

UK PRODUCT GUIDE VERSION 12.0

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About Panattoni

Panattoni is the world's largest privately owned industrial logistics property developer.

Since our founding in 1986, we have developed in excess of 580 million sq ft of commercial and industrial space worldwide. Now delivered via over 50 offices in the United States, Canada, Europe, the UK and Asia, our global platform is utilised by over 2,500 clients.

By some margin, we are the UK and Europe's largest developer of industrial logistics space. Since 2005, we have developed more than 200 million sq ft of speculative and build to suit projects across the UK and Europe.

While we are justly proud of this record, we have our eyes firmly fixed on the future. Our commitment to innovative building techniques and flexible new working practices puts us at the forefront of high quality, low carbon design and value for money development.

Whether you are a land owner, occupier or investor, you can look forward to the highest standards of professionalism and service.

Overall, our aim is to provide you with the quality of product on which your business can depend. This is achieved through our continual investment in engineering improvement and employing a 'best in class' supply chain, supported through our experienced management team.





At Panattoni, we understand the vital importance of sustainability, and our developments reflect this. Every new build is subject to our Target Net Carbon Zero programme, reducing and offsetting embodied carbon, and minimising energy use and emissions for our occupiers.

Sustainability

Delivering Sustainability For Our Customers

Panattoni is already delivering sustainability on an unrivalled scale.

Our approach to sustainability is shaped by our longstanding experience creating spaces for the logistics industry. By its very nature, logistics requires connected thinking on a global scale; we have simply taken that approach and applied it to drive our sustainability agenda.

In practical terms, what does that mean?

- Committed to our Net Zero Carbon Programme
- Developments designed from the outset to meet European sustainability standards
- All buildings are designed to achieve
 a BREEAM 'Excellent' rating
- A minimum EPC rating of 'A'
- Complying with the UK Green Building Council Framework
- Warehouse roof loading designed for 100% PV coverage
- A commitment to quality, creating buildings
 with longer life spans
- Locations close to major trunk routes and population centres, reducing road miles

Panattoni UK is committed to a programme to deliver all buildings as Net Zero Carbon in construction, in line with the UK Green Building Council Framework, by 2030. Several buildings have already been completed as NZC, and through minimising carbon production in the supply chain and offsetting mechanisms, we intend to achieve NZC on all buildings well in advance of the target date.

Our approach to sustainability reaps dividends for our customers, as a low carbon, sustainable space is also an efficient one. Our commitment to driving down consumption of key resources such as energy and water empowers our occupiers to do more with less, reducing their running costs as they do so.

Joined-up thinking around sustainability also requires that we think outside the box. We don't treat the green spaces around our developments as an afterthought, but as an opportunity to enhance biodiversity and protect nature.

In providing shared green amenity spaces, we also deliver workplaces that make people feel better by nature, improving well-being for workers and within the local community.

Panattoni may be Europe's biggest industrial logistics developer, but we never rest on our laurels. We understand that the decisions we make as a company have global reach and an out-sized impact not just for our customers, but also for our investors and our planet. Our responsible approach to sustainability is key to achieving the long-term goals of all our stakeholders.









BREEAM

Every Panattoni building is designed to achieve a BREEAM 'Excellent' rating.

BREEAM, established by the Building Research Establishment in 1990 and continuously updated since, is the world's longest established and most widely acknowledged method of assessing, rating, and certifying the sustainability of buildings.

As part of our flexible sustainability offering, Panattoni works directly with customers looking to achieve the BREEAM 'Outstanding' rating.

To meet this rigorous standard, we undertake:

- Early-stage planning
- Brown field location sourcing
- Enhanced sustainable build specification
- Additional sustainable construction measures





Air Tightness

Air leakage or 'air permeability' guidelines are set out in Part L of the Building Regulations, which stipulate an air leakage rate of 8m³/m²/hr at 50 Pascal.

Through superior design and careful detailing, Panattoni buildings dramatically reduce leakage, far exceeding statutory targets. In many cases we achieve a leakage approaching only 1m³/m²/hr.

Better By Every Measure

EPC Ratings

All Panattoni buildings are designed to achieve an EPC 'A' rating. This offers significant annual savings in energy consumption for the life cycle of the building and guarantees it will be over 40% more efficient than a building only conforming to building regulations.

Water-saving

Potable water is necessary for life and all businesses should manage it wisely. Panattoni's specification helps occupiers achieve savings amounting to 6,000 litres of water per day for a 215,000 sq ft facility, via:

- Rainwater harvesting systems
- Water conserving sanitaryware including dual flush, low flow cisterns and automated urinals
- Low flow aerated taps and shower heads
- Water meter and water leak detection systems to monitor water consumption



Thinking Outside The Box

The green spaces surrounding our developments are opportunities to protect nature, enhance diversity and improve well-being.

