Vale Consultancy

CONSULTING CIVIL & STRUCTURAL ENGINEERS

FLOOD RISK TECHNICAL NOTE (TN)

Ysgol Morgan Llwyd
Cefn Road
Wrexham
LL13 9NG

Prepared for: Wernick
Project Ref: 20851 - TN - 01

01656 863 794 | *enquiries@vale-consultancy.co.uk* | http://vale-consultancy.co.uk
29 Bocam Park | Old Field Road | Pencoed | Bridgend | CF35 5LJ

Thornlink Limited T/A Vale Consultancy
Registered Number | 04140053 | VAT Number | 879 7269 45

DOCUMENT CONTROL

Project:	Ysgol Morgan Llwyd, Cefn Road, Wrexham, LL13 9NG
Client:	Wernick
Vale Consultancy Ref:	20851 – TN - 01

Issue	Prepared by	Approved by	Date	Status
01	Liam Davies BA MSc	Richard Peskett BSc (Hons) MSc	17.12.2024	First issue

CONTENTS

1 INTRODUCTION 4

1.1 Site Location 4

1.2 Proposed Development 4

1.3 Existing Topography 4

1.4 Existing Ground Conditions 4

2 PLANNING POLICY 5

2.1 National Planning Policy 5

3 SOURCES OF FLOODING AND PROBABILITY 6

3.1 Historical Records of Flooding 6

3.2 Flood Risk from Rivers (Fluvial) 6

3.3 Surface Water & Small Watercourses (Pluvial) 7

3.4 Sewer Flooding 7

3.5 Groundwater Flooding 8

3.6 Artificial Sources of Flooding 8

3.7 Justification Test 8

4 FLOOD RISK MITIGATION 9

4.1 Flood Risk Mitigation 9

4.2 Finished Floor Level (FFL) 9

4.3 Flood Risk Elsewhere 10

5 CONCLUSIONS 10

APPENDIX A: Existing Site Plans 11

APPENDIX B: Proposed Site Plans 12

LIMITATIONS

This Technical Note (TN) is prepared in support of a planning application and is for exclusive benefit of *The Client*. It may not be assigned to or relied upon by third party without the agreement of Vale Consultancy in writing. Vale Consultancy retains all copyright and other intellectual property rights in the document and its contents unless transferred by written agreement between Vale Consultancy and The Client.

All comments and proposals contained in this report, including any conclusions, are based on information available to Vale Consultancy during investigations. The conclusions drawn by could therefore differ if the information is found to be inaccurate or misleading. Vale Consultancy accepts no liability should this be the case, nor if additional information exists or becomes available with respect to this scheme.

Except as otherwise requested by the client, Vale Consultancy is not obliged to and disclaims any obligation to update the report for events taking place after: -

The date on which this assessment was undertaken, and the date on which the final report is delivered.
Vale Consultancy makes no representation whatsoever concerning the legal significance of its findings or the legal matters referred to in the following report.

All the Natural Resources Wales (NRW) mapping data used is under special license. Data is current as of ***December 2024*** and is subject to change.

The information presented and conclusions drawn are based on statistical data and are for guidance purposes only. The study provides no guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates and associated probabilities.

PURPOSE OF THE REPORT

Vale Consultancy has been instructed by *The Client* to prepare a Flood Risk (Assessment) Technical Note (TN) to accompany an application for the proposed development works at (“The Site “) Ysgol Morgan Llwyd, Cefn Road, Wrexham.

The assessment has been undertaken in accordance with the requirements of Technical Advice Note 15 (TAN 15) dated July 2004 and taking into account the revised (draft version) of TAN 15 (January 2023).

1 INTRODUCTION

1.1 Site Location

Wernick have instructed Vale Consultancy to undertake a Flood Risk (Assessment) Technical Note (TN) for the proposed development ay Ysgol Morgan Llwyd, Cefn Road, Wrexham for educational use. The site is located at Ordnance Survey National Grid Reference 335229E, 350847N.

Ysgol Morgan Llwyd was established in 1963 with 36 students, becoming the first Welsh-medium secondary school in Wrexham. Initially, it operated from the outdated army barracks located off Bryn-y-Cabanau Road. In 1975, a new building was constructed on the site, featuring a main entrance on Stockwell Grove.

In the 1990s, the school relocated to the former Cartrefle Teacher Training College on Cefn Road, officially opening there in 2000 after expanding the facilities. St. Christopher's School took over the previous site on Stockwell Grove.

In 2018, construction began on a new sixth form block, which included eight classrooms and additional facilities, with an expected completion in 2019. The project was undertaken by Read Construction, with an estimated cost of £1.5 million.

Refer to Appendix A – Existing Site Plans.

1.2 Proposed Development

The proposed development is for the construction of a modular building for 3 no. classrooms (3 x 55 m^2), with associated office, lobby and WC facilities within the existing Ysgol Morgan Llwyd Site.

TAN15 classifies educational development as *Highly vulnerable* in regards to flood risk. The proposals are upon *Previously Developed Land*.

Refer to **Appendix B** – Proposed Plans.

1.3 Existing Topography

In the absence of a topographic survey, LiDAR data has been used to develop a digital terrain model (DTM) of the site and surrounding area.

A review of LiDAR Data indicates existing site levels are in the region of 82.72 m AOD – 83.19 m AOD. From a review of the proposed plans; a Finished Floor Level (FFL) has not been set or illustrated for the building. However, based off the proposed elevation plans, the classroom module has been set 293 mm (0.293 m) above existing ground levels, here.

Therefore, an addition of this figure onto the minimum site level sets the assumed proposed FFL in region of 83.013 m AOD.

1.4 Existing Ground Conditions

According to Soilscapes soils dataset produced by the Cranfield Soil and AgriFood Institute, soil conditions at the site and within the surrounding area are described as Freely draining slightly acid sandy soils.

