

COMPLIANCE WITH STANDARD PRINCIPLES

THE PROPOSED SURFACE WATER DRAINAGE SCHEME WILL COMPLY BY ADHERING TO THE SIX STANDARD PRINCIPLES WHILST DISCHARGING TO AN AGREED RUN-OFF RATE.

THE SCHEME SHALL LOOK TO MEET THE INTERCEPTION CRITERIA FOR THE FIRST 5mm OF RAINFALL BY ENSURING THAT ALL HARDPAVED SURFACES ARE CAPTURED BY PERMEABLE SURFACING AND RUNOFF IS CONVEYED THROUGH A BIO-RETENTION & SWALE AREAS (BASE AREA TO 1:5 OF ROOF AREA) PRIOR TO FINAL DISCHARGE.

ATTENUATION SHALL BE ACHIEVED BY POROUS PAVING WITH LINED SUB-BASE, SWALES, RAINGARDEN AND OFFLINE TANK.

TREATMENT OF RUN-OFF SHALL BE ACHIEVED BY A COMBINATION OF FILTERING THROUGH THE SUB-BASE AND, FLOW THROUGH THE BIO-RETENTION FEATURE.

THE BIO-RETENTION AREA IS ALSO AN ADDED AMENITY FEATURE, WITH A FOOTPATH TO BE PROVIDED FOR ACCESS WITH BENCH SEATING

STANDARD 1 - SURFACE WATER DESTINATION

THE PROPOSED RUN-OFF WILL BE DISPOSED OF VIA A CONNECTION TO THE EXISTING SW STRATEGIC SEWER SERVING THE SITE AND DISCHARGED AT A PRE-AGREED RATE OF 59.6 l/s.

FURTHER TO SITE INVESTIGATION WORKS AND DUE TO THE NATURE OF THE EARTHWORKS STRATEGY IT HAS BEEN ESTABLISHED THAT INFILTRATION IS NOT A VIABLE OPTION DUE TO GROUND CONDITIONS

STANDARD 2 - SURFACE WATER RUNOFF HYDRAULIC CONTROL

RUN-OFF SHALL BE RESTRICTED TO THE 1 YR PEAK FLOW RATE IN LINE WITH THE ALLOWABLE DISCHARGE RATE WITHIN THE STRATEGIC INFRASTRUCTURE NETWORK SERVING THE SITE.

FLOW RESTRICTION SHALL BE ACHIEVED BY UTILISING FLOW CONTROL CHAMBERS, FOR EACH CATCHMENT.

STANDARD 3 - WATER QUALITY

THE PROPOSED RUN-OFF SHALL BE TREATED THROUGH A PROCESS OF FILTRATION VIA A COMBINATION OF RAISED PLANTERS, POROUS PAVING WITH LINED VOIDED SUB-BASE, BIO-RETENTION AND SWALE FEATURES.

STANDARD 4 - AMENITY

THE PROVISION OF A BIO-RETENTION AREA SHALL PROVIDE AMENITY. THIS SUDS FEATURE WOULD BE ENHANCED VIA THE PROVISION OF A SURROUNDING FOOTPATH, SPECIFIC PLANTING AND SEATED AREAS, WITH INFORMATION BOARDS PROVIDING FURTHER AMENITY.

STANDARD 5 - BIODIVERSITY

THE SCHEME PROVIDES BIODIVERSITY VIA THE PROVISION OF SUDS FEATURES THAT WILL BENEFIT FROM SPECIFIED PLANTING.

STANDARD 6 - DESIGN OF DRAINAGE FOR CONSTRUCTION, OPERATION AND MAINTENANCE

THE SUDS SOLUTION HAS BEEN DESIGNED IN ACCORDANCE WITH THE SUDS MANUAL AND IS GENERALLY SERVED BY SHALLOW SUDS FEATURES. THERE ARE NO INHERENT SAFETY ISSUES WITH THE PROPOSED SCHEME AND ANY ISSUES WILL BE ADDRESSED VIA DESIGNER'S RISK ASSESSMENTS DURING THE REMAINDER OF THE DESIGN PROCESS.

THE PROPOSED SUDS INFRASTRUCTURE IS IN AN ACCESSIBLE AREA FOR EASE OF MAINTENANCE.

THE FLOWS SHALL BE DIRECTED AWAY FROM THE PROPOSED BUILDING AND FOLLOW PRE-DEVELOPMENT FLOOD FLOW ROUTES.

