Persimmon Homes Ltd

Specification for Cranfield Community Centre

Associated with Planning Application
CB/16/01192/FUL

This speciation should be read with CBC Community Building Specification and Drawings CRAN-PH3-02A – Community Building & CRAN-PH3-PAV-01N – External Layout

Rev A – 06.06.2017

CONTENTS

1. BUILDING SPECIFICATION – COMMUNITY CENTRE

Design life

The building is to have a designed life as defined in ISO 15686 Part 1 Buildings and Constructed Assets – Service Life Planning, General Principles. As such the design life of the building elements shall be:
Substructure 60 years.

1. Substructure 60 years
2. Frame 60 years
3. Roof structure 60 years
4. Roof covering 30 years
5. External walls / cladding 40 years
6. Windows and external doors 25 years
7. Internal partitions 25 years
8. Internal finishes 15 years
9. Ceilings 25 years
10. Internal doors 25 years
11. Internal fixtures and fittings 15 years
12. Sanitary and catering facilities 20 years
13. Engineering services (major components) 25 years
14. Underground drainage 60 years
15. External finishes 25 years
16. External fences 25 years
17. External services 25 years
18. Site works 25 years

External works

Drainage and civil engineering to Civil Engineers details.

Hard and soft Landscaping to Landscape Architects details
reference CRAN/PH3/PAV/01 Rev M

Substructures

Design of foundations is subject to SI Report and Structural engineers design.

Floor to be either suspended concrete floor or power floated ground bearing slab to structural engineer's details & specifications.

Floor insulation to be provided and incorporated into floor construction to achieve a minimum 'U' valve to improve by 10% Building Regulation requirements at time of construction subject to Building Regulations current Part L compliance

Internal solid partitions (non load bearing) to be built off structural slab which is to be thickened where required.

Loadbearing partitions founding to be as specified by Structural

Engineer **Superstructure – Shell and Core**

Thermal performance – TER – to be in line with Building Regulations Part L2A 2013 edition.

Structure –

The superstructure is to be formed in either loadbearing masonry with trussed rafter roof or a steel frame with purlins supporting roof and walls.

External Walls -

The construction of the external walls is to be of cavity wall construction with smooth matt render and 100mm block work outer leaf to BS EN 771-3, cavity to suit a "moderate" location as defined in Approved Document C, insulation and 140mm block work inner leaf BS EN 771-3 with a min compressive strength of 7N/mm^2, density of 1900 –2100 kg/m^3 and weigh no more than 20kg.

Where brickwork is shown, these are to be Clumber Red mixture with blue engineering brickwork below DCP. Refer to drawing CRAN-PH3-PAV-02 for external finishes.

In areas of external elevations external face of the wall are to receive a 'through colour render system' smooth matt factory prepared dry pre-mixed building mortar (render) comprising 2-4mm polymer basecoat and 12-14mm polymer flat top coat. Ensure substrate is suitably prepared with bonding agent to receive render finish at low level. Changes in render colour are to be separated by SS bead. Render Colour to be agreed.

Anti-graffiti paint to all applied to all external render wall finish surfaces

A controlled sample panel is to be built so that the standard of finish, jointing and decoration may be set and agreed with the local Planning Authority as the specification.

The external wall construction is to achieve a minimum 'U' valve to improve by 10% Building Regulation requirements at time of construction subject to Building Regulations current Part L compliance

Cavity wall Insulation: Mineral fibre batts to BS EN 13162: Part 1 or Agrement certified (Rockwool) mineral fibre batts or Rigid phenolic foam boards to BS EN 13166. All Insulation is to be stored on site in accordance with the manufacturer's instructions.

External wall details will be developed as part of the detailed design stage. Proprietary insulated cavity closers are to be installed to manufacturer's recommendations to all

openings in masonry cavity walls. Ensure that closers fit tightly to each other. The closer at the jamb must completely lap the closer at the cill.

The design of the details and construction measures are to be co-ordinated to achieve acceptable levels of air permeability. The air permeability is not to exceed $10m^3$ per hour / per m^2 at 50Pa.

Reinforcing/fixing accessories: Movement joints with cellular polyethylene filler and low modulus silicone sealant in accordance with BS 5628-3. Provide proprietary plastic weep holes at the base of the cavity, above DPC/tray, above all door and window openings at max 900mm c/c (colour to closely match substrate). All wall/fixing ties to be stainless steel in accordance with BS EN 845-1 and lintels above openings to be prefabricated stainless steel to BS EN 845-2.

Flexible horizontal and vertical damp proof courses/cavity trays in accordance with BS 8000: Part 3, section 3.3, BS5628: Part 3 1985 and BS8215:1991.

Flashings: To be provided as required.

Internal face of Blocks to have a hardwall plaster finish and cement render in shower areas

Internal Walls -

Subject to fire and acoustic requirements:

Option 1
All internal walls to be 100/140mm block work as Structural Engineer's drawings and comply with BS6073 Pre-cast Concrete Masonry Units Parts 1 and 2. The Minimum density of blocks is to be 1900 - 2100kg/m^3. Minimum compressive strength of blocks shall be 7N/m^2; the compressive strength shall be increased where structural considerations dictate and in accordance with Structural Engineer's requirements.