British Geological Mapping of surface geology indicates the underlying bedrock formation comprises Salop Formation - Mudstone, sandstone and conglomerate. Sedimentary bedrock formed between 309.5 and 272.3

million years ago during the Carboniferous and Permian periods, overlain by Glaciofluvial Sheet Deposits, Devensian - Sand and gravel. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.

According to the British Geological Survey and Natural Resources Wales aquifer designation dataset the superficial deposits are described as a Secondary A aquifer whilst the bedrock is also classified as a Secondary A aquifer. Both Secondary A Aquifers are classified ad 'High Vulnerability'. The site is not shown to be located in a designated groundwater source protection zone.

2 PLANNING POLICY

2.1 National Planning Policy

Future Wales – The National Plan 2040 sets out the national framework for Wales with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate – resilience, developing strong ecosystems and improving the health and well-being of our communities.

Policy 8 – Flooding states that "flood risk management that enables and supports sustainable strategic growth and regeneration in National and Regional Growth Areas will be supported. The Welsh Government will work with Flood Risk Management Authorities and developers to plan and invest in new and improved infrastructure, promoting nature-based solutions as a priority.

Planning Policy Wales (PPW) sets out the government's planning policies for Wales and how these are expected to be applied. TAN15 provides technical guidance which supplements the policy within PPW and seeks to ensure that flood risk is taken into account at all stages in the planning process and is appropriately addressed.

The general approach of TAN15 is to set out a precautionary framework to guide planning decisions at high risk of flooding by:

- Directing new development away from high-risk areas;
- Where development has to be considered in high-risk areas (Zone C) only those developments which can be justified should be located in these areas

In accordance with paragraph 6 of TAN15, development will only be justified if it can be demonstrated that:

1) Its location in Zone C is necessary for local authority regeneration
2) Its location in Zone C contributes to key employment objectives

And;

i) It meets the aims of PPW and meets the definition of previously developed land
ii) The potential consequences of a flooding event for a particular type of development have been considered, and in terms of the criteria contained in sections 5 and 7 and Appendix 1 found to be acceptable.

A revised version of TAN15 and updated Flood Map for Planning are due to be published in the near future (albeit the timing is yet to be confirmed by Welsh Government). The Flood Map for Planning currently holds no formal weight as it is not yet national policy, but Welsh Government advise this is the best available information.

National Policy requires that planning applications for new development proposals should incorporate sustainable drainage systems (SuDS) to appropriate operational standards and with maintenance arrangements in place unless there is clear evidence that this would be inappropriate.

Statutory standards for sustainable drainage were published by Welsh Government in October 2018 in relation to the design, construction, operation and maintenance of sustainable drainage systems serving new developments of more than one house or where the construction is equal to or greater than 100m^2.

3 SOURCES OF FLOODING AND PROBABILITY

3.1 Historical Records of Flooding

The Flood Map for Planning – Recorded Flood Extents and associated database indicates there have been no records of flooding at or within the vicinity of the site.

3.2 Flood Risk from Rivers (Fluvial)

The Afon Gwenfro is located circa 1km south of the site. The river rises at a number of small springs south and east of the village of Bwlchgwyn, including a place called Ffynnon y Ceirw. It flows eastwards for several miles through a rather deep valley, and is joined by several other streams; it then passes through Wrexham city centre, where it is largely culverted, and joins the Clywedog at King's Mills.

Figure 1 of TAN15 defines three development advice zones:

- Zone A: Considered to be at little or no risk of fluvial / coastal flooding
- Zone B: Areas known to have been flooded in the past evidenced by sedimentary deposits
- Zone C: Based on Natural Resources Wales flood outline, equal to or greater than 0.1% (river, tidal or coastal).

Zone C is subdivided into two zones:

1) Zone C1: Areas of the floodplain which are developed and served by significant infrastructure
2) Zone C2: Areas of the floodplain without significant defence infrastructure.

The Development Advice zones are shown on the Development Advice Map (DAM) and are defined by the predicted extent of the 1 in 1,000 (rivers and sea) AEP event (zone C) and the British Geological Survey drift data (Zone B).

The zones do not take into account the possible impact of climate change.

The DAM indicates the site to be located within **Zone A** of the DAM.

The Flood Map for Planning – Rivers (FMfP) indicates the site to be located in Flood Zone 1. The site is not located within a TAN15 Defended Zone.

The Flood Zones are defined as follows and include the potential effects of climate change:

- Flood Zone 1 (Rivers): Less than 1 in 1,000 chance of flooding from rivers in a given year;

- Flood Zone 2 (Rivers): Areas with a 1 in 1,000 to 1 in 100 chance of flooding from rivers in a given year;

- Flood Zone 3 (Rivers): Areas with more than a 1 in 100 chance of flooding from rivers in a given year;

- TAN15 Defended Zones: Areas that benefit from Risk Management Authority flood defences with a present day 1 in 100 and 1 in 200 AEP standard of protection for rivers and the sea respectively.

The Flood Map for Planning Zones take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Given the distance (approximately 900 m) between the site and Flood Zone 3 and Flood Zone 2 (extents) and that the site is approximately a minimum (conservative) of 23.5 m above the height of land at where the flood extents culminate.

Therefore, and as concluded by this TN; the site is assessed to not be at risk of flooding from fluvial sources when taking climate change into account.

Therefore, the risk from fluvial sources is considered ***Very Low / Negligible***.

3.3 Surface Water & Small Watercourses (Pluvial)

Surface water (or pluvial) flooding occurs when rainwater does not drain away through the normal drainage system or soak into the ground. It is usually associated with high intensity rainfall events but can also occur with lower intensity rainfall or melting snow where the ground is saturated, frozen or developed, resulting in overland flow and ponding in depressions in topography. Surface water flooding can occur anywhere without warning. However, flow paths can be determined by consideration of contours and relative levels.

The FMfP 'Surface Water and Small Watercourses' Map indicates that the large majority of the site is in Flood Zone 1, extending marginally into Flood Zone 2 and 3 to the north extent of the site.

