

'AS-BUILT' SPECIFICATION

For

INDUSTRIAL DEVELOPMENT - UNIT 2000

At

LINK 62, NORMANTON, WAKEFIELD

For

PPG LAND (NORMANTON) LIMITED

Michael Eyres Partnership LLP  
Chartered Quantity Surveyors and  
Project Managers  
208/210 Keighley Road  
Bradford  
West Yorkshire  
BD9 4JZ

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1.00 **GENERAL REQUIREMENTS**

1.01 **Introduction**

This 'As-Built' Specification is to be read in conjunction with the 'As-Built' drawings prepared by the Architect.

The gross internal floor area of the buildings is as follows:

Ground Floor Warehouse	100,065 ft <sub>2</sub>
Ground Floor Offices	2,611 ft <sub>2</sub>
First Floor Offices	2,611 ft <sub>2</sub>
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Total Gross Internal Floor Area	105,287 ft <sub>2</sub>
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The Contract works included site investigation, obtaining all statutory approvals, ground stabilisation, boundary treatments, retaining walls, all external works, landscaping, services, drainage, etc sufficient to achieve a fully serviced development, with the exception of those elements as identified in this Specification.

The Contractor assumed full design responsibility for the entire project and ensured the achievement of the standards indicated. The Contractor was responsible for the establishment and incorporation of all current requirements relating to the utility services, statutory instruments legislation, Local Authority requirements, Highway Authority, Building Control, etc.

1.02 **Planning Permission**

Planning Approval was granted for the project, with all Conditions fully discharged.

1.03 **Building Regulations Approval**

The Contractor was responsible for the preparation and submission of a Building Regulations Application for the base building only, providing all necessary documentation, calculations, drawings, test data, etc and to obtain approval from the Local Authority or other recognised Building Regulations Body.

1.04 **Fire Provision, Means of Escape in Case of Fire and Fire Officer's Requirements**

The Contractor was responsible for liaison with the Local Authority Building Control and the Fire Officer during the preparation of the design of the base building and incorporated all necessary requirements to comply with statutory obligations.

Note: the following items are specifically excluded from the project:

- Hand held fire fighting equipment.
- Fire hydrants.
- Sprinkler system, tanks, pumphouses, supply pipework and associated builder's work.
- Smoke ventilation system.
- Smoke detection system to the factory/warehouse area.
- Additional escape doors due to the final layout of the factory/warehouse area.
- Hose reel system.
- Internal warehouse division/fire walls.

#### 1.05 **Standards**

The Contractor designed, supervised and constructed to the highest of standards and adopted good building practice, in all aspects of the development. Any item of work or materials noted by the Employer's Agent which were not to standard were removed and replaced by the Contractor.

#### 1.06 **Warranties**

The Contractor obtained all necessary Deeds of Warranty from the Design and Construction Team.

#### 1.07 **Professional Design Team**

The Contractor employed suitably qualified persons/Sub-contractors to execute the design work for the whole of the works.

#### 1.08 **Duty of Care**

All professional persons or Sub/contractors appointed entered into a Duty of Care Agreement.

#### 1.09 **Health and Safety, including the Construction Design and Management Regulations, etc**

Pre-Contract Planning Supervisor was Michael Eyres Partnership LLP and Post-Contract the Principal Contractor.

### 2.00 **CONSTRUCTION REQUIREMENTS**

#### 2.01 **General**

Warehouses	100,065 ft_
Offices	5,222 ft_
	_____
Total Gross Internal Floor Area	105,287 ft_
	_____

The development included for all car parking, external service yard areas, drainage and services as outlined.

## 2.02 **General Standards and Provisions**

The design, materials and workmanship of the works complied with the latest editions of British Standards and relevant Codes of Practice and were in accordance with good building practice of a standard appropriate for the works. The general standards are indicated below:

- a) British Standards and Codes of Practice, latest editions and/or amendments.
- b) Building Regulations and Local Authority Building Control requirements.
- c) Fire Officer's requirements.
- d) Conditions of the Planning Approval issued by the Local Authority.
- e) The Construction (Design and Management) Regulations COSHH and any other Public Health and Health and Safety Executive requirements.

## 2.03 **Materials**

The Contractor used all reasonable skill and care not to specify for use, and not to approve the use in the development of any materials which by their nature or application contravene any British Standard or EU equivalent current at the time of specification, or which contravened the recommendations of Ove Arup & Partners' publication Good Practice in the Selection of Construction Materials (1997).

