

PROVISION OF FIRE ALARMS AND SMOKE DETECTION TO BE UNDERTAKEN AS PART OF SPECIALIST CONTRACTOR DESIGN PACKAGE. NEW DETECTION AND ALARMS TO BE LINKED WITH EXISTING SYSTEM.

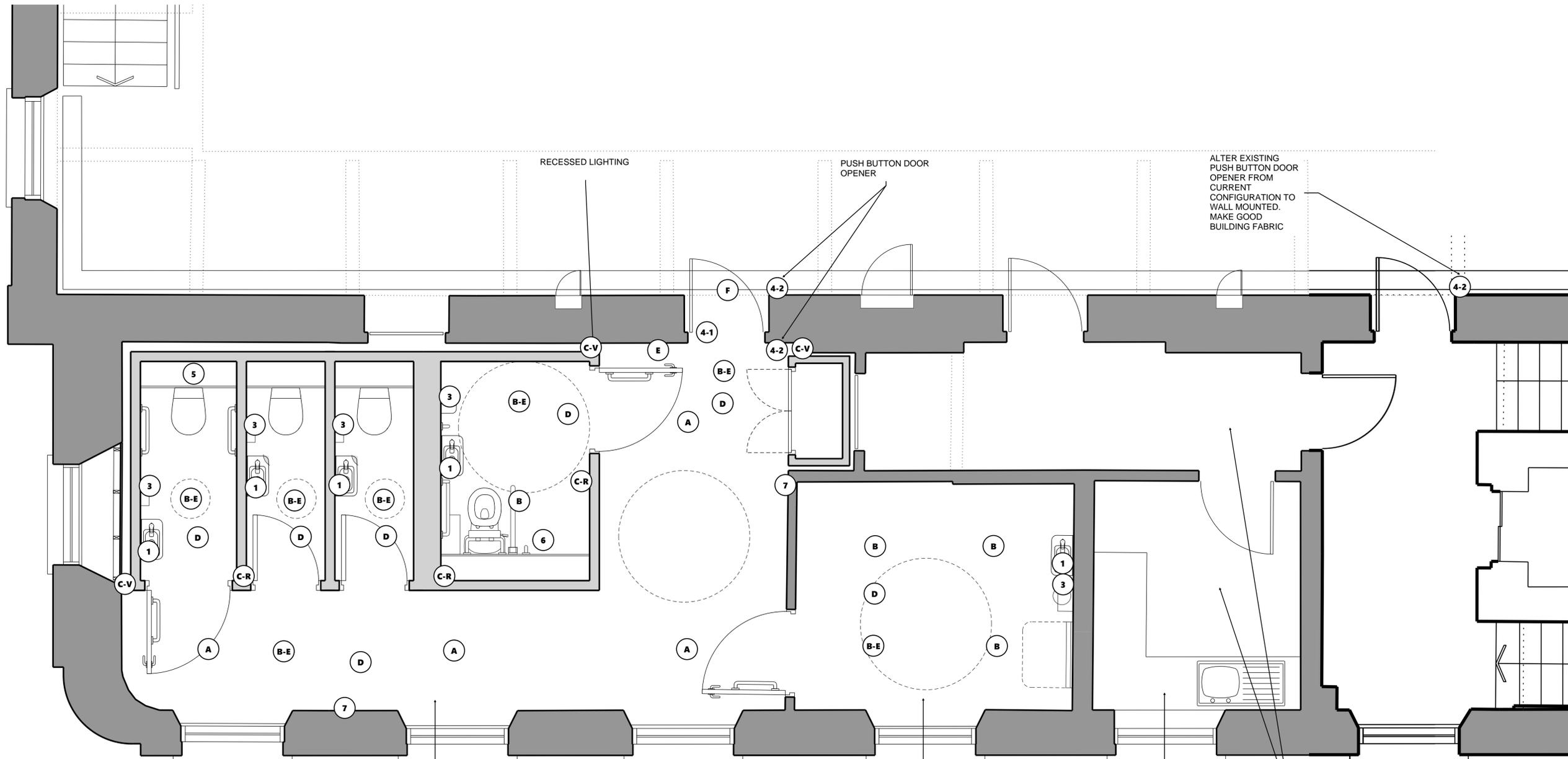
ISSUED FOR LISTED BUILDING CONSENT

BUROHAPPOLD
ENGINEERING

JOB TITLE: NML EVENTS WELFARE FACILITIES MLK BUILDING - TEMPORARY TOILETS
 SKETCH TITLE: FIRE, SMOKE DETECTION & ALARM PROPOSAL

