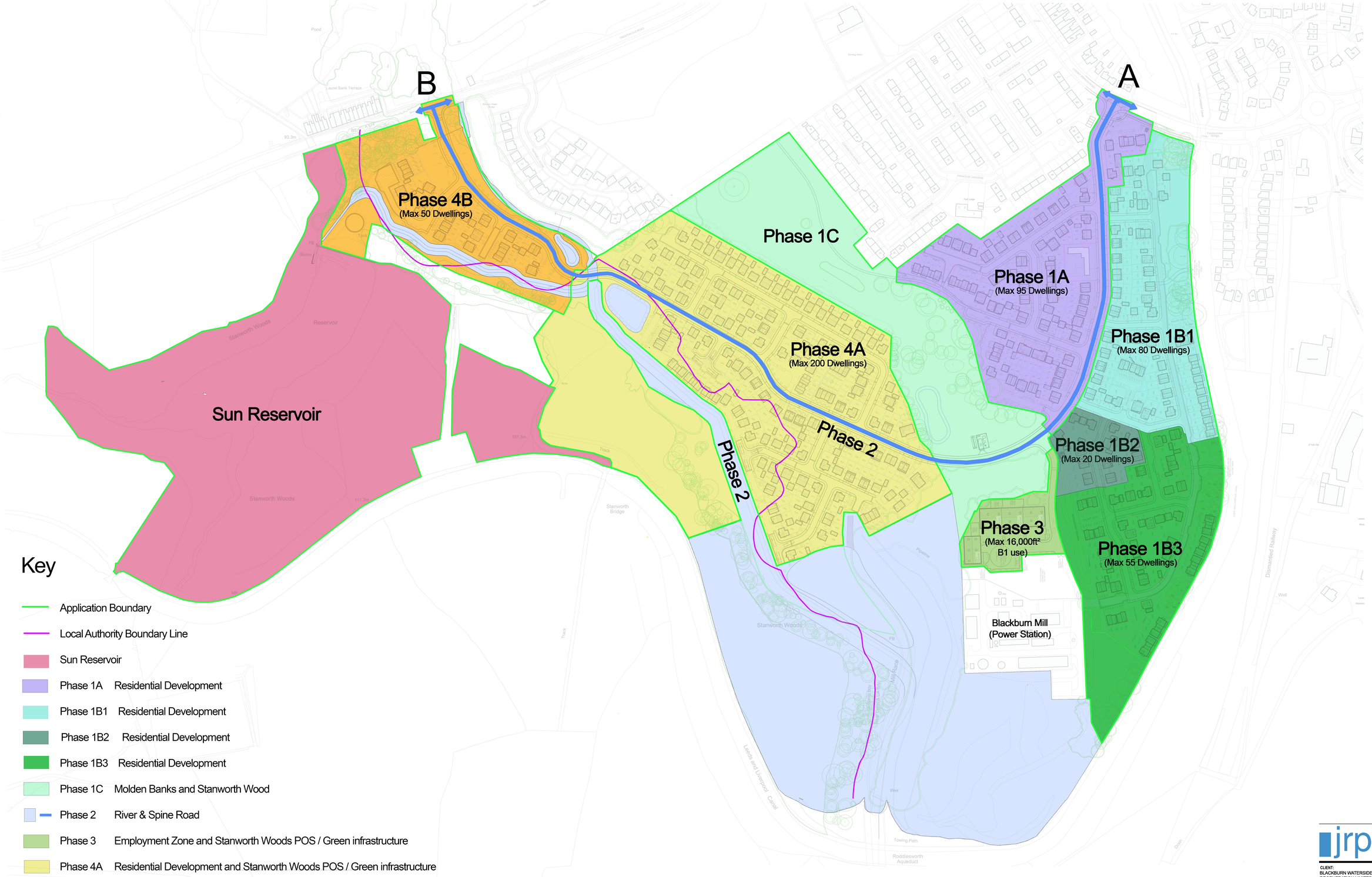
The Contractor shall obtain all relevant licences and permits from the relevant authorities to carry out the works. This shall include all mobile plant licences, discharge licences and abstraction licences. All costs shall be borne by the Contractor.

2.17 Sequence of Works

The Contractor shall ensure that the works are carried out in a manner which ensures the proper reclamation of the Site. The sequence of works shall be agreed in advance with the Project Manager and shall be carried out in accordance with the agreed programme.