Nature and Biodiversity

- Investigating the ecological footprint of each development to create a site-specific mitigation, protection and enhancement plan
- Landscaping with trees, shrubs and grasses, to enrich the surrounding ecosystems
- Habitat creation for key protected species
- Shelters for invertebrates, insects and birds, protecting and promoting biodiversity
- Sustainable urban drainage measures, taking into account the effect of climate change on global weather patterns

Green Transport

- Electric vehicle charging points, with infrastructure for additional charging points as required
- Bicycle parking shelters
- Schemes located to minimise car travel
- Develop a green transport plan in collaboration
 with local planning authorities
- Car sharing and bicycle sharing schemes

Natural Amenity

- · Green breakout spaces to meet up and socialise
- Footpaths and trim trails accessing nature areas
- Pedestrian and cycle paths for zero carbon access











¹ PANATTON⁷ Sustainable Warehouse

-States and States





LED Lighting

Twin-Therm

Photovoltaic

Cladding

Ω.

Resource 600 Metering



Target EPC A Rating



Rainwater Harvesting





Water Leak Detection



Recycled Content Carpet Tiles



Recycled Content Ceiling Tiles

Water Saving Taps



Dual Flush Toilets





- 1. Contaminated land at Panattoni Park Slough prior to remediation
- 2. Creating plateaus at Panattoni Park J28 Central M1
- 3. Demolition and site clearance at Panattoni Park Aylesford



Site Preparation

Panattoni is highly experienced in site preparation and enabling works including:

- Demolition and site clearance
- Service and drainage diversions
- Remediation of contaminated ground
- Ground improvement
- Ecological mitigation
- Major earthworks
- Formation of serviced plateaus







- 4. Recyclable materials reclamation
- 5. Lime stabilisation
- 6. Brownfield remediation















Infrastructure

Panattoni has an excellent track record in delivering:

- New roads, roundabouts, junctions and bridges
- Highway improvements
- Drainage and utility connections
- Rail infrastructure



ering: ges



- 1. Completed highway improvement works
- 2. Plateau works
- 3. Laying rail track
- 4. Laying track bed
- 5. Surfacing new road
- 6. Highway improvement

Warehouse Structure & Envelope

The warehouse frame and envelope are key elements which protect the operations being carried out inside.

Developed with our supply chain partners, the Panattoni structure and envelope specification delivers spaces demonstrating the highest standards of quality, efficiency and durability. Every element is designed to meet an occupier's requirements into the future.

Our structural column spacing is optimised to accommodate a wide range of racking configurations. Warehouse floors are constructed to a high standard of surface flatness, with floor joints coordinated to the customer's racking configuration to minimise conflicts. Our standard wall and roof cladding is an industry-leading multi-layer system. With air tightness and insulation far exceeding building regulations, our units cost less to heat, cool and operate. Generous roof lights illuminate the warehouse in daylight hours, again reducing operational costs.

All Panattoni buildings use a syphonic roof drainage system. This benefits customers through reduced maintenance costs and increased internal flexibility. In the unlikely event of a blockage in the primary system, a secondary system continues to drain the roof, avoiding disruption.







Steel Portal Frame

- Standard steel portal frame
- 5-degree roof pitch
- Internal column spacing 32m x 16m (standard)
- Column spacing options from 28m to 34m
- Suitable for Wide Aisle or Very Narrow
 Aisle (VNA) racked solution
- Frame designed to British Standard BS 5950 and BS 6399 for dead, superimposed and wind loading
- Frame and purlins capable of supporting service loading for Mechanical & Electrical (M&E) installation of 0.25 kN/m²

- Additional 0.125 kN/m² loading allowance for solar PV installation
- Galvanised sheeting rails within 2m of finished floor installed 'toes down' to prevent build-up of debris

Alternative Steel Frame Construction

Specific to customers' requirements.

- Propped portal frames (displace water to outside of structure)
- Low pitch or flat roofs (defined as below 5-degree pitch)
- Barrel vaulted roofs
- Super high bay frame



Robust Detailing

- Enhanced Twin-Therm® Chronus roof specification providing improved thermal and air-tightness performance, catering for a range of internal environmental conditions including 'chilled store' distribution with internal temperatures as low as 0°C
- · Galvalloy® pre-coated steel manufactured in either Colorcoat HPS200 Ultra® or Colorcoat Prisma®
- All cladding junctions thermally broken with specific psi-value (thermal performance) and f-factor (condensation risk) analysis
- Stainless steel fixings
- Euroclass A1 (non-combustible) Therma-quilt mineral wool insulation
- Minimum thermal insulation (U-value) 0.18W/m²K

Roof Lights

- 15% roof lights across roof area, the optimum to maximise daylight
- Non-fragile Therma-light triple skinned GRP rooflights providing a minimum U-value of 1.30W/m²K
- Roof lights positioned equally across warehouse roof

Roof Access

- Fully walkable (metal) Twin-Therm® roofing system and Class 'B' Non-Fragile (inclusive of Therma-light rooflights)
- · Permanent roof access ladder with Horizontal Life Line (HLL) system where necessary to allow access for maintenance and inspection



