

M-Sparc – Menai Science Park

Wednesday 10th May 2017

**ADEILADU
ARBENIGRWYDD**
YNG NGHYMRU



**CONSTRUCTING
EXCELLENCE**
IN WALES



Noddir gan
Lywodraeth Cymru
Sponsored by
Welsh Government

Wholly funded by Welsh Government to help to improve the performance of the construction industry across Wales, by sharing and learning from best practice

Exemplar Programme

Case studies at 3 key stages :

- Design Stage – intent
- Construction Phase– delivery
- Post-occupation – outcomes

Peer Review

Evidence based i.e. KPI's

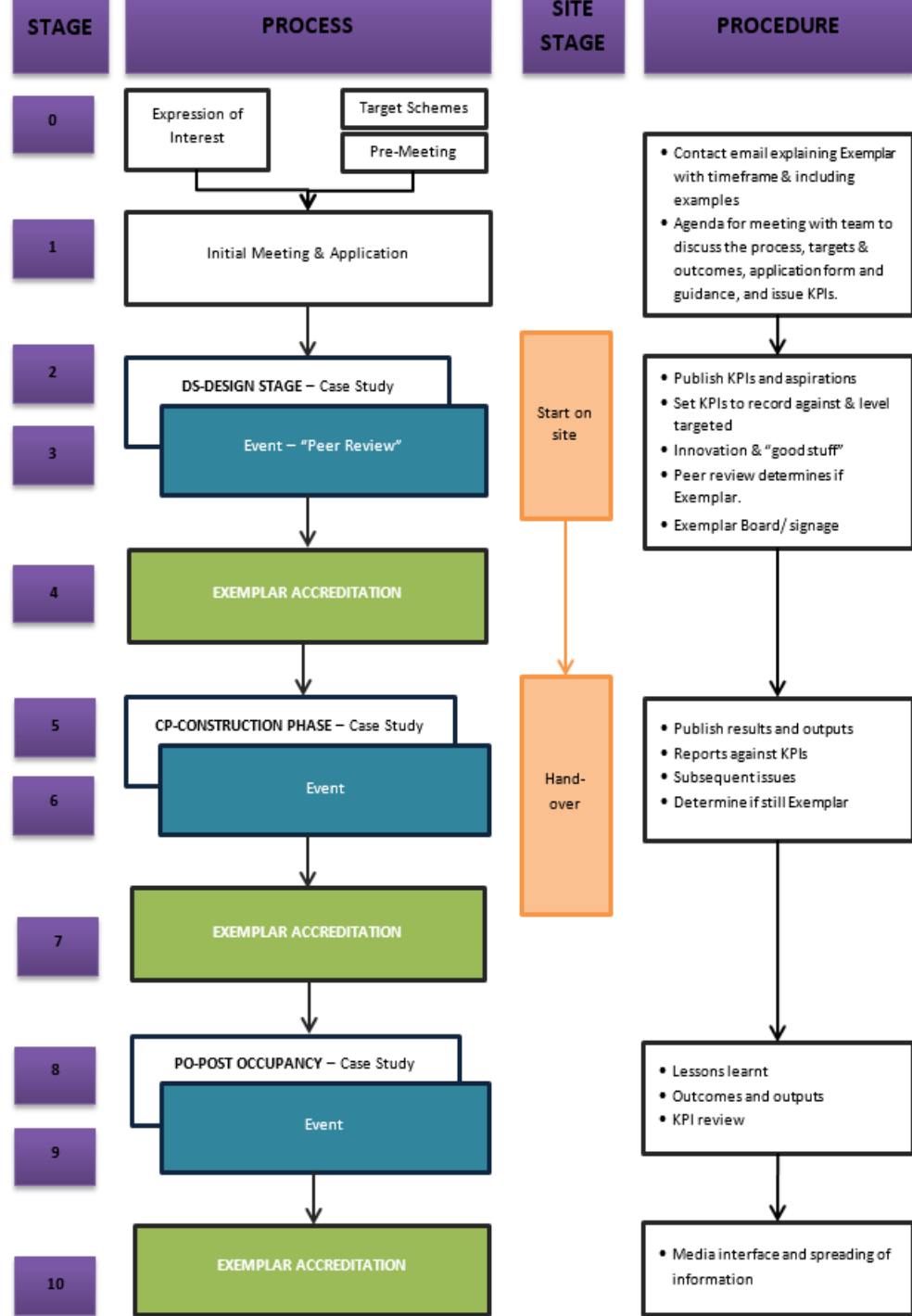
exemplar pilot case study
United Welsh Passivhaus

what is an exemplar project?
The project is based on a 'passive house' design. The design is based on the 'Passive House' standard, which is a high level of energy efficiency. The project is based on the 'Passive House' standard, which is a high level of energy efficiency. The project is based on the 'Passive House' standard, which is a high level of energy efficiency.

notable achievements
The project has achieved a high level of energy efficiency, with a predicted energy demand of 15 kWh/m² per year. This is significantly lower than the average energy demand of a typical house in the UK, which is around 100 kWh/m² per year. The project has also achieved a high level of indoor air quality, with a predicted indoor air quality index of 0.5, which is significantly lower than the average indoor air quality index of a typical house in the UK, which is around 1.0.

what made the project successful?
The project was successful due to a number of factors. Firstly, the project was supported by a number of local authorities, including the local council and the local health authority. Secondly, the project was supported by a number of local businesses, including the local hardware store and the local electrician. Thirdly, the project was supported by a number of local residents, including the local community group and the local residents' association.

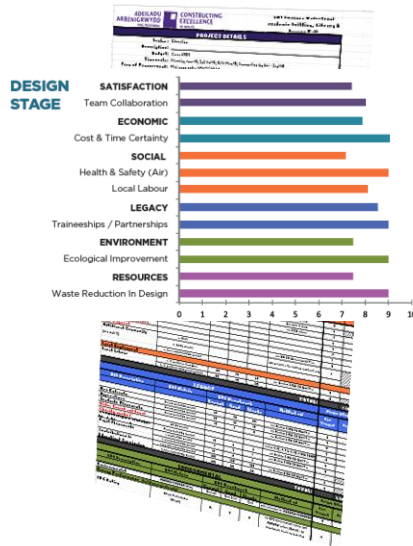
project details
Project Name: United Welsh Passivhaus
Location: United Welsh Passivhaus
Client: United Welsh Passivhaus
Contractor: United Welsh Passivhaus
Contract Value: £111,000
Contract Start: 2018
Contract End: 2019



Case Studies



KPIs



Events



Awards



Menai Science Park – M-SParc

DESIGN STAGE CASE STUDY

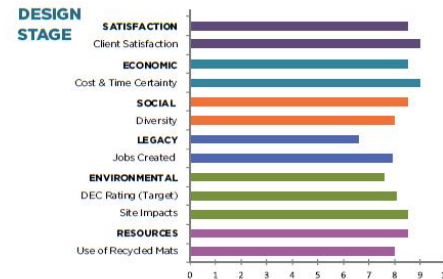


- Peer Review of the above Project

- Exemplar & Innovative in what ways?

- Yellow form collected at the end.

Menai Science Park (M-SParc)



The Exemplar Menai Science Park is a £20m project funded by the Welsh Government and EU ERDF fund. The aim is to spark the economy in North Wales by developing knowledge-based enterprises.

Menai Science Park Ltd (M-SParc) is currently developing its ambitious plans to build Wales' first dedicated Science Park in Gaerwen, some six miles from Bangor. M-SParc, a wholly-owned subsidiary of Bangor University, will offer clean workspace, offices and labs along with open hot desking. M-SParc will host companies, businesses, and research projects that are linked with knowledge based science, energy, environmental services and clean technology enterprises (although it will not necessarily be limited to these sectors). Ancillary services such as business support, IP advice and a Risk Fund will also be available for businesses established on the site.

The design and build contractors, Willmott Dixon, were appointed from the North Wales procurement framework and have been working with the project team to develop the detailed designs based upon concepts developed by architects FaulknerBrowns. Works started on site in the autumn last year and aims to be complete by early 2018.

This ground-breaking project has used Exemplar techniques during the design phase to engage with end users and consult with FM providers, using BIM to assist with the development of the design and consider how waste could be minimised.

PROJECT DETAILS

Client: Pryderi Ap Rhisiart, Bangor University
PM: Ian Lamb, Gleeds UK
Contractor: David Williams, Willmott Dixon
Designer: Leighton Cooksey, FaulknerBrowns
Structures: Caulmert; M&E Design: TACE
Value: Enabling Works, Utilities and Site Acquisition: £2m; Fees and Legal: £1.5m; D&B Contract: £15m
Project size: 5,950m²
Contract: JCT D&B
Duration: 64 weeks - Design Phase Jun 15 - Sept 16; D&B Oct 16 - Jan 18;



KEY CONTACTS

Gordon Brown - CE Wales
 gordon.brown@cewales.org.uk

Menai Science Park Ltd (M-SParc)
 - Pryderi Ap Rhisiart
 p.a.rhisiart@bangor.ac.uk





Cwmni Prifysgol Bangor
A Bangor University Company

Menai Science Park (M-SParc) Exemplar Project Presentation

www.m-sparc.com



M-SParc - Background



Cwmni Prifysgol Bangor
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- Company Established in 2013
- Small Team, Huge Engine!
- The aim
To create an advanced, relevant and sustainable Science Park to serve the people and economy of North-West Wales, propelling the region into the future and increasing the overall Welsh value proposition.
- But that's boring!..