The NRW National Hazard Maps for pluvial flooding have been analysed. The findings are below;

During a high risk (1 in 30 AEP) event, the site does not flood from surface water. During a medium risk (1 in 100 AEP) event, depths of flooding are expected to a maximum of 0.18 m with a mean depth of 0.16 m. Associated velocities are expected to a maximum of 0.04 m/s with a mean velocity of 0.04 m/s. During a low risk (1 in 1000 AEP) event, depths of flooding are expected to a maximum of 0.20 m with a mean depth of 0.17 m. Associated velocities are expected to a maximum of 0.06 m/s with a mean velocity of 0.05 m/s. The site is set to be raised above the minimum site levels by 293 mm therefore reducing the risk of surface water flooding to the site.

It can be concluded that the risk of pluvial flooding to the site is ***Low.***

3.4 Sewer Flooding

Flooding from sewers can occur when a sewer is overwhelmed by heavy rainfall, becomes blocked, is damaged, or is of inadequate capacity. This can occur if there is a blockage in the network causing water to back up behind it or if the sheer volume of water draining into the system is too great to be handled. Sewer flooding tends to occur sporadically in both location and time. As such, any inundation flows emitting from / breaching the local sewer network would be confined to the highways around the development before either re-entering the water cycle via evapotranspiration, flow away from the site following the natural fall in topography, be absorbed by local surface water drainage as and where the capacity of the system is recovered.

There are no known records of notable flooding from sewers at the site or in the near vicinity.

There are no distinct flow routes in the area which would direct any potential flooding arising from the local sewer network.

It can be concluded that the risk of sewer flooding to the site is ***Low.***

3.5 Groundwater Flooding

Groundwater flooding occurs when water levels underneath the ground rise above normal levels. Prolonged heavy rainfall soaks into the ground and can cause the ground to become saturated. This results in rising groundwater levels which leads to flooding above ground.

There are no known records of groundwater flooding incidents at or near to the site.

The majority of the existing / proposed development site will be overlain by hardstanding, thus; preventing the ingress of groundwater to the surface.

It can be concluded that the risk of groundwater flooding is ***Low.***

3.6 Artificial Sources of Flooding

There are no canals or other artificial / man-made surface water bodies within the immediate vicinity of the site or surrounding area which would pose a flood risk to the site.

The NRW 'Risk of Flooding from Reservoirs' map shows that the site is not at risk of flooding from reservoirs.

The risk of flooding from reservoirs is extremely unlikely to happen. For instance, all large reservoirs must be inspected and supervised by a reservoir panel engineer, as the enforcement agency the NRW ensure that reservoirs are inspected regularly, and essential safety / maintenance work is carried out.

Therefore, it can be concluded that the probability of flooding from artificial sources is ***Low*** / ***Residual***.

3.7 Justification Test

The Justification Test is not applicable to sites located within **Zone A** of the DAM and deemed to be at ***Low*** risk of flooding from all other sources.

The site and proposals are compliant with A1.14 and A1.15 of TAN15.

4 FLOOD RISK MITIGATION

4.1 Flood Risk Mitigation

The risk of flooding to the proposed development from all sources is assessed to be ***Low.*** As such; no specific flood risk mitigation measures are proposed. Notwithstanding this, finished floor levels should be raised at least 150mm above adjacent ground levels following any reprofiling of the development area, with ground levels sloping down from the building.

External alterations such as commercial flood guards (barriers) are available and could be fitted to doorways. They can be applied and removed as and when by site users / residents and can provide a protection and freeboard to inundation waters of up to 0.6m and will prevent the ingress of waters to properties thus minimising and avoiding internal damage. Other products which would protect the dwellings from inundation and which should be considered; include flood fences, flood doors and air bricks.

Additional *internal* alterations that should be introduced where practically possible to the building aspect of the proposed development include:

- Raised electronic control units and sockets;
- Install smart air bricks or air brick covers;
- Provide low level flood guards on all access points;
- Use plastic and stainless-steel fixtures and fittings and avoid wooden alternatives;
- Use solid flooring (tiled, resin, concrete) at lower ground level, where possible;
- Ensure that with the time afforded by advance warning, evacuation of property via safe egress and removal of valuables from the building can be implemented;
- Clearance of the existing surface water drainage system to improve drainage of the site and follow necessary maintenance procedures (to new and existing surface water drainage) to ensure that the system functions to optimum capacity.

All construction methods to be inherently flood resilient as and where possible. ***Refer to the BS 85500: 2015, Flood resistant and resilient construction. Guide to improving the flood performance of buildings*** (November 2015).

Flood Alerts and **Flood Warnings** do not cover this area. Should they become available in the future; site owners and occupants to sign up to receive such warnings / alerts.

Proper observation and implementation of these Mitigation Measures and Recommendations will mean that the risks and associated consequences of flooding to the site are acceptable, manageable and residual across the lifetime expectancy of the development (100-years). The developer wholly accepts the risks and potential consequences of flooding, as outlined in this report.

4.2 Finished Floor Level (FFL)

The FFL of the building will be 83.013 m AOD.

4.3 Flood Risk Elsewhere

The site is not at risk of flooding in up to a 1 in 1000 AEP fluvial event including an appropriate allowance for climate change. As such the proposals would not be expected to impact flood risk elsewhere and no compensatory storage would need to be provided on site. No third-party land / infrastructure will be affected, neither will flood risk be exacerbated as a result of the proposals. No loss of flood storage.

During a high risk (1 in 30 AEP) event, the site does not flood from surface water. During a medium risk (1 in 100 AEP) event, depths of flooding are expected to a maximum of 0.18 m with a mean depth of 0.16 m. Velocities are expected to a maximum of 0.04 m/s with a mean velocity of 0.04 m/s. During a low risk (1 in 1000 AEP) event, depths of flooding are expected to a maximum of 0.20 m with a mean depth of 0.17 m. Velocities are expected to a maximum of 0.06 m/s with a mean velocity of 0.05 m/s.

