BRYAN G HALL

CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Land off Dearne Valley Parkway, Birdwell, South Yorkshire

Drainage Statement

March 2019

Land off Dearne Valley Parkway, Birdwell, South Yorkshire

Hartwood Estates Ltd.

DRAINAGE STATEMENT

Report by: Rik Binnersley

Bryan G Hall
Consulting Civil & Transportation Planning Engineers
Suite E15, Joseph's Well, Hanover Walk, Leeds, LS3 1AB

Ref: 18-429-003.2

March 2019

	Name	Signed	Date
Report prepared by	Rik Binnersley		26/03/20169
Report checked by	Ian Ellis		26/03/2019

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1.0 INTRODUCTION

1.1 This report has been prepared on behalf of Hartwood Estates Ltd. to assess the surface water drainage strategy for the development of a 2.03 hectares area of land off Dearne Valley Parkway. The proposals are for an employment led, mixed use development including both B1(c) and B8 industrial buildings as well a hotel and A3 food and drink use.

1.2 The purpose of this report is to establish a drainage strategy for the site, highlighting the current agreements already in place with Yorkshire Water for the development as a whole.

2.0 SITE LOCATION AND DESCRIPTION

Site Location

2.1 The site is located on the Southern portion of an existing development formerly under the ownership in it's entirety of Hartwood Developments Ltd. During 2018 the Northern portion of the land was developed by means of an Estate Road fed from the stub off Kestrel Way to the North with the 2 Northern parcels of land sold to a private developer. The 2 Plots are now developed and contain a petrol filling station with retail and drive thru coffee shop.

2.2 The location of the site is shown on the Location Plan included in **Appendix BGH1**.

Site Description

2.3 The area for the proposed development is triangular shaped with an East to West dimension of 142.5m at its widest point and a North to South dimension of 229.5m. The developable area of land covers 2.03ha.

2.4 The site is bounded by Dearne Valley Parkway to the East, the newly constructed drive-thru coffee shop to the North and an existing industrial development to the West.

2.5 The site falls relatively uniformly from South to North at a gradient of around 1 in 80. There is around 2.75m of fall across the entire length of the site.

2.6 The portion of site of concern is currently scrub land with areas stripped after temporary storage of surplus material was removed during contrition of the phase 1 works.

2.7 A minor watercourse has been formed in the neighbouring land to the North collecting water from the Hartwood Development and neighbouring Industrial Units to the North and draining via Short Wood Dike into a large attenuation pond.

2.8 The site currently benefits from a technically approved Section 104 agreement submitted to Yorkshire Water in 2018 under the reference H-3-263-835. A copy of the draft agreement awaiting signing can be found in **Appendix BGH2**.

3.0 NATIONAL PLANNING POLICY FRAMEWORK

FLOOD RISK

3.1 A Flood Risk Assessment Report was undertaken for Hartwood Estates Ltd. for the current area of development by RWO Associates in March 2019.

4.0 DRAINAGE PHILOSOPHY

4.1 Surface Water Drainage

4.1.1 The use of Sustainable Urban Drainage Systems (SUDS) to collect, treat and dispose of surface water run-off is currently being promoted throughout the water industry due to their positive impact on the natural water cycle and therefore the environment compared to conventional piped drainage systems.

4.1.2 The developers of the Industrial development served by Kestrel Way to the North of the Hartwood Development scheme was contracted to install a surface water sewer into the Hartwood Land as part of their scheme during construction and make allowance within their design for a peak discharge from the Hartwood Site as a whole of 5L/Sec.

4.1.3 The agreed site wide surface water system for the Hartwood development accepts surface water run off from each development and the partly constructed central spine road leading through the development and drains via gravity to the adoptable Surface Water stub provided by the neighbouring development.

4.1.4 Each of the development parcels will contribute 3 l/sec peak flow via a private flow control into 2100 dia. concrete storage pipes situated within the central spine road.

4.1.5 The 2100 dia. storage pipes within central spine road are designed to accept the 3 l/sec from each plot and the surface water run off from the adoptable spine road, holding it within the system and restricting the flow out via an adoptable flow control chamber to 5 l/sec peak flow.

4.1.6 At the behest of Yorkshire Water, the surface water system has been designed such that the 1in100 year (+ 30% c.c.) worst case storm event is held within the storage system, allowing within the calculations for simultaneous failure of all private flow control devices.

4.2 Foul Drainage

4.2.1 As part of the S104 approval process it has been agreed that FW discharge from the proposed development will discharge at an unrestricted rate by gravity into a combined public sewer running down the South-Western boundary of the site.

4.2.2 In order to make the connection an easement will need to be placed within the service yard of the Southern-most speculative industrial unit.

5.0 MAINTENANCE AND MANAGEMENT

Management of Main Drains

5.1 The piped system within the central spine road and areas of private land where easements will be imposed including the 2100 diameter storage pipes will be offered to Yorkshire Water for adoption under a Section 104 agreement. As such the on-going maintenance and upkeep of this portion of the system will be attributed to them.

5.2 The private flow control chambers in each plot restricted to 3 l/sec and any associated private attenuation will be maintained by the final land owner.

6.0 CONCLUSIONS

6.1 Surface Water run-off from the site shall incorporate into the part built site wide drainage system technically approved by Yorkshire Water, which in turn discharges at a reduced rate into the existing tail provided by the neighbouring land owner which discharges into Short Wood Dike. **Appendix BGH3** shows the site wide drainage design technically approved by Y.W. **Appendix BGH4** shows the current drainage system installed to facilitate the construction of the earlier phase of development.

6.2 1 in 30 year flood attenuation will we housed within on-line adoptable attenuation pipes which will be offered to the Local Water Authority who will then become responsible of their ongoing maintenance.

6.3 1 in 100 year (+ 30% c.c.) flood attenuation will be housed within the on-line adoptable attenuation pipes which will be offered to the Local Water Authority who will then become responsible of their ongoing maintenance.

6.4 The surface water system has been designed such that the 1in100 year worst case storm event held within the storage system, also allows within the calculations for simultaneous failure of all private flow control devices.

6.5 Foul water drainage from the site will discharge by gravity from the proposed development at an unrestricted rate into a combined public sewer running down the South-Western boundary of the site.

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

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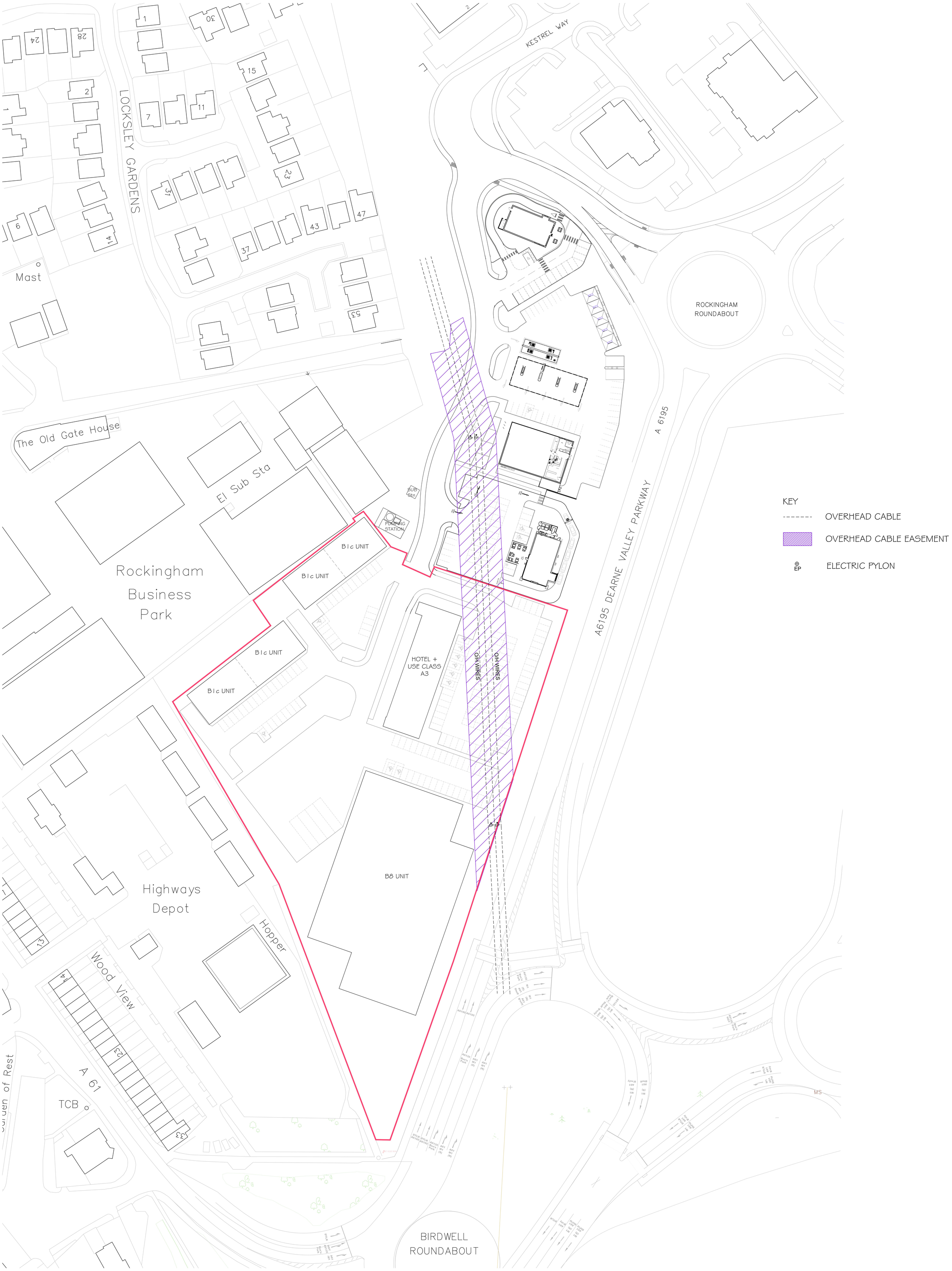
London N1 9RY

Telephone: 0203 553 2336

Website: www.bryanghall.co.uk

APPENDIX BGH 1



REV	DATE	DESCRIPTION	BY	CHECK
B	01.03.19	AMENDED IN ACCORDANCE WITH SMITH JENKINS COMMENTS DATED 28.02.19	KW	VS
A	27.02.19	AMENDED IN ACCORDANCE WITH SMITH JENKINS COMMENTS DATED 20.02.19	KW	VS

NORTH

1:500 SCALE

10m 50m

103 / INDICATIVE SITE LAYOUT

Do not scale off this drawing - Only figured dimensions to be taken from this drawing. Drawings based on Ordnance Survey and/or existing record drawings - Design and Drawing content subject to Site Survey, Structural Survey, Site Investigations, Planning and Statutory Requirements and Approvals.
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jrp ARCHITECTURE | PLANNING | LANDSCAPE