## 2.04 **Substructure**

The Developer carried out a Site Investigation, including a Desktop Study adequate to establish the history of the site, in sufficient detail to determine the extent of any necessary environmental, geotechnical or contamination investigation. The Site Investigation is based upon the requirements of BS 5390 and the environmental investigations should comply with BS 10175.

## 2.05 **Site Preparation**

All necessary site preparation was undertaken in accordance with the Structural Engineer's requirements with regard to the foundations and loadings required, noting the category of the floor finish and tolerances, both internal and external finishes.

## 2.05 (Cont'd)

Copies of all Statutory Approvals and other documentation associated with site clearance are provided.

Adequate foundations are provided in accordance with the Structural Engineer's requirements, designed appropriate to the requirements of the building and to accord with the ground environmental conditions and loadings identified.

No abnormal groundworks or foundations have were encountered.

## 2.06 **Ground Floor Slab**

The ground floor slab was constructed in reinforced concrete. The design thickness and reinforcement was designed in accordance with the Engineer's requirements, strictly conforming to the relevant Codes of Practice, British Standards and taking due cognisance of the ground conditions prevalent. The slab is designed to support a uniform distributed load of 50.00 kN/m<sup>2</sup>. The floor slab is designed and constructed in accordance with the recommendations of Technical Report No. 34 "Concrete Industrial Ground Floors" (prepared by the Concrete Society in association with the British Industrial Truck Association and the Storage Equipment Manufacturer's Association). The floor is laid to an FM 1 Special

tolerance.

The slab included joints in accordance with the Structural Engineer's requirements. The top surface is finished smooth and level with a power float finish. The floor is treated with a hardener/dust inhibitor upon completion.

## 2.08 **Office Ground Floor Slab**

The ground floor slab to the office area is designed to carry a maximum superimposed load of 7.5 kN/m<sub>2</sub> with a top surface finished smoothed and levelled with a power float with a tolerance of +/- 3 mm in 3 m length, not exceeding 12 mm across the whole floor slab from datum level. The first floor to the office area is designed to carry a maximum superimposed load of 4 kN/m<sub>2</sub> plus an additional allowance of 1 kN/m<sub>2</sub> to cater for the weight of partitions.

## 2.08 **Structural Frame**

The main structural frame of the warehouse building is constructed in a portal frame with an overall clear height to underside of haunch of 9500 mm.

The steel frame is designed, manufactured and erected in accordance with current British Standards and Codes of Practice. Steelwork design to be as BS 5950, Part 1 : 2000 and Part 2 : 2001, BS 6399, Part 1 : 1996, Part 2 : 1997 and Part 3 : 1998. The portal frame is completed with all purlins, sheeting rails, bracing, sag-rods and all necessary support angles, channels, ties, etc to walls. The office is constructed with structural steelwork frame to support the first and second floor, roof and walls as necessary, allowing for all associated secondary steelwork.

Steelwork is designed in accordance with the appropriate ground conditions. An allowance of 0.25 kN/m<sub>2</sub> was made for service loading. All hot rolled steelwork is shot blasted and primed with zinc phosphate paint post fabrication.

Concealed surfaces of steelwork and steelwork encased by blockwork are fully painted with two coats of heavy duty bituminous paint.

## 2.08 (Cont'd)

Steelwork below ground is encased in concrete.

Cold rolled steel rails and purlins are manufactured in galvanised steel to BS 5950, Part 5 : 1998.

## 2.09 **Internal Envelope**

### General

The external walls are of a thermal performance equal to or better than that required by the current edition of the Building Regulations.

### Walls

External elevations are as indicated on the Architect's drawings, to incorporate 150 mm high precast concrete edge beam at floor level.

In the office areas at ground floor level, inner leaf blockwork is extended full height to the underside of the office steel haunch. Inner leaf blockwork is concrete block to BS 6073, Part : 1987, unless specified otherwise by the Engineer.

The inner leaf (precast concrete panel) in the warehouse area is painted and extends to 2100 mm above finished slab level, with the top of the wall suitably capped.

## Quality

Use of good building practice to mitigate damage to mortar staining to brick and blockwork was maintained at all times. Prior to handover, all brick and blockwork was cleaned down.

All walling is true and flush, well aligned to a good finish.

Cavities were kept clear of all mortar droppings, rubbish, etc.

## 2.10 **Cladding**

### Roof

The roof slopes are clad in Kingspan RW composite roofing panels or similar and approved, to meet current Building Regulation requirements. The roof pitch is a minimum of 6°.