M-SParc – The Idea



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***M-SParc.** “We all have great ideas. But how many become reality?
To turn that initial idea into a successful venture something extra is needed.
Something which ignites ambition.
Something that creates the energy to succeed.
Something which helps that initial spark light the way to a better future.*

We understand that pioneering, innovative businesses at the cutting edge of science need expert knowledge, skill, support, encouragement and investment to succeed.

M-SParc will create the right environment, we will offer specialist business support, and provide dedicated facilities. We will help knowledge based science, energy, environmental services and clean technology enterprises, ICT, and natural products including life sciences, to get going.

M-SParc will also ignite ambition in the young people of North West Wales, generating a better understanding and creating positive attitudes to science. We will accelerate the economic development of the area, helping shape high value jobs. We will help start new opportunities in our communities. We will help Bangor University start new era of positivity with businesses.

When you visit M-SParc, it will be positive, it will be vibrant. There will be a buzz. We are the ignition to a very powerful engine of opportunity in North West Wales.

But your spark of imagination will provide the key.”

M-SParc - Background



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- £21m Project
- Welsh Government and WEFO (ERDF)
- Company limited by shares
- Wholly owned subsidiary of Bangor University



M-SParc – Focus & Fit



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Focus & Key Sectors :

- Low Carbon
- Energy
- Environmental Services
- ICT
- Natural Products



Fit:

- Strengths of Bangor University
- Key Economic Developments
- Energy Island Programme
- Enterprise Zone

M-SParc – The Site



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- 8ha (20 acre) site with 7 Plots Identified
- Outline Consent Secured
- 22,700sqm GEA Class B1
- Option for additional land



M-SParc – The Site



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- Greenfield
- Utility Connections Established
- Resilient Internet Connection
- Location, J7 A55



M-SParc – The 1st Building



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A Bangor University Company

- 5000 sqm (internal)
- Open Innovation Space & Co-Working
- Pre-incubation and incubation units, accelerator space and space for mature projects;
- Full On-Site Business Support Package
- Labs and Offices
- Meeting Rooms
- Development Plots
- Completion Q1 2018



M-SParc – The Demand?



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- 20 Virtual Tenants – (post@m-sparc.com)
- Business Development Manager (Jan 2017)
- Healthy Demand Schedule
- 3 'Anchor' tenants in discussion

Site Update: (Also online : <https://www.youtube.com/watch?v=rptfasGYLCU>)



M-SParc – The Approach



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A Bangor University Company

Project Ethos and Statement

“As a team we’ll deliver an award winning building that we can all be proud of. M-SParc will be an exemplar to the construction industry. The project will provide lasting economic impact for the region, immediately through community benefits and into the future through provision of high quality job and entrepreneurial opportunities. We will do this through communicating openly with each other, with the public, and with our stakeholders and by working as a team. We will exceed expectations and strive to be the best. “

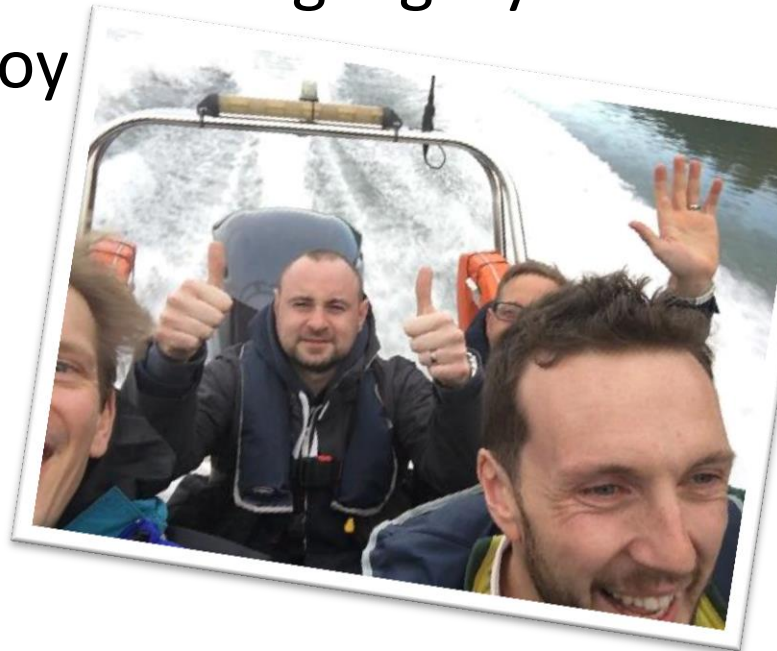
But again that’s boring...

The Approach – Why?



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- Collaborative Team Approach
- To listen and respect each other
- To action and deliver
- To be open
- To leave a lasting legacy
- To enjoy



The Approach – Why?



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- Problem solving / sharing / difficult discussions
- Ownership
- People enjoy coming to work
- Team go the extra mile
- Pride
- A better product
- And much more....



360° Consultation



- We were not experts in Science Parks!
- Consultation
 - External
 - Public
 - End Users
 - Visits →
 - Internal
 - Facilities Management
 - Directors
 - Business Plan
 - End Users



External – Listening



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- Public
 - No build zones identified at masterplan level
 - Opportunities for community benefits
- End Users
 - Need for clean workshops identified
 - Travel issues identified and tackled
 - Spirit of the building evolved.



Internal – Listening



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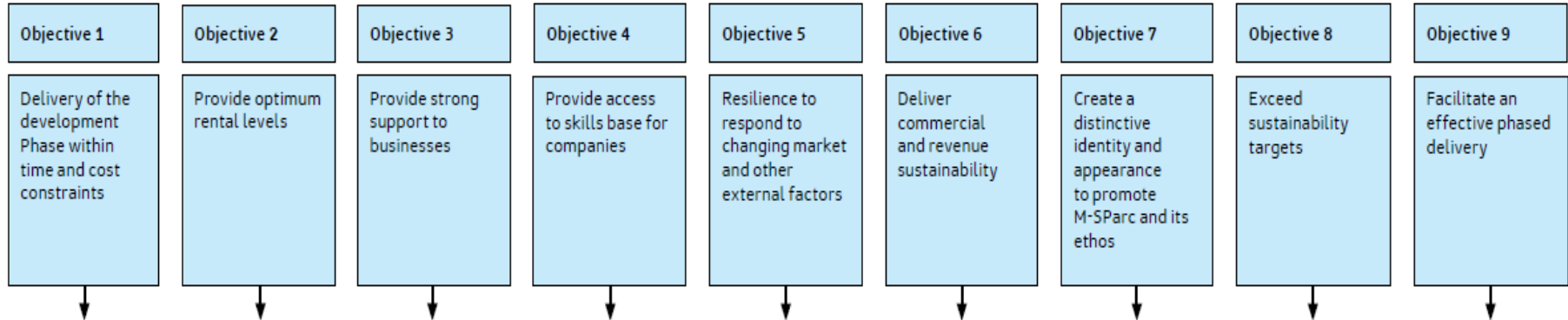
- Listening is the wrong word
 - Involvement, inclusion and embedding
- Created ownership
- Circa 300 comments captured and addressed as part of the internal process.

