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1.0 INTRODUCTION

Brinson Staniland Partnership have been commissioned to carry out a feasibility report / outline proposal matrix for the electrical and mechanical systems within the proposed refurbishment at Holmes Road Depot, 78 Holmes Road, London, NW5 3AP.

The existing depot building is a multifunctional space generally consisting of workshops, stores and office accommodation and has undergone various refurbishment works during the buildings life. Holmes Road Depot is a 1960's mixed-use building consisting of commercial / industrial and residential units. The depot comprises of a concrete framed structure with non-loadbearing cavity wall brickwork infills. The windows mainly consist of metal single glazed windows to the 1st and 2nd storey of the block, with upgraded uPVC windows to the ground floor level. The roofs generally consist of a concrete deck with a built-up felt roofing.

In addition there are 21 flats at 76 Holmes Road, which are served from the Depot's centralised heating system. There are also 4 residential units located on the second floor above the Parking CCTV offices which are provided with independent heating systems.

All 25 units have independent electrical supplies and are not connected to, or served from the depot.

The proposed works at the works depot comprise the complete renewal of the LTHW heating system, DHW system and the above ground soil and waste systems, and the installation of new VRF systems. Electrical works comprise the complete renewal of the incoming supply arrangements, sub-main distribution, small power, lighting, fire alarm, communications systems and security systems.

This report has been based on drawings all provided by Pellings LLP.

This scope of works for the project has been formulated based on the requirements identified through various communications with the design team and the council. Further meetings will be required to develop the scope of works once the outline proposals have been agreed.

All designs will be undertaken in accordance with the relevant CIBSE Guides, IET Guides, Building Regulations, Water Regulations, Gas Regulations, and British/European/International Standards and will be subject to Building Regulation approvals. A BREEAM Rating for the building is not required.

Reference is made to the separate Condition report and Energy Strategy Report by Brinson Staniland Partnerships.

2.0 OUTLINE PROPOSALS MATRIX

Electrical Systems												
System		Access Control	Video / Audio Entry	Data & Telephones	Fire Alarm	Intruder Alarm	CCTV	Lighting	Emergency Lighting	Main Distribution	Sub-main Distribution	Small Power
Zone #	Zone Description											
Zone 01	Veolia	Existing Controls to be retained	Existing Video entry to be retained	Existing Data & Telephone provision to be retained	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	Existing intruder alarm provision to be retained	Not Applicable	Existing Lighting & controls to be retained	Existing emergency lighting to be retained	Not Applicable	Existing Distribution Board to be retained & resupplied from new LV supply arrangement.	Existing small power provision to be retained
Zone 02	Carpentry Workshops	Existing Controls to be retained	Not Applicable	Existing Data & Telephone provision to be retained. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	Existing intruder alarm provision to be retained	Not Applicable	Existing Lighting & controls to be retained	Existing emergency lighting to be retained	Not Applicable	Existing distribution boards to be retained and resupplied from new LV Supply.	Existing small power provision to be retained
Zone 03	Toilets & Lockers & Canteen	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Not Applicable	Not Applicable	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Not Applicable	Surface mounted IP44 Luminaires with Occupancy Controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	Dedicated circuits to hand driers, ventilation equipment. Cleaners sockets at 1 per 10m.
Zone 04	Environmental Services Offices	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Audio entry panel to each main door to the space.	Twin data outlet per desk mounted on perimeter dado trunking. Cat 6A cabling routed on cable basket to local patch panel / comms room. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Not Applicable	600x600 LED luminaires with daylight & Occupancy Detection	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	2 double socket outlets per desk mounted to desk power system, connected via perimeter dado trunking. Dedicated circuits to door controllers, ventilation equipment and other items of small power. Cleaners sockets at 1 per 10m.
Zone 05	Comms Room 4a	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Not Applicable	Data Cabling from other zones terminated in IT cabinets with detailed layouts provided by specialist IT provider	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to newCIE	New intruder presence detection.	Not Applicable	Surface mountedLED Luminaires with Occupancy Controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Standby by UPS power to be provided by 160kVA UPS within comms room 3 / CCTV suite.	Distribution board to serve local circuits fed via UPS within comms room 3.	Dedicated small power circuits to IT cabinets to IT specialists requirements.
Zone 06	Intake Rooms	Existing Controls to be retained	Not Applicable	Existing telephone line to be retained	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection.	Not Applicable	Surface Mounted IP65 linear Luminaires with Occupancy Control	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	New 630A TP&N UKPN supply to be provided. Form 4 Type 2 Cubicle switch panel with Sub-main cabling to MCCB panel board load centres. Metering to TM39.	Distribution board to serve local circuits. Metering to TM 39	Small power provision to ventilation equipment as necessary
Zone 07	Mechanical Plant Room	Existing Controls to be retained	Not Applicable	Single data outlet for BMS. Cat 6A cabling routed on cable basket to local patch panel / comms room.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection.	Not Applicable	Surface Mounted IP65 linear Luminaires with Occupancy Control	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits & MCCP. Metering to TM 39	small power circuitry to pumps, motors, boilers as necessary to suit final layouts
Zone 08	Stores	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Audio entry panel to each main door to the space.	Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Not Applicable	Surface Mounted IP65 linear Luminaires with Occupancy Control	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	General provision of small power outlets to suit final layouts
Zone 09	Stores Offices	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Audio entry panel to each main door to the space.	Twin data outlet per desk mounted on perimeter dado trunking. Cat 6A cabling routed on cable basket to local patch panel / comms room. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Not Applicable	600x600 LED luminaires with daylight & Occupancy Detection	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	2 double socket outlets per desk mounted to desk power system, connected via perimeter dado trunking. Dedicated circuits to door controllers, ventilation equipment and other items of small power. Cleaners sockets at 1 per 10m.

Electrical Systems												
System		Access Control	Video / Audio Entry	Data & Telephones	Fire Alarm	Intruder Alarm	CCTV	Lighting	Emergency Lighting	Main Distribution	Sub-main Distribution	Small Power
Zone #	Zone Description											
Zone 10	External Sheds	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Fixed IP65 CCTV cameras to identify & observe	IP65 LED Highbay type Lights and timeswitch / Photocell controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Not Applicable	Not Applicable
Zone 11	Car Parking	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Fixed IP65 CCTV cameras to identify & observe	Wall Mounted IP65 LED Bulkhead Lights with no upward lighting & timeswitch / Photocell controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Not Applicable	Not Applicable
Zone 12	Main Reception	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Audio / Video Vandal resistance external Video Entry panel. Disabled refuge system main control panel	Twin data outlet per desk mounted on perimeter dado trunking. Cat 6A cabling routed on cable basket to local patch panel / comms room. Incoming Open Reach PABX / Fibre optic to remain as existing. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices and Main Fire Alarm system CIE	New intruder presence detection and main control system.	Fixed CCTV cameras to identify & observe	Decorative LED downlights with daylight & Occupancy Controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	2 double socket outlets per desk mounted on perimeter dado trunking. Dedicated circuits to door controllers, ventilation equipment and other items of small power. Cleaners sockets at 1 per 10m.
Zone 13	Metalwork Workshops	Not Applicable	Not Applicable	Twin data outlet per desk mounted on perimeter trunking. Cat 6A cabling routed on cable basket to local patch panel / comms room. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Not Applicable	Surface Mounted IP65 lowbay type LED Luminaires with Traditional switching	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	MCCB panel board with Sub-main cabling to local distribution boards. Metering to TM39	Distribution board to serve local circuits. Metering to TM 39	Small power circuitry to items of equipment as necessary to suit final layouts, within perimeter steel trunking.
Zone 14	Painters Workshop	Existing Controls to be retained	Not Applicable	Existing Data & Telephone provision to be retained. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	Existing intruder alarm provision to be retained	Not Applicable	Existing Lighting & controls to be retained	Existing Emergency Lighting to be retained	Not Applicable	Existing Distribution Board to be retained	Existing small power provision to be retained
Zone 15	Stair cores	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Audio entry panel to each main door to the space. Disabled refuge alarm system linked to main fire alarm CIE location	Not Applicable	Smoke / Heat detectors, manual breakglasses, audio warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Fixed CCTV cameras to identify & observe	Surface mounted IP44 Luminaires with Occupancy Controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	Cleaners sockets at 1 per 10m.
Zone 16	New Mechanical Plant Room	Not Applicable	Not Applicable	Single data outlet for BMS. Cat 6A cabling routed on cable basket to local patch panel / comms room.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Not Applicable	Surface Mounted IP65 linear Luminaires with Occupancy Control	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits & MCCP. Metering to TM 39	small power circuitry to pumps, motors, boilers as necessary to suit final layouts
Zone 17	Repairs Office Call Centre	Existing Controls to be retained	Existing audio entry provision to be retained.	Existing Data & Telephone provision to be retained. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	Existing intruder alarm provision to be retained	Not Applicable	Existing Lighting & controls to be retained	Existing Emergency Lighting to be retained	Not Applicable	Existing Distribution Board to be retained	Existing small power provision to be retained
Zone 18	Comms Room 2	Existing Controls to be retained	Not Applicable	Existing Data & Telephone provision to be retained	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection.	Not Applicable	Existing Lighting & controls to be retained	Existing Emergency Lighting to be retained	Standby by UPS power to be provided by 160kVA UPS within comms room 3 / CCTV suite.	Existing Distribution Board to be retained and resupplied from comms room 3 UPS	Existing small power provision to be retained

