

BAE SYSTEMS MAI TRAINING FACILITY SAMBLESBURY

DESIGN & ACCESS STATEMENT

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REVISIONS

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0	Design and Access Statement	Dan Barber	Derek Southworth	18 . 02 . 2015

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1.0 APPRAISAL OF CONTEXT

THE PROPOSED BAE SYSTEMS MAI TRAINING FACILITY IS LOCATED ON THE EAST OF THE SAMLESBURY AERODROME SITE. IT WILL BE THE FIRST DEVELOPMENT AT THE ENTRANCE TO THE ENTERPRISE ZONE.

1.1 PHYSICAL CONTEXT

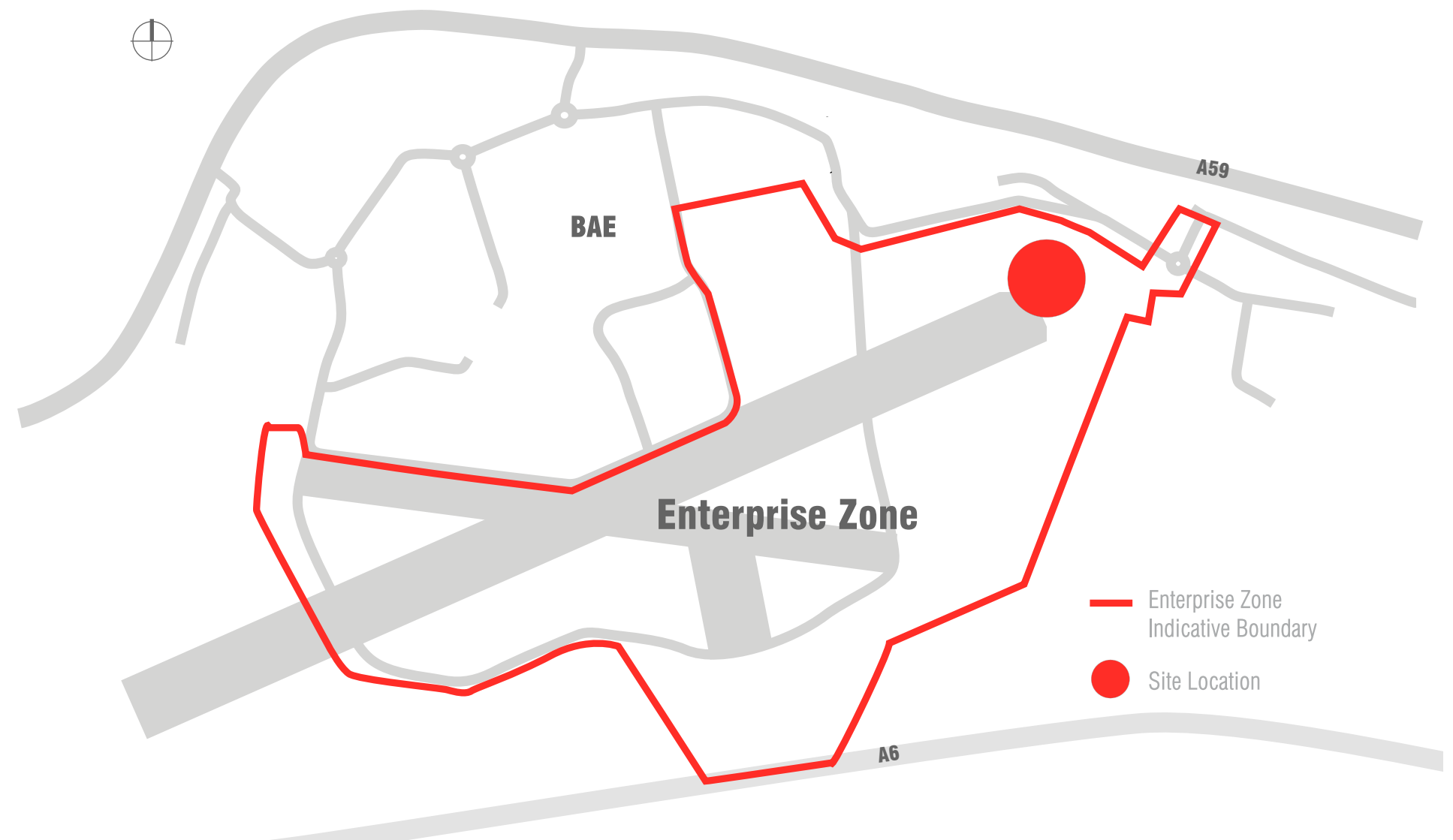
The Enterprise Zone will become a national focal point for the resurgence of the advanced engineering and manufacturing sector in the UK.

The Enterprise Zone (EZ) is to be established on surplus BAE Systems Samlesbury land located approximately 7km east of Preston and currently accessed via the BAE access road from the Mellor Brook roundabout on the A59.

The Local Authority boundary which separates Ribble Valley from South Ribble Council, runs east / west and bisects the site for the Samlesbury Training Facility.

The BAE Systems MAI Training Facility site is located on north-eastern corner of the Enterprise Zone which will benefit from a strong visual connection to the EZ entrance.

The relatively open site for the proposed development is bounded on the north by a BAE Systems access road /new security Gate 3A and to the south by a disused runway which will broadly define the line of the new EZ spine road.



1.0 APPRAISAL OF CONTEXT

A FEASIBILITY STUDY CARRIED OUT IN THE INITIAL STAGES OF THE PROJECT IDENTIFIED A NUMBER OF POSSIBLE OPTIONS TO MAXIMISE THE IMPACT AND USE OF THE DESIGNATED SITE.