Reinforcement is to be provided to walls as required by structural engineer.

Blocks to have a hardwall plaster finish and cement render in shower areas

Option 2 for internal walls apart from show areas:
Internal walls to be constructed in severe duty (defined in BS 5234-2: table 1) drywall construction. With board types and thicknesses determined by fire, acoustic strategy and partition heights

Lintels -

Internal metal lintels to be sheet pressed, welded, insulated and post galvanised to BS EN ISO 1461 method but with a minimum zinc coating of 1420g/m2 (sum of both sides) from IG range or equivalent.

External metal lintels are to be stainless steel from IG range or equivalent.

General glazing -

External glazed components are to be double-glazed with clear/cavity/low emissivity glass, achieve a minimum 'U' valve to improve by 10% Building Regulation requirements at time of construction subject to Building Regulations current Part L compliance and shall have a daylight factor of 0.73 unless stated otherwise. Windows to be fitted with laminated inner and toughened outer panes.

Safety glass is to be used in all locations below a height of 800mm above finished floor level and in all glazing to doors and adjacent panes to comply with Approved Document N.

Permanent manifestations are to be included in all glazing to comply with Approved Document M.

Windows: Grey powder coated aluminium, thermally broken, double-glazed, windows. Extruded powder coated aluminium cills. Trickle vents to supply 4000mm^2 of ventilation and ironmongery including security locks and restrictors. Weather tightness is to be in accordance with BS6375-1. Operation and strength characteristics are to be in accordance with BS6375-2.

All openable windows and doors are to be fitted with security locks and restrictors. Locking handles to each opening light to have an espagnolette mechanism and include restrictors to limit opening to 100mm. Teleflex gear is to be provided as required to meet the requirement of the Building Regulations (where opening handles are above 1.9m or 1.7 if obstructed). Trickle ventilation to be provided to meet Building Regulation standards.

External Doors -

External plant room to be steel doors, complete with 1 $^1/_2$ pair's stainless steel butt hinges, threshold seal, factory fitted hardware including 5 lever or profiled cylinder.

Main entrance doors and French doors from community hall to be double glazed in PPC aluminium frames with integrated finger guard protection (Pivot hinges). Main entrance door to have pivot hinges and need one leaf to provide 1m clear opening with automated opening via electronic push pad internally and externally. Provision should be made for a letterbox.

External doors are to achieve a minimum 'U' valve to improve by 10% Building Regulation requirements at time of construction subject to Building Regulations current Part L compliance.

Doors and frames are to be compatible with both window and curtain walling systems. PPC finish is to match window system.

The ironmongery for all external doors shall be PPC aluminium. Suiting will be individual locks with one common master. All ironmongery is to be approved prior to fitting.

The specification for the Biofold doors needs to be added to include quality and width of each door. (NB these doors will take a lot of wear and tear and need to be robust and high quality.

Roof -

Roof covering to be Mini Stonewold Mockbond Grey tiles on battens to suit rafter centres on breather felt on counterbattens on insulation set over rafters and insulation layer set between rafters to manufacturer's instructions and to meet current Building Regulations. Roof to be completed as a total insulated roof including flashings and other accessories.

Roof penetrations will be waterproofed code 4 lead upstands and soakers.

Lightning protection is to be provided where determined necessary in accordance with current EN standards. This will need to be detailed by the M&E contractor during the detailed design stage.

The design of the details and construction measures are to be co-ordinated to achieve acceptable levels of air permeability. The air permeability is not to exceed $10m^3$ per hour / per m^2 at 50Pa. This is to be tested post construction at the contractor's expense, in accordance with the CIBSE Technical Memoranda TM23:2000 'Testing buildings for air leakage'.

Gutters & RWP are to be rectangular section (anti climb) in UPVC external eaves gutters, sized to suit roof area and RWP locations.

Are Solar Panels required on the roof to meet environmental specifications.

Fit-out

Internal Doors -

Internal doors to be ply faced solid core flush doors for painted finish: lipped 44mm thickness solid core with 150 x 1500mm glazed vision panels hardwood glazing beads, clear non wired acoustic / FR glazed where applicable to all fire resistant doorsets. All internal doors to be complete with integral finger guards.

Wooden faced doors to main public areas.

The ironmongery for all external doors shall be satin anodised aluminium finish. Suiting will be individual locks with one common master. All ironmongery is to be designed to withstand severe use. Kickplates 150mm high to both faces.

WC Cubicles –

WC partitions shall be proprietary solid compact grade laminate as Petal Action Range or similar approved. Toilet Cubicles to be provided with doorstop, coat hook and toilet roll holders. WC cubicles shall be compatible with an integrated plumbing panelling system (IPS).

Integrated Plumbing System -

With the exception of the disabled toilet and the changing room toilets, an integrated plumbing system (IPS) panelling shall be provided to conceal all cisterns and pipework to sanitary appliances. The IPS shall be proprietary solid compact grade as Petal Action Range or similar approved with associated timber frames and sub-frames. (Colour TBA)

Sanitary ware –

All fittings shall be in white vitreous china and are to include necessary cisterns and associated plumbing fittings (Armitage Shanks or Twyfords, or equal approved). All waste discharge pipework, SVP's etc, is to be PVC-U.