Electrical Systems												
System		Access Control	Video / Audio Entry	Data & Telephones	Fire Alarm	Intruder Alarm	CCTV	Lighting	Emergency Lighting	Main Distribution	Sub-main Distribution	Small Power
Zone #	Zone Description											
Zone 19	First Floor Toilets	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Not Applicable	Not Applicable	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Not Applicable	Surface mounted IP44 Luminaires with Occupancy Controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	Dedicated circuits to hand driers, ventilation equipment. Cleaners sockets at 1 per 10m.
Zone 20	Comms Room 1	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Not Applicable	Data Cabling from other zones terminated in IT cabinets with detailed layouts provided by specialist IT provider	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection.	Not Applicable	Surface mounted LED Luminaires with Occupancy Controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Standby by UPS power to be provided by 160kVA UPS within comms room 3 / CCTV suite.	Existing Distribution Board to be retained and resupplied from comms room 3 UPS	Dedicated small power circuits to IT cabinets to IT specialists requirements / layouts.
Zone 21	Repairs Offices	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Audio entry panel to each main door to the space.	Twin data outlet per desk mounted on perimeter dado trunking. Cat 6A cabling routed on cable basket to local patch panel / comms room. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Not Applicable	600x600 LED luminaires with daylight & Occupancy Detection	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Existing MCCB panel board to be retained	Distribution board to serve local circuits. Metering to TM 39	2 double socket outlets per desk mounted to desk power system, connected via perimeter dado trunking. Dedicated circuits to door controllers, ventilation equipment and other items of small power. Cleaners sockets at 1 per 10m.
Zone 22	Comms Room 3	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Not Applicable	Data Cabling from other zones terminated in IT cabinets with detailed layouts provided by specialist IT provider	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection.	Not Applicable	Surface mounted LED Luminaires with Occupancy Controls	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	New 160kVA UPS plus bypass switch provided to serve all equipment within comms room 3, plus cabinets with comms room 1, 2 & 4a.	New distribution board to serve comms room 3, plus cabinets with comms room 1, 2 & 4a from new 160kVA UPS.	Dedicated small power circuits to IT cabinets to IT specialists requirements.
Zone 23	CCTV Suite Offices	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Audio / Video entry panel to each main door to the space.	Twin data outlet, single data outlet Co-ax outlet & twisted pair cable outlet per desk mounted in desk consoles. Cat 6A cabling routed on cable basket to local patch panel / comms room. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for rooms with windows.	Fixed CCTV cameras to observe	600x600 LED luminaires with daylight & Occupancy Detection	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	2 double socket outlets per desk mounted to desk power system, connected via perimeter dado trunking. Dedicated circuits to door controllers, ventilation equipment and other items of small power. Cleaners sockets at 1 per 10m.
Zone 24	CCTV Suite Video Wall	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Audio / Video entry panel to each main door to the space.	Quad data outlet, Twin Co-ax outlet & twisted pair cable outlet per desk mounted on perimeter dado trunking. Cat 6A cabling routed on cable basket to local patch panel / comms room.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	Not Applicable	Not Applicable	600x600 LED luminaires with daylight & Occupancy Detection	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits, supplied from comms room 3 UPS	4 double socket outlets per desk position mounted in desk consoles
Zone 25	Roof PV Panels	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Surface mounted IP65 LED Bulkhead Lights with no upward lighting & traditional switches	Integral to normal luminaries complete with 3hour battery backup	Not Applicable	G59 Controller & DC isolators	Not Applicable
Zone 26	Roof Solar Thermal Panels	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Surface mounted IP65 LED Bulkhead Lights with no upward lighting & traditional switches	Integral to normal luminaries complete with 3hour battery backup	Not Applicable	25kWp (400m2) Photovoltaic Array (exact size as per specialists installers design)	Not Applicable
Zone 27	South & West Offices Plant Area	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Existing Lighting & controls to be retained	Existing Emergency Lighting to be retained	Not Applicable	Not Applicable	Dedicated power supplies to condenser units fed from local floor distribution boards. AC units serving comms rooms to be supplied from generator MCCB Panel board.

Electrical Systems												
System		Access Control	Video / Audio Entry	Data & Telephones	Fire Alarm	Intruder Alarm	CCTV	Lighting	Emergency Lighting	Main Distribution	Sub-main Distribution	Small Power
Zone #	Zone Description											
Zone 28	HASC Call Centre Plant Area	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Existing Lighting & controls to be retained	Existing Emergency Lighting to be retained	Not Applicable	Not Applicable	Existing condenser supplies to be retained. Existing AC unit serving comms room 2 to be supplied from generator MCCB Panel board.
Zone 29	CCTV Suite Plant Area	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Surface mounted IP65 LED Bulkhead Lights with no upward lighting & traditional switches	Integral to normal luminaries complete with 3hour battery backup	Not Applicable	Not Applicable	Dedicated power supplies to condenser units fed from local floor distribution boards. AC units serving comms rooms to be supplied from generator MCCB Panel board.
Zone 30	Security Reception	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Not Applicable	Twin data outlet per desk mounted on perimeter dado trunking. Cat 6A cabling routed on cable basket to local patch panel / comms room. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE. Repeating fire alarm panel to be provided	New intruder presence detection for rooms with windows. Main intruder alarm control panel & keypad.	Not Applicable	600x600 LED luminaires with daylight & Occupancy Detection	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	2 double socket outlets per desk mounted to desk power system, connected via perimeter dado trunking. Dedicated circuits to door controllers, ventilation equipment and other items of small power. Cleaners sockets at 1 per 10m.
Zone 31	Future District Heating Plant room	Not Applicable	Not Applicable	Not Applicable	Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	Not Applicable	Not Applicable	Surface Mounted IP65 linear Luminaires with Occupancy Control	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Distribution board to serve local circuits. Metering to TM 39	Dedicated power supplies to circulating pumps fed from local distribution board
Zone 32	Tool Lockers	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Not Applicable	Not Applicable	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection for tool lockers.	Fixed CCTV cameras to observe	Surface Mounted IP65 linear Luminaires with Occupancy Control	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Not Applicable	Not Applicable	Small power provision to ventilation& small power as necessary
Zone 33	Generator Room	Proximity reader, push to egress & emergency green breakglass; connected to a local door controller	Not Applicable	Single data outlet for remote indication of generator operation. Cat 6A cabling routed on cable basket to local patch panel / comms room.	Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	New intruder presence detection.	Not Applicable	Surface Mounted IP65 linear Luminaires with Occupancy Control	Integral to normal luminaries & emergency exit signage, all complete with 3hour battery backup	Automatic changeover switch & MCCB Panelboard to be provided for free issue generator. Generator MCCB panel board to be provided to serve 160kVA UPS in comms room 3 and AC units withing comms rooms 1,2,3&4.	Not Applicable	Small power provision to ventilation equipment as necessary
Zone 34	Call centre Small meeting rooms	Existing Controls to be retained	Not Applicable	Existing Data & Telephone provision to be retained. Wifi provision for dual data cables to be provided.	Smoke / Heat detectors, manual breakglasses, audio / visual warning devices connected to new CIE	Existing intruder alarm provision to be retained	Not Applicable	Existing Lighting & controls to be retained	Existing Emergency Lighting to be retained	Not Applicable	Not Applicable	Existing small power provision to be retained