JOB NUMBER: 0047122
 SKETCH NUMBER: MLK-WEL-001

DATE: 15/12/2020
 INITIALS: RS



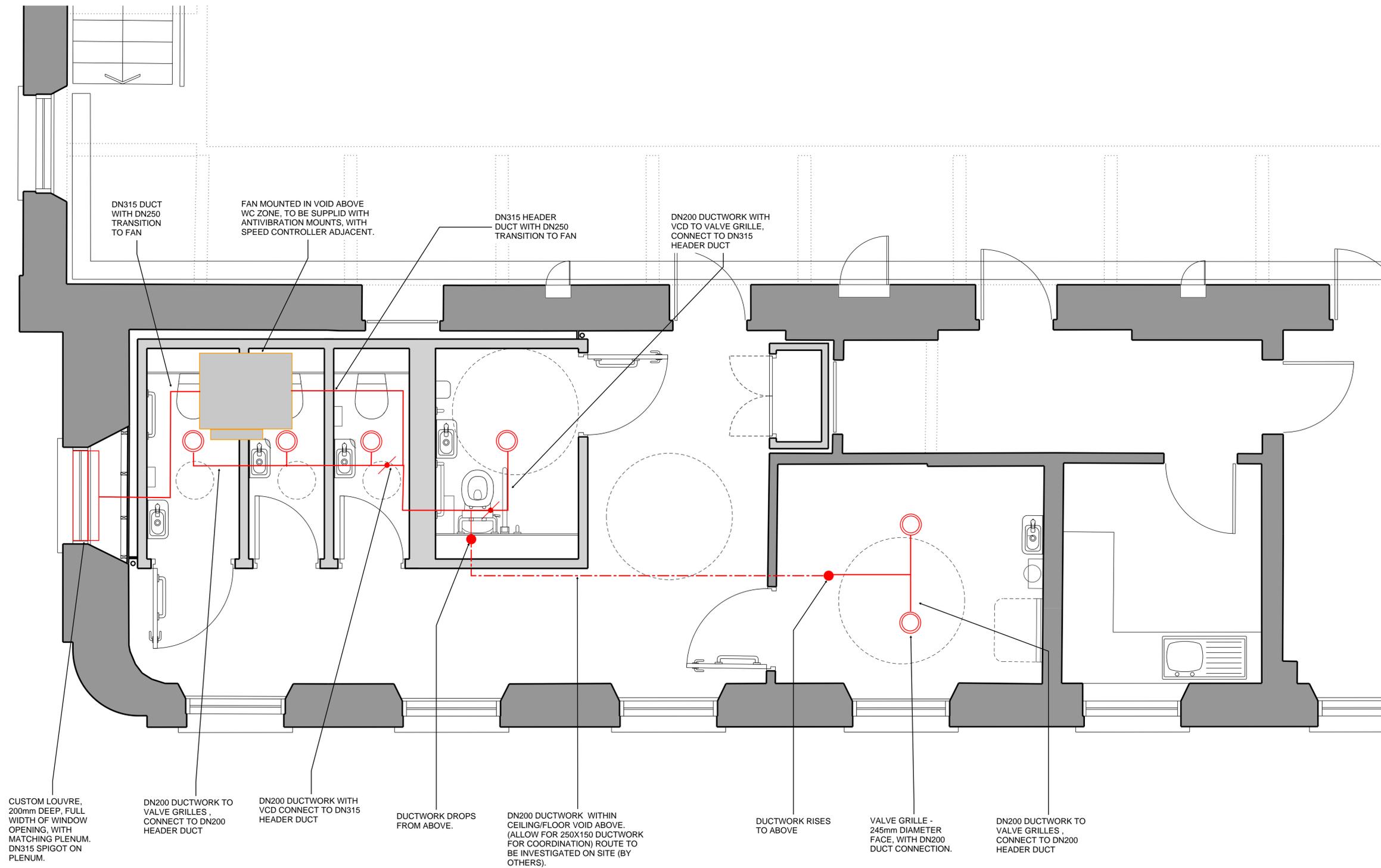
- LEGEND POWER**
- 1. FUSED POWER SUPPLY FOR POU WATER HEATERS
 - 2. NO-LONGER-IN-USE
 - 3. FUSED POWER SUPPLY FOR HAND DRYERS
 - 4-1. FUSED POWER SUPPLY FOR DOOR OPENER
 - 4-2. DOOR OPENER PUSH BUTTON
 - 5. FUSED POWER SUPPLY FOR FAN
 - 6. DISABLED ALARM SYSTEM
 - 7. CLEANERS SOCKET

- LEGEND LIGHTING**
- A. SUSPENDED LED CEILING FITTING
 - B. LED SPOTLIGHT
 - B-E. EMERGENCY LED SPOTLIGHT WITH INTEGRAL BATTERY
 - C-V. VERTICAL LINEAR LED FITTING
 - C-R. RECESSED LINEAR LED FITTING
 - D. PIR
 - E. LIGHT SWITCH
 - F. ENTRY LIGHT