Environment

- Minimum 15% rooflights with optimised placement maximises natural light within the warehouse interior. The decreased use of lights saves electricity, reduces operational costs and the amount of emitted carbon
- All components are manufactured in the UK
- Independently assessed Life Cycle Analysis (LCA) based on Environmental Product Declarations (EPDs) calculated in accordance with EN15804
- 98% of all general waste and 100% all metal, cardboard, plastic, wood and electrical (WEEE) waste is recycled during manufacturing
- Therma-quilt insulation is manufactured from natural materials including a minimum 80% recycled glass
- Therma-quilt has a zero Ozone Depletion Potential (ODP) and zero Global Warming Potential (GWP) in both manufacture and content
- Roofs are designed PV ready
- 'A+' rating within the BREEAM Green Guide to Specification

Warranty

Built-up Twin-Therm® roof system supplied with a complete building envelope guarantee of 25 years from CA Group, including roof lights and all fixings.





- 1. Cutaway of a syphonic system
- 2. Syphonic system diagram
- 3. Gravity system diagram
- 4. Internal rainwater pipe work is installed above the minimum haunch height of the building

Rainwater Drainage

- Gutter system manufactured from a minimum 1.2mm thick pre-galvanised steel complete with 1.2mm prelaminated PVC membrane to all boundary wall and valley gutter applications
- Minimum 50mm thick Euroclass A1 (non-combustible) Therma-rock rock fibre insulation
- Roof drainage BS EN 12056 3:2000 compliant with minimum discharge risk rating of Category 3. Equivalent to a rainfall intensity of 200mm/hr
- Syphonic system installed with both primary and secondary drainage system
- Primary discharges to underground storm water network
- Secondary discharges to air above hard standing
- Indicative weir outlets provided at the end of the valleys and to perimeter gutters to provide advance warning of a maintenance requirement

Rainwater Harvesting

A portion of rainwater from the roof is diverted into a storage tank to be re-used internally or externally

Warranty

• 25 year building envelope guarantee

Options and Alternatives

Traditional gravity rainwater system







Stormwater Attenuation



Various systems are used to capture and store rainwater falling on the site. The water is then released slowly to protect drainage infrastructure and downstream watercourses.



External Wall Cladding

Main Supplier:



Built-Up Cladding System

- Enhanced Twin-Therm® Chronus
 wall specification providing improved
 thermal and air-tightness performance
- Euroclass A1 non-combustible
 Therma-quilt mineral wool insulation
- LPCB LPS 1181 part 1 certified for fire performance
- LPCB LPS 1175 certified for security performance
- Stainless steel external fixings
- Carbon steel internal fixings
- Minimum thermal insulation (U-value) 0.26W/m²K

 Caters for a range of internal environmental conditions including 'chilled store' distribution with internal temperatures as low as 0°C, eliminating the requirement for a 'boxwithin-a-box' building design

Environment

- All components are manufactured within the UK
- Colorcoat® High Reflect internal liner panel with ≥85% reflectivity to reduce internal lighting requirements and improve daylight factor by up to 10%
- Independently assessed Life Cycle
 Analysis (LCA) based on Environmental

Product Declarations (EPDs) calculated in accordance with EN15804

- 98% of all general waste and 100% all metal, cardboard, plastic, wood and electrical (WEEE) waste is recycled during manufacturing
- Therma-quilt insulation is manufactured from natural materials including a minimum 80% of recycled glass content
- Therma-quilt has a zero Ozone
 Depletion Potential (ODP) and zero
 Global Warming Potential (GWP) in
 both manufacture and content
- 'A+' rating within the BREEAM Green Guide to Specification











Options and Alternatives

- standard buildings
- Design' certification

Quality Assurance

- of the cladding
- All buildings are subjected to an air test once the envelope is complete. The more air tight the build, the less energy escapes. This lowers the environmental impact and reduces bills for the occupier. The Chronus system offers air permeability as low 0.33m³/hr/m² at 50pa
- Single source supply

- BES 6001 (Responsible Sourcing of Construction Products) certification for all coated steel materials

Warranty

components utilised.

- Structural cladding system without the need for sheeting rails, especially beneficial to food hygiene
- Optional stainless steel internal fixings can be offered for humid or corrosive internal environments
- LPS 1175 certification for intruder resistance and security performance, with 'Secured By
- 'FM Approved' built-up roof and wall cladding system inclusive of Therma-light GRP rooflights

• An independent cladding inspector carries out inspections during the installation and at completion

- Periodic inspections of the building envelope (free-ofcharge) for the duration of the envelope guarantee
- · Independent testing for fire, structural, thermal, acoustic and durability performance
- · Therma-quilt insulation is Euroclass A1 certified for non-combustibility to BS EN 13501-1
- ISO 9001 (Quality Management System) and ISO 14001 (Environmental Management System) certification for manufacturing
- The Twin-Therm® building envelope system with the Caskade® Premier gutter systems, are supplied with a 25 year guarantee from CA Group, inclusive of all





- 1. Arcline steel cladding
- 2. Vertical trapezoidal steel cladding
- 3. Horizontal trapezoidal steel cladding





Floors

Standard Floor

- Minimum design thickness 175mm with power floated finish
- · Designed and installed to Concrete Society TR34 standards
- Constructed in accordance with TR34 4th Edition the warehouse floor will be (Free Movement) FM2 for buildings up to 15m clear internal height and FM1 for buildings higher than 15m clear internal height

Note: If there are specific racking requirements for VNA (Very Narrow Aisle) racking configuration, the floor can be cast to DM1 or 2 (Defined Movement) specification. Alternatively, the standard FM2 floor is flexible and adaptable and can be 'ground in-rack' to comply with DM criteria.