WC flushing cisterns located behind IPS panelling shall have push button operation located to front of panelling.

WC cisterns will be low volume flush type incorporating 4/2.6l flushing volumes.

Accessible WCs are to be of a system to match the above and to incorporate all relevant grab rails and suitable tap fittings etc. to meet the requirements of Approved Document M.

Fused spur to be provided with adjacent warm air hand driers in each changing room and toilet areas.

Hand driers to be Dyson air blades.

Kitchen – 20m^2
Provide 2 no. double drainer 1200 wide sink units complete with mixer tap and drainage. Additional hand wash basin to be provided. Each sink will require H+C running water.

Provide water boiler above all sink drainer - Heatrae Sadia Streamline 10 Litre Oversink Water Heater 3KW or equivalent. (is this above each sink?)

Provide Howden contract kitchen cupboard and drawer units, with metal drawer construction, arrangement to perimeter of kitchen two walls with space for hob, oven, fridge, dishwasher, work surfaces. ~~& freezer~~. Cupboard specification to be agreed.

Heat resistant work surfaces to be agreed with the Parish Council.

Include mechanical extract hood abov cooker

Bar –

Provide 1 no. double drainer 1200 wide sink units complete with mixer tap and drainage. Each sink will require H+C running water and 1 x handwashing sink

Provide water boiler above all sink drainer - Heatrae Sadia Streamline 10 Litre Oversink Water Heater 3KW or equivalent

Provide Howden contract kitchen cupboard and drawer units, with metal drawer construction, Cupboard and work surfaces specification to be agreed.

Serving hatch to hall and kitchen

Bar storage with lockable door.

Kitchenette (within meeting room) –

Provide 1 no. double drainer 1200 wide sink units complete with mixer tap and drainage. ~~Each~~ The sink will require H+C running water.

Provide Howdon contract kitchen cupboard and drawer units, with metal drawer construction, Cupboard and work surfaces specification to be agreed.

Cleaners -
Provide Belfast sink complete with lever taps and drainage

Mirrors –

Polished edge mirrors (toughened glass) shall be provided in all WC areas, with concealed fixings across full width of basins and 1050mm high. A mirror of similar quality shall be provided within the Accessible WCs in accordance with regulations covering accessible mirror provision. A full height (toughened glass) mirror is to be provided in each of the changing rooms, 1800mm high x 600mm wide.

Showers -

Accessible shower facility to be provided to official / disabled changing room and to be designed in accordance with the appropriate Sports England guidance.

Showerhead fittings to all changing rooms to be Rada Vandal Resistant VR115 or equivalent

Internal Signage –

Internal building signage shall be provided to satisfy the requirements of Building Regulations for WC locations and fire exiting purposes and all necessary hazard warnings. Door labels to identify rooms shall be provided - to be agreed with the client.

Fire exit signage is to conform to the Health and Safety (Safety Signs and Signals) Regulations 1996 using the EU Directive 92/58 EEC design.

Firefighting equipment: to be supplied and installed by end users as required by Local Fire Authority.

External signage –
Allow for PPC aluminium individual letters secret fixed to the external wall adjacent to the main entrance. Wording/style subject to confirmation – Cranfield Community Centre. In 300 high lettering

Wall Clock as shown on CRAN-PH3-PAV-02A to be agreed.

Add -

Accoustic modelling should be allowed for – appropriate acoustic dampening within all spaces in the building

Finishes

All internal walls (except plant room) to be plastered and to receive one coat of Dulux Trade Block filler and two coats of Dulux Diamond Eggshell (2 Coats)

Wet Areas -

Full height glazed ceramic plain white wall tiling to shower areas of changing rooms. Adhesives and grout are to be suitable for a wet environment. 300mm high tiled splash backs to WHB's and cleaner's sink to be provided. Contrasting tiles band pattern.

Plant/stores –

All plant areas/stores are to have a dust inhibiting clear sealer (Uni-bond PVA sealer or equal or approved) to walls.

Window boards –

Cill boards in all areas are to be pre-painted pencil rounded leading edge profile moisture resistant MDF, with additional site painted gloss finish. Wooden cill boards to be used in wet areas.

Ceilings to Shower areas –

Moisture resistant plasterboard ceilings fixed to trussed rafters to be painted and receive 2 full coats of Dulux Bathroom washable paint finish. Ceilings shall incorporate recessed down lights and extract grilles.

Ceilings to Toilets & Changing areas –

Moisture resistant plasterboard ceilings fixed to trussed rafters system to be painted and receive 2 full coats of Dulux Bathroom washable paint finish. Ceilings shall incorporate recessed down lights and extract grilles

Ceiling to Entrance Lobby & Corridors –

Plasterboard ceiling with paint finish

Ceiling in Community Meeting room and Reception/Office -

Plasterboard ceiling with paint finish

Hall Ceiling

Inclined ceiling following rafter line: Armstrong Dune Supreme 15 mm thick tiles 600x600 tegular edge in 24mm white grid. Shadow gap detail to surrounding walls.

