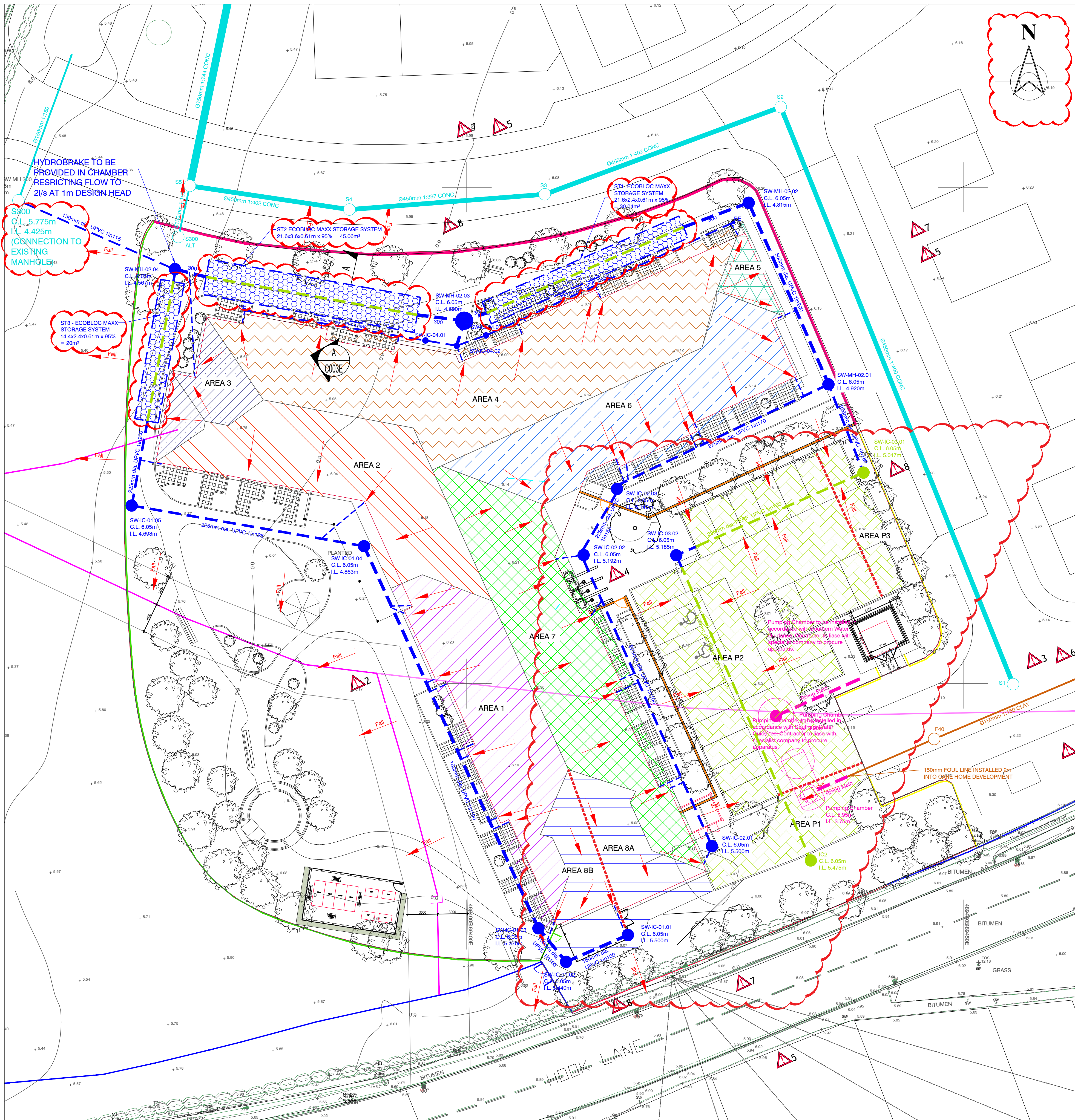


Appendix D

Catchment Area Drawing – C010



DRAINAGE MANAGEMENT / MAINTENANCE PLAN			
SUDS / DRAINAGE FEATURE	DESCRIPTION	MAINTENANCE REQUIRED	FREQUENCY OF MAINTENANCE
HYDROBRAKE FLOW CONTROL DEVICE / CHAMBER	FLOW CONTROL MECHANISM USED TO RESTRICT FLOW OF SURFACE WATER TO CONTROLLED DISCHARGE LIMITS AGREED WITH LOCAL AUTHORITY. ATTENUATED FLOWS STORED WITHIN UNDERGROUND ATTENUATION TANKS. FLOW CONTROL MECHANISM LOCATED WITHIN UNDERGROUND MANHOLE CHAMBER.	CLEANING INLETS / OUTLETS, MANHOLE AND ORIFICES OF FLOW CONTROL DEVICE TO ENSURE OPTIMUM PERFORMANCE OF DEVICE	ANNUAL INSPECTION OR AS REQUIRED
UNDERGROUND ATTENUATION TANK	UNDERGROUND PLASTIC GEOCELLULAR/MODULAR SYSTEMS CAN BE USED TO CREATE A BELOW GROUND STORAGE STRUCTURE. DUE TO THE MODULAR NATURE OF THE SYSTEMS, THEY CAN BE TAILORED TO SUIT THE SPECIFIC REQUIREMENTS OF ANY SITE. WATER CAN BE ATTENUATED ON SITE, BEFORE DISCHARGING AT A CONTROLLED RATE TO A WATERCOURSE OR OTHER DRAINAGE SYSTEM.	CLEANING INLETS / OUTLETS, MANHOLES, ASSOCIATED PIPEWORK, AND SILT TRAPS	ANNUAL INSPECTION OR AS REQUIRED
PERMEABLE PAVING	PERMEABLE SURFACES PROVIDE A SURFACE SUITABLE FOR PEDESTRIAN AND/OR VEHICULAR TRAFFIC, WHILE ALLOWING RAINWATER TO INFILTRATE THROUGH THE SURFACE AND INTO UNDERLYING LAYERS. THE WATER CAN BE TEMPORARILY STORED BEFORE INFILTRATION TO THE GROUND, REUSED, OR DISCHARGED TO A WATERCOURSE OR OTHER DRAINAGE SYSTEM. SURFACES WITH AN AGGREGATE SUB-BASE CAN PROVIDE GOOD WATER QUALITY TREATMENT.	CLEAN WITH STIFF BRUSH, CHECK/SCRAPE OUT JOINTS IF NECESSARY AND REFILL WITH AGGREGATE	ANNUAL INSPECTION (AFTER AUTUMN FALL OF LEAVES) OR AS REQUIRED

DRAWINGS ISSUED BASED ON CONCEPTIONAL DESIGN & ASSUMPTIONS MADE BY CHARLES SCOTT & PARTNERS.

INFORMATION WILL BE VERIFIED UPON RECEIPT OF THE FOLLOWING :-

- RIDGE UPDATED SITE INVESTIGATION
- LOS LINE LOADS