Loadings

- Standard specification 50kN/m² UDL (Uniformly Distributed Load)
- Standard rack leg loadings:
- 10.0m to haunch = 5.0 tonnes
- 11.5m to haunch = 7.0 tonnes
- 12.5m to haunch = 7.0 tonnes
- 15.0m to haunch = 9.0 tonnes
- 18.0m to haunch = 11.0 tonnes

Note: The floor is designed to accommodate a rack leg loading in a back-to-back situation with legs 300mm to centre assuming a base plate size of 100mm x 100mm.

Wearing Surface

- Following the final power floating operation of the floor slab, the surface is sprayed with acrylic curing, sealing and hardening agent
- Minimum AR1 abrasion resistance in accordance with BS 8204 Part II

Note: The slab is the last item to be laid after the building is water and weather tight.





Alternatives

- Armorex topping for colouring and additional abrasion resistance
- · Pigmented for colour
- Fibre reinforced
- Shield joint sealant-free system

Environment

- Where and when possible, Ground Granulated Blast Furnace Slag (GGBS) and Fly Ash can be used in mixes reducing the cement content, both of which are by-product of other industrial activities
- Where possible, high quality Recycled Aggregates (RCAs) are used
- The concrete industry aims at carbon neutrality by 2050

Joints

- Steel edged day joints formed by Permaband Alpha or equivalent
- Permaband Wave option for defined movement and joint less slabs, dock leveller areas and high traffic areas where movements are at 90° across
- Permaband Signature Slide option for joint-free floors, cold store and freezer slabs
- Joints to provide expansion capacity for floor slab
- Day joints on a 50m x 40m grid spacing
- Saw cut 3mm joints every 6m x 6m sealed with mastic on completion of the project
- Low shrinkage concrete to reduce joint width





Concrete floor slab installation:

- 1. Sub-base preparation
- 2. Concrete delivery and pouring
- 3. Laser levelling
- 4. Dry shake topping (option)
- 5. Completed polished floor









Loading

Docks and doors are the arteries of any warehouse; their capacity, location and efficient operation are key to maintaining the flow of goods. Panattoni specify the highest quality doors, installing them in quantities matched to the size of each build.

Level Access Doors



- Level access vertical lift doors
- 4.0m wide x 4.8m high standard door size
- Galvanised sheet steel composite construction
- Insulated sectional panels with micro-rib profile
- Electrically operated with manual override
- Control panel and interlocking bolt to secure
 the door from the inside
- Double glazed vision panel
- U-value 0.4 W/m²/°C
- Safety edge seal fitted to bottom of door. This stops the door if it meets an obstruction while closing
- Fall device to prevent door closing
- Integral finger pinch protection fitted to both sides of door panel. Door tracks and moving components are fully encased for added safety

Fire Exit Doors

 Factory painted galvanised mild steel doors within steel frames to be used either as a fire escape or as a personnel door

Warranty

- 3 year maintenance package included
- 12 year warranty included

Options

- Extra height doors
- Internal rapid rise doors



Internal view of a typical level access door

1. Door motor and gearbox with emergency hand chain

2. Sectional door

3. Cable tray

- 5. Door control panel
 - 6. 1,528mm to underside of vision panel

4. Double glazed vision panel







Dock Doors

Main Supplier: HORMANN

- Dock level access vertical lift doors
- 2.86m wide x 3.0m high standard dock door size
- Electrically operated with insulated sectional panel
- Double glazed vision panel
- Composite construction comprising galvanised sheet steel
- Micro-rib profile
- U-value 0.4 W/m²/°C

- Standard provision of 2 doors per 8m bay
- One door provided per 10,000 sq ft on a single sided warehouse
- One door provided per 7,500 sq ft on a cross docked warehouse
- Safety and security features as per level access doors
- 10% of dock doors are equipped with Euro dock shelters

Dock Levellers

Main Supplier: HORMANN

Specification

- Units more than 150,000 sq ft: Hörmann HLS-2-FR-20-35 fully hydraulic dock leveller -3.5 x 2.0m (length x width) with 1.0m telescopic lip
- Units less than 150,000 sq ft: Hörmann HLS-2-FR-20-25 fully hydraulic dock leveller -2.5 x 2.0m (length x width) with 1.0m telescopic lip
- 6,000kg single axle load
- 10mm thick steel platform slip resistant
- Rubber draught seal to the edges
- Tailgate slots