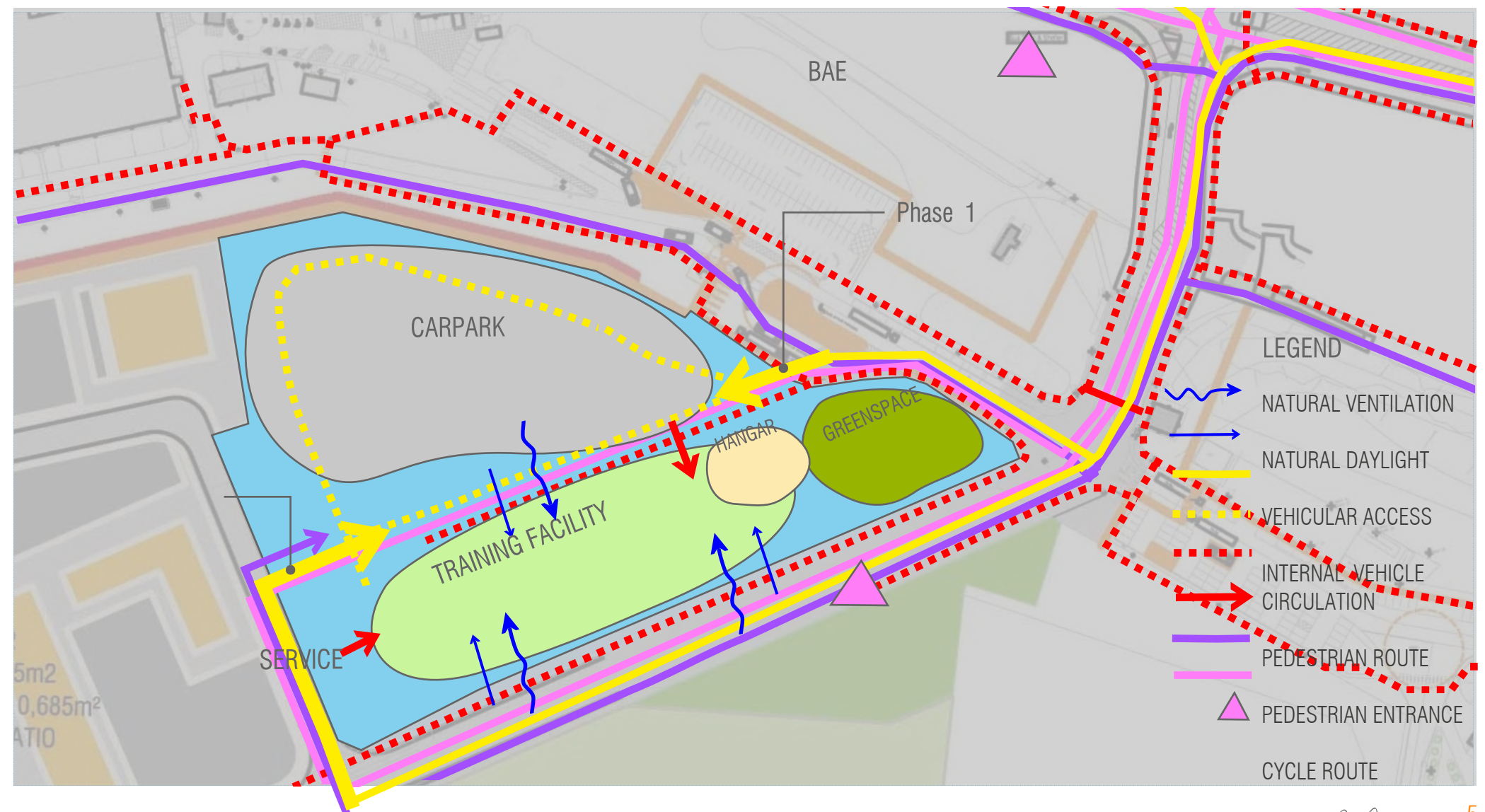
The principal factors which influenced the layout were:

- Greatest potential to create an appropriately pleasant landscape setting for the Training Facility.
- Proximity to and visibility from the new A59 entrance to Enterprise Zone.
- Ease of vehicular access to site from new spine road.
- Flexibility of available site area avoids unnecessary constraints on design and provides room for expansion.

These benefits are felt to outweigh the disadvantages of this site which are:

- Concentration of below ground services require some to be re routed.

The building form and its orientation are key determinants in delivering a building which utilises natural day lighting and ventilation in preference to relying on mechanical ventilation systems. The site offers the opportunity to adopt an optimal layout to encourage natural ventilation.



1.0 APPRAISAL OF CONTEXT

THE LANCASHIRE ADVANCED ENGINEERING AND MANUFACTURING ENTERPRISE ZONE HAS AN APPROVED LOCAL DEVELOPMENT ORDER.

1.2 PLANNING POLICY

LOCAL DEVELOPMENT ORDER

The Lancashire Advanced Engineering and Manufacturing Enterprise Zone (Samlesbury) Local Development Order (LDO) No.2 2014 is part of a phased approach to the development of the Samlesbury site Lancashire Enterprise Zone.

The boundary between Ribble Valley Borough Council and South Ribble Borough Council runs through the LDO area and the project site. Each Local Planning Authority has adopted a separate but identical LDO.

The LDO permits the development of Class B (B1 Business, B2 General Industrial, B8 Storage and Distribution associated with advanced engineering and manufacturing) and Class D1 (Non-Residential Institutions) for the development of a non residential education and training centre to be used as a Regional Skills Facility within the Enterprise Zone.