APPENDIX E

Drawings



Key

- Application Boundary
- Local Authority Boundary Line
- Sun Reservoir
- Phase 1A Residential Development
- Phase 1B1 Residential Development
- Phase 1B2 Residential Development
- Phase 1B3 Residential Development
- Phase 1C Molden Banks and Stanworth Wood
- Phase 2 River & Spine Road
- Phase 3 Employment Zone and Stanworth Woods POS / Green infrastructure
- Phase 4A Residential Development and Stanworth Woods POS / Green infrastructure
- Phase 4B Residential Development and Stanworth Woods POS / Green infrastructure

86 / PROPOSED MASTERPLAN

jrp ARCHITECTURE | PLANNING | LANDSCAPE

CLIENT:
BLACKBURN WATERSIDE REGENERATION LIMITED

PROJECT:
LIVESEY BRANCH ROAD
BLACKBURN

DRAWING:
PROPOSED MASTERPLAN

DRAWING NUMBER:
17 5150 86

SCALE @ A0:
1:1250

DRAWN: THS DATE: SEPT 20

CHECKED: VS DATE: SEPT 20

NORTH

1:1250 SCALE
10m 100m

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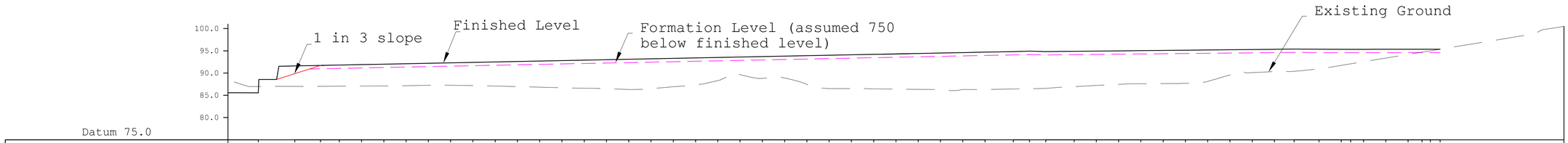

NOTES:

REFER TO DRAWING BWR-1357-01-EW-001 FOR SECTION LOCATIONS

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B - B (364498.6E 424944.5N)

A - A (364516.9E 424936.3N)

REV	DATE	NAME	CHECK	NOTE
P1	31/08/18	GJ	CAR	Sections Extended

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BLACKBURN WATERSIDE REGENERATION LTD

PROJECT:
BLACKBURN WATERSIDE PHASE 2

DRAWING TITLE:
PROPOSED EARTHWORK SECTIONS SHEET 1

DRAWING STATUS:
FOR INFORMATION

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AJS	CR	CR

DATE:
6th August 2018

SCALE @ A1:
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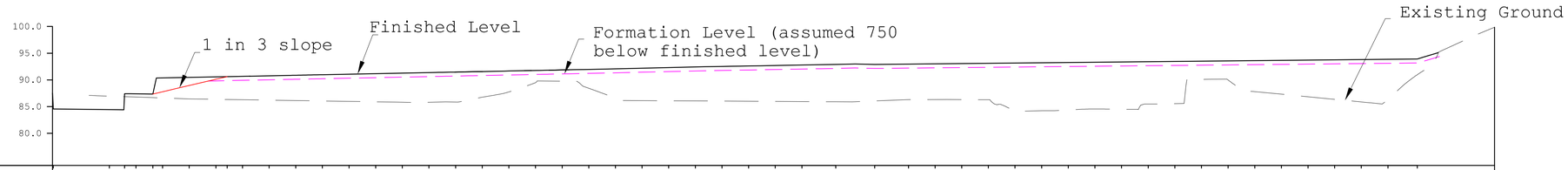
DRAWING No.:
BWR-1357-01-EW-002

REVISION No.:
P1



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PROPOSED EARTHWORK SECTIONS SHEET 2

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6th August 2018

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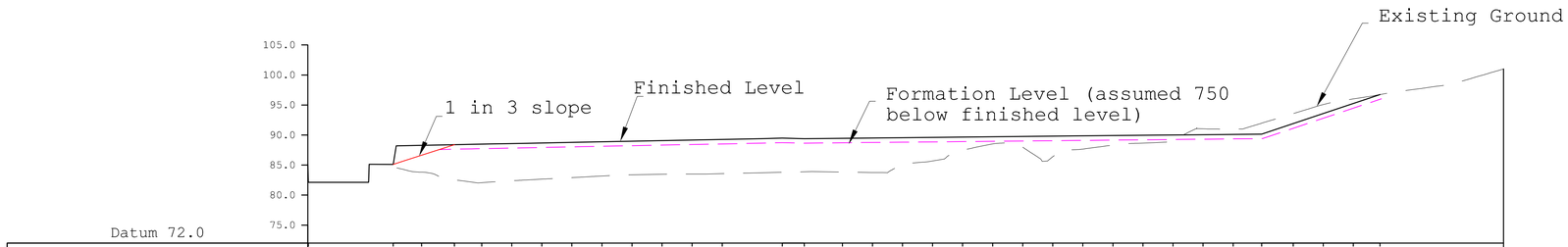
BWR-1357-01-EW-003

REVISION No.:
P1



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DRAWING TITLE:
PROPOSED EARTHWORK SECTIONS SHEET 3

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FOR INFORMATION

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AJS	CR	CR

DATE: 6th August 2018

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REVISION No.:

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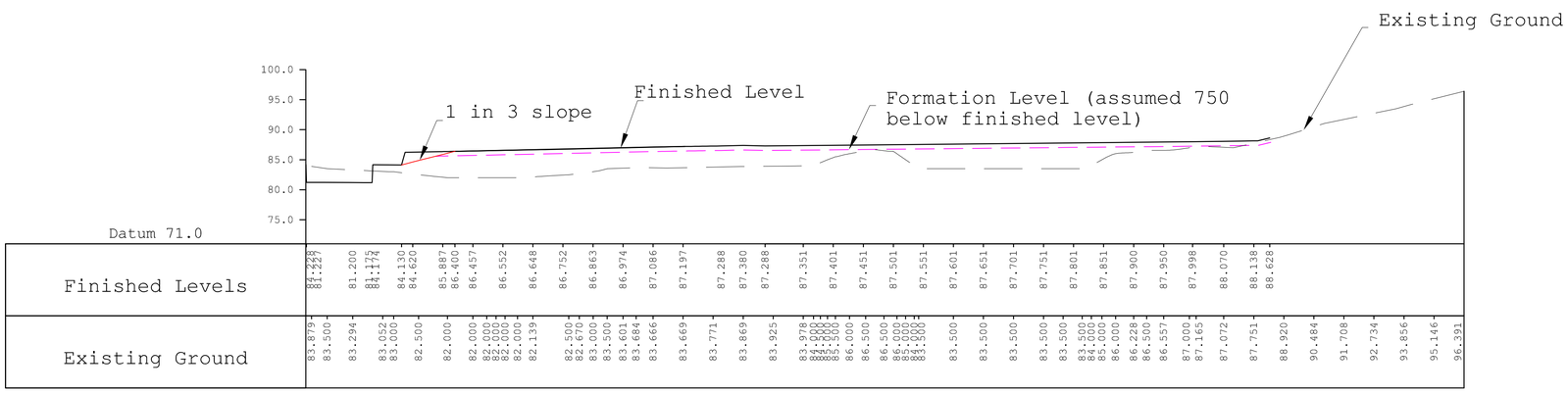

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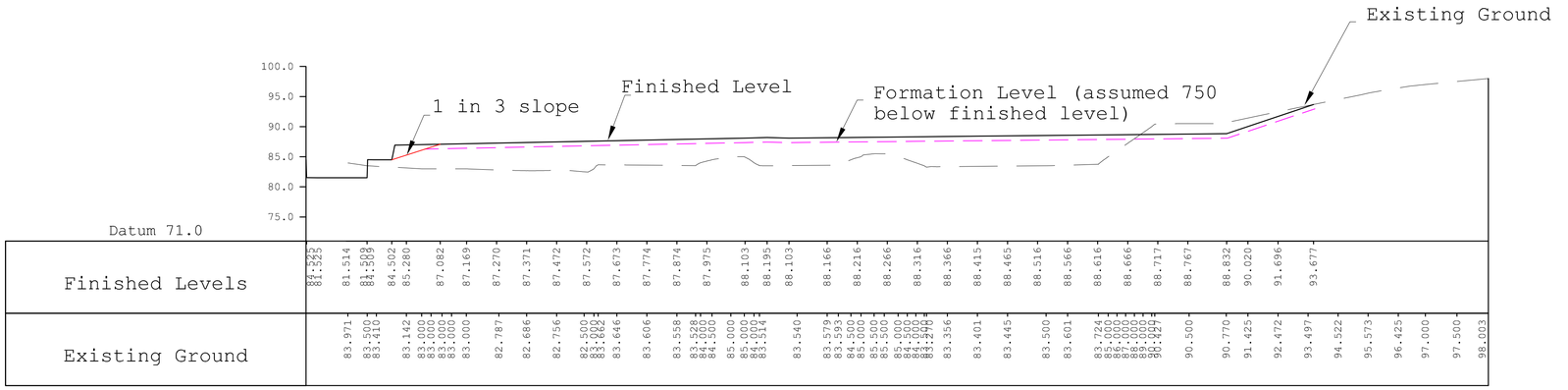

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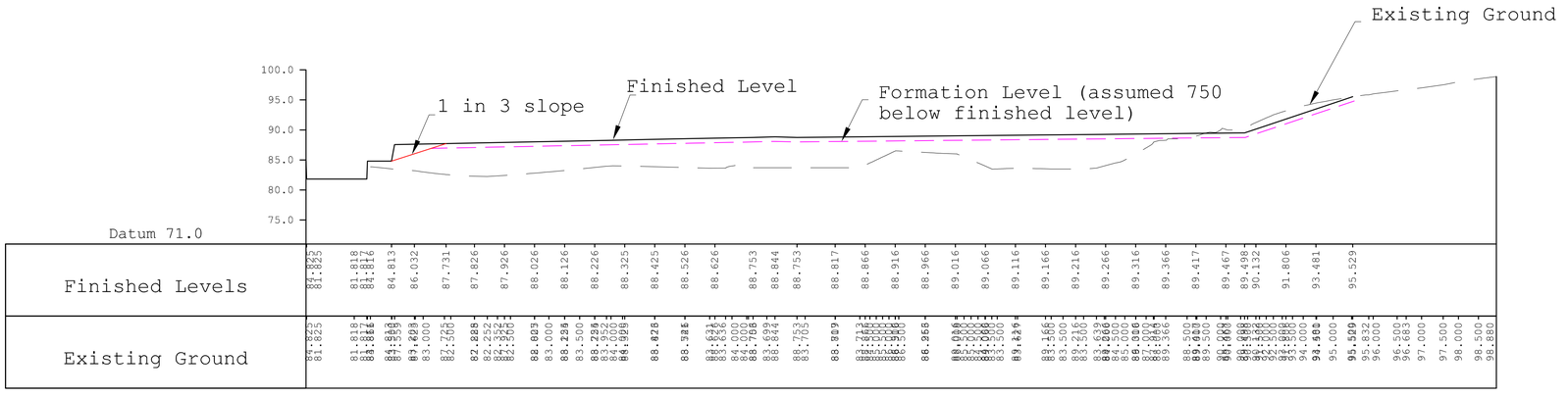