### Walls

Cladding to elevations is 0.50 mm thick HPS 200 coated steel sheets, in alternate profiles as shown on the elevation drawings with a 0.40 mm thick bright white steel liner tray including all bearers, fixings, etc, strictly in accordance with the manufacturer's recommendations and comply with CP3 Chapter V, Part 2 : 1972.

Office elevations have a composite flat panel cladding system, Kingspan Microrib or other equal and approved, and Gasell Horizontal cladding system as shown on the elevation drawings.

## 2.10 (Cont'd)

### Rooflights

15% of the warehouse roof area has double skin rooflight to match the roofing system. The specification satisfies the Health and Safety Executive requirement for non-fragile roof test and is in accordance with the current Building Regulations.

### Flashings

All flashings, trims, etc to all openings, corners, etc are in HPS 200 to match elsewhere.

### Rainwater Goods

The rainwater installation is designed to BS EN 12056, Part 1 : 2000 and Part 3 : 2000.

Rainwater disposal is by means of a syphonic system. Steel gutters are of the "wrap-over" type pressed to form an integral unit with the purlins, to eliminate the need for gutter straps. All necessary stop ends, weir overflows, junction pieces and outlets were allowed as appropriate.

All gutters are underdrawn. The lining and insulation are the same materials as the insulated roof construction. The insulation has been allowed to the full area of the sole and sides.

Two coats of heavy grade bituminous weathering to the weather surface of all gutters was applied prior to the end of the Contract.

Rainwater fall pipes to be conventional PVC pipes, connected to ground level access points. Wherever possible, these pipes were set within the web of the structural steel columns.

### Boundary Wall Conditions

For any applicable boundary wall conditions, we included for all necessary materials and fixings to provide a fire wall system, including for all fire protection to steelwork, nylon ferrules, slotted connections, etc all filled strictly in accordance with the manufacturer's recommendations to provide the required fire resistance.

#### 2.11 **Fire Protection**

Fire protection, where required by Building Regulations, was provided to the structural steelwork, with the use of a board or sprayed finish.

#### 2.12 **External Windows and Glazing**

External windows and glazing is provided as shown on the Architect's drawing. The Contractor allowed for the design, supply and installation of all windows and included for all necessary mastic sealants, cill and head flashings, etc which are to be powder coated to match the frame sections. The window and glazing system is by Technal Viking or similar manufacturer, double glazed, thermally broken system. Windows accord with BS 4873 and comply with the latest Edition of the Centre for Window and Cladding Technology Standard for Curtain Walling (CWCT Standard) and is tested and conform to BS 6375.

#### 2.12 (Cont'd)

All glazing system members and infill panels are designed to accord with BS 6399, Part 2 : 1997 with regard to the location, exposure and shape of the proposed building. The aluminium accorded with BS 1474 and the finish is polyester powder coated by Syntha Pulvin or similar (standard RAL colour) to BS 6496. All glazing conformed to Part N of the Building Regulations. All windows provided background ventilation, all complying with Part F of the Building Regulations.

The type and location of fixings and cleats is strictly in accordance with the manufacturer's recommendations and relevant British Standards. The glass is manufactured to BS 952 and accords with the requirements of safety glass externally and clear toughened glass internally.

The windows and curtain walling include opening lights, as indicated. The openings lights are fitted with friction stay hinges, with automatic restrictors and a locking device.

The entrance doors and side panels are from a similar range, including double glazed units and solid panels, as indicated. The doors are fitted with maximum security deadlocks and concealed bolts, pad handles, letter plate and floor springs. The frame incorporates the necessary draft and weathering seals. All finished in polyester powder coated finish.

The infill panels, as indicated, are double glazed units with external leaf of tinted glass and an internal enamel backed panel to achieve a look-a-like glazed infill.

A powder coated and glazed feature entrance canopy is located over the main entrance doors.

Internal electrically operated security shutters to all ground floor windows.

#### 2.13 **External Personnel Fire Doors to Warehouse Area**

The external personnel fire exit doors to the warehouse area comprises vandal resistant heavy duty steel door sets and frames from proprietary manufacturers, with a pre-galvanised basic factory finish suitable for further decoration. Heavy duty vandal-resistant hinges provided per door as a minimum. No fixings for the steel door construction or steel frame are visible on the exterior. The door ironmongery and frame assembly are suitable for use by disabled persons in case of emergency. A weatherproof and watertight threshold is provided. It does not inhibit or hinder escape by persons in wheelchairs. The doors and

frames are treated and finished in high gloss paint.