Increased height shelter

Features

- Dock shelters: Hörmann DTS heavy duty scissor type retractable dock shelters, with crash resistant side frames. Reinforced front and side flaps
- Steel faced rubber buffers on each dock
- LED traffic light system. External, long-life red and green traffic lights positioned to provide clear, unobstructed visibility to vehicles in parked position
- Automatic control panel with internal 'mimic panel' to show the traffic light colour being displayed externally
- Dock spot lights: Hörmann high output LED dock light system mounted on swivel arm bracket to illuminate vehicle interior

Dock doors and dock levellers operated by a single combined panel





Options

- Taller shelters for double deck trailers



Dock door and leveller



Internal view of dock doors and levellers



Dock Walls

- ProWall used as standard
- Precast insulated concrete
- Prefabricated off site
- Enhanced speed of construction
- High quality finish
- Highly durable and knock resistant
- No maintenance

Dock Pits

 Proprietary precast dock pit solution with tailgate slots

Options

- Single ProWalls
- Double ProWalls
- Infill kits for future proofing











Offices

Office areas are fitted out to a Category A standard and designed to maximise flexibility.

The minimum number of columns and their spacing provides the opportunity to create a fully open-plan office, without restricting the ability to subdivide the space.

Specified finishes are of the highest quality. Where practical, we use recycled materials and environmentally friendly products.

The mechanical and electrical services are selected to maximise performance and flexibility, whilst reducing energy consumption.

The reception area includes a high proportion of glazing to provide natural lighting. Finished to a high standard, a feature wall frames the space for a reception desk. Stairs and a passenger lift provide access to the upper floors.

In many cases, the ground floor space beneath the raised main offices offers further opportunity for customisation. Drainage points are provided, offering the potential for the addition of staff changing and welfare facilities, offices and meeting rooms, or communications rooms.

For larger warehouses, dedicated transport hub offices are provided to the loading elevations.

Structure & Envelope

- Structural steel frame
- Ground bearing concrete slab
- Precast or in-situ upper floors: Superimposed load of 4.0 kN/m² with an additional 1.0 kN/m² for lightweight partitions
- Where offices are constructed on the first floor, a 6m clear height undercroft storage area will be provided
- Plant room either on top of internal offices or on suspended deck 7.5 kN/m² loading
- Roof built to same high specification
 as warehouse but without roof lights

Curtain Walling & Windows

- High quality curtain walling
 and glazing system
- Powder coated aluminium frame
- Anti-sun double glazing with 6mm clear glass. 16mm argon filled spacing between glazing sheets
- U-value 1.5m W/m²/°C
- 1 in 3 windows can be opened

External Doors

- High quality Schüco or equivalent
- Polyester powder coated
- Power assisted or automatic









- 1. Optional external wood cladding
- 2. Curtain walling under construction

Lift

- Precast concrete lift shaft
- 10 person hydraulic passenger lift:
 - Stainless steel doors and surrounds
 - Stainless steel or decorative laminate interior walls with mirror
 - Tiled lift floor

Options

Fire-rated viewing windows from office
 into warehouse

- 3. External walls and standard hub office
- 4. Brise soleil are installed on exposed elevations

Environment

- Curtain walling system manufactured from aluminium with a minimum 40% recycled content
- With input at the design stages, solar glazing can be implemented to reduce M&E cooling requirements
- To reduce solar heat gain on exposed elevations, brise soleil and solar shading is installed as required



Internal Walls

- · Proprietary high-density plasterboard partitioning system – Lafarge/Siniat Megadeco
- · Emulsion painted plaster: colour to suit
- Toilet walls: Full height ceramic tiling with feature band
- Reception area: Full height ceramic feature wall tiling

Ceilings

- Armstrong Dune Plus 600mm x 600mm regular tiles in a suspended ceiling with perimeter shadow battening
- 2.7m ceiling height in offices
- 2.4m ceiling height in welfare areas



Internal Finishes & Fittings

High efficiency LED lighting

brightness diffusers

• 500 lux at 850mm above floor level

• Passive Infra-Red (PIR) and auto

dimming sensors as standard

• Lay-in modular light fittings with low

Lights

- Floor
- Raised access floor with minimum 150mm void – Hewitson RMG600
- Carpet tiles in choice of colours -Heuga Transformation
- Floor boxes: 1 per 10m². Box incorporating electric twin socket, twin back plate telecom point and twin blank plate for data.