- Stakeholders such as:
 - Facilities Management
 - Directors
 - Business Plan
 - End Users

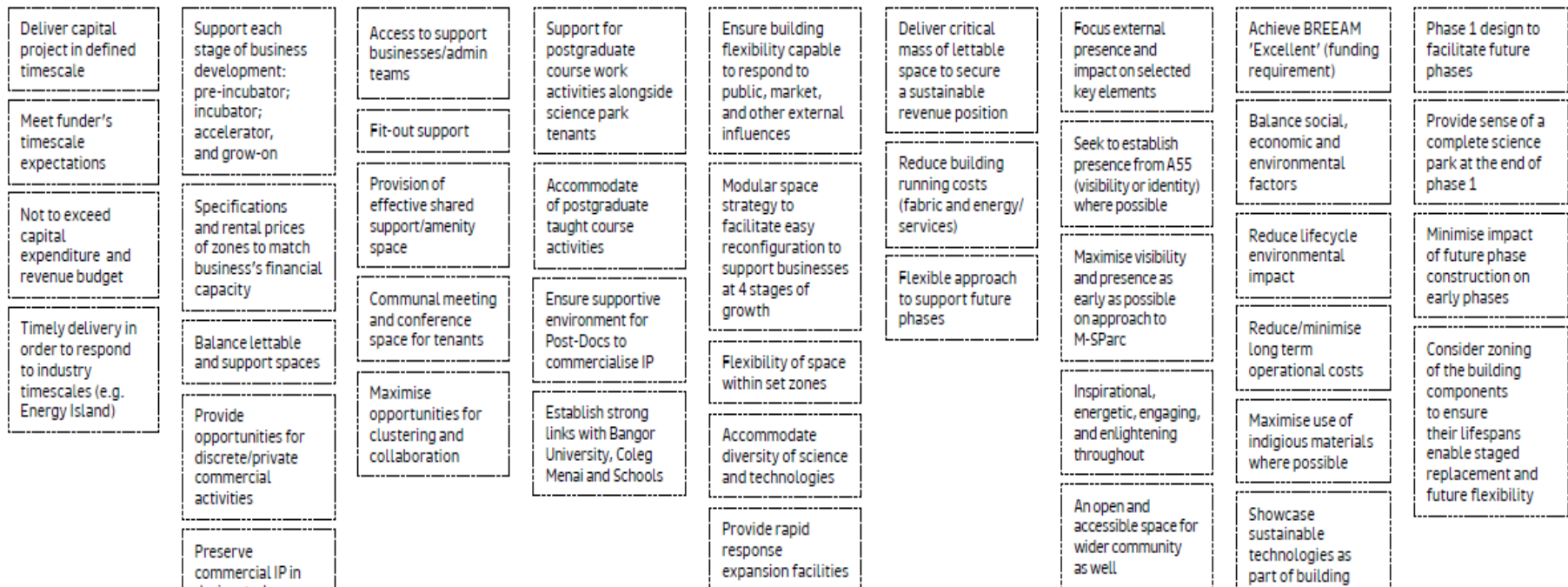
Internal – Value Tree



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Secondary objectives



Key Lessons



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- We **can't** be experts in everything
- We **can** create conditions and an approach that will bring the best out in people.





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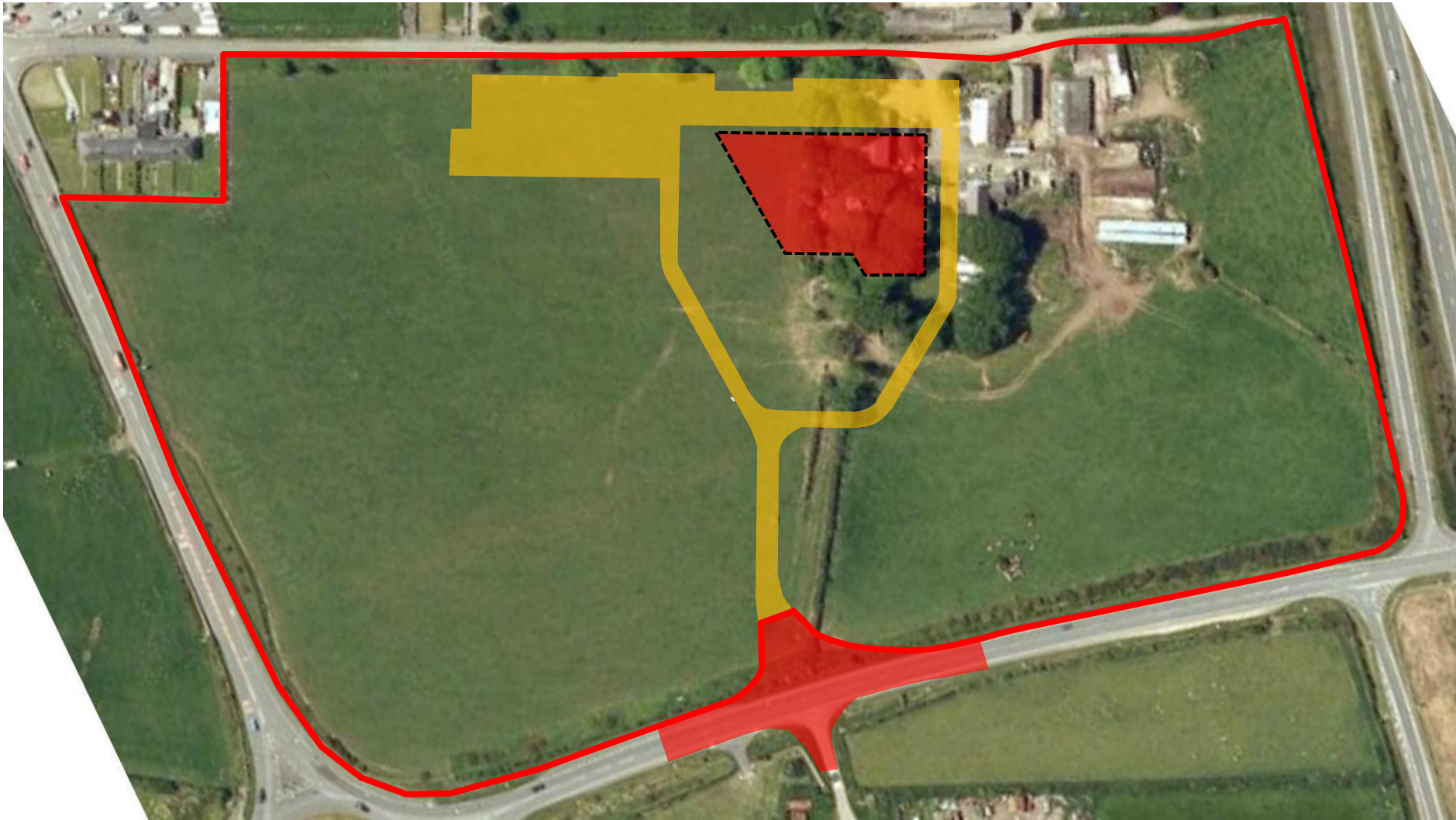
Diolch

Thanks

www.m-sparc.com






pryderi@m-sparc.com - [#msparc](https://twitter.com/m_sparc) - [@m_sparc](https://twitter.com/m_sparc)


Site Layout / Existing Overlay



Legend/Notes:

-  Site Boundary
-  Gate Access
-  Turnstiles
-  Welfare & Offices
-  Site Roads /Hard Standing

- 
-  Material Storage
-  Pedestrian Site Route
-  New Building
-  Existing Buildings

 Delivery Routes

Site Plant Vehicle Routes

Drawing Title:

Site Layout / Existing Overlay

Project Name:

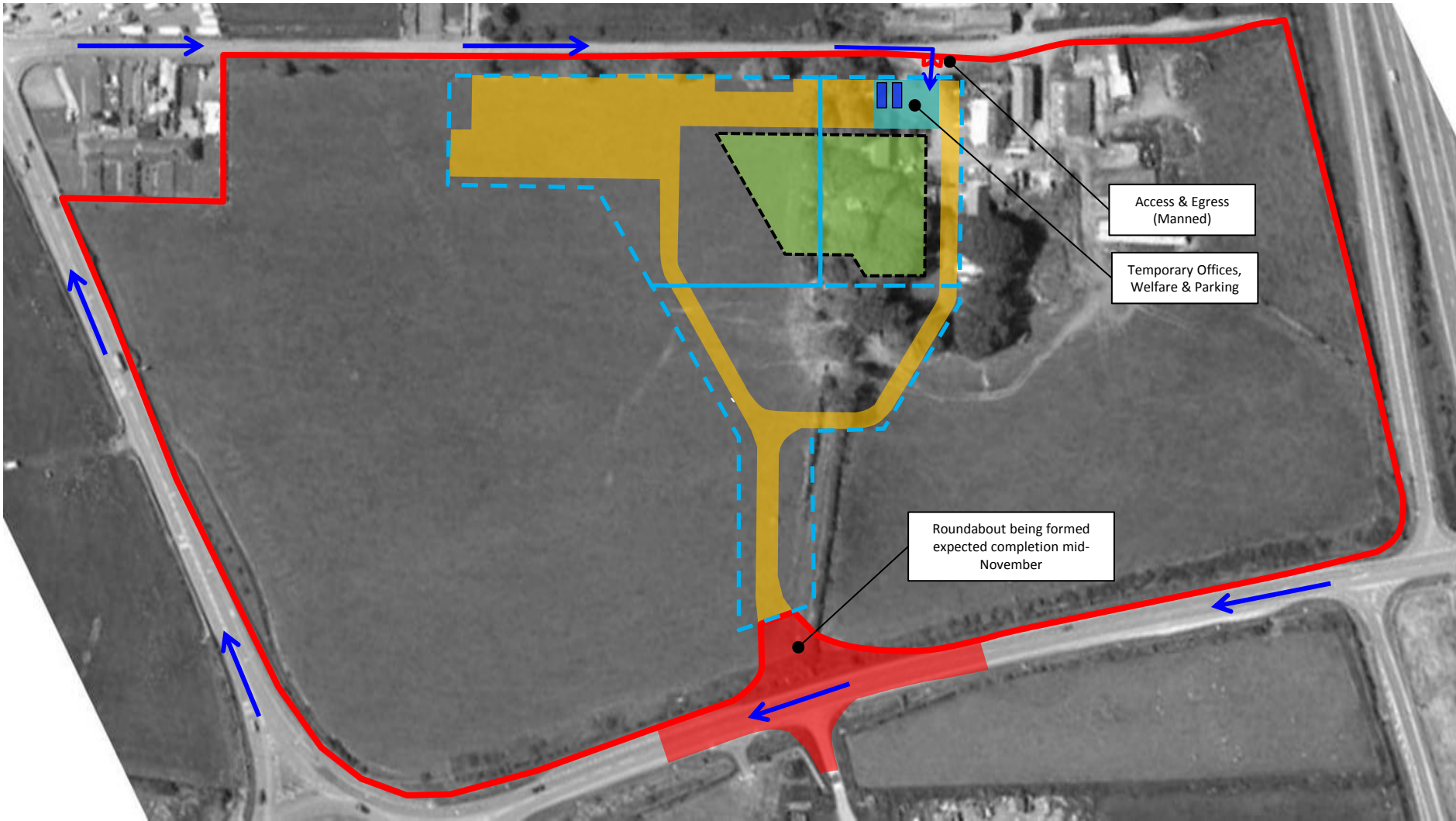
MENAI Science Park

Rev:	Date:	Scale:
002	26/07/16	Not to Scale

Drawn By:
JGM



Initial Site Logistics



Access & Egress (Manned)

Temporary Offices, Welfare & Parking

Roundabout being formed expected completion mid-November

Legend/Notes:

Site Boundary

Gate Access

Turnstiles

Welfare & Offices

Site Roads /Hard Standing

Material Storage

Pedestrian Site Route

New Building

Existing Buildings

Delivery Routes

Site Plant Vehicle Routes

Drawing Title:

Initial Site Logistics

Project Name:

MENAI Science Park

Rev:

002

Date:

26/07/16

Scale:

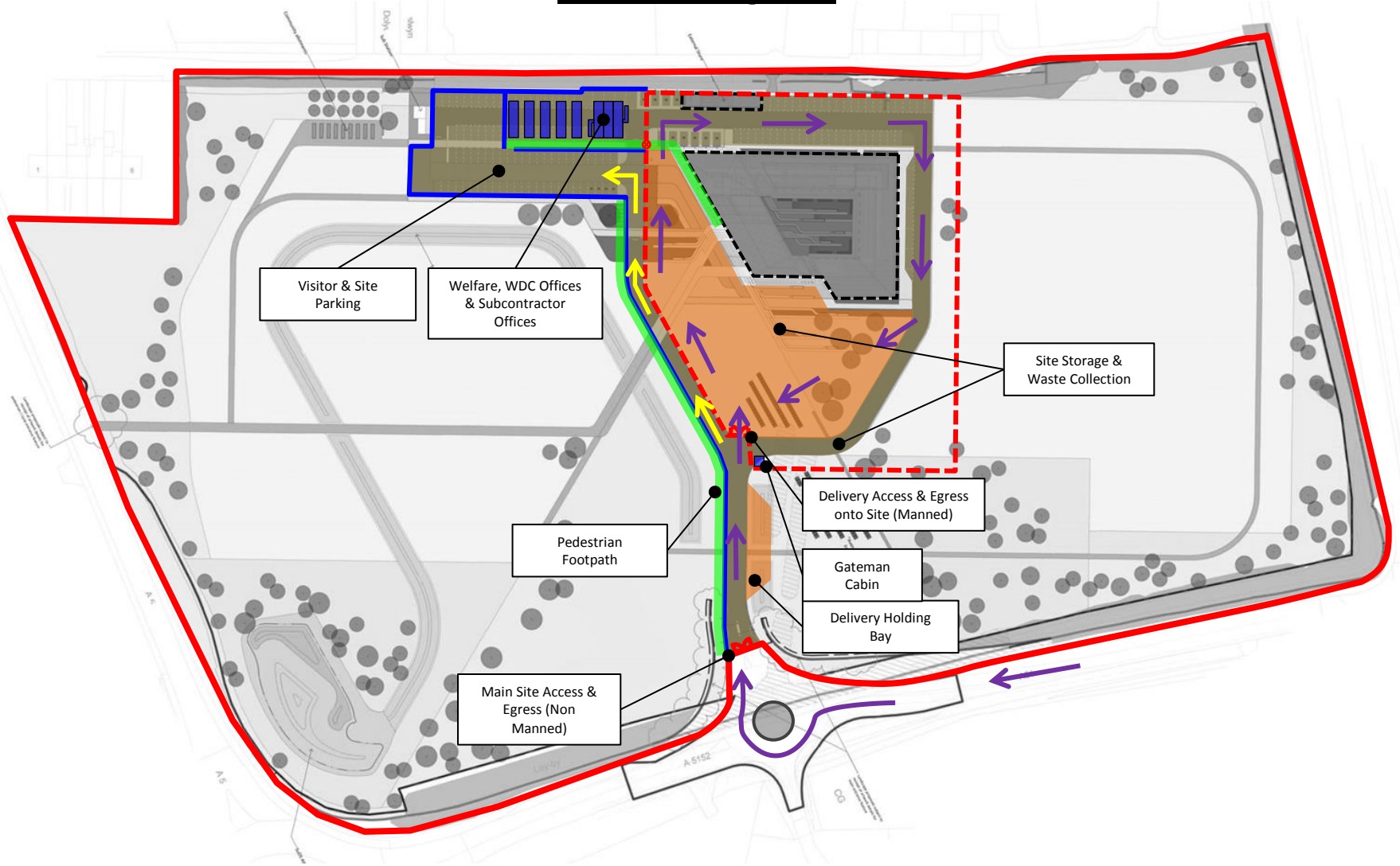
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Drawn By:










JGM





Main Site Logistics



Legend/Notes:

-  Site Boundary
-  Gate Access
-  Turnstiles
-  Welfare & Offices
-  Site Roads /Hard Standing
-  Material Storage
-  Pedestrian Site Route
-  New Building
-  Existing Buildings

-  Delivery Routes
-  Site Plant Vehicle Routes

Drawing Title:
Main Site Logistics

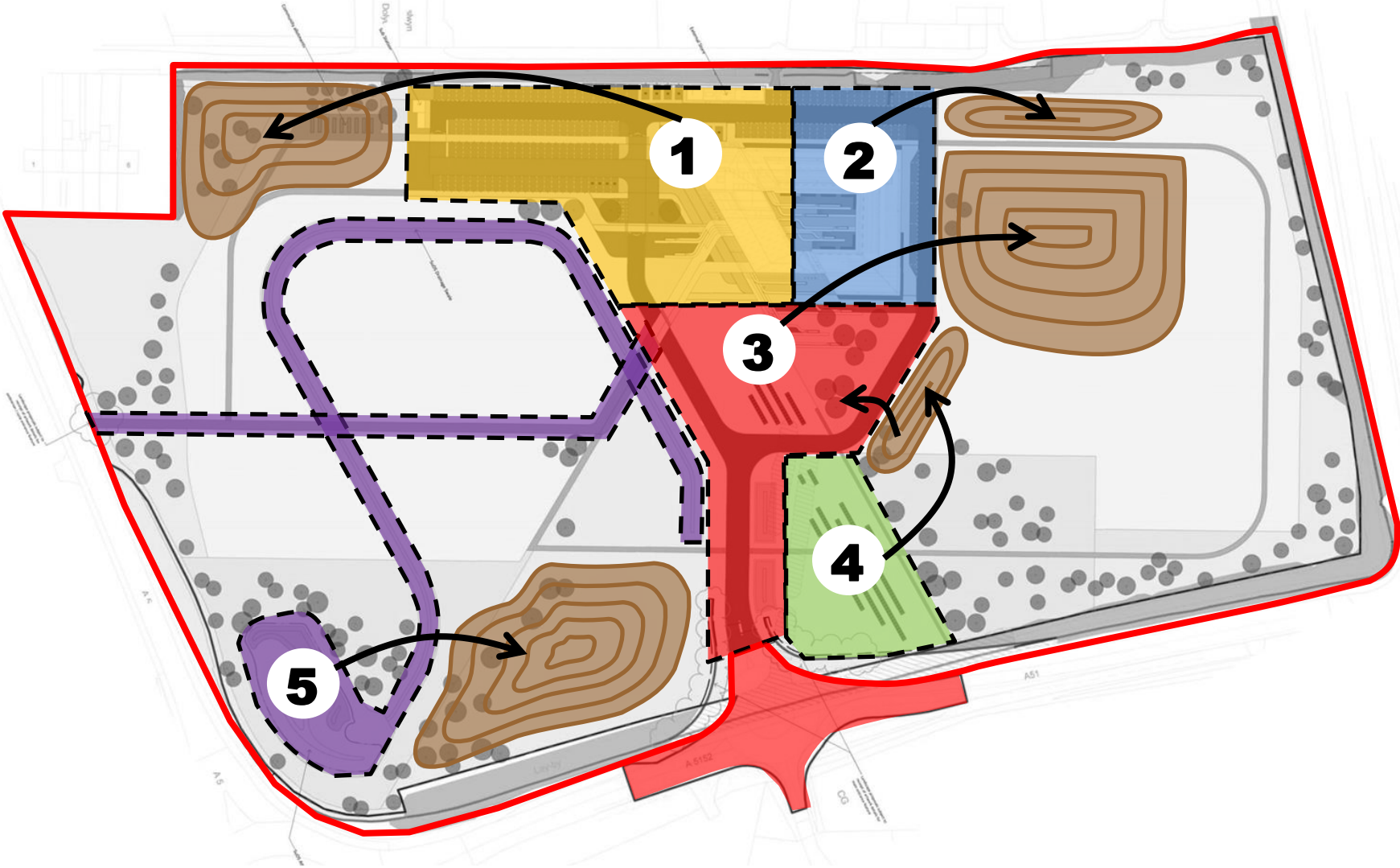
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MENAI Science Park