CLIENT: HARTWOOD ESTATES

PROJECT: DEARNE VALLEY PARKWAY SHEFFIELD ROAD

DRAWING: INDICATIVE SITE LAYOUT

DRAWING NUMBER: 13 4806 103 - B

SCALE @ A0: 1:500

DRAWN: KW **DATE:** FEB 19

CHECKED: VS **DATE:** FEB 19

14 MARINER COURT / CALDER PARK / WAKEFIELD / WF4 3FL
01924 383322 / www.jrpassoc.co.uk / info@jrpassoc.co.uk
jrpassociates is a trading style of John R Paley Associates Limited

APPENDIX BGH 2

YorkshireWater

YORKSHIRE WATER SERVICES
LIMITED
DEVELOPER SERVICES
PO BOX 52
BRADFORD
BD3 7AY

Fax: 01274 303047
For telephone enquiries ring:
Imtiyaz Nadat on 0345 120 8482
(Option 1)

Bryan G Hall Limited
Suite E15; Joseph's Well
Hanover Walk
Leeds
LS3 1AB

(For the attention of : Mr Rik Binnersley)

27th July 2018

Your Ref: 10-336/RPB
Our Ref: R625189 / IN

Dear Rik,

DEVELOPMENT AT : DEARNE VALLEY PARKWAY (LAND OFF), ROCKINGHAM, BIRDWELL, BARNSLEY.
DEVELOPER : HARTWOOD ESTATES LIMITED
AGREEMENT UNDER SECTION 104 OF THE WATER INDUSTRY ACT 1991 - H-3-263-835

Thank you for your e-mail's dated 20th July 2018 and to attached revised drawings, details, etc. in connection with the above development site. **The design of the adoptable sewerage scheme is satisfactory for the proposed sewers to be adopted in accordance with an Agreement under Section 104 of the Water Industry Act 1991 and the WSA document "Sewers for Adoption" (6th Edition)**. Our comments are as follows:-

SECTION 104 SEWER ADOPTION AGREEMENT

1. On receipt of the drawings, details and information requested above and below, I will prepare and issue a draft Section 104 Sewer Adoption Agreement for your Client's review/approval. There will be an administration charge of £416.00 : which will be invoiced with the Supervision Fees.

2. As the site has separate parties defined as 'the Developer' and 'the Owner'. We therefore draw your attention to **Clause 1.6 in Section 2. Interpretation, Specifically 1.6.2.**

3. Your client should incorporate the rights and covenants in the "Fourth Schedule" into the Land Transfer Deed/Agreement, where the transfer of a property or where land has a protected strip or part of it within the land.

DRAWINGS

Drawings 10/336/DE/500/009 Rev B and 10/336/DE/500/011 Rev E, need updating to reflect the revised proposals. Please amend the drawings accordingly and then let us have following for inclusion in the Section 104 Agreement:-

continued...

- Full set of the latest drawings in PDF. format via emailing the drawings to Technical.Sewerage@yorkshirewater.co.uk or on a disk (**including the Xylem design document**).

- 6 coloured paper copies of the Section 104 Layout (**drawing(s) 10/336/DE/500/001 Rev M**) in accordance with Appendix VI - Standard symbols for use on the drawings (**please do not colour gully branches, existing public sewers, the private connections, highway drains and watercourses**).

- 2 paper copies of all other drawings (**10/336/DE/LOC-002 Rev C, 10/336/DE/ATR/001 Rev A, 10/336/DE/100/002 Rev F, 10/336/DE/500/002 Rev C, 10/336/DE/500/003 Rev C, 10/336/DE/500/004 Rev D, 10/336/DE/500/005 Rev D, 10/336/DE/500/006 Rev D, 10/336/DE/500/007 Rev C, 10/336/DE/500/008 Rev A, 10/336/DE/500/009 Rev B, 10/336/DE/500/010 Rev J, 10/336/DE/500/011 Rev E, 10/336/DE/500/013 Rev E, 10/336/DE/500/014 Rev B, 10/336/DE/500/015 Rev A, 10/336/DE/500/017 Rev A, A 6466 - 01 Rev E, A 6466 - 02 Rev H, A 6466 - 03 Rev E, A 6466 - 04 Rev B, A 6466 - 05 Rev B, A 6466 - 06 Rev D, 3956/S0001 and 3956/S0001 Rev A**).

**** The drawings that are submitted to us for inclusion within the S104 Agreement should be numbered the same as detailed above. If the drawing numbers are changed with no material changes relating to the design please ensure that a note is included within the revision table - 'This plan No..... is the same as the Technically Approved (plan No.....), but the reference number has changed to allow issue to site'. If there are any fundamental changes to the Technically Approved drawings, then these alterations will need to be fully assessed and approved before the S104 Agreement will be entered into.***

SUPERVISION FEE -

1. The 2.5% supervision fee for the adoptable sewer works is based on an agreed estimate of the cost of the adoptable sewerage scheme. As requested in our previous correspondences, please let us have a detailed estimate for the cost of the adoptable sewer works.

2. Yorkshire Water reserves the right to recover any additional costs in accordance with **Parts 1.9.5. and 1.9.6 of "Sewers for Adoption" (6th Edition)**. In this case there will be a charge of **£70.00 + VAT/hour**, will be charged for additional checking of your proposals.

BOND

As requested in our previous correspondences, please let us have the name and address of the Surety who will provide the necessary bond in the Section 104 Sewer Adoption Agreement.

SITE SUPERVISION

A member of Yorkshire Water staff must inspect the adoptable sewer works during construction : to arrange an inspection, please contact Yorkshire Water's Scheduler on **0345 120 8482 (Option 1) : quoting reference R625189 or H-3-263-835.** Please give 5 days notice.

continued...

FOUL PUMPING STATION (S) AND RISING MAIN(S)

Ownership of the compounds will have to be transferred to Yorkshire Water before adoption (**see attached sheet, listing information and details which you/your client will have to be provided for the inclusion in the Land Transfer Deed**). There is a charge of £519.40p + Vat for Yorkshire Water's Abloy locks which are to be fitted to the pump station works once the pumping station compound is transferred to Yorkshire Water.

RIGHT OF DISCHARGE

1. Any approval under Section 104 and Section 106 of the Water Industry Act 1991 is not an acceptance in respect to any planning conditions imposed under the Grant of Planning permission. As requested in our previous correspondences, please let us have a copy of the Planning Conditions/Consent and evidence of complying with the Grant of Planning Consent and that all pertinent drainage conditions have been discharged.

2. Yorkshire Water has no objection for the highway drainage runoff from the site discharging to the 225mm public surface water sewer record to the north of the development site, subject to the Developer and Highway Authority agreeing not to make any discharge to the public sewer which exceeds total combined surface water discharge from the site to be no greater than **5 litres per second in all storm return period**.

Should you have any queries regarding the above, please contact us on the above number : **quoting the following reference R625189 or H-3-263-835.**

Yours sincerely

Imtiyaz Nadat
Developer Services Sewerage Technical

Please send emails to : technical.sewerage@yorkshirewater.co.uk

Copy to:- Mr Allan Finlay : Hartwood Estates Limited

YorkshireWater

DETAILS REQUIRED FOR LAND TRANSFER AGREEMENT (PUMPING STATION)

No's	Items/Information Required	Rec'd [√]
1.	8 copies of coloured plan (**showing the land to be transferred to Yorkshire Water coloured red [specifying the area in m^2]** and any access to the compound coloured brown [**specifying the area in m^2**]).	
2.	Copy of a SNRS map (Scale 1 : 2500) showing the site boundary edged green and the approximate location of the pumping station marked in red.	N/A
3.	Copy of the completed Section 104 Agreement.	N/A
4.	Office Copy of the Land Registry Title and Title Plan.	✓
5.	Registered names and addresses of The Landowner and Developer.	✓
6.	The Landowner's and Developer's Solicitors Details.	✓
8.	There will be an administration charge of £260 + VAT and is payable to Yorkshire Water Services Limited by return of post. This charge is additional to the fees charged by Kelda Group's Legal Services.	
9.	Copy of the Provisional Certificate or Final Certificate.	N/A

DRAFT

H-3-263-835

DATED **2018**

HARTWOOD ESTATES LIMITED
(Developer)

and

HARWORTH ESTATES (**WAVERLEY PRINCE**) **LIMITED**
(Adjoining Owner)

and

SVENSKA HANDELSBANKEN AB (**PUBL**)
(Surety)

and

YORKSHIRE WATER SERVICES LIMITED
(Undertaker)

[Sewers for Adoption 6 - Model agreement]

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under Section 104 of the Water Industry Act 1991
relating to the sewers at **Dearne Valley Parkway (**Land Off**), Rockingham, Birdwell, Barnsley**
in the county of **South Yorkshire**

Perminder Kaur Solicitor
Head of Legal Services
Yorkshire Water Services Limited

DRAFT

H-3-263-835

PART 1 - MODEL AGREEMENT UNDER SECTION 104 OF THE WATER INDUSTRY ACT 1991

THIS AGREEMENT is made the day of **Two thousand and eighteen** (**2018**) BETWEEN:-

1 "The Developer" **HARTWOOD ESTAES LIMITED** whose registered office is at **P4 Sheffield Business Park Europa Links Sheffield S9 1XU**

2 "The Owner" (Needed if Developer and Owner are different persons) **"None".**

3 "The Adjoining Owner(s)" **HARWORTH ESTATES (**WAVERLEY PRINCE**) LIMITED** whose registered office is at **AMP Technology Centre Advanced Manufacturing Park Brunel Way Waverley Rotherham S60 5WG**

4 "The Surety" **SVENSKA HANDELSBANKEN AB** (**PUBL**) whose registered office is at **3 Thomas More Square London E1 1WY** and whose address for service is **Svenska Handelsbanken AB** (**PUBL**) **1st Floor Copia House Dodworth Barnsley S75 3SP**

5 "The Undertaker" **YORKSHIRE WATER SERVICES LIMITED** whose registered office is at **Western House Halifax Road Bradford BD6 2SZ** (which expression includes any contractor or contractors, agent or agents for the time being appointed by the Undertaker to administer this Agreement)

NOTE: IF A PARTY IS NOT APPLICABLE, DO NOT DELETE IT BUT INSERT 'NONE'

