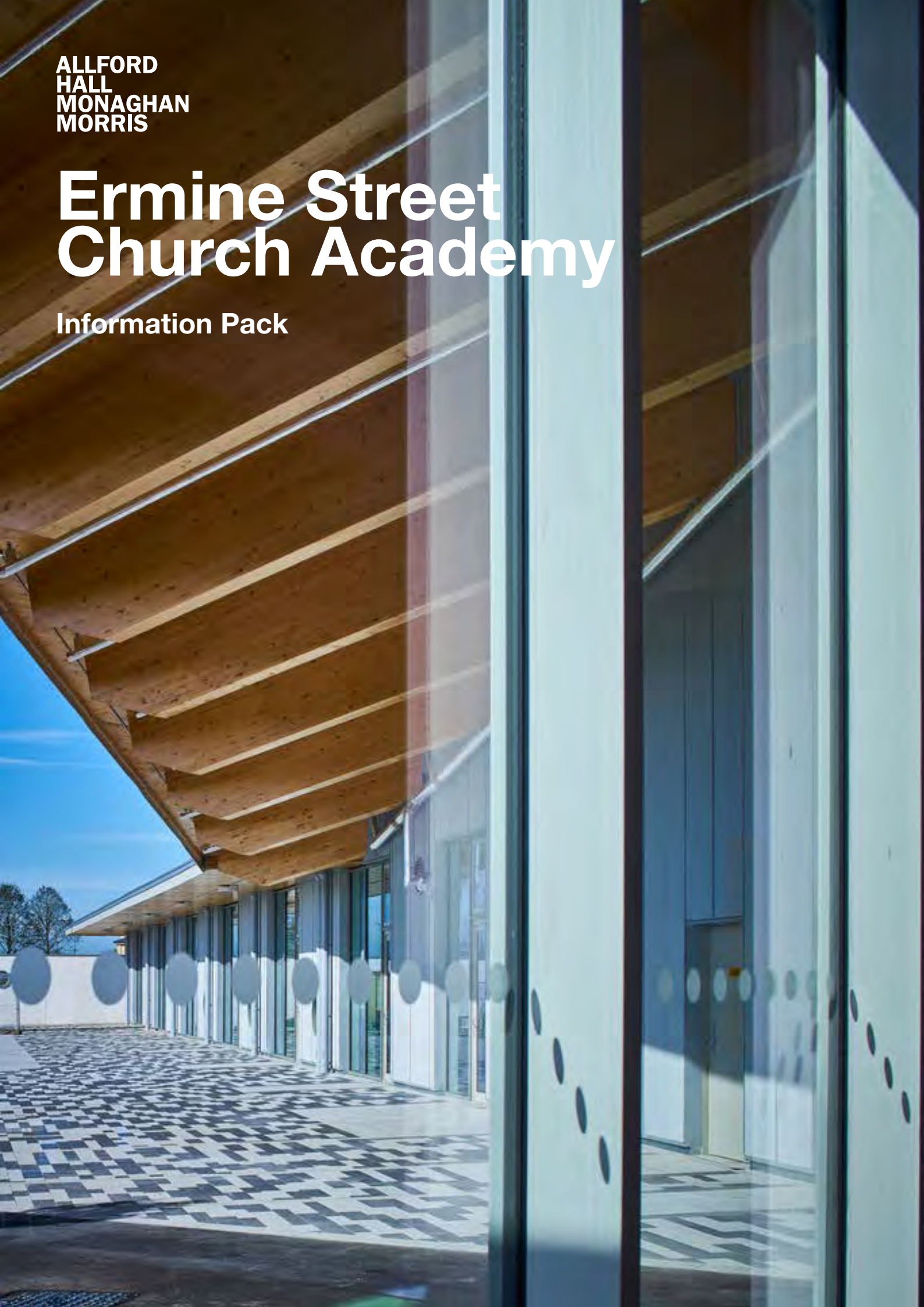


**ALLFORD
HALL
MONAGHAN
MORRIS**

Ermine Street Church Academy

Information Pack



For further information and images please contact:

Allford Hall Monaghan Morris

Morelands
5-23 Old Street, London
EC1V 9HL

T: +44 (0)20 7251 5261

E: press@ahmm.co.uk

ALLFORD
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MORRIS

Ermine Street Church Academy

Information Pack

ERMINE STREET CHURCH ACADEMY





ERMINE STREET CHURCH ACADEMY

Ermine Street Church Academy is a key building for the new community of Alconbury Weald near Huntingdon, 60 miles north of London. It is the fourth building completed by Allford Hall Monaghan Morris (AHMM) at Alconbury Weald after the Gatehouse, Incubator and Club buildings, all located within the same new town.

As the first civic building for Alconbury Weald, the primary school has an important role to play in establishing the quality of the built environment at Alconbury Weald as well as providing vital education and community facilities.

The school building reinterprets principles gleaned from previous AHMM school projects to create a new 2-Form Entry (2FE) learning campus. In recognition of the future growth of Alconbury Weald, the building has been designed to allow the construction of an additional six classrooms when demands necessitate.

Three wings - placed to continue key masterplan axes and capture three distinct external play spaces - converge to create a double-height, top-lit, vaulted-roofed assembly hall. Outside, the Cross Laminated Timber (CLT) building is clad in white polished concrete or sinusoidal metal panels that are playfully punctuated with porthole openings that establishes a secure yet engaging boundary that meets its community through form, not fence.

KEY DATES

| | |
|----------------------|----------------------|
| August 2014: | AHMM Appointed |
| January 2015: | Planning submitted |
| March 2015: | Planning granted |
| April 2015: | Sub-Contract tender |
| August 2015: | Start on site |
| August 2016: | Practical Completion |

AHMM TEAM

Simon Allford, Philip Turner, Alex Russell
Ivan Dragoshinski, Ian Emmerson, Neil Hadrill, Anita Howard, Chris Pope,
Luis Torres, Liz Varnavides, Jen Wang, Euan Watson, Ayesha Wynne
Jonathan Hall, Paul Monaghan, and Peter Morris.

| | |
|------------|--|
| Sector | Education |
| Location | Huntingdon, Cambridgeshire |
| Address | Ermine Street Church Academy Swynford Road, Alconbury Weald, Huntingdon, Cambridgeshire, PE28 4XG |
| Client | Morgan Sindall / Cambridgeshire County Council |
| Value | £9m |
| Start | August 2014 |
| Completion | August 2016 |
| Contract | NEC3 Sub-Contract Form |

| | |
|-----|---|
| GIA | 31,860 ft ² / 2,961 m ² |
|-----|---|



SITE: RAF ALCONBURY





HISTORY OF THE SITE (1938 - 1995)

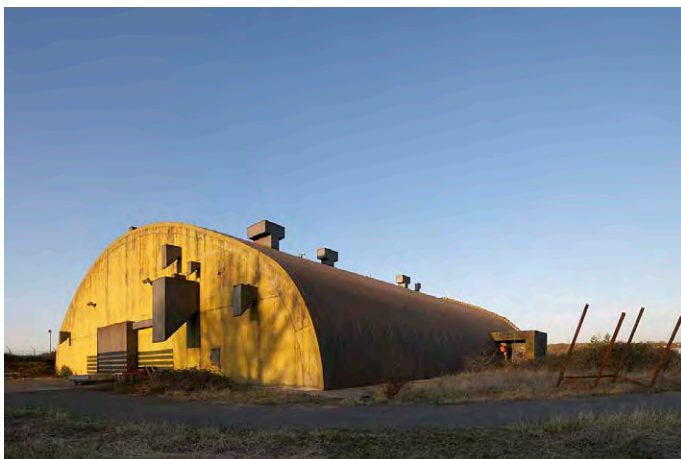
Located around 5 miles north of the market town of Huntingdon, RAF Alconbury was an occupied airbase from 1938 to 1995 under the control of the British and later, the American Air Forces. The base was used continuously for 57 years and planes provided support for the Second World War, the Cold War, and the Gulf War.

Numerous planes which flew from Alconbury include Bristol Blenheims, Vickers Wellingtons, B-24 Liberator Bombers and the notorious Lockheed U-2 Spy planes.

The site was effectively closed by the Ministry of Defence in 1995 and until development works commenced, the infrastructure material remained on the site; its hangars, control centres, bunkers and huts reflect a complex and fascinating history.

Some of these are now designated heritage assets:

- Grade II Listed Watch Office + Operations Room
- 13 no Grade II* Listed U-2 Hardened Aircraft Shelter
- Grade II* Listed Avionics Building