- · Power sockets connected to busbar with 3m flexible cable lead so floor box can be moved to suit
- · Reception area:
- Enhanced feature ceramic tile floor finish
- Floor box for future reception desk
- Toilet: ceramic tiled floors and skirting

Doors & Joinery

- American light oak throughout skirting, architraves, window boards and doors all from sustainable sources
- Stainless steel door handles, hinges and ironmongery
- Door locks suited to customer's requirement

Staircases

- Precast staircase with carpet finish, oak skirtings and 'Gradus' nosings
- Brushed stainless steel balustrades and handrails

Kitchen & Breakout Area

- Howden Joinery base units, work tops and wall cupboards
- Inset stainless steel single drainer sink with mixer tap
- Tiled floor
- Tiled splash back above work tops
- Appliance space under work top

- WCs
- Armitage Shanks (or similar) sanitary whiteware throughout with concealed pipe work and fittings
- High quality Integrated Plumbing System (IPS)
- Dual flushing WCs
- Washbasins with push taps to toilets inset into or mounted on work tops to vanity units
- Toilet compartment fully compliant and fitted for disabled persons in accordance with Building Regulations Part M
- Wet room

- Showers to hub office
- Cleaners' sink with bucket stand and hot and cold water

Environment

- Energy efficient lighting
- Energy efficient heat/cooling
- Smart control systems
- Natural lighting
- Natural ventilation
- Water-saving sanitaryware
- FSC sourced timber
- 100% recycled carpet tiles













Utilities & Plant

Offices

Plant Room

- VRF heating and cooling
- Mechanical ventilation and openable windows
- Minimum P1 fire alarm system
- Mechanical ventilation, extract and electric panel heaters to WCs, transport hub offices and gatehouses
- Heart defibrillator in easily accessed position

Utilities

- Incoming electrical supply sized to serve office and warehouse fit out
- Gas infrastructure for future connection for warehouse
 Energy Monitoring System (EMS) providing granular heating if required
- Telecoms ducts from building to site boundary
- Metered water supply for the office and amenity areas

• Plant located on top of internal offices or on suspended plant deck

Environment

- Air Source Heat Pumps
- Solar water heating
- Rain water harvesting for toilet flushing
- AHU heat exchanger using the vented air to reheat the incoming fresh air
- Building Monitoring System (BMS)
- reporting of energy use

















Service Yard & HGV Access

Brush finished, pavement quality concrete

- Drainage designed to ensure service yards remain operational in storm conditions
- LED floodlights to give minimum average 30 lux at ground level, increasing to 50 lux average to dock areas, timer and photocell controlled
- 2.4m high galvanised palisade or paladin fencing

Gatehouse

- High quality and purpose built to match warehouse
- Electrically operated entrance barriers
- WC and kitchen facilities
- Sliding windows

External Ducts

• Ducts from corners of building to yard perimeter and gatehouse

Landscaping

- Mature trees and plants used to give immediate impact
- Plants specially grown and selected for purpose by specialist contractor
- 12 months maintenance included







Car Park & Landscaping

Car Park

- Tarmac roadways
- Block paved parking bays with 2.4 x 4.8m parking spaces
- Manual lifting arm barriers with ducts from building to facilitate future automation

Landscaping

- Mature trees and plants used to give immediate impact
- Plants specially grown and selected for purpose by specialist landscape contractor

Environment

- High efficiency LED lighting on 6m columns
- Cycle shelter
- Car/van charging stations to a minimum 10% of spaces as standard, with additional below ground ducts providing future proofing
- Permeable paving to reduce rain water runoff
- Recycled glass aggregates used to lay block paving, where available





Optional Extras

Panattoni has extensive experience of the fit out of warehouse and office spaces for our customers.

We can facilitate the integration of customer fit out requirements into the overall building programme, providing significant time and cost savings compared to a fit out after handover.





Warehouse Lighting

- LED lighting system with daylight sensors and auto dimming
- PIR sensors fitted at aisle entrance points or to individual fittings so only active areas have lighting
- Self-contained non-maintained emergency lighting throughout
- Lighting designed to 250 lux at finished floor level or client requirements



Warehouse Sprinklers

- LPC (Loss Prevention Council) or FM Global approved roof coverage sprinkler system including water supplies, with pump and tank all sized to suit the addition of in-rack sprinklers by the customer
- ESFR (Early Suppression Fast Response) roof sprinkler system which negates the requirement for in-rack sprinklers

Note: The maximum clear height at the ridge for an ESFR installation is 13.7m; this equates to a clear height of 11.5m to underside of haunch. This type of system is ideal for customers who require maximum future flexibility, as the racking can be moved without reconfiguring the in-rack sprinkler system.





Warehouse Fire Alarm

- High level beam detectors and final exit break
 glass, with sounders to provide a fully automatic fire
 detection service
- Alternatively, an aspirating system (VESDA or similar) can be provided





Warehouse Heating

- Highly efficient indirect gas fired heating for frost protection (6°C) or ambient temperature (16°C) with floor mounted recirculating heaters
- High velocity jet nozzle heating system for high degree of temperature/humidity control
- Radiant system for specific area of work (to limit running costs)

Note: A Panattoni building benefits from enhanced air tightness, thereby reducing energy consumption in operation.

External Canopies

A 20m deep canopy over the loading area is recommended if level access doors are the main means of transferring goods. This would be built to the same specification as the main building, although not insulated.

Standby Generator

Provision can be made for the following:

- Manual or automatic changeover with external plug-in point for hired generator
- Integrated automatic changeover complete with standby generator fully installed and commissioned



Vehicle Wash

Any work associated with the customer's vehicle wash facility can be incorporated in the construction phase. This avoids any additional costs and disruption caused by excavating through completed works.

