AECOM

STRIDE TREGLOWN

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Design & Access Statement

CENTRE FOR INTEGRATIVE SEMICONDUCTOR MATERIALS
Swansea University
Bay Campus

Stride Treglown job no.	**152296**
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Revisions

Revision	Description
A	06.08.19 Pre-application Draft
B	11.12.19 Pre-Application Issue

Contents

1. Introduction

1.1. Centre for Integrative Semiconductor Materials (CISM)

1.1.1 CISM is a proposed new facility to bring together semiconductor and advanced materials platforms to research and develop new technologies and products at Swansea University's Bay Campus.

1.1.2 The facility will offer R&D, prototyping and process development facilities. It will also offer opportunities for incubation and industry partners to have development space and support and provide access to training and development.

1.1.3 CISM will deliver a bespoke, integrated facility for semiconductor research and technology development, with the following capability:

- Manufacturing grade, ISO-qualified clean rooms for process development
- Backend materials integration and packaging capability
- Advanced NNG research laboratories
- II/III-VI MOCVD growth facility
- Customer Bays for SME incubation
- Access to advanced characterisation and analysis [microscopy, surface analysis, chemical, optical, electrical]
- Access to state-of-the-art materials and device-level theory and simulation

1.1.4 The proposed building is sited in the centre of the existing engineering quarter adjacent to the Centre for Printing and Coating, Energy Safety Research Institute and Swansea Materials Research & Testing Building.

1.2. Background

1.2.1 The CISM concept emerged in mid-2017 as a response to the following stimuli and opportunities:

- Growing collaboration with the regional semiconductor industry and Cardiff University arising from an expanding portfolio of cross-platform projects with the Centre for Nanohealth and other elements of the SU semiconductor community (for example Power Electronics);
- The development of new research activity in next-generation electronic materials across the university (Physics – the Sêr Cymru Programme in Sustainable Advanced Materials; Chemistry – bioelectronics and electronic nanomaterials; Materials Engineering – next-generation II(III)-VI compound semiconductors);
- The expansion of advanced manufacturing through initiatives such as the SPECIFIC Innovation & Knowledge Centre, Sêr Solar and Sunrise (buildings as power stations and printed, low cost PV), the Steel and Metals Institute (SAMI - industrial coatings), and the Welsh Centre for Printing and Coating (WCPC - printed opto);
- Ongoing requests from the regional semiconductor industry for suitably skilled graduates and assistance with critical sectoral services such as process development, prototyping, characterisation and bespoke R&TD;
- Emerging priorities through the Industry Strategy Challenge Fund (ISCF) and Welsh Government (WG) strategic innovation plan closely aligned to technologies of high relevance to integrated semiconductors.

1.3. Project Objectives

1.3.1 The Swansea University Strategic Plan 2016-20201 sets out Centenary Commitments (CC) associated with all elements of the university's business.

1.3.2 The CISM project (infrastructure and research program) will make a significant contribution to these Commitments, notably:

- To deliver world-class research [CC7 – highest quality publications; CC8 – attraction of world-class talent and partnerships; CC9 – world-class research environment; CC10 – global impact from research]
- World-class teaching and research driving economic growth and societal impact [CC11 – drive economic growth and prosperity in the region and UK; CC12 – enhance local and global partnerships; CC13 – contribute to an international community of learning]

1.3.3 The prioritised business objectives are:

- To create a world-class research and technology development (R&TD) facility to advance the science and engineering of integrating semiconductor technology platforms and related manufacturing philosophies;
- To deliver a comprehensive, sustainable and impactful strategic research programme which both explores applied and fundamental aspects of integrative semiconductor materials, and also produces tangible technology outcomes of high value to feed the UK semiconductor industry;
- To build an open-innovation, multi-disciplinary community where critical sectoral services such as incubation, product prototyping, characterisation and analysis, and skills provision are co-located and exist hand-in-hand with enquiry-led high-quality research;
- To dramatically enhance the research capacity of Swansea University (SU) in semiconductor science and engineering, and in a concerted effort with our sister institution Cardiff University (CU) create a long-term, deeply embedded regional core competency capable of producing tomorrow's skilled semiconductor engineers, scientists and thought leaders to drive our industry to global leadership.

1.3.4 The prioritised project objectives are typically:

- Deliver a bespoke CISM building at SU's Bay Campus, fully tooled and fit for purpose, on-time and on-budget;
- To deliver the built environment within the constraints of the funding body;
- To ensure and co-ordinate a collaborative approach to the design with the wider industry stakeholders

1.3.5 Underpinning these Commitments are Strategic Enablers (SE) and the CISM infrastructure is closely aligned to SE 19 - to ensure that the quality of our physical and digital estate, facilities and infrastructure enables our strategic ambitions. The Bay Campus Phase 1 Master-Plan focused on creating a world-class teaching and innovation precinct where industry and academia can co-exist is nearing completion, and CISM, alongside the planned Active Building Centre and National Steel Innovation Centre are the final elements of that Plan.

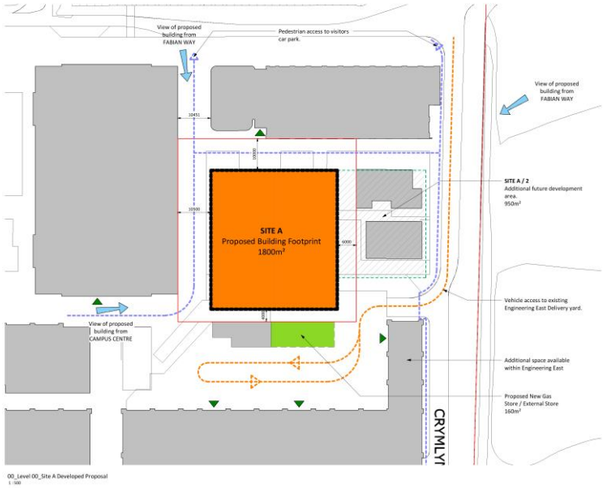
1.3.6 CISM is a new, but now fully-formed addition to the SU Strategic Research and Estate Plan.

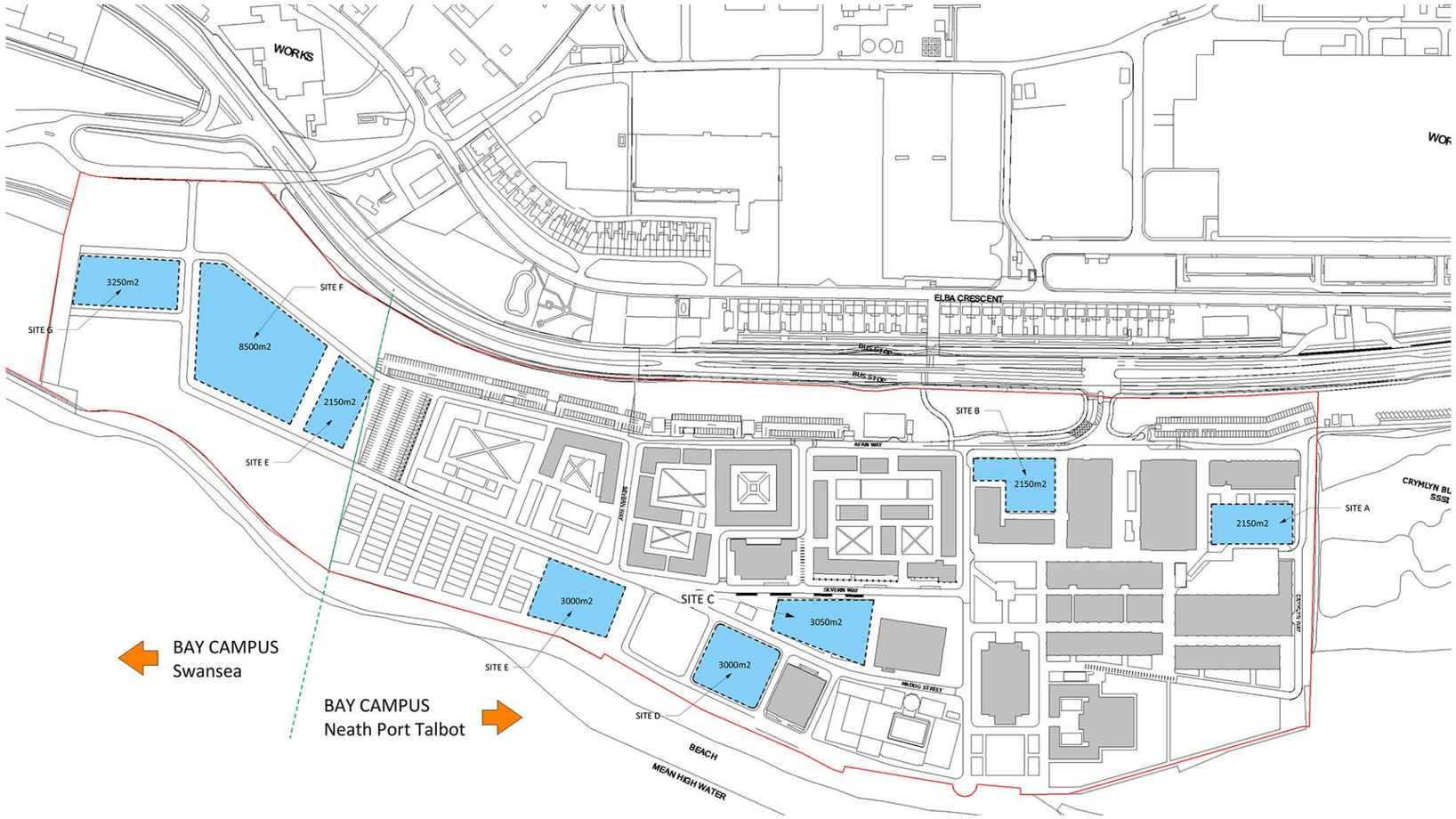
2. Context

2.1. The Bay Campus

2.1.1 The Bay campus has been developed on a 65-acre beachfront site between Fabian Way and Jersey Marine beach at Crymlyn Burrows. It initially houses the College of Engineering and School of Management, a Great Hall seating 800, a library offering views over a Site of Special Scientific Interest, and student accommodation. Projects moving on to campus include the UK's first Energy Safety Research Institute, and the Institute of Structural Materials, home to the University Technology Centre for Rolls Royce materials testing.