Jet testing tunnel



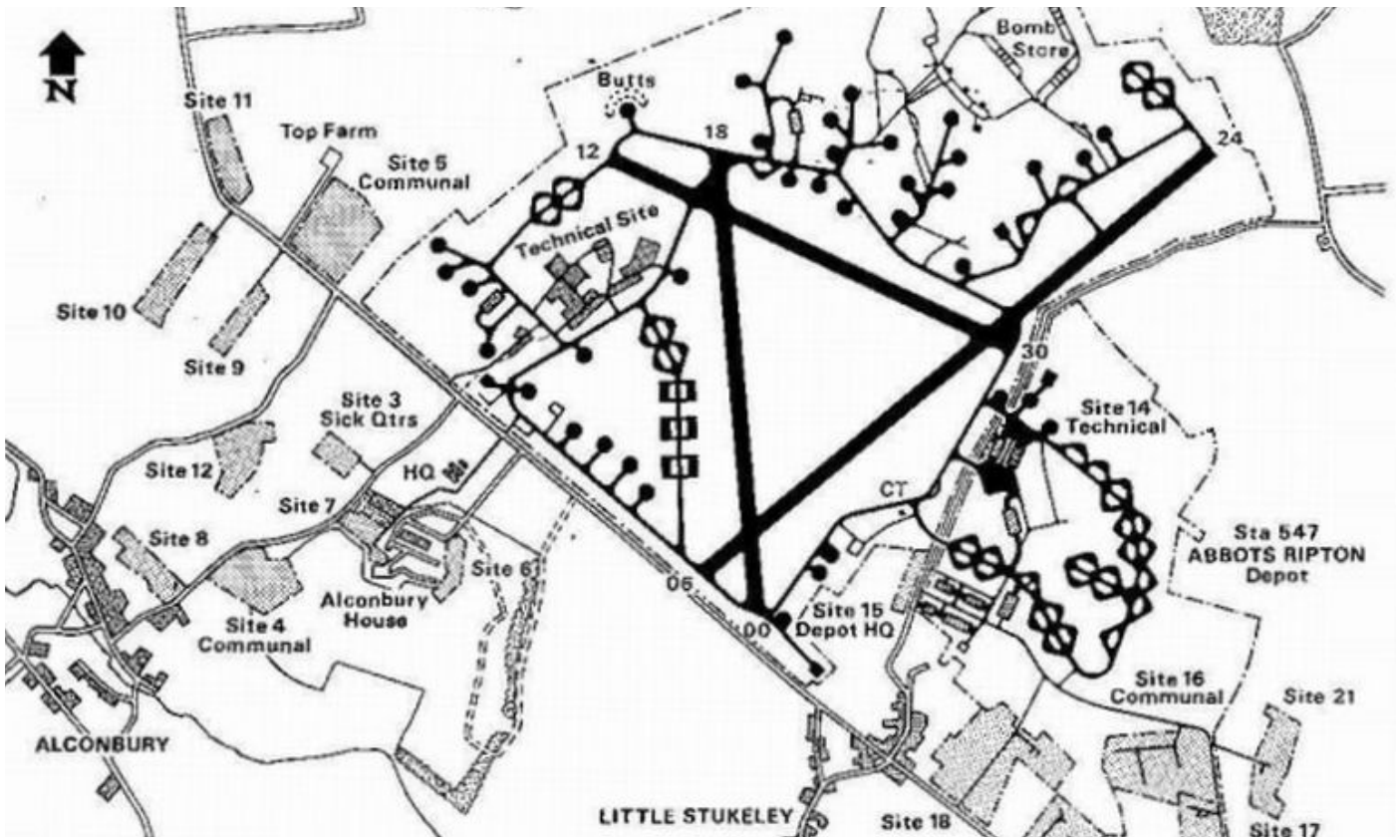
Watch tower



Grade II Listed Watch Office + Operations Room



Bomb dump shelters



World War II map of RAF Alconbury



B-45 Tornado Bomber



Vickers Wellington



B-24 Liberator



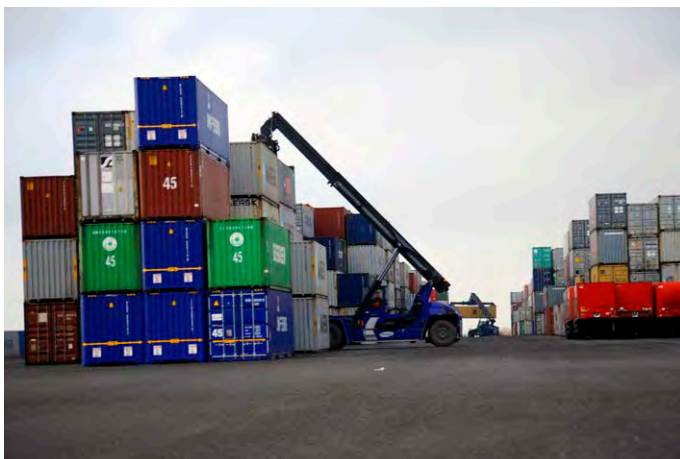
U-2 Spy Plane

HISTORY OF THE SITE (1995 - 2015)

Since the site's closure in 1995, it has largely fallen under temporary uses, and is currently occupied by a number of short-term commercial tenants.

The site was purchased by Urban & Civic in 2009, but a small portion remains active, under the occupation of the United States Air Force, though without the use of the runway.

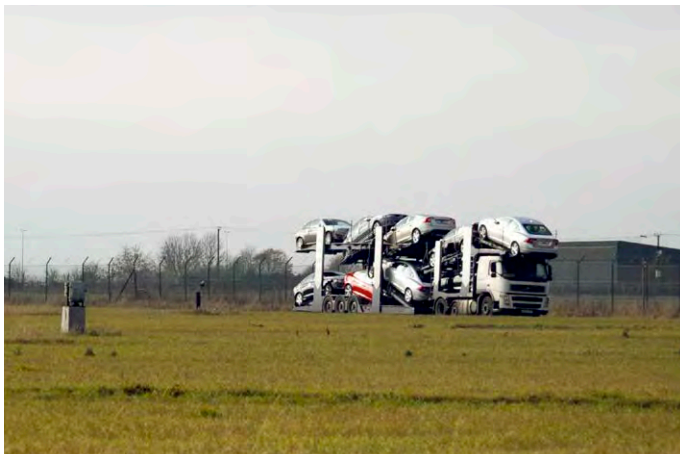
Urban & Civic are currently in the process of constructing a masterplan for a mixed-use site, with the remit of creating 8,000 new jobs within a newly designated Enterprise Zone and 5,000 new homes. U&C have inherited a number of short-term commercial tenants, mostly storage and distribution companies. These tenants have begun to relocate to make room for the new residents and businesses of Alconbury Weald.



Shipping containers on the runway



Storage of used porta-kabins



Temporary storage of newly imported vehicles



Recycling of plastics and pallettes



View across the military landscape



Aerial view of the runway (photograph by Jason Hawkes)

REDEVELOPMENT (2015 - NOW)

While the 1,400 acre was until recently used for storage and logistics, Urban & Civic have a very different vision for its future - a unique and inspiring place to live, work and play:

- Bring skilled jobs and opportunities to the local area,
- Provide a range of homes set within attractive landscapes forming part of an active community,
- Ensure there is green open space for people and nature in keeping with the local area,
- Provide strong and fast connections with Huntingdon, Peterborough, Cambridge, London and beyond through enhanced road, rail, bus and cycle network.

Alconbury Enterprise Campus was granted Enterprise Zone status by the Government in 2011 and is supported by the Local Enterprise Partnership whose role is to help drive economic growth.

The Enterprise Campus offers a host of benefits:

- A 100% business rate discount, worth up to £275,000 over a five-year period, for businesses that move into an Enterprise Zone during the course of this Parliament.
- For at least 25 years, all business rates growth within the zone will be shared by the local authorities in the LEP area to support their economic priorities.
- Government and local authority help to develop radically simplified planning approaches in the zone, and Government support to deliver superfast broadband across the zone.

The wider masterplan for Alconbury Weald brings together residential, commercial, and civic use to create a major new, sustainable community. Ermine Street Church Academy is the third in a series of new buildings by AHMM at Alconbury Weald, each of the buildings taking cues, and learning from each other to create a suite of buildings, familiarly linked but intrinsically unique.





AHMM AT ALCONBURY



Grade II* Listed Hardened Aircraft Shelter: Open door (photograph by Hufton & Crow)



MASTERPLANNING

The wider masterplan for Alconbury Weald, by David Lock Associates, contained an outline design for the first building of the Enterprise Zone to set a quality marker for the whole development. This building would come to be the Alconbury Incubator.

The Phase 1 masterplan, located by the Ermine Street entrance of the site, is the focus of Urban & Civic's initial development at Alconbury.

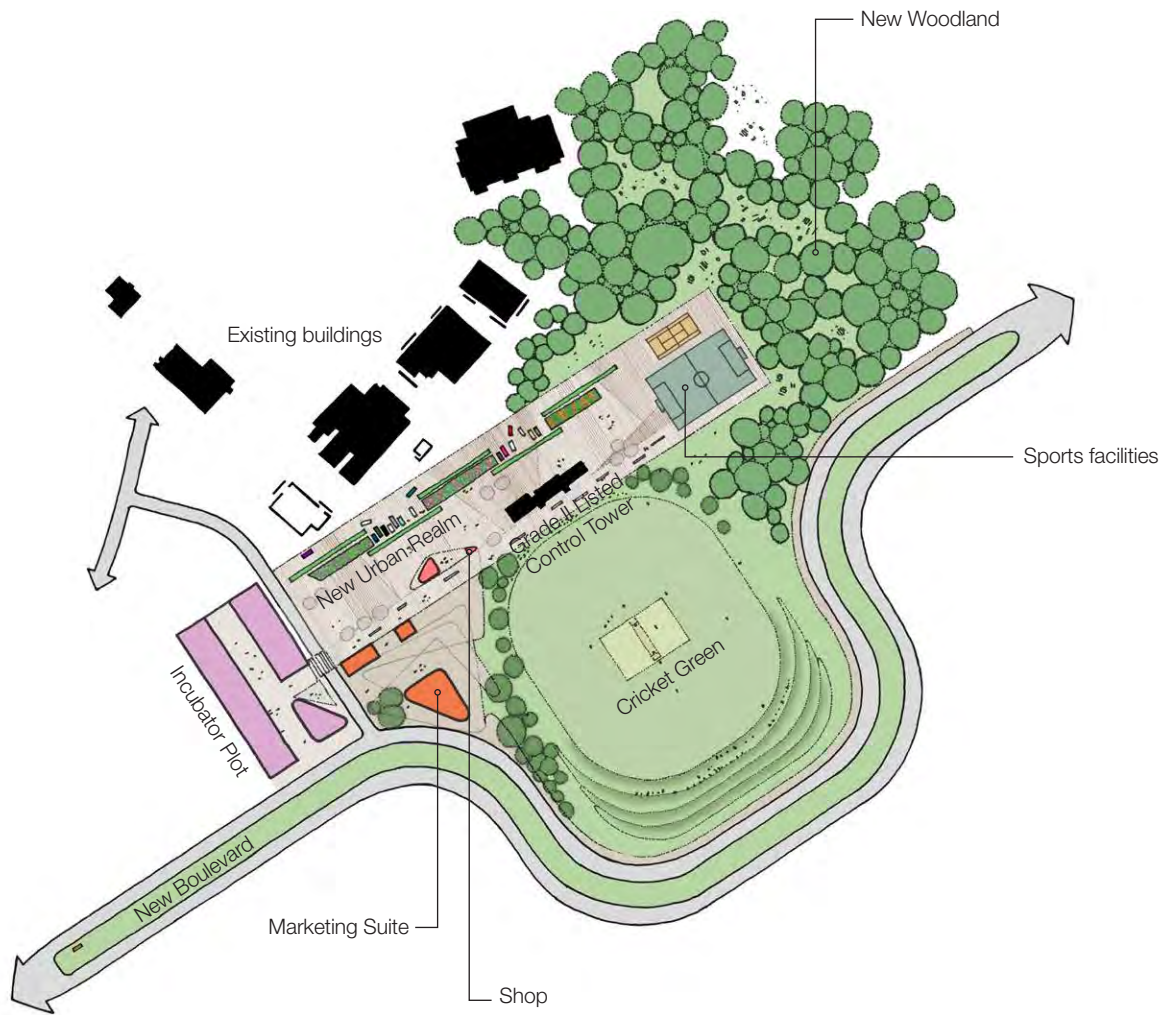
AHMM carried out studies for the Incubator building considering its eventual relationship with the emerging urban context, and how this would establish the design intent for the whole of Alconbury Weald.