"Advanced engineering and manufacturing" is defined as falling within the following Standard Industrial Classification (SIC) Codes:

- Aerospace (30.3, 28.4)
- General Aviation Services (52.23)
- High-end automotive including motorsport, electric/alternative energy vehicles, (29.1, 29.3)
- Computing, systems engineering and autonomous systems (62.01, 72.1)
- Nuclear (35.1)
- Advanced flexible materials (13.96, 20.6)
- Renewable Energy (27.1).

The purpose of the LDO is to provide a comprehensive framework for the construction of permitted development within the Enterprise Zones.

Lancashire County Council has planning permission for a new signalised junction on A59 and access road to form an entrance to the Samlesbury Enterprise Zone. The proposed junction, due for implementation in 2014 as part of site segregation, will be between the existing BAE Systems access and Mellor Brook roundabout.

1.3 INVOLVEMENT

Since the proposed building is within the Enterprise Zone covered by the adopted LDO it was not considered appropriate to consult with local community groups prior to submitting a planning application.

1.4 SOCIAL CONTEXT

The new facility is intended to accommodate the training environment (office, classroom, welfare and industrial) for the through-life talent pipeline for BAE Systems.

The BAE Systems MAI Training Facility will provide a study environment for early careers, higher / further education training, further education training and continued professional development. The facility will also provide offices and welfare facilities to support the management and occupation of the facility including conferencing and exhibition facilities for hosting events and awareness programmes for schools.

The proposed new development will provide a centralised Training Facility for a number of existing training activities which are currently located over a number of BAE Systems sites and locations. The proposals outlined in this feasibility study are intended to consider and present design strategies that will anticipate the existing and projected needs of the various collated training activities to be accommodated.

1.5 ECONOMIC CONTEXT

The economic background and economic benefits of the proposed development to the local community are integral to those for the entire Enterprise Zone.

The relationship between BAE Systems, the Enterprise Zone and the proposed development will help strengthen the position of Samlesbury as a major employer in the area.

1.6 EVALUATION

The preceding analysis of the site identifies the importance of the site due to its prominence within the Enterprise Zone and its proximity to the new entrance from the A59.

The physical attributes of the site allow the scheme to adopt an environment that compliments that found elsewhere in the surrounding area, emphasising quality education, engineering and manufacturing.



2.0 DESIGN

THE BRIEF FOR THE BAE SYSTEMS MAI TRAINING FACILITY COMPRISES OF THREE KEY EDUCATION SPACES; CLASSROOMS AND OFFICES, WORKSHOP AND OPEN PLAN AND BREAKOUT AREAS.

2.1 USE

The early analysis of key activity areas focused around the arrangement of these main activity groups.

In space planning terms, the open plan/circulation/breakout space is used as the vehicle to bind together the two main functional areas containing the workshops and the classroom/support accommodation.

2.2 AMOUNT

The size of development proposed is readily accommodated on the site whilst still leaving adequate space for access, parking and servicing.

Gross Internal Area (GIA) = 7,396 sq.m

The daily occupancy for the Training Facility has been assessed as follows:

Office staff	48	
FE Staff	10	
Lean	19	(50% of time)
CPD	31	(50% of time)
LRC	25	(50% occupancy)
Mezz office staff	5	
Instructors	10	
Workshop student	75	
FE students	75	
Café	2	
Reception	2	
TOTAL	302	

Currently approximately 7% of apprentices are female but it is anticipated that this will increase to 17% by 2017.



2.0 DESIGN

A NUMBER OF DIFFERENT DESIGN OPTIONS HAVE BEEN INVESTIGATED FROM WHICH THE PROPOSED DESIGN SOLUTION HAS EVOLVED.

2.3 LAYOUT

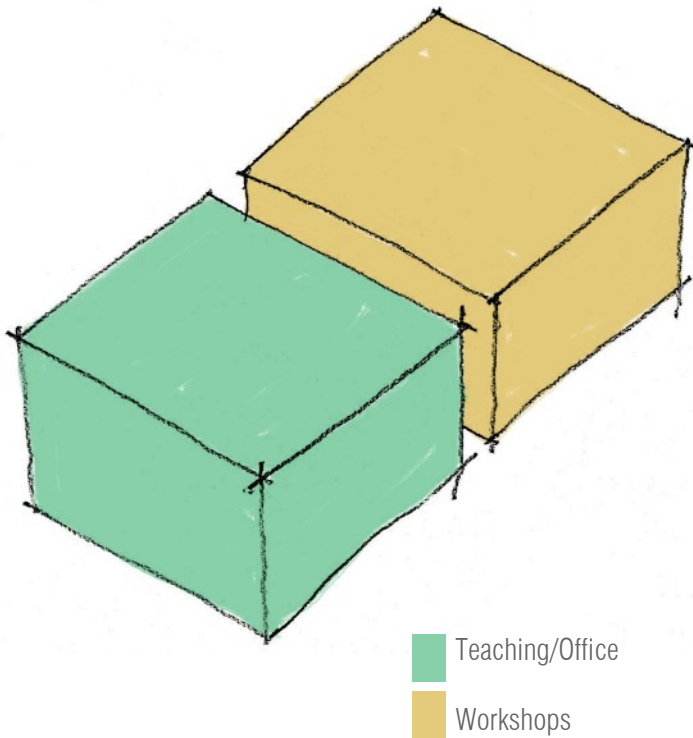
The early design development for the BAE Systems MAI Training Facility reviewed the potential to group key areas. A number of alternative arrangements were explored.