KEY:

--- PROPOSED FW DRAINAGE

--- PROPOSED SW DRAINAGE

--- PROPOSED FW INTERNAL DRAINAGE

PERMEABLE SURFACE WITH TANKED SUBBASE

FIN DRAIN

LINEAR DRAIN

RAINWATER PIPE

RAINGARDEN / SWALE

RAISED PLANTER

CELLULAR STORAGE TANK

OVERFLOW GULLY

ACO SWALE INLET

ALTHON SWALE INLET HEADWALL

PERMAVOID DIFFUSER UNIT

EROSION CONTROL

VEGETATED WEIR WALL WITH THROTTLE PIPE

TANKED PERMEABLE PAVING (2m PROXIMITY TO FOUNDATIONS)

SW DRAINAGE CHAMBER

SEL SUDS02005 CONTRAFLOW 500 SERIES CHAMBER

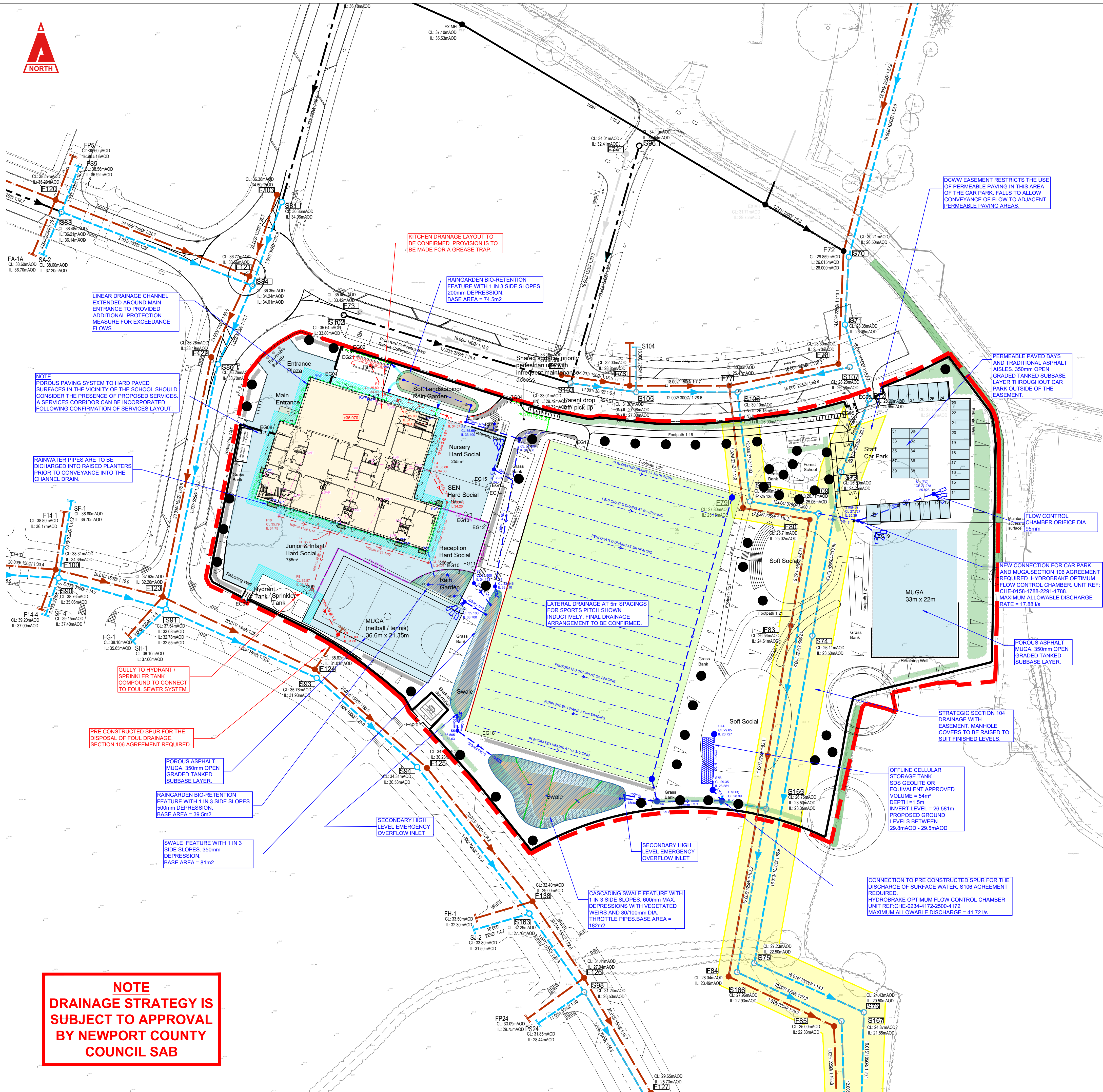
SHALLOW OPEN CHANNEL

WARDELL ARMSTRONG PHASE 1 (SECTION 104)