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Drawn By:
JGM



Cut & Fill Sequence



Legend/Notes:

- Site Boundary
- Gate Access
- Turnstiles
- Welfare & Offices
- Site Roads /Hard Standing

- Existing Buildings
- Material Storage
- Pedestrian Site Route
- New Building

- Delivery Routes
- Site Plant Vehicle Routes

Drawing Title:
Cut & Fill Sequence

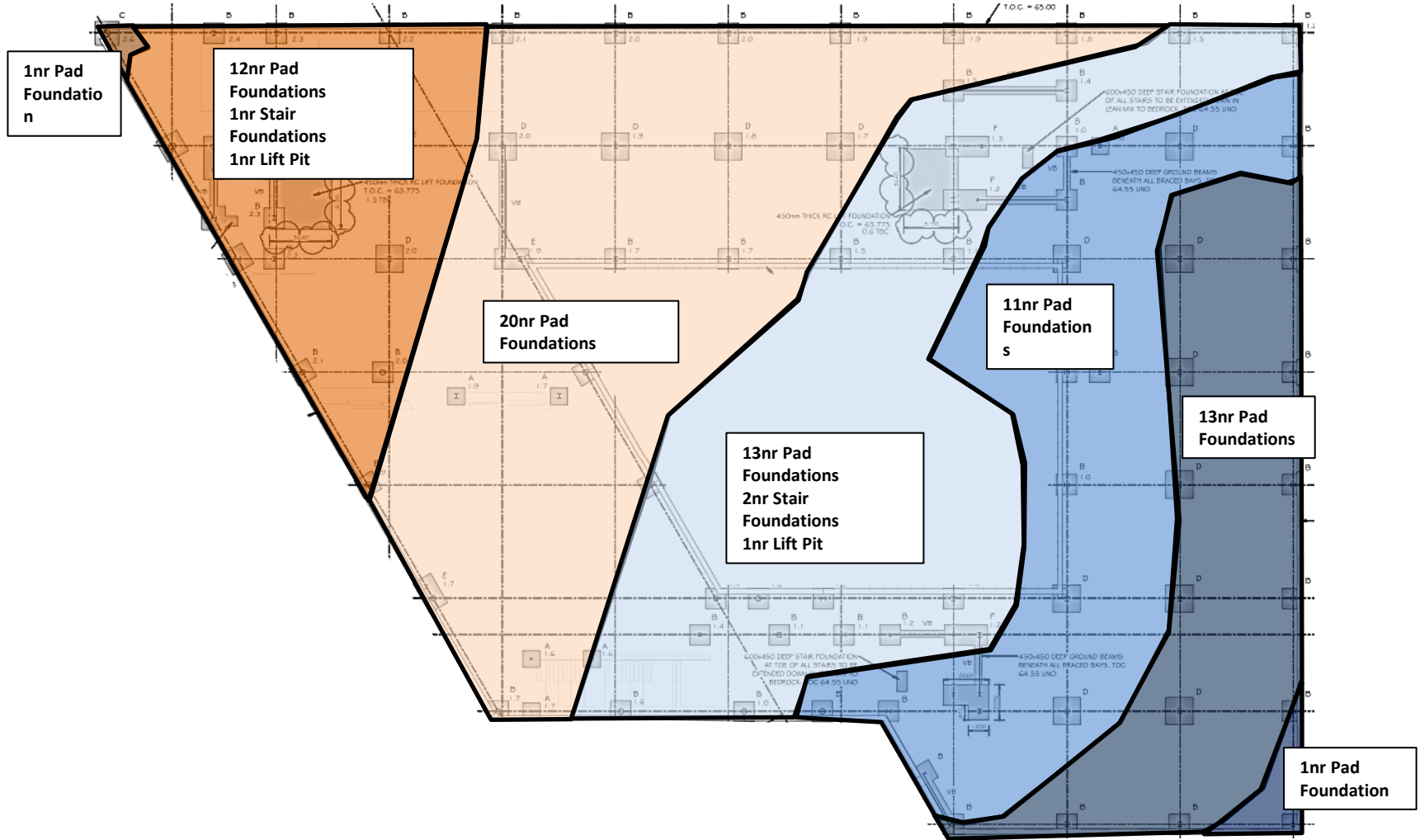
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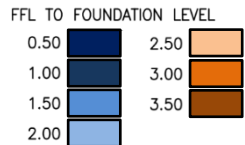
Drawn By:
JGM



Foundations/Earthworks Overlay



Legend/Notes:



Drawing Title:
Foundations/Earthworks Overlay

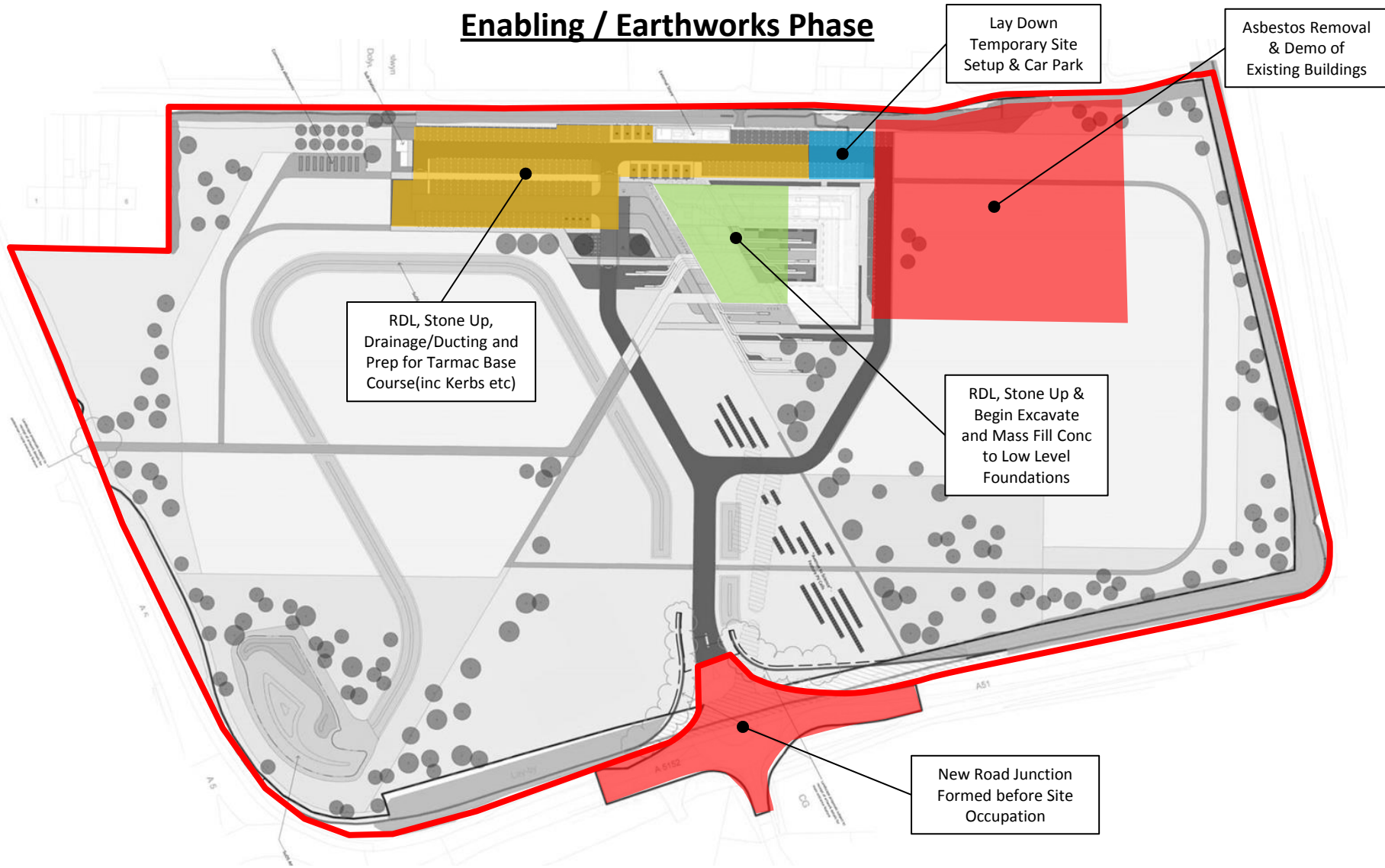
Project Name:
MENAI Science Park

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Drawn By:
JGM



Enabling / Earthworks Phase



Lay Down
Temporary Site
Setup & Car Park











Asbestos Removal
& Demo of
Existing Buildings


RDL, Stone Up,
Drainage/Ducting and
Prep for Tarmac Base
Course(inc Kerbs etc)