The accommodation is to be provided as one building form rather than two separate buildings containing workshops/teaching space. The single building design approach enables a building plan to be developed which is more compact and cost effective.

A massing option study was developed for presentation to BAE Systems which explored the generic arrangements options to accommodate the schedule of accommodation. This falls broadly into two main space groupings: the workshop accommodation including the aircraft hangar and the teaching and support spaces.

Two primary solutions were identified. The first stacked the two groups of accommodation horizontally and the second vertically. Both options assume the workshop spaces have a clear height of 6 metres and the teaching/support space 3 metres.

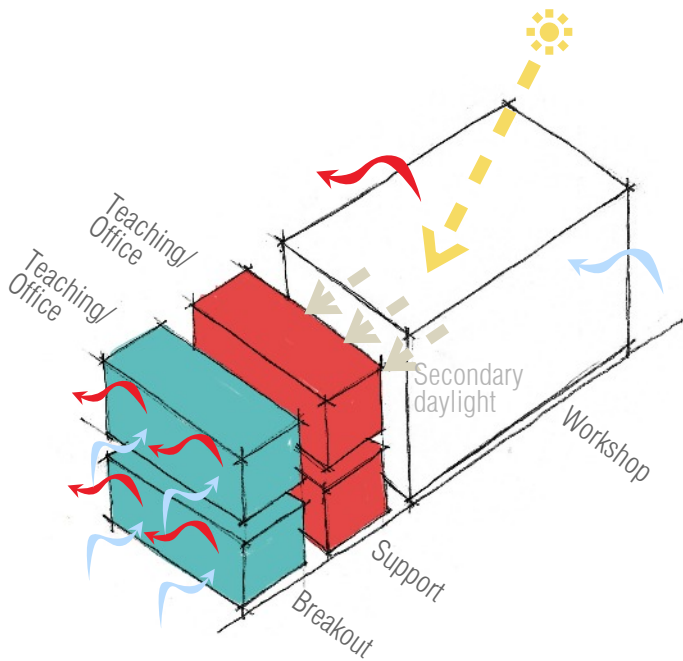
For practical and economic considerations it was agreed to maintain the 6.0m workshop ceiling level across all workshop and hangar areas. This is considered preferable to stepping the ceiling level for different areas which do not require 6m clear working height. It would provide greater future flexibility and also the potential to convert existing workshop areas to aircraft hangar space at a later date if required.



HORIZONTAL STACKING

The horizontally stacked option results in a significant amount of teaching/support accommodation being internally stacked against the 6 metre (clear) workshop which would compromise the potential to use natural light and ventilation to serve these areas.

The horizontally stacked solution also resulted in the teaching/ support accommodation being split over two floors which reduces future flexibility and also the ability to provide a centralised plan where the shared accommodation provides a nucleus for all teaching areas.

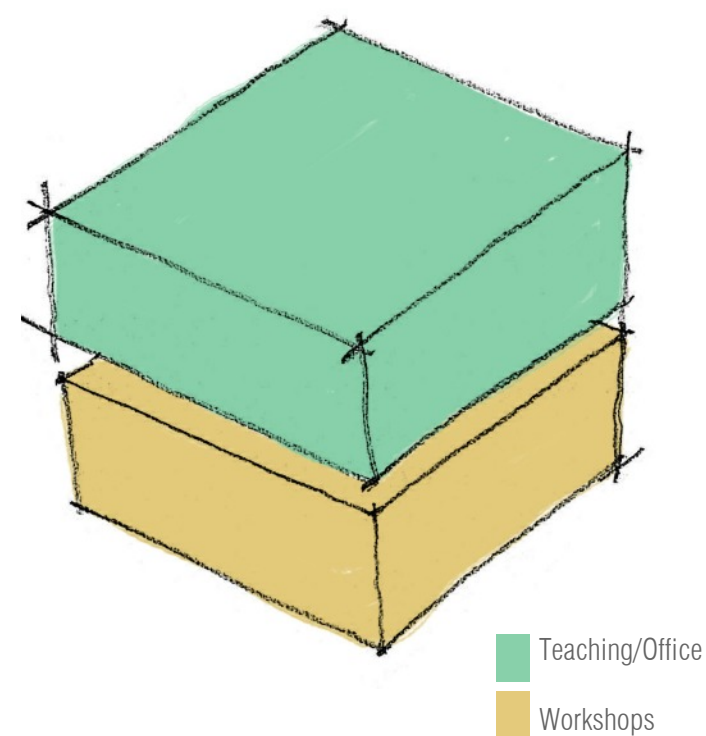


PROS

- Building 6 metres high
- Workshop area can be top ventilated
- Natural light via roof