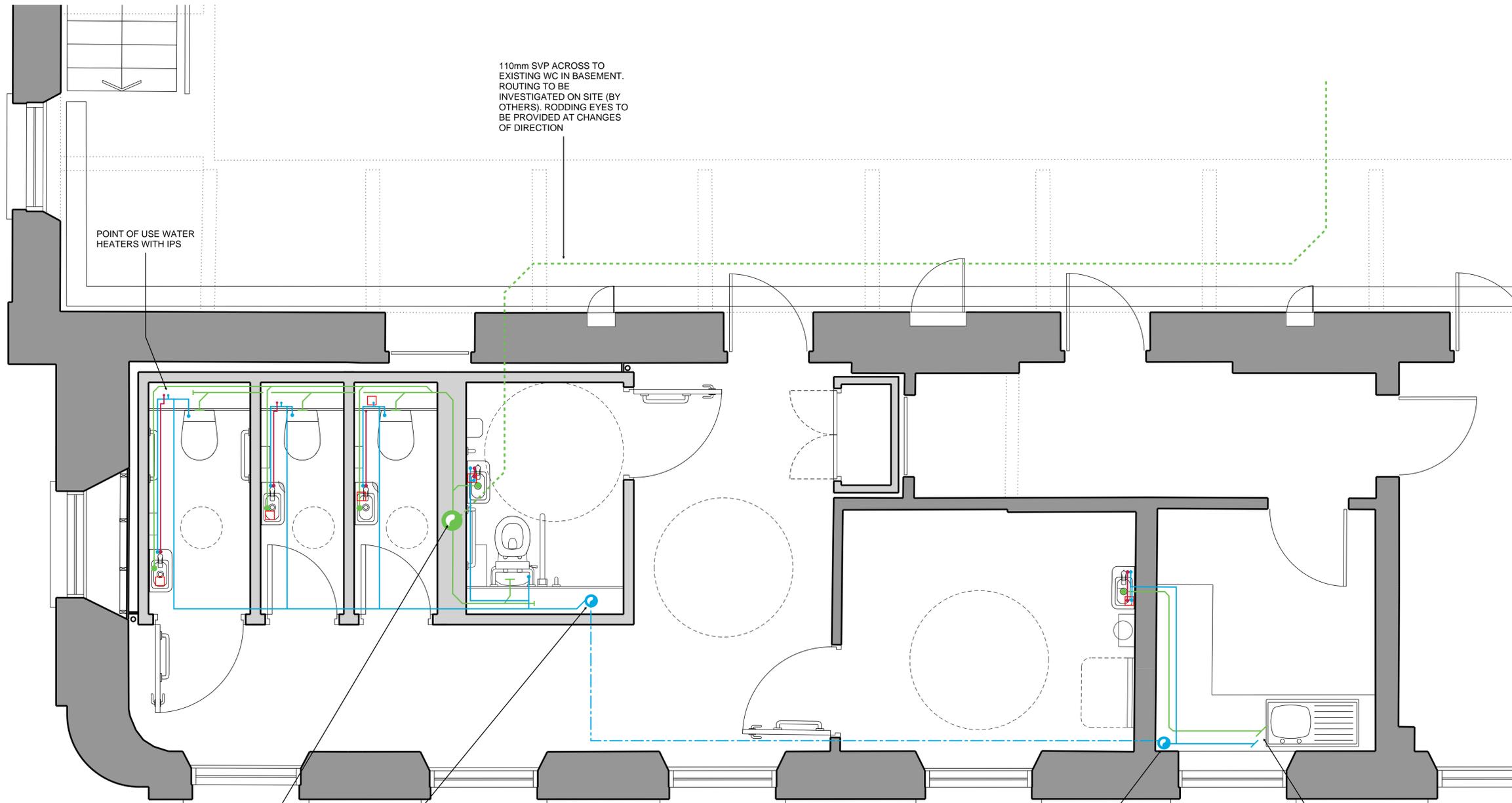
- GENERAL NOTES**
1. All works to comply to the requirements of BS7671 – IET Wiring Regulations.
 2. Earthing and bonding to be provided in accordance with BS7671. All circuits to have separate dedicated CPC same size as phase conductor.
 3. All electrical circuits to be wired in LSF single core cable within metallic conduit and / or trunking.
 4. Existing cable trunking can be used if required and on suitable routes subject to ensuring the trunking is not over capacity.
 5. Each fused connection unit to be on dedicated circuit from existing local distribution board. Circuit details 20A MCB 3 x 1c 2.5mm² LSF single core cable.
 6. Flexible cable from connection unit to equipment to be same size as supply cable.
 7. All lighting devices to be wired on single circuit from existing local distribution board. Circuit details 10A MCB 3 x 1c 2.5mm² LSF single core cable.
 8. All lighting PIR's to be presence detectors with adjustable off time delay of 0-20mins
 9. All circuits to be tested in accordance with BS7671 and record information such as distribution board charts to be updated as required.
 10. Disabled alarm system to consist of pull cord with reassurance light when activated adjacent to toilet with cord down to floor, reset unit adjacent to door inside the room and visual and audible alarm external to the room above the door.
 11. Refer to architectural specification for light fitting details.
 12. Contractor to validate light fitting arrangement by undertaking lighting calculations ensure the lighting level does not exceed 200lux.
 13. Separate self-contained emergency lighting to be provided with 3 hour duration and provide lighting levels to the relevant BS standards with a minimum of 1lux at floor level in all areas. Contractor to undertake calculations and validate proposed layout.
 14. Fire alarm devices to be wired by extending the existing system in accordance with the requirements of BS 5839, contractor to engage the services of the present system maintainer or suitably qualified specialist contractor to undertake the works including completion of the design, system calculations, installation and testing and commissioning. All current record information to be fully updated to reflect the works.
 15. Refer to architectural package of setting out information.
 16. Contractor to review existing electrical installation and select suitable existing distribution board to supply all electrical outlets from.