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DRAWING TITLE: PROPOSED EARTHWORK SECTIONS SHEET 4

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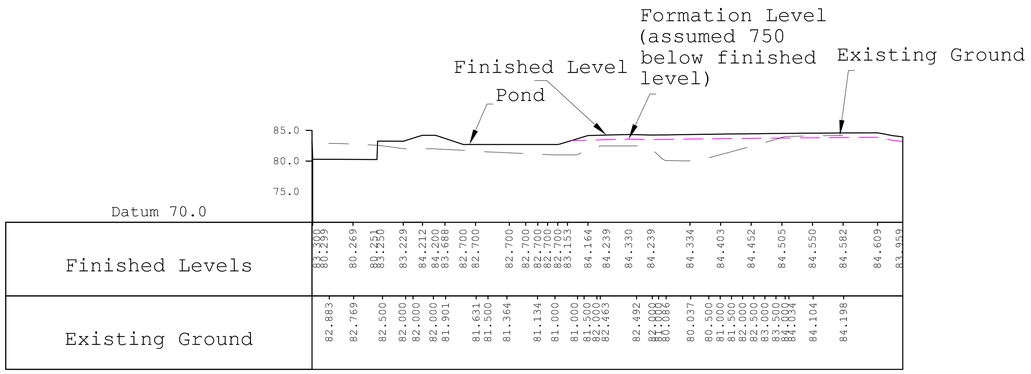

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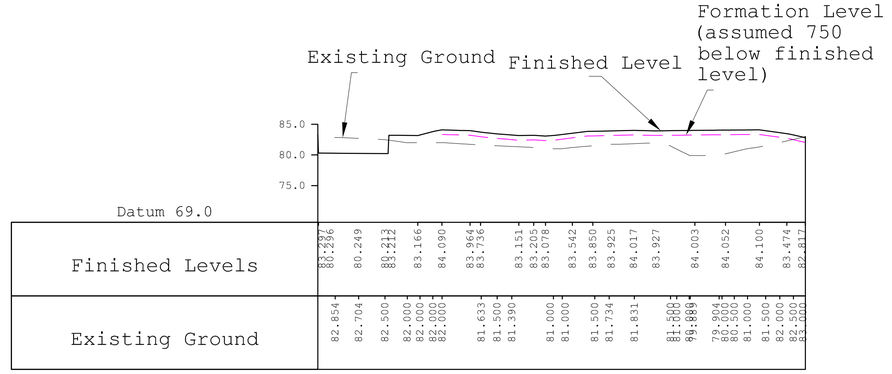

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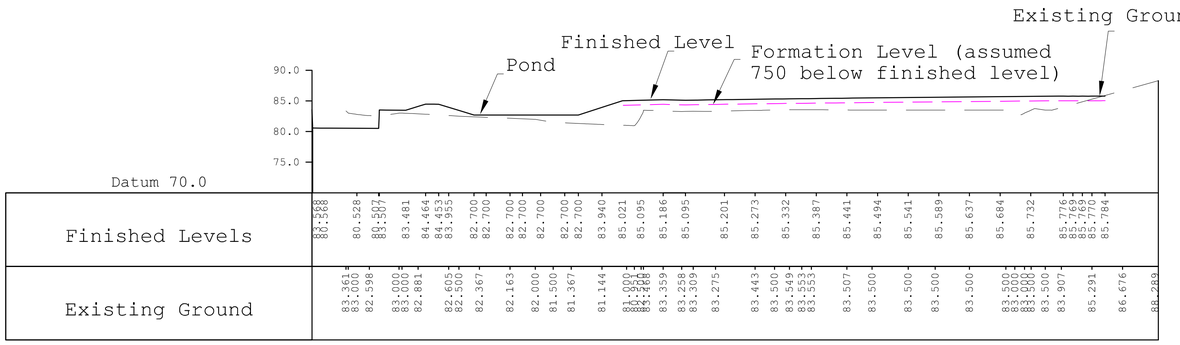