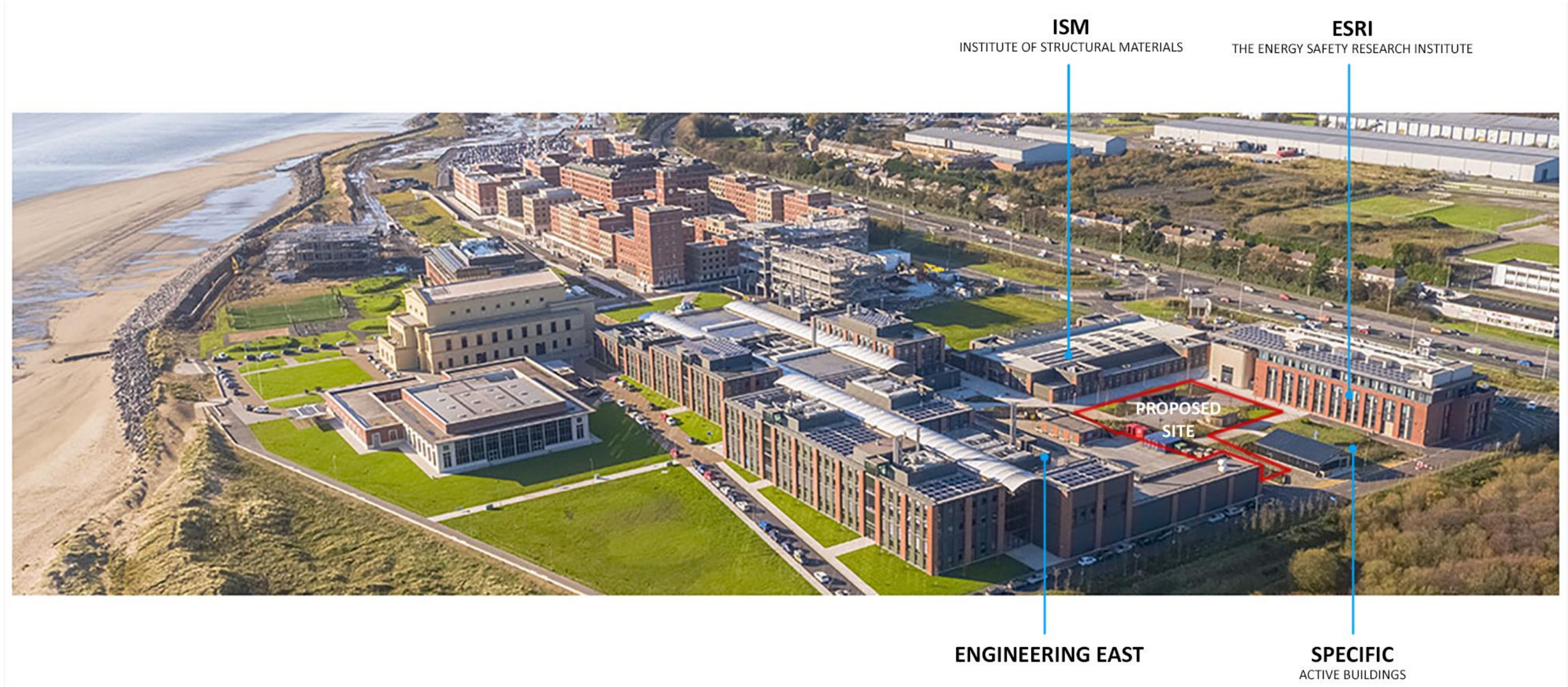
2.1.2 The Bay Campus Engineering Centre currently has five buildings supporting a variety of engineering departments. The proposed location for the new CISM building would locate this new facility in the heart of this engineering campus allowing for shared facilities and supporting areas. The site was chosen after a lengthy feasibility study which looked at several sites across the campus and the gateway site located east of the Amazon Warehouse. This study looked at the proposed activity of the CISM building, impact on surrounding campus, access and adjacency advantages. After this initial review two sites were identified for further exploration, the current proposed site and a proposed development plot west of the existing great hall. Due to the advantages of proximity to the surrounding engineering buildings, existing goods yard and campus access the proposed site was chosen.





GATEWAY
Neath Port Talbot

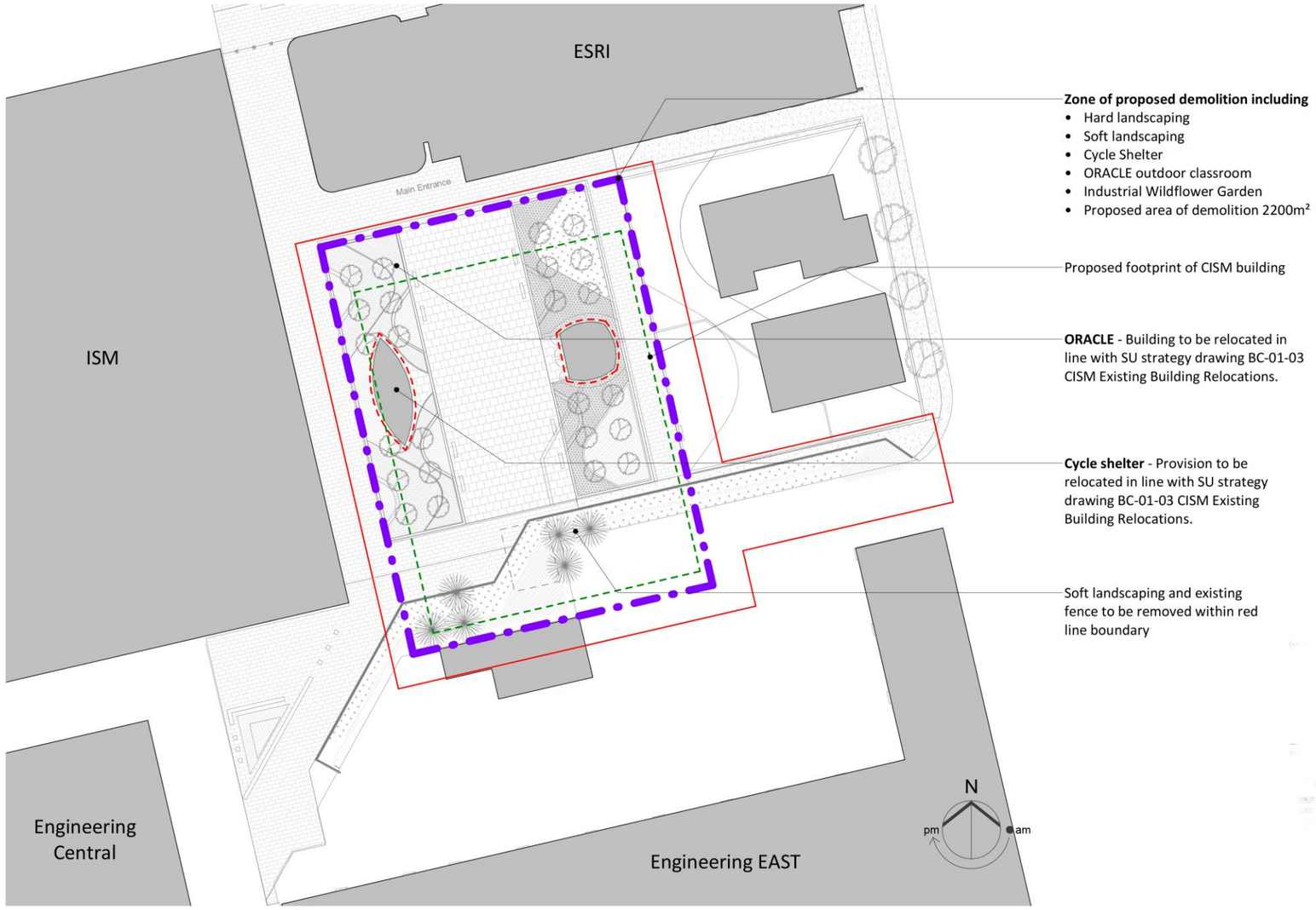
2.1.3 The proposed building is sited in the centre of the existing engineering quarter adjacent to the Centre for Printing and Coating, Energy Safety Research Institute and Swansea Materials Research & Testing Building. The proposed development therefore accords with the industry / R&D uses approved for the site as part of the outline planning permission (P2010/0222) for the university campus.



2.2. Existing Site & Demolition Plan

2.2.1 The proposed development site is in the centre of the existing engineering quarter adjacent Energy Safety Research Institute and Engineering East and will connect directly to the existing goods yard located to the North of the Engineering building.

The proposed development will involve the relocation of the ORACLE outdoor classroom and the existing ESRI cycle shelter. Existing wildflower planting will also be relocated. Options for the relocation of these elements are currently being explored.



Site Plan. Existing and demolition
1 : 500

3. Planning Policy Context

3.1. Planning Policy Wales PPW10 (2018)

3.1.1 Planning Policy Wales (PPW) is the Welsh Government's principal statement of national policy and sets out the land use planning policies that should be taken into account by local planning authorities in Wales and may be material to decisions on individual planning applications.

3.1.2 PPW identifies that the goal of the land use planning system in Wales is the creation of Sustainable Places and seeks places which are attractive, sociable, accessible, active, secure, welcoming, healthy and friendly (2.2 and 2.3).

3.1.3 PPW refers to supporting the growth of output and employment in Wales by ensuring that there is no shortage of land for economic uses (para 5.4.1).

3.1.4 PPW recognises that any statutory body carrying out a planning function must exercise those functions in accordance with the principles of sustainable development as defined in the Well-being of Future Generations Act. "Sustainable Development" means the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals. Acting in accordance with the sustainable development principle means that a body must act in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.

3.1.5 Paragraph 2.8 states that decisions must seek to promote sustainable development and support the well-being of people and communities across Wales.

3.1.6 PPW introduces the following 5 key Planning Principles which are intended to support the culture change needed to embrace placemaking and ensure that planning facilitates the right development in the right place:

- Growing our economy in a sustainable manner
- Making best use of resources
- Facilitating accessible and healthy environments
- Creating & sustaining communities
- Maximising environmental protection and limiting environmental impact

3.1.7 PPW identifies a series of placemaking outcomes which are to be used to inform the preparation of development plans and the assessment of development proposals (2.15). As a result development proposals must seek to deliver development that address the national sustainable placemaking outcomes (2.17).

3.1.8 PPW recognises that not all of the outcomes will be applicable to all proposals, however, demonstrating that they have been considered in the process is important. The following outcomes have been identified as most relevant to the proposals:

Creating and Sustaining Communities

- Appropriate development densities
- Jobs to meet society's needs
- A mix of uses

Growing Our Economy in a Sustainable Manner

- Fosters economic activity
- Enables easy communication
- Generates its own renewable energy
- Vibrant and dynamic
- Adaptive to change
- Embraces smart and innovative technology

Making Best Use of Resources

- Makes best use of natural resources
- Prevents waste
- Prioritises the use of previously developed land and existing buildings
- Unlocks potential and regenerates
- High quality and built to last

Maximising Environmental Protection and Limiting Environmental Impact

- Resilient biodiversity and ecosystems
- Integrated green infrastructure
- Reduces environmental risks
- Manages water resources naturally
- Clean air
- Reduces overall pollution
- Resilient to climate change

Facilitating Accessible and Healthy Environments

- Accessible and high quality green space
- Accessible by means of active travel and public transport
- Not car dependent
- Minimises the need to travel
- Provides equality of access
- Feels safe and inclusive
- Supports a diverse population
- Good connections

- Convenient access to goods and services
- Promotes physical and mental health and well-being

3.1.9 PPW identifies the importance of early collective consideration of placemaking issues at the outset while emphasising the importance of not considering policy issues in isolation but thinking holistically about how it would be used and its impacts (3.1). PPW refers to Good Design as being fundamental to creating sustainable places where people want to live, work and socialise (3.3) and addresses the objectives of good design with reference to the following:

- Access and inclusivity "...placing people at the heart of the design process"
- Environmental sustainability "sustainable management of natural resources where multiple benefits solution become an integral part of good design...."
- Character "The special characteristics of an area should be central to the design of a development..."
- Community safety "...to produce safe environments that do not compromise on design quality..."
- Movement "...avoiding the creation of car based developments....maximising opportunities for people to make sustainable and healthy travel choices for their daily journeys...".
- Appraising context "... Site and context analysis should be used to determine the appropriateness of a development proposal in responding to its surroundings".