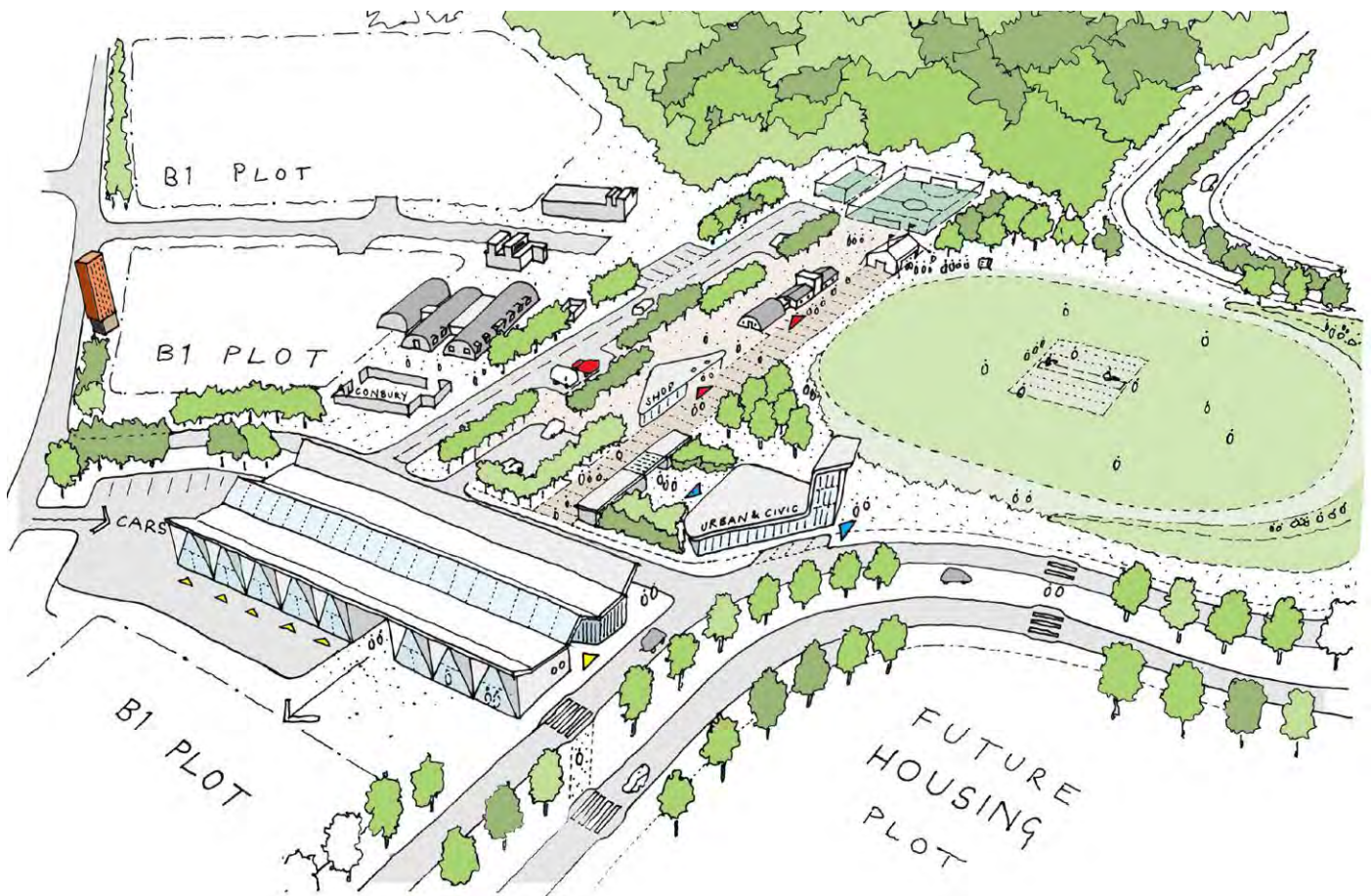
Extent of Phase 1 Masterplan (coloured) in overall masterplan (red) (image by David Lock Associates)



Phase 1 Masterplan (image by David Lock Associates)



Early Phase 1 design proposal plan sketch



Early Phase 1 design proposal aerial view sketch

ALCONBURY 1 : THE GATEHOUSE

A new gatehouse at each of the 3 site entrances was needed to secure and define entrances to site. These gatehouses became the first design study and built elements at the new Alconbury Weald.

Construction at the edge of the site announces the emerging development and the function of the Gatehouses doubles as a welcoming face of a new Alconbury.

Taking inspiration from stacked volumes from the shipping containers stored on the runway, the Gatehouses varied in height, acting as way-finders on the flat site.

The final design comprised two unitised, prefabricated portacabins overlaid with black painted Scottish Larch. Large windows puncture the ground floor to allow vistas in both directions along the road.

A lantern tops the vertical stack, which illuminates the masterplan's strapline / motto: **Make | Grow**



Early proposal: Corten-clad Main gatehouse



Early proposal: Corten-clad Main gatehouse



Early proposal: Corten-clad HCV gatehouse



Developing proposal: Timber clad HCV gatehouse



Developing proposal: Timber clad HCV gatehouse at night

ALCONBURY 1 : THE GATEHOUSE

Installation of the Gatehouse Unit on site



Mobile crane on-site



Prefabricated modules delivered by lorry



Corner anchors secured to module



Remove module from lorry



Locate onto capped-off services



Second + third modules arrive by lorry



Repeat lifting operations



Crane lift of light-box module



Fix light-box module to solid module



Weatherproof between modules



Clad in timber weatherboarding



Fit-out and install lightbox glazing + signage

Opposite: Completed HCV Gatehouse



Make Grow

STOP

ALCONBURY 2 : INCUBATOR BUILDING

In 2013, as the first building completed on site at Alconbury Weald, the Incubator anchored the new Enterprise Campus and commenced the development of a new community.

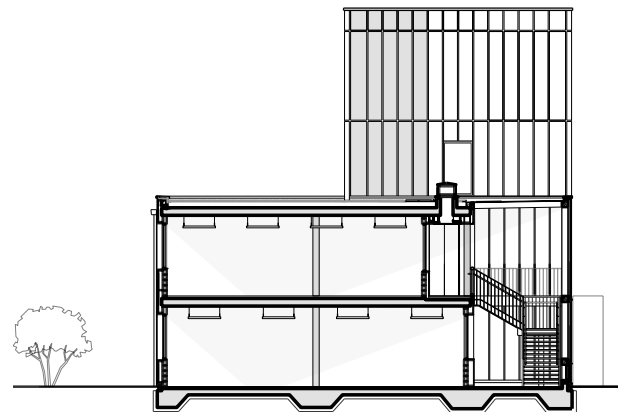
The fully occupied Incubator served as a reference in the design development of the neighbouring Alconbury Club - the two completed buildings are visibly related and in dialogue.

A narrow and transparent two-storey volume runs parallel to the ex-airfield site's new boulevard and kicks up at its north-east corner to enclose a four-storey tower that both announces the building and offers a panoramic view across the emerging masterplan. Behind it sits a two-storey black box, larch-clad and punctuated by a grid of large openings that draw natural light into the flexible working spaces contained within.

Workspaces ranging from 380 to 3800 square feet accommodate local businesses for activities ranging from research development to production. Auxiliary spaces including a café, a marketing suite, meeting rooms, and break-out balconies are dotted around the glazed gallery to animate the building's public face and create opportunities for social exchange.

KEY

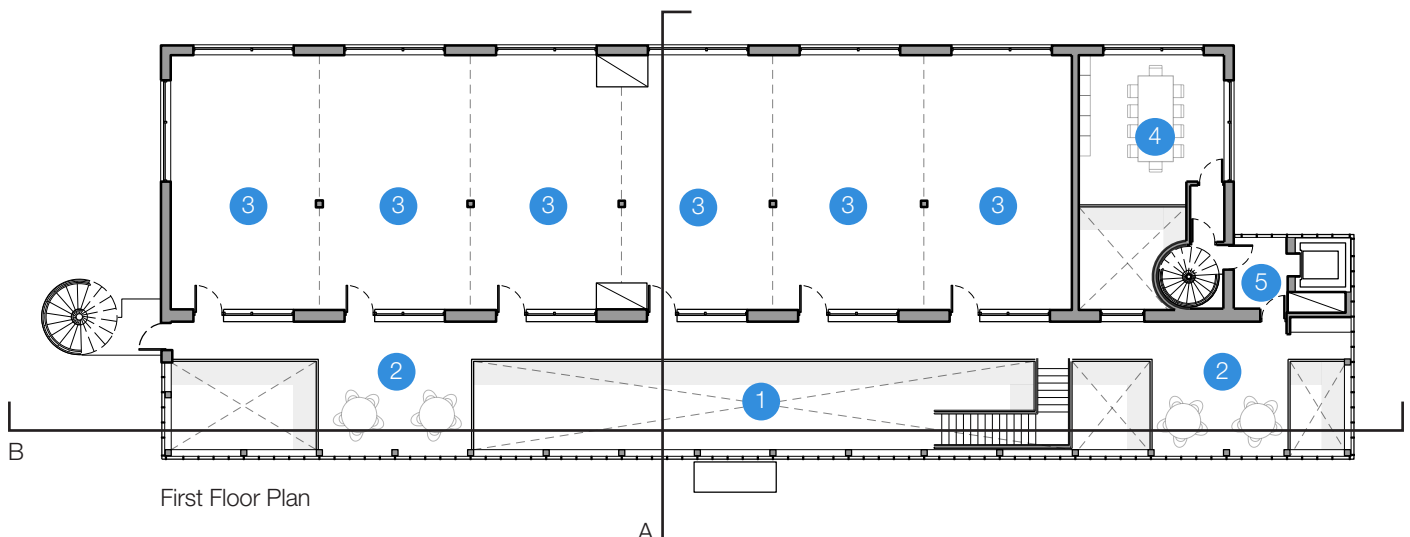
- 1 Glazed Gallery
- 2 Breakout Space
- 3 Lettable Office
- 4 Marketing Suite
- 5 Core



Section A



Section B



First Floor Plan



ALCONBURY 2 : INCUBATOR BUILDING



Above: Completed Incubator Building
Opposite: Internal View of Gallery Space



ALCONBURY 3 : ALCONBURY WEALD CLUB

In 2014, as design work commenced on Ermine Street Church Academy, AHMM also began developing proposals for Alconbury Weald Club - directly adjacent to the neighbouring Incubator building but with a very different functional brief.

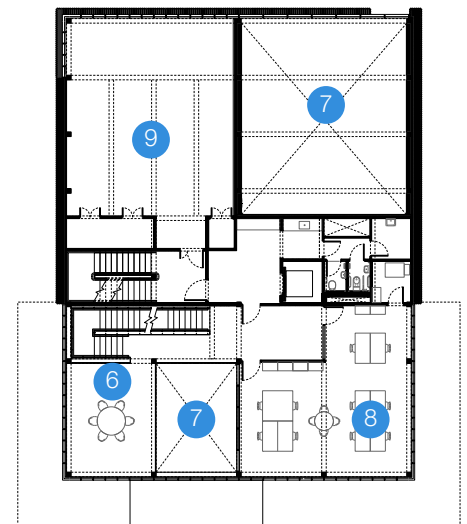
Located on the threshold between the residential and commercial zones of the Alconbury Weald masterplan, the three-storey building sits beneath exaggerated roof canopies that create sheltered community spaces and contribute to the building's environmental credentials.

The elevation of the Club appropriates the material palette of the Incubator building - a vertical order of curtain wall glazing and dark stained timber cladding - but re-orientates the timber cladding to run vertically, in a slip-and-miss arrangement akin a Scandinavian summer house. CLT and glulam timber construction provides a material quality to varied internal volumes.

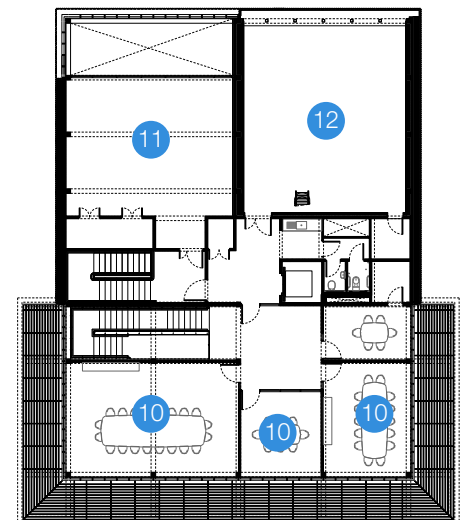
The building has been designed to accommodate the offices of Urban & Civic, a public cafe and a meeting hall that doubles as a gym space. Generous volumes and exposed finishes ensure that the building is flexible and robust enough to adapt to new uses as the community at Alconbury continues to grow.