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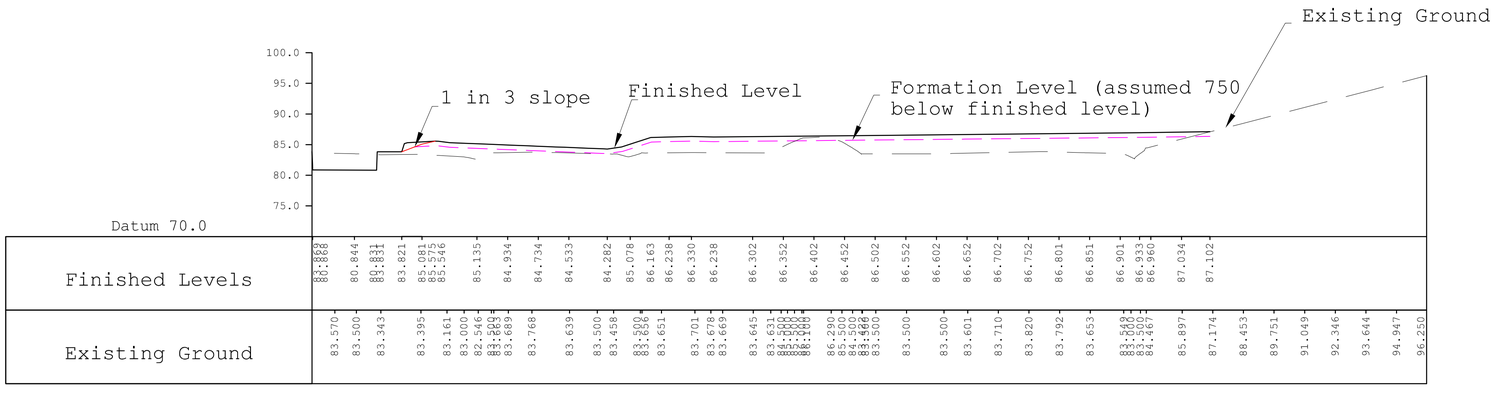