Floor to Hall and Stores served from hall

~~Gerflor Creation 55 Luxury Vinyl Tiles, or similar approved – colour to be ag~~reed.

Floor to Changing rooms and Officials Floors –

Sheet vinyl slip resistant heavy duty safety flooring, with heat welded seams, sealed edges and coved skirting. Polyflor Hydro Evolve sheet Vinyl safety flooring suitable for barefoot wet areas or similar approved (Colour TBA)

Floor to public WC's; kitchen, bar, internal store & Corridor area (19).

Sheet vinyl slip resistant safety flooring, with heat welded seams, sealed edges and sit on PVC skirting. Polyflor Modena sheet vinyl safety flooring or similar approved (Colour TBA)

Floor to changing rooms –
Slip & Stud resistant safety flooring, with heat welded seams, sealed edges and coved skirting in shower and sit on skirting elsewhere. Polyflor Hydro Vinyl Flooring or similar approved (Colour TBA)

Floor to external plant room and external store -
Epoxy paint finish with slip resistant paint finish. (Range and colour TBA)

Floor to Meeting Room, Reception/Office, Circulation areas & Entrance Foyer – Heckmondwike Supacord range broadloom carpet or equivalent and approved. Skirting in wood ~~MDF with paint finish~~.

Flooring to Hall / Foyer/Office / meeting room

Do not want carpet.

Parish Council preference is for ALTRO flooring

Barrier matting –

2m walk off inside entrance doors shall have a durable primary entrance barrier mat of a type that prevents surface accumulation of dust and dirt, whilst allowing for its easy and efficient cleaning and removal. Gradus Barrier Mat or similar approved (Colour TBA)

Skirting & architraves –

MDF: 18mm x 100mm high pencil round skirting and 18mm x 50mm wide architraves, primed, 2 coats undercoat and gloss finish. All water based paint.

Shutter to Kitchen & Bar –

Provide 1 x PPC roller grille 2.0m wide to the Kitchen & Bar opening into the community hall. Include stainless steel capping to base of opening. Shutter to be 1/2 hour fire rated and to automatically close on activation of fire alarm. Lockable and with 2 roller grilles

Provide 1 x PPC roller grille 1.0m wide between the kitchen and bar. Include stainless steel capping to base of opening. Shutter to be 1/2 hour fire rated and to automatically close on activation of fire alarm. This is to be lockable.

Cleaners/Caretaker cupboard –

Provide 4 rows of 350 deep heavy duty spur shelving across far end of room

Changing Rooms –
Perimeter Broxap or equivalent HW timber slatted benching finished with clear varnish and 20 no coat hooks per room. Bench unit to be floor supported and fixed.

Include for:

All softwood or MDF joinery is to be pre-primed and shall be finished with three coats water based gloss paint.

Metal fittings, joinery, sundry fixings, supports etc. shall be finished with three coats water based gloss paint.

Items to receive paint finish shall be pre-primed. Wherever practicable, factory applied finishes shall be preferred to site applied finishes, where a superior quality of finish is required

Lockers – 15 in each changing room ~~Number,~~ type, Locking system,

construction and finish to be agreed. **Samples –**

The following material samples will be produced by the contractor for inspection and approval by the client's agent:

- Block work
- External windows
- Render
- External doors
- Roofing
- Internal door sets
- Worktops
- Ironmongery
- Floor finishes
- Ceramic wall tiling
- Roof tiles

Health and Safety

The Principle Designer is to prepare the Pre - Construction Phase (Health and Safety) Plan prior to commencing work on site. The Principle Contractor will prepare all health

& safety documentation in line with Construction (Design & Management) Regulations 2015.

The contractor should be registered with the Considerate Constructors Scheme.

The contractor is to monitor and report CO2 and energy arising from site activities; water consumption from site activities; transport to and from site; construction waste on site. The contractor is to sort and recycle construction waste on site. The contractor is to adopt best practice policies in respect of air and water pollution.

Commissioning

Provide evidence that commissioning will be carried out. Provide evidence that seasonal commissioning will be carried out in the first year.

Provide simple guide to operation and environmental performance of building.

2. MECHANICAL SPECIFICATION

Any reference to manufactures if applicable within the specification is to be used as a guide only.

Passive ventilation system requires confirmation of Mechanical

Engineer. PARTICULAR SPECIFICATION

This particular specification relates to the design, supply installation, testing and commissioning of the: -

Boiler Plant and Heating

Domestic Services

Ventilation Systems

Sanitary Ware and Plumbing

Commissioning

INSTALLATION STANDARDS

The complete engineering services installation and all related equipment will comply with this specification and the following standards:-

This specification represents design intent. The installation is to be designed in accordance with the following standards:
This list is not exhaustive and the systems are to be design in compliance with other current and relevant standards to the works

British Standard Specifications and Codes of Practice.

The latest issue of the CIBSE Guide to Current Practice and Commissioning Codes.

The HVCA Standard Specification with Specific regard to TR20 and DW142.

Local Authority Byelaws and Recommendations.

Manufacturers Stipulations and Recommendations for Installation and Testing.