CONS

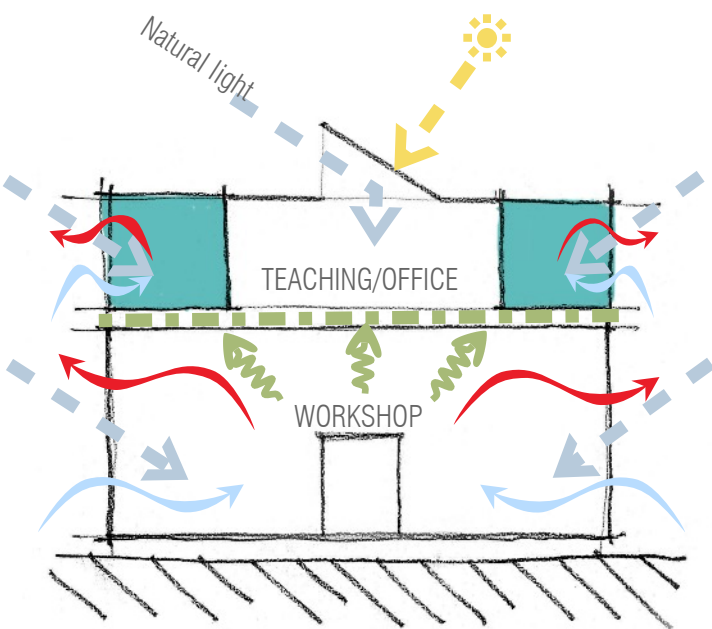
- Natural ventilation and day light, only possible to 50% of classroom/welfare area
- Areas to centre of plan require mechanical ventilation to ground and first floor
- Mix of teaching space and workshop on each floor reduces flexibility.



VERTICAL STACKING

The vertically stacked arrangement permits the workshop space to be located at ground floor where it could be naturally ventilated and lit from all elevations and also allows the same arrangement to be employed at first floor level where the teaching/support space is located.

Due to the ability to utilise natural ventilation and lighting to all areas and the ability to group key activities in two distinct groups the vertical stacked massing arrangement was adopted.



PROS

- Central mezzanine with structure reducing first floor spans
- Natural light & ventilation to workshop areas
- Open plan office with ancillary support
- Teaching and office areas can be naturally ventilated
- Views to south from teaching area
- All teaching accommodation to first floor can achieve increased flexibility
- Service integration via central spine forming mezzanine
- Mezzanine can form effective viewing gallery.
- Structural acoustic separation from first floor teaching area and workshop

CONS

- Building 9m High
- 6m vertical circulation to main teaching area
- Servicing of cafeteria on first floor
- Increased storey height for window cleaning and maintenance



2.0 DESIGN

DURING THE DESIGN DEVELOPMENT STAGE DISCUSSIONS WITH BAE SYSTEMS FE DEPARTMENT WERE UNDERTAKEN TO DEVELOP THE LAYOUT OF THE TEACHING SPACES.

It is proposed to provide the main workshop space as one area with low level mobile sub division to increase future flexibility. The aircraft hangar will be enclosed in a separate block with it's own security provision.

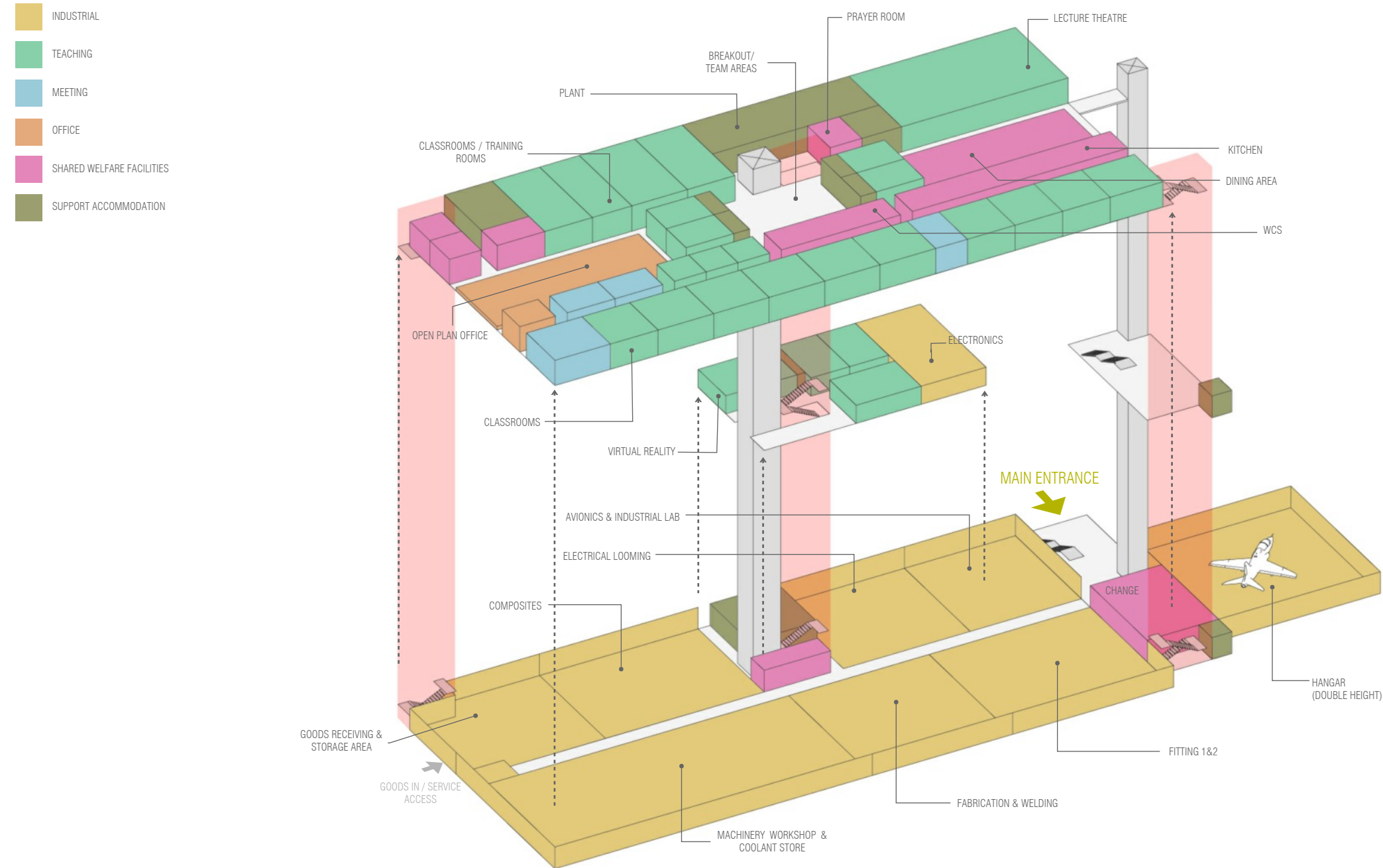
To provide access through the workshop area a 3 metre wide dedicated access route will be provided which is linked to the central stair case / lift arrangement which serves the main plant areas, the mezzanine teaching spaces and first floor teaching / support accommodation.