A displacement calculation has been undertaken to work out the potential displacement of volume of water during pluvial events on site during a medium and low risk AEP surface water event. An estimated 16 m^2 of surface water impinges on the site in the low-risk event. An increase in impermeable area multiplied by the max depth during this event of 0.20 m, there is potential for 3.20 m^3 of inundation water to be displaced. An estimated 5 m^2 of surface water impinges on the site in the medium risk event. With an increase in impermeable area multiplied by the max depth during this event of 0.18 m, there is potential for 0.9 m^3 of water being displaced. The potential displaced volume is very minimal and will not cause significant issues to flood risk elsewhere from this development. As per the existing scenario; it could and would be limited to cause very shallow surface water flooding spread across the site in an extreme event.

The site is served by formal and longstanding surface water drainage infrastructure. The proposals will be supported by a surface water drainage strategy which will be designed in accordance with national, regional and local policy.

5 CONCLUSIONS

This report has been prepared on behalf of Wernick and relates to the proposed development at Ysgol Morgan Llwyd, Cefn Road, Wrexham.

The Development Advice Map indicates the site to be located in **Zone A.** The Flood Map for Planning - Rivers indicates the site to be located within **Flood Zone 1**.

The risk of flooding to the proposed development from all sources is assessed to be ***Low.*** As such no specific flood risk mitigation measures are proposed.

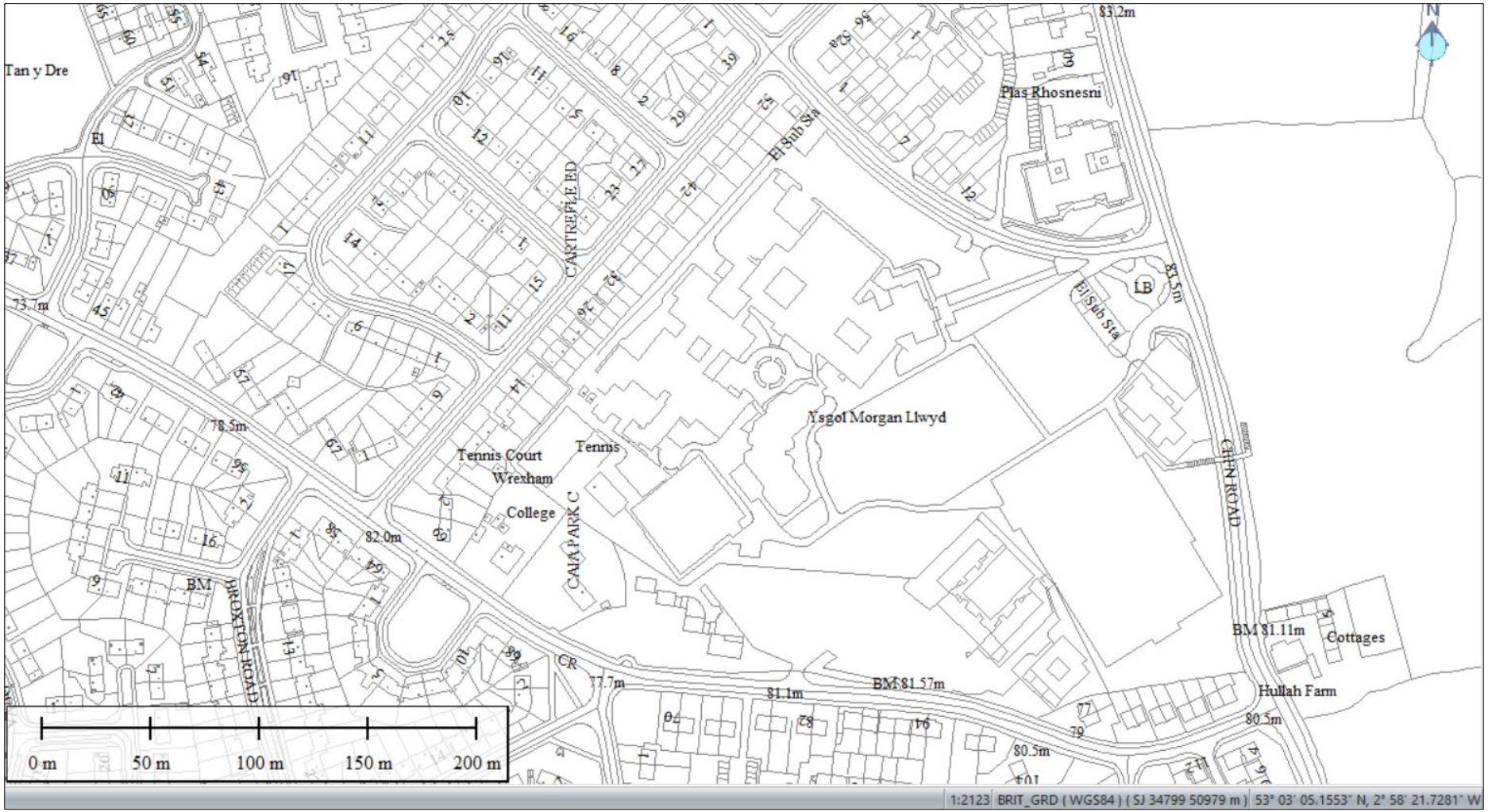
The proposals will not result in any increase in flood risk elsewhere or loss of any flood storage. No third-party land / infrastructure would be affected as a result of the proposals.

The site and proposals are compliant with TAN15.