DEFINITIONS		
In this Agreement the following words or phrases shall have the following meanings:		
	Accessories	As defined in Section 219 of the Act.
	Act	The Water Industry Act 1991 including any statutory modification or re-enactment thereof.
	Cash Deposit	(Not applicable if Clause 7 of this Agreement does not apply) shall mean £ **Not Applicable**
	CDM	Construction (Design and Management) Regulations 2015 as amended or replaced.
	Day or date	Any day except Saturdays, Sundays, Bank or other Public Holidays.
	*Diverted Sewers **N O T A P P L I C A B L E**	Sewers and Lateral Drains (if any) which the Developer proposes to construct to replace existing public sewers and public Lateral Drains (if any) (which existing public sewers and public Lateral Drains are to be abandoned as public sewers and public Lateral Drains upon the issue of the Vesting Declaration, and to be transferred automatically to the ownership of the Developer at no cost to the Undertaker, subject to the Developer (or the Owner or the Adjoining Owner(s) (as the case may be if there is a Party so defined) indemnifying the Undertaker from all liabilities arising directly or indirectly from such abandoned public sewers and public Lateral Drains, and at the Developer's choice removing them entirely from the Green Land at no cost to the Undertaker.). **Note: This and all related Clauses are optional. Undertakers may prefer to deal with diverted sewers by a separate Agreement.*

	Drawings	Subject to any alteration in accordance with S.2 of the First Schedule this expression shall mean those Drawings, calculations and other design or working Drawings relating to the carrying out of the Works or any part or parts thereof numbered **10/336/DE/LOC-002 Rev C, 10/336/DE/ATR/001 Rev A, 10/336/DE/100/002 Rev F, 10/336/DE/500/002 Rev C, 10/336/DE/500/003 Rev C, 10/336/DE/500/004 Rev D, 10/336/DE/500/005 Rev D, 10/336/DE/500/006 Rev D, 10/336/DE/500/007 Rev C, 10/336/DE/500/008 Rev A, 10/336/DE/500/009 Rev C, 10/336/DE/500/010 Rev K, 10/336/DE/500/011 Rev F, 10/336/DE/500/012 Rev A, 10/336/DE/500/013 Rev E, 10/336/DE/500/014 Rev B, 10/336/DE/500/015 Rev A, 10/336/DE/500/017 Rev A, 10/336/DE/500/019 Rev A, A 6466 - 01 Rev E, A 6466 - 02 Rev H, A 6466 - 03 Rev E, A 6466 - 04 Rev B, A 6466 - 05 Rev B, A 6466 - 06 Rev D, 3956/S0001, 3956/S0002 Rev A and Micro Drainage Calculations** (**Dated : 09/05/2018**) which are not annexed hereto.
	Estate Roads	Roads or proposed roads which are or are intended to be maintained at public expense.
	Final Certificate	A certificate issued under Paragraph S.8.4 of the First Schedule by the Undertaker to the Developer confirming that : the Works have been constructed in accordance with this Agreement; and all defects notified to the Developer following final inspections by the Undertaker have been remedied to the Undertaker's satisfaction. For the avoidance of doubt, the issue of a Final Certificate does not vest the Works in the Undertaker and they remain the responsibility of the Developer until a Vesting Declaration (defined below) is issued.
	Financial Limit	(not applicable if no Surety is named on page 1 of this Agreement) (but is applicable in the case of a Cash Deposit in lieu of a Surety) Shall mean **One hundred twenty thousand and five hundred pounds** (**£120,500.00**)
	Green Land	The land situates at **Dearne Valley Parkway (**Land Off**), Rockingham, Birdwell, Barnsley** and which is shown edged green on the attached Layout Plan or Plans.
	Inspection Fees	**Thirty thousand one hundred and twenty-five pounds** (**£30,125.00**).
	Lateral Drains or Public Lateral Drains	As defined in Sections 219 and 106(1A)(b)(i) of the Act.
	Layout Plan	The plan or plan(**s**) **10/336/DE/500/001 Rev Q** attached to this Agreement which shows the Site and the layout of the Works.
	Maintenance Period	The period from the date of issue of the Provisional Certificate until the Works are vested in the Undertaker.
	Period of Construction	**1 year** from the date of this Agreement.

	Protected Strip	The strip of land shown coloured yellow on the Layout Plan having a width of **6 and 8 metres**] and (unless the contrary shall be stipulated or be clear from the Drawings or the Layout Plan) the Protected Strip shall lie one half to each side of the centreline of those parts of the Works which are not being constructed within Estate Roads and/or public highways and any existing sewers and any Diverted Sewers or Public Lateral Drains (other than any sewers or Lateral Drains which may be abandoned pursuant to this Agreement) as are shown on the Drawings or the Layout Plan and includes any part or parts of the Protected Strip.
	Provisional Certificate	The certificate issued under S.8.1 or S.8.3 of the First Schedule.
	Sewer or Sewers	As defined in Section 219 of the Act.
	Site	Shall comprise the Green Land and other land (if any) on under in or through which the Works are proposed to be executed.
	Specification	The 6th Edition of Sewers for Adoption or (in relation to health and safety matters or changes in relevant legislation only) the corresponding provision of the current edition subsequent to the 6th Edition and any Appendices provided by the Undertaker.
	Vesting Declaration	A written declaration signed on behalf of the Undertaker vesting the Works in itself as public Sewers or Public Lateral Drains.
	Undertaker's Rights	All rights exercised by the Developer and/or granted to the Developer by the Owner and/or the Adjoining Owner(s) in relation to the construction, use, maintenance, alteration, repair and replacement of the Works together with discharges therefrom to any watercourse. For the avoidance of doubt any covenants that the Developer is subject to shall have no effect on the Undertaker.
	Watercourse	A Watercourse as defined in Section 219 of the Act, but also including a canal, pond or lake.
	Works	Subject to any alteration in accordance with S.2 of the First Schedule this expression shall mean all those Works being Sewers Lateral Drains pumping stations and Accessories and shall include valve chambers overflow chambers outfall structures and (where appropriate) balancing facilities as shown on the Drawing(**s**) **10/336/DE/500/001 Rev Q** and includes any part or parts of the Works.

INTERPRETATION

	1.1	This Agreement which is made under Section 104 of the Act is NOT a deed.
	1.2	References to gender shall include either gender or a corporate identity and the singular shall include the plural.
	1.3	The Interpretation Act 1978 shall apply for the interpretation of this Agreement as it applies to the interpretation of an Act of Parliament.
	1.4	If there is more than one person named as one of the parties then any covenants agreements liabilities or statements made by that party shall be deemed to be made by those persons jointly and severally.
	1.5	If there are no details shown against any one of the party definitions then this Agreement shall be interpreted as if there was no such party.

	1.6	In the event of there being separate parties defined as "the Developer" and "the Owner" then: 1.6.1 the obligations in Clause 2.1 of the Agreement and S.20 of the First Schedule relating to matters of title or conveyancing shall be obligations of the Owner and not of the Developer; and 1.6.2 in the event of default by the Developer in respect of any matter under this Agreement the obligations of the Developer shall also become obligations of the Owner and at the Undertaker's discretion may be enforced against either the Developer or the Owner until this Agreement is replaced by a further agreement entered into by the Owner and/or a different Developer PROVIDED THAT these obligations shall only apply to that part of the Green Land that they own.
	1.7	1.7.1 The provisions of this Agreement are personal to the parties hereto save on the reconstruction or amalgamation of the Developer or 1.7.2 on the appointment of another person as Sewerage Undertaker for the area, including the Site, under the Act.
	1.8	This Agreement shall be governed in all respects by English Law.

AGREEMENT

NOTE: WORDING IN SQUARE BRACKETS IS OPTIONAL

1.		The provisions in the First and Third Schedule shall apply in respect of the Works and all other matters therein contained as though the same had been set out in full in this Agreement.
2.	2.1	In respect of any part of the Works to be constructed in the Green Land the Owner (if any) hereby consents to the exercise by the Developer of its rights under this Agreement and acknowledges that the Undertaker shall be entitled to carry out the Undertaker's Rights following issue of the Vesting Declaration in addition to statutory rights that are exercised by the Undertaker pursuant to the Act.
	2.2	If any of the Works are to be constructed within the Site but outside the Green Land then the Adjoining Owner(s) shall join into this Agreement solely for the purposes of acknowledging and consenting to the arrangements herein expressed between the Developer and the Undertaker. For the avoidance of doubt the Adjoining Owner(s) shall have no liability under the provisions of this Agreement in relation to the construction and future maintenance or repair of the Works.
	2.3	The Developer has sufficient rights in that part of the Site that is outside the Green Land to enable the Works to be carried out therein and to permit the use repair maintenance and discharge therefrom to any Watercourse prior to the date of the Vesting Declaration and to enable a valid and effectual declaration to be made in respect of the Works.
	2.4	The Adjoining Owner(s) hereby consents and agrees to the arrangements contained within this Agreement as far as they relate to land in the ownership of the Adjoining Owner(s) and acknowledges that the Undertaker shall be entitled to carry out the Undertaker's Rights following issue of the Vesting Declaration in addition to statutory rights that are exercised by the Undertaker pursuant to the Act.
	2.5	The Developer hereby confirms that the title of the Owner and the Adjoining Owner(s) (if such parties have joined in this Agreement) have been examined and establishes that the parts of the Site where the Works are to be constructed are in their ownership at the date of this Agreement.
	2.6	The Owner and the Adjoining Owner(s) acknowledge that the Works during and after their construction and until the issue of the Vesting Declaration belong to the Developer.
3.		The Developer shall immediately upon completion of the Works (but without delaying whilst outfall connections to public Sewers or other Works are completed) forward to the Undertaker accurate 'as constructed' Drawings of the Works (including any agreed variations to the original Drawings).
4.		No statutory or common law rights and powers of the Undertaker or the Developer shall be affected by this Agreement.
5.		Nothing in this Agreement is intended to confer on any third party (whether referred to herein by name, class, description or otherwise) any benefit or right to enforce a provision contained in this Agreement.
6.		The Developer shall, if requested, supply to every purchaser of land to be drained by means of the Works a copy or summary of this Agreement.

7.		If as part of the Works the Developer is proposing to construct Diverted Sewers then the additional provisions of the Second Schedule shall apply.
8.		The Developer or the Owner or the Adjoining Owner(s) if there are parties so defined either own the freehold or the unexpired residue of not less than 200 years of a leasehold term or in the case of the Developer has sufficient interest in the Green Land or land adjoining the Green Land within the Site to enable certain development in relation to the same including the construction of the Works to serve the said development.
9.	9.1	The Developer has sufficient rights in the Green Land to enable the Works to be carried out and to permit the use repair maintenance and discharge therefrom and into any Watercourse prior to the date of the Vesting Declaration and to enable a valid and effectual declaration to be made in respect of the Works.
	9.2	The Developer and the Owner (if any) hereby acknowledges that the Undertaker shall be entitled to carry out the Undertaker's Rights following issue of the Vesting Declaration.
10.		In the event of a conflict between this Agreement and the 6th Edition of 'Sewers for Adoption' the provisions of this Agreement shall prevail and have effect.
[*11.]	**NOT APPLICABLE**	The agreements in Clause 2 hereof are: (a) given in connection with the land on which the Works are being constructed which land at the date of execution hereof belongs to the Developer the Owner or the Adjoining Owner(s) as the case may be (b) given in pursuance of [e.g. Section 41of the Yorkshire Water Authority Act 1986].
[*12.]		The Undertaker shall apply for this Agreement to be registered in the Register of Local Land Charges]. **Note: These Clauses are optional. Undertakers may have a local Act to replace Clause 11. Undertakers may not require this agreement to be registered in the Register of Local Land Charges.*

AS WITNESS the hands of the parties the day and year first before written.