Dock Wheel Guides

Tubular vehicle wheel guides can be provided to each of the dock locations. These help minimise potential damage to lorries and docks, which can be caused by poor driving. Wheel locking mechanisms can also be provided.

High level services:

- 1. Heating duct work
- 2. Syphonic drainage
- 3. Lighting
- 4. Sprinkler pipes















Battery Charging Area

Fully enclosed or open battery charging areas can be provided together with power supply, plug-in busbar, drench shower and drainage provisions.



Fuel Island

All substructure drainage, ducts, power supplies and plinths can be provided for the future installation of a fuel island or LPG installation.

Vehicle Maintenance Unit (VMU)

Vehicle maintenance facilities, including dedicated building with inspection pits and exhaust extraction.







Refrigeration

Refrigeration space can be constructed using white wall panels and include all necessary refrigeration plant, including:

- Fire alarm
- Rapid rise doors
- Edge kerb protection
- Heater mat
- Cold air blowers
- Lighting

Security

All aspects of security can be incorporated into the building works, to include:

- Control desk or room
- CCTV
- Intruder alarm
- Swipe card (or proximity reader) access control
- Turnstiles
- Search rooms





Solar Carports

Ground-mounted canopies over car

area is slightly tilted and offers natural drainage for rainwater. Electricity generated by the carports' solar panels is available to be used onsite.

parking spaces. The canopy roof







Other Options

- Strengthened steel frame to accommodate overhead crane
- Additional foundations required for MHE or production machinery
- Internal mezzanines or raised walkways
- Internal division walls, including roller shutter and personnel access doors
- Small power to warehouse
- External power requirements

- Building signage (builders' work and power)
- Public address systems
- Data installations
- Canteen / Mess rooms
- Locker / Changing rooms / Showers
- Office partitioning
- Server room (including power, cooling, fire protection)
- External compactor requirements

- 1. Catering kitchen
- 2. Refrigerated space





Aftercare

To ensure your trouble-free operation of the building, Panattoni will provide detailed manuals and staff training, with a demonstration of all equipment installed.

Your building will be guaranteed for the first 12 months after practical completion. In the unlikely event that you have any issues with the building during this period, it will be addressed promptly, with the minimum of disruption to your business.

Warranties

- 12 years from Practical Completion
- Institutional Warranties provided these include:
- Main Contractor: min. £10m Pl cover
- Architect: min. £5m Pl cover
- Engineer: min. £5m Pl cover
- Warranties also provided from all sub-contractors with a design responsibility, these include:
- Structural steel
- Cladding
- Floor slab
- Precast concrete
- M&E Installation

Operating/Maintenance Manual

The Operating/Maintenance Manual (O&M) is a user friendly guide which includes an interactive guide, detailing correct building maintenance and practice. This will cover all aspects on the construction and services installation, including as-built drawing and maintenance information.

Building Log E-Book

Access to the electronic Building Log Book is handed over at Practical Completion. This covers the operation of the main building services.



Case Studies

Panattoni has an enviable track record of delivering an extremely wide range of both speculative and bespoke industrial and logistics developments across the UK. This vast knowledge gives stakeholders the utmost confidence in our first class delivery.



Amazon, Swindon 2.3



amazon

A record-breaking 2.3 million sq ft unit, the largest single unit letting in the UK.

Swindon 2.3 is a 68-acre complex containing a 2.3 million sq ft build to suit logistics facility for Amazon.

The cutting edge internet retail facility has a 625,000 sq ft footprint. Three floors totalling 1.64 million sq ft accommodate Amazon's extensive automation.

The building also features 66,000 sq ft of ground floor offices, plus 70,000 sq ft of welfare and amenity spaces.

Planning was granted in August 2020, the first of 3,500 steel piles being driven a month later. In Q4 2021, practical completion was attained, and the building was immediately operational.

Developing at unrivalled scale

At the time of completion, Swindon 2.3 represented the biggest ever singleasset logistics letting, and funding deal, negotiated in the UK.

The development required;

- 600,000 m³ of earth movement
- 27km of recycled steel piles
- 11,830 tonnes of steel (twice as much as the Eiffel Tower)
- · An on site concrete batching plant to provide over 47,000 m³ of concrete
- · 600 construction operatives at peak

Sustainable construction

With an EPC A rating and BREEAM Excellent certification, Swindon 2.3 offers extensive green building and well-being features. These include:

- A third of the site given over to landscaping and the creation of a wetland habitat
- Over 36,000 trees, shrubs and plants
- 1.1km of cycle paths
- Outdoor green amenity areas
- Storage for 25 million litres of rainwater
- Charging provisions for 400 EVs





Amazon, Bolton amazon

Speculative development of a 360,000 sq ft industrial warehouse with twin yards.

- Building let to Amazon for an internet fulfilment centre, with three levels of mezzanine
- On commencement the largest spec build in the North West
- Former open cast colliery with technical ground solution
- Buildings developed to EPC 'A'





















LDH (La Doria)

Panattoni delivered a build to suit warehouse and distribution facility, including a 40 metre high automated 'dark warehouse'.

