SURFACE WATER FLOW REGIME

1. All access roads/parking areas to be Type A Permeable Paving Full Infiltration except B2 Unit parking areas which shall be Type C Permeable Paving- No infiltration.
2. Type C permeable paved areas will discharge freely to the Flood Conveyance Channel. Each separate parking area will incorporate a Pollution Control Valve (PCV) to isolate the area in the event of a pollution spill.
3. Type A permeable paved areas infiltrate to ground. An infiltration rate of 0.4m/hr has been calculated based on the lowest recorded BRE DG365 soakage test results undertaken by Civils Contracting Ltd on 21 Dec 2021.
4. Runoff from roofs discharges directly to the Type A Permeable Paved areas via distribution tanks.
5. Runoff from rooffs connects directly to the Flood Conveyance Channel for those units that are located directly adjacent.
6. The surface water networks/SuDS components are designed to convey/contain the 1 in 100 year plus 40% climate change with no flooding.

FOUL WATER FLOW REGIME

The following regime will ensure the on-site foul water drainage systems will be resilient in times of flood:

1. Foul water from each unit connects directly to a gravity foul drain suspended under the raised floor slab.
2. The gravity drain connects to a package pumping station located above the existing ground level within the void space under each unit. The pump station incorporates sealed bolt down covers to prevent the ingress of flood water should this rise above the modelled 1 in 100 year event plus 40% climate change.
3. The pump chamber incorporates dual pumps operating on a duty / standby basis. An audible / visual alarm alerts the owner / tenant of any malfunction.
4. Emergency storage is provided within the pump chamber to cater for mechanical / power failure.
5. Foul flows are pumped through a sealed pressurised lateral main to the common rising main located within the access road adjacent each unit.
6. The common rising main discharges to the head of the on-site gravity sewer located to the west of the flood conveyance channel.
7. The on-site gravity foul sewer manholes incorporate sealed bolt down covers to prevent the ingress of flood water.
8. Foul flow connects to the existing public foul sewer MH at the entrance to the Business Park.

WATER QUALITY MANAGEMENT

The effect of the proposed work on local water quality has been assessed using the simple qualitative method as set out in CIRIA Report C753 the SUDS Manual 2015 [CHAPTER 26].

BOX 26.2 Steps of the simple index approach

Step 1 – Allocate suitable pollution hazard indices for the proposed land use

Step 2 – Select SuDS with a total pollution mitigation index that equals or exceeds the pollution hazard index

Step 3 – Where the discharge is to protected[1] surface waters or groundwater, consider the need for a more precautionary approach

Note:
1 Designated as those protected for the supply of drinking water (Table 4.3).

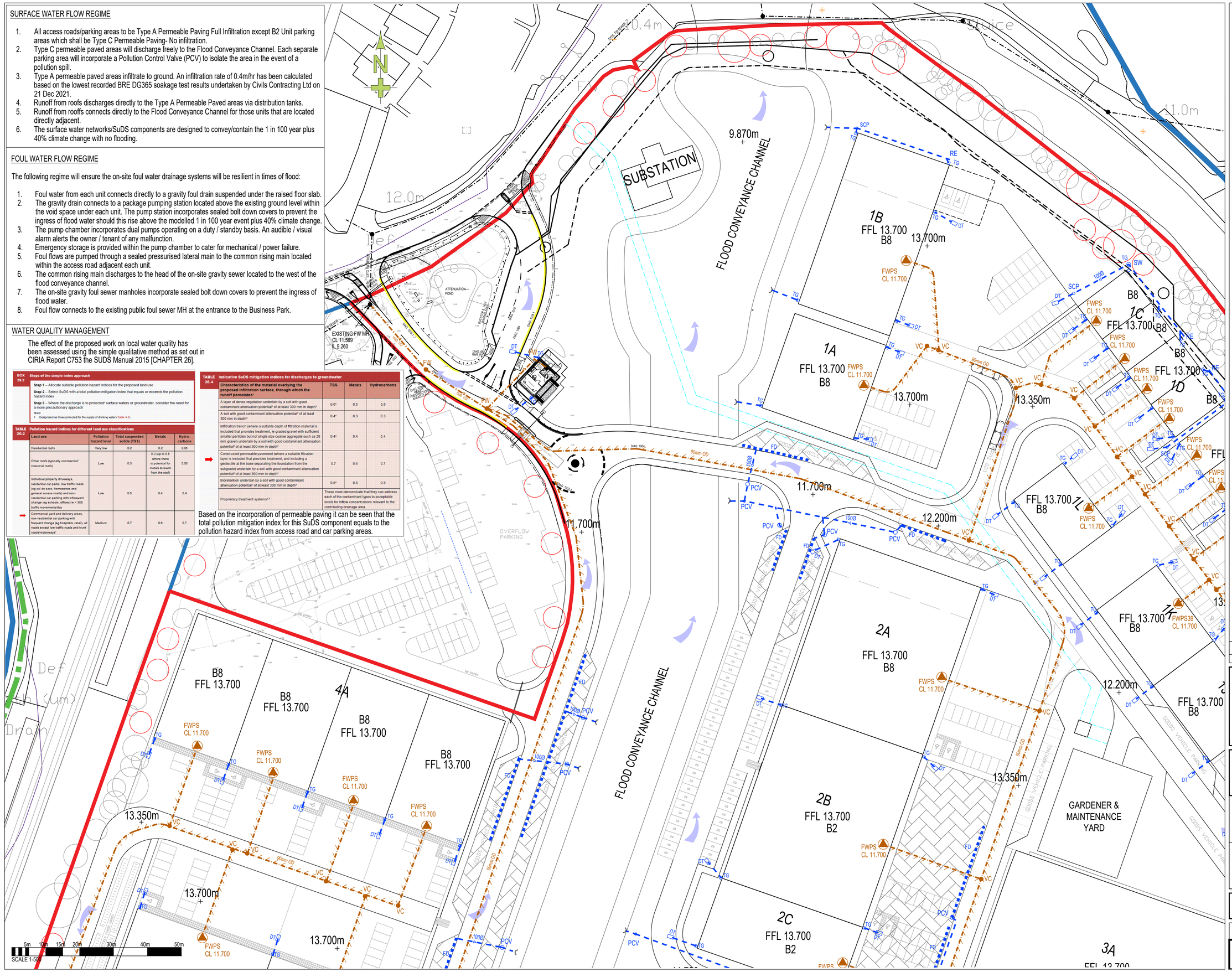
TABLE 26.2 Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways[1]	Medium	0.7	0.6	0.7