FIRST SCHEDULE
(Being provisions applicable to the Works)

Construction of Works		
S.1		If the Developer proceeds with the Works it shall, at its own expense, properly construct and complete them in accordance with the Drawings and the Specification (and which Drawings and Specification shall be deemed to be part of this Agreement) or as varied by virtue of the powers contained in S.2 of this Schedule and the statutory provisions for the time being relating to new Sewers and to the reasonable satisfaction of the Undertaker in the positions and to the extent shown within the Drawings and indicated by coloured lines and symbols as to foul and surface water sewers in accordance with Appendix VI of the said 6th Edition of 'Sewers for Adoption'.
Minor Variations		
S.2		The Developer shall not vary the Works nor make any additional connections not shown on the Drawings without first obtaining the Undertaker's written consent.
Consent to Discharge		
S.3		
	S.3.1	In the case of a discharge from any part of the Works to controlled waters as defined by the Water Resources Act 1991 ('WRA' which expression includes any statutory modification or re-enactment thereof) the Developer shall: S.3.1.1 before the commencement of any Works make application for and obtain any necessary consent to such discharge from the Pollution Control Authority and, if appropriate, the Land Drainage Authority and comply with the conditions relating to their consent PROVIDED, however, that the Developer shall not agree to conditions without the prior approval of the Undertaker (which approval shall not be unreasonably withheld or delayed) and shall, if required by the Undertaker, appeal against the same or any of them within the period provided within the WRA for the lodging of an appeal; and S.3.1.2 transfer the consent to discharge referred to in S.3.1.1 to the Undertaker immediately prior to the issue of the Vesting Declaration or as soon as practicable thereafter.
	S.3.2	If any part of the Works is intended to discharge into any Watercourse which is owned by or comprises part of the undertaking of a Navigation Authority (as defined in the WRA) (otherwise than a natural Watercourse and whether the same is navigable or not) the Developer shall before the commencement of any of the Works which would drain to such Watercourse obtain the consent of the Navigation Authority to such discharge but shall not agree to any conditions relative to such consent without the prior approval of the Undertaker.
	S.3.3	In the case of a discharge to an estuary or coastal waters the Developer shall, before the commencement of any of the Works obtain requisite consents or approvals.
	S.3.4	If the Works are to discharge to land (including any Watercourse) owned by any of the Undertakings listed in Schedule 13 Part 1 of the Act, the conditions referred to in S.3.2 above shall (so far as the context admits) apply to the Works.

Notification of Intended Commencement		
S.4		The Developer shall give the Undertaker at least five days' written notice of the date on which it intends to commence the Works and shall with such notice submit to the Undertaker for inspection such plans Drawings and other design or working, Drawings not previously submitted to the Undertaker and which relate to the carrying out of the Works as the Undertaker may require and shall not commence construction until the Developer has completed this Agreement (unless otherwise agreed with the Undertaker) and supplied to the Undertaker a copy of the relevant form relating to the registration of the Site for CDM purposes.
Period of Construction		
S.5		The Developer shall construct and complete the Works within the Period of Construction and all parts of the Works including all outfalls and all connections to existing public Sewers shall be completed and in working order before any foul or surface water drainage is discharged from any building or property served by the Works PROVIDED ALWAYS that if the Developer shall fail to construct and complete the Works within the Period of Construction the Developer shall comply with any revised standards for any part of the Works which have been notified to the Developer in writing by the Undertaker.
Building Over		
S.6		The Developer shall not build plant or place anything over or within **3 metres** measured horizontally from the centreline of any Sewer or Lateral Drain which are to be included in the Vesting Declaration (or such other distance as may be reasonably specified by the Undertaker) without the written consent of the Undertaker PROVIDED THAT consent shall be deemed to be refused if consent is not given within ten days PROVIDED ALSO THAT this condition shall not apply to anything shown on the Drawings or the Layout Plan within the Protected Strip.
Backfilling		
S.7		
	S.7.1	The Developer shall notify the Undertaker before covering up any part of the Works.
	S.7.2	Upon receiving such notice the Undertaker shall if it thinks fit arrange with the Developer to inspect the Works.
	S.7.3	If the Developer fails to give notice under S.7.1 or fails to comply with arrangements under S.7.2 it shall be liable for the full cost of reopening the Works even if the same are found to comply with this Agreement.
	S.7.4	Provided notice is given as above if the Undertaker fails to comply with arrangements under S.7.2 (unless prevented from so doing because of circumstances beyond its control) the Developer may cover in the Works.
		S.7.4.1 Without prejudice to S.7.1 to S.7.4 inclusive the Developer shall at any time if requested to do so by the Undertaker in writing, open up the Works for inspection.
		S.7.4.2 If the Developer fails to comply with such request within any time limit specified by the Undertaker, the Undertaker may open up the Works and then if any part of the Works are found not to comply with the terms of this Agreement the Developer shall repay to the Undertaker on demand all costs the Undertaker incurs in opening up and re-covering the Works but in any other case and provided due notice has been given the costs of opening up the Works shall be borne by the Undertaker.
	S.7.5	For the avoidance of doubt the provisions of S.10 (relating to access to the Works) are to be read in conjunction with this paragraph.

Provisional and Final Certificates		
S.8		
	S.8.1	When the Undertaker is of the opinion that the Works have been completed (including all outstanding remedial works) it shall issue a certificate to the Developer to that effect.
	S.8.2	The Works shall be deemed completed when: S.8.2.1 they have been constructed in accordance with this Agreement; and S.8.2.2 a majority of the premises within the Green Land and intended to be served by the Works are occupied; and S.8.2.3 all necessary connections or other things have been made or done whereby such occupied premises may be properly drained; and S.8.2.4 the Developer has supplied to the Undertaker: (a) two full sets of 'as constructed' Drawings and sections showing the completed Works and sewers by lines colours and symbols in accordance with Appendix VI of the 6th Edition of 'Sewers for Adoption' and (b) two sets (or more if requested) of operating instructions/maintenance manuals for any pumping station.
	S.8.3	If requested by the Developer the Undertaker may at its discretion issue one or more certificates in respect of any substantial part or parts of the Works that have been completed to its satisfaction.
	S.8.4	The Undertaker may issue a Provisional Certificate and/or a Final Certificate when it considers it appropriate or if requested to do so by the Developer.
	S.8.5	The Undertaker may issue the Provisional Certificate subject to conditions which must be discharged before the Works are vested as public Sewers.
Maintenance Period		
S.9		During the Maintenance Period the Developer shall at its own expense maintain repair and otherwise keep the Works in good working order and repair to the reasonable satisfaction of the Undertaker UNLESS the Undertaker shall declare that any required maintenance and/or repair is an emergency in which case the Developer shall carry out the said maintenance and/or repair immediately.
Access to the Works		
S.10		The Developer shall arrange for the Undertaker to have access to the Works and the Site at all reasonable times and in particular shall, at its own cost, provide all relevant plant, equipment (including safety equipment) signing, guarding, lighting and personnel whilst the Undertaker is on the Site for the purpose of carrying out inspections under this Agreement.

Undertaker's Right to Repair		
S.11		If at any time before the Works are vested in the Undertaker the Developer shall fail to construct and maintain the Works in accordance with this Agreement the Undertaker shall (as agent of the Developer) be entitled at its entire discretion to construct complete make good and maintain such part or parts of the Works as may be necessary in the opinion of the Undertaker after first giving not less than ten days notice in writing to the Developer (UNLESS the Undertaker declares that any required construction and/or maintenance is an emergency in which case the Undertaker may carry out the said construction and/or maintenance immediately) and the Surety of such intention and the Developer shall upon demand pay to the Undertaker the cost thereof including the necessary cost of the preparation and service of such notices and of necessary administration as certified by the Undertaker including professional fees and other expenses reasonably and properly incurred.
Vesting Declaration		
S.12		
	S.12.1	The Undertaker shall (subject to the Developer complying with the terms of this Agreement and to the terms of the proviso immediately below) vest the Works in the Undertaker and supply immediately to the Developer a Vesting Declaration in relation to vesting BUT the Undertaker shall not be required to vest the Works until the Developer has proved to the Undertaker that it owns or has sufficient rights in the Site to enable the making of valid declaration and the Undertaker is satisfied that: S.12.1.1 the Works have been constructed and completed in accordance with the Drawings and the Specification to its reasonable satisfaction and have been maintained by the Developer during the Maintenance Period and any defects arising or work required in connection with the Works during that period and prior to the date of the Vesting Declaration have been made good by the Developer to the reasonable satisfaction of the Undertaker AND THAT S.12.1.2 (a) no building or structure save as permitted in S.6 of this Schedule has been erected within the Protected Strip or on or over land within **3 metres** of any part of the Works not falling within the Protected Strip (or such other distance as may be reasonably specified by the Undertaker in respect thereof) measured horizontally from the centreline of any such Works without the written consent of the Undertaker and (b) access to any part of the Works with or without vehicles plant or equipment is not obstructed AND THAT S.12.1.3 where any part of the Works is shown in the Drawings discharging to an existing public Sewer that part of the Works has been connected properly and directly and in the manner shown in the Drawings to a Sewer having the status of a public Sewer AND THAT S.12.1.4 where any part of the Works is shown in the Drawings discharging to a Watercourse, that part does discharge properly and directly to the Watercourse in the manner shown in the Drawings and in accordance with any necessary consents or approvals AND THAT S.12.1.5 the Developer has complied with all requirements of the Undertaker in pursuance of Clause 2 of the Agreement and S.3, S.19 and S.20 of this Schedule.