RDL, Stone Up &
Begin Excavate
and Mass Fill Conc
to Low Level
Foundations

New Road Junction
Formed before Site
Occupation

Legend/Notes:

-  Site Boundary
-  Gate Access
-  Turnstiles
-  Welfare & Offices
-  Site Roads /Hard Standing
-  Existing Buildings
-  Material Storage
-  Pedestrian Site Route
-  New Building
-  Existing Buildings

 Delivery Routes

Site Plant Vehicle Routes

Drawing Title:

Enabling / Earthworks Phase

Project Name:

MENAI Science Park

Rev:	Date:	Scale:
002	26/07/16	Not to Scale











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JGM





Substructure Phase



Legend/Notes:

-  Site Boundary
-  Gate Access
-  Turnstiles
-  Welfare & Offices
-  Site Roads /Hard Standing
-  Existing Buildings
-  Material Storage
-  Pedestrian Site Route
-  New Building
-  Existing Buildings

-  Delivery Routes
-  Site Plant Vehicle Routes

Drawing Title:
Substructure Phase

Project Name:
MENAI Science Park

Rev:	Date:	Scale:
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JGM














WILLMOTT DIXON
SINCE 1852

Superstructure Phase



Legend/Notes:

-  Site Boundary
-  Existing Buildings
-  Gate Access
-  Material Storage
-  Turnstiles
-  Pedestrian Site Route
-  Welfare & Offices
-  New Building
-  Site Roads /Hard Standing
-  Delivery Routes

 Delivery Routes

Site Plant Vehicle Routes

Drawing Title:
Superstructure Phase

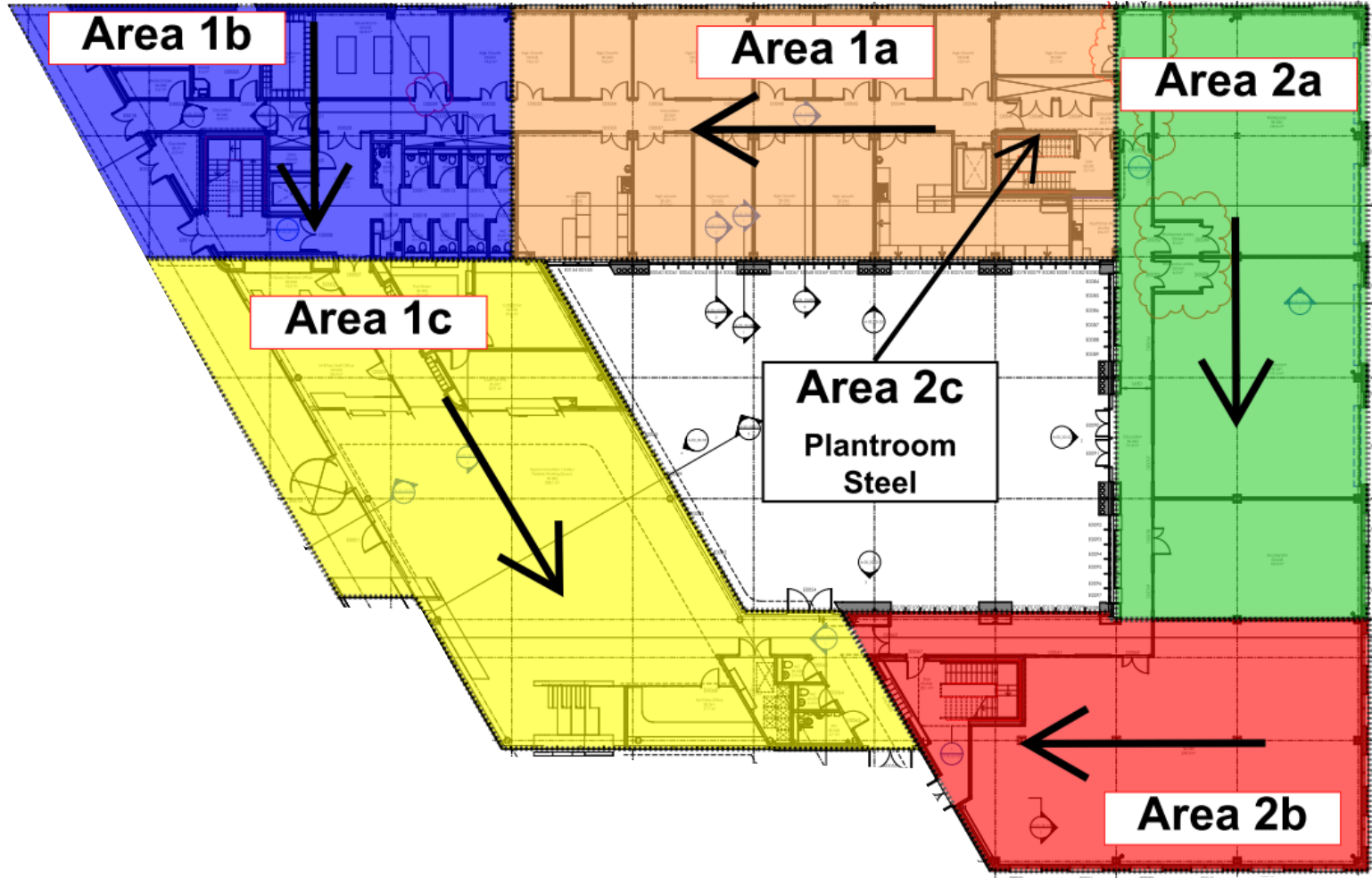
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MENAI Science Park

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JGM



Steelwork & PCC Phasing Areas



Legend/Notes:

- | | | |
|---|---|---|
|  Site Boundary |  Existing Buildings |  Delivery Routes |
|  Gate Access |  Material Storage |  Site Plant Vehicle Routes |
|  Turnstiles |  Pedestrian Site Route | |
|  Welfare & Offices |  New Building | |
|  Site Roads /Hard Standing | | |