British Gas Regulations and Recommendations.

Guidance Note EH48 from the Health and Safety Executive.

IEE Wiring Regulation, Latest Edition.

Electricity at Work Act.

Employers Requirements Standard Specification

MAIN INCOMING SUPPLIES

Liaise with Public Utilities and members of the Contractors Design Team to ensure complete co-ordination between new services and existing services to be routed below ground including gas supplies, water supplies and foul and storm water network.

ELECTRICITY SUPPLY
Incoming power to include a minimum of 25% spare capacity above the buildings requirements to allow for future proofing and to provide for community events

FUTURE SERVICE DUCTS
Provide 2 underground ducts to allow for future incoming service requirements

GAS SUPPLY

Liaise with Transco Gas or the client's nominated shipper and will co-ordinate and fully integrate any works required by them into the main building programme.

WATER SUPPLY

Liaise with local water company and will co-ordinate and fully integrate any works required by the company into the main building programme. Ensure the capacity of the rising main is adequate to enable all showers to work at full capacity at the same time.

BUILDING FABRIC

Thermal insulation will be included to comply with Building Control requirements plus 10% improvement.

METERING & SUB METERING

Install energy metering systems in compliance with requirements of Building Regulations Part L2A

STATUTORY AND OTHER REGULATIONS

The contractor will initiate action with all external authorities and will obtain all approvals, pay all fees, give all notices for and in connection with and ensure compliance with the latest revisions of the following:-

Current Building Regulations

Public Health Acts.

Office, Shops and Railway Premises Act.

Fire Precautions Act/Fire Officer.

Controls of Pollution Regulations.

In addition to the above, the works will be designed and constructed in accordance with and to satisfy the following:-

Health and Safety at Work Act.

Requirement of the Local Building Control Department.

Requirement of the Local Fire Authority.

Requirement of the Local Licensing Authority.

Requirement of the Local Water, Electricity and Gas Authorities.

Local Water Byelaws.

Gas Safety Regulation.

IEE Wiring Regulations, 17th Edition.

Clean Air Acts.

CDM Regulations

The construction operations will be carried out in strict conformity with the latest relevant statutory and other Regulations. These include:-

The Construction Regulations, (General Provision and Lifting

Operations). The Construction Regulations, (Health and Welfare and

Working Places) ENVIRONMENTAL PARAMETERS

The temperatures listed will be a minimum requirement and will be used for the computation of heat losses.

When calculating plant duties all CIBSE recommended adjustments for height of space, intermittent heating, etc. will be included.

DESIGN CRITERIA

External Winter Design Conditions	-5°C db
Internal Winter Design Conditions	
Hall	Set point to vary from 12 to 16 degC db subject to level of activity played in hall.
Toilets	19-21degC
Changing Rooms	22-24degC db
Showers	22-24degCdb
Meeting Room	21-23degCdb
Entrance/Lobby	19-21degCdb
Corridors	19-21degCdb
Office	21-23degC db
Internal Summer Design Conditions	uncontrolled

PIPEWORK/DUCTWORK SIZING:

Limiting Water Velocities in pipework.

Pipe Diameter (mm)	Water Velocity (m/s)
50 and Below	1.0
Above 50	2.0

Maximum pressure loss per unit length will be 300 pa/m.

Limiting Air Velocities in Ductwork.

Branch	Main
3-4.5m/s	5-6.5m/s

Maximum pressure loss per unit length will be 1 pa/m.

LEGIONELLA

Attention will be made to 'Health Guidance' notes on minimising potential micro bacterial growth in water storage or pipework systems. General consideration will be given to compliance with Approved Code of Practice (ACoP)(L8 Rev 4)

Legionella risk assessment to be carried out prior to handover by an approved company

BOILER PLANT & HEATING

Heating to be provided in agreed rooms to effect dry resultant design temperatures when outside air is at -5degC with building heat loss calculations carried out to recommendations of CIBSE Guide to Current Practice.

Internal rooms with a fabric loss of less than 300 watts will not be provided with a space heating appliance.

Heat loss calculation will be based on the thermal insulation of the building to meet current Building Regulations.

.

Boiler Plant

Provide centralised gas fired boiler plant sized to accommodate all system loads. Provide flue from boiler plant to discharge externally at suitable and agreed height. Flue system to be complete with all necessary fittings in accordance with good practice.

Boilers to be rated at 110% of connected load.

Pumped circulation is to be provided for the general heating circuits and the underfloor circuit and sized to achieve design temperature drop. . All necessary valves and fittings are to be provided in accordance with good design practice and as manufactured by Crane. Valved supplies will be provided in the ceiling void for future extension to serve the proposed future classrooms.

Feed and expansion is to be achieved by the provision of sealed expansion vessel and fill set, suitably sized and complete with fill point and high and low pressure cut out switches.

Connect to incoming gas supply and extend to serve boiler plant, domestic water heating plant and kitchen; providing isolation cock locally to each appliance. A Solenoid isolation shut off valve will be provided on the incoming gas supply and controlled to shut upon fire alarm activation. The valve will be manually re-settable and further activated by an emergency push button located on exit from the Plant Room.