	S.12.2	The Undertaker shall not be obliged to issue a Vesting Declaration while: S.12.2.1 any dispute exists between the Developer and any third party concerning the Works; or S.12.2.2 any connection remains whereby surface water or groundwater may enter a foul water Sewer or foul water or groundwater may enter a surface water sewer.	
	S.12.3	In order that the Works may as soon as practicable be vested in the Undertaker: S.12.3.1 the Developer shall no later than ten months after the issue of the Provisional Certificate supply to the Undertaker the relevant section (relating to drainage) of the CDM Health and Safety File S.12.3.2 the Undertaker shall within fifteen days after any inspection of the Works made during the Maintenance Period, advise the Developer in writing of any defects arising or work required in connection with the Works needing rectification or completion before the issue of the said Vesting Declaration provided however that:	
			S.12.3.2.1 if the said plans and sections or records provided by virtue of S.8.2.4 do not adequately and accurately show the Works to the reasonable satisfaction of the Undertaker it may require the Developer to provide at the Developer's own cost corrected plans and sections or records (as the case may be);
			S.12.3.2.2 the Undertaker shall be under no duty to issue the Vesting Declaration until it is satisfied that the Developer has complied with S.12.3.1
	S.12.4	Notwithstanding the provisions of this Paragraph the Undertaker shall not be obliged to vest Sewers in itself until all intervening private Sewers which link the Works to the receiving public sewerage system are themselves public Sewers.	
	S.12.5	For the avoidance of doubt the provisions of this Schedule in relation to maintenance or repair of the Works whether by the Developer or otherwise shall apply until vesting in the same even though vesting may be delayed by the preceding Sub-paragraph.	
No Duty to Developer			
S.13		Nothing in this Agreement shall imply any obligation on the part of the Undertaker to the Developer or to any other person to ensure that the Works or any part or parts of the same are properly constructed.	
Indemnity to Undertaker by Developer			
S.14		The Developer indemnifies the Undertaker against all actions costs claims and demands which may be made against them jointly or separately in connection with the construction and completion of the Works and those matters referred to in Clauses 2 and 9 and Paragraph S.20.1.1 of the First Schedule of this Agreement provided that the said actions costs claims or demands shall have arisen not later than the vesting of the Works in the Undertaker unless those actions costs claims or demands relate to the ownership of the Site.	

Bankruptcy etc. of Developer		
S.15		If the Developer shall fail to perform any of the conditions contained in this Agreement to be performed or observed by the Developer or shall be adjudicated bankrupt or shall go into receivership or liquidation voluntarily or otherwise or shall execute a deed of assignment or arrangement for the benefit of or otherwise compound with its creditors (except for the purpose of re-construction or amalgamation) the Undertaker may without prejudice to its other Rights, remedies and powers against the Developer for such non-performance or non-observance by notice in writing to the Developer and Surety terminate this Agreement and upon such notice being served this Agreement shall immediately terminate but without prejudice however to the obligations of the Surety to the Undertaker under S.16 of this Schedule and of the Developer to the Undertaker under S.19 and S.20 of this Schedule and of the rights of the Undertaker under S.11 of this Schedule.
Obligation of Surety (where Party to the Agreement)		
S.16		
	S.16.1	In consideration of the Undertaker entering into this Agreement with the Developer the Surety as a principal indemnifies the Undertaker in respect of any expenditure which the Undertaker may incur in accordance with this Agreement by reason of the failure of the Developer to observe or perform in full its obligations according to this Agreement whether or not this Agreement has been terminated or disclaimed but the obligations of the Surety shall in no circumstances exceed the Financial Limit to which the Surety and its successors and assigns under this Agreement now bind themselves to the Undertaker.
	S.16.2	The amount of any such expenditure shall be that certified by the Undertaker whose decision shall be final.
	S.16.3	The Surety shall be discharged or released from its obligations under this Paragraph when the Provisional Certificate has been issued and such parts of the Works in relation to which the Undertaker requires a transfer of land together with the rights referred to in S.20 of this Schedule shall have been transferred or granted to the Undertaker but the Surety shall not be discharged or released from such obligations by any determination or disclaimer of this Agreement or by any arrangement between the Developer and the Undertaker or by any alteration in the obligations of the Developer or by the execution of any amended extra or substituted Works authorised by virtue of S.2 of this Schedule or by any forbearance whether as to payment performance time or otherwise whether made with or without the assent of the Surety.
Arbitration		
S.17		In the event of any dispute or difference arising from the construction of the Works or application of this Agreement (the distance or distances specified in S.6 and S.12.1.2 of this Schedule and the decision of the Undertaker in S.8.3 of this Schedule excepted) the same may be referred for determination to a person to be agreed between the parties hereto (or failing such agreement within ten days to be appointed by the President for the time being of the Institution of Civil Engineers) the decision of the person so agreed or appointed to be binding on all the parties thereto.
Notices		
S.18		Any notice to be served on or Drawings to be supplied or submitted to the Undertaker shall be delivered or posted to the Undertaker's registered office or other address as may be notified from time to time and any notices to be served on the Developer may be delivered or posted by pre-paid letter to its last known address (or being a limited company to its registered office or to its last known registered or head office) or place of business and any notice to be served on the Surety may be delivered at or posted to its address for service.

Fees		
S.19		
	S.19.1	The Undertaker acknowledges receipt of the following sums: S.19.1.1 the cost of the preparation and completion of this Agreement and appropriate copies thereof; and S.19.1.2 the Inspection Fees being the fees incurred by the Undertaker for the technical examination and processing of the initial submission by the Developer of plans Drawings and other design or working Drawings whereby the Works are proposed to be constructed and for inspection by the Undertaker of the execution of the Works (which may include a survey by closed-circuit television (CCTV) and/or other internal survey methods).
	S.19.2	The Developer shall on demand pay to the Undertaker : S.19.2.1 any additional fees arising from CCTV or other internal resurveys associated sewer cleansing and Site visits essential to recheck sub-standard work; S.19.2.2 any additional Inspection Fees in respect of Lateral Drains that are proposed for adoption and which were not constructed at the same time as the Sewers in the Green Land; S.19.2.3 any fees and disbursements pursuant to S.20 of this Schedule; S.19.2.4 VAT upon any payments referred to in this Agreement if the same is properly payable thereon.
Transfer of Land and Maintenance Arrangements and VAT		
S.20		
	S.20.1	The Developer shall before the Works are vested in the Undertaker at the request of the Undertaker execute or secure the execution (at no cost to the Undertaker whether by way of consideration costs or disbursements whether such costs or disbursements be incurred by the Undertaker or by any other party) of:
		S.20.1.1 a Transfer to the Undertaker transferring to the Undertaker (if so required by the Undertaker) the title absolute free from any covenant easement exception reservation (other than a reservation of rights necessary for the Developer to maintain the Works until the issue of the Vesting Declaration) or other incumbrance of the land forming the sites of pumping stations outfall structures or of any balancing facilities (excluding above ground balancing facilities that do not form part of the Works) that form part of the Works together in each case with all rights necessary to gain access thereto with vehicles and the transfer deed shall contain the following agreement and declaration together with the covenant and indemnity in the form shown below: "It is hereby agreed and declared that this Transfer of the Property shall not vest in the Undertaker the Works (as defined in the related sewer adoption Agreement) until the same are subsequently vested in the Undertaker".

		"The Transferor covenants with the Transferee that until such time as the Sewers are vested in the Undertaker pursuant to Section 104 of the Water Industry Act 1991 it will indemnify the Transferee from and against all actions, costs, claims, demands, proceedings and expenses whatsoever in respect of the use and occupation of the Property or the presence of the Sewers". Note: *"the Sewers" to be defined as "any Sewers pumping station or accessories thereto on over or under the Property".* S.20.1.2 adequate administrative arrangements agreed in writing by the Undertaker for the maintenance and permanence of any balancing facility which is not to be vested in the Undertaker. S.20.1.3 a Deed of Grant of easement for a discharge in the model form of agreement referred to in the 'Interim Code of Practice for Sustainable Drainage Systems' published in July 2004 and available at http://www.ciria.org/suds/word/icop_suds_ma3.doc (where the Undertaker considers it necessary) in respect of any balancing facility which facility is not to be vested in the Undertaker. S.20.1.4 a Deed of Grant of easement incorporating the rights and covenants contained in the Fourth Schedule hereto in the event that the Undertaker considers it reasonably necessary and appropriate for the future protection of the Works and any discharges therefrom to any Watercourse.
	S.20.2	The Undertaker hereby agrees to pay to the Developer an amount equal to any Value Added Tax ("VAT") to which the Developer becomes properly accountable by virtue of those Works to be vested in the Undertaker (if and insofar as such vesting is a 'supply' for VAT purposes) PROVIDED HOWEVER that the Developer shall have submitted to the Undertaker a VAT-only invoice in respect of the same and a copy of the Vesting Declaration issued to it by virtue of S.12.

SECOND SCHEDULE
(Provisions applying to Diverted sewers or public Lateral Drains under Clause 7 of the Agreement : Optional Clauses)

NOT APPLICABLE

***Diverted Sewers**		
1.		The Developer shall construct the Diverted Sewers in accordance with the provisions of the First Schedule of this Agreement.
2.		Prior to the commencement of the construction of the Diverted Sewers the Developer shall provide a method statement for approval by the Engineer together with payment of the Cash Deposit which is calculated to be one hundred per cent of the estimated construction costs of the Diverted Sewers.
3.		Upon issue of the Provisional Certificate for the Diverted Sewers in accordance with S.8 of the First Schedule the Diverted Sewers shall in pursuance of the powers conferred on the Undertaker by the Act vest in the Undertaker as public Sewers or public Lateral Drains PROVIDED THAT the diversion of flows from the existing public Sewers or public Lateral Drains into the Diverted Sewers shall not be permitted until the necessary and relevant provisions of this Agreement have been complied with and the decision of the Undertaker in this respect shall be final and conclusive. The Undertaker shall return eighty per cent of the Cash Deposit to the Developer when the Diverted Sewers are vested in the Undertaker.
4.		Until the issue of the Final Certificate for the Diverted Sewers in accordance with S.8 of the First Schedule if the Developer fails to carry out the provisions of S.9 of the First Schedule then the Undertaker may deduct from the balance of the Cash Deposit such costs as are incurred by the Undertaker in carrying out those provisions in place of the Developer.
5.		S.8.2.2 and S.8.2.3 and the references to vesting in S.9 and S.12 of the First Schedule shall not apply to the Diverted Sewers.
6.		The balance of the Cash Deposit shall be repaid to the Developer upon issue of the Vesting Declaration following the deduction of any amounts due to the Undertaker in accordance with the provisions of Paragraph 4 above PROVIDED THAT if any part of the Diverted Sewers shall have been constructed in public highway then five per cent of the Cash Deposit shall be retained for a period of two years from the date of the issue of the Final Certificate and if the Developer fails to comply with the provisions of the New Roads and Street Works Act 1991 in relation to the Diverted Sewers then the Undertaker may deduct from the remainder of the Cash Deposit such costs as are incurred by the Undertaker in carrying out those provisions in place of the Developer. At the end of the said two-year period the remaining balance of the Cash Deposit shall be repaid to the Developer following the deduction of any amounts due to the Undertaker.

