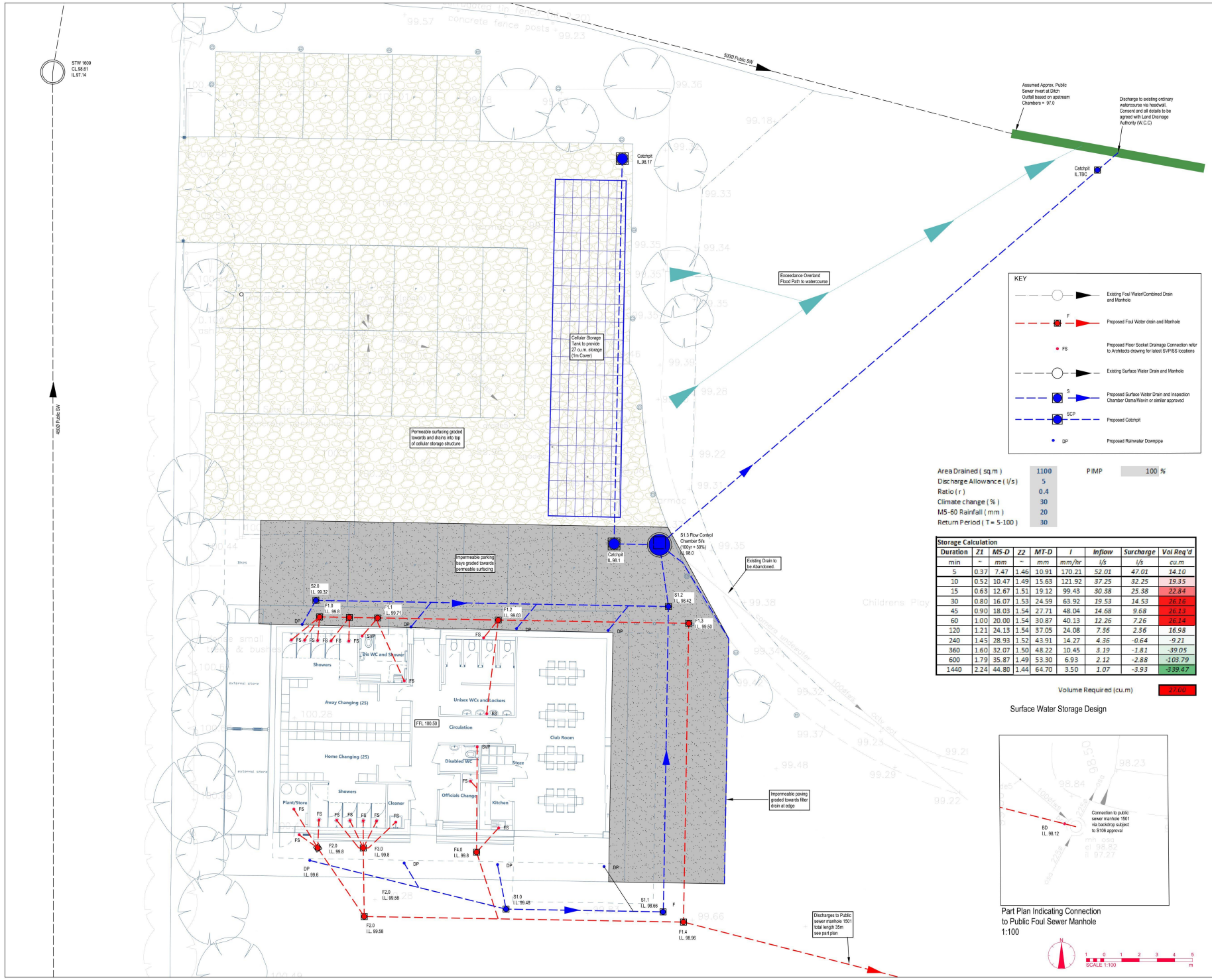

Area Drained (sq.m)	1100	PIMP	100 %
Discharge Allowance (l/s)	5		
Ratio (r)	0.4		
Climate change (%)	30		
M5-60 Rainfall (mm)	20		
Return Period (T= 5-100)	30		

Storage Calculation

Duration	Z1	M5-D	Z2	MT-D	I	Inflow	Surcharge	Vol Req'd
min	~	mm	~	mm	mm/hr	l/s	l/s	cu.m
5	0.37	7.47	1.46	10.91	170.21	52.01	47.01	14.10
10	0.52	10.47	1.49	15.63	121.92	37.25	32.25	19.35
15	0.63	12.67	1.51	19.12	99.43	30.38	25.38	22.84
30	0.80	16.07	1.53	24.59	63.92	19.53	14.53	26.16
45	0.90	18.03	1.54	27.71	48.04	14.68	9.68	26.13
60	1.00	20.00	1.54	30.87	40.13	12.26	7.26	26.14
120	1.21	24.13	1.54	37.05	24.08	7.36	2.36	16.98
240	1.45	28.93	1.52	43.91	14.27	4.36	-0.64	-9.21
360	1.60	32.07	1.50	48.22	10.45	3.19	-1.81	-39.05
600	1.79	35.87	1.49	53.30	6.93	2.12	-2.88	-103.79
1440	2.24	44.80	1.44	64.70	3.50	1.07	-3.93	-339.47