3.1.10 The Design & Access Statement is identified as the method which demonstrates the design process that has been undertaken and explains how the objectives of good design and placemaking have been considered from the outset of the development process.

Wellbeing of Future Generation Act (Wales) 2015

3.1.11 The Well-being of Future Generations (Wales) Act 2015 places a duty on public bodies (including Welsh Ministers) that they must carry out sustainable development.

3.1.12 "Sustainable development" means the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals.

3.1.13 Acting in accordance with the sustainable development principle means that a body must act in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.

3.1.14 This means that each public body listed in the Act must work to improve the economic, social, environmental and cultural well-being of Wales.

3.1.15 **TAN 12 Design (2014)** includes advice on how promoting sustainability through good design may be facilitated through the planning system.

3.1.16 The proposed development has followed the process of identifying the constraints and opportunities on the site. The proposals have, therefore, been carefully considered to respond to the surroundings.

3.1.17 **TAN 16 Sport Recreation and Open Space (2009)** provides advice on the provision and protection of sport / recreational facilities and informal open spaces.

3.1.18 **TAN 18 Transport (2007)** contains advice on the location of development, parking design, walking, cycling and public transport.

3.1.19 **TAN 15 Development and Flood Risk (2004**) sets out the precautionary framework to guide planning decisions in areas of flood risk. The site is located partly within Flood Zone C2.

3.1.20 **TAN 5 Nature Conservation and Planning (2009)** provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. Paragraph 4.1.1 refers to how the development control process can help achieve these objectives and supports identifying ways to build nature conservation into the design of new development and applying the five-point approach to decision-making - information, avoidance, mitigation, compensation and new benefits.

3.1.21 **TAN 11 Noise (1997)** provides advice on how the planning system can be used to minimise the adverse impact of noise, including both noise sensitive development and noise generating development, without placing unreasonable restrictions on the development.

3.1.22 **TAN 23 Economic Development (2014)** provides advice on B class uses and notes that local planning authorities should recognise market signals and have regard to the need to guide economic development to the most appropriate locations, rather than prevent or discourage such development.

3.2. Neath Port Talbot CBC Local Development Plan (2011-2026) (January 2016)

3.2.1 The following policies have been identified as being of relevance to the proposed development.

Principle

3.2.2 Policy SC1 notes that development within settlement limits that is proportionate in scale and form to the role and function of the settlement as set out in the Settlement Hierarchy will be acceptable in principle

3.2.3 Policy CCUC1 allocates land at the Coastal Corridor University Campus for the development of the Swansea University Science and Innovation Campus, comprising academic university facilities, research and development and student residential accommodation.

Design

3.2.4 Policy BE1 refers to a series of criteria based on the overall expectation for high quality design that takes into account the natural, historic and built environmental context and contributes to the creation of attractive, sustainable places

3.2.5 Policy TR2 refers to a series of criteria relating to the design and access of new development including not compromising the safe, effective and efficient use of the highway network, providing appropriate levels of parking and facilitating the safe manoeuvring of service vehicles and access by sustainable means.

Open Space

3.2.6 Policy SP10 refers to retaining and protecting existing open space, while Policy OS2 identifies specific criteria for the loss of such space including demonstrating that:

- The open space is no longer needed; and
- There is no shortfall of provision of that category of open space in the ward, before or as a result of the development; and
- The site would not be suitable to provide an alternative type of open space for which there is a shortfall.
- Or: It can be demonstrated that equivalent or enhanced facilities can be provided on a suitable and accessible replacement site which would serve the local community equally well

Ecology

3.2.7 Policy SP15 refers to the protection, conservation, enhancement and management of important habitats, species and sites of geological interest.

3.2.8 Policy EN6 refers to important biodiversity and geodiversity sites and states that development should conserve and where possible enhance the natural heritage importance of the site, while mitigation and/or compensation measures will need to be agreed where adverse effects are unavoidable.

3.2.9 Policy EN7 notes that development proposals that would adversely affect ecologically or visually important natural features and notes that where removal is unavoidable, mitigation measures are agreed.

Environmental Protection

3.2.10 Policy SP16 notes that air, water and ground quality and the environment generally will be protected and where feasible improved through a series of measures including:

- Ensuring that proposals have no significant adverse effects on water, ground or air quality and do not significantly increase pollution levels;
- Giving preference to the development of brownfield sites over greenfield sites where appropriate and deliverable;
- Ensuring that developments do not increase the number of people exposed to significant levels of pollution.

3.2.11 Policy EN8 notes that proposals which would be likely to have an unacceptable adverse effect on health, biodiversity and/or local amenity or would expose people to unacceptable risk due to issues such as air, noise, water and light pollution will not be permitted.

Sustainability

3.2.12 Policy SP1 refers to a series of measures to address the causes and consequences of climate change including encouraging sustainable travel patterns, making a contribution to renewable energy generation and reducing flood risk.

3.2.13 Policy SP18 refers to encouraging renewable energy/low carbon technology and energy conservation and efficiency measures in all developments where appropriate.

3.2.14 Policy RE2 notes that major developments will be required to submit an Energy Assessment to determine the feasibility of incorporating a scheme that connects to existing sources of renewable energy, district heating networks and incorporate on-site zero / low carbon technology (including microgeneration technologies), and where viable, would be required to implement the scheme.

Transport

3.2.15 Policy SP20 refers to a series of measures to develop a safe, efficient and sustainable transport system, including:

- Promoting connectivity and access to public transport through improving bus and rail facilities;
- Supporting enhancements to the walking and cycling network;
- Restricting development which would have an unacceptable impact on highway safety;
- Requiring development proposals to be designed to provide safe and efficient access and promote sustainable transport; and
- Requiring appropriate parking provision.

Other

3.2.16 Policy SP4 notes that developments will be expected to make efficient use of existing infrastructure and where required make adequate provision for new infrastructure, ensuring that there are no detrimental effects on the area and community.

3.2.17 Policy SP19 refers to ensuring that provision is made for the sustainable management of waste in all new developments.

3.2.18 Policy W3 states that proposals for new built development will need to demonstrate that provision is made for the design, layout, storage and management of the waste generated by the development both during the construction phase and occupation.

3.2.19 Site Waste Management Plans are required for industrial or commercial development that would generate in excess of 1,000 tonnes of waste per annum and development that would generate hazardous waste.

4. Design

4.1. Proposed Layout

4.1.1 The footprint of the proposed CISM building measures 1620m².

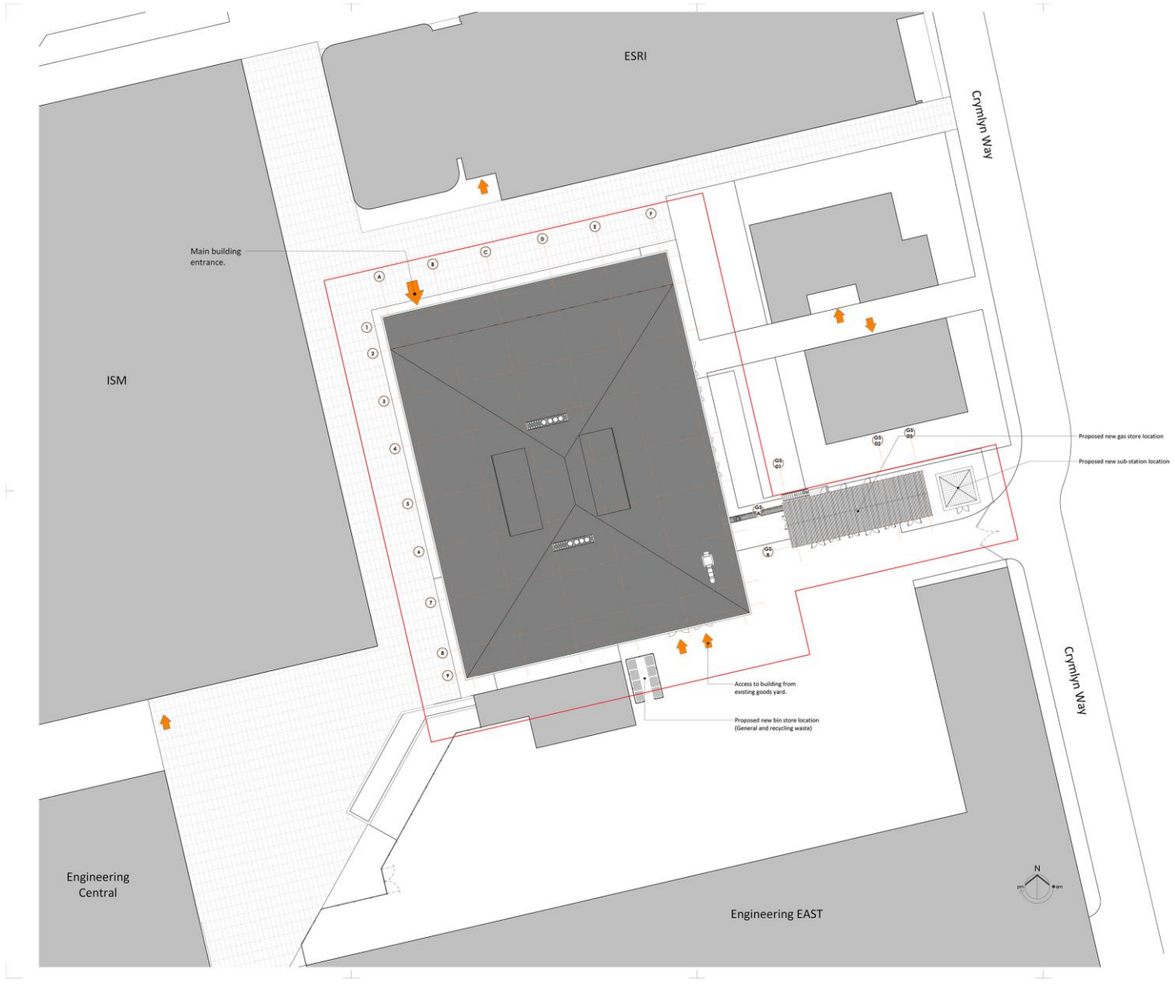
4.1.2 A separate gas store (footprint 100m²) is proposed to the east of the main CISM building. This building will store the required process gasses within a secure compound which currently surrounds the existing goods yard. These gasses need to be housed outside of the main laboratory building and for campus users safety is located within the gated compound.