Under Floor Heating

Under floor heating system is to be provided of the Wirsbo (or equal) type. The system design would initiate low temperature mains from the Boiler Plant serving controlled coils installed below the screed on an insulated base. The floor surface temperature would be at approximately 21°C (3°C above room temperature) to achieve self balance with any load variance.

Provide centralised gas fired boiler plant sized to accommodate all system loads. Provide flue from boiler plant to discharge externally at suitable and agreed height. Flue systems are to be complete with all necessary fittings in accordance with good practice.

Pumped circulation is to be provided for the general heating circuits, and the underfloor circuit is to be sized to achieve design temperature drop. All necessary valves and fittings are to be provided in accordance with good design practice. Valved supplies will be provided in the ceiling void for future extension to serve the proposed future classrooms.

Feed and expansion is to be achieved by the provision of sealed expansion vessel and fill set, suitably sized and complete with fill point and high and low pressure cut out switches.

Connect to incoming gas supply and extend to serve boiler plant, domestic water heating plant and kitchen; providing isolation cock locally to each appliance. A Solenoid isolation shut off valve will be provided on the incoming gas supply and controlled to shut upon fire alarm activation. The valve will be manually re-settable and further activated by an emergency push button located on exit from the Plant Room.

The heating installations are to be zoned with two separate zones, as a minimum, for the Hall and associated accommodation or as agreed

Thermal Insulation

Thermal insulation will be provided to all pipework in Plant Rooms, concealed ducts and in roof spaces in compliance with mandatory requirements.

Generally heating mains exposed at high level in rooms will not be insulated and pipe losses used as heat gains to the space.

DOMESTIC SERVICES

Cold Water Supply

Mains Cold water will connect to the pressure boosting pumpset where the system is designed to meet the peak demand of all showers being used simultaneously. The

pumpset will be located in the plantroom and generally consist of duty/assist pumps, control vessel and control panel. A boosted CWS supply will emanate from the pumpset and distribute to serve the hot water generator and non-potable cold water draw-offs around the building. A valved supply will be provided in the kitchen for final connection to equipment. The provision of isolation valves and drain points will be in accordance with good design practice building requirements and system installed to comply with BS EN 806-5.

Mains Cold Water Supply

A connection will be made to the incoming cold water supply and extend to serve all drinking water points and all remaining cold water outlets

Pipework will generally distribute throughout the building in ceiling voids and service routes and drop locally to serve individual items or groups of ware. Stopcocks will be provided at point of connection for each range of fittings. A valved supply will be provided in the Kitchen for final connection to equipment.

Hot Water Supply

A direct gas fired water heater will be located in the Plant Room and will be of the unvented pattern and provided will all necessary safety features. A supply will extend from the heater and distribute to serve all hot water draw-offs. An electrical trace heating system will be employed to reduce dead leg branches. A valved supply will be provided in the Kitchen for final connection to equipment.

Hot water to outlets to incorporate thermostatic blending valves as required.

Thermostatic blending valves will be provided to all necessary hot water draw-offs to reduce delivery temperatures to 43°C and prevent the risk of scolding. Blending valves will incorporate isolation valves, check valves and strainers and installed with a tamper proof setting device. Consideration will be given in the design to take precautions to eliminate the circumstances thought to contribute to the growth of the bacterium known as Legionella Pneumophillia.

The provision of isolating valves and drain points to be in accordance with good design practice and system installed to comply with BS EN 806-5. All necessary pipework to be insulated with mineral fibre pre-formed sections backed with aluminium foil. Seal joints with matching foil tape to maintain vapour barrier. Fit aluminium servicing bands and identification arrows to BS: 1710.

VENTILATION SYSTEMS

Mechanical ventilation will be provided to serve the following areas and will be designed in accordance with the CIBSE recommendations and full compliance with Building Regulations. Careful Consideration will be given to reducing noise levels from mechanical plant to within acceptable limits. In general, areas not provided with mechanical systems will be ventilated by openable windows or natural building leakage.

Mechanically ventilated rooms: Toilets, Changing rooms, Officials rooms and Cleaner Cupboard

Each room will be provided with an independent extract fan, mounted on the wall or ceiling with discharge ductwork routed to atmosphere via a wall/roof terminal. . Fans will be linked to the respective light circuit or PIR and provided with integral overrun timers to enable fans to continue running for pre-set periods when lights are switched off. Replacement air will be provided from adjoining areas via undercut doors or door mounted air transfer grilles.

PLUMBING INSTALLATION

Sanitary Ware

Sanitary ware will be provided generally in accordance with current issue building drawings and room data sheets. Installation will be fully compliant with manufacturers recommended fixing procedures and good practice. Connection will be made to local domestic services, tested and adjustments made to controls, ball valve etc.

Soil and Ventilating Pipework

Provide internal soil and ventilating pipework connecting to builders drain and rising through roof with weathering slate and terminal or to high level with anti-vac valves. Provide branches as necessary and extend to serve W.C.'s provide bosses to receive wastes.

Soil pipework will be carried out in UPVC and will comply with BS EN 1329-1:2000 with compatible solvent weld fittings.

Access will be provided where necessary either by means of purposes made door at a fitting or by two-piece clamp type door fitted into the pipe runs.