KEY

- 1 Entry / Waiting
- 2 Cafe
- 3 Kitchen
- 4 Meeting Hall
- 5 Gym Changing
- 6 Gallery
- 7 Void
- 8 U&C Offices
- 9 Gym Machines
- 10 Meeting Room
- 11 Gym Studio
- 12 Plant



Second Floor Plan



First Floor Plan



Ground Floor Plan



Alconbury
World
Make/Grow

ALCONBURY 3 : ALCONBURY WEALD CLUB



Above: Alconbury Weald Club (near) and Alconbury Incubator
Opposite: Internal view of Alconbury Club entry



Welcome to The C

ALCONBURY 4: ERMINE STREET CHURCH ACADEMY





PROJECT DIRECTORY

Project Team

| | |
|--|------------------------------------|
| Client | Cambridgeshire County Council |
| Developer | Urban & Civic |
| Architect | Allford Hall Monaghan Morris |
| Main Contractor | Morgan Sindall |
| School Sponsor | Diocese of Ely Multi Academy Trust |
| School Operator | Ermine Street Church Academy |
| Project Manager | Faithful and Gould |
| Structural / Civil Engineer | Peter Dann |
| Mechanical & Electrical Engineer | Emec Consulting |
| Landscape Design | Wynne Williams |
| Planning Consultant | Alliance Planning / Bidwells |
| Approved Inspector | MLM |
| Acoustician | SRL / Hann Tucker |
| Transport Advisor | Mott MacDonald |
| Fire Engineer | Mott MacDonald |
| BREEAM Assessor | Mott MacDonald |
| Pre-Contract CDM Coordinator | Faithful and Gould |
| Construction Phase Principal Designer | Shore Engineering for Peter Dann |
| Masterplan Designers | David Lock Associates |
| Masterplan Civil / Transport Engineer | Peter Brett |
| Masterplan Landscape Design | Bradley Murphy Design |

Trade Sub-Contractors

| | |
|------------------------------------|---------------------|
| Building Frame | KLH with Ramboll |
| Pre-Cast Concrete | Buchan Concrete |
| Metal Cladding | ASL |
| Glazing & Louvres | Prestige Glazing |
| Roofing | Voland Roofing |
| Stairs & Gates | Crofton Engineering |
| Partitioning & Ceilings | SCL Interiors |
| Internal Doors | David Smith St Ives |
| Flooring | PICA Flooring |
| IPS | Inscape |
| Services | Sotham Engineering |
| Spinklers | Fire Security |
| ICT | EDICT |
| Specialist Kitchen Design | Gratte Brothers |
| Signage | DMA Signs |
| Fitted Furniture | Papworth Furniture |

Trade Sub-Contractors

| | | |
|---------------------|------------------|------------------------|
| BOEN | Forbo | TEK |
| Burmatex | Johnson Tiles | Total Laminate Systems |
| Breathing Buildings | Ruukki | Xtralite |
| Dividers | SIKA Sarnafil | |
| Ecophon | Smarts Aluminium | |

THE DEVELOPER

Urban&Civic plc

Urban & Civic Limited, founded in 2009 by Nigel Hugill and Robin Butler, is a private equity backed developer dedicated to enabling and delivering strategic developments in key growth areas of the UK.

Nigel and Robin have a long, distinguished track record in urban and suburban development, having worked together for 20 years at Chelsfield and Lend Lease, they have been responsible for some of Britain's largest, most complex developments at White City and at Stratford City.

Working for Lend Lease, AHMM designed the Chobham Harris Academy, a new All-Ages school in the London 2012 Athletes Village. Prior to this, working with Chelsfield, AHMM designed Westminster Academy, shortlisted for the Stirling Prize in 2008.

The Incubator Building, winner of 2014 BCO Regional and 2015 RIBA East Region Awards, provided a new opportunity for AHMM and Urban & Civic to build on their combined experience of delivering contemporary architecture to signify and catalyze the process of change and re-development.

Alconbury Weald continues to develop as a reinforcement of this potential of innovation emphasizing reinterpretation and reinvention.

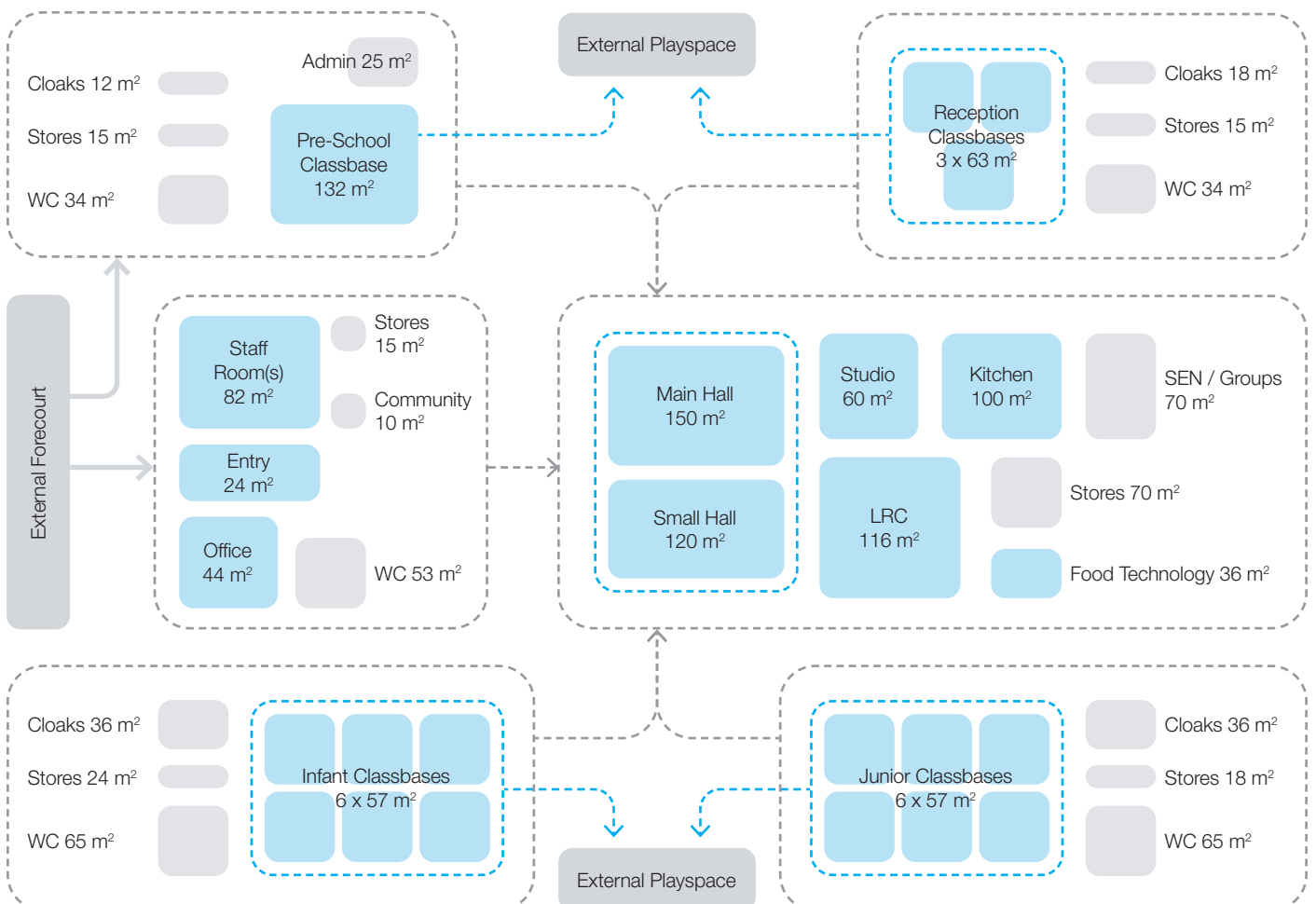


PROJECT BRIEF

Ermine Street Church Academy reinterprets principles gleaned from previous AHMM school projects to create a new 3-Form Entry (3FE) learning campus for the emerging Alconbury Weald region.

Three wings – placed to continue key masterplan axes and capture three distinct external play spaces – converge to create a double-height, top-lit, vaulted-roofed assembly hall that is accessible to the wider neighbourhood out-of-hours.

Outside, the building's main elevation, clad in white polished concrete and playfully punctured with porthole openings establishes a secure yet engaging boundary that meets its community through form, not fence. Inside, all classrooms are well-connected to external amenity via direct access ways, large expanses of full-height glazing and exposed Cross Laminated Timber (CLT) structure that ensures a consistent ceiling finish to all internal and external spaces.



AREA + COST

| Space | m ² | ft ² |
|-----------------------------|----------------------------|------------------------------|
| Pre-School Classbases | 173 m ² | 1,861 ft ² |
| Reception Classbases | 245 m ² | 2,636 ft ² |
| Infant Classbases | 342 m ² | 3,680 ft ² |
| Junior Classbases | 348 m ² | 3,744 ft ² |
| Halls | 267 m ² | 2,873 ft ² |
| Studio | 59 m ² | 635 ft ² |
| Food / Science / Technology | 36 m ² | 387 ft ² |
| Learning Resource Centre | 111 m ² | 1,194 ft ² |
| Special Educational Needs | 40 m ² | 430 ft ² |
| Small Group Rooms | 32 m ² | 344 ft ² |
| Administration | 232 m ² | 2,496 ft ² |
| Stores | 243 m ² | 2,615 ft ² |
| Kitchen | 88 m ² | 947 ft ² |
| Kitchenettes | 7 m ² | 75 ft ² |
| Servery | 13 m ² | 140 ft ² |
| Hygiene & WC | 215 m ² | 231 ft ² |
| Circulation | 320 m ² | 3,443 ft ² |
| Plant | 81 m ² | 872 ft ² |
| Total | 2,924 m² | 31,462 ft² |

| Cost Information | Total | £/m ² |
|------------------|------------|------------------|
| Cost Information | £8,941,000 | £3,058 |

TIMELINE

AUGUST 2014

AHMM Appointed
Design Development (13 weeks)



JANUARY 2014

Planning Submission
Detailed Design (20 weeks)