7.		Until the issue of the Final Certificate if by reason or in consequence of the construction or failure of the Diverted Sewers or any subsidence resulting from any of those Works any damage shall be caused to any land or property or there is any interruption in any service provided by the Undertaker the Developer shall repay the cost reasonably incurred by the Undertaker in making good such damage or restoring the service and shall:
	7.1	make reasonable compensation to the Undertaker for any loss sustained by it; and
	7.2	indemnify the Undertaker against all claims demands proceedings costs damages and expenses which may be made or taken against or recovered from or incurred by the Undertaker by reason or in consequence of any such damage or interruption.
8.		The use of the existing public Sewers or public Lateral Drains that are being replaced by the Diverted Sewers shall be abandoned in accordance with the method statement referred to in Paragraph 2 hereof and discontinued and prohibited in accordance with Section 116 of the Act upon issue of the Provisional Certificate.

THIRD SCHEDULE
Sewers for Adoption 6th Edition – the Sewerage Undertaker Addendum

YORKSHIRE WATER SERVICES LIMITED ADDENDUM in relation to the Pumping Station Specification

The following amendments to Part 2B (Design of pumping stations) and Part 3 (M & E Specification for small pumping stations) of Sewers for Adoption 6th Edition shall apply to the Works:-

Amendments to Part 2B

M&E Requirements in addition to SFA6, where the following clauses shall take precedent.

2.17.4.

YWS already has Framework arrangements in place for plant and equipment, such as Pumps and Motor Control Centres, these are the preferred types.

2.20.2

Wet well sumps shall be designed to be benched to a minimum 45 degrees, the area under the pump shall be as small as possible to ensure effective well cleansing.

Typically the benching shall start within 100mm of the pump volute.

2.21.2

Check valves or non return valves shall be mounted horizontally, fitted with a removable top cover, & an external lever weighted arm.

The lever weighted arm shall be guarded.

½" BSP tappings shall also be provided & fitted with ½" BSP stainless steel flanged plugs.

2.21.2

Thrust blocks shall be fitted to the valve chamber pipework on the Tee section and bend (as Figure 2.12 in sectional plan), they shall provide sufficient restraint and cover at least half of the pipework section.

Where flange adaptors are fitted, these shall be tied as necessary to resist thrust loadings.

Sufficient space shall be allowed for adjacent fittings or bolts to be removed for maintenance.

2.22

No permanent access provision shall be required.

However a davit & socket shall be provided to allow a man riding winch to be employed, in the event of man access being required to the wet well.

The davit socket shall be labelled as "man riding winch".

2.22.4a

The wet well shall be ventilated by a minimum diameter of 75mm galvanised steel pipe, the height shall be at least the same height as the top of the kiosk.

2.22

Submersible pump lifting chains are not required.

A blue rope system shall be provided for each submersible pump.

These can be obtained from YWS Framework Lifting suppliers.

A davit & socket will be required to lift the pumps with the blue rope system.

Amendments to Part 3

3.1

YWS already has Framework arrangements in place for plant and equipment, such as Pumps and Motor Control Centres, these are the preferred types.

3.2

Where YWS Framework pumps are selected, & duties are approved by the framework supplier, pumpsets are permitted with speeds up to 3000 rpm.

3.2.2

Each pumpset shall be capable of operating at 110% of the design flow rate, this ensures each pump can provide the required flow when wear takes place.

Each pump shall achieve a self cleansing velocity in the rising main of

0.76 m/s minimum and 1.8 m/s maximum.

For surface water ONLY stations, consideration may be given to relax this requirement, this must be approved by the undertaker.

3.2.3

The “snore” facility is not required with single stage screw impeller pumps.

3.2.9

All pumps shall be capable of passing a sphere, sized no less than

75% of the bore of the outlet flange.

The only permitted exceptions are pumps supplied from YWS Framework suppliers.

3.2.10

Pumpsets shall be reliable, efficient and capable of operating between the manufacturers recommended service intervals without attention of inspection.

All pumpsets shall as a minimum meet the following asset lives;

0	-	2.99 Kw	5 years
3	-	9.99 Kw	7 years
10	-	29.99 Kw	10 years
30	-	99.99 Kw	15 years
		> 100 Kw	20 years

Pumpsets shall not be acceptable if they are more than 2/3rds asset life expired at the expected time of adoption.

3.3.4.2

Twin circular cross section guide rails or tubes shall be provided as a guide system, these tubes shall be a single piece construction.

The top of the guide rail shall be securely fixed & not be more than 150mm below the top slab.

3.3.11

A single wet well flushing/mixing/cleaning system is required for each pair of submersible pumps.

In addition to a wet well flushing/mixing/cleaning system.

Benched & profiled sump liners are also acceptable as a means to aid wet well cleansing of small SPS sumps fitted with screw impeller pumps.

3.3.13

Submersible pump chains are not required.

A blue rope system shall be provided for each submersible pump.

These can be obtained from YWS Framework Lifting suppliers.

A davit & socket will be required to lift the pumps with the blue rope system.

3.3.14

Lightweight Aluminium davits are preferred for loads up to but not exceeding 500kg.

Davits supplied for loads above 500kg shall be conventional steel design.

Standard socket diameter shall be 65mm.

These can be obtained from YWS Framework Lifting suppliers.

Overhead Gantry & Electric hoist equipment shall be installed for lifting applications with the following conditions:-

a) For plant & equipment above 1000 kg, with a lift height in excess of 3m.

b) Where the operation of manual lifting equipment or chain blocks for a single lift cannot be undertaken in less than 20 minutes.

An electric traverse shall also be provided for electric hoist equipment having a traverse distance in excess of 6m.

For submersible installations where an electric hoist is required a proprietry “Dock Link” lifting system is preferred.

Fabricated lifting equipment shall be galvanised and coated to Wimes 4.01, the final paint coat shall be coloured yellow with black markings.

Electric hoist lifting equipment should as a minimum be rated to IP65.

Electric hoist lifting equipment shall be supplied from a separate compartment on the motor control centre.

3.3.16

Submersible pump chains are not required.

3.4

Motor Overheat & Mechanical seal protection shall be provided on all pumps with motors of 7 kW and above.

Mechanical Seal Sensors shall be configured to alarm only and not stop the pump.

3.7.4

The maximum number of starts per hour shall not exceed ;

Up to 20kW	8 starts per hour
20 kW and above	6 starts per hour.

3.8.3.4

Each pumpset cable shall be directly cabled back to the motor control centre.

3.9

A generator socket is required, this shall be mounted on the motor control centre, located adjacent to a cat flap, the kiosk doors must lockable with the generator plug & socket connected.

This shall be suitably rated, five pin pilot, red, 400 volt

63A or 125A, as appropriate, BSEN60309-2, 3 phase neutral & earth appliance & inlet.

3.10.3

Operating Instructions and Maintenance manuals to be submitted to Yorkshire Water for approval.

These shall contain record drawings, wiring diagrams, cable schedules, copies of all test certificates (including Pump test, Lifting Equipment test, Electrical tests, Drop tests & system curve information), a full set of wiring diagrams, pump serial numbers, pump type, impeller details complete with duty curve, power rating of pumps.

Three complete working sets of operating instructions/maintenance manuals will be provided to Yorkshire Water prior to the pre-maintenance inspection along with as built drawings.

YWS data forms. Shall be completed and provided prior to pre-maintenance inspection.

The third copy of the finalised manual will be provided and kept in a document holder within the kiosk. All pages shall be plastic sleeves.

3.11.2.7

Approval of the design must be obtained from Yorkshire Water

3.11.2.12.

The kiosk doors shall be fitted with hasp & staple and triangular key locks located at the top & bottom of the door.

3.11. 6

See clause 3.9.

3.11.7

A Logica MM3x (or latest equipment supplied by YWS) telemetry outstation shall be provided by the Developer.

The telemetry system shall be configured and commissioned by YWS at the developers expense.

The Developer shall provide a suitable telephone line.

3.12

YORKSHIRE WATER HAS STANDARDISED IT'S SMALL MOTOR CONTROL PANELS.

ALL WIRING SHALL COMPLY WITH YORKSHIRE WATER'S STANDARD DETAILS INCLUDED IN THIS DOCUMENT.

Yorkshire Water has a Framework for motor control centres, this is the preferred source of supply.

All motor control centres shall be form 4.

Any other type of motor control centre must be approved by the YWS E&M Inspecting engineer PRIOR TO CONSTRUCTION.

The framework drawings comprise;

YWFWDPGA1

YWFWDPGA2

YWFWDPGA3

YWFWDPSW1

YWFWDPSW2

YWFWDPSW3

YWFWDPSW4

YWFWDPSW5

YWFWDPDOLSW6

YWFWDPDOLSW7

YWFWDPDOLSW9

YWFWDPDOLSW10

YWFWDPDOLSW11

YWFWDPDOLSW13

YWFWDPSW14

Plus any further updated drawings (see YWS framework suppliers).

3.12.3

In addition to;

f) A separate telemetry compartment.

Table 3.2

In addition;

Analogue 4-20 mA or 1-5 V signal cables and wiring shall be yellow with cable numbers prefixed by the letter “A”.

3.14.3.2

Each pumpset cable shall be directly cabled back to the motor control centre.

Plugs, sockets or junction boxes are NOT permitted.

3.14.5.

Earthing Bolts, screws, nuts and washers shall be phosphor bronze. Rivets shall be copper. The minimum provision for jointing tape shall be two M8 bolts or four 5 mm diameter rivets

FOURTH SCHEDULE

Rights and Covenants to be Incorporated in a Deed of Grant of Easement pursuant to S.20.1.4 of the First Schedule

The following shall be incorporated into a Deed of Grant made between the Grantor and the Owner of the Green Land in addition to any rights granted to the Owner by this Deed:

Definitions

"the Undertaker"	means YORKSHIRE WATER SERVICES LIMITED and its successors in title
"the Apparatus"	means the foul and/or surface water Sewers, Lateral Drains and any accessories thereto as defined by Section 219 of the Water Industry Act 1991 as are within the Protected Strip defined below
"the Protected Strip"	means that strip of land shown on the plan (being the plan annexed to the Transfer) and thereon coloured **yellow** and being **6 and 8 metres** wide and, unless the contrary shall be stipulated or be clear from the Drawings, the Protected Strip shall lie one half to each side of the centreline of the Apparatus
"the Dominant Tenement"	means the undertaking of the Undertaker within its area as particularised in the Undertaker's "Instrument of Appointment" as a Sewerage Undertaker and taking effect under the Water Act 1989 and the properties and rights forming part thereof

Rights

Subject to the Undertaker making good so far as is reasonably practicable or paying proper compensation for any damage not made good and to the Undertaker indemnifying the Transferee from and against all rates taxes impositions and outgoings of an annual or recurring nature claims demands proceedings damages losses costs charges and expenses arising out of the exercise of the Rights the Transferee hereby grants with full title guarantee the following perpetual rights ("the Rights") to the Undertaker for the benefit of the Dominant Tenement and each and every part thereof:

(a) The right of having retaining using inspecting the condition of reconstructing replacing relaying altering enlarging maintaining cleansing repairing conducting and managing the Apparatus in through under over or upon the Protected Strip (being the servient tenement) together with the right of having and enjoying the free flow and passage of water with or without other matter of any kind whatsoever through and by means of the Apparatus as existing from time to time in through under over or upon the Protected Strip and to discharge from the Apparatus into any canal pond lake or Watercourse (as defined in section 219(1) of the Water Industry Act 1991) within or adjacent to the Protected Strip in compliance with the terms of any statutory consent granted in relation thereto and to increase or decrease such discharge and for such discharge to flow along and within the said canal pond lake or Watercourse and the right at any time to take samples of such discharge.