4.1.3 The proposed building has been designed to fit naturally into the existing campus and is aligned to the original masterplan for the site which showed development of the plot (see below). The building plot is located adjacent to the SPECIFIC buildings to the east. The proposed building aligns to the north with the existing face of the Active Office and to the south at the existing boundary of the goods yard. To the west the proposed building has been aligned to the existing edge of the ESRI building maintaining the 'street' between ESRI and the ISM building. To the west the building has been restricted so as not to affect the existing SPECIFIC buildings (active office, active classroom).

4.1.4 The proposed footprint of the building maximises the available site, however efforts have been made to reduce the impact to the ESRI building to the north by setting back the proposed entrance to the new CISM building and create a new public space between the existing ESRI entrance and proposed new entrance to the CISM building.

4.1.5 The proposed layout also takes advantage of the existing access and delivery routes into the site covered in more detail later in this document.

Extract from 'Illustrative Urban Grain and Land Uses' - Parameter Drawing for Outline Planning Application (Porphyrios Associates)



4.2. Scale

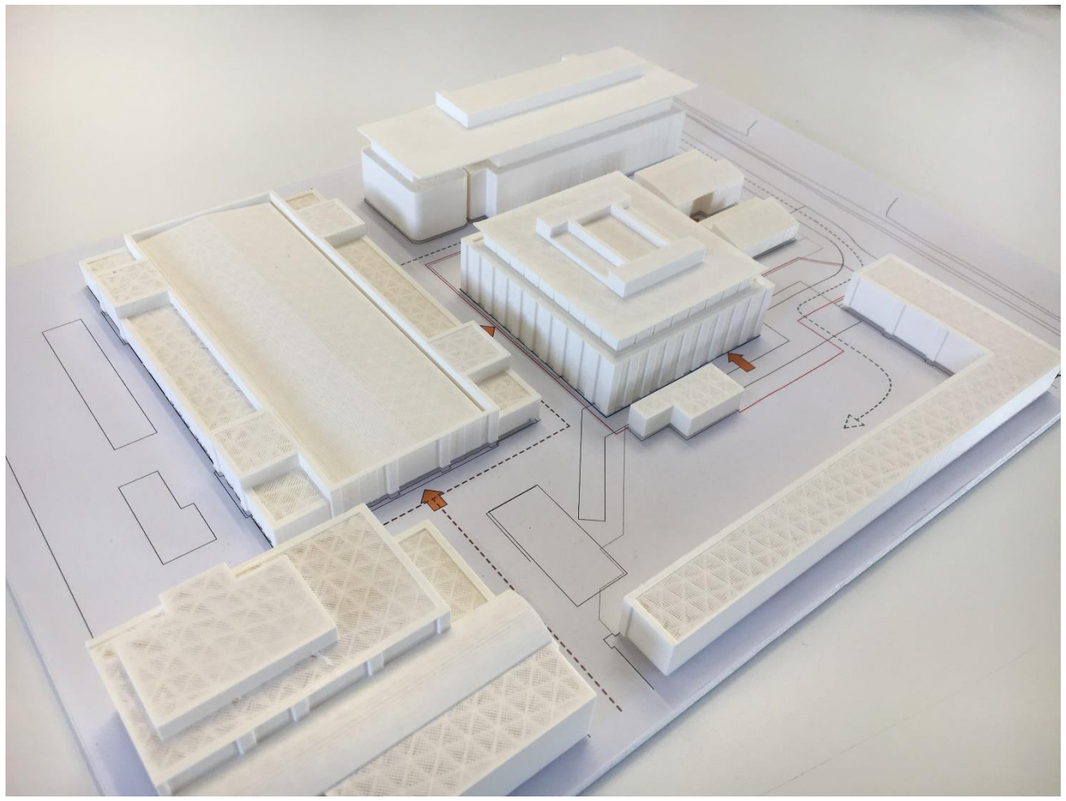
4.2.1 The proposed height of the CISM building has been designed to align as closely as possible to the height of the existing ESRI building. Due to the function of the building internal building heights are dictated by process with requirements for large plant and maintenance voids. As such the parapet height has been restricted, with proposed flues and other rooftop plant and services clustered to the centre to minimise visual impact.

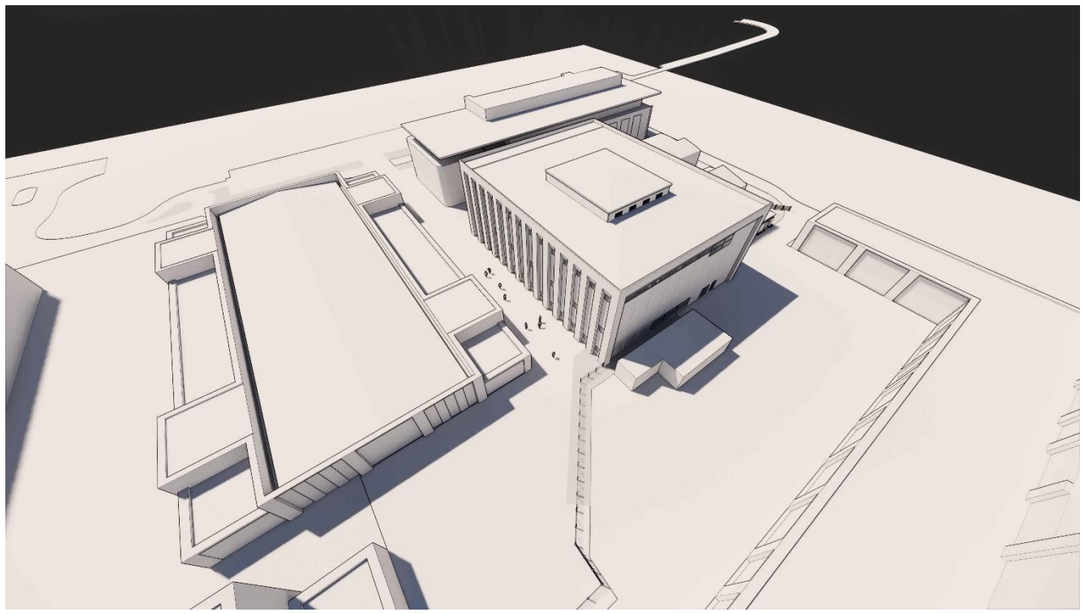
4.2.2 As the building design has been developed care has been taken through massing studies and physical models to examine the impact on surrounding buildings. As stated above the overall height of the building has been dictated by process. Wherever possible the impact of this has been reduced using the following strategies.

- Concrete framing reduces down stand areas and 'dead space' below floor voids.
- Roof pitches minimised to reduce height of flues and rooftop plant.
- Internal planning maximises internal plant space on both ground and second floor to reduce amount and height of exposed plant.
- The building has been moved south as much as possible to minimise the impact on the existing ESRI building.

4.2.3 Overall the building scale has been considered to be in keeping with the surrounding buildings and the overall massing of the Bay Campus.

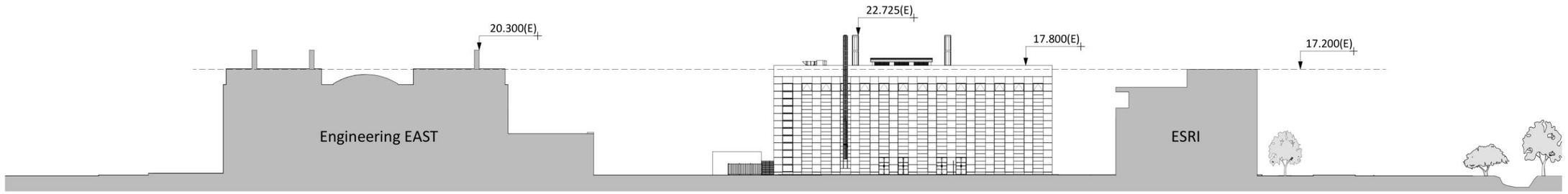
4.2.4 The outline approval included a maximum permitted building height for this plot of 17.5metres. The proposed height of the building to the edge of the parapet is 17.8metres with roof top plant and flues projecting beyond this to a maximum height of 23metres.



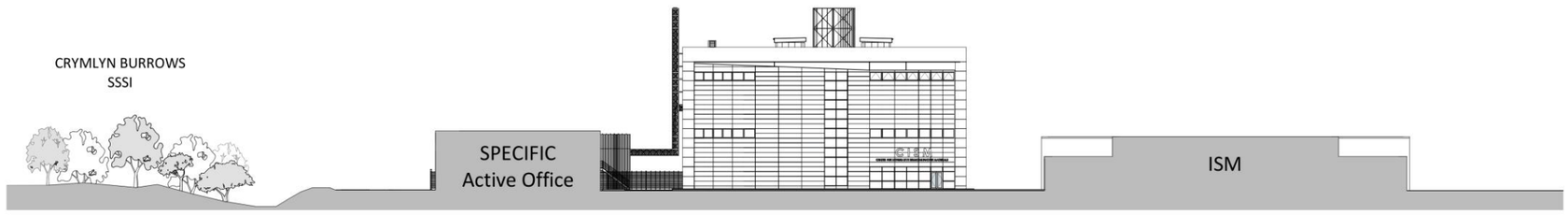


4.2.5 Site Sections.

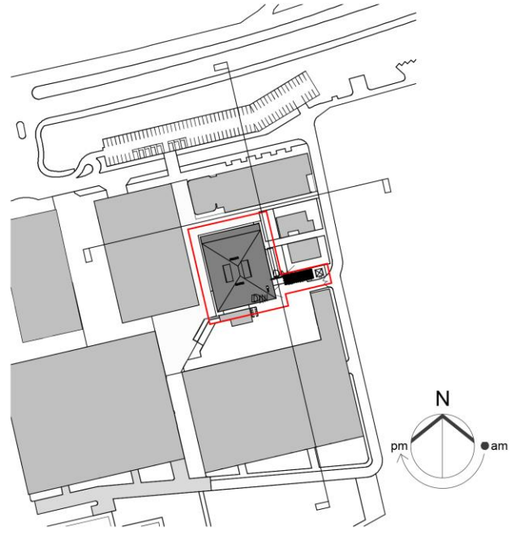
4.2.6 The proposed CISM building has been design to be of a similar height of the surrounding buildings. From the north to the south across the site. The lower ISM building is located to the north west white the engineering central building located to the south west is of a similar scale.