MARCH 2015

Planning Permission Granted

MAY 2015

Out to Sub-Contract Tender



AUGUST 2015

Site Works Commence



FEBRUARY 2016

CLT Frame Complete



AUGUST 2016

Practical Completion

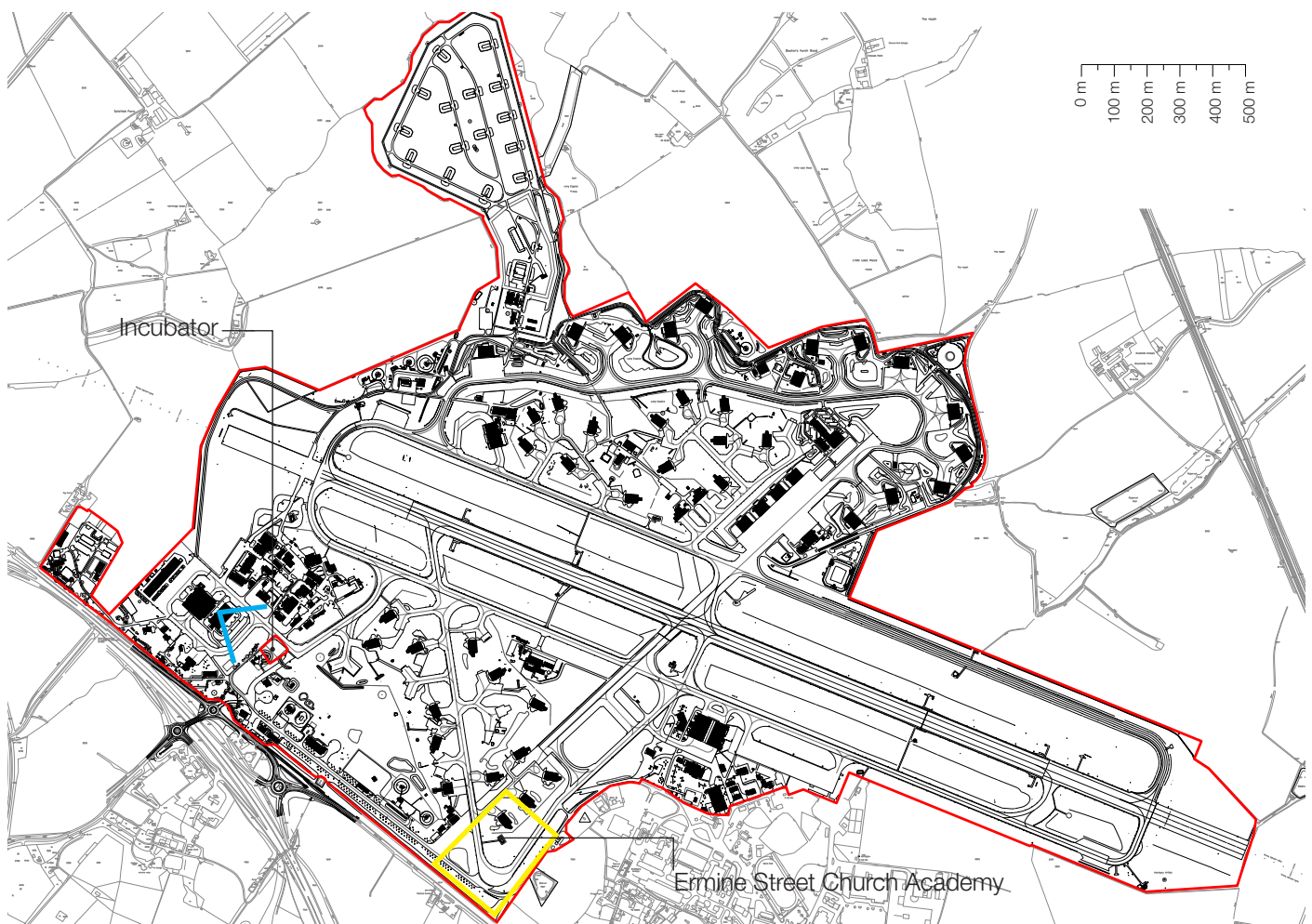


SITE + CONTEXT

Ermine Street Church Academy sits within Phase 1 of the Alconbury Weald masterplan and is bordered by the historic Ermine Street Roman Road to its south-west and the extent of the Ermine Street residential units of Key Phase 1 to its immediate north.

Due to its location, the primary school was the first building to be designed and constructed in this area of the site. As such, key consideration was made to ensure that the building was well sited in its context, both current and future. The building's three-winged form derives in part from the key geometry of the original plane taxiway that terminated at what is now the school site. This taxiway is further referenced by its form becoming a linear park that provides a major part of the masterplan and reinforces the green-infrastructure plan of Alconbury Weald.

The view on the approach to the school from Ermine Street as vehicles and pedestrians turn into Alconbury Weald was also a key consideration. The prominence of the gable ends of the building's wings placed necessary attention on the careful articulation of these elevations. The approach and views over the newly established duck ponds that form a focal point for the residential development were of a key concern and contributed to the overall composition of Ermine Street Church Academy.

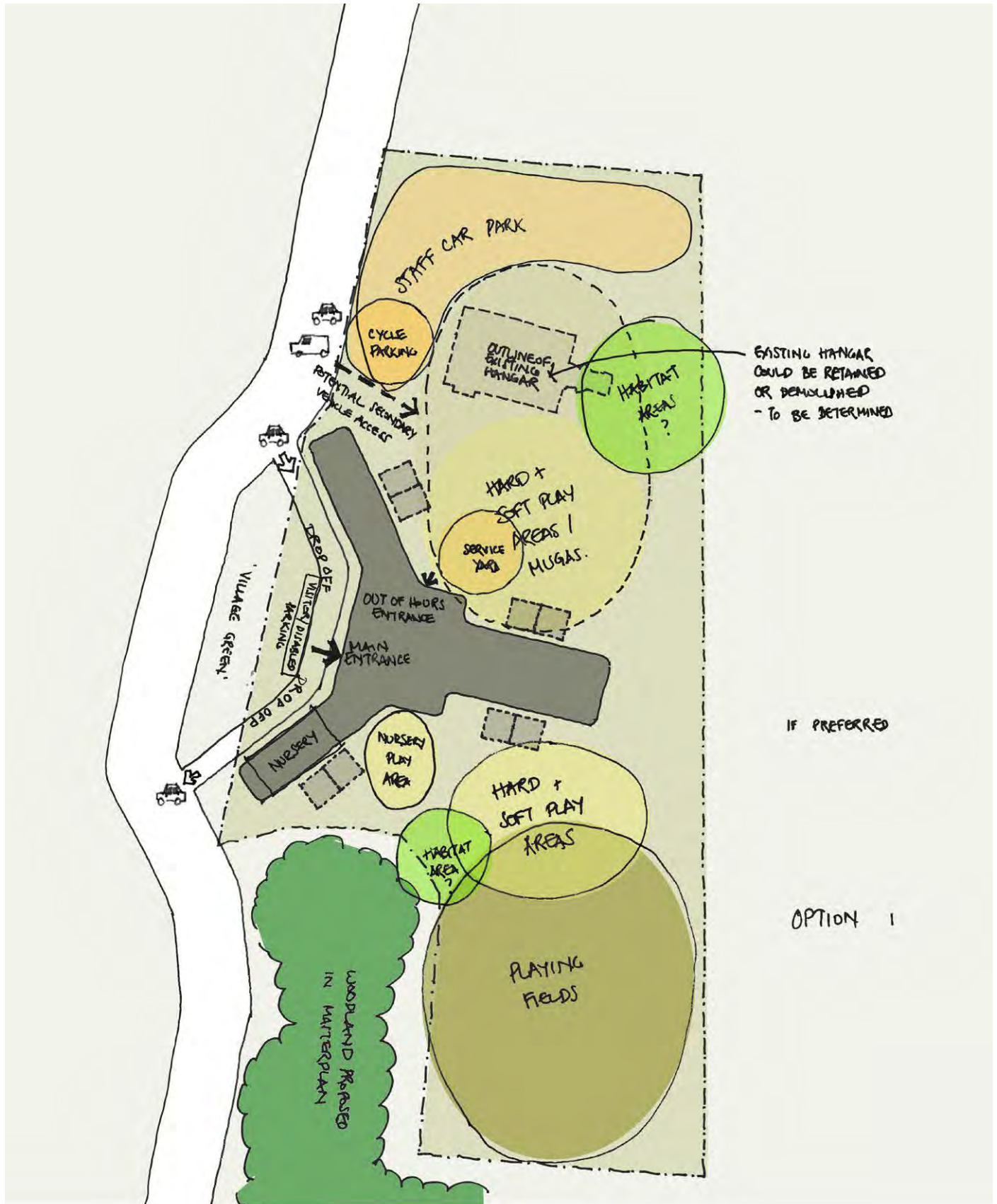


Masterplan Site (Existing) Showing Club & Incubator Locations



Aerial Photograph Indicating Club & Incubator Plot Locations

EARLY SKETCHES



PHASE 1
 PHASE 2

LANDSCAPE STRATEGY DIAGRAM
 OPTION 2
 AHMM. 13/06/14

KEY DESIGN STRATEGIES



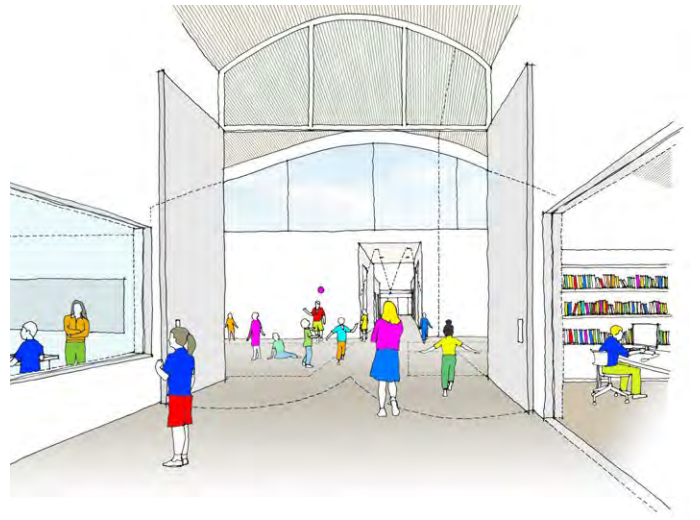
1 A school in the centre of a new community



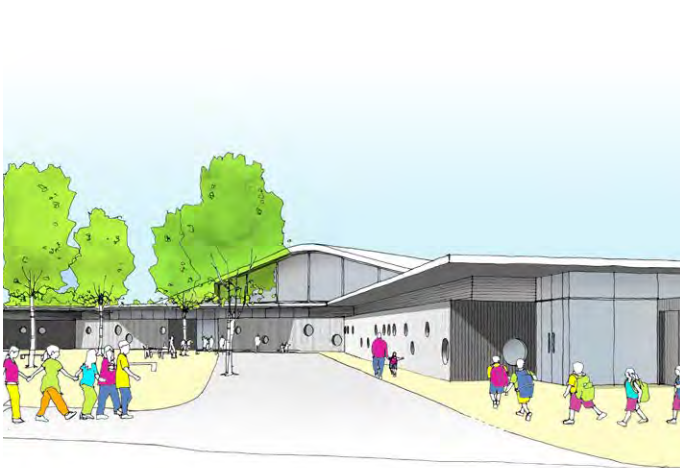
2 The school building as a civic marker



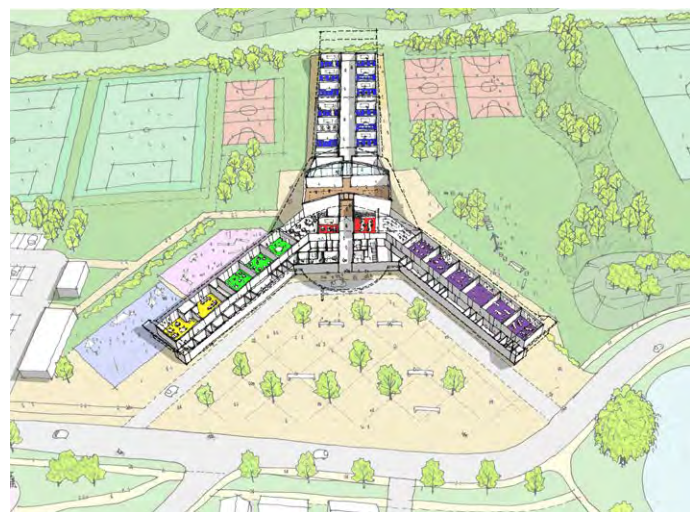
3 Well-connected and encouraging sustainable transportation



4 A generous, double height volume at the centre of the building



5 A welcoming street edge



6 A variety of generously proportioned, naturally lit spaces

ACCOMMODATION

Ermine Street Church Academy comprises a variety of teaching, community and support spaces - all unified by the celebration of the Cross-Laminated (CLT) building structure and generous proportions of volume and glazing to maximise height and natural light.

The unique propellor arrangement of the building's plan means that all teaching spaces orientate themselves directly to the external playgrounds and teaching spaces, with generous full height glazing. As a single storey building, all classrooms have direct access to this external playspace, which is itself completely within the school's secure boundary with no danger of overlooking or security concerns.

Each of the building's three wings features a variation of the arrangement of the teaching spaces, with WCs, cloakrooms, storerooms and access arranged differently in relation to the classroom core. Not only does this bring efficiency in sharing facilities depending on the year groups served by particular classrooms, but also creates a variety of environment as children progress through the school and grow with the building.