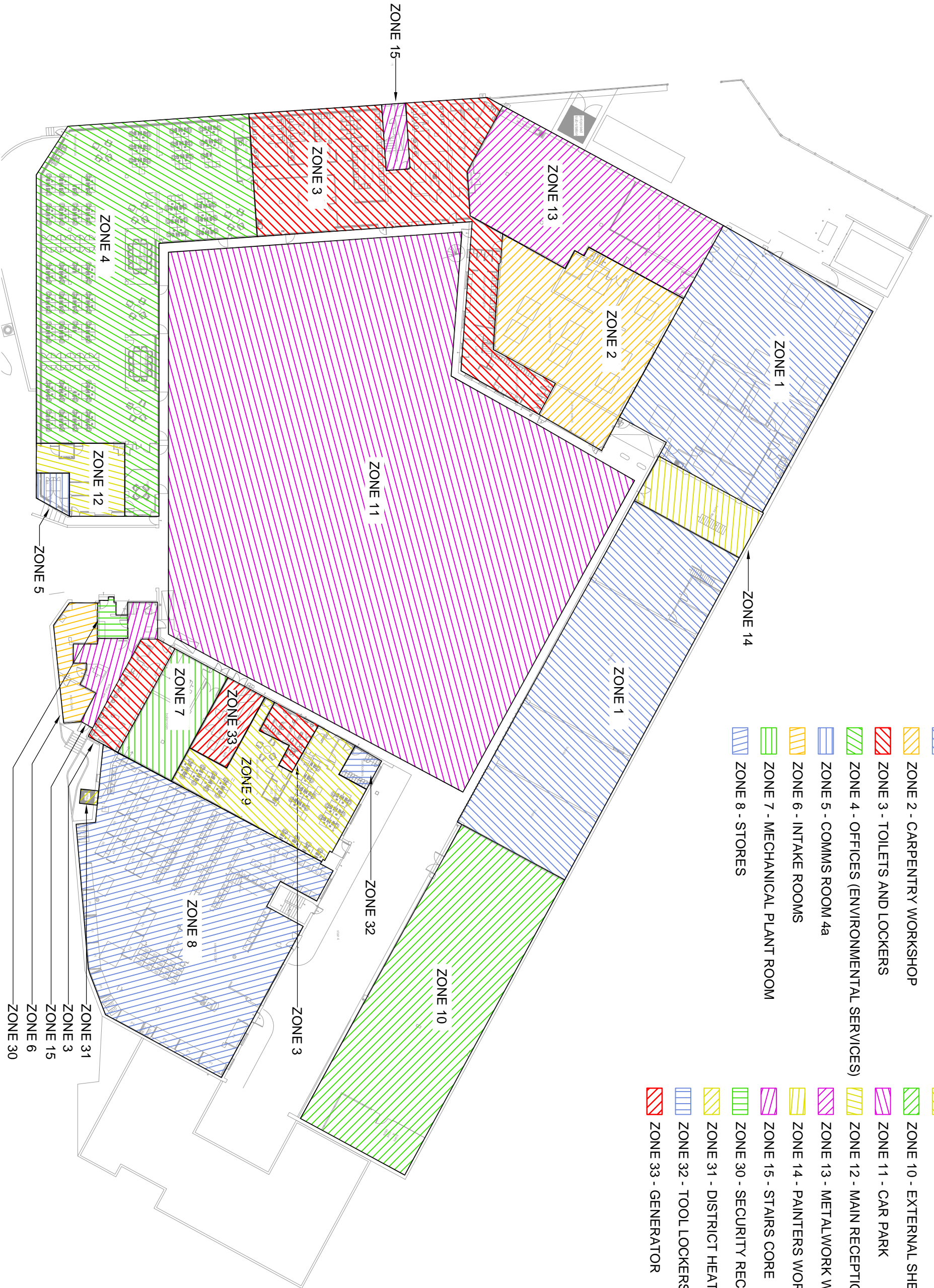
		Mechanical Systems							
System		Incoming Supplies	Natural Gas	Heating	Cooling	DWS	Soil & Waste Systems	Ventilation	Automatic Controls
Zone #	Zone Description								
Zone 01	Veolia	Not Applicable	Not Applicable	Existing electric heating to be retained	Not applicable	Existing DWS to be connected into new West Wing systems	Existing Soil & Waste systems to be retained	Not Applicable	Not Applicable
Zone 02	Carpentry Workshops	Not Applicable	Not Applicable	New heat emitters and LTHW distribution connected to new West wing Plant Room	Not applicable	Not applicable	Not applicable	Existing machinery dedicated ventilation to be retained. Existing natural ventilation openings to be retained.	Existing Ventilation control systems to be retained
Zone 03	Toilets & Lockers & Canteen	Not Applicable	Not Applicable	New heat emitters and LTHW distribution to be connected to West Wing plant room	Not applicable	West wing toilets DWS to be provided from new Mezzanine Plant Room.	New above ground S&W for both new and refurbished areas. New below ground service to be extended to new Toilet & Lockers areas.	New ceiling heat recovery mechanical ventilation system. Controlled by PIR sensors.	New Ventilation system to be connected to new BMS system
Zone 04	Environmental Services Offices	Not Applicable	Not Applicable	Heating to be provided by new VRF system. Outdoor units to be located on West roof above	Cooling to be provided by new VRF system. Outdoor units to be located on West roof above	DWS to be provided from new Mezzanine plant room	New sanitary ware to be provided with new Soil & Waste systems to connect to existing.	New ceiling void heat recovery mechanical ventilation system to be provided to office spaces. Local exhaust systems provided to Tea Rooms.	Ventilation systems to be controlled by PIR sensors.
Zone 05	Comms Room 4a	Not Applicable	Not Applicable	Not applicable	New dedicated direct expansion split units, to be provided on N+1 basis	Not applicable	Not applicable	New local extract fan to be provided	Temperature control with changeover to be provided
Zone 06	Intake Rooms	Incoming mains water systems to be retained	Incoming gas mains and meter to be retained	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not Applicable
Zone 07	Mechanical Plant Room	Incoming gas and water to be extended from existing meters to serve new plant.	New gas main to be extended to the refurbished Ground Floor plant room	New boilers, distribution pumps, expansion vessels, pressurisation unit and pipework to be installed	Not applicable	New LTHW Calorifier and distribution pumps to be installed. Existing cold water mains to be extended to the refurbished ground floor plant room from the Services Intake Room	New boiler condensate water to discharge into existing floor gulleys.	Plant room ventilation to be renewed	New BMS system to be installed
Zone 08	Stores	Not Applicable	Not Applicable	New LTHW heat emitters and distribution pipework to be connected to East Wing heating system.	Not applicable	New single point of use electric water heater for the Tea Station. New cold water service to be extended to Tea Station.	New sink waste to be provided for Tea Station sink. Existing cast iron stack from above to be retained.	New window or wall mounted extract fans at high level	Local ventilation controls.
Zone 09	Stores Offices	Not Applicable	Not Applicable	Heating to be provided by new VRF system. Outdoor units to be located on East roof above	Cooling to be provided by new VRF system. Outdoor units to be located on East roof above.	Not applicable	Not applicable	New ceiling void heat recovery mechanical ventilation system. Controlled by PIR sensors.	Local VRV / MHRV controls to be provided

		Mechanical Systems							
System		Incoming Supplies	Natural Gas	Heating	Cooling	DWS	Soil & Waste Systems	Ventilation	Automatic Controls
Zone #	Zone Description								
Zone 10	External Sheds	Not Applicable	Not Applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not Applicable
Zone 11	Car Parking	Not Applicable	Not Applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not Applicable
Zone 12	Main Reception	Not Applicable	Not Applicable	Heating to be provided by new VRF system	Cooling to be provided by new VRF system	Not applicable	Not applicable	New heat recovery mechanical ventilation system. Controlled by PIR sensors.	Local VRV / MHRV controls to be provided
Zone 13	Metalwork Workshops	Not Applicable	Not Applicable	New LTHW heat emitters and distribution pipework to be connected to West Wing heating system.	Not applicable	1 No. new undersink single point of use electric water heater. Cold water service to sink to be renewed.	New waste from sink to connect to existing below ground system.	New window or wall mounted extract fans at high level. Existing local extract system to be relocated.	Existing ventilation control system to be relocated
Zone 14	Painters Workshop	Not Applicable	Not Applicable	New LTHW heat emitters and distribution pipework to be connected West Wing heating system.	Not applicable	New cold water service to be extended to Workshop	Not applicable	New local extract fans at high level. New dedicated paint spray extract system to be provided by specialist	Local painters workshop ventilation controls to be provided
Zone 15	Stair cores	Not Applicable	Not Applicable	New LTHW heat emitters and distribution pipework to be connected to East Wing heating system.	Not applicable	Not applicable	Not applicable	Not applicable	Not Applicable
Zone 16	New Mechanical Plant Room	New gas and water mains to be extended from the street. New meter and stopcock to be installed.	New gas to be extended to plant room from new gas meter	New boilers, distribution pumps, expansion vessels, pressurisation unit and pipework to be installed	Not applicable	New Calorifier with double coil for solar thermal collectors and distribution pumps to be installed. New water mains to be extended from the street. CWS Cistern and Booster Set to be installed.	Not applicable	New plant room ventilation to be provided. New boiler flues to discharge above roof level.	Not Applicable
Zone 17	Repairs Office Call Centre	Not Applicable	Not Applicable	Existing VRF systems to be retained	Existing VRF systems to be retained	Hot and cold water services to Tea Station to be renewed	Tea Station sink waste to be renewed	Existing mechanical heat recovery ventilation to be retained. Tea Station extract fan to be renewed.	Local VRV / MHRV controls to be retained
Zone 18	Comms Room 2	Not Applicable	Not Applicable	Not applicable	Direct expansion split units to be renewed, to be provided on N+1 basis	Not applicable	Not applicable	Local extract fan to be renewed	Temperature control auto changeover to be provided