TABLE 26.4 Indicative SuDS mitigation indices for discharges to groundwater

Characteristics of the material overlying the proposed infiltration surface, through which the runoff percolates[1]	TSS	Metals	Hydrocarbons
A layer of dense vegetation underlain by a soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.6[4]	0.5	0.6
A soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.4[4]	0.3	0.3
Infiltration trench (where a suitable depth of filtration material is included that provides treatment, ie graded gravel with sufficient smaller particles but not single size coarse aggregate such as 20 mm gravel) underlain by a soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.4[4]	0.4	0.4
Constructed permeable pavement (where a suitable filtration layer is included that provides treatment, and including a geotextile at the base separating the foundation from the subgrade) underlain by a soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.7	0.6	0.7
Bioretention underlain by a soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.8[4]	0.8	0.8
Proprietary treatment systems[4, 5]	These must demonstrate that they can address each of the contaminant types to acceptable levels for inflow concentrations relevant to the contributing drainage area.		

Based on the incorporation of permeable paving it can be seen that the total pollution mitigation index for this SuDS component equals to the pollution hazard index from access road and car parking areas.



Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT.
3. THE DEVELOPMENT LAYOUT & SURVEY HAVE BEEN TAKEN FROM CIVILS CONTRACTING LTD'S DRG. NO. 2210_CCL_Site plan_20220224.

CDM REGULATIONS 2015 - SIGNIFICANT RISKS -

1. EXISTING FOUL WATER SEWER IN THE VICINITY IS PRESENT AND HAS BEEN TAKEN FROM RECORDS OBTAINED FROM SOUTHERN WATER. THERE IS A RISK OF UNCHARTED SERVICES BEING PRESENT.
2. THE CONTRACTOR MUST TAKE ADEQUATE PRECAUTIONS FROM THE POSSIBLE PRESENCE AND CONTAMINATION FROM LEPTOSPIROSIS (WEILS DISEASE).
3. THE WORKS WILL INVOLVE THE MOVEMENT OF PLANT AND MACHINERY IN A LIVE CARRIAGEWAY. THERE IS A RISK OF POTENTIAL CONFLICT BETWEEN PLANT AND ROAD/PEDESTRIAN USERS.
4. THE WORKS WILL INVOLVE WORKING WHERE THERE IS A DANGER OF SUDDEN RISES IN WATER LEVELS AND THE ASSOCIATED DANGER OF DROWNING.

DRAINAGE KEY

- SITE BOUNDARY
- EXISTING FOUL WATER SEWER
- SURFACE WATER DRAINAGE - DIA GRADIENT/PIPE NUMBER
- SCP — SW INSPECTION CHAMBER MIN 300DIA CATCHPIT
- S1 — SW INSPECTION CHAMBER MIN 450DIA
- SW1.0 — SW MANHOLE
- PCV — SW POLLUTION CONTROL VALVE MANHOLE
- RE — RODDING EYE
- FD — FIN DRAIN
- FOUL WATER DRAINAGE - DIA GRADIENT/PIPE NUMBER
- F1 — FW INSPECTION CHAMBER MIN 450DIA
- VC — FW VALVE CHAMBER
- FW1.0 — FW MANHOLE
- PUMPING STATION — FOUL WATER PUMPING STATION
- RISING MAIN FW
- TG — TRAPPED GULLY DRAIN OUTLET TO BE 100 DIA UNLESS STATED OTHERWISE
- DT — DISTRIBUTION TANK
- EXCEEDANCE FLOW ROUTE
- RWP — RAINWATER PIPE. DRAIN OUTLETS TO BE 100 DIA
- TYPE C NO INFILTRATION PERMEABLE PAVING
- 33.108m — PROPOSED LEVEL
- HEADWALL

FOR THE DISCHARGE OF PLANNING CONDITIONS 13 AND 38

THE DRAINAGE LAYOUT MAY VARY DEPENDING ON THE EVENTUAL NATURE AND LAYOUT OF THE UNITS, HOWEVER THE PRINCIPLES OF THE DRAINAGE STRATEGY WILL REMAIN THE SAME.

Rev	Description	Drn	Chk	Date
A	FOR APPROVAL	SBR	CJM	15.03.22

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HAMSTEAD LANE,
YALDING, KENT [BUSINESS PARK]

Drawing
DRAINAGE LAYOUT[ILLUSTRATIVE]
SHEET 1 OF 3

FOR APPROVAL

Scale @ A1	Date	Drawn by	Checked
1:500	FEB22	SBR	CJM

Job No.	Drg. No.	Rev
22-0042	C10501	A