Administrative and support functions are arranged along the forecourt elevations of the building, to allow passive observation of the public space from staff offices and to safeguard teaching spaces from overlooking. These spaces

are lit by playful 'porthole' windows at a variety of heights and by overhead rooflights to deliver daylight deep into the building plan.

Within the heart of the building, the school's shared and community facilities - such as the main hall which can be subdivided into smaller spaces and Learning Resource Centre - sit within a double height volume with large north-facing high-level glazing. The position of these spaces within the plan arrangement of the school ensures that they can be used out of ordinary teaching hours (either by the school or local community groups) without compromising the building's security by closing down the teaching wings that feed off this central node.

The school's circulation spaces have also been designed to maximise their proportions and deliver natural daylight through circular roof lights. Cloakrooms and study spaces broaden the corridor widths through the use of half-height walls to widen the proportion of the circulation route. Finally, the end of each corridor is terminated with full height glazing to ensure that an external view is always visible at the end of a corridor.



Double height Learning Resource Centre

INTERNAL CHARACTER

Internally, a considered palette of neutral materials contrasts with the exposed CLT structure to create a sophisticated and characterful suite of environments where the volume of the space is celebrated and enhanced by natural light. With floor-to-ceiling heights of 3.5m, the scale of the classroom spaces is lowered through the use of suspended acoustic rafts which integrate lighting and other building services. Within classroom spaces, finishes are neutral, durable and supplemented with in-built storage and presentation boards that provide a variety of opportunities for curation and display.

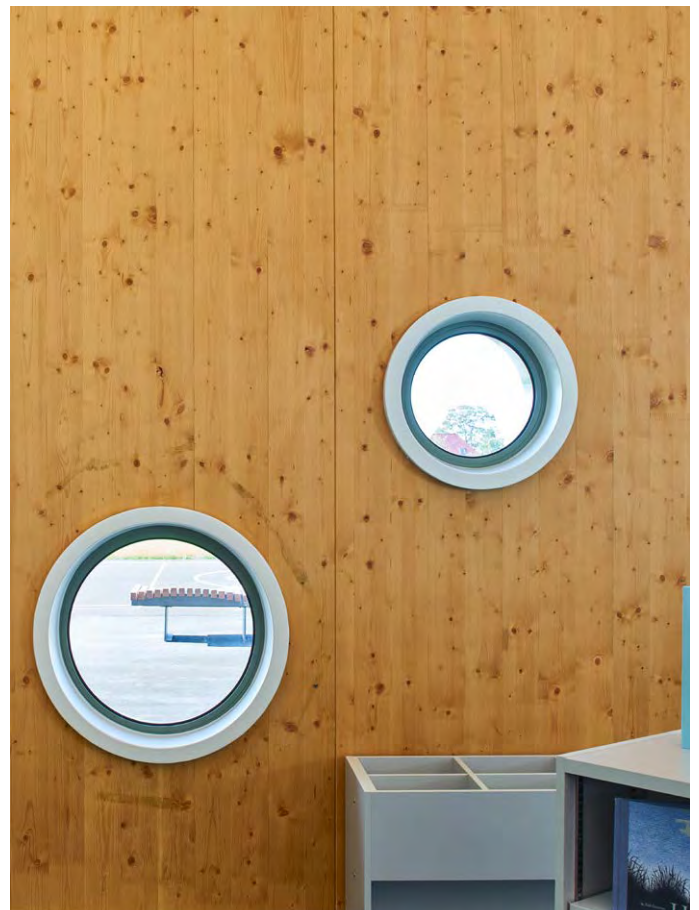
Circulation spaces also utilise a palette of neutral walls, paired with an exposed CLT soffit within inset circular rooflights. Again, the absence of a ceiling in the circulation spaces maximises the height and volume with building services crossing the corridor in an ordered and co-ordinated manner.

The building's support functions, on the adjacent side of the circulation spine to the classroom space has a lower floor-to-ceiling height - to create appropriately proportioned spaces for these smaller functions. This also creates a bulkhead for the distribution of building services around the building outside of the full-height areas.

Within the circulation spaces, cloakrooms, group study rooms and bathroom areas are coded through a distinct, but limited colour palette of blue, orange and green that creates a Corbusian influenced use of colour to contrast with the neutral finishes elsewhere. This not only adds character, but also variety to the linking spaces throughout the building.



Strategic use of colour to bring character to common parts



Use of exposed CLT and porthole windows at varying heights

CLADDING + RELATIONSHIP TO SITE

Ermine Street Church Academy has two distinct facade treatments: to the public facing spaces, the elevations are clad with polished, white pre-cast concrete panels, punctuated with porthole windows set within. To the private, playspace side, elevations are comprised of full height bands of glazing (incorporating access doors and high-level opening vents) and sinusoidal metal cladding panels, in a natural metallic finish. Both the pre-cast concrete and sinusoidal metal cladding have a level of reflectiveness that means their visual appearance and quality varies in changing natural light and creates a building that is influenced by conditions and its quality is never static.

Both of these cladding treatments are vertically aligned, to create commonality between the two elevations and to guide the eye towards the generous CLT roof structure that overhangs the building - creating covered playspace and natural solar shading. On the public forecourt elevation, a consistent, recessed plimsoll line of dark louvre grilles sits between the pre-cast concrete and CLT roof panels, creating a visual shadow gap and allowing the building's services to distribute over a wider expanse and limiting the need for a dedicated bank of grilles.

The polished pre-cast concrete creates a civic feeling of robustness and quality to the public forecourt elevations. It is designed in conscious contrast to the adjacent residential buildings, designed in a traditional masonry aesthetic.

The pre-cast concrete references the solidity of masonry architecture whilst providing a visual contrast appropriate to a civic building surrounded by a domestic architecture. The pre-cast wall that surrounds the building continues to provide a 'garden-wall' that creates a secure site boundary without relying on a traditional security fence. This ensures that the building is welcoming, whilst still maintaining the school's vital security requirements.

The building's form, in particular the angle of orientation of the forecourt wings, is arranged to continue key geometries of the public realm - including the linear park that runs through the centre of the masterplan and terminates within the school's forecourt, therefore ensuring that the school is an integral part of the masterplan and provides a civic focus for the developing neighbourhood.



External view of main building forecourt elevation



External view of playground elevation

STRUCTURE

As with other buildings designed by AHMM within the Alconbury Weald masterplan, Ermine Street Church Academy utilises a Cross Laminated Timber (CLT) and Glulam frame, designed with timber-frame specialists KLH.

The CLT frame brings a number of benefits to the building. Aesthetically, the timber is part of a limited palette of materials and is exposed wherever possible. Offset by secondary finishes, the composition of the timber with other neutral colours and considered lighting contributes to the welcoming feeling of the school building.

Additionally, a timber frame also has sustainability benefits, using timber sourced from sustainable PEFC certified forests, where new trees are planted to replenish those used to create CLT planks. Additionally, the use of CLT allows the structural panels to be used as fuel at the end of the building's life.

Primarily, the CLT frame enabled an extremely tight construction programme to be met. The prefabricated nature of the CLT frame meant that it took just over 2 months to install the full structure and with limited lorry deliveries and specialist operators, keeping the construction team efficient and effective.



SERVICING

Simple Robust Servicing

A simple, resilient servicing strategy was implemented in order to improve the building's environmental credentials and to meet specific requirements for education buildings. Each classroom space has a hybrid 'Breathing Building' unit within the roof structure that conditions the classroom space. This is partnered with opening vents within the building's facade.

Within summer months, fresh air is drawn in through the building's facade and exhausted through the hybrid unit at roof. During winter months, the hybrid unit intakes fresh air, pre-heats his air through an integrated heat exchanged before distributing it into the classroom space and exhausting again once it has circulated. The unit is linked to a visual display that measures air quality and environmental conditions to assist the teacher in knowing how to efficiently operate the building's services.

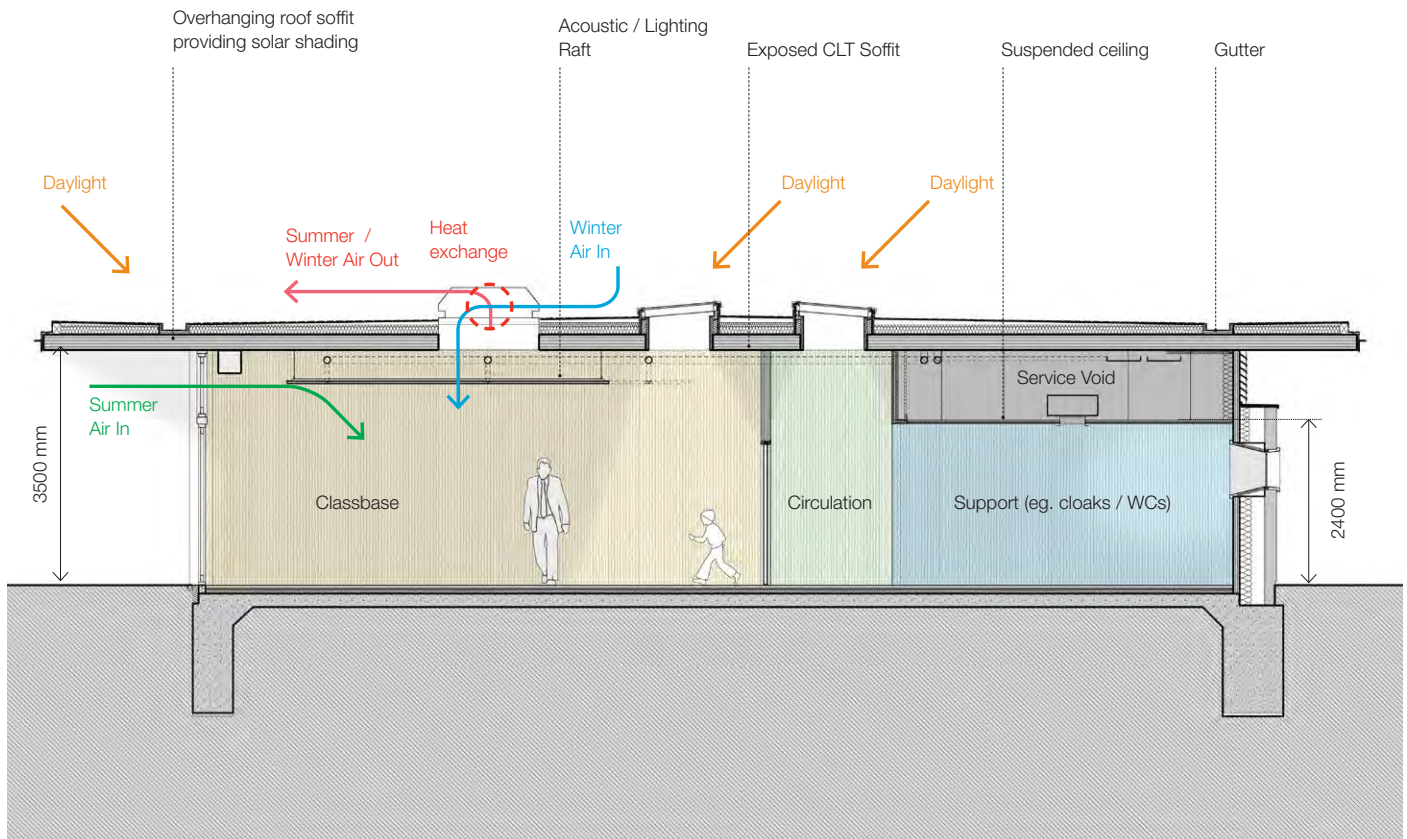
High-efficiency underfloor heating is used throughout the school to provide low energy heating, which is partnered with high-efficiency LED lighting throughout the teaching and circulation spaces.