		Mechanical Systems							
System		Incoming Supplies	Natural Gas	Heating	Cooling	DWS	Soil & Waste Systems	Ventilation	Automatic Controls
Zone #	Zone Description								
Zone 19	First Floor Toilets	Not Applicable	Not Applicable	New heat emitters and LTHW distribution to be connected to East Wing plant room	Not applicable	West wing toilets DWS to be served from new Mezzanine Plant Room. East wing toilets DWS to be served from Ground Floor Plant Room	New above ground S&W	New heat recovery mechanical ventilation system. Controlled by PIR sensors.	New Ventilation system to be connected to new BMS system
Zone 20	Comms Room 1	Not Applicable	Not Applicable	Not applicable	Direct expansion split unit to be renewed, to be provided on N+1 basis	Not applicable	Not applicable	Extract fan to be renewed	Not Applicable
Zone 21	Repairs Offices	Not Applicable	Not Applicable	Offices West: provided by new VRF system. Offices South West: provided by modified existing VRF. Offices South: provided by modified existing VRF.	Offices West: provided by new VRF system. Offices South West: provided by modified existing VRF. Offices South: provided by modified existing VRF.	New single point of use electric water heater for the Tea Station. New cold water service to be extended to Tea Station	New waste for Tea Station sink to be provided.	South and West Offices to be provided with new heat recovery mechanical ventilation. SW Offices: existing heat recovery mechanical ventilation to be retained	South and West Offices to be provided with new local VRV/MHRV controls. Local VRV / MHRV controls to be retained in South West offices.
Zone 22	Comms Room 3	Not Applicable	Not Applicable	Not applicable	2 No. existing d-x split units to be renewed. 2 No. existing d-x split units to be retained	Not applicable	Not applicable	Extract fan to be renewed	Temperature control auto changeover to be provided
Zone 23	CCTV Suite Offices	Not Applicable	Not Applicable	Heating to be provided by new mini-VRF system. Wall-hung outdoor units to be located on North facing wall of CCTV suite.	Cooling to be provided by new VRF system. Wall-hung outdoor units to be located on North facing wall of CCTV suite.	New single point of use electric water heater for the Tea Station. New cold water service to be extended to Tea Station,	Not applicable	New heat recovery mechanical ventilation system. Controlled by PIR sensors.	New local VRV/MHRV controls to be provided.
Zone 24	CCTV Suite Video Wall	Not Applicable	Not Applicable	Heating to be provided by new mini-VRF system. Wall-hung outdoor units to be located on North facing wall of CCTV suite.	Cooling to be provided by new VRF system. Wall-hung outdoor units to be located on North facing wall of CCTV suite.	Not applicable	Not applicable	New heat recovery mechanical ventilation system. Controlled by PIR sensors.	New local VRV/MHRV controls to be provided.
Zone 25	Roof PV Panels	Not Applicable	Not Applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not Applicable
Zone 26	Roof Solar Thermal Panels	Not Applicable	Not Applicable	Not applicable	Not applicable	Evacuated solar collectors for hot water generation located on the roof. Minimum area: 20m²	Not applicable	Not applicable	Not Applicable
Zone 27	South & West Offices Plant Area	Not Applicable	Not Applicable	Condensers for the new VRF systems (Ground Floor and First Floor West) to be located on the roof. Existing condensers for the First Floor South West and South VRF systems to be retained.	Condensers for the new VRF systems (Ground Floor and First Floor West) to be located on the roof. Existing condensers for the First Floor South West and South VRF systems to be retained.	Not applicable	Not applicable	Not applicable	Not Applicable

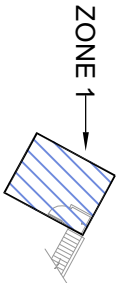
		Mechanical Systems							
System		Incoming Supplies	Natural Gas	Heating	Cooling	DWS	Soil & Waste Systems	Ventilation	Automatic Controls
Zone #	Zone Description								
Zone 28	HASC Call Centre Plant Area	Not Applicable	Not Applicable	Existing VRV systems condensers located on the roof to be retained	Existing VRV systems condensers located on the roof to be retained	Not applicable	Not applicable	Not applicable	Not Applicable
Zone 29	CCTV Suite Plant Area	Not Applicable	Not Applicable	New VRV systems condensers to be located on the metalwork workshop roof	New VRV systems condensers to be located on the metalwork workshop roof	Not applicable	Not applicable	Not applicable	Not Applicable
Zone 30	Security Reception	Not Applicable	Not Applicable	New heat emitter and LTHW distribution to be connected to East Wing plant room	Not applicable	Not applicable	Not applicable	Local wall-mounted extract fan to be provided	Local ventilation controls to be provided
Zone 31	Future District Heating Plant room	Future incoming District Heating supply connection and valves to be located (to be confirmed) in enclosure.	Not Applicable	New Plate Heat Exchanger (provided by others) LTHW connections to be extended to East Wing Plant Room.	Not applicable	Not applicable	Not applicable	Local extract fan to be provided	Local ventilation controls to be provided
Zone 32	Tool Lockers	Not Applicable	Not Applicable	New LTHW heat emitters and distribution pipework to be connected to East Wing heating system.	Not applicable	Not applicable	Not applicable	Local wall-mounted extract fan to be provided	Local ventilation controls to be provided
Zone 33	Generator Room	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	External louvres and lowered doors to be provided for combustion and cooling of generator.	Not Applicable
Zone 34	Call centre Small meeting rooms	Not Applicable	Not Applicable	Heating to be provided by wall mounted Split Heat Pump unit connected to external unit on roof	Cooling to be provided by wall mounted Split Heat Pump unit connected to external unit on roof	Not Applicable	Not Applicable	Existing Ventilation sysem to be retained	Local AC / Ventilation controls to be provided

3.0 OUTLINE SCHEME DRAWINGS



Background Based On Architect's Drawing:
Arch Dwg: 274-009-10-N

				scale	check	project title	
				1:400@A3	SW	Holmes Road Depot	
				date	drawn	client	
				Aug 2016	CC	Pellings	
				drawing title			drawing number
				Proposed systems zoning - Ground Floor			1654-ME005
							rev
							12



