

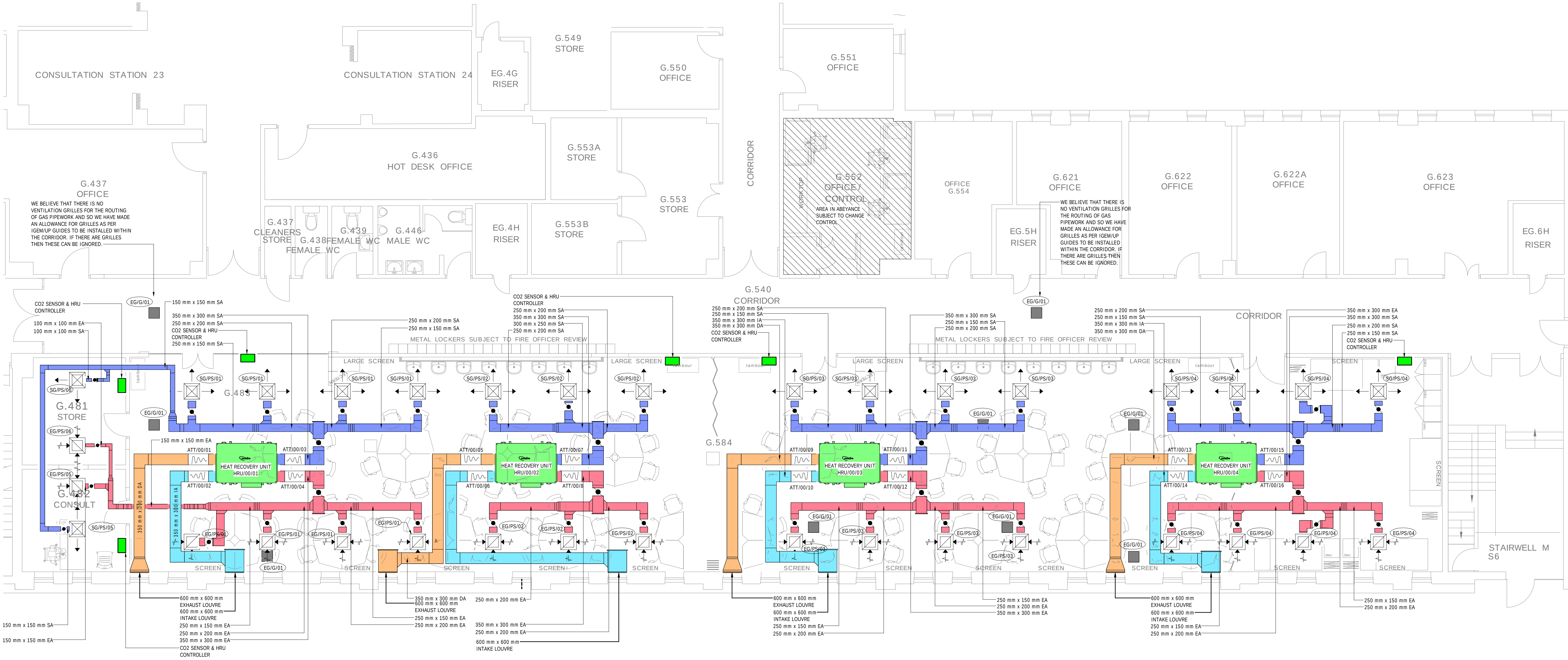
THESE NOTES ARE BASED ON THE USE OF EXPERIENCED AND COMPETENT CONTRACTORS CARRYING OUT THE WORK USING AN APPROVED SAFE METHOD OF WORKING

KEY TO HEALTH AND SAFETY SYMBOLS

- INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION
- INDICATES A RESIDUAL RISK FOR INFORMATION
- INDICATES A RESIDUAL RISK REQUIRING A PROHIBITIVE ACTION
- INDICATES A RESIDUAL RISK AS A WARNING

FOR DETAILS OF RISKS REFER TO CDM RISK REGISTER RUK2022N00181-RAM-HS-00004

- Asbestos known to be present in some pipework & ductwork insulation routing - Asbestos survey to be reviewed or carried out if survey does not contain all information
- Improper Labelling of Services: Services have not been properly labelled; all services must be identified and verified before commencing any work to avoid potential hazards.
- Unstable grating within risers. Replace all missing or unstable grating in risers with secure, properly fitted metal grates. Ensure no temporary coverings, such as cardboard, are used, and inspect all grating before work begins to prevent fall risks.