(b) For the purposes hereof and in particular for the purposes mentioned in Paragraph (a) of this Schedule (and for similar purposes in relation to any connected length of pipes or works incidental thereto) the right at any time and at all times in the day or night-time with or without vehicles plant machinery servants contractors and others and all necessary materials to enter upon and pass and re-pass along the Protected Strip by a route within the same or by such (if any) other convenient route from a public highway as the Undertaker shall with the approval of the Transferee (which shall not be unreasonably withheld or delayed) from time to time require doing and occasioning no unreasonable damage thereto or to the Transferee's adjoining land.

(c) The right of erecting on or near the Protected Strip and maintaining any necessary markers indicating the Protected Strip or the position of the Apparatus provided the same are not erected in such a position as to unreasonably affect the beneficial use of the Protected Strip.

(d) The right in exercising the Rights to make all necessary excavations and to tip soil on land immediately adjoining such excavations as shall be necessary or desirable in relation to the exercise of the Rights.

(e) The right of fencing or severing off such part of the Protected Strip from the adjoining and adjacent land of the Transferee as shall be necessary and for so long as may be necessary during the exercise of the Rights.

(f) The right of support for the Apparatus from the subjacent and adjacent land and soil including minerals of the Transferee.

(g) The right to remove all or any trees and shrubs growing in the Protected Strip and any walls hedges and fences thereon.

Covenants

The Grantor to the intent that the burden of this covenant may run with the Protected Strip and so as to bind (so far as practicable) the same into whosesoever hands the same may come and every part thereof and to benefit and protect the Apparatus and the Dominant Tenement and each and every part thereof capable of being so benefited or protected but not so as to render the Transferee personally liable for any breach of covenant committed after the Transferee has parted with all interest in the land in respect of which such breach shall occur hereby covenants with the Undertaker to observe and perform the following covenants:

1. Not to use or permit or knowingly suffer to be used the Protected Strip or any adjoining or adjacent land of the Transferee for any purpose that may:

   1.1 endanger injure or damage the Apparatus or render access thereto more difficult or expensive

   1.2 adversely affect the quality of water or other matter therein or the free flow and passage thereof or means of communication along or through the same.

2. Without prejudice to the generality of the foregoing:

2.1 not to erect construct or place any building wall or other structure or erection or any work of any kind whether permanent or temporary PROVIDED ALWAYS that this covenant shall not be deemed to prevent the erection of boundary or other fences which are of an easily-removable character

2.2 not to withdraw support from the Apparatus or from the Protected Strip

2.3 not to undertake or cause or permit to be undertaken any piling or percussive Works within the Protected Strip

2.4 not to alter the ground levels within the Protected Strip

2.5 not to plant or cause or permit to be planted any trees or shrubs in the Protected Strip

2.6 not to construct or lay or cause or permit construction or laying of any street road pipe duct or cable across the Apparatus at an angle of less than forty five degrees formed by the Apparatus and the street road pipe duct or cable PROVIDED that this prohibition shall not apply to an existing street road pipe duct or cable.

3. To advise any tenant for the time being of the Protected Strip of the existence of the Apparatus and of this Deed and its contents insofar as the same relate to the tenant's occupancy and enjoyment of the Protected Strip.

4. The Undertaker shall have the benefit of the right to enforce these Rights and Covenants pursuant to The Contracts (Rights of Third Parties) Act 1999.

5. Notwithstanding the earlier exercise of the Rights or the earlier enforcement of the Covenants, the Apparatus shall not vest in the Undertaker until it has issued a Vesting Declaration vesting the Apparatus in itself pursuant to Section 102 of the Water Industry Act 1991.

Please Note that The Agreement cannot be signed as A DEED

SIGNED .....

Print Name : .....
being duly authorised to sign this Agreement on behalf of the Developer

SIGNED .....

Print Name : .....
being duly authorised to sign this Agreement on behalf of the Adjoining Owner(s)

Executed by **SVENSKA HANDELSBANKEN AB (PUBL)** a company incorporated in Sweden, acting by **[ ]** and **[ ]** who, in accordance with the laws of that territory, are acting under the authority of the company

Signature in the name of the company

SVENSKA HANDELSBANKEN AB (PUBL)

……
Signature of authorised signatory

……
Signature of authorised signatory

SIGNED .....

Print Name : .....
being duly authorised to sign this Agreement on behalf of the Undertaker

APPENDIX BGH 3

YORKSHIRE WATER REF NO. H-3-263-835

MH REF.	INVERT LEVELS AT CENTRE OF MANHOLE	COVER LEVELS	DEPTH TO SOFFIT	DEPTH TO INVERT	TYPE	SIZE	COVER TYPE	NOTES	SET-OUT COORDINATES
SW 01	131.844 - 2100Ø	137.943	3.999	6.099	SEE DWG 10/366/DE/500/003	3000Ø CONC.	D400		E434899.140, N400506.268
SW 02	131.762 - 2100Ø	137.689	3.827	5.927	SEE DWG 10/366/DE/500/003	4000Ø CONC.	D400		E434911.609, N400522.540
SW 03	131.862 - 2100Ø 133.812 - 150Ø	137.200	3.238	5.338	SEE DWG 10/366/DE/500/003	3000Ø CONC.	D400		E434933.863, N400511.149
SW 04	131.670 - 2100Ø 133.620 - 150Ø	137.357	3.587	5.867	SEE DWG 10/366/DE/500/003	3000Ø CONC.	D400		E434917.115, N400544.871
SW 05	131.526 - 2100Ø 133.476 - 150Ø	136.934	3.308	5.408	SEE DWG 10/366/DE/500/004	3000Ø CONC.	D400		E434931.798, N400577.741
SW 06	131.388 - 2100Ø 133.338 - 150Ø	136.515	3.027	5.127	SEE DWG 10/366/DE/500/004	3000Ø CONC.	D400		E434951.795, N400605.854
SW 07	131.252 - 2100Ø 133.202 - 150Ø	136.061	2.709	4.809	SEE DWG 10/366/DE/500/004	3000Ø CONC.	D400		E434964.138, N400637.534
SW 08	131.188 - 2100Ø	135.833	2.545	4.645	SEE DWG 10/366/DE/500/004	3000Ø CONC.	D400		E434963.615, N400653.525
SW 09	131.020 - 2100Ø 132.970 - 150Ø	134.993	1.873	3.973	SEE DWG 10/366/DE/500/006	4000Ø CONC.	D400		E434980.165, N400692.127
SW 10	131.058 - 2100Ø 132.933 - 225Ø	134.548	1.390	3.490	SEE DWG 10/366/DE/500/006	3000Ø CONC.	D400		E434984.686, N400710.582
SW 11	130.955 - 2100Ø 130.930 - 225Ø	134.400	1.370	3.470	SEE DWG 10/366/DE/500/005	3000Ø CONC.	D400	Flow control MH, see 10/336/DE/500/005	E434955.864, N400703.895
EXG SW	130.490 - 225Ø	132.530	1.815	2.040				Existing MH	

THE POSITION OF THE INTERNAL FACE OF ANY DRAIN/SEWER OR RISING MAIN SHALL NOT DEVIATE FROM THE DESIGN LINE AND LEVEL BY MORE THAN +/- 20mm, PROVIDED THAT NO DRAIN/SEWER SHALL HAVE A REVERSE GRADIENT.

MH REF.	INVERT LEVELS AT CENTRE OF MANHOLE	COVER LEVELS	DEPTH TO SOFFIT	DEPTH TO INVERT	TYPE	SIZE	COVER TYPE	NOTES	SET-OUT COORDINATES
FW 01	132.600 - 150Ø	135.099	2.349	2.499	B	1200Ø CONC.	D400		E434980.830, N400687.149
FW 02	131.405 - 150Ø	135.804	4.249	4.399	A	1200Ø CONC.	D400		E434966.709, N400654.211
FW 03	130.802 - 150Ø 132.057 - (BD)	136.018	5.066	5.216	A	1200Ø CONC.	D400		E434966.458, N400635.675
FW 04	130.637 - 150Ø	136.017	5.230	5.380	A	1200Ø CONC.	D400		E434951.928, N400631.061
FW 05	135.878 - 150Ø	138.950	2.922	3.072	B	1200Ø CONC.	C250		E434880.061, N400592.729
FW 06	135.486 - 150Ø	136.849	1.213	1.363	B1/E	1200Ø CONC.	D400		E434935.028, N400577.896
FW 07	135.436 - 150Ø	136.918	1.332	1.482	B1/E	1200Ø CONC.	D400		E434932.237, N400573.769
FW 08	135.212 - 150Ø	137.245	1.883	2.033	B	1200Ø CONC.	D400		E434923.395, N400553.127
FW 09	135.097 - 150Ø	137.383	2.136	2.286	B	1200Ø CONC.	D400		E434920.222, N400541.261
FW 10	134.922 - 150Ø	137.568	2.496	2.646	B	1200Ø CONC.	D400		E434915.687, N400524.336
FW 11	134.818 - 150Ø	137.722	2.754	2.904	B	1200Ø CONC.	D400		E434910.141, N400515.549
FW 12	130.578 - 150Ø	136.300	5.572	5.722		1500Ø CONC.	D400	FW pump inlet chamber, refer to Xylem Water Solutions details*	T.B.C. upon receipt of Xylem design
FW 13	131.561 - 150Ø in 135.100 - 89Ø out	136.300	4.589	4.739		3000Ø CONC.	D400	FW pump wet well, refer to Xylem Water Solutions details*	T.B.C. upon receipt of Xylem design
FW 14	135.100 - 89Ø	136.300	1.111	1.200		1800x2400 CONC.	D400	FW valve chamber, refer to Xylem Water Solutions details*	T.B.C. upon receipt of Xylem design
EXG CW (no-8530)	134.580 - 150Ø	137.880	3.150	3.300				Existing public C.W MH	
EXG CW (no-8532)	ll 135.303/225Ø exg.) approx.	139.128	3.600	3.825				Existing public C.W MH	

THE POSITION OF THE INTERNAL FACE OF ANY DRAIN/SEWER OR RISING MAIN SHALL NOT DEVIATE FROM THE DESIGN LINE AND LEVEL BY MORE THAN +/- 20mm, PROVIDED THAT NO DRAIN/SEWER SHALL HAVE A REVERSE GRADIENT.