Drawing Title:
Steelwork & PCC Phasing Plans

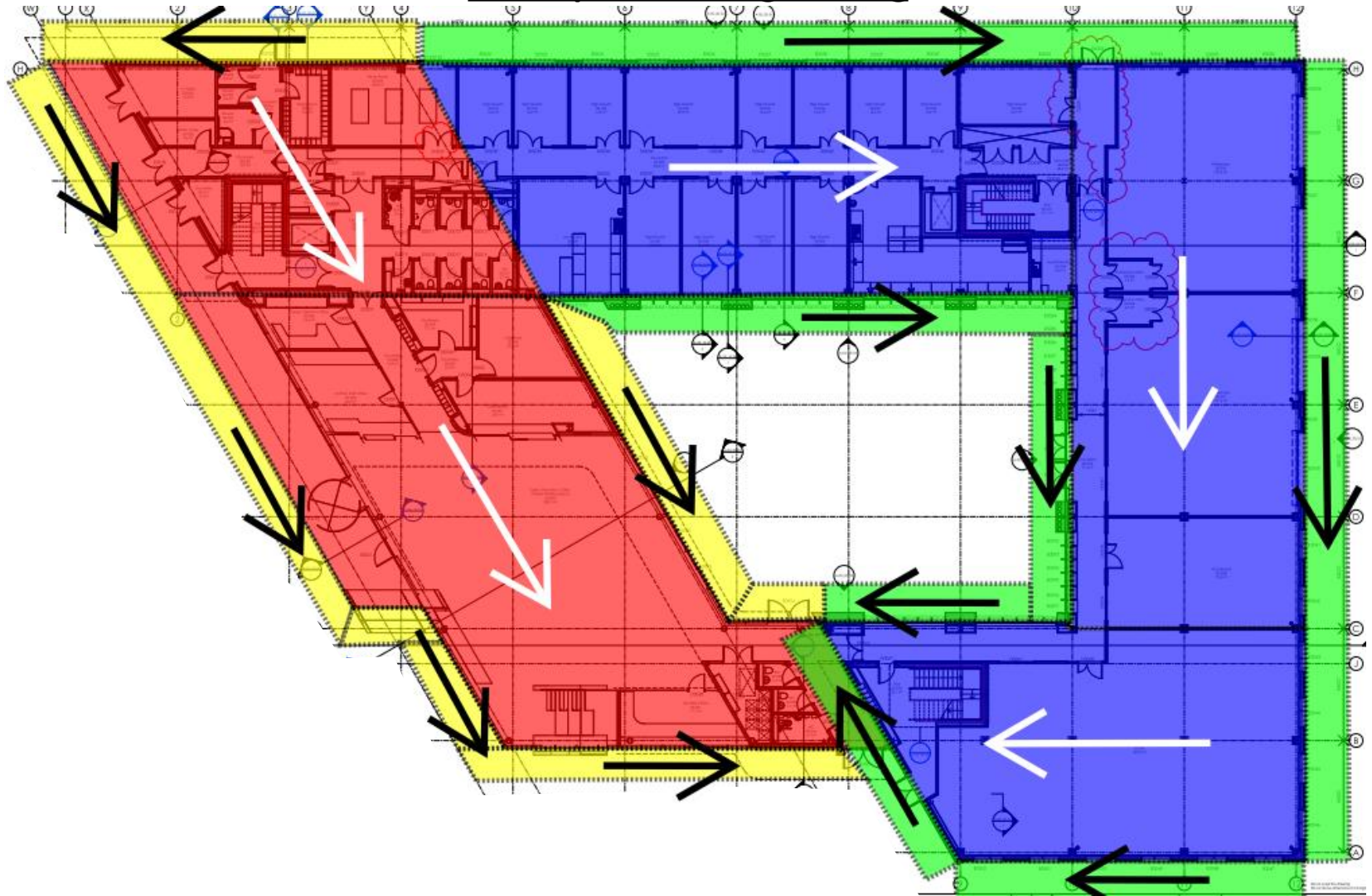
Project Name:
MENAI Science Park

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JGM




Envelope & Roofing Phasing



Legend/Notes:

-  Site Boundary
-  Gate Access
-  Turnstiles
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-  Material Storage
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-  New Building
-  Existing Buildings

-  Delivery Routes
- Site Plant Vehicle Routes

Drawing Title:
Envelope & Roofing Phasing Plans

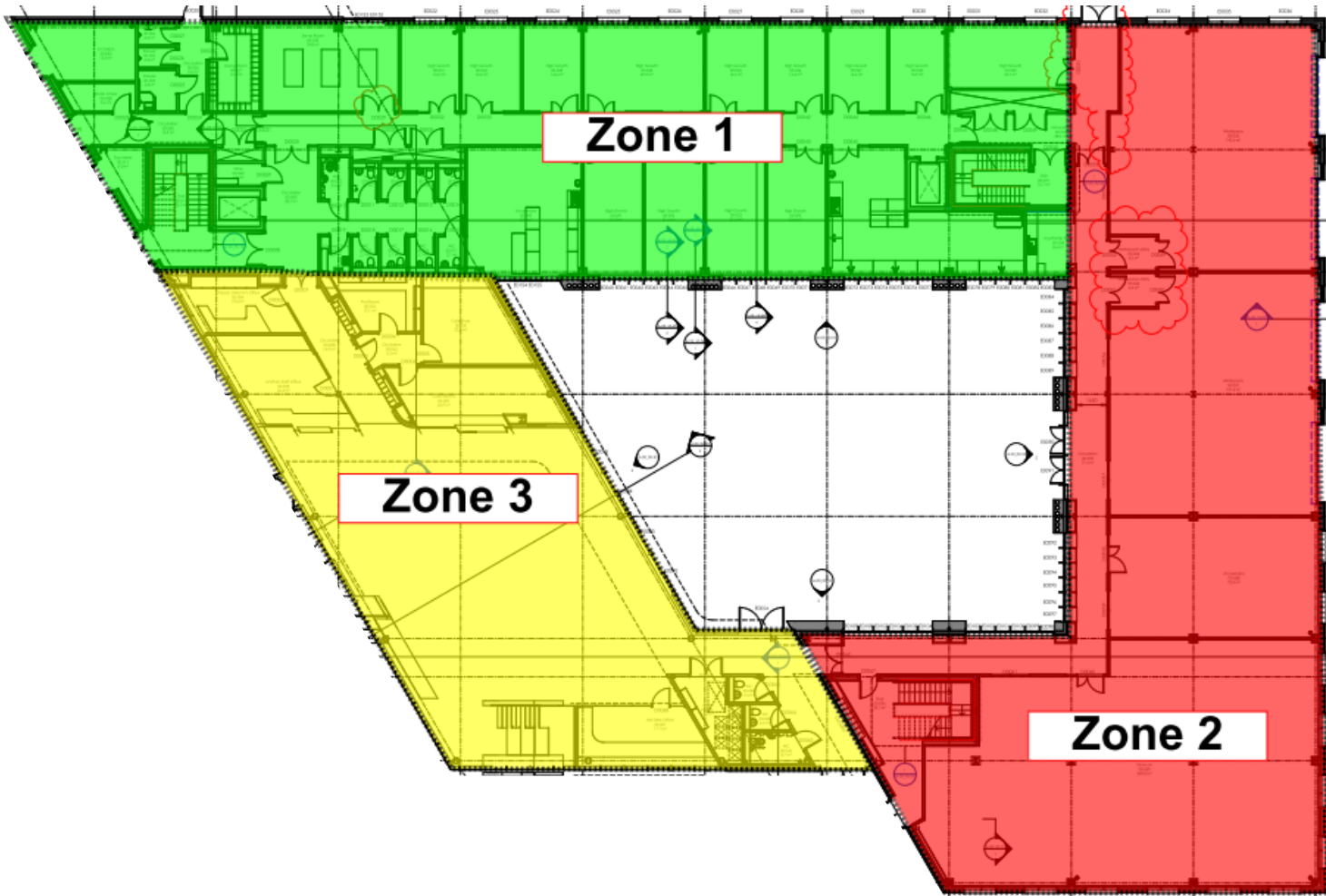
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MENAI Science Park

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Drawn By:
JGM



Fit-out Phasing Zones



Zone 1

Zone 3

Zone 2

Legend/Notes:

- Site Boundary
- Gate Access
- Turnstiles
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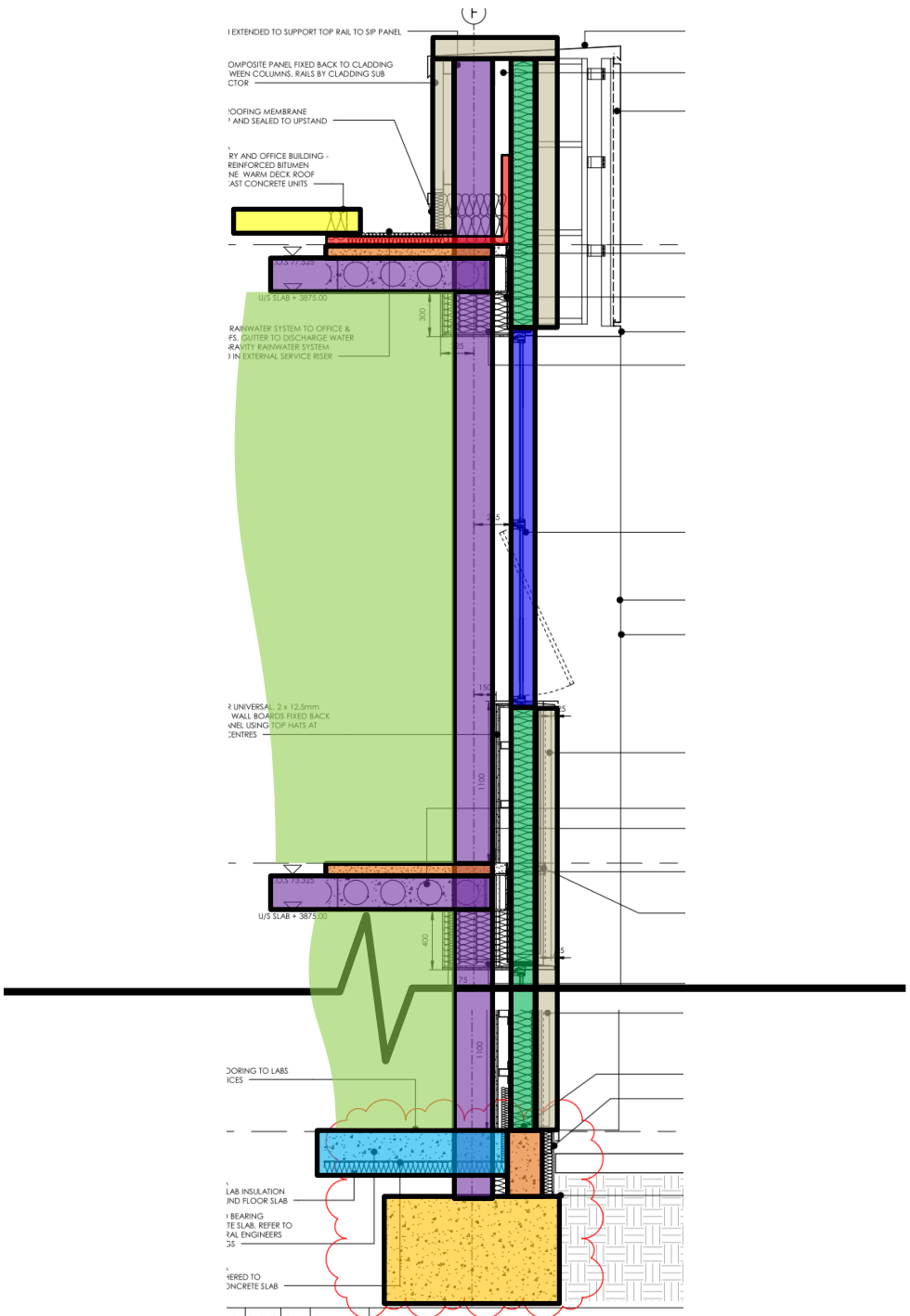
Drawing Title:
Fit-out Phasing Zones