APPENDIX A:

Existing Site Plans

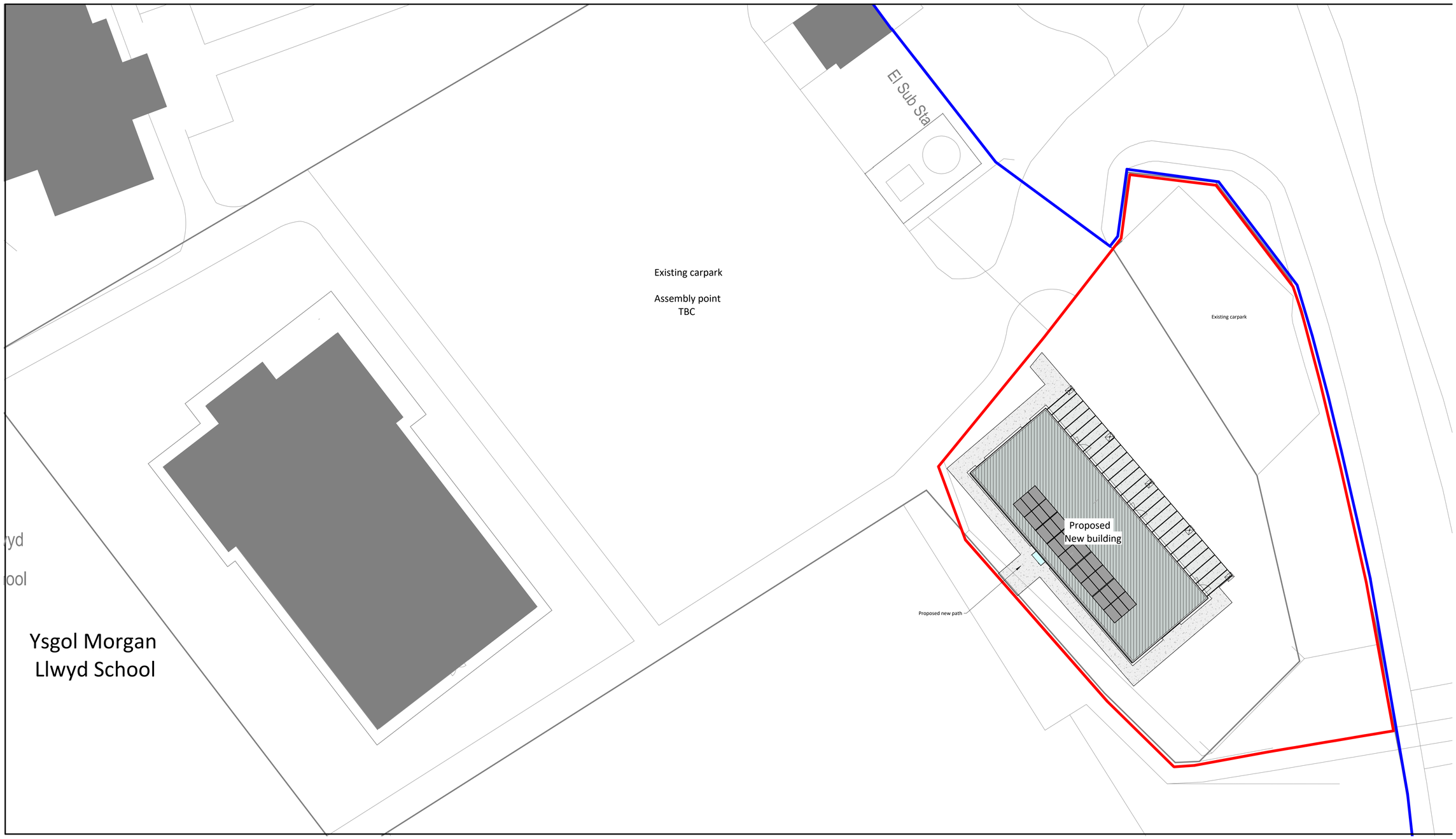
20851 -Ysgol Morgan Llwyd, Wrexham



Existing Site and Location Plan (Ordnance Survey Tiles)

APPENDIX B:

Proposed Site Plans



1 Site plan
1 : 200

0 4m 12m 20m

N

Wernick GROUP

Part of the Wernick Group of Companies.
WB 527B

Number	Revision Description	Date	Issued	Checked
P02	Planning pack of drawings	07-Feb-2025	SL	KA
P01	First issue	16-Jan-2025	SL	KA

SUITABILITY:

WORK IN PROGRESS:
S0 - Initial Stage or WIP
PUBLISHED (CONTRACTUAL):
Approved & Accepted
A0 to **A7** and STAGES **0** to **7**

SHARED (NON-CONTRACTUAL):
S1 - For coordination
S2 - For information
S3 - For review and comment
S4 - For stage approval

• Do not scale from this drawing. • Check all dimensions on site.
• Report any discrepancies and omissions to WB Technical Services.
• This drawing is based on photocopied/scanned information liable to distortion in scale. • These drawings are copyright, project specific and confidential and no part is to be used or copied in any way without the express prior consent of Wernick Buildings.

NOTES:

PRELIMINARY DRAWING

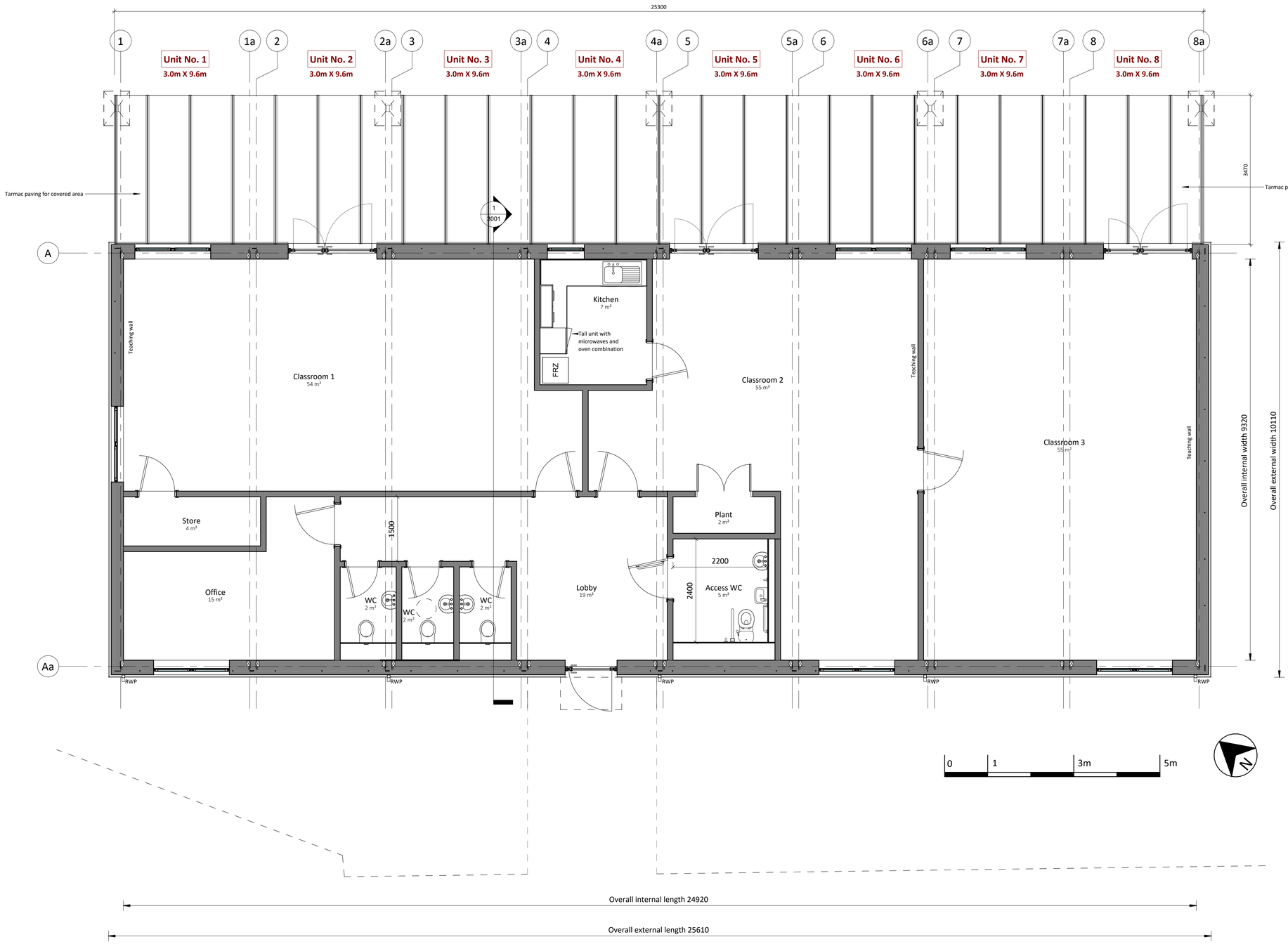
NOT TO BE USED FOR CONSTRUCTION PURPOSES UNTIL "APPROVED FOR CONSTRUCTION" STAMP IS APPLIED. The areas shown are approximate only and have been measured off preliminary drawings as the likely areas at the current stage of design using the started option from the code of Measuring Practice, 4th edition. RICS/ISVA These may be affected by future design development and construction tolerances, or the result of surveys for existing buildings. Take account of these factors before planning any financial or property developemnt purpose or strategy and seek confirmation of latest areas before decision making.

Wernick BUILDINGS
Kenfig Industrial Estate, Port Talbot, SA13 2 PE
Tel: 01656 747 340 **Website:** wernick.co.uk

CLIENT:	Wrexham Borough Council
PROJECT:	Ysgol Morgan Llwyd - 3 No. classroom
	Cefn Road, LL13 9NG Wrexham
DRAWING TITLE:	Proposed site plan

DRAWN:	CHECKED:	APPROVED:	SCALE:
SL	KA	KN	1 : 200@ A1
FIRST ISSUE:	CONTRACT NO:	SUITABILITY:	REVISION:
16-Jan-25	12117	S0	P02

12117 - WB - 02 - B1 - DR - AA - 0203



INTERNAL FINISHES:

Suspended ceiling:
- 2360mm from floor level;
- 25mm Suspended Ceiling Hangers;
- 15mm Ceiling Tiles 600 x 600mm grid;
- Colour: White 00E55.

Walls:
- Vinyl Face plasterboard with pvc cover strips single or double layers, either side of 70mm GTEC 'C' stud with 25mm Isowool quilt between studs;
- 16mm Ply Patress inside the 'C' stud for teaching wall, shelves and kitchen wall unit;
- Splashbacks - Altro whiterock cladding;
- Colour: White 00E55.

Floors:
- Carpet tiles to office and classrooms;
- Non-slip vinyl to all toilets and Kitchen;
- Barrier matting to all entrances;
- Colour/s: Grey.

Skirting:
- MDF painted skirting to all carpet areas;
- Coved skirting to all vinyl flooring areas;
- MDF painted skirting to barrier matting areas;
- Colour/s: Merlin grey 18B25.

INTERNAL FITOUT:

Internal Door Sets:
- Door Leaf: Melamine;
- Door Frame: Solid core;
- Architrave: MDF;
- Vision panel: 200x1450mm; Pyrodur clear non-wired safety glass;
- Colour: Lancaster Oak.

Kitchen Units:
- Material: Melamine;
- Colour: Greenwick Oak.

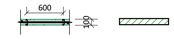
Work Tops:
- Material: Laminate;
- Colour: Limasurf.

IPS System
- Material: Melamine;
- Colour: Grey.

Shelving:
- Material: PPC steel and MDF
- Colour: White 00E55.

Coat Hooks:
- Material: Steel;
- Colour: Silver/Metal.