Stair and lift access is provided at the main entrance located to the east of the site where it is most obvious to serve the viewing gallery / heritage display and first floor levels.

A separate lift / stair access is provided midway along the north elevation to provide service access to the first floor catering facilities, plant areas at ground and first floor and also the mezzanine teaching accommodation.

Fire escape stair provision has been included in the north west and south east corners of the development to meet statutory requirements.

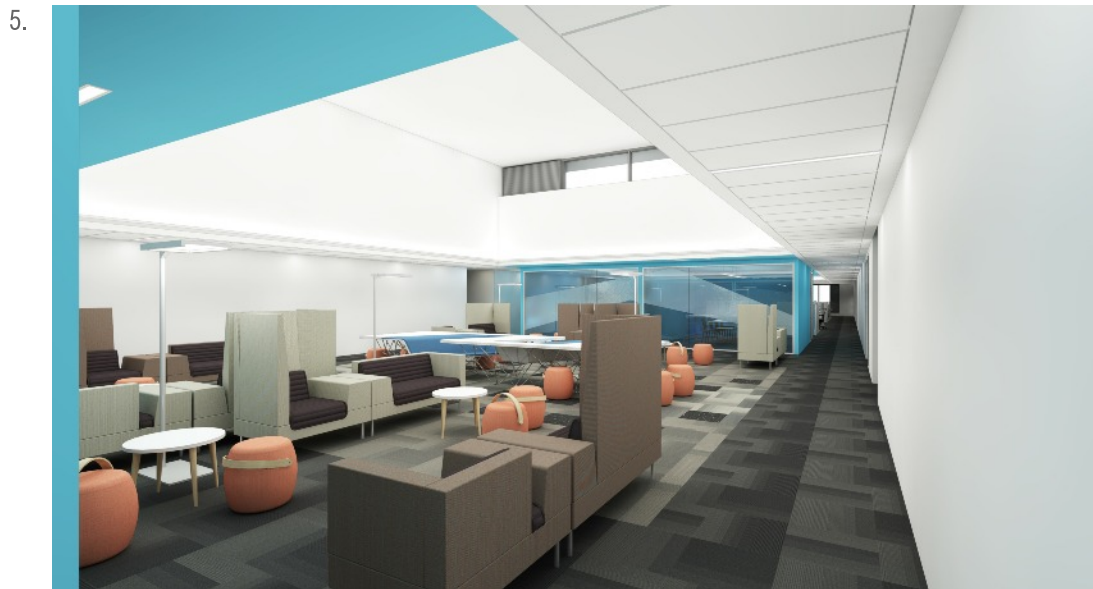
Service access to Goods Receiving is located to the west end of the ground floor plan accessed off the Training Facility site access road.