## 2.14 **Goods Doors**

The service doors are lockable, and electrically operated, of an insulated sectional overhead door type, with Plastisol coated external finish from the standard range. Each door has a higher lift track arrangement. The horizontal and vertical tracks are manufactured from galvanised steel. Roller brackets are of heavy duty and rollers are of self-adjusting type with ball bearings on the steel shaft. All guide rails, roller brackets, hinges, etc are bolted or screw-fixed. The doors are manufactured and installed in accordance with all British Standards, Codes of Practice and relevant European Standards with regard to operations, installations, etc. The doors are to incorporate observation panels.

1 Nr flat entry electrically operated shutter door has been included.

## 2.14 (Cont'd)

The dock levellers are manufactured by Easilift Loading Systems, minimum working capacity of 6000 kg. The warehouse floor level is set at 1200 mm above the adjacent external yard level. The dock levellers have a working range of +/- 350 mm in relation to the warehouse slab level.

The Contractor has included for precast concrete dock surrounds and pits to the approval of the Engineer.

8 Nr dock levellers have been included, comprising a dock pit, leveler, electronically operated insulated door and dock shelter in each location of proprietary manufacture.

Bollards are provided inside and outside the loading doors, positioned clear of the building and faced in such a way that vehicle damage to brickwork is prevented. The bollards are constructed in 10 mm thick, 150 mm diameter steel with steel cappings, all galvanised after fabrication. All bollards project 1300 mm above ground level and at least 600 mm below ground level, suitable, secured and founded in concrete to prevent uprooting by vehicle knocks at manoeuvring speed. Bollards are prepared, galvanised treated and finished with gloss paint.

## 2.15 **Office Areas and Ancillary Areas**

### Internal Doors

All internal doors comprise heavy duty, solid-core American oak construction with flush hardwood face. Door frames are oak with good quality satin anodised aluminium ironmongery and suitable fire rating.

### Toilet Accommodation

The main walls forming all toilet accommodation are in blockwork. All the toilets comprise full height ceramic wall tiling.

Ceilings are Armstrong Ceramaguard or similar and softwood shadow battens incorporated throughout. Toilet cubicles are Bushboard or similar, including for all hinges, handles, coat hooks, toilet holders, etc.

The disabled toilet is complete with all extras and fittings, to comply with Part M of the current Building Regulations requirements. All toilets include minimum 1000 x 600 mm mirror.

### Sanitary and Plumbing

The toilets incorporate appliances of high quality vitreous enamel, complying with British Standards, coloured white to be Armitage Shanks or equivalent quality.

#### Office Walls

Office core walls are constructed in solid dense blockwork. Any internal partition walls is concrete blockwork or metal stud. Metal stud walling has been constructed from first floor level as the office/warehouse division wall.

### 2.15 (Cont'd)

#### Joinery

Window cill boards throughout are in American oak . Door frames, architraves, skirtings and the like throughout office area are also in American oak.

#### Wall Finishes

All office areas throughout are complete with 13 mm, two coat plaster finish.

All walls throughout the office areas are finished two full coats of emulsion paint.

#### Floor Finishes

Heavy duty contract quality carpets are throughout the offices - allowance of £15/m\_ supply only. Matwell to the reception area with New Way or similar approved matwell carpeting system.

Reception toilet areas, including coved skirtings are to be quarry tiles.

Medium duty raised flooring system has been installed in all office areas, overall depth 180 mm.

#### Ceiling Finishes

The ceiling finishes throughout the office areas is a proprietary 600 x 600 mm tegular ceiling system with white Microlock "T" grid with Armstrong Dune tile or similar, ceiling height 2650 mm.

#### Stairs

The main staircase to the office is constructed in concrete. The balustrade comprises stainless steel balusters with gloss infill panels and stainless steel handrails. Finish to the treads and risers are in carpet to match the offices with aluminium nosings.

### 2.16 **Electrical Installation**

Provision made for an incoming supply of 402 kVA. The supply into the building is low voltage from a new substation.

#### Warehouse Lighting

Not included.

#### Warehouse Fire Alarm

Included.

#### Lightning Protection

A lightning system is incorporated to provide lightning protection to the building in accordance with the current Regulations.

### 2.16 (Cont'd)

#### External Lighting

An average illumination throughout the car parking and service areas of 15 lux has been provided. This external lighting is to be photo-cell operated with clock and manual override.

#### Office Lighting

The office areas are complete with 600 x 600 mm recessed low brightness modular fittings, providing a lux level of 500 at 800 mm above floor level. Lighting to the main office areas is provided to category LG7.

#### Circulation and Toilet Areas

The circulation and toilet areas have 300 lux level.