- LIGHTING CONTROL NOTES**
- Lighting shall have manual on/off control for staff use at a single point.
 The toilet pods, baby changing room, ceiling pendants and strip lights shall be separately controllable.
 The toilet pods, baby changing room and ceiling pendants shall have automatic control via the PIRs.
 The strip lights shall remain on continuously to provide background light within the space.
 Facilities shall be provided to test the emergency lighting.

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110mm SVP ACROSS TO EXISTING WC IN BASEMENT. ROUTING TO BE INVESTIGATED ON SITE (BY OTHERS). RODDING EYES TO BE PROVIDED AT CHANGES OF DIRECTION

POINT OF USE HEATERS WITH IPS

110mm SVP DROP TO HIGH LEVEL BELOW (NEW OPENING TO BE COORDINATED WITH EXISTING SERVICES BELOW ON SITE BY OTHERS). AAV TO BE FITTED WITHIN VOID ABOVE POD.

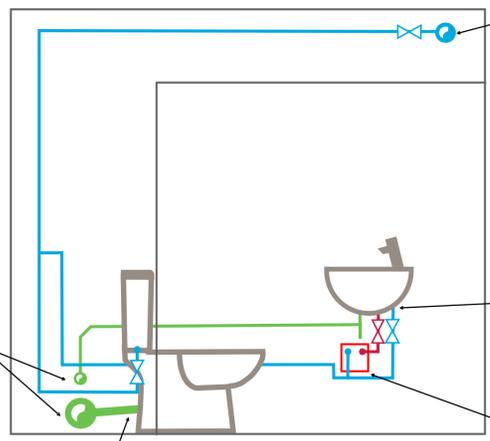
22mm CWS FROM FLOOR VOID ABOVE

22mm CWS PIPE WITH 15mm BRANCH TO WC CUBICLE

22mm CWS RISE TO FLOOR VOID ABOVE (ROUTE TO BE INVESTIGATED ON SITE BY OTHERS)

22mm CWS & 40mm WP CONNECT TO EXISTING SERVICES (BREAK IN POINTS TO BE INVESTIGATED ON SITE BY OTHERS)

LEGEND
 CWS - COLD WATER SERVICE
 HWS - HOT WATER SERVICE
 WP - WASTE PIPE
 SVP - SOIL VENT PIPE
 POU - POINT OF USE
 X ISOLATION VALVE



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	SKETCH TITLE: PUBLIC HEALTH PROPOSALS	SKETCH NUMBER: MLK-WEL-004	INITIALS: RS

TOILET EXTRACT FAN

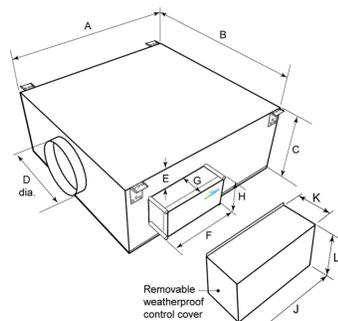
NUAIRE DE - DAVE EXTRA
 DE - DAVE Extract Fan Plus with Ecosmart Control
 Inline Centrifugal Extract Fan
 Fan Code: DE4A-ES
 Installation Manual Links: 611280
 Required Duty: 0.224 m³/s @ 80 Pa
 Actual Duty: 0.274 m³/s @ 120 Pa
 Actual at Required Flow: 0.224 m³/s @ 212 Pa
 Velocity at Actual Duty: 5.584 m/s
 When Speed Controlled to Required Duty (81.7%):
 Velocity at Required Duty: 4.563 m/s
 Motor Input Power: 0.1 kW
 Specific Fan Power: 0.4 W/(l/s)
 Motor Efficiency: 0 %
 Motor Input Power: 0.182 kW
 Specific Fan Power: 0.7 W/(l/s)
 Nominal Fan Speed: 2,550 RPM
 Electrical Supply: 230 V 1 Phase 50 Hz
 Motor Rating: 0.17 kW
 Motor Current: flc: 1.35 A
 Motor Current: sc: 1.35 A
 Max. Operating Temp.: 60°C
 Acoustic performance to ISO 13347 and AMCA 300.