- LOS FLOOR SPANS
- LOS POINT LOADS FOR PADS
- ARCHITECTS CO-ORDINATION

NOTES:

ASSUMED FORMATION LEVEL FROM RIDGE SITE INVESTIGATION IS 3.4m A.O.D.

FOUNDATION TO BE PLACED ON BROWN FIRM / STIFF CLAY WITH A BEARING CAPACITY OF 150 kN/m².

WATER TABLE AT 1-1.7m BELOW GROUND CONTRACTOR TO CARRY OUT DEWATER AS NECESSARY.

REMOVE ANY MADE GROUND/SOFT SPOTS AND FILL WITH TRENCHFILL

FORMATION LEVEL TO BE WELL BELOW ANY TREE ROOTS

ALL CONCRETE TO BE GRADE C28/35 UNLESS NOTED OTHERWISE

NOTES:

ROUTE OF INTERNAL DRAINAGE RUNS SHOWN ON PLAN OPPOSITE IS INDICATIVE.

CONTRACTOR TO COORDINATE INTERNAL DRAINAGE RUNS WITH FINALISED FOUNDATION LAYOUT (AFTER CONFIRMATION OF REQUIRED PAD FOUNDATION TO SUIT LSG MANUFACTURERS CONFIRMED LOADS)

DRAINAGE DESIGN CRITERIA:-

WE PROPOSE TO INCORPORATE A SUDS DESIGN THAT REDUCES THE QUANTITY OF WATER AND IMPROVES THE WATER QUALITY DISCHARGING TO THIS SEWER ALL IN ACCORDANCE WITH SUDS PRINCIPLES.

THE SURFACE WATER NETWORK SHOWN OPPOSITE HAS BEEN DESIGNED TO CONVEY THE RUN OFF DISCHARGE FROM ROOFS AND HARD SURFACED AREAS IN TO THE NEW SURFACE WATER SEWER AND PIPED TO THE LOCAL AUTHORITY SEWER WITH FLOWS RESTRICTED TO AGREED RUN OFF LIMITS. WE PROPOSE TO REDUCE THE FLOW OF SURFACE WATER TO THE LOCAL AUTHORITY SURFACE WATER DRAIN TO A LIMITED FLOW OF 2.0 L/S BY INTRODUCING A HYDROBRAKE FLOW CONTROL DEVICE.

THE TOTAL ATTENUATION VOLUME REQUIRED TO ACCOMMODATE THIS LIMITING FACTOR IS 224m³. THIS VOLUME IS PROVIDED WITHIN THE PROPOSED DRAINAGE SCHEME USING 141m³ UNDERGROUND MODULAR STORAGE BOXES. THE REMAINING VOLUME OF 83m³ IS ACHIEVED BY USING THE STORAGE CAPACITY WITHIN THE DRAINAGE SYSTEM (PIPES AND MANHOLES) AND THE VOIDS WITHIN THE AGGREGATE FORMING THE PERMEABLE PAVED CAR PARKING AREA.

THIS ATTENUATION VOLUME HAS BEEN GENERATED TO ACCOMMODATE A 1 IN 100 YEAR STORM EVENT WITH ADDITIONAL 45% CLIMATE CHANGE.