LDH (La Doria) Ltd is a leading supplier of canned products, dried pasta and other ambient foods to UK supermarkets.

Panattoni advised and worked closely with the client to develop their brief for a cutting edge build to suit automated warehouse, distribution and office facility.

Critical to the project was the identification of a site close to the port of Felixstowe. Panattoni secured a prime location on the outskirts of Ipswich,







adjacent to the A14, giving direct dual carriageway access to the port.

Site secured, Panattoni developed the design and secured planning permission for a 269,098 sq ft scheme.

The facility comprises a 122,138 sq ft warehouse with 15m to haunch. In addition, a striking 40m high 93,463 sq ft high-bay 'dark warehouse' was designed to accommodate the latest robotic storage and picking technologies.

With a construction value of £25 million, Panattoni procured and oversaw the construction and commissioning of the new facility.

Crucial to delivery was collaborative working with contractors and specialist suppliers, integrating data, security, and the high tech robotic solution for the automated warehouse.

The facility achieved EPC 'A' and BREEAM 'Very Good' ratings.













Marks & Spencer, Nottingham



1 million sq ft build-to-suit project

- 28m high warehouse with 1,200,000 sq ft mezzanine over 5 floors
- Largest building of its type in Europe by volume
- Purpose built rail freight terminal









Panattoni Park Northampton

1.7 million sq ft speculatively developed in the UK's most prominent logistics location.



4PX

iFORCE

Chocolat.

Panattoni Park Northampton occupies a 120 acre site immediately adjacent to J16 of the M1 and only 20 miles from the M6 and A14 connection. All six speculative units were let before practical completion.

- 98,000 sq ft let to Eddie Stobart
- 230,000 sq ft let to Eddie Stobart
- 330,000 sq ft let to Eddie Stobart
- 250,000 sq ft let to 4PX
- 380,000 sq ft let to iForce
- 430,000 sq ft let to Hotel Chocolat

Preparation and infrastructure

Panattoni Park Northampton required extensive preparatory works. The ecological impact of the development was carefully assessed, with extensive mitigation measures implemented, in addition to protecting the adjoining floodplain. An existing occupier was relocated, and extensive archaeological works were also conducted beforehand.

Panattoni then made a significant investment in groundworks. Prior to creating the development plateaus,

existing infrastructure crossing the site was relocated or mitigated. Services and drainage, including a high pressure gas main, were procured and installed, some from many kilometres away.

In addition to on-site road construction, Panattoni also committed to extensive local highway improvements.





Co-op, Mansfield

The **co-operative**

500,000 sq ft build-to-suit project

- 18m high cross-docking warehouse
- Major earthworks including 230,000 m³ cut and fill
- 41,000 sq ft of high quality office accommodation

Panattoni Park Aylesford

1.6 million sq ft logistics park speculatively developed to serve London and the continent.

Located immediately adjacent to the M20, Panattoni Park Aylesford redeveloped 95 acres of brownfield land.

The park is constructed on a former newsprint factory which had occupied the site for over a century. Extensive remediation was required, complicated by the need to divert critical utilities serving the local area.

Around 100,000 m³ of concrete from the existing complex was crushed and reused on site, reducing landfill and the carbon emissions from road haulage.

During the build, a pipe gantry bridging the South Eastern Railway line between Maidstone and Rochester was removed during an arranged track closure.

Infrastructure

As a part of the development, Panattoni committed to an extensive range of local amenity works and new infrastructure. These consisted of:

- A new primary substation providing up to 50MVA
- Adoptable foul pumping station
- New flood defences

Transport

Panattoni also delivered significant new transport infrastructure and green travel options for park users. These included:

- A highway link road into the park
- New roads, cycle paths and foot paths into and across the park
- Improved public rights of way
- Electric car share scheme delivered in partnership with Enterprise Rent-a-Car
- Funding a new bus service to the development
- Funding a local cycle hire scheme
- Refurbishment of local train stations

Biodiversity

Working in partnership with Kent Wildlife Trust, Panattoni delivered a net gain to biodiversity across the park.

This was achieved through extensive on-site planting, plus the funding of a new green amenity space.

A successful scheme

All units across the park have achieved a BREEAM 'Excellent' rating and an EPC rating of 'A'.

- 144,000 sq ft plus a 560 space multi-level van park let to Amazon
- 110,000 sq ft let to DHL
- 98,000 sq ft let to Fowler Welch
- 79,000 sq ft let to Evri
- 10,000 sq ft let to Marley Tiles
- 621,000 sq ft let to major retailer

The Product Guide

Sainsbury's, Basingstoke

615,000 sq ft build-to-suit project

Sainsbury's

Redevelopment of existing operational warehouse and adjacent site, to provide a brand new state of the art ambient/chilled/produce distribution centre, through a complex three year phased build programme working closely with the customer to maintain continuity of operations throughout.

^Î Panatton⁷

The world's largest privately owned industrial developer

> 19-21 Old Bond Street, London W1S 4PU

> > panattoni.co.uk

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