2.0 DESIGN

2.4 INTERNAL PERSPECTIVE VIEWS

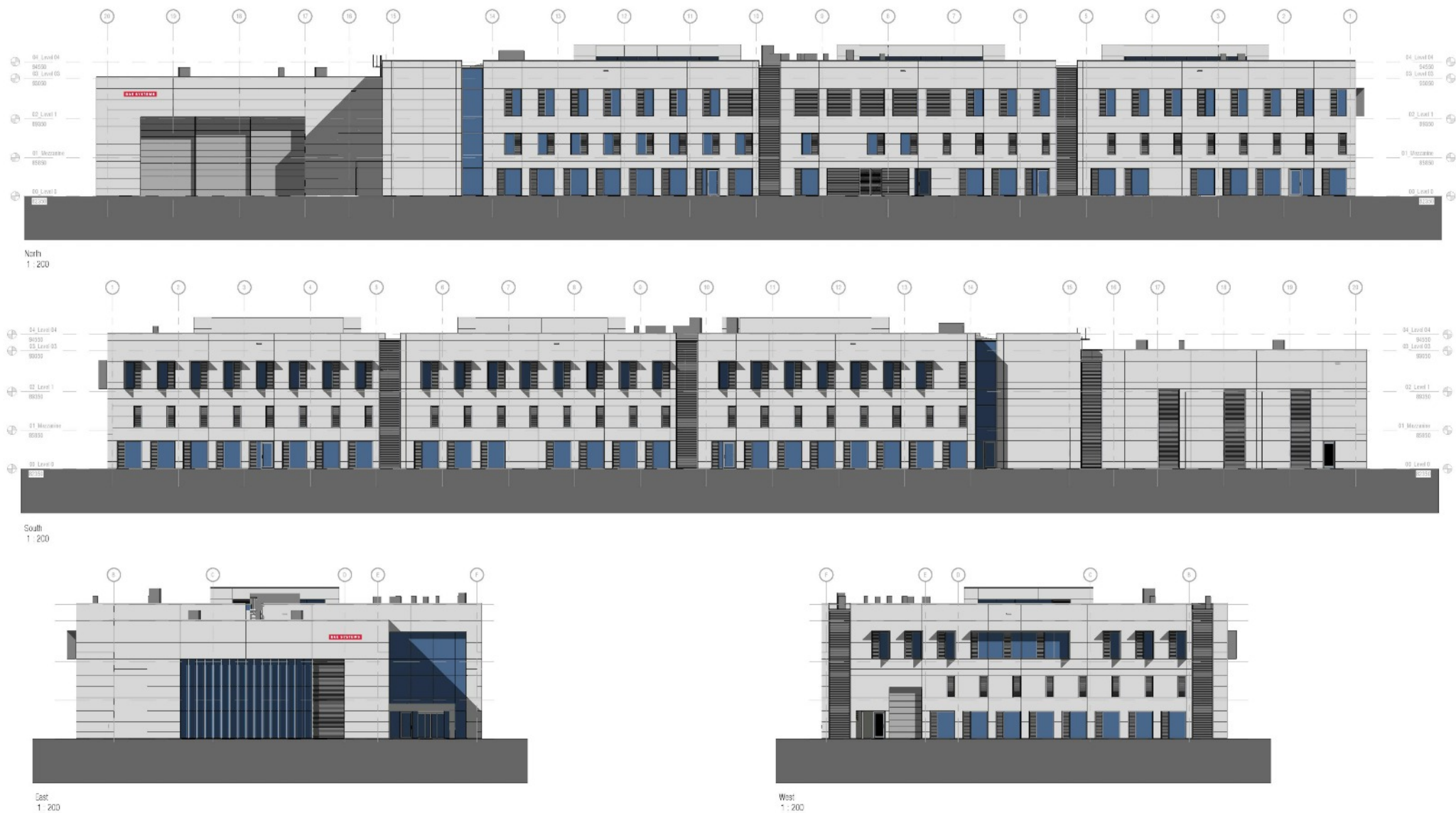
- 1. Internal Reception
- 2. Internal Workshop Area
- 3. Internal Hangar
- 4. Internal Restaurant
- 5. Internal Student Breakout Area
- 6. Internal Open Plan Office



2.0 DESIGN

2.5 SCALE

The external expression of the building has largely been driven by the desire to achieve adequate natural ventilation and day lighting within the building whilst responding to requirement for a future proofed workshop and teaching spaces. The length of the building is set out using a 6m grid this allows for a repeated method of construction using modular panels. The width is set out using a similar rationale.



2.0 DESIGN

2.6 MATERIALS

The structure of the proposed building is to be created using a steel frame. Within the workshop areas on the ground floor this structure is visible together with the all the main services. On the first floor this structure is hidden to create clean finishes in the teaching spaces.

The building is clad in a composite panel. The setting out of the panels are based on the 6m structural grid. Three different panel heights are utilised to add interest to the elevations.

The proposed windows and curtain walling utilise an aluminium system. Louvers required for natural ventilation are paired with the glazing to create a clean finished unit. The ratio of glass to louver have been worked out throughout the design process to create optimal conditions for the users.

The roof is covered with a composite panel deck which suits the both the building form and use. The three roof lanterns are created using the same materials utilised on the elevations.

Floors will have a number of finishes to define different areas. The finishes on the teaching spaces on the first floor will use carpeting to define a softer 'quiet' zones and help reduce reverberation within the space as a whole.





A QUALITY AND VARIED SOFT LANDSCAPE SCHEME INCLUDING SPECIMEN TREES, ORNAMENTAL SHRUB PLANTING, WOODLAND PLANTING, WILDFLOWER AREAS AND AMENITY GRASS WILL ALL PROVIDE AN ATTRACTIVE AND ECOLOGICALLY RICH ENVIRONMENT.

2.7 LANDSCAPING

Radial grassed mounds reaching up to 3.5m metres in height encompass the landscape at the entrance to the development. Mounds are shaped to create service access routes for below ground services.

The main entrance to the facility is complimented with a large shared surface. This hardscape provides the potential to accommodate activities of open days for guests and potential new students. The hangar opens onto this space.

A strip of landscape between the building and the car park acts as a barrier between the two. This strip of landscape is used to lessen the impact of the required housing for transformer and compressor.

For ease of maintenance around the building, a 2m walkway between the building and adjacent landscape has been provided. Lighting Bollards that follow the perimeter footpath will maintain a welcoming pedestrian scale.

Swatches of low height scrub and groundcover planting will be incorporated at some of the footpath junctions to provide seasonal interest and scale.