Volume Required (cu.m) 27.00

Surface Water Storage Design

Part Plan Indicating Connection to Public Foul Sewer Manhole
1:100

SCALE 1:100

NOTES

1. Drawings to be read in conjunction with all Architects', Services and Structural Engineers' Drawings & Specifications.
2. Topographical survey is based on Midland Surveys Ltd. drawing number 37436
3. Refer to architects' drawings for current floor layouts rainwater pipe and internal drainage locations
4. All drainage works shall be carried out in accordance with the specification contained within Sewers For Adoption 6/7th edition and addendums as appropriate including the requirements of the local authority and in conjunction with all relevant British Standards and codes of practice
5. Drawings to be read in conjunction with any specifications issued with the stage drawings
6. All drainage shall comply with the requirements of BS EN 752:2008, The Building Regulations ADH and typical drainage construction details
7. Private pipework may be either vitrified clay to BS 65:1991 and BS EN 295:2013, Thermoplastic Structured Wall (BS4 Min) to BS EN 13476 or UPVC (UD / SN4 Min) to BS EN 1401 and shall comply with WIS 4-35-01 and be BSI kitemarked or equivalently certified.
8. 150mmØ pipework for public sewer diversion/adoption to be vitrified clay pipes, kitemark certified with flexible spigot and sockets joints complying with BS EN 295:2013. pipes 300mmØ and above to be concrete pipes and fittings to class m to BS5911.
9. All new and existing sewers to be retained are to be jet-cleaned and condition-surveyed by CCTV on completion of the works by the contractor. Applies also to the existing drains adjacent the new building and the site boundary. An additional CCTV survey of all drains beneath buildings is to be carried out prior to completion of floor construction. Any structural defects shall be repaired or replaced as required using appropriate and approved methods.
10. Access covers and frames shall comply with the loadings specified and to bs en 124:2015 and kitemarked or if recessed covers are to be specified then in accordance with facta association equivalent
11. All drainage connecting to the public sewer shall not commence until approval has been sought from the drainage authority.
12. No works are to be carried out in the public highway without relevant approval from the highways authority and utilities companies. works to be carried out by approved contractors only or appropriately supervised by the overseeing authority
13. Existing information shown to be verified on site including kerblines, drains, chambers, sewers, stub connections, existing invert levels and pipe sizes. any discrepancies to be reported to the engineer prior to any new construction.
14. Cover levels of manholes shown are approximate and are intended for guidance only and shall be adjusted to suit finished pavement levels on site by contractor. covers to be orientated to suit pavement finishes where appropriate.
15. Existing access covers and frames to be retained shall be checked to ensure they are of a suitable duty and condition for reuse and levels adjusted to suit proposed finished ground levels
16. Refer to architects/mechanical & electrical engineers drawings for setting out of sub-stacks, soil vent pipes, rain water pipes, floor gullies & other drainage pop up's.
17. Foul stack connections under building to be 100mmØ laid to minimum 1 in 40 gradient unless otherwise noted.
18. Foul drainage external to the building to be 100mmØ laid to a minimum 1 in 80 gradient where one or more WC is connected or min 1 in 40 otherwise.
19. All under-slab drainage to be clear of foundations unless shown otherwise with long radius bends kept to a minimum and used where unavoidable.
20. Soil pipe at head of each run to be vented to atmosphere.
21. DP connections and all SW drainage to be laid to minimum 1 in 100 gradient and 100mmØ unless otherwise noted.
22. Any drainage constructed within 5 m of new or existing trees to be provided with proprietary root barriers installed in accordance with manufacturers details to mitigate against the risk of root ingress/damage.
23. Where clearance between two pipe crossing is less than 300mm pipes shall be concrete encased at crossing point and provided with rocker pipes - see typical details.
24. Existing drainage shall be assumed to be live and appropriately maintained at all times during the works. existing drainage to be reconnected to newly constructed drainage system unless proven to be redundant for abandonment
25. Ends of any existing drains/sewers to be abandoned are to be plugged with Gen.3 concrete.
26. Unless agreed with the Building Control Officer (ref SFA7) - Class Z bedding (concrete bed and surround) required where: - refer to details.
    - Clay / Concrete pipelines with less than 1200 cover
    - Thermoplastics with less than 900mm cover
    Dimensions are from finished levels beneath traffic areas including footways likely to be overrun by vehicles exceeding 7.5T.
27. Road gully and linear drain connections to be 100mmØ unless noted otherwise with class z concrete bed and surround. class z concrete bed and surround with flexcell at pipe joints required to internal drains, with concrete backfill.
28. Refer to services consultants for details of existing and proposed services' / Utility apparatus locations and protection/ diversions required.
29. The works shall be carried out by competent and experienced contractors. all operatives to have appropriate training with appropriate qualifications for the duties they are required to undertake.
30. Additional channel bends in manholes are required to assist branch flow directions, dependant on main channel orientation
31. Chamber types to be Type 3 in accordance with Sewers for adoption 7th edition unless noted otherwise

Rev'n.	Description	Date
-	-	-

Richard Strauss Associates
Consulting Structural Engineers
14 Seymour Road
Stratford-upon-Avon
CV37 9EP
Tel (01789) 298947

CLIENT
Bishops Itchington Parish Council

PROJECT
Proposed Pavillion
Bishop's Itchington Sports Pavilion
Chapel Street, Bishop's Itchington

TITLE
Foul and Surface Water Drainage

Drawn	Authorised	Scale	Project Number
RG	RS	1:100	9982
Status	Date	Drg. no	Rev
1	DEC'20	01	-

1=Prelim, 2=Info, 3=Appr, 4=Tender, 5=Const, 6=As Built