THE ABOVE MEASURES REDUCE THE QUANTITY OF WATER DISCHARGING TO THE LOCAL AUTHORITY SEWER IN ACCORDANCE WITH SUDS PRINCIPLES.

THE DESIGN OPPOSITE ALSO INCORPORATES THE TREATMENT REQUIREMENTS ASSOCIATED WITH SUDS SYSTEMS. ALL VEHICULAR ACCESS ROADS, CAR PARKING, ETC. IS GRADED TO FALL TO AREAS OF PERMEABLE PAVING WHERE FLOWS ARE TREATED BY PERCOLATION THROUGH GRANULAR FILTER MEDIUM BELOW SURFACE BLOCKS. PERCOLATION THROUGH THE FILTER MEDIUM ALSO RESTRICTS THE FLOW OF SURFACE WATER RESULTING IN FURTHER ATTENUATION OF COLLECTED RAINWATER FROM THE HARDSTANDING AREAS. RUN OFF FROM AREAS OF ROOF ARE CONSIDERED CLEAN RUN OFF AND ARE CONVEYED IN SURFACE WATER SYSTEM THROUGH ATTENUATION SYSTEM.

THE ABOVE MEASURES IMPROVE THE QUALITY OF WATER DISCHARGING TO THE LOCAL AUTHORITY SEWER IN ACCORDANCE WITH SUDS PRINCIPLES.

DRAINAGE MANAGEMENT REQUIREMENTS

AN INITIAL PRE INSPECTION OF THE DRAINAGE SYSTEM SHALL BE CARRIED OUT BY THE CLIENT PRIOR TO HANDOVER OF THE CONSTRUCTED DRAINAGE SYSTEM AND ALL ASSOCIATED SUDS FEATURES.

REGULAR INSPECTIONS OF SUDS FEATURES WILL THEN:

- HELP DETERMINE THE FUTURE MAINTENANCE REQUIREMENTS TO ENSURE OPTIMUM OPERATION OF THE DRAINAGE SYSTEM.
- HELP ESTABLISH ONGOING HYDRAULIC, WATER QUALITY AND BIODIVERSITY OF THE SYSTEM
- ALLOW IDENTIFICATION OF POTENTIAL PERFORMANCE FAILURES, SUCH AS BLOCKAGES, RESULTING FROM LACK OF MAINTENANCE.

DURING THE FIRST YEAR OF OPERATIONS ALL TYPES OF SUDS FEATURES SHALL BE INSPECTED AT MONTHLY INTERVALS (AND AFTER SIGNIFICANT STORM EVENTS) TO ENSURE THE SYSTEM IS FUNCTIONING AS DESIGNED WITH NO LOSS OF SYSTEM PERFORMANCE.

SUDS FEATURES WILL BE INSPECTED BY THE CLIENT. THE CLIENT'S DETAILS ARE AS FOLLOWS:-

SIMPLY LTD
PAVILION 6
THE APPROACH
321 SPRINGHILL PARKWAY
GLASGOW
G69 6GA
UNITED KINGDOM

THEREAFTER THE MAINTENANCE REGIME SHALL INCORPORATE THE METHODS OF INSPECTION AS NOTED IN DRAINAGE MANAGEMENT/MAINTENANCE PLAN.

Pumping Station Requirements. Client to confirm exact parameters:-

The pumping station requires to be sized to accommodate the following:-

- Maximum 80 care home residents
- 10 Full time staff over 3 shifts (Total of 30 in 24 hr period)
- Kitchen facilities for residents and staff serving 3 meals per day
- 3 washing machines at a rate of 0.35m³/hr for 4.5 hours per day (Operating 1.5 hours per eight hour shift)
- We are also limited to a final factored discharge of 1.81l/s into the public network so this needs to be factored into flow rates / storage requirements.

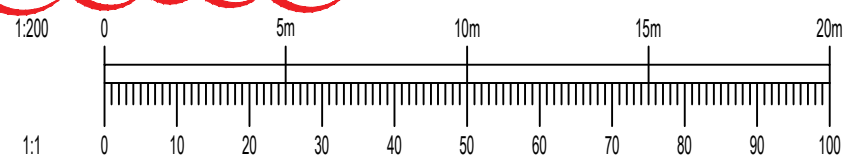
The proposed solution would require a duty and stand-by pump arrangement and associated telemetry back to care home plant room.

Roof Catchment Area

Area	m²
Area 1	306
Area 2	299
Area 3	71
Area 4	552
Area 5	28
Area 6	332
Area 7	363
Area 8A	70
Area 8B	70
Permeable 1	72

Permeable 2	500
Permeable 3	72

TOTAL CATCHMENT AREA=2735m²



A			
Rev.	Description	Date	Initials
INFORMATION			
Client			
SIMPLY UK			
Location			
HOOK LANE, PAGHAM, PO21 3PB			
Drawing Title			
ROOF DRAINAGE FLOW ROUTES AND SQUARE METERAGE LAYOUT			
Date	Drawn by	Scale	Checked by
OCT 24	JPC	1:200	LC
Project Ref.			
9418			
Dwg. No.			
C010			
Rev.			
A			

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