SURFACE WATER MANHOLE SCHEDULE

ADOPTABLE PUMPING STATION

PUMP TO INCLUDE MONITOR, VISUAL ALARM AND TELEMETRY LINK/REMOTE DIALLER.

FW PUMPING STATION
CL= 136.136
IL= (150Ø IN) 130.591
IL= (RISING MAIN OUT) 135.100
IL= (RISING MAIN OUTFALL INTO FW05) 136.475
PUMP RATE = 4.7l/s
STATIC HEAD TBC

FW PUMPING STATION SUPPLIED BY XYLEM WATER SOLUTIONS U.K. LTD.

MODEL FLYGT NP3085 MT 3~ADAPTIVE 462

RISING MAIN
RISING MAIN TO BE 110mm (89.1Ø INTERNAL) HDPE SDR11 AND SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 13244-2. COLOUR TO BE BLACK. POLYETHYLENE FITTINGS, INCLUDING FUSION JOINTS AND ELECTROFUSION FITTINGS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 13244-3.

SL = SOFFIT LEVEL
IL = INVERT LEVEL

DRAIN LEVEL KEY

KEY:
- PROPOSED FOUL DRAIN
- PROPOSED SURFACE WATER DRAIN
- PIPE HATCHED THUS ON PLAN TO HAVE 150mm CONCRETE SURROUND
- PROPOSED FOUL WATER RISING MAIN
- FW PROPOSED FOUL MANHOLE
- SW PROPOSED SURFACE WATER MANHOLE
- G PROPOSED ROAD GULLY

DRAINAGE LAYOUT KEY

'HYDROBRAKE' DETAILS				
MANHOLE	RING SIZE	COVER LEVEL	INVERT LEVEL	SUMP LEVEL
SW11	3000	134.400	130.930	130.525
Unit Type	MD-SHE-0081-5000-3400-5000			
Design Head	3.400m			
Design Flow	5.0 L/sec			

NOTE:
1. ALL MANHOLE COVER LEVELS ARE APPROXIMATE AND SHOULD BE ADJUSTED TO SUIT THE FINISHED HIGHWAY LEVEL.

NOTE: existing manhole to be inspected with a Yorkshire Water inspector to check that it can accommodate the new connection and to check if any remedial works are required. It may be necessary to reconstruct the manholes at the developers expense.

NOTE
LEVELS AS SURVEYED BY CONTRACTOR ON SITE

Rising Main to be 110mm HDPE (89.1mm internal diameter) 80.8m Length SDR11 in black

45 degree junction to public sewer 150Ø in135.399 approx

Marker tape will be provided above the rising mains. On plastic rising mains, the marker tape should include a tracer wire that is terminated in the valve chamber and outfall manhole, in such a way to facilitate the easy connection of a location signal (e.g. Locat & genny)

NOTE
PROPOSED YW. 6m EASEMENT

NOTE
MAXIMUM ALLOWABLE SW DISCHARGE FROM PLOT D AT WORST CASE 1in100 YEAR + cc STORM = 3L/Sec

VEHICULAR HARDSTANDING TO ALLOW ACCESS TO PUMPING STATION

NOTE
SITE BOUNDARY DENOTED THUS

NOTE
PROPOSED YW, 6m EASEMENT

SITE PLATEAU CONTOURS DENOTED THUS

PLOT D

PLOT E

PLOT C

NOTE
MAXIMUM ALLOWABLE SW DISCHARGE FROM PLOT E AT WORST CASE 1in100 YEAR + cc STORM = 3L/Sec

NOTE
MAXIMUM ALLOWABLE SW DISCHARGE FROM PLOT C AT WORST CASE 1in100 YEAR + cc STORM = 3L/Sec

NOTE
MAXIMUM ALLOWABLE SW DISCHARGE FROM PLOT F AT WORST CASE 1in100 YEAR + cc STORM = 3L/Sec

NOTE
MAXIMUM ALLOWABLE SW DISCHARGE FROM PLOT G AT WORST CASE 1in100 YEAR + cc STORM = 3L/Sec

NOTE
MAXIMUM ALLOWABLE SW DISCHARGE FROM PLOT A AT WORST CASE 1in100 YEAR + cc STORM = 3L/Sec
FGL 134.80

NOTE
MAXIMUM ALLOWABLE SW DISCHARGE FROM PLOT B AT WORST CASE 1in100 YEAR + cc STORM = 3L/Sec

NOTE
FFL 135.60

NOTE
REFER TO BRYAN G HALL DRAWING 10/336/DE/500/019 FOR DETAILS OF VEHICULAR ACCESS TO FLOW CONTROL CHAMBER

NOTE
MAXIMUM TO BE ALLOWABLE SW DISCHARGE FROM SITE AT WORST CASE 1in100 YEAR + cc STORM = 5L/Sec

NOTE
FLOW CONTROL LOCATED WITHIN MANHOLE SW11 REFER TO BRYAN G HALL DRAWING 10/336/DE/500/005 FOR DETAILS

HIGHWAY MH
CL 134.434
IL (225Ø) 133.009

NOTE
EXISTING 2250 COMBINED PUBLIC SEWER. LINE AND LEVEL OF SEWER TO BE CONFIRMED BY CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS

NOTE
PROPOSED YW. 6m EASEMENT

EXG. 6000 YW EASEMENT

NOTE
EXISTING MANHOLE WILL NEED TO BE INSPECTED WITH A YORKSHIRE WATER INSPECTOR TO CHECK THAT IT CAN ACCOMMODATE THE NEW CONNECTION AND TO CHECK IF ANY REMEDIAL WORKS ARE REQUIRED: IT MAY BE NECESSARY TO RECONSTRUCT THE MANHOLES AT THE DEVELOPER'S EXPENSE

NOTE
GULLY CONNECTIONS TO BE STAGGERED AND TAKE PLACE INTO NEXT DOWNSTREAM PIPE LENGTH

SURFACE WATER OUTFALL TO EXG. SW MANHOLE 1:250

NOTE
Existing manhole will need to be inspected with by a Yorkshire Water inspector to check that it can accommodate the new connection and to check if any remedial works are required.

Drainage Notes

1. All works shall be carried out in accordance with Appendix S/1and S/5 standard specification for highway works and standard details, unless otherwise instructed by the local inspecting officer.
2. All new gullies to utilise existing gully connections where possible.
3. Gully connection pipes shall be either flexible or rigid; the angle of connection to chambers and drain should be no greater than 60 degrees to the direction of flow.
4. Except where otherwise indicated gully gratings and frames are to be set at a level 6mm below finished carriageway level.
5. The minimum depth from the top of grating to the top of gully outlet is to be 750mm when connecting pipe is under carriageway and 600mm elsewhere.
9. The contractor is obliged to obtain necessary road opening and/or sewer connection licenses from the appropriate governing authority prior to commencement of the works.
10. One vertical joint per course of brick work shall be left open to allow drainage during construction.
11. All existing gullies, sewers, manholes and drain runs to be cleaned of detritus and high pressure water jetted prior to commencement of works in accordance with Clause 560AR of the specification.
12. All pipe runs under carriageway that do not achieve 1.2m of cover shall have a 150mm concrete surround.
13. Anti-slip coating to be applied to all new and existing covers in the carriageway unless otherwise instructed by the inspecting officer.
14. Backfilling of trenches above the pipe cover material shall be undertaken using only Class 1 material complying with Table 6/1 and the 600 series of the Specification.
15. Existing manholes to be surveyed to distinguish correct location for the proposed gully connections.
16. Proposals to be in accordance with Yorkshire Water policy, Sewers to be laid in Class S bedding (150mm granular bed and surround). Where depth of cover to top of sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provided above granular and surround.
17. All adoptable sewer works and material to be in accordance with "Sewers for Adoption" 6th Edition, The Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked.
18. Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
19. Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
20. Yorkshire Water is **not** obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system **(directly or in-directly).** An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.
21. Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association **(CPSA),** 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.
22. Sulphate resistant cement **(C20-DC2)** and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
23. The adoptable sewers should be a minimum of 1 m and manholes 0.5m from kerb faces and service margins.
24. "Sewers must have 5 metres clearance from trees and hedges **(please also refer to Figure 2.3 on page 33 in "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers)".**
25. Sewers to be laid in Class "S" Bedding **(150mm granular bed and surround).** Where depth of cover to top of the sewer is less than 1.2m in highways and verges **(or less than 900mm in none vehicular access areas)** then a concrete slab should be provide above granular bed and surround.
26. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 **(Table A2).**
27. The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.
28. Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.

Rev:	Date:	Amendment:	DRN	CHK
Q	13/11/18	Hatching added to show tanker access road highlighted.	JI	RB
P	31/08/18	Hardstanding accessed from new road to allow maintenance of flow control chamber omitted in lieu of allowing access through exg. Rockingham Business Park	RPB	RB
N	02/08/18	Line of rising main updated to reflect as laid on site.	RPB	RB
M	20/07/18	FW5 Location updated and notes amended	JI	RPB
L	05/07/18	FW5 & ECG CW (no-8532) Invert level updated	JI	RPB
K	22/06/18	FW04 & FW12 Invert level updated to suit as built levels	JI	RPB
J	08/05/18	Backdrop added to FW103.	JI	RPB
H	08/05/18	FW dropped from FW01 down to pumping station.	JI	RPB

NOTES:

THIS PLAN 10-336-DE-500-001-N IS THE SAME AS THE TECHNICALLY APPROVED (10-336-DE-500-001-M), BUT THE REFERENCE NUMBER HAS CHANGED TO ALLOW ISSUE TO SITE.

This drawing is copyright and shall not be reproduced nor used for any other purpose without the written permission of the Bryan G Hall ltd. This drawing must be read in conjunction with all other related drawings and documentation.

It is the contractors responsibility to ensure full compliance with the Building Regulations. Do not scale from this drawing, use figured dimensions only. It is the contractors responsibility to check and verify all dimensions on site. Any discrepancies to be reported immediately. IF IN DOUBT ASK.

Materials not in conformity with relevant British or European Standards/Codes of practice or materials known to be deleterious to health & safety must not be used or specified on this project.

Status: FOR APPROVAL

Client: HARTWOOD ESTATES

Project: LAND TO EAST HIGHWAYS DEPOT, BIRDWELL, SOUTH YORKSHIRE

Title: SECTION 104 GENERAL ARRANGEMENT

Scale: 1:250 A0 - 841 x 1185 | Drawn: RPB | Checked: IE | Drawing No: 10/336/DE/500/001 | Job No: 10-336 | Revision: Q | Date: 12/06/17

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APPENDIX BGH 4

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