

SURFACE WATER PRINCIPLES

NPPG HIERARCHY OF SURFACE WATER DRAINAGE

THE NATIONAL PLANNING PRACTICE GUIDANCE SETS OUT THE HIERARCHY OF DRAINAGE TO PROMOTE THE USE OF SUSTAINABLE DRAINAGE SYSTEMS, BY ALIGNING MODERN DRAINAGE SYSTEMS WITH NATURAL WATER PROCESSES. THE AIM OF HIERARCHY OF DRAINAGE IS TO DRAIN SURFACE WATER RUN-OFF AS

AS STATED IN THE NATIONAL PLANNING PRACTICE GUIDANCE, THE AIM SHOULD BE TO DISCHARGE SURFACE WATER RUN-OFF AS HIGH UP THE DRAINAGE HIERARCHY, AS REASONABLY PRACTICABLE:

- INTO THE GROUND (INFILTRATION). TO A SURFACE WATER BODY.
- TO A SURFACE WATER SEWER, HIGHWAY DRAIN, OR ANOTHER DRAINAGE
- TO A COMBINED SEWER.

INTO THE GROUND (INFILTRATION)

A DESK STOP STUDY HAS BEEN UNDERTAKEN TO DETERMIN THE SUITABILITY OF

LANDIS SOILSCAPES DESCRIBES THE LAND AS 'SLOWLY PERMEABLE SEASONALLY WET ACID LOAMY AND CLAYEY SOILS' DRAINAGE IS DESCRIBED AS IMPEEDED . A REVIEW OF BGS GEOINDEX CONFIRMED THERE ARE NO HISTORIC BORE HOLE

RECORDS AVAILABE WITHIN THE SITE BOUNDARY. A PHASE 2 GEO-ENVIRONMENTAL ASSESSMENT HAS BEEN UNDERTAKEN BY PWA GEO-ENVIRONMENTAL LTD, REPORT REFERENCE 21256-PWA-00-XX-RP-G-2000-P02. THE REPORT SUMMARIES THAT THE GROUND

GLACIAL TILL. BASED ON THE ABOVE, THE USE OF INFILTRATION HAS BEEN DISCOUNTED.

AFTER REVIEWING ALL AVAILABLE RESOURCES ONLINE, THE ARE NO NEARBY WATERCOURSES WITHIN A 300m RADIUS THAT WOULD ACT AS A VIABLE SOLUTION FOR SURFACE WATER DISCHARGE.

TO A SURFACE WATER SEWER

AN ADOPTED SURFACE WATER SEWER IS LOCATED NORTH WEST OF THE SITE

SURFACE WATER WILL DRAIN VIA GRAVITY TO A FLOW CONTROL MANHOLE (HYDROBREAK) WHICH WILL DISCHARGE SURFACE WATER TO AN INSPECTION CHAMBER AT A RESTRICTED RATE. SURFACE WATER WILL THEN FLOW VIA GRAVITY TO THE ADOPTED YORKSHIRE WATER ASSET. SUBJECT TO A SECTION 106 AGREEMENT WITH YORKSHIRE WATER.

SURFACE WATER DESIGN

A GREENFIELD CALCULATION HAS BEEN UNDERTAKEN TO DERIVE

A GREENFIELD RUN OFF RATE OF 1.04l/s. SEE 21256-PWA-01-XX-CA-C-1000 FOR CALCULATIONS.

PROPOSED DRAINAGE SYSTEM

ALL SURFACE WATER WILL DRAIN VIA GRAVITY TO THE SOUTH OF THE SITE. FLOWS ARE TO BE ATTENUATED AND RESTRICTED TO 11/s TO ALIGN WITH THE GREENFEILD RUN OFF RATE BEFORE ENTERING A YORKSHIRE WATER ADOPTED ASSET. FLOWS ARE TO BE RESTRICTED VIA A FLOW CONTROL

THE PROPOSED SYSTEM HAS BEEN DESIGNED TO ACCOMOATE A 10% URBAN CREEP ALLOWANCE IN ALL PRIVATELY OWNED DWELLING AREAS PLUS A CLIMATE CHANGE ALLOWANCE OF 40% FOR A 1 IN 30 YEAR SCENARIO AND 45% FOR A 1 IN 100 YEAR SCENARIO.

