



Note A - Infiltration Tanks:
The proposed surface water drainage system serving the site has been split into two separate networks, each draining to a cellular infiltration tank. These tanks have been sized using the results of localised on-site infiltration testing carried out across the site at appropriate depths. Both tanks have been designed with access ducts for inspection and maintenance works.
Tank A achieves the higher infiltration rate and therefore manages run-off from a higher proportion of the site while still achieving the 24-hour half drain time for both the peak 1:30y +20% and 1:100y +40% storm events.
Tank B has a lower infiltration rate, therefore the run-off area it serves has been kept to a minimum. Analysis shows this tank does fail the 24-hour half drain time test both the peak 1:30y +20% and 1:100y +40% storm events however the tank has been oversized to account for this. Allowing for a larger tank will not only prove additional storage capacity for a repeat storm event but will also maximise the amount of infiltration achieved.

Note B - Permeable Paved Areas:
Some areas of the development will be allowed to drain locally to ground via permeable paving. These include driveways and parking areas. A 60mm thick block may be used for the private driveways however any of the shared surfaces that may be subjected to occasional HGV loading should be laid with an 80mm thick permeable block.
Initial source control calculations have shown that these areas will successfully drain to ground without exceeding the 24-hour half drain time limit, however infiltration rates do vary across the site. Gully's have been allowed for within the surface water drainage design as a safety measure to collect any overflow from the permeable paved areas should the surfaces ever become clogged prior to scheduled maintenance works. These gully's will also allow exceedance flows to surcharge out of the drainage system into the permeable paving should it ever be required. See Note A.

Note:
The proposed new foul water mainline drain serving the site will need to be laid at a shallow depth to achieve a gravity connection to the existing public foul water sewer. It will therefore require a type Z pipe bedding wherever there is less than 1.2m of cover to the soffit of the pipe within trafficked areas

Note:
All proposed drainage works located within the root protection areas (special engineer / supervised excavations) are to be carried out using hand dig methods / air spades or under the supervision of the arboriculturalist

Continued on Drawing
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Notes:

- This drawing is to be read in conjunction with all of the relevant architects, engineers and specialist sub-contractor drawings and specifications.
- Any discrepancies between the engineers and the architects drawings to be referred to the architect before proceeding. Drawings must not be scaled 1:0m
- All private drainage is to be in accordance with BS EN 752-1-2-3-4, BS EN 1295-1, BS EN 1610 and all relevant sections of approved document H of the building regulations (2015 Edition).
- All adoptable drainage is to be in accordance with 'Design and construction guidelines for foul & surface water sewers offered for adoption', where appropriate.
- Pipework Type - Plastic i.e. PVC-U, to BS EN 1401-1 0sm or equivalent. (Private pipework to be type SN4 and all adoptable pipework to be type SN8)
- Precast concrete manholes and fittings shall be to BS 5911 parts 3 and 4 and BS EN 1917.
- Whenever pipework passes through foundations, walls or connects to manholes, flexible pipe joints are to be provided within 150mm of the face of the structure. 600mm pipe length to then be used to form a rocker pipe.
- Whenever pipework passes through screen walls, footings or retaining walls, linets are to be provided.
- Where pipelines pass within 1.0m of buildings or walls the foundations are to be taken down below the bottom of the trench. Where pipelines are more than 1.0m away from foundations the trench shall be backfilled with concrete up to a point that meets a 45° angle line taken from the bottom corner of the nearest foundation.
- Where pipelines cross with less than 300mm of clearance, each is to be surrounded with grade 3/4 mass concrete for a distance of not less than 1.0m centered on the crossing point. The length of surround should be extended as necessary to within 150mm of the next nearest flexible joints.
- For private drainage, concrete protection is to be provided where the effective cover to the crown of the pipe(s) is less than 1.2m in trafficked areas and 0.6m in soft landscaped or pedestrianised areas. (Applies during and after construction).
- The contractor is to ensure that suitable protective measures are taken to ensure that the drainage pipework and fittings are not damaged by site traffic prior to any over-site filling operations being completed.
- Chamber annotation references are as follows:
AC - Denotes a polypropylene or vitrified clay access chamber, depth not exceeding 600mm, diameter not exceeding 300mm.
IC - Denotes a polypropylene inspection chamber, depth not exceeding 3.0m, diameter not exceeding 600mm. Standard diameter 450mm unless specified otherwise.
MH - Denotes a manholes constructed from either brick, polypropylene or P.C.C sections. Chamber depth to be in excess of 1.2m.
- The top run of each private foul drainage network is to be laid to falls no steeper than 1:40. The head of each run is to be vented to atmosphere in accordance with approved document H.
- All foul and surface water drainage pipelines are to be 100mm dia min and laid at a gradient no steeper than 1:80, unless stated otherwise.
- The contractor is to ensure that all pipework connections are arranged to direct flows down or into the main channel in the direction of the main flow. Any oblique or perpendicular chamber connections are to be directed into the mainline channel via appropriate benching. All chambers must include a connection via the main channel to ensure that a flush through is achieved.
- The contractor is to ensure that when preformed polypropylene manhole bases are used, they are orientated such that the main flow is directed through the main channel of the base. This should be achieved by using long radius bends outside of the manhole when necessary.
- Where new connections are to be made into existing manholes or sewers, all invert levels, pipe orientation and sizes should be checked on-site prior to the commencement of the works, with any variance reported to the engineer once identified. Where new connections are to be made either on or off-site, the contractor is to check the line and level of any existing services / mains, to ensure that no clashes exist prior to the works commencing.
- Any and all new connections into a public sewer are to be inspected by the local water authority and carried out fully in accordance with their requirements. The contractor is to allow for obtaining the appropriate 'Section Agreements' as well as paying all necessary fees.
- The contractor is to allow for obtaining the appropriate road opening licence's from the local highway authority and paying all necessary fees. All reinstatement works within the public highway are to be carried out in accordance with the requirements of the local highway authority.
- Permeable paving surface finish to the architects spec'. Any alteration to the extents of the permeable paving may have an adverse affect upon the Surface water drainage design and must therefore be discussed with the engineer.
- Modular crate soakaway system(s) to be Wavin Aquacell® or Polypipe Polystorm®. Any other system offered will need to be provided with a separate warranty for design and installation.

Note:
The proposed surface water drainage measures have been designed to manage a peak 1:100 year +40% climate change storm event.

P2 12.07.22 Site plan and building layouts updated. Drainage revised following the results of on-site infiltration testing - issued for Planning
P1 21.06.22 Drawn - Preliminary Issue
Rev. Date Description



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Client
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Project Title
Orchard Gate, Dibden Purlieu

Drawing Title
Proposed Drainage
Layout Drawings
Sheet 2 of 3

Drawing Status
Planning

Originator No.	Rev by	Chk by	Scale
114290	GEB	GEB	1:125 @A1

PROJECT ORIGINATOR ZONE LEVEL TYPE ROLE NO.	Revision
114290-CAL-XX-XX-DR-D-006	P2

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