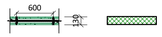
TYPE 1 Partition
RFP 044



Weight:	26kg/m²
Max height:	3.4m
Overall Thickness:	100mm
Fire Performance:	60mins
Strength Duty Rating:	Heavy
Acoustic Performance:	44dB

Facing Outer Layer(s):
1x 15mm GTEC Fire Board.
Studs: Single GTEC AS70R x Acoustic 'C' Studs at 600mm centres.
Insulation: 25mm 16kg/m3 glass mineral woo.l

TYPE 2 Partition
RFP 046



Weight:	51kg/m²
Max height:	4.5m
Overall Thickness:	130mm
Fire Performance:	120mins
Strength Duty Rating:	Severe
Acoustic Performance:	58dB (-8C tr)

Facing Inner Layer(s):
1x 15mm GTEC Fire Board.
Facing Outer Layer(s):
1x 15mm GTEC Fire Board.
Studs: Single GTEC CS70R x 'C' Studs at 600mm centres.
Insulation: 25mm 16kg/m3 glass mineral wool.

Wernick GROUP

Part of the Wernick Group of Companies.
WB 527B

Number	Revision Description	Date	Issued	Checked
P05	Planning pack of drawings	07-Feb-2025	SL	KA
P04	Rear elevation doors and windows positions amended	14-Jan-2025	SL	KA
P03	Internal layout and Right elevations/Logo revised.	27-Sept-2024	SL	KA
P02	Internal layout and external design revised	17-Sept-2024	SL	KA
P01	First issue	17-July-2024	SL	KA

SUITABILITY:

WORK IN PROGRESS:
S0 - Initial Stage or WIP
PUBLISHED (CONTRACTUAL):
Approved & Accepted
A0 to **A7** and STAGES **0** to **7**

SHARED (NON-CONTRACTUAL):
S1 - For coordination
S2 - For information
S3 - For review and comment
S4 - For stage approval

- Do not scale from this drawing. - Check all dimensions on site.
- Report any discrepancies and omissions to WB Technical Services.
- This drawing is based on photocopied/scanned information liable to distortion in scale. - These drawings are copyright, project specific and confidential and no part is to be used or copied in any way without the express prior consent of Wernick Buildings.

NOTES:

PRELIMINARY DRAWING

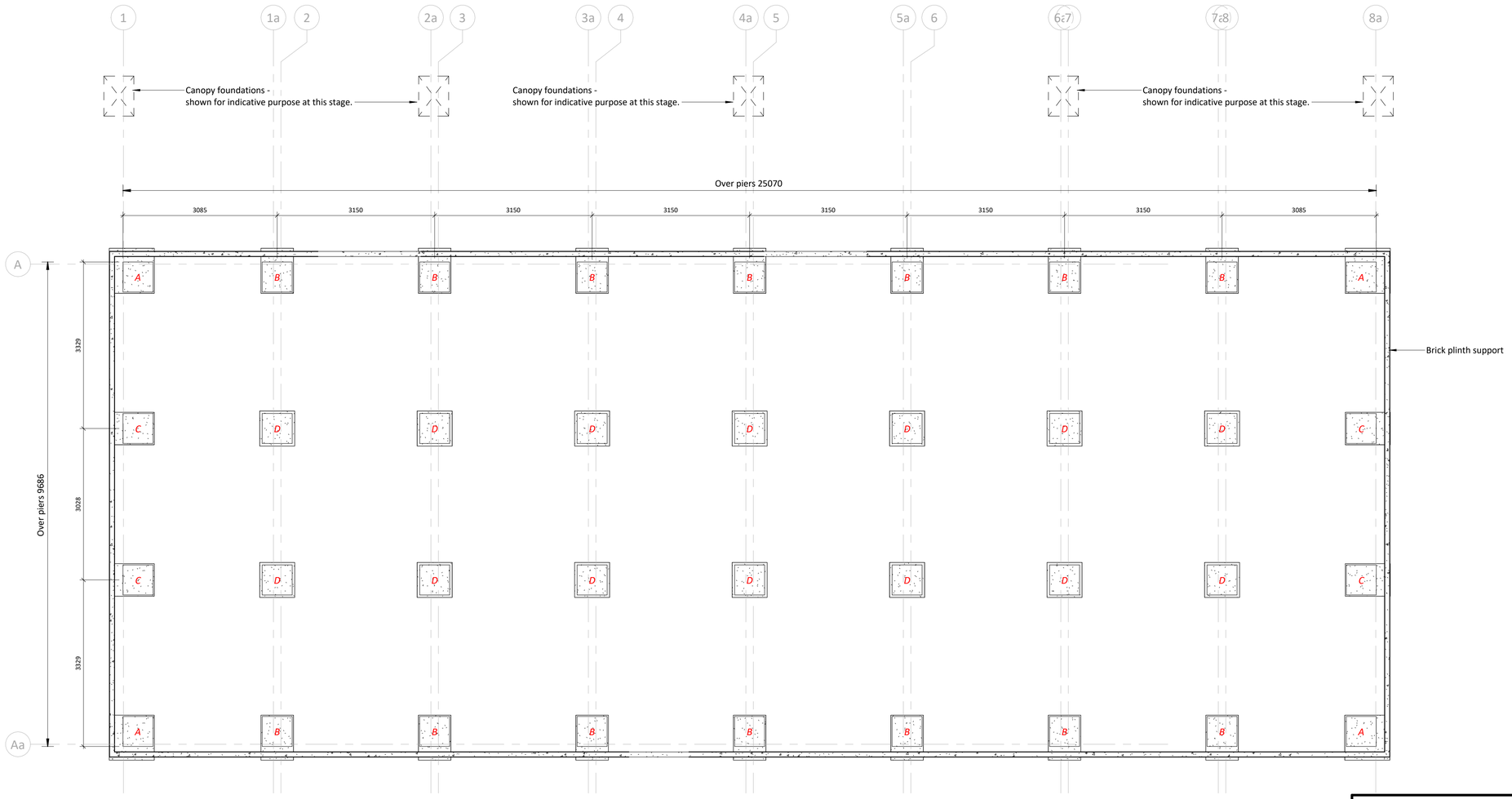
NOT TO BE USED FOR CONSTRUCTION PURPOSES UNTIL "APPROVED FOR CONSTRUCTION" STAMP IS APPLIED. The areas shown are approximate only and have been measured off preliminary drawings as the likely areas at the current stage of design using the started option from the code of Measuring Practice, 4th edition, RISCS/ISVA These may be affected by future design development and construction tolerances, or the result of surveys for existing buildings. Take account of these factors before planning any financial or property developemnt purpose or strategy and seek confirmation of latest areas before decision making.