Generally the system design shall comply with BS EN 12056-2:2000 and installations tested for soundness and performance on completion.

Waste Pipework

Provide a waste system to serve Basins, Sinks and Urinals and extend to connect to internal drain gullies and soil pipework. Waste pipework shall be carried out in UPVC and will comply with BS5255:1989 with compatible solvent weld fittings.

Access and cleaning points will be provided where necessary by means of purpose made fittings.

All sanitary appliances will be trapped. Traps will be of moulded white polypropylene manufacture having universal compression outlets to comply with BS3943:1979.

Generally the systems design will comply with BS5572:1978 and installations tested for soundness and performance on completion.

Overflows

Provide PVC overflows from all cisterns to run and discharge external to building, where practicable. Alternative methods are to be in accordance with relevant water authority Byelaws.

COMMISSIONING

All equipment and plant will be fully commissioned prior to handover. Commissioning report for boilers and other specialist equipment will be included in the Operating Manuals that will be handed to the Client on contract completion.

Commissioning training to be provided based on a four season programme for the first year to ensure the building performs efficiently.

All pipe circulation systems will be balanced as appropriate and domestic systems flushed out and purity checks carried out by Public Health Laboratory testing with reports handed to Client prior to use.

Demonstration of the systems and operating procedures will be given to the Clients staff.

3. ELECTRICAL SPECIFICATION

The electrical installation consists of the following elements:

Mains distribution
Sub main distribution and local distribution boards.
Cable management
Small power
Lighting
Emergency lighting
Data
External lighting
Security installation
Fire alarm system
Closed circuit television
Lightning protection
Mechanical services wiring

This specification represents design intent. The installation is to be designed in accordance with the following standards:
This list is not exhaustive and the systems are to be design in compliance with other current and relevant standards to the works

CIBSE guidance notes
CIBSE L2A Guide 4
BS EN 12193:2007
BS 7671: 2011 Seventeenth edition
BS 5839: Part 1 2013 – Fire detection and fire alarm systems for buildings
BS 5266: Part 1 2011 – Emergency Lighting
BS EN 62305-1 - 4:2006
Sport England Artificial Sports Lighting Updated guidance for 2012

MAINS DISTRIBUTION

The new supply will be T.N.C.S. system 400 volt three phase and neutral 50HZ.

The new supply will be terminated into a new MCCB board located in the electrical switch room, s.

SUB MAIN DISTRIBUTION AND LOCAL DISTRIBUTION BOARDS

The sub main distribution consists of XLPE/SWA/PVC/cu cables either fixed direct to the building fabric or on galvanized cable tray run at high level.

.

Distribution boards will be provided in the positions to be

agreed. CABLE MANAGEMENT

All cable containment will consist of cable baskets for lighting, small power, fire alarm cabling and security..

SMALL POWER

The small power installation power points will either been installed as flush on the dado trunking installation or surface mounted in areas where there is no dado trunking. Cabling for the small power installation consists of Twin and Earth cables.

Circuits supplying socket outlets in classrooms and other vulnerable areas are to be protected with MCB/RCD's with the RCD's set at 30mA.

	Room	Sockets (all switched)
	Kitchen	6xtwin above worktop
		1 cooker unit and socket (Hob & oven)
		1 single at LL for fridge with isolator above worktop
		1 single at LL for ~~freezer~~ dishwasher with isolator above
		1 Cleaner socket at LL
	Kitchenette	2 x twin sockets above work top
	Hall	1 at Hl for agreed TV position
		I Aerial point
		1 Cleaner socket at LL
		8 twin sockets placed evenly around room at 450mm AFFL
	Meeting room	dado trucking on one wall with 6 power sockets (2x twin sockets) and phone point. 1 Wireless system data point. Position to be agreed.
	Reception / Office	dado trucking on one wall with 6 power sockets and phone point. 1 Wireless system data point. Position to be agreed
		1 twin socket at low level for broadband server by others
	Lobby	2 twin sockets (for cleaning)
	Foyer	2 twin sockets (for cleaning)
	Officials rooms	1 twin socket (for cleaning)
	Changing rooms	1 twin socket (for cleaning)
	Cleaners/caretaker	1 twin socket
	Bar	4 twin sockets
	Bar Storage Room	2 twin sockets
	~~Hall, Office, Reception Room & Foyer area~~ Throughout the building	~~Cat 6 network cabling throughout~~ Broadband installed that gives 100% wifi coverage throughout the building

	Pation area	1 external lockable socket

Hearing loop to be installed throughout. Specification to be agreed.

LIGHTING

All lighting is to be designed in compliance with Building Regulations

The lighting installation will consist of a recessed and surface fixed linear luminaries.

Cabling for the lighting installation is to consist of twin and earth cables.

Switching of the local circuits will generally consisting of surface mounted local switches ganged to suit the local switching arrangement. PIR switching to be provided where appropriate.

All lighting to be low energy efficient LED lighting

All switches are to be rated at 20 amps.

All lamps selected are to be from the manufacturers most energy efficient range.