Project Name:
MENAI Science Park

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Drawn By:
JGM





1 EXTENDED TO SUPPORT TOP RAIL TO SIP PANEL

COMPOSITE PANEL FIXED BACK TO CLADDING BETWEEN COLUMNS, RAILS BY CLADDING SUBSTRATE

1 WATERPROOFING MEMBRANE AND SEALED TO UPSTAND

1 RAINWATER SYSTEM AND OFFICE BUILDING - REINFORCED BITUMEN ON WARM DECK ROOF WITH CAST CONCRETE UNITS

U/S SLAB = 38/3,100

RAINWATER SYSTEM TO OFFICE & FS, GUTTER TO DISCHARGE WATER TO GRAVITY RAINWATER SYSTEM IN EXTERNAL SERVICE RISER

2 UNIVERSAL 2 x 12.5mm WALL BOARDS FIXED BACK AND USING TOP RAILS AT CENTRES

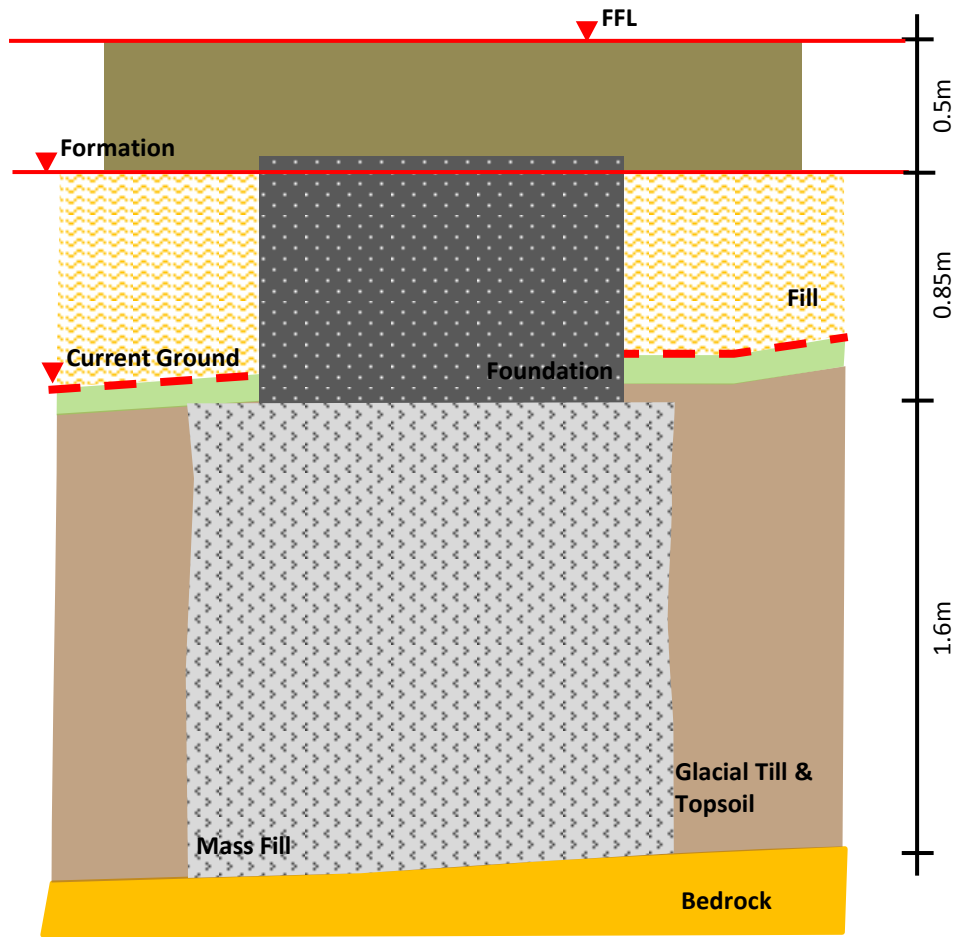
U/S SLAB = 38/7,100

3 JOINING TO LABS RISES

4 LAB INSULATION AND FLOOR SLAB

5 BEARINGS TO SLAB, REFER TO STRUCTURAL ENGINEERS

6 REFERRED TO CONCRETE SLAB



FAULKNERBROWNS ARCHITECTS

Constructing Excellence Exemplar Presentation
Menai Science Park

10th May 2017

M-SParc – Outline Masterplan

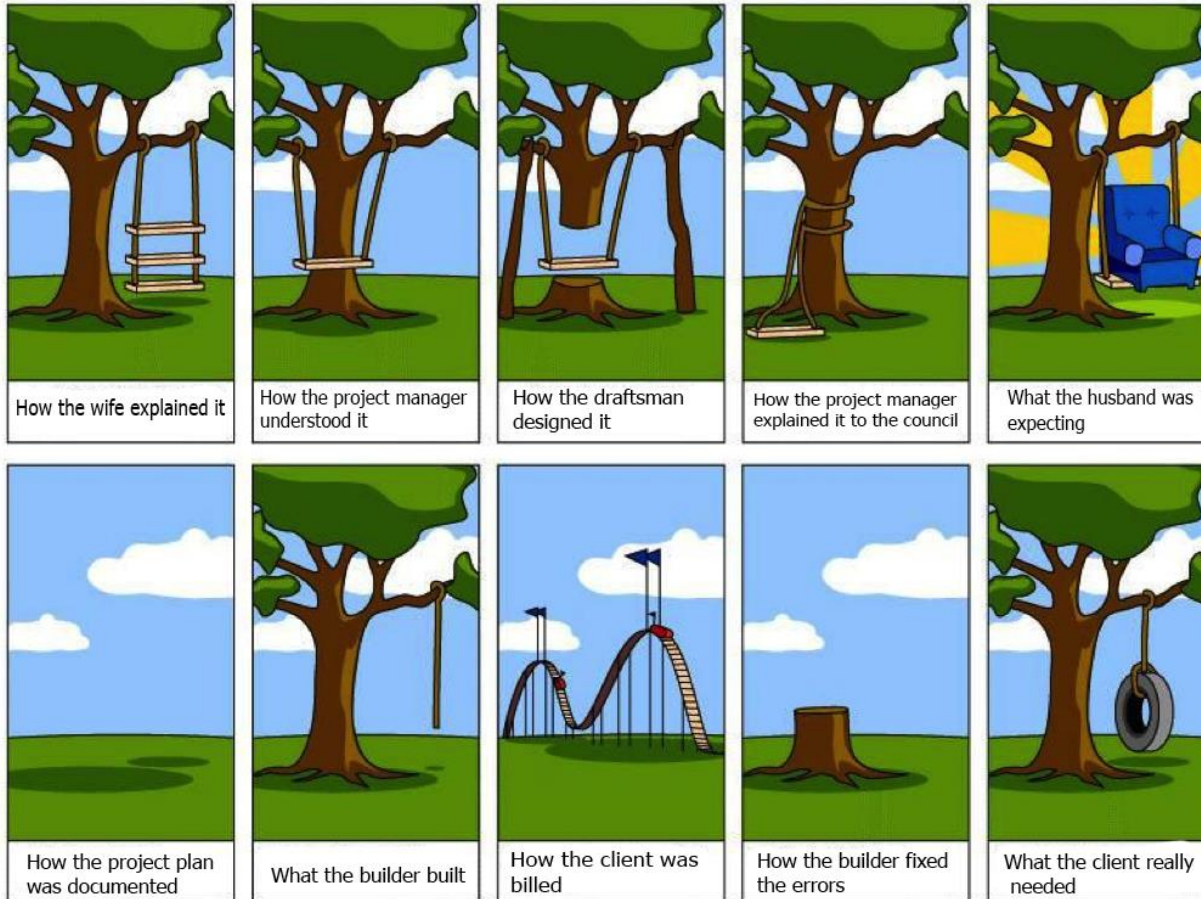


M-SParc – Outline Masterplan Constraints



Understanding the Clients

Requirements



BIM-Defining the Clients and users needs

“The Project shall be delivered to Level 2 BIM”