Dave high performance extract fan, extended casing configuration type 'A' with patented 'Floating fan' construction. Single skin, with infill panels and manufactured from heavy gauge, corrosion resistant Aluzinc steel. Units have integrated attenuation pods to reduce noise breakout. The unit is suitable for internal or external mounting, in any orientation and incorporates a full length top or bottom access panel. The fan impeller and EC motors are selected to provide optimum performance and energy efficiency conforming to Part L regulations. Units are suitable for operation in ambient temperatures of up to 60°C (sizes 1-5), 40°C (sizes 6-7) and are Class L2 leakage. The unit shall be controlled by an integrated Ecosmart control mounted externally to the case. The fans shall have the following energy saving and operational functions integrally installed with in it, all components will be pre-wired and fitted by the manufacturer:

- Integral Frequency inverter/speed controller.
- Integral adjustable run-on timer.
- Maximum and minimum speed adjustment/setting (trickle and boost).
- Volt free run & failure/status indication.
- 0-10V BMS interface for remote operation.
- Multiple low voltage sockets for interconnection of sensors or fans.
- Background ventilation/trickle enable switch.

The unit is supplied with G3 filter, circular spigots and set of four mounting brackets. The Fan unit shall have a 5 year warranty.

Fan Dimensions

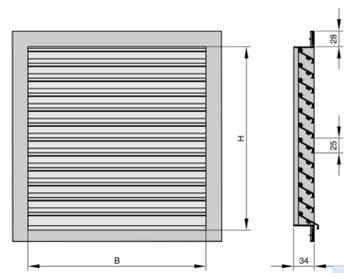


A	B	C	D	E	F	G	H	J
1,004	848	380	250	131	370	96	150	470
K	L	kg						
120	170	67						

The drawing is for dimensional purposes only. Dimensions in mm.

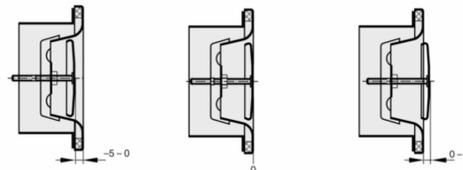
EXTRACT LOUVRE

TROX - WGKL-AL
 Rectangular external weather louvre as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings. Ready-to-install component which consists of a border, aerofoil rain defence blades, and a bird mesh at the rear.
SPECIAL CHARACTERISTICS
 - Low differential pressure and low air-regenerated noise due to aerofoil blades
 - Simple and quick installation due to perimeter border
 - Silicone free
MATERIALS AND SURFACES
 - Border, blades and stabilising mullions made of extruded aluminium sections, material no. EN AW-6060 T66, anodised to EURAS standard, E6-C-0, natural colour
 - Wire mesh made of galvanised steel
 - Border fixing holes
VARIANT
 ALMaterial: Aluminium
 Construction: Wire mesh, galvanised steel
 Border: With fixing holes
 997Width: 997
 197Height: 197
 ERInstallation subframe: With
 P1Surface: Powder-coated to RAL 9006 (GL 30%), RAL 9010 (GL 50%), other colours to RAL... (GL 70%)
 RAL 9010Select state colour: RAL 9010
PRODUCT DATA
 Strategy: Given volume flow
 Installation type Ducted, exhaust air (A)
 Volume flow qv 270 l/s
 Airflow velocity v 1.37 m/s
 Free area Afr 0.0793 m²
 Width of installation opening binst 1,025 mm
 Height of installation opening hinst 225 mm
Acoustic results
 Air-regenerated noise
 Δpt [Pa] 7
 LW,A [dB(A)] 36
 63Hz [dB] 23
 125Hz [dB] 33
 250Hz [dB] 24
 500Hz [dB] 28
 1kHz [dB] 35
 2kHz [dB] < 15
 4kHz [dB] < 15
 8kHz [dB] < 15
 LW,NC [dB] 34
 LW,NR [dB] 35
 Manufacture of the planning: TROX
 Type: WGK-AL/997x197/ER/P1-RAL9010