ZONE 1 - VEOLIA

ZONE 2 - CARPENTRY WORKSHOP

ZONE 3 - TOILETS AND LOCKERS

ZONE 7 - MECHANICAL PLANT ROOM

ZONE 8 - STORES

ZONE 9 - STORES OFFICES

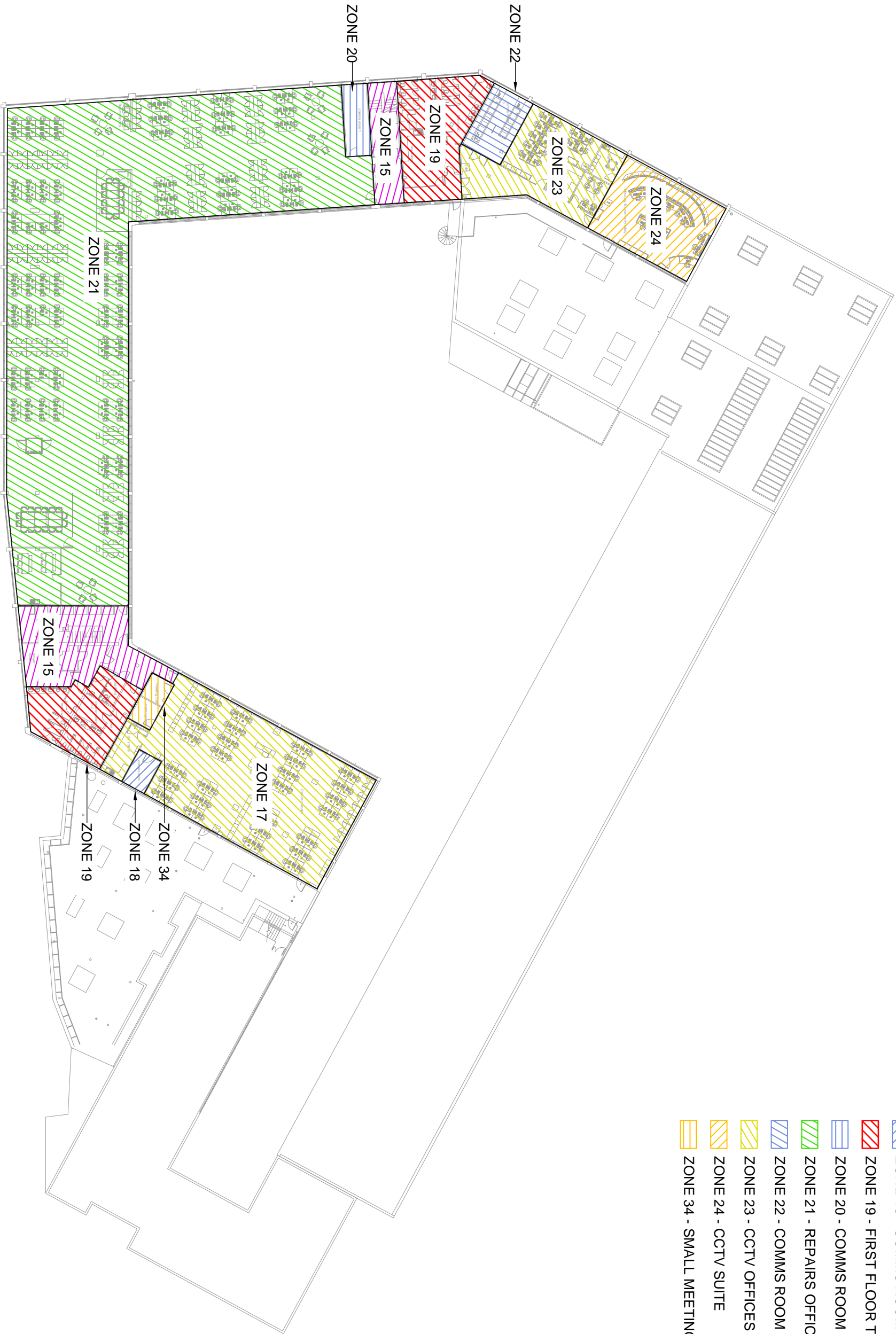
ZONE 15 - STAIR CORE

ZONE 16 - NEW MECHANICAL PLANT ROOM



Background Based On Architect's Drawing: Arch Dwg. 274-009-11-I									

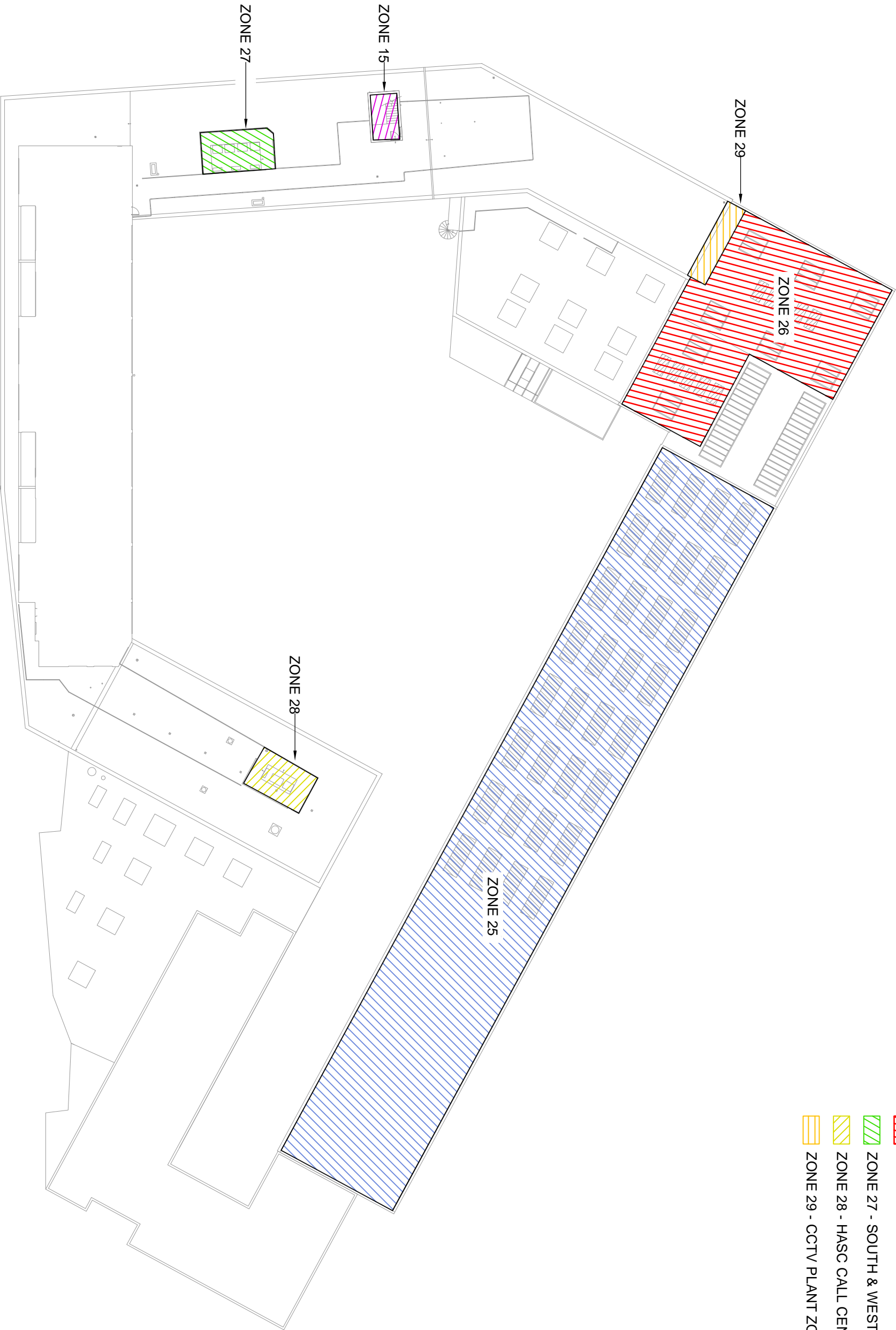
- ZONE 15 - STAIRS CORE
- ZONE 17 - CALL CENTRE OFFICES
- ZONE 18 - COMMS ROOM 2
- ZONE 19 - FIRST FLOOR TOILETS
- ZONE 20 - COMMS ROOM 1
- ZONE 21 - REPAIRS OFFICE
- ZONE 22 - COMMS ROOM 3
- ZONE 23 - CCTV OFFICES
- ZONE 24 - CCTV SUITE
- ZONE 34 - SMALL MEETING ROOMS



Background Based On Architect's Drawing:
Arch Dwg. 274-009-12-H

			scale	check	project title		
			1:400@A3	SW	Holmes Road Depot		
	12	Issued for Information	16.09.16		date	drawn	client
Rev	11	Issued for Information	03.08.16		Aug 2016	CC	Pellings
		Description			drawing title		drawing number
					Proposed systems zoning - First Floor		1654-ME07
							rev
							12

- ZONE 15 - STAIRS CORE
- ZONE 25 - ROOF PV PANELS
- ZONE 26 - SOLAR THERMAL PANEL
- ZONE 27 - SOUTH & WEST OFFICES ROOF PLANT
- ZONE 28 - HASC CALL CENTRE ROOF PLANT
- ZONE 29 - CCTV PLANT ZONE



Background Based On Architect's Drawing:
Arch Dwg: 274-009-31-E

			scale	check	project title			
	12	Issued for Information	16.09.16	SW			date	
Rev	11	Issued for Information	03.08.16	CC	drawn	client	drawing title	rev
							Proposed systems zoning - Roof	12
							drawing number	
							1654-ME08	