Section North South
1 : 500



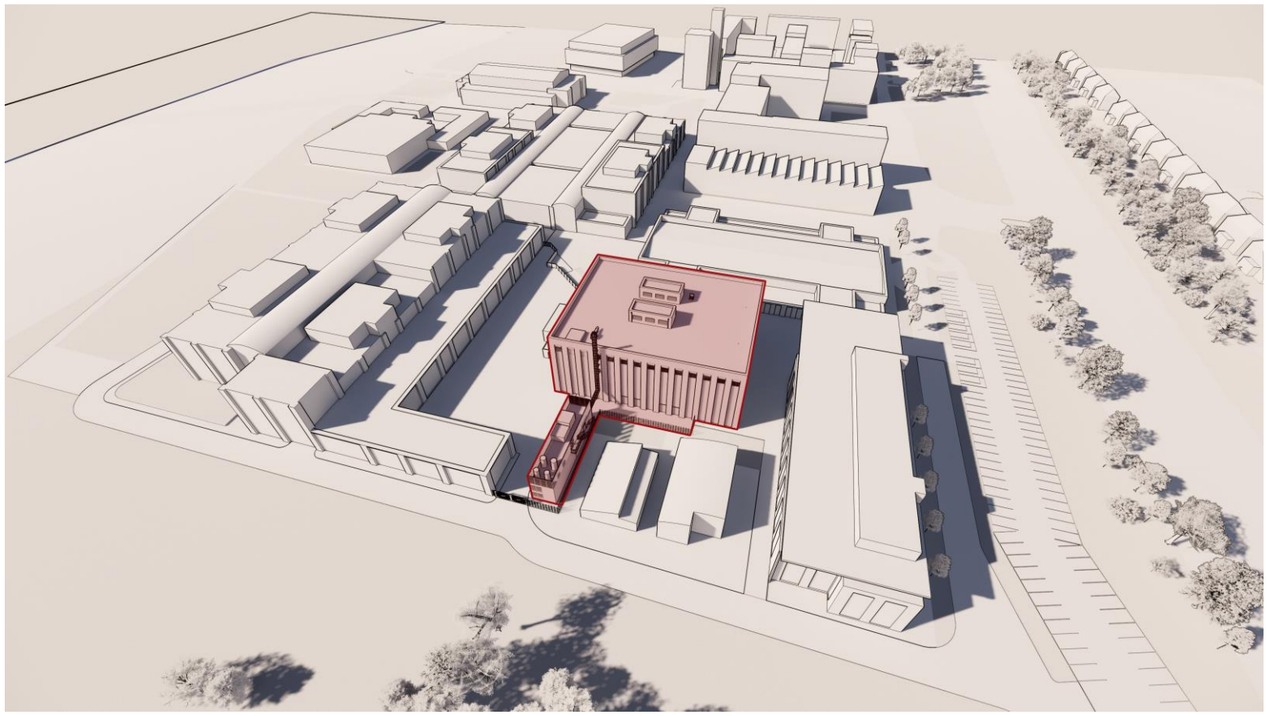
Site Section East West
1 : 500



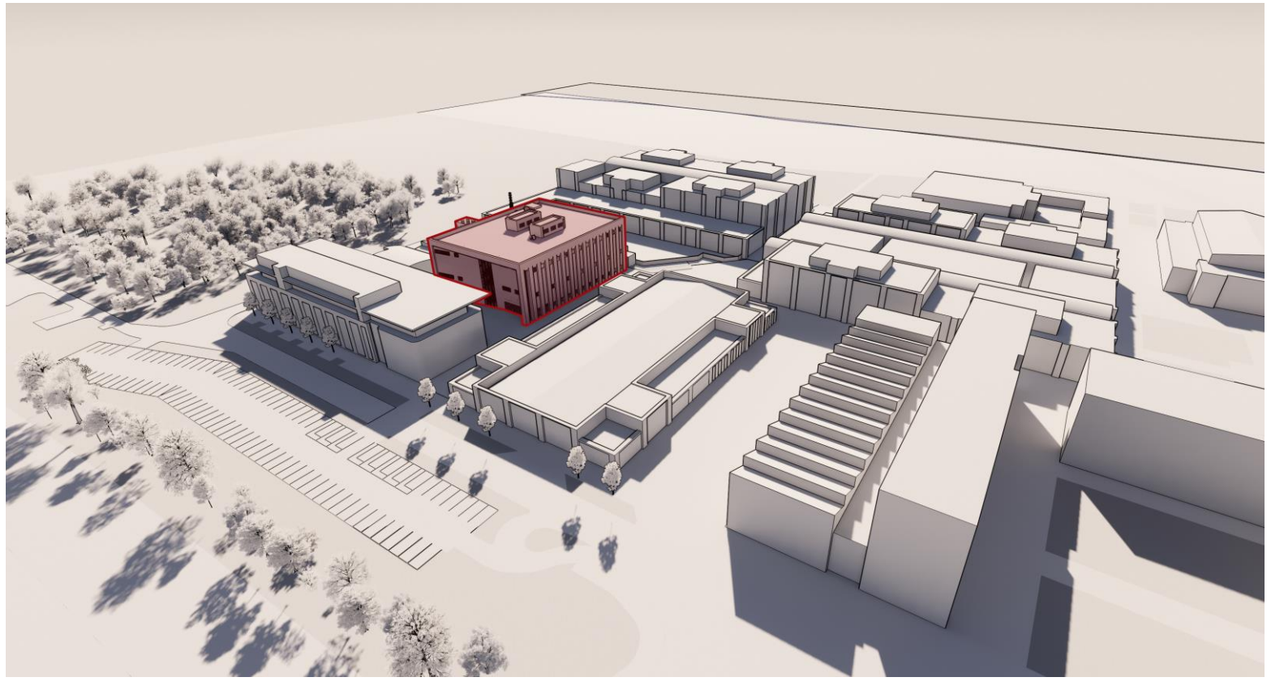
Section Location Plan
1 : 2500

4.3. Site massing strategy

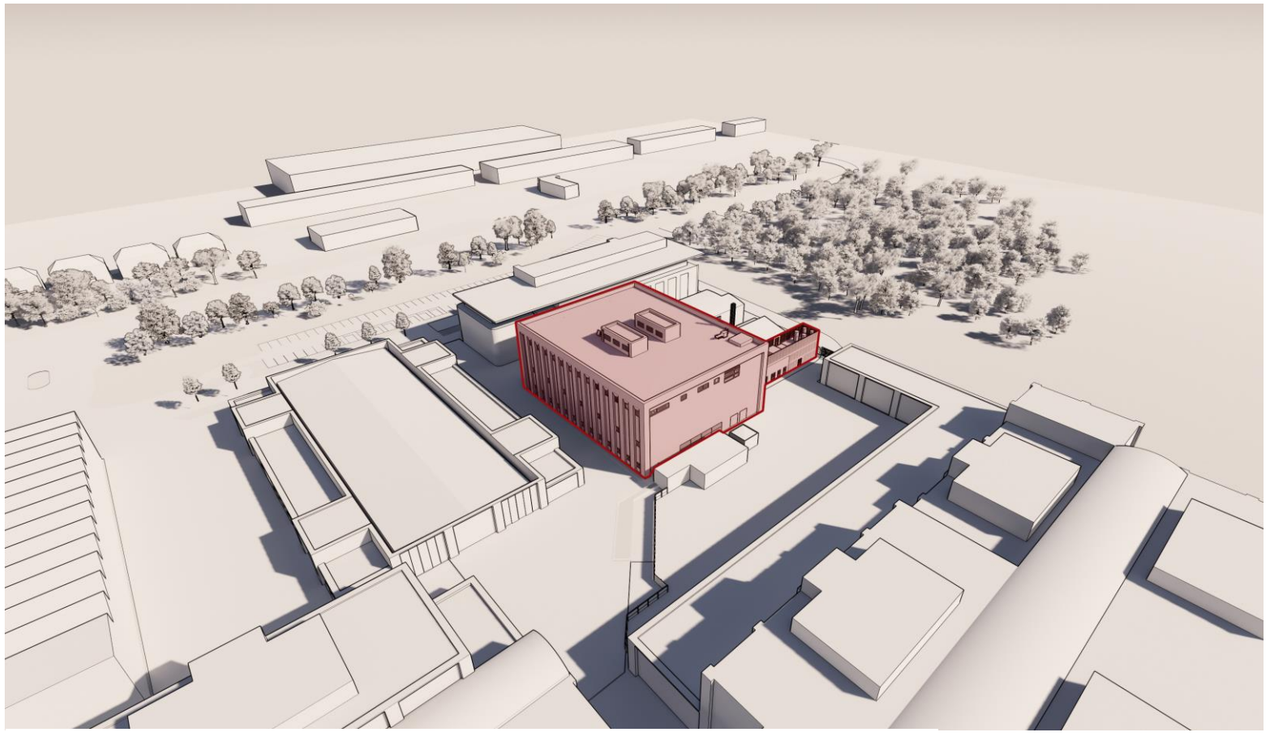
4.3.1 The position and mass of the proposed building have been carefully considered in the context of the overall bay campus. They are also aligned to the master planning documents relating to site massing and development.



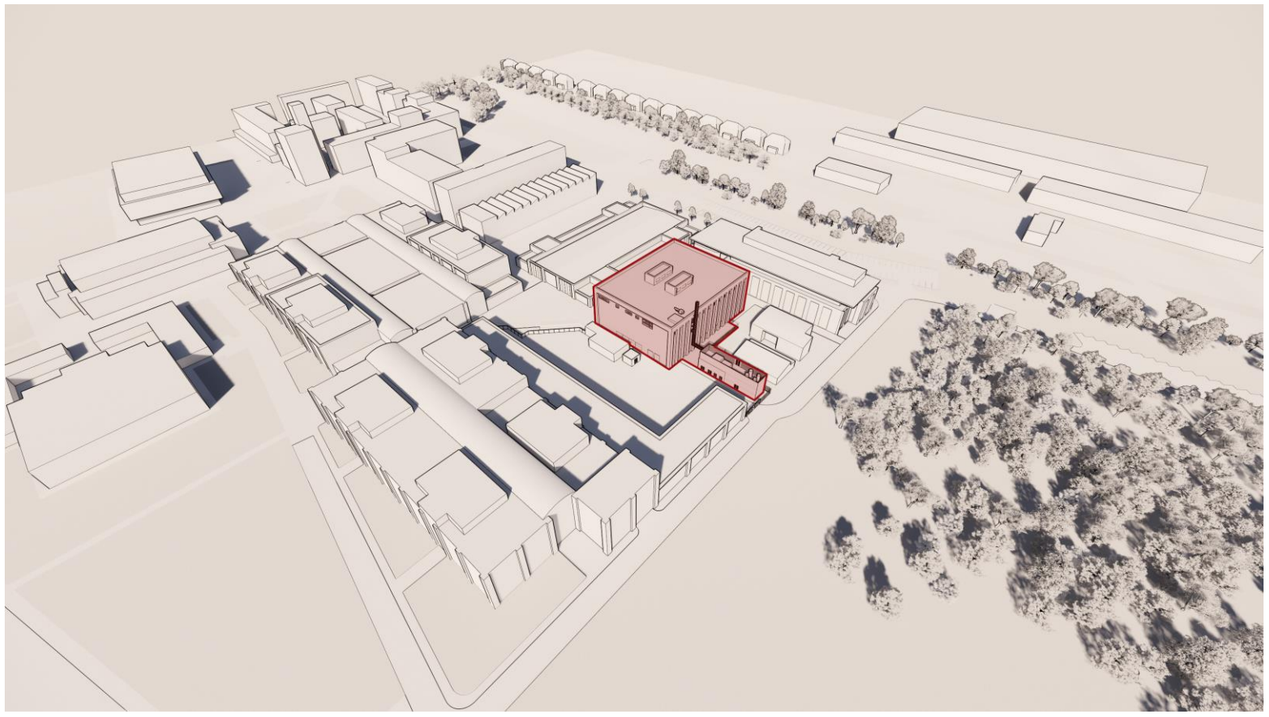
View from east



View from west.