Wernick BUILDINGS
Kenfig Industrial Estate, Port Talbot, SA13 2 PE
Tel: 01656 747 340 **Website:** wernick.co.uk

CLIENT:	Wrexham Borough Council
PROJECT:	Ysgol Morgan Llwyd - 3 No. classroom
	Cefn Road, LL13 9NG Wrexham
DRAWING TITLE:	Proposed ground floor plan

DRAWN:	CHECKED:	APPROVED:	SCALE:
SL	KA	KN	1 : 50@ A1
FIRST ISSUE:	CONTRACT NO:	SUITABILITY:	REVISION:
17-July-2024	12117	S3	P05

12117 - WB - 02 - GF - DR - AA - 1001



1 Foundations
1 : 50

UNFACTORED FOUNDATION POINT LOADINGS
3kN FLOOR LOAD

MARK	LOADING [kN]					
MODULE SIZE	6m	7.2m	8.4m	**9.6m**	10.8m	12m
A	14	15	17	**20**	15	17
B	28	30	34	**40**	30	34
C	21	18	20	**22**	21	23
D	42	35	39	**44**	41	45
E	-	-	-	-	29	34
F	-	-	-	-	58	68

Pad and Strip Foundation Notes: Single Storey 3kN/m sq floor load.

The following notes are intended for guidance only. Detailed design of the foundations should be undertaken by a suitably qualified person, based on specific site and local ground conditions.

These guidance notes assume that the ground at the site will provide an adequate bearing capacity for all the loads envisaged, and that settlements will be within tolerable limits.

All works should be carried out to relevant Building Regulations and Codes of Practice.

All vegetation, topsoil and organic material should be stripped and removed. The area beneath the building is to be surfaced with approved 150mm of granular material, suitably graded, compacted and leveled over 'Terram' or similar geotextile layer.

Foundations will be founded at a minimum depth capable of providing an adequate bearing capacity and to provide suitable penetration below the zone of shrinkage and swelling within cohesive soils due to seasonal weather changes, trees and other vegetation (750mm minimum for cohesive soil with low volume change potential) and to penetrate the zone affected by ground frost (450mm minimum)

All excavations should be adequately battered or shored to ensure they remain safe throughout the duration of the works.

All foundation excavations should be inspected and approved by an appropriate person prior to the placing of concrete. The base of the excavation should be blinded where appropriate.

All soft spots at the base of foundation excavations shall be removed and replaced by a suitable compacted granular fill or lean concrete.

Foundations are to be set out to the following tolerances and any variance reported to Wernick Buildings Contracts Manager :-
Horizontal +/- 3mm. Vertical +/- 3mm.

Foundation piers/pad supports are to be coated on top surface with Bitumen paint to act as a damp proof course.

Groundworks contractor is advised to visit site to ascertain full extent of works. Any discrepanies to be reported to Technical Services Department prior to submitting tender. Any claims arising from a difference to this drawing and actual site conditions will not be accepted and therefore any differences between tender price and this drawing must be detailed at time of submission of tender.

Blockwork used to be of density no less than 2000kg/m cubed with a min. compressive stength of 7kN/mm sq, alternatively brickwork to BS 6649.

Mortar grade vol. 1:3 or 4 cement/sand.

All foundations to be positioned centrally about piers.
Foundation type A to be used for piers less than 480 high.
Foundation type B can be used as an alternative to type A.
Foundation type C to be used for piers above 480 high.
Foundation type D to be used for intermediate piers only and no higher than 480.
For piers above 1000 high refer to Wernick Buildings Limited Technical services Department.

Note:
Foundations pads sizes to be confirmed by engineer at later stage.

Wernick GROUP

Part of the Wernick Group of Companies.
WB 527B

Number	Revision Description	Date	Issued	Checked
P01	First issue	17-July-2024	SL	KA

SUITABILITY:

WORK IN PROGRESS:
S0 - Initial Stage or WIP
PUBLISHED (CONTRACTUAL):
Approved & Accepted
A0 to **A7** and STAGES **0** to **7**

SHARED (NON-CONTRACTUAL):
S1 - For coordination
S2 - For information
S3 - For review and comment
S4 - For stage approval

• Do not scale from this drawing. • Check all dimensions on site. • Report any discrepancies and omissions to WB Technical Services. • This drawing is based on photocopied/scanned information liable to distortion in scale. • These drawings are copyright, project specific and confidential and no part is to be used or copied in any way without the express prior consent of Wernick Buildings.

NOTES:

PRELIMINARY DRAWING

NOT TO BE USED FOR CONSTRUCTION PURPOSES UNTIL "APPROVED FOR CONSTRUCTION" STAMP IS APPLIED. The areas shown are approximate only and have been measured off preliminary drawings as the likely areas at the current stage of design using the started option from the code of Measuring Practice, 4th edition. RISCS/ISVA These may be affected by future design development and construction tolerances, or the result of surveys for existing buildings. Take account of these factors before planning any financial or property developemnt purpose or strategy and seek confirmation of latest areas before decision making.

Wernick BUILDINGS
Kenfig Industrial Estate, Port Talbot, SA13 2 PE
Tel: 01656 747 340 **Website:** wernick.co.uk

CLIENT:	Wexham Borough Council
PROJECT:	Ysgol Morgan Llwyd - 3 No. classroom
	Cefn Road, LL13 9NG Wrexham
DRAWING TITLE:	Proposed foundations

DRAWN:	CHECKED:	APPROVED:	SCALE:
SL	KA	KN	As indicated@ A1
FIRST ISSUE:	**CONTRACT NO:**	**SUITABILITY:**	**REVISION:**
17-July-2024	12117	S3	P01

12117 - WB - 02 - 00 - DR - AA - 0201