PRELIMINARY ATTENUATION DESIGNS ARE BELOW: 1 CELLULAR STORAGE TANK 15m (L) x 4m(W) x 0.8m(D) WITH A 95% VOID

RATIO PROVIDING A TOTAL STORAGE VOLUME OF 45.60m³

FOUL WATER STRATEGY

THE PROPOSED FOUL WATER FROM THE DEVELOPMENT WILL BE DRAINED VIA GRAVITY INTO AN ADOPTED FOUL SEWER LOCATED TO THE NORTH WEST OF THE SITE. SUBJECT TO A 106 AGREEMENT WITH

ALL PROPOSED DRAINAGE IS SUBJECT TO DETAILED DESIGN. DETAILED DESIGN TO BE IN LINE WITH BRADFORD DISTRICT COUNCIL GUIDANCE

TABLE 1: DESIGNERS RISK ASSESSMENT		
RISK REFERENCE	RISK DESCRIPTION	RISK CONSIDERATION
R.01	EXISTING PRIVATE DRAIANGE	ANY EXISTING PRIVATE D FROM EXISTING STRUCTU TO BE LOCATED/SURVEYE COMMUNICATED BACK TO ENGINEER FOR REVIEW.
R.02	NO CONFIRMED RAINWATER PIPE OR SOIL VENT PIPE LOCATIONS FOR PLOT 2a AND 3a.	ARCHITECTS ARE TO CON THE LOCATION PRIOR TO CONSTRICTION AND INFO ENGINEER FOR REVIEW.

11.02	LOCATIONS FOR PLOT 2a AND 3a.	CONSTRICTION AND INFORM ENGINEER FOR REVIEW.
ABLE 2: NOTE TO	DEVELOPER	
OTE REFERENCE	NOTE DESCRIPTION	

CONNECTION INTO SURFACE WATER SEWER IS SUBJECT TO APPROVAL FROM YORKSHIRE WATER. ONNECTION INTO FOUL WATER SEWER IS SUBJECT TO APPROVAL FROM YORKSHIRE WATER.



OS Y (Northings) 445721 SE 04515 45721 Nat Grid Post Code (Nearest) BD20 OLJ



KEY PLAN - 1:2000

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ALL DIMENSIONS ARE SHOWN IN MILLIMETRES.

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EXISTING ADOPTED SURFACE WATER MANHOLE

__ __ EXISTING ADOPTED SURFACE WATER SEWER EXISTING ADOPTED FOUL WATER MANHOLE

____ · ___ EXISTING ADOPTED FOUL WATER SEWE

O PROPOSED ADOPTED SURFACE WATER INSPECTION CHAMBER — — — PROPOSED ADOPTED SURFACE WATER LATERAL SEWER

PROPOSED PRIVATE SURFACE WATER FLOW CONTROL MANHOLE (ORIFICE) PROPOSED PRIVATE SURFACE WATER INSPECTION CHAMBER

— — — PROPOSED PRIVATE SURFACE WATER SEWER

PROPOSED PRIVATE SURFACE WATER GEO-CELLULAR ATTENUATION PROPOSED PRIVATE SURFACE WATER GULLEY

PROPOSED PRIVATE SURFACE WATER CHANNEL

 PROPOSED ADOPTED FOUL WATER INSPECTION CHAMBER

PROPOSED PRIVATE FOUL WATER INSPECTION CHAMBER

---- PROPOSED PRIVATE FOUL WATER SEWER SITE BOUNDARY



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HAINSWORTH ROAD DAVRIC SITE

PROPOSED DRAINAGE LAYOUT

PRELIMINARY

Job Number Originator Zone Level Type Role Drawing No. 21256 - PWA - 01 - XX - DR - C - 1001