#### Emergency Lighting

Emergency lighting to office areas only are to be provided, to conform with the current Building Regulations and Fire Officer recommendations.

#### Office Power

Power is provided by floor mounted outlets in recessed floor boxes, each box to provide a minimum of 2 power outlets; 2 data outlets; and 2 telephone outlets. Floor boxes to be provided at the rate of 1 Nr/10m<sup>2</sup>. Wall mounted sockets provided on perimeter walls, WC and core areas for cleaning purposes.

Spur points for hand driers are provided in toilet areas.

#### Warehouse Power

Power supplies are provided to doors and dock levellers.

#### Intruder Alarm

Included.

#### Fire Alarm

Included.

#### CCTV System

Included.

### 2.17 **Mechanical Installation**

The proposed heating and cooling system is VRF Heat Recovery System.

Ceiling mounted cassette fan coil units are installed in all office areas and reception area with

zoned control and external condenser units for each floor, this provides heating and cooling as required.

2.17 Electric panel thermostatically controlled heaters provided to staircase and toilet areas.  
(Cont'd)

The Contractor designed, supplied, and installed/commissioned the complete system to the following criteria:

Offices:	Internally 22C	Externally	-3C
Toilets:	Internally 18C	Externally	-3C

Plumbing Installation

Domestic hot and cold water is provided to all toilets throughout. All internal drainage pipework cylinders, etc necessary for the complete installation of the system are provided. An incoming gas main has been brought into the building, sufficient to provide heating to the office and warehouse areas.

Ventilation

Extract ventilation to toilets is provided by fan units with ducting wired back to light switching with variable override.

Warehouse Heating

Not included.

2.18 **External Works**

General

External access roads and concrete yard areas are designed for heavy duty traffic, sufficient to accommodate heavy loaded vehicles. The access road and concrete yards are designed in accordance with Structural Engineer's requirements with regard to the ground conditions.

The service yard and road include a full drainage system and the yard is laid to falls and finished with a brushed surface. All areas are formed on consolidated hardcore. Pre-cast concrete road kerbs have been used throughout.

Precast concrete paving to all fire exit paths.

Block paving to all office paved areas.

Car parking areas for car parking that is separated from any heavy goods traffic are concrete, brushed finish, with thermoplastic line marking. All externals will be laid to falls and adequately drained.

The office car park is constructed in tarmac areas and include delineation of car parking areas and provision and display of disabled bays with the correct symbols, (including stainless bollards).

Roads and Footpaths

The Developer constructed suitable access roadways and footways to the building, the car park and the service yard, in accordance with the Planning Consent and other Statutory Approvals.

2.18 (Cont'd)

## Fencing and Gates

Fencing is provided to the extent shown on the Architects drawings with gates to the access road.

Paladin fencing 2100 mm high to all service yard areas and timber knee rail fencing to the car parking areas.

### 2.19 **Drainage**

All drainage has been installed in accordance with the requirements of the local drainage Inspector and Building Regulations. A complete foul and surface water drainage system has been incorporated to cater for the whole of the building and is sized also to accommodate additional capacity and layout for future expansion. All drainage is on a separate system and suitably discharged to mains adoptable sewer. All drainage work throughout is in vitrified clay or concrete. No plastic pipework has been accepted.

A foul drainage outlet in the warehouse area has been provided for future use.

The Contractor has given consideration to the design intent with regard to the main foul and surface water systems and has provided a drainage system in its entirety, including all Approvals, the payment of related connection charges, provision of petrol interceptors, etc as required.

A petrol interceptor has been sized to deal with the total surface area and also for future expanded areas.

### 2.20 **Landscaping**

A full and complete landscaping scheme has been provided to comply with Local Authority Approvals, including for all topsoiling and for twelve months maintenance.

To be completed in the next appropriate planting season.

### 2.21 **Cycle Stands and Bin Store**

Cycle stand 'hoops' have been left unfixed for either internal or external use. Brick built bin store provided externally.

### 2.22 **Telephone**

2 Nr service ducts have been brought in and terminated within each building, position as agreed.

### 2.23 **Incoming Services**

The following incoming services have been provided:

Electricity	-	402 kVA (substation)
Water	-	32 mm supply
Gas	-	Supply only

### 2.23 (Cont'd)

Exclusions

- General power in the warehouse.

- Heating/lighting in the warehouse.
- IT cabling or distribution in the office or warehouse.
- Internal office partitioning.
- Fuel storage area.
- Vehicle wash down area.
- Sprinkler installation.
- Smoke venting or separation curtains in the warehouse.