GENERAL NOTES

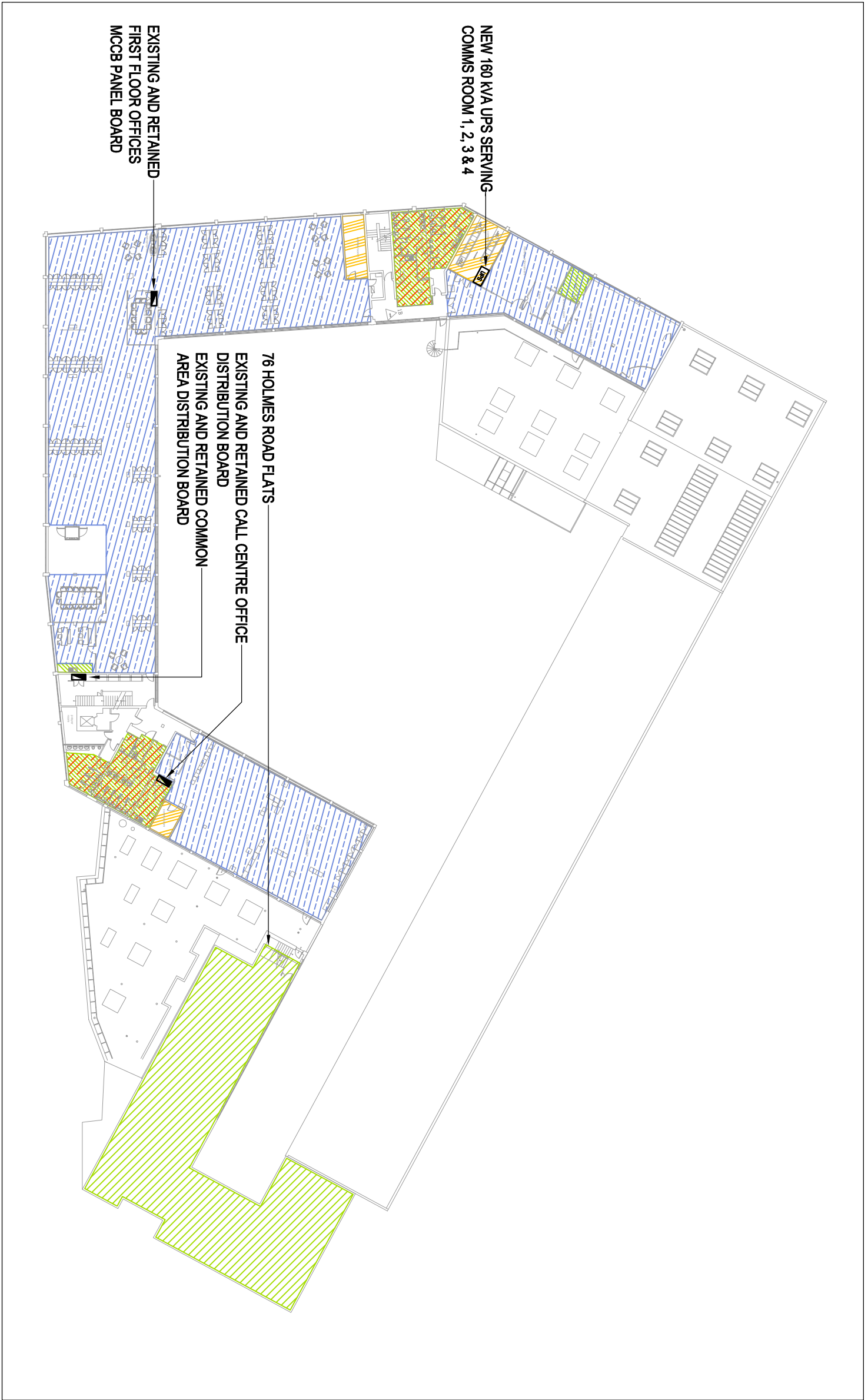
- The copyright of this drawing is reserved by Unison standard partnership. It is issued on the basis of a design and construction contract with Unison standard partnership. It is not to be used for any other purpose without the written consent of Unison standard partnership.
- Do not scale the drawing refer to architect's drawings for amended dimensions.
- The contractor must verify all dimensions, tolerances and reference before proceeding with works.
- Any discrepancy found between the drawing and any other document must be reported immediately to the contract administrator.
- Remove the drawing from custody when revised drawing is issued.
- The contractor shall refer to architect's drawings including reflected ceiling plans and other specialist drawings or setting out all visible wall and ceiling mounted equipment.

TECHNICAL NOTES

- To be used in conjunction with the specification.
- Contractor to check exact locations of equipment prior to tender.

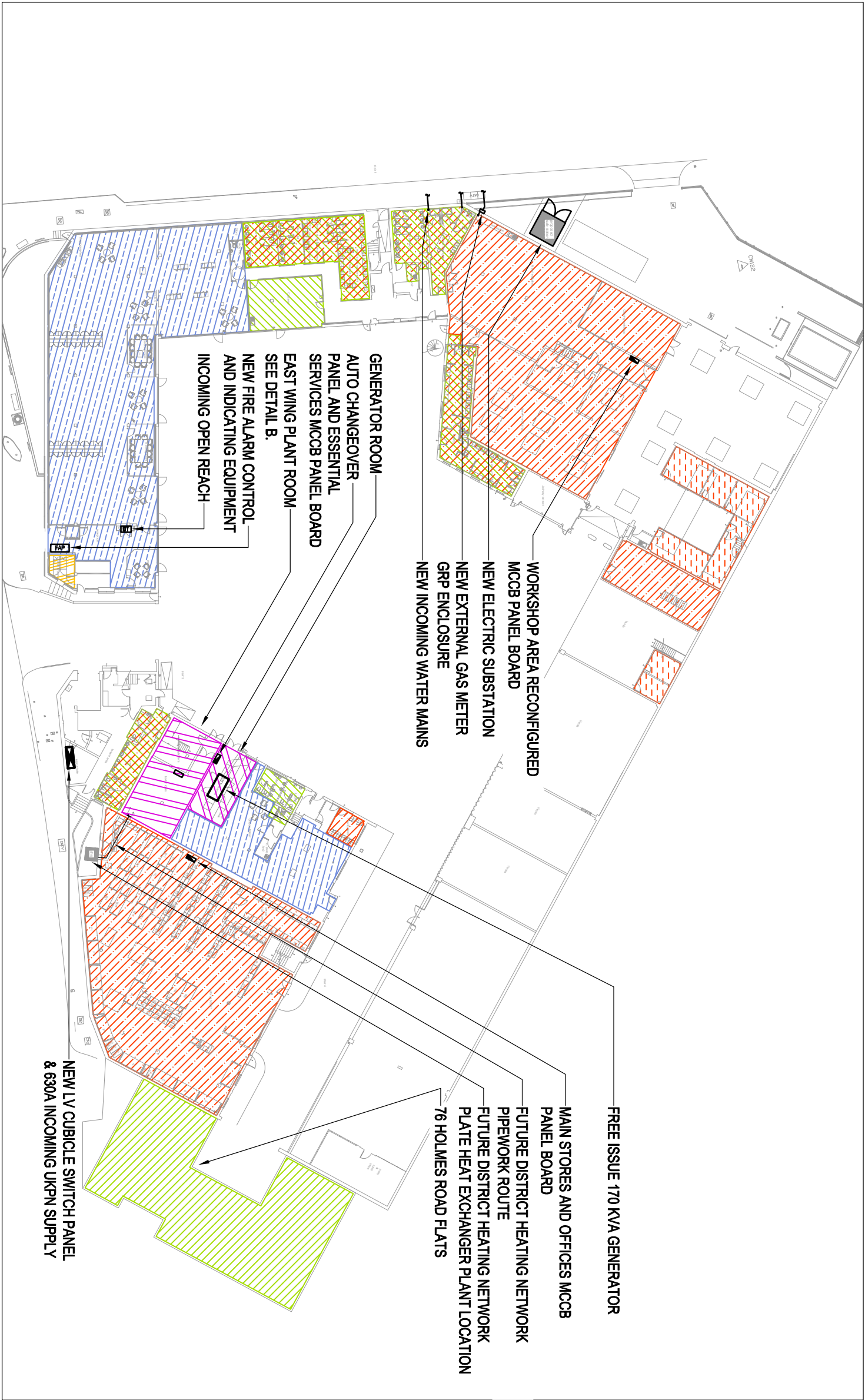
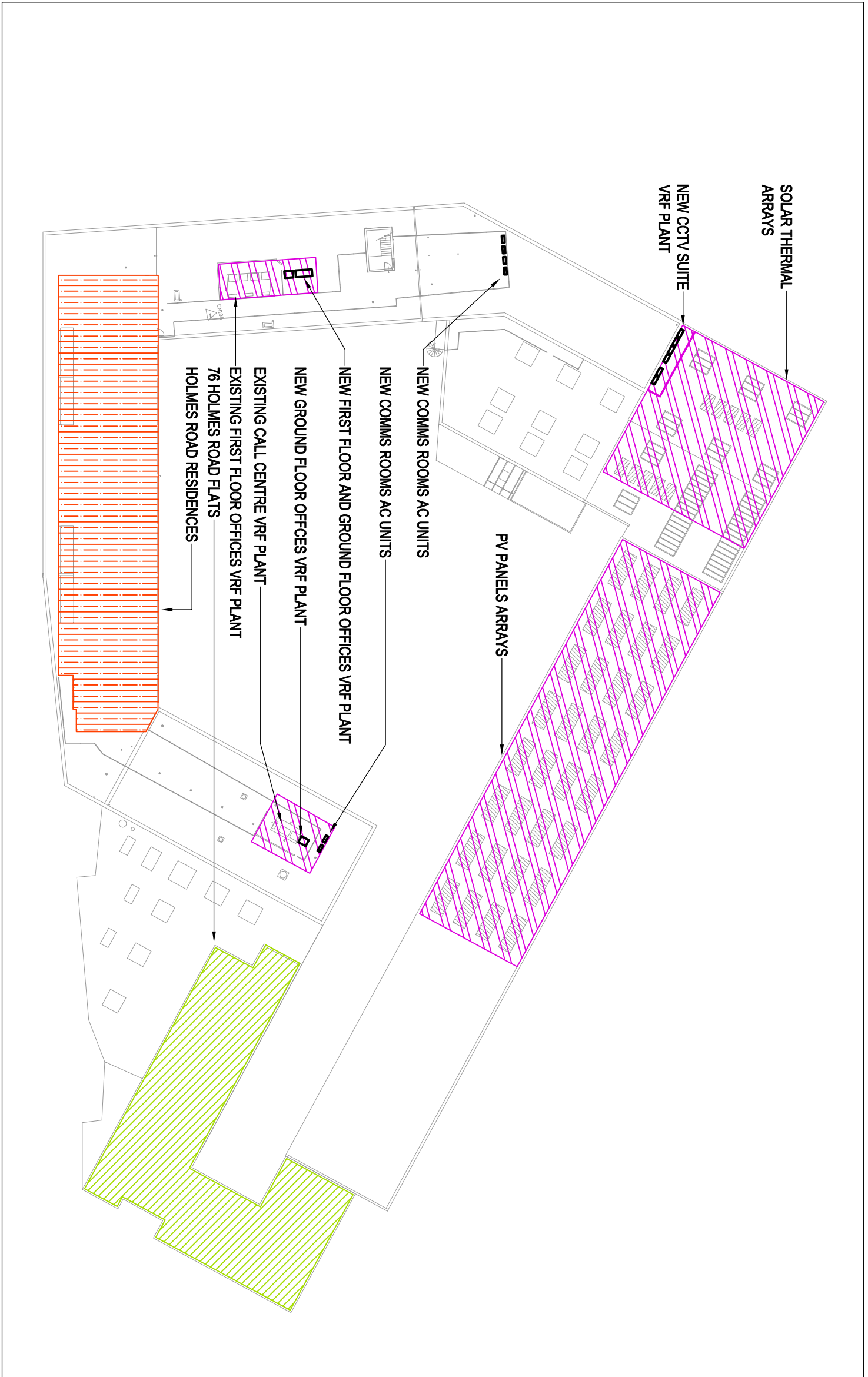
LEGEND