View from south west.



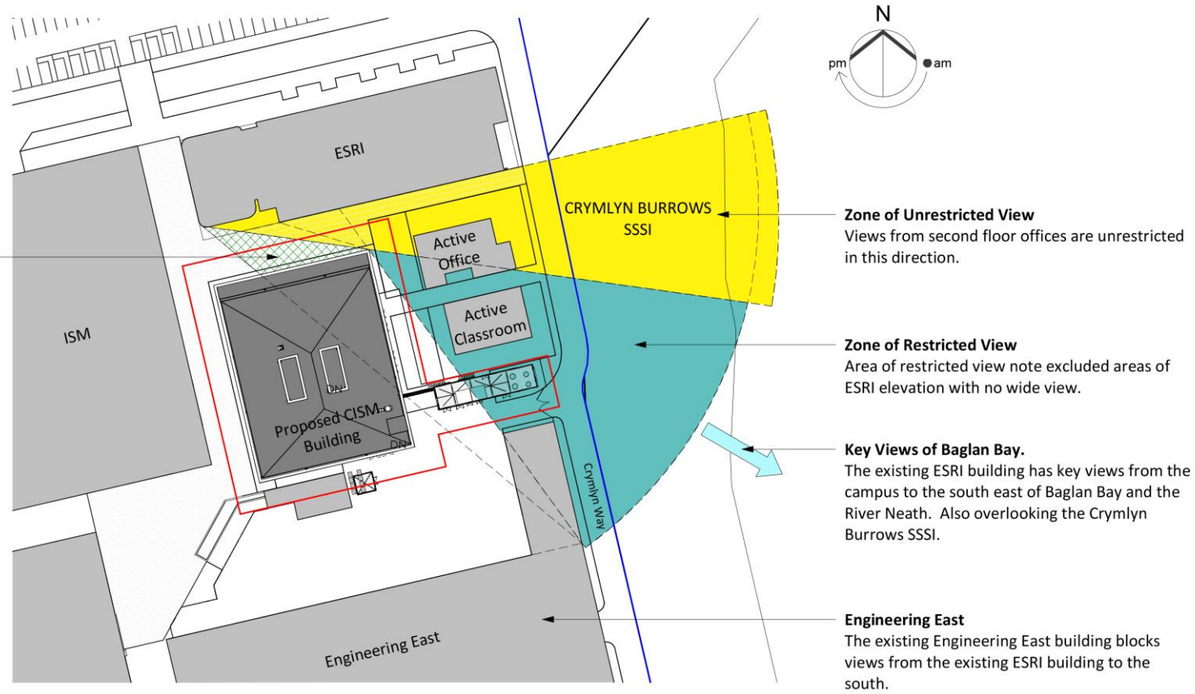
View from south east.

4.4. Impact

4.4.1 The proposed CISM building is located to the South of the existing ESRI building. The CISM building is proposed to be of similar height to the adjacent ESRI building as such this will impact the existing views from the western end of the existing building.

4.4.2 The ESRI building has a large lecture theatre located to the western end within the metal clad building element. A small waiting area is located to the south opposite the proposed entrance to the CISM building. This lecture facility takes up the lower two storeys of the building. On the third floor a conference / board room is set back from the main facade. Generally the lower floors of the ESRI building are laboratory spaces with offices restricted to the upper two storeys.

4.4.3 The proposed CISM building has been orientated so to restrict the mass to the western end of the ESRI building. This restricts the impact of the new building to the inward looking spaces in the ESRI building and minimises impacts to office spaces.



Site Plan. Impact to Building Views
1 : 1000

PL ESRI Window Locations
1 : 350

4.5. Appearance

4.5.1 Externally the building design has been developed in line with the original master planning and development guidance. The existing campus relays heavily on a 'Victoriana' aesthetic with the engineering buildings and student housing utilising a redbrick and metal panel construction method. More recent developments have taken this aesthetic and introduced additional stone and industrial materials. The CISM building is a highly complex engineering facility requiring heavy servicing and support, due to this there are minimal opportunities for large areas of glazing or complex stepping facades.

4.5.2 The proposed CSIM building embraces the classical nature of the surrounding architecture and the opportunities of materiality introduced by other recent developments. By its nature the building wants to be uniform and rectilinear to allow for order internal layouts. The building also requires a deep plan form to allow for centralised plant and support areas.

4.5.3 After the development of the initial massing the building become less square as per the original feasibility and more rectangular to suit the internal function. This stout rectangular form is very reminiscent of a classical temple arrangement, this combined with the existing solid pier aesthetic of the surrounding buildings led the team to embrace the classical proportions of the building but also to include for the advantages of modern construction methodology.

- To the east and west a classical colonnaded design has been selected, this matches the exiting ESRI and engineering buildings with integrated metal and glazed panel elements between to proposed colonnade.
- To the north the building has been stepped back within the proposed rectilinear skeleton. This has been done to help focus visitors on the asymmetric entrance and to reduce the feeling of crowding at the entrance to the ESRI building. This also allows for modern aesthetic elements to be included in the pushed back element with complete geometry linking the facade to the rigid stone skeleton.
- To the South the stone framework is finished to create a large metal clad portal. This has been done to allow for future expansion of the building and reduce overall cost. While the building has no natural 'back' this elevation facing the goods yard and engineering east building has the opportunity for reduction of complexity.

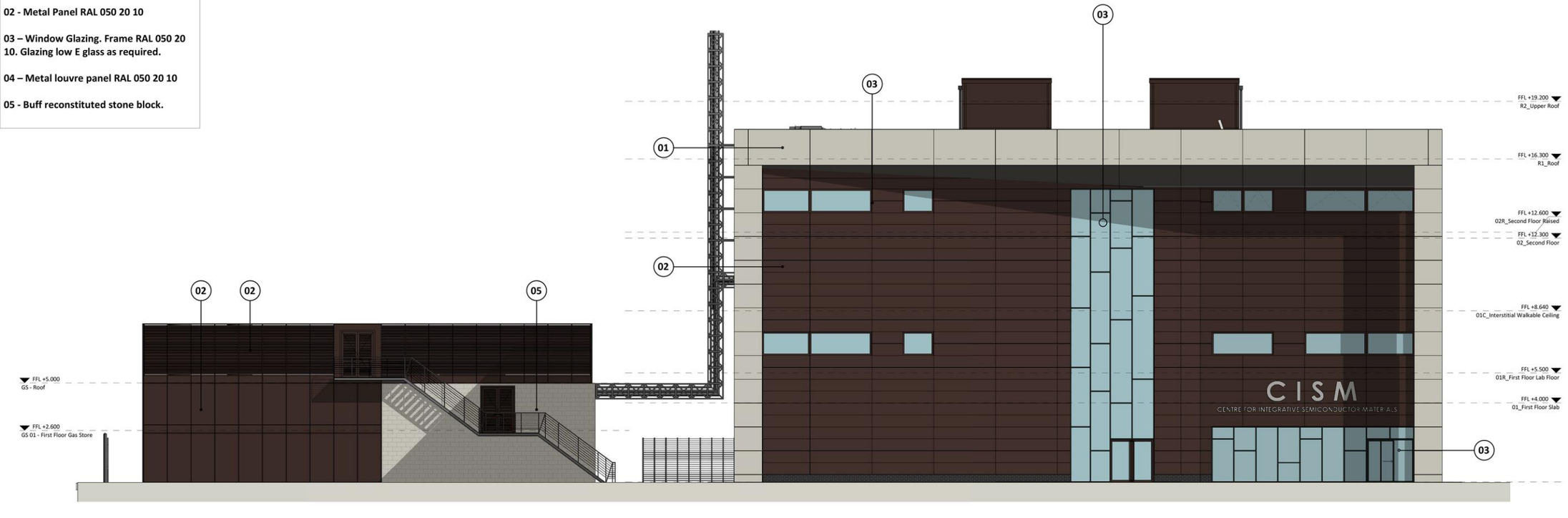
01 – Buff reconstituted stone panel

02 - Metal Panel RAL 050 20 10

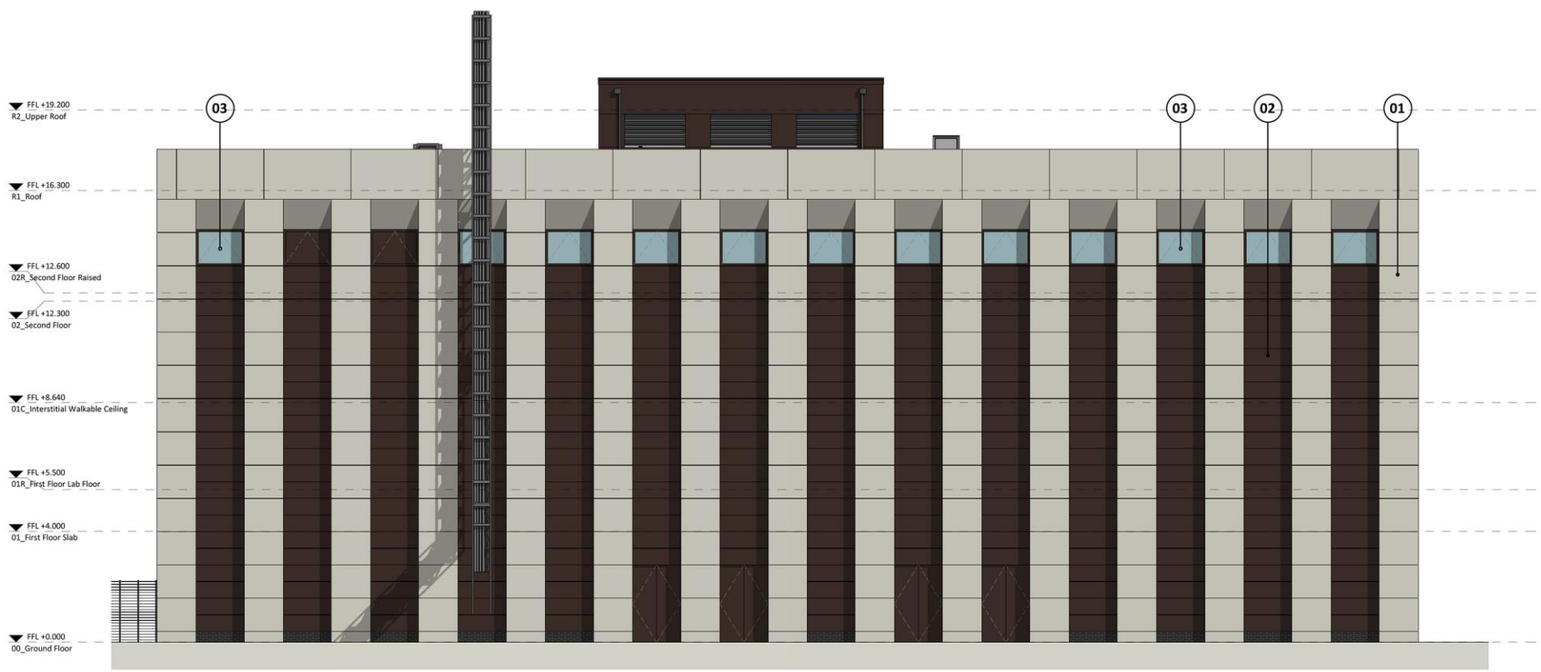
03 – Window Glazing. Frame RAL 050 20 10. Glazing low E glass as required.