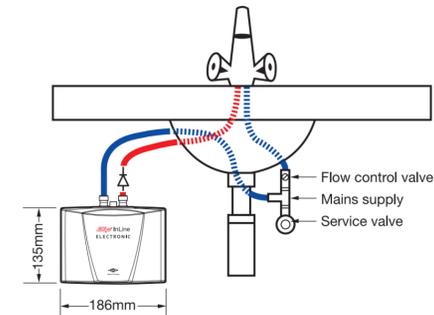
EXTRACT VALVE GRILLE

TROX - LVS
 Circular disc valves as extract air devices, preferably for small rooms. For installation into walls and suspended ceilings. Ready-to-install component which consists of a valve casing with cross bar, a valve disc with threaded spindle, and an installation subframe. The valve disc can be turned for volume flow rate balancing. The valve setting can be fixed with a lock nut. Spigot suitable for ducts to EN 1506 or EN 13180. Sound power level of the air-regenerated noise measured according to EN ISO 5135.
SPECIAL CHARACTERISTICS
 - Continuous volume flow rate balancing by turning the valve disc
 - Easy to install
MATERIALS AND SURFACES
 - Valve casing and valve disc made of galvanised sheet steel
 - Installation subframe, cross bar, threaded spindle and lock nut made of galvanised steel
 - Foam seal
 - Valve casing and valve disc powder-coated RAL 9010, pure white
VARIANT
 Nominal size:200
PRODUCT DATA
 Volume flow qv 50 l/s
 Gap width s 20.0 mm
Acoustic results
 General
 Δpt [Pa] 8
 LWA [dB(A)] < 15
 63Hz [dB] 21
 125Hz [dB] < 15
 250Hz [dB] < 15
 500Hz [dB] < 15
 1kHz [dB] < 15
 2kHz [dB] < 15
 4kHz [dB] < 15
 8kHz [dB] < 15
 LWNC [dB] < 15
 LWNR [dB] < 15
 Manufacture of the planning: TROX
 Type: LVS/200



POINT OF USE (POU) WATER HEATER

ZIP INLINE ES3
 Zip Model ES3
 Pressure rating 10 bar
 Element type Bare wire
 Supply voltage 1/N/PE 230V~
 Nominal power rating @ 230V 2.8kW
 Nominal current @ 230V 12A
 Temperature adjustment (installer) 30°C - 45°C
 Maximum inlet temperature 70°C
 Factory set temperature 38°C
 Factory set flow rate 38°C 1.5 litres/min
 Maximum temperature increase @ 230V and a flow rate of:
 2.0 litres/min 20°C
 2.5 litres/min 16°C
 3.0 litres/min 13°C
 3.5 litres/min 11°C
 4.0 litres/min 10°C
 Switch on flow rate 1.2 litres/min
 Switch off flow rate 1.0 litres/min
 Required specific water resistance @ 15°C >1100 ohm.cm
 Capacity 0.2 litres
 Filled weight 1.5kg
 Water connection 1/2" BSP
 Dimensions (H x W x D) 135mm x 186mm x 87mm
 Protection class (IEC 529) IP25
 All data quoted at nominal supply voltage.
 A minimum water pressure of 0.2 MPa (2bar) is recommended for optimum performance.
 The appliance must not be subject to more than 1 MPa (10bar).
Description
 • The ES is designed to provide hot water for handwash in areas where space is limited
 • Heating power controlled electronically for temperature stabilisation
 • Outlet temperature can be preset inside the unit between 30°C and 45°C (factory set at 38°C)
 • Flow adjustment control, preset for a temperature increase of 25k
 • Stainless steel bare-wire heating system for very quick response
 • Double pole thermal cut-out protection
 • Choice of special kits available complete with heater, tap and fittings
 • Supplied with 700mm of pre-wired cable
 • Easy to install with improved wall bracket
 Approvals WRAS approval and CE endorsed.