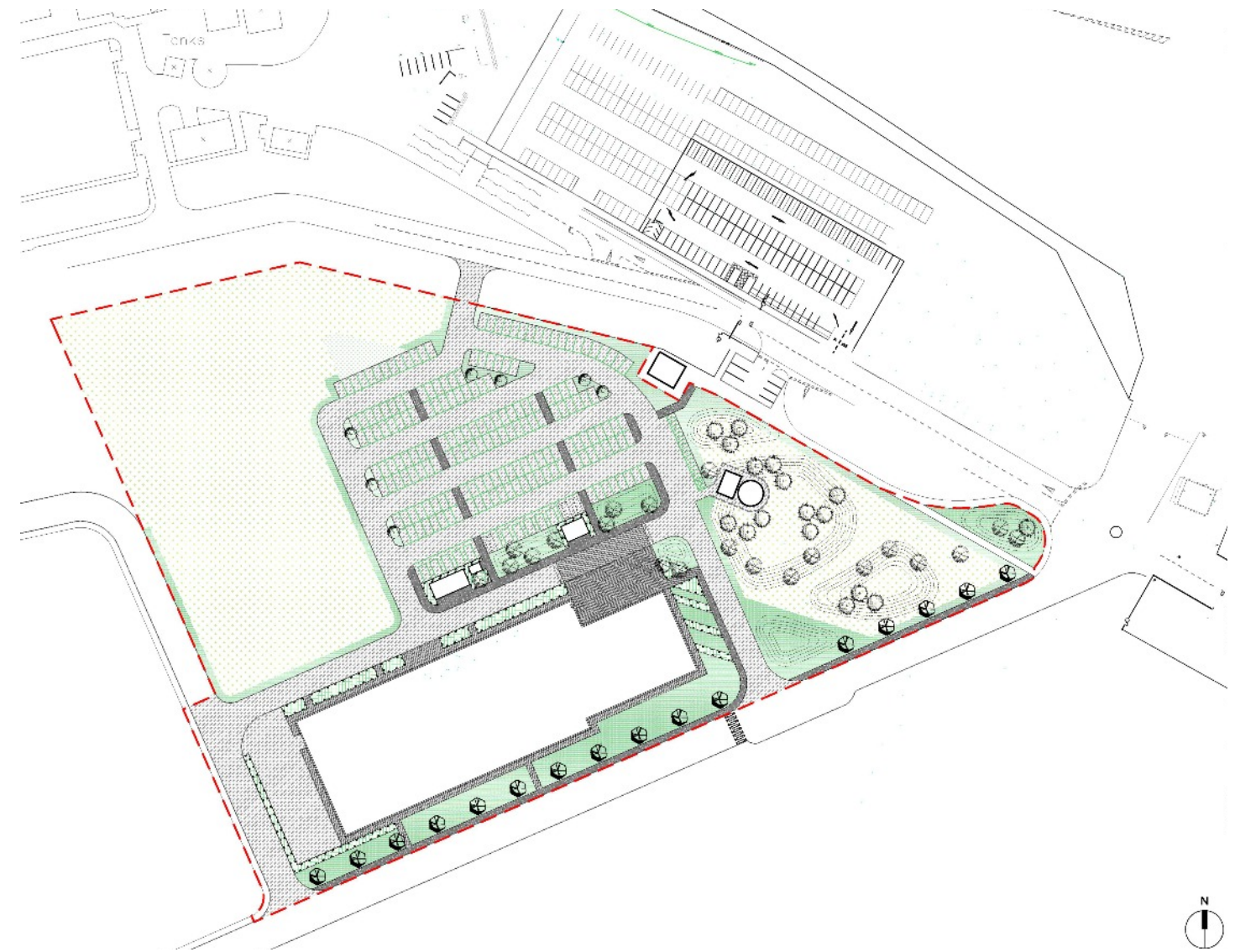
The available space to the north west of the site is allocated for future development and is required to remain flat and will be treated with a mixture of wildflower seed.

2.8 ENVIRONMENTAL ISSUES

Scott Hughes Design has been appointed to undertake a BREEAM 2011 assessment of the proposed Training Centre at BAE Systems Campus, Samlesbury. The Building will be assessed under BREEAM New Construction 2011 'Other' section, with the sub-category of 'Research & Development.' The building has been design to achieve a BREEAM rating of 'Very Good'. The building will be predominantly naturally ventilated but the workshop will have mixed mode ventilation due to the depth of the space. Domestic hot water and space heating is to be provided by high efficiency gas boilers.

A travel plan has been developed by Ashley Helme Associates.

Secured by Design has been applied for with Lancashire Constabulary and the application has been registered.



3.0 ACCESS

PRIORITY HAS BEEN GIVEN TO PROVIDING A SAFE AND EASILY ACCESSIBLE ENVIRONMENT. THE LAYOUT WILL BE READILY UNDERSTOOD WITH THE ENTRANCES AND FUNCTIONS EASILY IDENTIFIABLE.

3.1 VEHICULAR AND TRANSPORT LINKS

The site for the BAE Systems MAI Training Facility fits into a larger masterplan for the whole Enterprise Zone. The Enterprise Zone will benefit from a designated new access route off the A59 and A6.

A travel plan for the proposed development has been completed which focuses purely on the requirements for the BAE Systems MAI Training Facility parking provision.

The scheme indicates on site parking provision for staff, students and visitors. The travel plan requirements for car, motorcycle and bicycle parking identifies the following:

- 195 Car Parking Spaces
- 10 Disabled Car Parking Spaces (5% of 195)
- 17 Motorcycle Parking Spaces
- 30 Bicycle Parking Spaces

HGV's and Bin Lorries can access the building via a number of routes however the preferred anticlockwise route minimises the need to reverse large vehicles.

A bus stop is proposed on the main spine road for the Enterprise Zone. A footpath will link the bus stop and Training Facility.

3.2 INCLUSIVE ACCESS

It is anticipated that many people will arrive at the BAE Systems MAI Training Facility by car. A series of bus stops are proposed along the Enterprise Zone spine road to provide good access by public transport and a designated cycle lane will run parallel to the spine road.

The building allows for level disabled and ambulant access to all levels. Externally, sloping walkways have been designed to a gradient of 1:20 or less to allow universal use. The external landscape is arranged to make the entrances highly visible and readily identified. An automatic revolving entrance door is complimented with a power assisted pass door giving good access for wheelchair users.



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