PROPOSED FW DRAINAGE

PROPOSED SW DRAINAGE

EASEMENT



NOTE
DRAINAGE STRATEGY IS
SUBJECT TO APPROVAL
BY NEWPORT COUNTY
COUNCIL SAB

THIS DRAWING IS COPYRIGHT © CAMBRIA CONSULTING LTD.

DO NOT SCALE FROM THIS DRAWING.

CONTRACTORS MUST CHECK ALL DIMENSIONS ON SITE. ONLY FIGURED DIMENSIONS ARE TO BE WORKED FROM. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO CAMBRIA CONSULTING LIMITED BEFORE PROCEEDING.

THE CONTRACTOR IS TO REFER TO THE SPECIFICATION, FULL SCHEDULE OF RESIDUAL RISKS IN THE CONTRACT DOCUMENTATION AND ALSO TO INFORMATION FROM OTHER DESIGNERS, IN PARTICULAR THE M&E CONSULTANT REGARDING EXISTING LIVE SERVICES.

THIS SYMBOL IS USED TO HIGHLIGHT INSTANCES OF RISK WITHIN THE CONSTRUCTION PROCESS. ALWAYS CHECK FOR LATER REVISIONS OF THIS DRAWING.

NOTES

- SURFACE WATER DISPOSAL TO COMPLY WITH SUDS HIERARCHY AS SET OUT IN BUILDING REGULATIONS AND NATURAL RESOURCES WALES GUIDANCE.
- TOTAL IMPERMEABLE CATCHMENT AREA = 7,261m². (0.726Ha)
- WARDELL ARMSTRONG DRAINAGE NETWORK ALLOWS FOR IMPERMEABLE AREA OF 0.599Ha FOR SCHOOL SITE. TOTAL SITE AREA = 18,913m² = 1.89Ha
- THE SURFACE WATER DRAINAGE SCHEME WILL NEED TO BE DESIGNED IN ACCORDANCE WITH THE STATUTORY STANDARDS FOR SUSTAINABLE DRAINAGE SYSTEMS - DESIGNING, CONSTRUCTING, OPERATING, AND MAINTAINING SURFACE WATER DRAINAGE SYSTEMS' AND WILL BE SUBJECT TO SUDS APPROVAL BODY (SAB) APPROVAL.
- PROPOSED SURFACE WATER DISCHARGE RATES FROM WARDELL ARMSTRONG MODEL.
 - 1YR - 59.6 l/s
 - 10YR - 113.6 l/s
 - 30YR - 137.6 l/s
- REFER TO FIRST 5mm RAINFALL INTERCEPTION PLAN FOR COMPLIANCE.

P10	DELIVERY ACCESS ROAD REMOVED. RAINGARDEN ADDED.	BW	BW	BW
P09	UPDATED KEY	JD	BW	BW
P08	ISSUED FOR SAB APPLICATION.	BW	BW	BW
P07	ISSUED FOR PLANNING.	LW	BW	BW
P06	TENDER ISSUE.	PY	BW	BW
P05	REVISED TO SUIT LEVEL CHANGES.	PY	BW	BW
P04	RIBA STAGE 3.	PY	BW	BW
P01	DRAFT ISSUE FOR INFORMATION.	PY	BW	BW
Rev.	Description	By	Chk	App

Client:



Project:

LLANWERN PRIMARY SCHOOL

Drawing Title:

DRAINAGE STRATEGY
SuDS CONCEPT

Drawing No.

LPS CAM ZZ 00 D C 521101

Project No. Org. Vol. Level Type Dis. Class No.

Suitability Status: S4 PRELIMINARY

Scale @A1: 1:500

Rev P10

CAMBRIA
Constructive Thinking

Civil & Structural Engineers
Cambria House
16 Plas St. Pol de Leon
Penarth Marina
Cardiff, CF64 1TR
T 029 2009 3333
E admin@cambria.co.uk
W www.cambria.co.uk
@cambriauk
uk.linkedin.com/in/cambria/uk