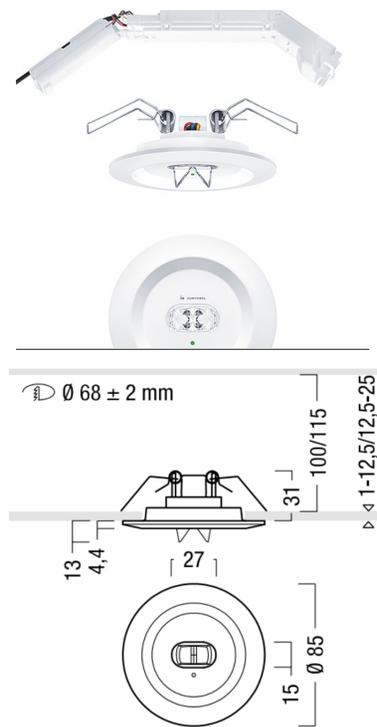


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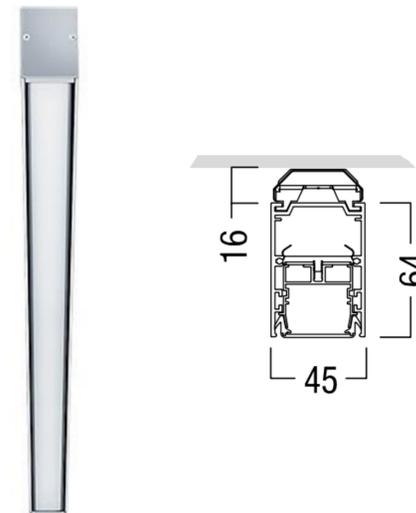
SUSPENDED LED LIGHT FITTING - A
 ZUMTOBEL ONDA2 P LRO D590 LED4000-830 LDE WH
 Decorative diffuse LED Circular luminaire with LRO cover for pendant mounting. Luminaire input power: 32.1 W, DALI controllable luminaire with LED converter; LED service life lasts 50000 h before luminous flux is reduced to 90% of the initial value. Chromaticity tolerance (initial MacAdam): 3. Luminaire luminous flux: 3970 lm, Luminaire efficacy: 124 lm/W. Colour rendering Ra > 80, colour temperature 3000 K, aluminium housing in white enamelled finish. Plastic cover, LRO light reducing optic with UGR<19 in polymethylmethacrylate with frosted surface, fixed to frame. Includes electronic LED converter for DALI control. Luminaire wired with halogen-free leads Dimensions: Ø590 x 85 mm weight: 5.8 kg;
 To be supplied with pendant set.
 Light Source: LED
 • Luminaire luminous flux*: 3970 lm
 • Luminaire efficacy*: 124 lm/W
 • Colour Rendering Index min.: 80
 • Ballast: 1 x 28000657 DRV TR LCA 75W 400mA 220V D #04A lp PRE
 • Correlated colour temperature: 3000 Kelvin
 • Chromaticity tolerance (initial MacAdam): 3
 • Rated median useful life*: L90 50000h at 25°C
 • Luminaire input power*: 32.1 W Power factor = 0.98
 • Standby Power*: 0.15 W
 • Dimming: LDE dimmable to 1% over DALI, DSI and switchDIM
 DC level is adjustable
 • Maintenance category: D - Enclosed IP2X



RECESSED LED SPOTLIGHT (+EMERGENCY) - B / B-E
 ZUMTOBEL RESCLITE PRO MRCR ESC E3D WH
 Safety luminaire
 LED emergency luminaire for escape route lighting with min. 1 lux compliant to EN 1838; Room height 2.2 to 7 m; 2 high power LEDs, neutral white 4,000 K; lens of polycarbonate; optimum thermal management via heat sink; Ceiling recessed luminaire for 68mm ceiling cut-out and ceiling thickness from 1 - 25 mm; tool-free rapid luminaire installation through specially shaped retaining springs; tool-free replacement of battery and control unit; Cover ring diecast aluminium, powder-coated; housing colour white (close to RAL9016); Polypropylene (PP) gearbox for installation in ceiling recess; Luminaire with local battery supply for 3 h emergency lighting in maintained or non-maintained mode, with automatic test (auto-test) via the luminaire, optional central monitoring via DALI, display of luminaire status via status LED; NFC interface for addressing, configuration and maintenance via PROset Pen (article no.: 22170290) or PROset app; addressing also alternatively possible visually or via EZ-addressing; Maintained and non-maintained mode: +5°C to +35°C; power supply: 220-240 V AC (+/- 10%), 50-60 Hz; Luminaire input power: 4.7 W; Non-maintained and maintained mode settable via jumper and NFC interface; IP40; SC1; Luminaire wired with halogen-free and silicone-free leads; Plug-in terminals for through-wiring up to 2.5 mm²; Impact strength: IK04; Dimensions: Ø85 x 4 mm; weight: 0.38 kg; Suitable for installing in concrete casting surround (separately ordered);
 Light Source: LED
 • Luminaire luminous flux*: 183 lm
 • Total emergency luminous flux: 183 lm
 • Luminaire efficacy*: 39 lm/W
 • Colour Rendering Index min.: 70
 • Ballast: 1 x 89800524 EM TR EM powerLED NTx 102 DIM 5W ZUM
 • Chromaticity tolerance (initial MacAdam): 5
 • Rated median useful life*: L90 50000h at 25°C
 • Luminaire input power*: 4.7 W Power factor = 0.7
 • Standby Power*: 1.2 W
 • Charging power: 1.25 W
 • Service life rating: 3 h