- Heat pump systems
- LTHW heating
- Electric heating
- DHW + Ventilation
- Cooling only (Comms Rooms)
- Plant Rooms
- LTHW Heating + Hot Water
- Generator Room
- Not served from Depot



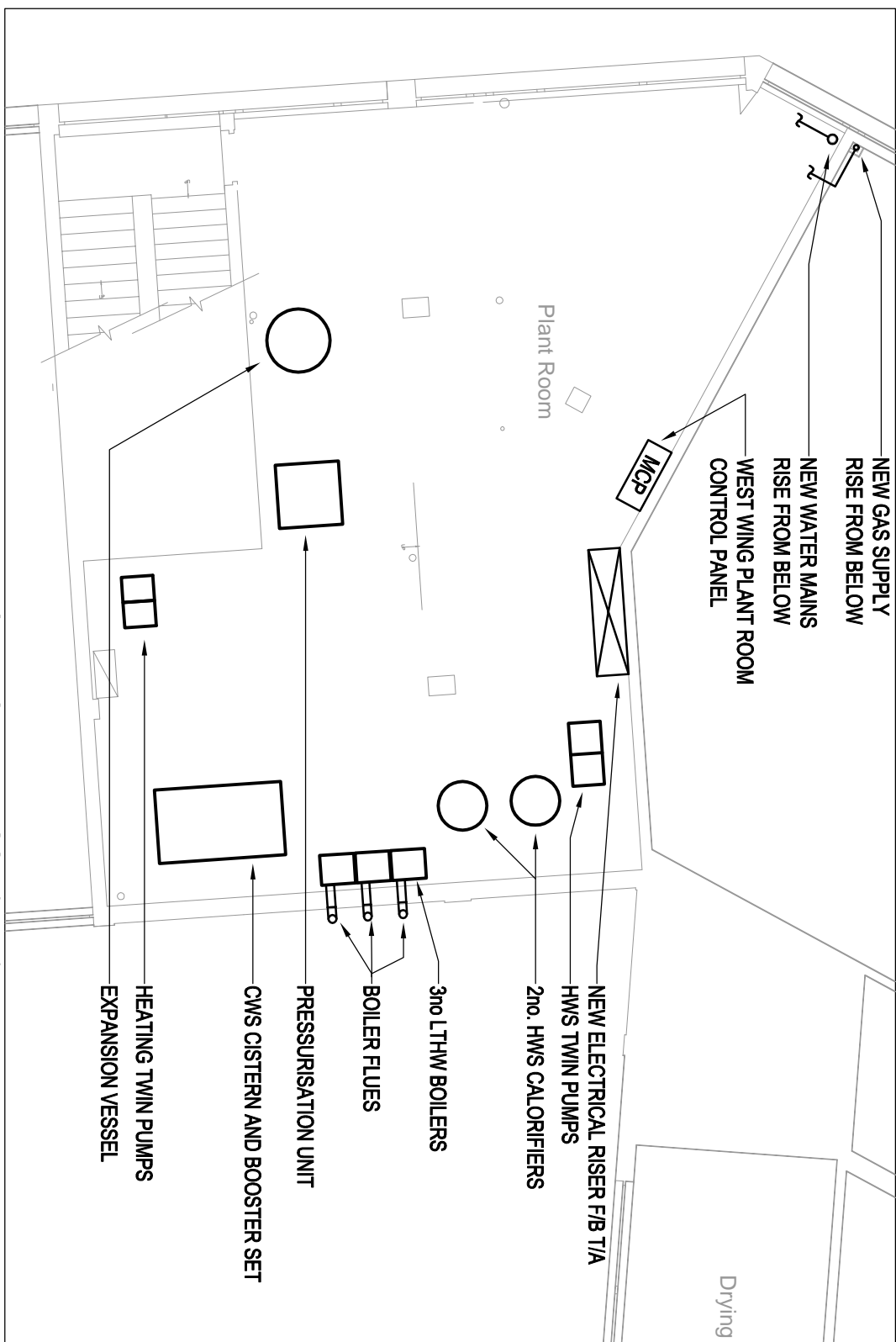
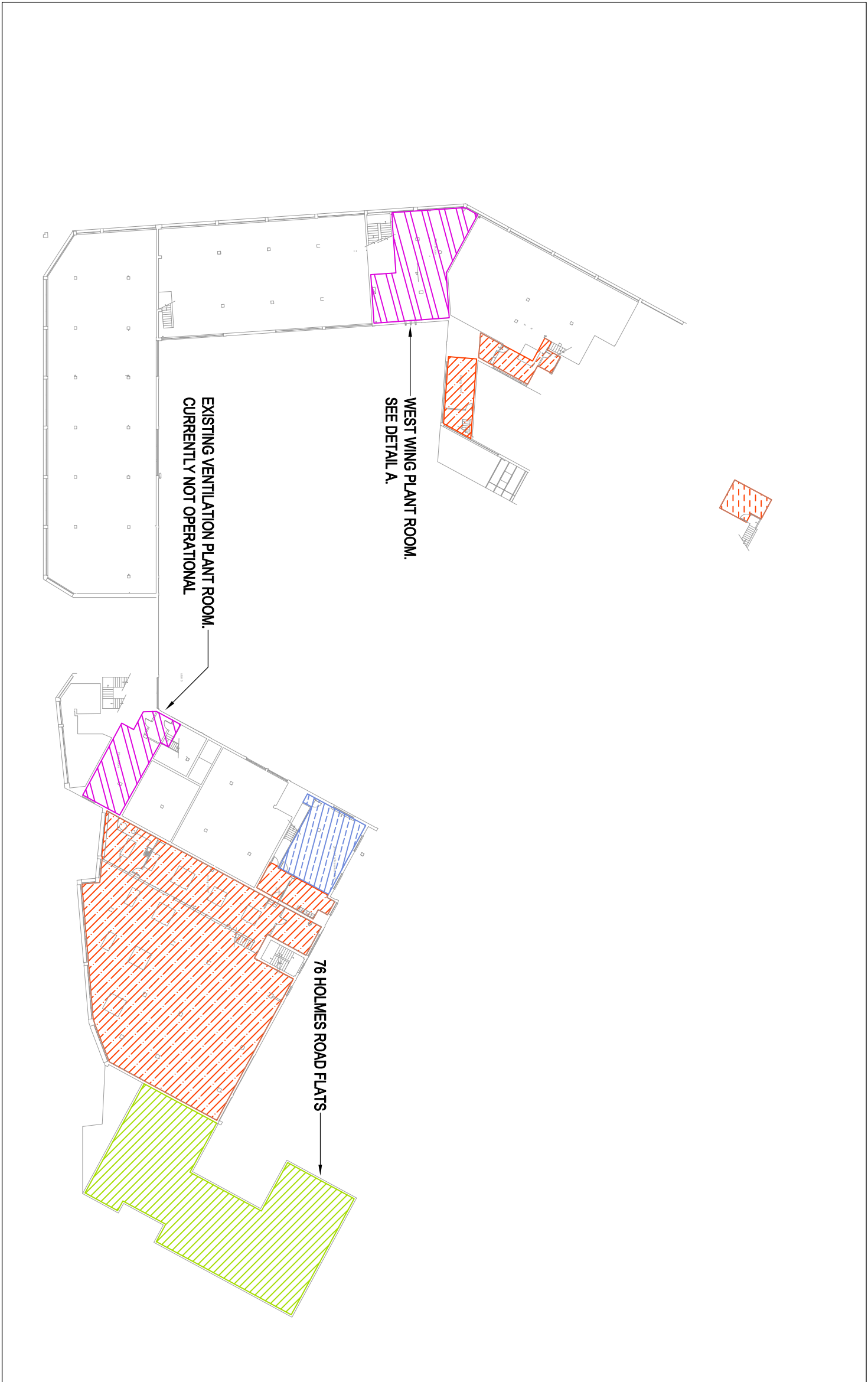
FIRST FLOOR LAYOUT (1:500)