Environmental Design

As a single storey building, the overhanging roof structure of exposed CLT is used not only to provide covered play space, but also to provide passive solar shading to the full height glazing and the classrooms within. The depth of these overhangs varies depending upon the orientation of the wing on which they are situated, and the differing sunlight conditions that fall upon them. They are detailed so as to be part of the architecture, as opposed to additional 'bolt-on' elements. Detailed acoustic studies were undertaken to ensure the acoustic comfort of all building users.

Generous Volumes

Tall ceilings, exposed structural slabs and downstand glulam beams result in generous, well-lit volumes throughout the building that increases the natural daylight penetration, allows for efficient and even distribution of artificial lighting and gives a more pleasant working environment. This, partnered with generous glazing bays means that all teaching spaces have high levels of natural light that can be controlled by the classroom teachers.



Annotated section showing servicing strategy

MATERIALS + METHODS OF CONSTRUCTION

CLT Frame

The Cross Laminated Timber frame sits on a concrete ground floor slab. The CLT frame has aesthetic, sustainable and notably, construction benefits.

The pre-fabricated nature of the CLT frame means that the building frame could be assembled in 10 weeks, enabling the project's tight construction programme to be met.

Transparent: Curtain Walling

The large bays of curtain walling to the classroom spaces are designed to maximise natural daylight penetration into the building's teaching spaces and integrate opening vents and doors providing each classroom with direct access to the external play spaces.

Solid: Pre-Cast Cladding

Polished, white pre-cast cladding wraps the building's public elevation and is expressed vertically to create a regular rhythm of 200mm modules that create a micro-grain to the 150m long front wall of the building. This regular rhythm is punctuated through the use of porthole windows at varying heights that create a playful and engaging facade treatment.

Solid: Metal Cladding

The sinusoidal metal cladding panels that form the rear wall of the school are used in between the full-height glazed bays are similarly vertically aligned. The detailing of this material was given careful consideration to ensure that sharp edges are properly finished and do not present a danger to young children.

Finishes

The internal finishes of Ermine Street Church Academy are generally self-finished and are selected to encourage a robust functional aesthetic. This contributes to reducing the building's maintenance and refurbishment strategy.



LANDSCAPING

The external playspace landscaping within the school's grounds has been designed by Wynne Williams Landscape Architects, with the external public works by Bradley Murphy Design as part of their works considering the masterplan-wide landscaping strategy.

The public forecourt outside the school's main entrance has been designed to be a public gathering space, with a variety of hard and soft landscaping to add variety and interest to the building's forecourt in a semi-formal arrangement. Integrated benches provide resting spaces for parents waiting to collect students from the school.

The school's playspaces are a similar mix of hard and soft landscaping elements to provide a variety of formal and informal play experiences. Sports pitches are accompanied with small allotments, trim trails and external classroom spaces distributed around the secure play areas.

All landscaping elements, particularly those within the school's curtilage have been selected to ensure that they use species and planting that offer visual variety, low maintenance, encourage wildlife and crucially do not produce fruits or nuts that may be harmful to the young users of the building.



Illustrative Site Plan with landscaping features highlighted

SUSTAINABILITY

An important ambition for the project was to ensure that it was environmentally sustainable and aimed to achieve a BREEAM Very Good rating. The developing nature of the wider Alconbury Weald masterplan limited the ability to achieve some BREEAM points, (such as public transport, access to local amenities, etc) which are easily achieved in buildings within more established urban contexts. This in turn limited the ability to achieve a higher BREEAM rating.

Sustainable design was a key consideration through the design development, with features such as the building's solar shading being integrated into the architectural proposal.

Central to the building's sustainability strategy is the use of Cross Laminated Timber which forms the primary structural frame. CLT brings a number of sustainability advantages; it is a renewable material that stores carbon through its usable lifespan, it is a natural thermal insulator that avoids thermal bridging and forms an airtight envelope as it is a relatively lightweight material with less need for deep foundations with high embodied energy. The CLT and Glulam frame is from a sustainable source where the trees taken to produce the panels are replaced and renewed. Prefabricated CLT panels reduce site waste and surplus material was made into bespoke furniture for the building.

Energy performance

The overall U-value of the building exceeds Part L requirements, partly due to the use of a CLT/Glulam frame, in companion with the flat foundation concrete slab that has the additional advantage of high thermal mass that works in tandem with a mixed model ventilation system.

The glazed cladding bays permit daylight penetration into the teaching spaces and enhance direct access to the external playspace.

A solar-shading canopy and anti-glare blinds were introduced to the teaching spaces elevation to reduce overheating to the glazed areas of the building. An assisted natural ventilation unit was used to provide fresh air to the building, even in the winter months where this air was preheated by the same hybrid unit to prevent chills and drafts. Photovoltaics on the building's roof also contribute to the building's energy usage.

Social sustainability

Good public transport access and a dedicated cycle store and scooter spaces all promote community use, designed to be accessible to all without the need for a large-scale visitor's car park.

The school building incorporates shared community facilities within itself, to encourage engagement outside of teaching hours and ensure that the building is a key part of its local context and environment. New landscaping and wildflowers enhance the building's surroundings and promote biodiversity across the site.

| Gross Floor Area: 3,566 m ² | Treated Floor Area: 3,566 m ² |
|---|---|
| Annual energy demand and CO ₂ emissions for heating | 17.41 kWh/m ² |
| Annual energy demand and CO ₂ emissions for cooling | 0 kWh/m ² |
| Annual energy demand and CO ₂ emissions for ventilation | 3.87 kWh/m ² |
| Annual energy demand and CO ₂ emissions for electricity | 18.41 kWh/m ² |
| Onsite Energy Generation (by Photovoltaics) | 3.19 kWh/yr (total) |
| Total annual CO ₂ emissions /m ² treated floor area | 13.3 kgCO ₂ /m ² |
| Airtightness test (average) | 2.33 m ³ /hr/m ² @ 50pa |
| BREEAM Rating | Very Good |

Post Occupancy Evaluation

Following the building's completion, AHMM completed a series of post-occupancy evaluation visits to the school - speaking to the head teacher, facilities manager, staff and students to record their qualitative views of the school, in addition to taking a series of quantitative readings to assess the building's performance. These findings were summarised in a simple report, shared with the school, and reiterating the building users' views that the light and quality of the teaching spaces were of an excellent standard and contributed to the wellbeing of the building users.

VISUALISATIONS



External view from Green Taxiway



External view of playspace



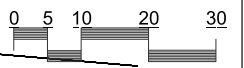
External view of main building forecourt