CHANNEL LIGHT VERTICAL & RECESSED - C-V / C-R
 ZUMTOBEL SLOIN slim K L2500 SRE
 SURFACE MOUNTED MODEL
 Channel for LED light line made of aluminium for installing in plasterboard ceilings, for surface-mounting and suspending, silver powder coated. End cap set not included; Luminaire wired with halogen-free leads. Dimensions: 2500 x 45 x 64 mm. Weight: 2.8 kg. SLOIN slim consists of a channel, LED-batten, cover and accessories, which have to be configured and ordered separately. This product is one part of the complete configuration.
 Light Source: LED
 • Luminaire luminous flux*: 4140 lm
 • Luminaire efficacy*: 81 lm/W
 • Colour Rendering Index min.: 80
 • Correlated colour temperature: 2700 Kelvin
 • Chromaticity tolerance (initial MacAdam): 3
 • Rated median useful life*: L85 50000h at 25°C
 • Ballast: 2x LED_Con
 • Luminaire input power*: 51.2 W Power factor = 0.98
 • Standby Power*: 0.32 W
 • Dimming: LDE dimmable to 1% over DALI, DSI and switchDIM
 DC level is adjustable



PIR - D
 Detectors to have options for ceiling and surface mounting. Sensitivity to be programmable from the specialist software package.
 Technical Details: The following details are typical, and alternatives may be provided subject to CA approval
 • Coverage: 360° (6m range at 2.5m mounting height). Design to achieve adequate coverage.
 • Operating Voltage: Nominal 15V
 • Current Bus sensor: Max 12mA
 • Power Consumption: 160mW
 • Load Rating
 • Switching: 10A (Max Inrush Current 80A)
 • Dimming: 15 Ballasts
 • Operating Temperature: 0° C to 40° C
 • Storage Temperature: -20° C to 80° C
 • Humidity: 20% to 80% non-condensing
 • Fascia Colour: White (RAL9010)
 • Material: Flame retardant PC/ABS
 • IP Rating: IP4x
 • Conformity
 • aEMC: 2014/30/EU
 • bLVD: 2014/35/EU
 • cRoHS-2011/65/EU
 • CFeatures: The following features are typical, and alternatives may be provided subject to approval from the CA.
 • Occupancy Timeout: 5 s to infinity
 • Power-up State: Occupied/Transition/Background/Unoccupied
 • Trigger mode: Presence/Absence/Auto absence
 • Movement sensitivity: Low/Med/High/Max
 • Setback sensitivity: 20% to 100%
 • Photocell operation: Enabled/Disabled
 • Photocell turn ON level: 100-1000 lux
 • Photocell turn OFF level: up to 6 x ON level, 100-1000 lux
 • Fade to off: Fast/Medium/Slow/Very Slow (default medium)
 • Indicator LEDs: Enabled/Disabled

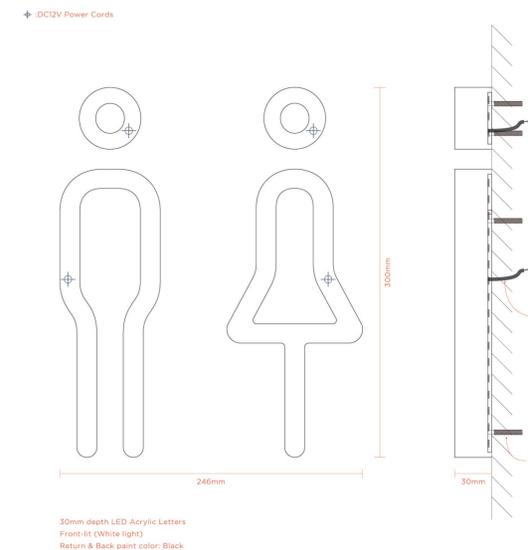


Refer to MEP Materials and Workmanship specification for details on the below.

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- 4-2. DOOR OPENER PUSH BUTTON
5. FUSED POWER SUPPLY FOR FAN
6. DISABLED ALARM SYSTEM
7. CLEANERS SOCKET
- E. LIGHT SWITCH

A 4 gang 1 way light switch shall be use to provide lighting control over the main room, the toilet pods and the baby change.
 Where fixtures are visible finishes shall be brushed stainless steel.

DOOR SIGNAGE - F
 NETTO LED ILLUMINATED RESTROOM SIGN - TWIN FORMAT
 Manufactured from 30mm deep Perspex Spectrum LED acrylic, embedded with premium white LED's for a dramatic even, bright white illumination. Side returns are finished black with a weather resistant PVDF paint. Supplied complete with 2500mm long low voltage cables and electronic drivers for remote connection, drilling template and fixing studs. With a warranted life of 50,000hrs, our product is CE certified and IP67 rated for weather resistance.



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JOB TITLE: NML EVENTS WELFARE FACILITIES MLK BUILDING - TEMPORARY TOILETS
 SKETCH TITLE: ELECTRICAL PLANT SCHEDULE

JOB NUMBER: 0047122
 SKETCH NUMBER: MLK-WEL-006

DATE: 15/12/2020
 INITIALS: RS