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DRAWING TITLE: PROPOSED EARTHWORK SECTIONS SHEET 5

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PROJECT: BLACKBURN PHASE 2

DRAWING TITLE: PROPOSED FINISHED LEVEL

DRAWING STATUS: FOR INFORMATION

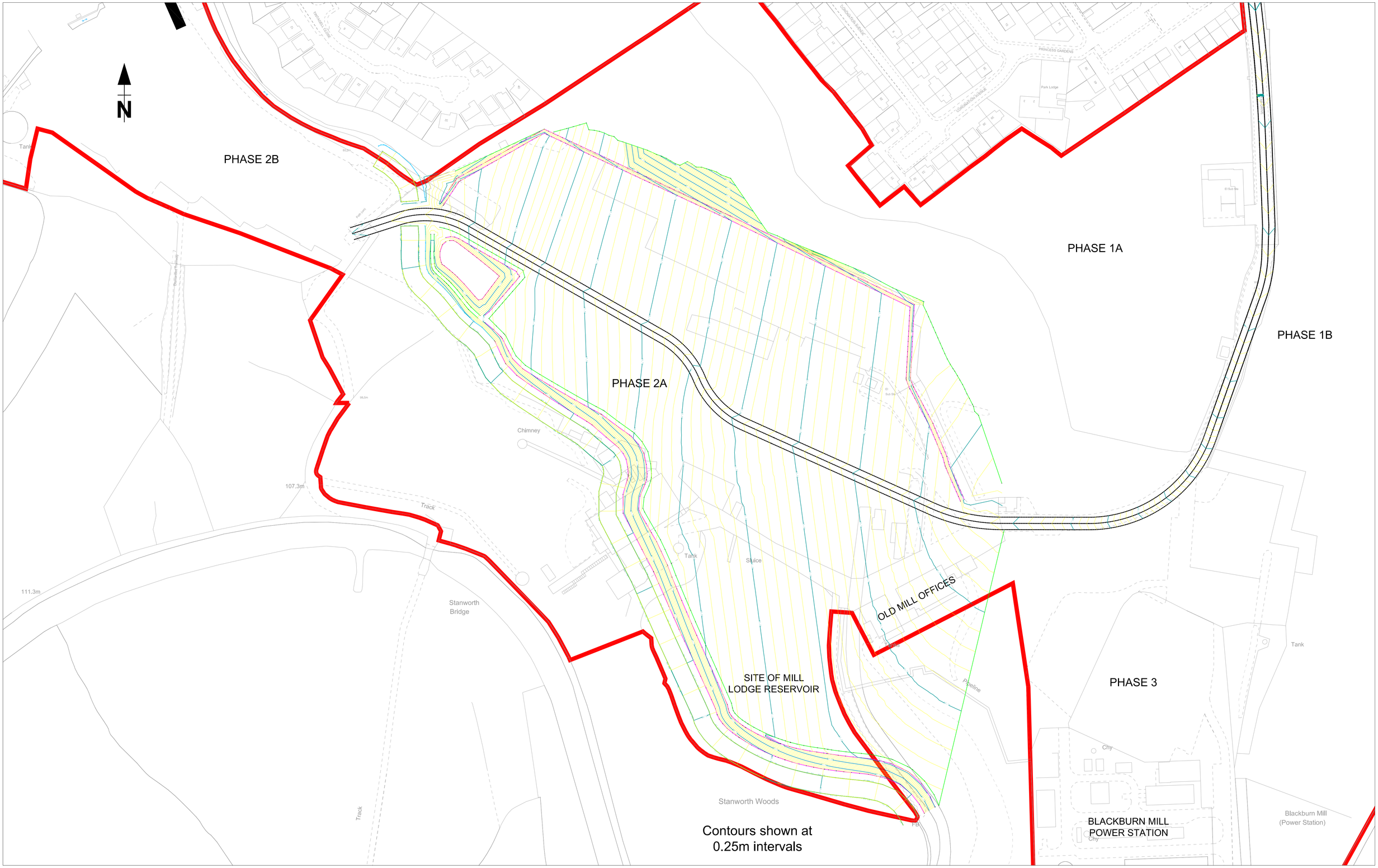
DRAWN: AJS | CHECKED: CR | APPROVED: CR

DATE: 03 August 2018

SCALE @ A1: 1:1000

DRAWING No.: BWR-1357-01-EW-007

REVISION No.:



REV	DATE	NAME	CHECK	NOTE
P1	8/31/18	GJ	CAR	Sections Extended

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PROJECT: BLACKBURN PHASE 2

DRAWING TITLE: PROPOSED FORMATION LEVEL

DRAWING STATUS: FOR INFORMATION

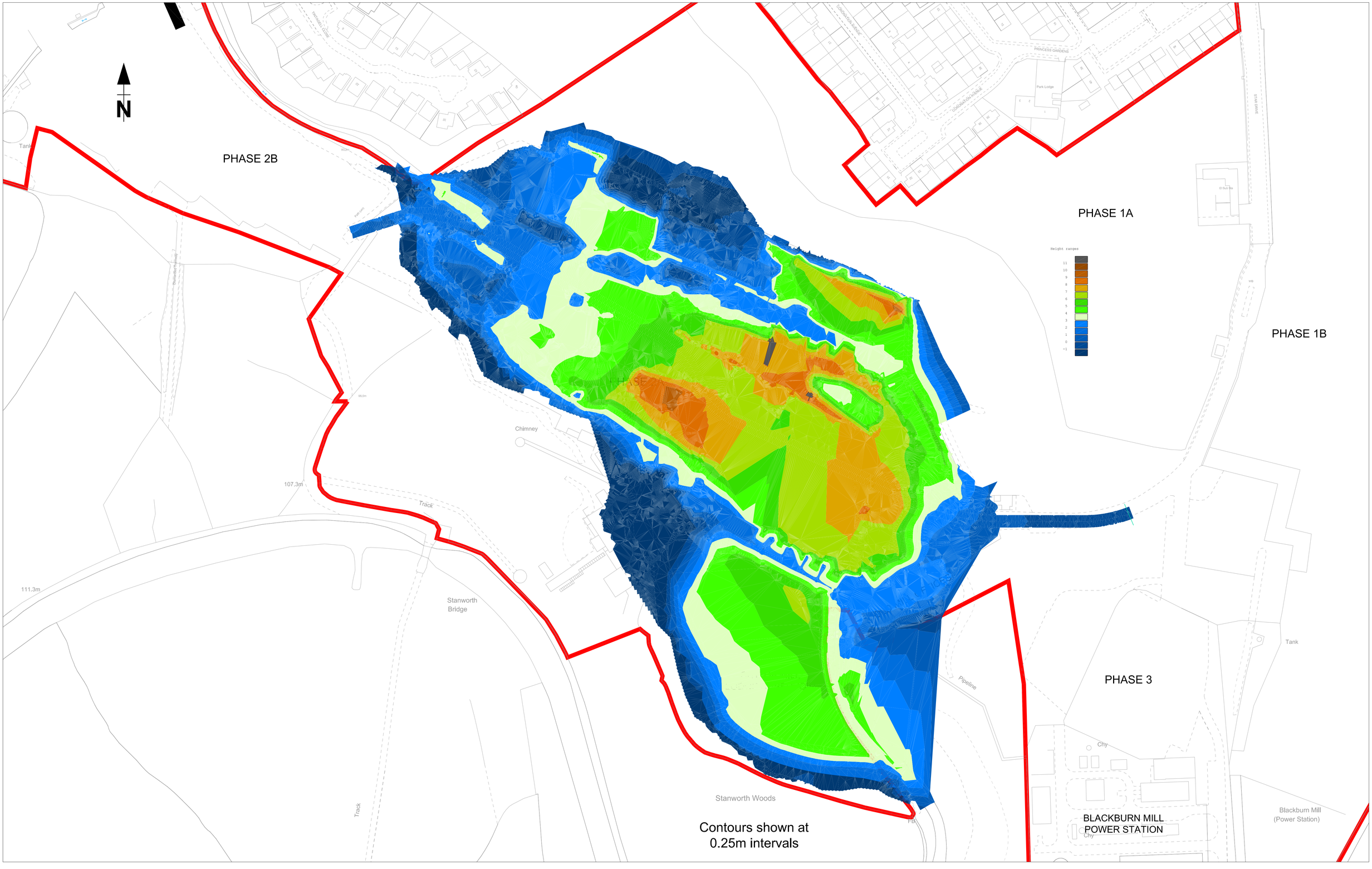
DRAWN: AJS | CHECKED: CR | APPROVED: CR

DATE: 03 August 2018

SCALE @ A1: 1:1000

DRAWING No.: BWR-1357-01-EW-008

REVISION No.:



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P1	8/31/18	GJ	CAR	Sections Extended

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PROJECT: BLACKBURN PHASE 2

DRAWING TITLE: ISOPACHYTE

DRAWING STATUS: FOR INFORMATION

DRAWN: AJS | CHECKED: CR | APPROVED: CR

DATE: 03 August 2018

SCALE @ A1: 1:1000

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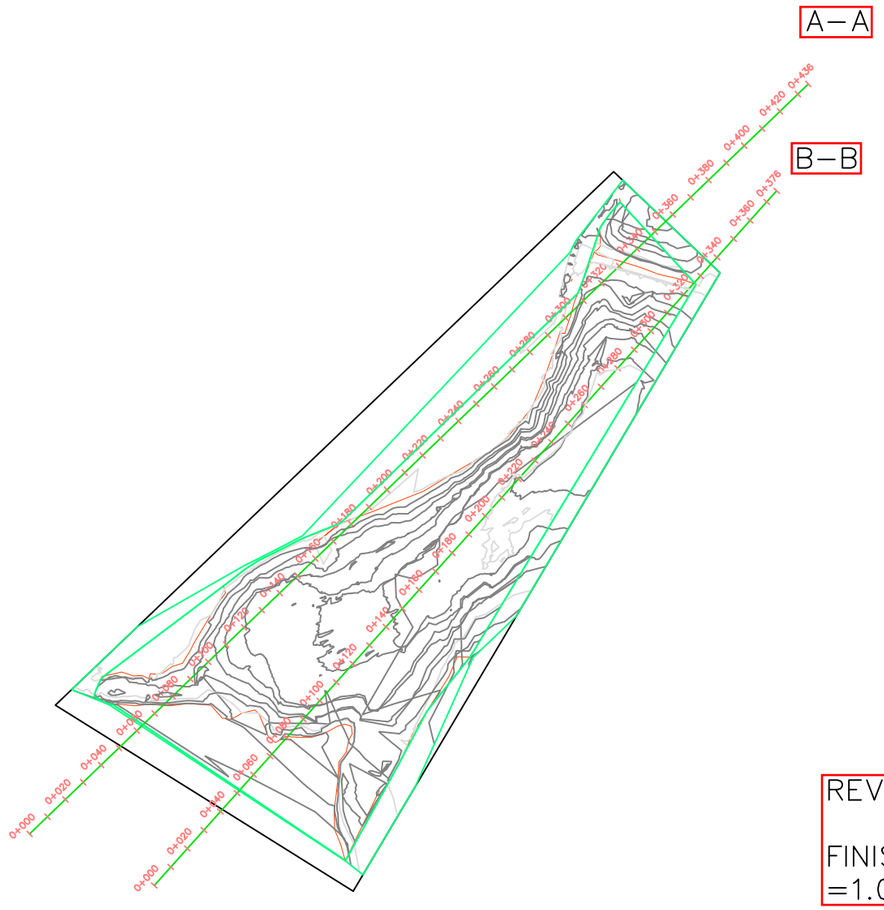


REVISED FINISH LEVELS.

FINISH LEVEL TO BE WATER LINE =1.00M

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
CUTT FILL	**1.000**	**1.000**	20007.92sq.m	1.91 Cu. M.	92663.71 Cu. M.	92661.80 Cu. M.<Fill>
Totals			20007.92sq.m	1.91 Cu. M.	92663.71 Cu. M.	92661.80 Cu. M.<Fill>