ROOF LAYOUT (1:500)

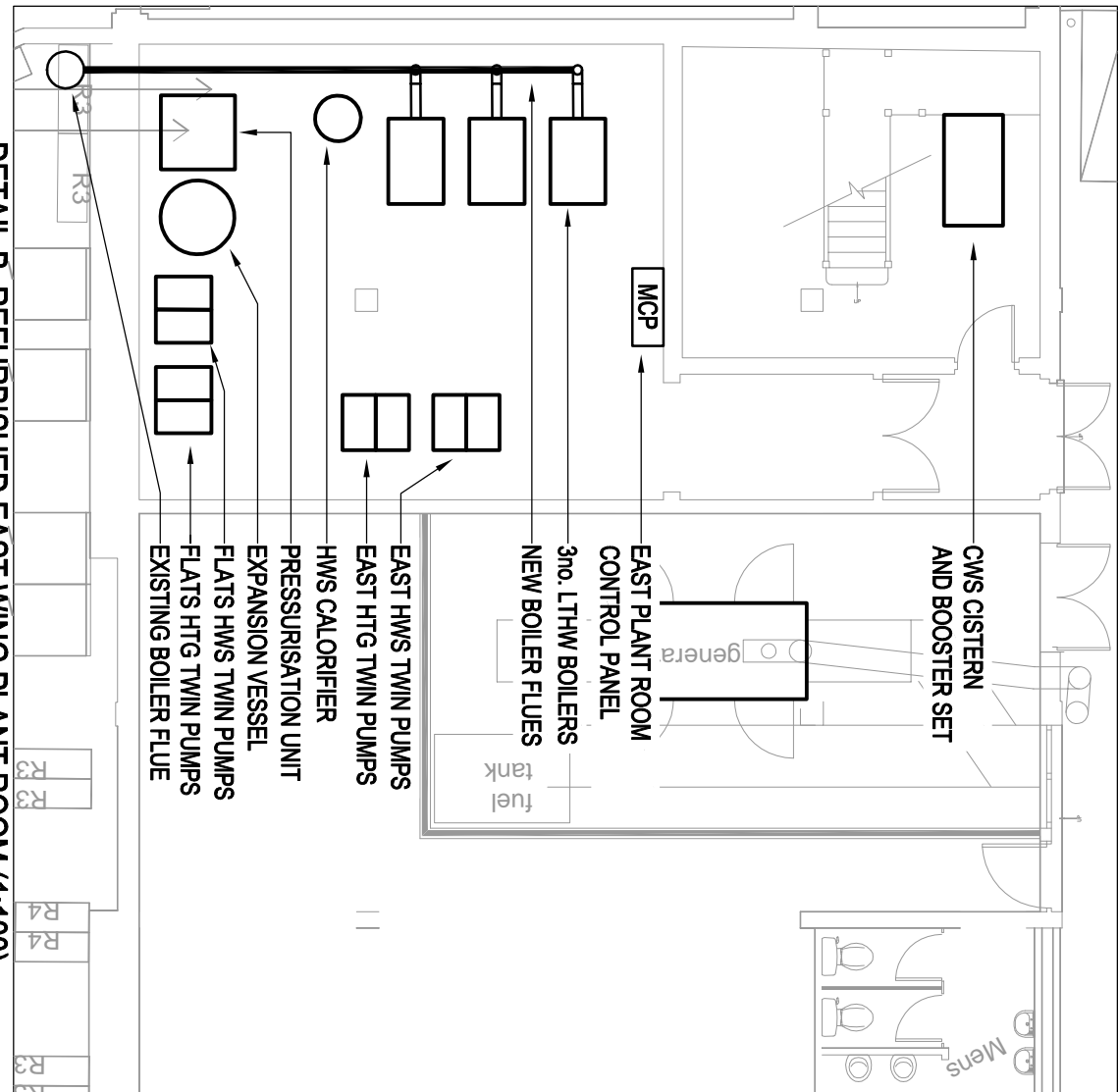


GROUND FLOOR LAYOUT (1:500)

MEZZANINE LAYOUT (1:500)



DETAIL A: NEW WEST WING PLANT ROOM (1:100)



4.0 APPENDIX 1 - OUTLINE LOAD CALCULATIONS

Project -

Holmes Road Depot

Project Number -

1654**Preliminary Electrical Load Study**

Description -

Main Depot Initial Elec Demand

Sheet -

1 of 1

A) Description	B) Area served (m2)	C) Connected load per square meter (Watts)	D) Total connected load (B*C)/230 = (A)	E) Diversity Factor (pu)	F) Circuit current (A)	Active Power (kW)	Power Factor	Apparent Power (kVA)
Offices	2098	140	1277.04	0.7	893.93	205.60	0.9	228.45
Circulation space	229.7	15	14.98	0.66	9.89	2.27	0.9	2.53
Workshops	618.4	80	215.10	0.25	53.77	12.37	0.9	13.74
Toilets / Showers & Lockers	605.2	15	39.47	0.66	26.05	5.99	0.9	6.66
Carparks	1872	4	32.56	0.1	3.26	0.75	0.9	0.83
Lifts	2098	28	255.41	0.1	25.54	5.87	0.9	6.53

A) Description	B) Area served (m2)	C) Connected load per square meter (Watts)	D) Total connected load (B*C)/230 = (A)	E) Diversity Factor (pu)	F) Circuit current (A)	Active Power (kW)	Power Factor	Apparent Power (kVA)
comms room 1	18.6	200	16.17	1	16.17	3.72	0.9	4.13
comms room 2	9.3	200	8.09	1	8.09	1.86	0.9	2.07
comms room 3 & CCTV Suite	123.1	1100	588.74	1	588.74	135.41	0.9	150.46
comms room 4a	12	200	10.43	1	10.43	2.40	0.9	2.67

Total for installation**1635.87****418.06**Summary:

Total connected load (A)	Active Power (kW)	Power Factor	Apparent Power (kVA)
1635.87	376.25	0.9	418.056

Notes:

- 1) Load estimations and associated diversities based on the 'Judgemental Approach'.
- 2) The 'watts per square meter' values are taken from BSRIA rules of thumb 5th edition
- 3) The existing available power is 400 Amps per phase. Projected (diversified) load is 545 Amps per phase.