04 – Metal louvre panel RAL 050 20 10

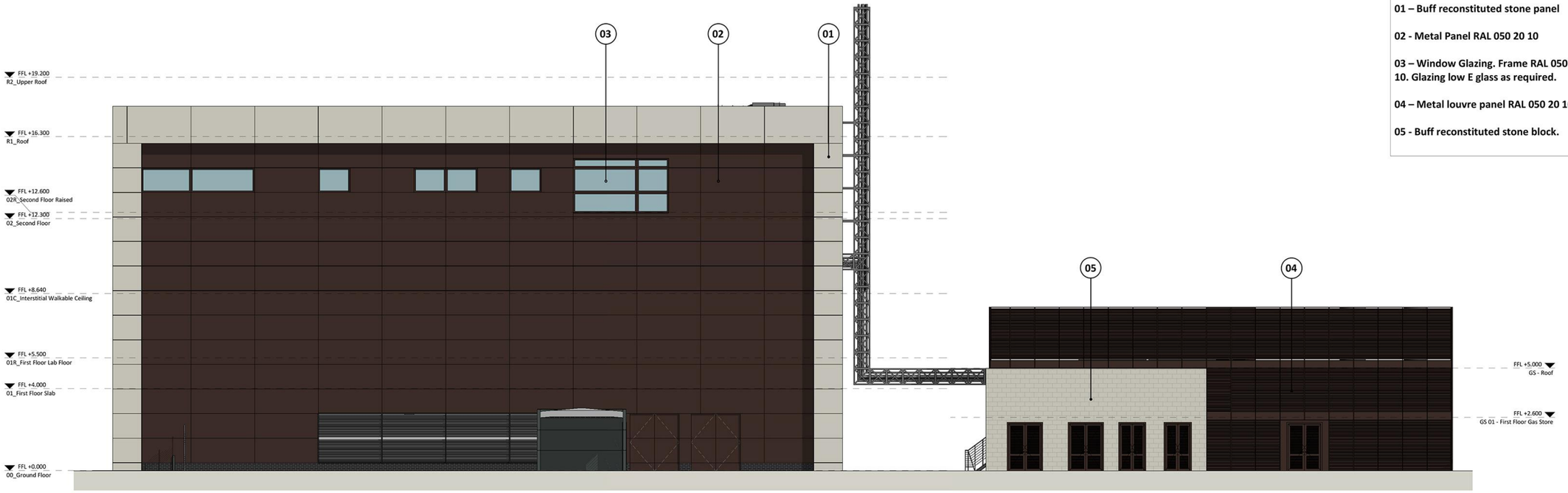
05 - Buff reconstituted stone block.



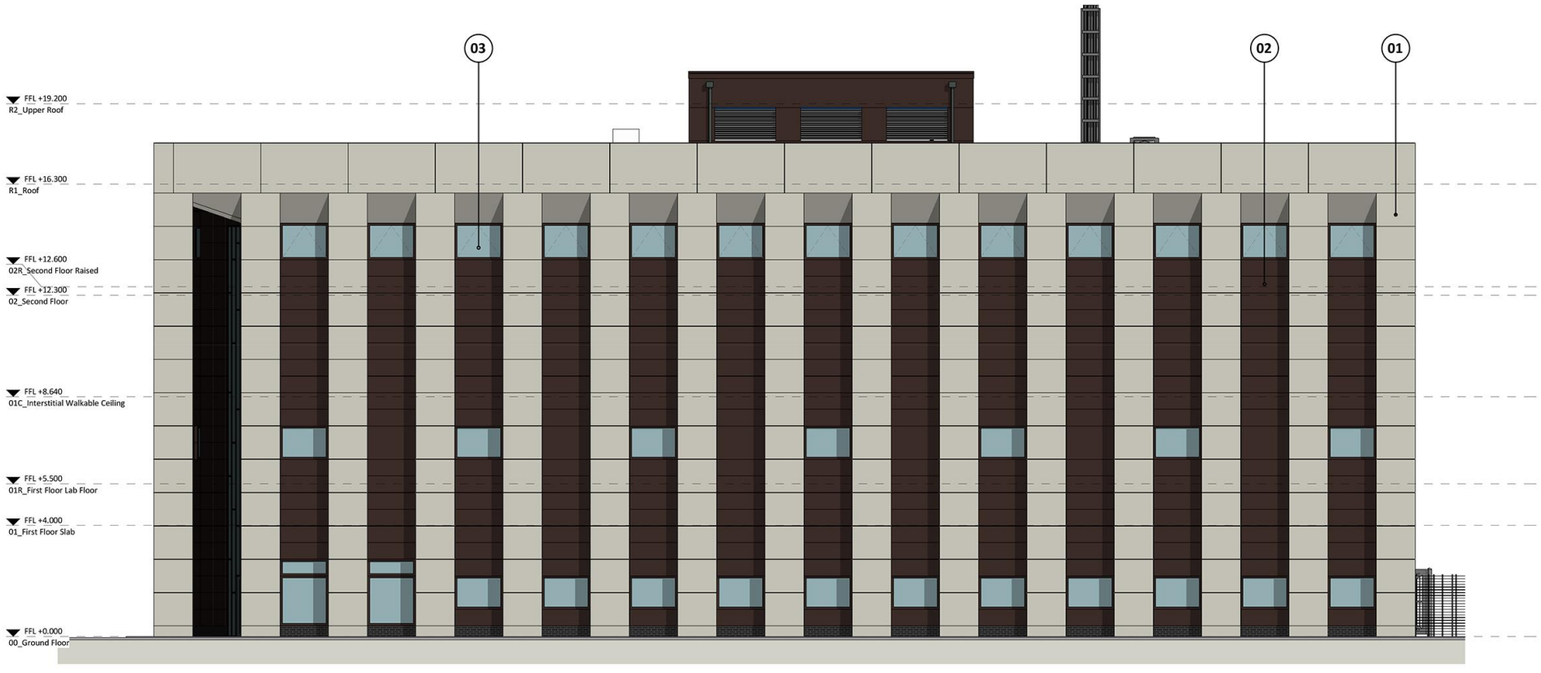
North WIP Elevation1
1 : 100



East WIP Elevation 1
1 : 100



South WIP Elevation1
1 : 100



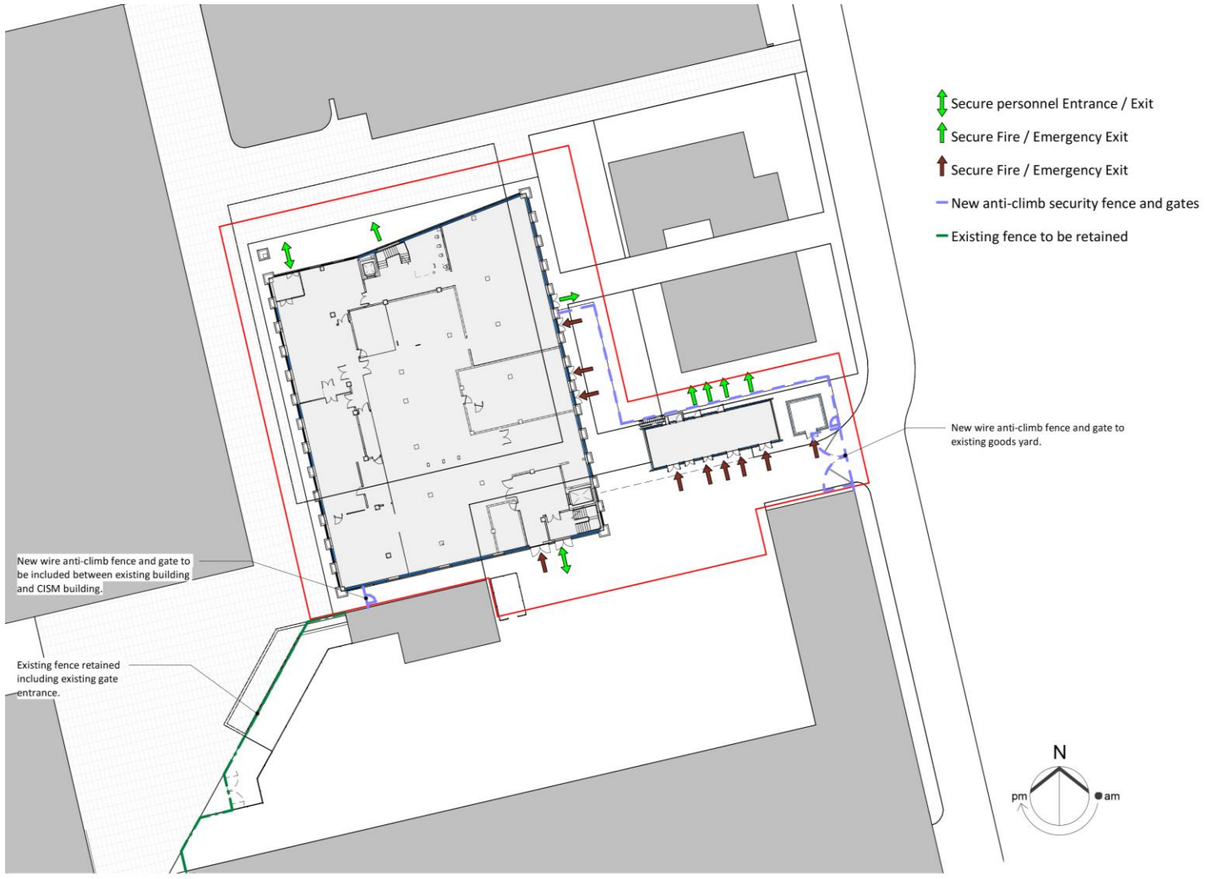
West WIP Elevation
1 : 100

4.6. Landscape Strategy

4.6.1 The current landscape proposal is restricted to an access and maintenance surface to the perimeter of the proposed building, loading dock and supporting waste and storage areas. Additional landscaping where required will extend from the existing hard surfaces.