EMERGENCY LIGHTING

The emergency lighting installation is to consist of mainly modified normal light fittings which are to be modified to give emergency operation. These are to be fitted with the necessary inverters ballast and batteries to give three hours operation in the event of a loss of power supply.

The emergency lighting installation is to be installed in accordance with BS5266.

Cabling for the emergency lighting installation is to consist of |Twin and Earth cables, sizes as indicated on the schedules these are to be wired as part of the normal lighting circuit.

At positions as indicated on the drawings secret key switches are to be provided to give local test facilities for the emergency lighting installation.

.

PHONE LINE & INTERNET BROADBAND

Provide services ducts and allow for connections for incoming phone and internet lines (ordered and paid for by end user) to phone point in Reception / office and Meeting Room. Cat 6 network cabling to be installed in hall, office, reception and reception for wifi. Broadband system that gives 100% coverage throughout the building. Point of exit is the same as point of entry.

EXTERNAL LIGHTING

The external lighting installation will consist of a mixture building mounted and remote lighting columns to cover the immediate building perimeter and the car park.
Cabling for the external lighting installation is to consist of 6491B/cu cables, sizes as indicated on the schedules for the building mounted luminaries; these are to be wired as part of the normal lighting circuit. The remote fittings are to be cabled using PVC/SWA/PVC/cu cables buried direct in the ground.

Control of the remote fittings is to be via a time clock and photocell combination, which will operate the coil of the external lighting contractor. The controls are to be located in the electrical switch room.

SECURITY INSTALLATION

A specialist security installer will install a security system consisting of door contacts and dual technology detectors. The system will be installed by a company on the official list of recognised firms of any UKAS accredited inspectorate body and will also appear on the local police force list of compliant companies. The system will be installed to BS4737: part 1: 1986, BSDD 243:2002 and in accordance with ABI/association of Chief Police Officers (ACPO) Policy Response to Security Systems 2000. Means of compliance with BS DD 243: 2002 will be confirmed with the employers' agent prior to installation.

The alarm should be sequentially confirmed unless agreed with the employers' agent prior to installation.

Local audible sounders will be configured to operate instantaneously and the system will incorporate the automatic transmission of alarm signals to an alarm receiving centre which conforms to BS 5979, by either CSL DualCom or RedCare GSM.

The alarm Company Specification will be issued to the employers' agent for approval prior to installation.

Cabling for the security system is to be contained within the dedicated compartment of the multi compartment trunking.

FIRE ALARM SYSTEM

The fire alarm system is to be installed to points as indicated on drawings and will consist of a fire alarm control panel, break glass call points, smoke detectors, heat detectors and electronic sounders.

The system is to be designed to comply with BS5839 -1 2013 Category L2 and the Rules for Automatic Fire Detection and Alarm Systems for the Protection of Property (RLS1) issued by the Loss Prevention Council.

All equipment is to be supplied and commissioned by a specialist fire alarm company. The installing company should be a BAFE registered organisation certified to LPS 1014.

The system is to be wired using "Datwyler Lifeline" cable contained in the multi compartment trunking or clipped surface to the various items of equipment.

The fire alarm panel is to be a single loop analogue addressable which when configured will identify the location in text format on the panel display the location of the device which has either gone into fire or a fault developed with.

When the system goes into a fire situation all the sounders are to operate along with the interfaces to the mechanical services control panel.

Remote signalling to be incorporated either direct to the local fire brigade or to a permanently manned monitoring station conforming to BS5979.

CLOSED CIRCUIT TELEVISION

Closed circuit television cameras will cover the front, side and rear elevations of the building and include the doors to be external store room and be linked by to a central recording unit situated in the office

The complete system is to be supplied and installed by a specialist CCTV installer as per the security system.

Within the Reception / office a monitor is to be installed to enable the office staff to review recorded information.

CCTV should be compatible for integration with CBC CCTV

network LIGHTNING PROTECTION

A lightning protection system is to be installed if required following risk assessment in accordance with latest EN guidance.

The system is to consist of low level bonds to the building steel frame which are to link to ground mounted earth rods via test points. At high-level bonds are to be taken from the building frame to link to the sheet roofing and guttering.

MECHANICAL SERVICES WIRING

The complete mechanical services installation will be wired in accordance with the information provided by the mechanical services contractor.

The cable installation is to be contained in galvanized steel trunking and conduit installed surface within the plant room.

The mechanical services contractor will provide all the following equipment, extract fans, extract fan controllers, room stats, pipe stats etc, along with any equipment necessary for the mechanical services installation to function.

OTHER SPECIFCATION ITEMS / FIT OUT

Refer to legal agreement associated with CB/16/01192/FUL, CRAN-PH3-02A – Community Building & CRAN-PH3-PAV-01N – External Layout

External works (Refer to CRAN-PH3-PAV-01N

Paved area to rear of building with external lighting and landscaping (25m^2) Paving and lighting to be agreed.

Main entrance is covered by a clear canopy (refer to AN-PH3-

02A) Outside Tap with internal stop cock (location to be agreed)

Outside locakable electrical point.

Parking to be laid out as per CBC Community Building Specification and CRAN-PH3-PAV-01N

4. Appendix A – Plans and Elevations