DRAWINGS

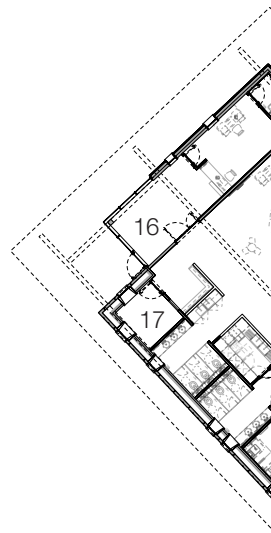


Location Plan



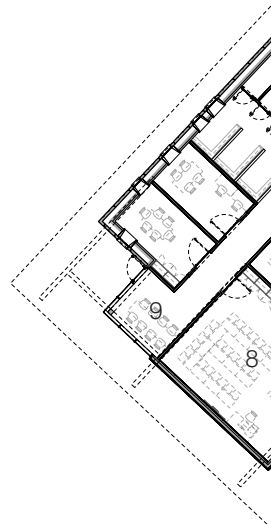


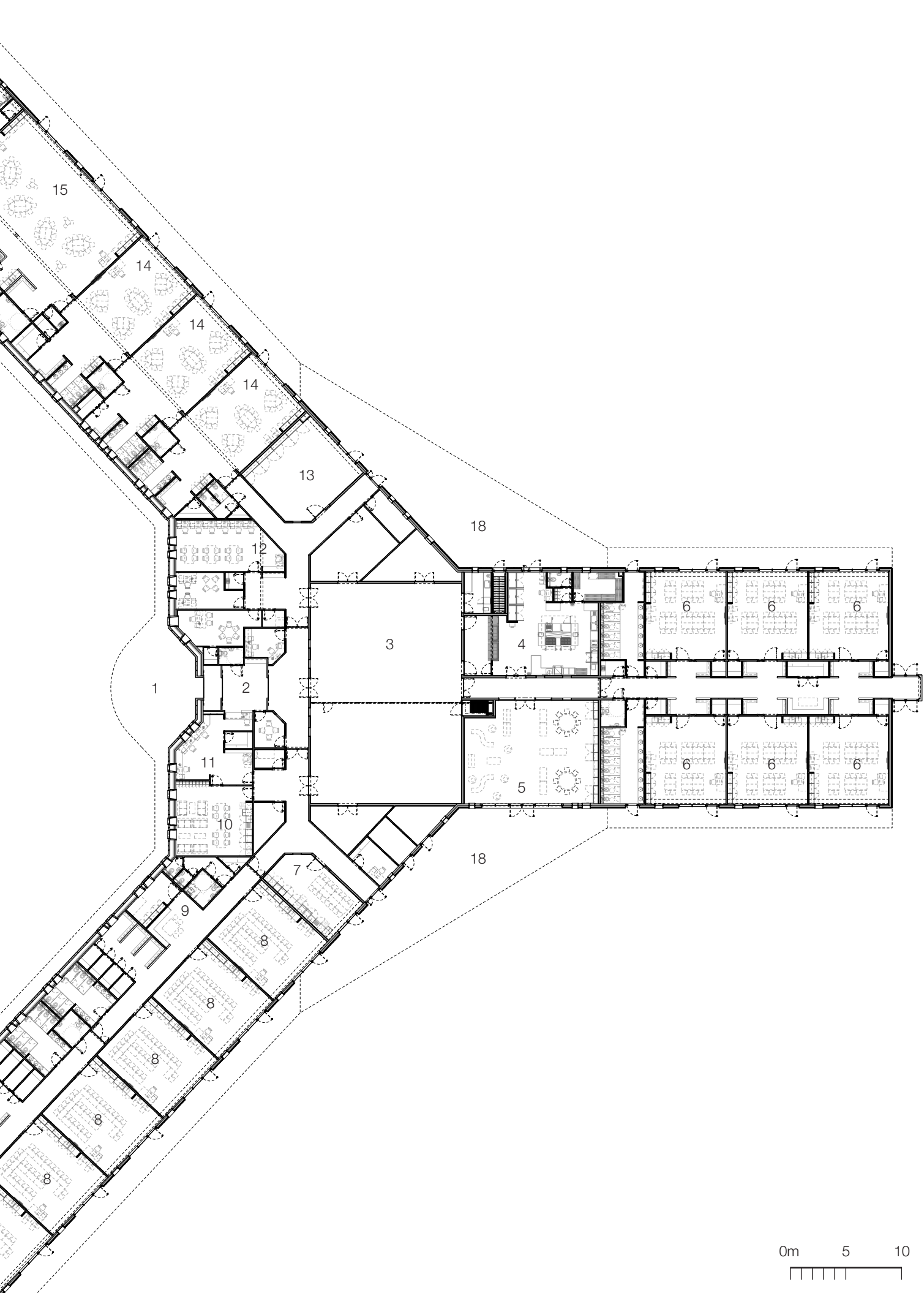
DRAWINGS



KEY

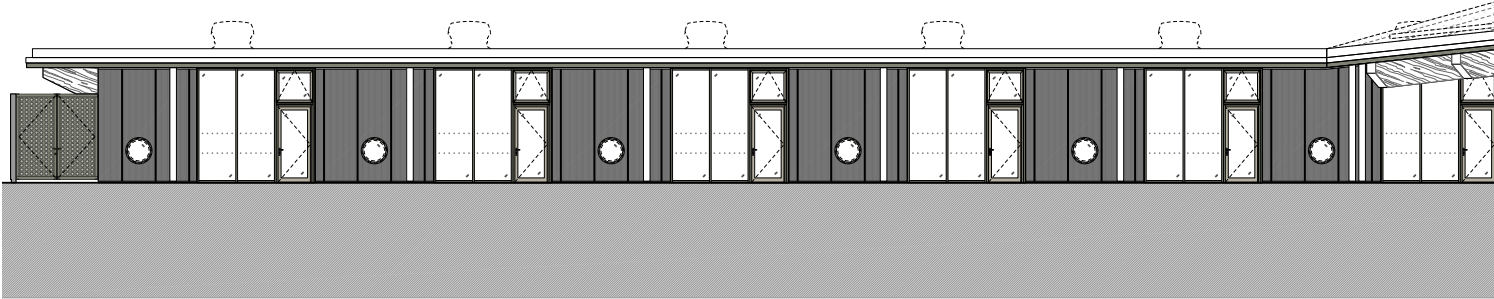
- 1 Main Entrance
- 2 Reception
- 3 Main Hall
- 4 Kitchen
- 5 Learning Resource Centre
- 6 KS1 Classbase
- 7 Food Technology
- 8 KS2 Classbase
- 9 Group Learning
- 10 Staff Room
- 11 Main Office
- 12 Senior Staff
- 13 Small Hall / Music
- 14 Reception Classbase
- 15 Pre-School
- 16 Pre-School Reception
- 17 Quiet Room
- 18 Covered External Play



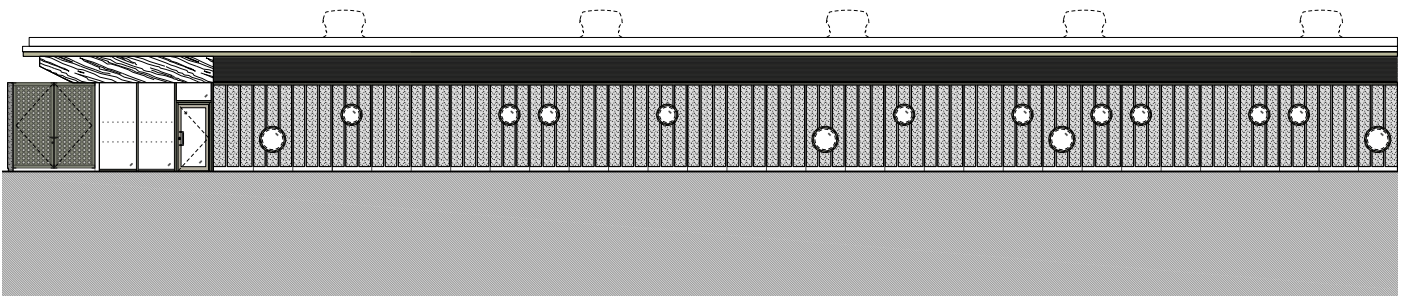


Ground Floor Plan

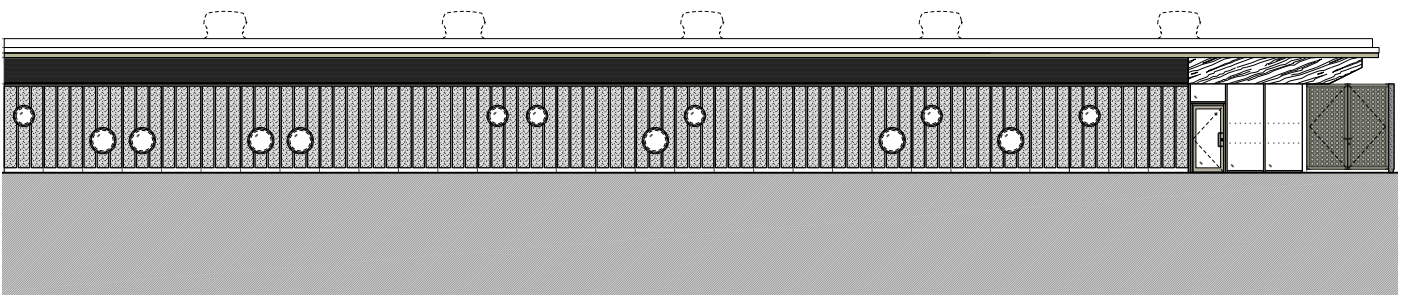
DRAWINGS



Playground Elevation (South)

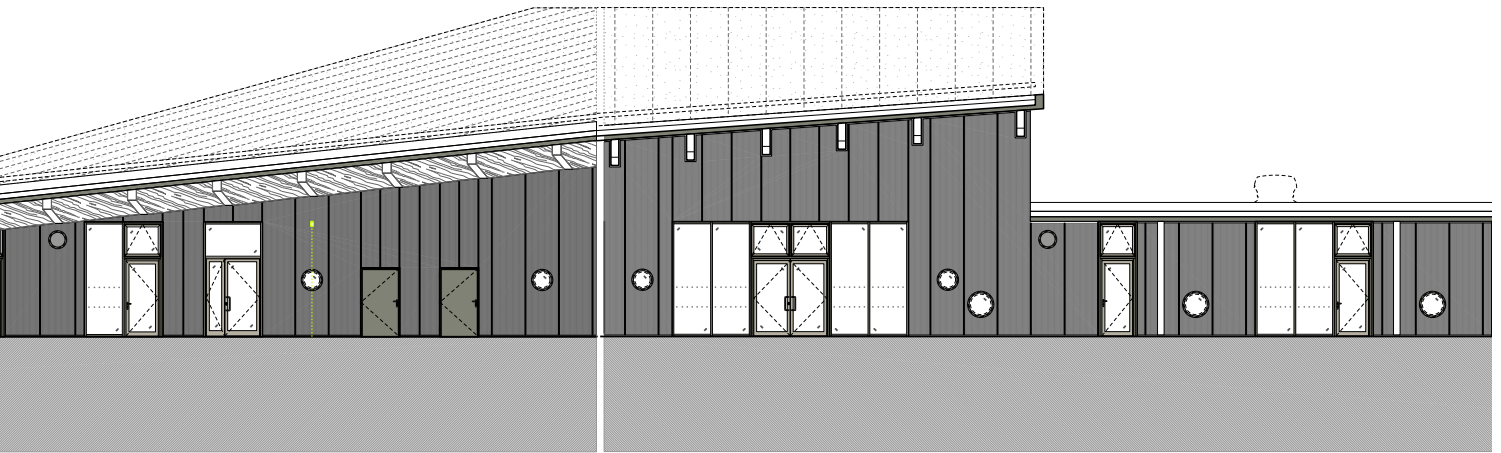


Forecourt Elevation (North) - continued opposite

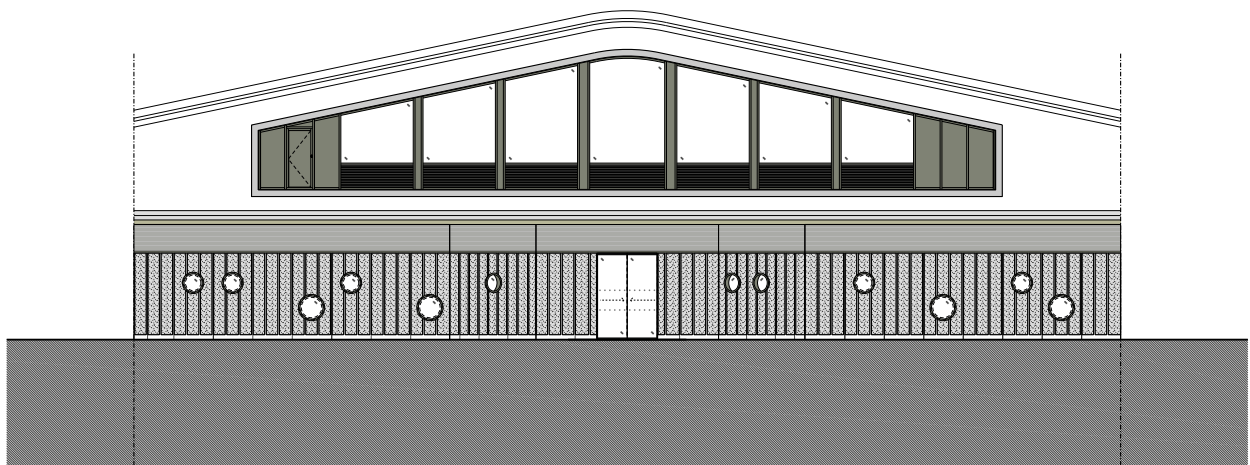


Forecourt Elevation (South)

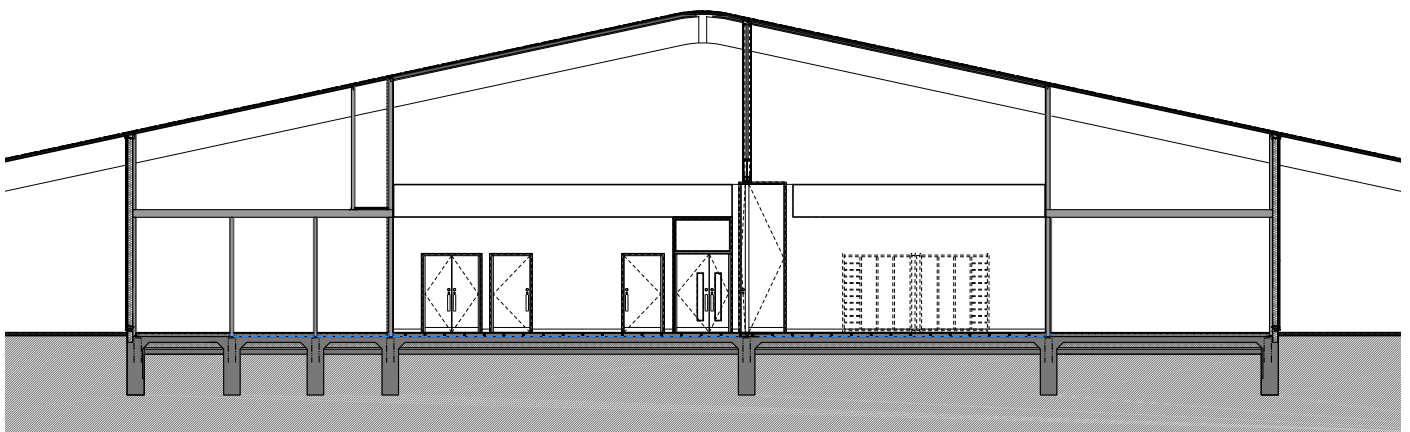
0m 1 2 3 4 5 6



Playground Elevation (West)



Forecourt Elevation (Centre) - continued below left



Long Section through Double Height Main Hall

FINAL PHOTOS

Photographs by Tim Soar



Ermine Street Church Academy from approach







Internal View of Glazed Wing Ends and External Entry Gates



Overleaf : Internal View of double height Learning Resource Centre

Internal View of Cloakroom Space





View of External sinusoidal metal cladding



Internal View of typical classroom



Overleaf : Internal View of teaching space with exposed CLT as a prominent part of the architectural character

External View of the building and school playground with double height roofscape