4.6.2 The site security arrangements require new anti-climb security fence to enclose the proposed new gas store and restrict access to the external entrances to the proposed chemical waste and storage areas within the building. As noted earlier in this document a full access and delivery strategy will be developed in line with the outcome of the proposed HAZOP and operational risk workshop to be undertaken during RIBA stage 4 and incorporating feedback from the designing out crime officer.

4.6.3 At this stage it is assumed areas outside of this boundary and within redline will be rectified to a matching surrounding hard landscaped surface by the contractor at completion of the project.



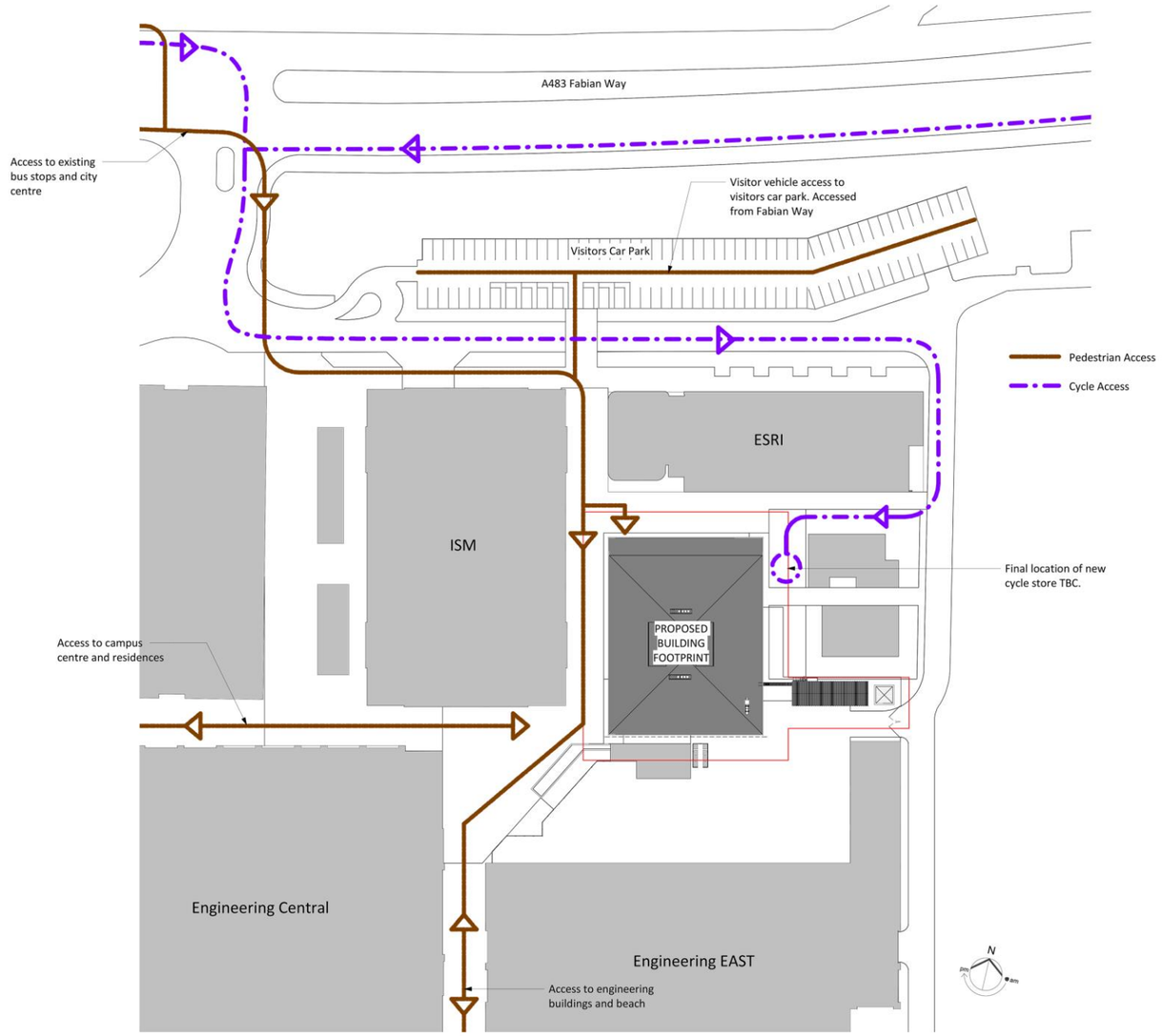
5. Access

5.1. Proposed pedestrian and cycle access

5.1.1 The building sited as it is on the existing development plot is reliant of the existing access strategy for the campus. Pedestrians will arrive via transport links to the north (bus stops and visitors car park) or alternatively from the on campus residences located to the west. This is in line with the existing campus access strategy.

5.1.2 Cycle provision will be aligned to the overall campus strategy. Additional cycle storage will be provided in line with the relocation of the existing cycle storage within the development plot.

5.1.3 Vehicle access to the campus beyond the main entrance is restricted to deliveries only. There is no parking available for building users beyond the existing carpark facilities and no additional parking is proposed for this development.

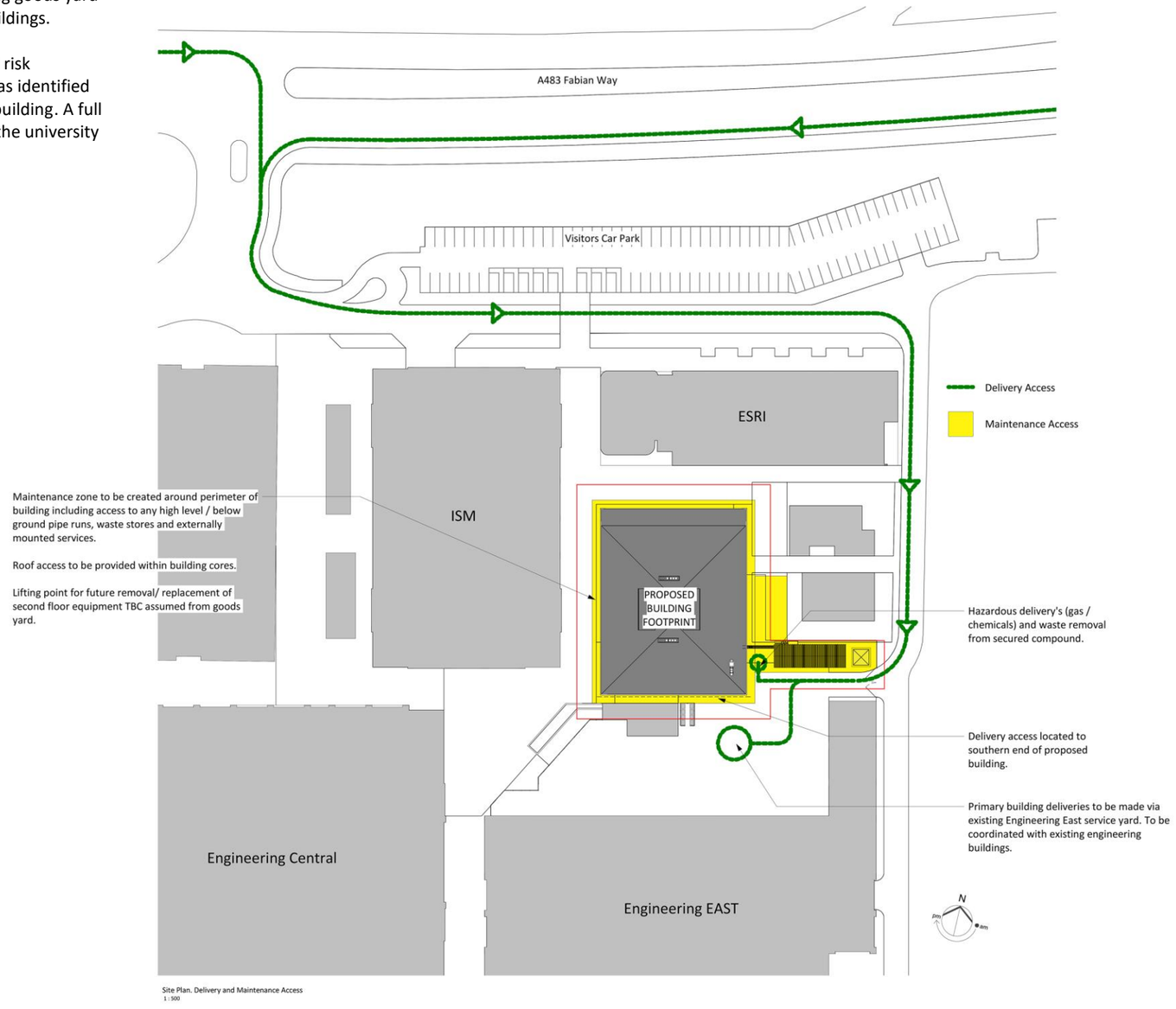


Site Plan. Pedestrian / Cycle Access
1 : 500

5.2. Proposed access delivery's and servicing

5.2.1 The proposed CISM building shares the existing goods delivery area for the engineering buildings. As such the proposed delivery strategy for the new build is aligned to the current campus access strategy. It should be noted that these are potential hazardous deliveries for the proposed building however the existing goods yard is already utilised for the delivery of process chemicals and gasses for the existing engineering buildings.

5.2.2 Swansea University and the design team have undertaken an initial Hazard study and operational risk workshop relating the proposed gasses and chemicals required for the new building. This study has identified the risk associated with deliveries within the goods yard and generally within the proposed new building. A full HAZOP and operational process review will be undertaken during RIBA Stage 04 which will allow the university to develop procedures for access and delivery's for the building once in use.



Site Plan. Delivery and Maintenance Access
1 : 500

6. Summary

6.1.1 The proposals will provide a new world class research and teaching facility for semiconductor and advanced materials development within an established University setting.

6.1.2 The location and size of the proposal is in accordance with historic parameters. The scale of the development exceeds previously agreed parameters for this plot, with the specific plant requirements of the building and the processes to be carried out dictating the building's height.

6.1.3 The external appearance embraces the classical nature of the surrounding architecture and the opportunities of materiality introduced by other recent developments. The design is therefore in keeping with its surroundings.

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