N

SURVEY STATIONS

NOTES

RED LINE
DENOTES
EXISTING
GROUND LEVEL

BLUE LINE
DENOTES
PROPOSED
GROUND LEVEL

REVISIONS

DRAWN	DATE
GMD	27.03.20

Drawing title

SECTIONS

Drawing number

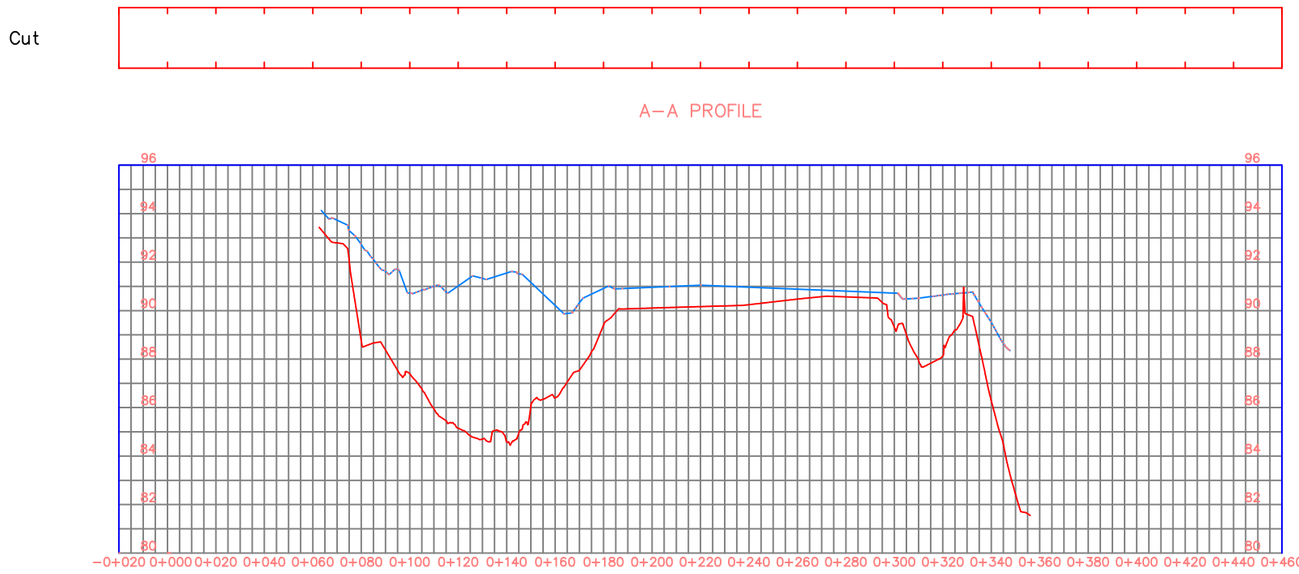
BB—SUN—RES—GA—001

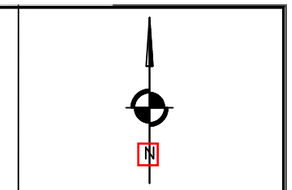
No. of SHEETS	DATE	REVISION
3	03.09.20	B

Envestigate

REVISED FINISH LEVELS.

FINISH LEVEL TO BE WATER LINE =1.00M





NOTES

RED LINE DENOTES EXISTING GROUND LEVEL

BLUE LINE DENOTES PROPOSED GROUND LEVEL

REVISIONS

DRAWN	DATE
GMD	27.03.20

Drawing title

SECTIONS

Drawing number

BB–SUN–RES–SEC–A–A

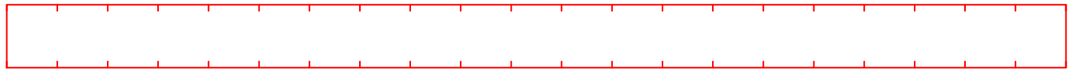
No. of SHEETS	DATE	REVISION
3	03.09.20	B

Envestigate

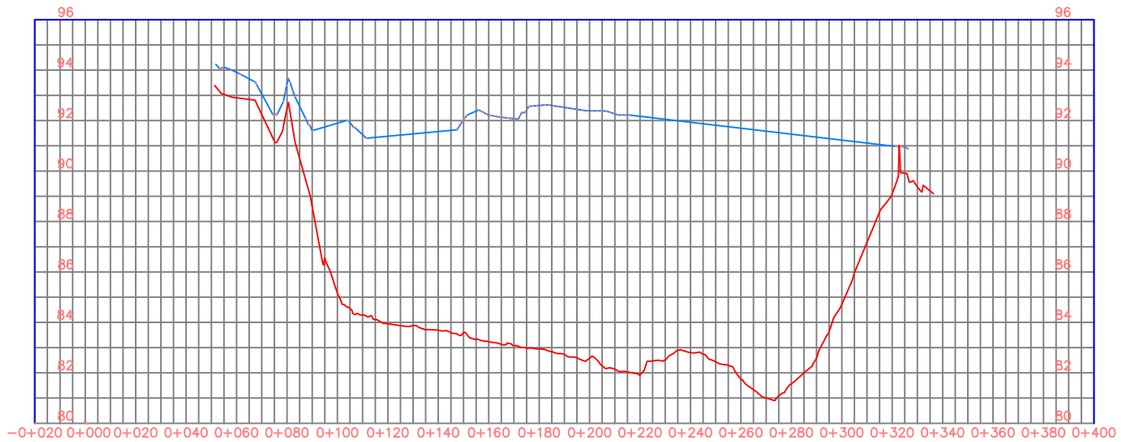
REVISED FINISH LEVELS.

FINISH LEVEL TO BE WATER LINE =1.00M

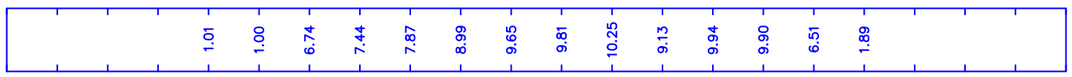
Cut

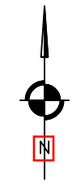


B–B PROFILE



Fill





SURVEY STATIONS

NOTES

RED LINE DENOTES EXISTING GROUND LEVEL

BLUE LINE DENOTES PROPOSED GROUND LEVEL

REVISIONS

DRAWN	DATE
GMD	27.03.20

Drawing title

SECTIONS

Drawing number

BB–SUN–RES–SEC–B–B

No. of SHEETS	DATE	REVISION
3	03.09.20	B

Envestigate

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