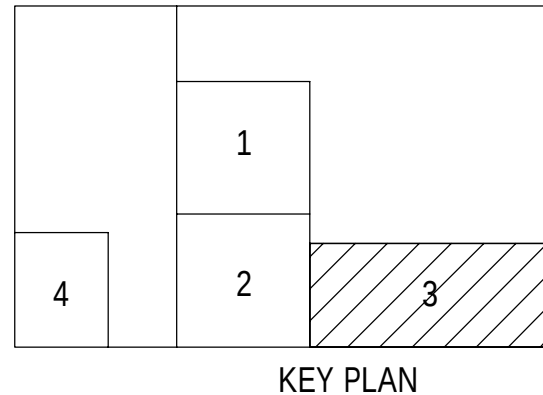


- VENTILATION SYSTEM NOTES:**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH VENTILATION AND HEATING LAYOUTS & SCHEMATICS
 - THE CONTRACTOR SHALL PROVIDE ALL VENTILATION SYSTEM ATTENUATION AS REQUIRED BY THE PROJECT ACOUSTIC RECOMMENDATIONS
 - ALL DUCTWORK SHALL BE MANUFACTURED, INSTALLED, IN STRICT ACCORDANCE WITH BESA, DW143 & DW144
 - ALL DUCT RUNS & DIFFUSER POSITIONS MUST BE CHECKED & SET/OUT AGAINST FULLY DETAILED CEILING AND FLOOR LAYOUTS, ARCHITECTURAL, STRUCTURAL & ELECTRICAL ENGINEERING DRAWINGS. ALL DUCTWORK SHALL BE CO-ORDINATED WITH ALL OTHER TRADES
 - ALL DUCTWORK TO BE IDENTIFIED IN ACCORDANCE WITH BS-1710, ID LABELS SHALL DEFINE THE SYSTEM TYPE (SUPPLY/EXTRACT/INTAKE/EXHAUST) THE DIRECTION OF FLOW AND BE COLOUR CODED.
 - ALL VENTILATION DUCTWORK SHALL BE INSULATED AND VAPOUR SEALED. INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH THE BRUKL & TMSA GUIDE
 - ALL FINAL BRANCHES WILL BE FITTED WITH OPPOSED BLADE OR IRIS TYPE REGULATING DAMPERS
 - THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ALL DUCTWORK SUPPORT SYSTEMS. SUPPORT SYSTEMS FOR FIRE-RATED DUCTWORK MUST BE CAPABLE OF BEARING DUCTWORK LOAD UNDER FIRE CONDITIONS.
 - FIRE DAMPERS ARE TO BE INSTALLED AT LOCATIONS ALIGNED WITH THE CURRENT FIRE PLAN. FIRE DAMPERS MUST BE SELECTED TO SUIT THE MATERIAL IN WHICH THEY ARE FITTED AND MUST BE INSTALLED IN FULL COMPLIANCE WITH THE SUPPLIERS TESTED DETAIL, ACHIEVING THE CE AND UKS (IF AVAILABLE) RATING ON COMPLETION.
 - SERVICE PENETRATIONS THROUGH FIRE WALLS MUST ACHIEVE THE MINIMUM CLEARANCE REQUIREMENTS WITH RESPECT TO SURROUNDING SERVICES, OTHER PENETRATIONS, AND WITH RESPECT TO THEIR OWN POSITION WITHIN THE PENETRATION. THIS IS CRITICAL TO ACHIEVING A TESTED DETAIL.
 - THE CONTRACTORS MUST SELECT EQUIPMENT, DUCTWORK, FITTINGS AND COMPONENTS TO ACHIEVE THE INDICATIVE ECONOMIC LIFE EXPECTANCY FIGURES PROVIDED IN CIBSE GUIDE B APPENDIX 12.2.1 WITHIN THE INSTALLATION ENVIRONMENT. COATINGS MUST BE APPLIED WHERE NECESSARY (CORROSIVE, SALINE, CHEMICAL ENVIRONMENTS ETC.)
 - AIR INTAKES SHALL BE POSITIONED AWAY FROM LOCAL SOURCES OF POLLUTION.
 - IN ACCORDANCE WITH BRUKL, MECHANICAL VENTILATION SYSTEMS MUST BE COMMISSIONED. A COMMISSIONING NOTICE MUST BE GIVEN TO THE BUILDING CONTROL BODY. COMMISSIONING SHOULD BE CARRIED OUT IN ACCORDANCE WITH CIBSE'S COMMISSIONING CODES A&M, AND BESA DW143 & 144 DW 145
 - ALL DUCTWORK SHOULD BE SUBJECT TO AIR LEAKAGE TESTING ON COMPLETION IN ACCORDANCE WITH BESA DW 145
 - ACCESS PANELS ARE TO BE PROVIDED IN THE DUCTWORK SYSTEM AT THE LOCATIONS IDENTIFIED IN BESA DW144 & TR19. ACCESS PANELS MUST BE IDENTIFIED UPON THE AS INSTALLED DRAWINGS, AND BE INSTALLED IN ACCESSIBLE LOCATIONS.
 - FLEXIBLE DUCTWORK IS PERMITTED ONLY FOR FINAL CONNECTIONS TO DIFFUSERS. FLEXIBLE DUCTWORK SHOULD BE LIMITED TO 500 mm IN LENGTH AND MUST BE INSTALLED SO TO BE FULL EXTENDED, WITHOUT BENDS, TWIST OR DEFORMATION.
 - ADDITIONAL SURVEYS ON SITE REQUIRED TO DETERMINE SPACE AVAILABILITY AROUND THE EXISTING & RETAINED EXISTING SERVICES WITH THE VOID SPACE.
 - ALL LOUVERES SHALL BE FITTED WITH BIRD MESH AND INSECT SCREENS. CONNECTING DUCTWORK SHALL BE PROVIDED WITH ACCESS PANELS TO FACILITATE MAINTENANCE/CLEANING. ALL LOUVERES SHALL BE AS PER ARCHITECTS SPECIFICATION. EXACT LOCATIONS TO BE AGREED WITH ARCHITECT.
 - ALL DOOR TRANSFER GRILLES AND DOOR UNDERCUTS TO BE PROVIDED AS NECESSARY FOR THE VENTILATION RETURN AIR PATH. FINAL METHOD AND SIZE OF RETURN AIR PATH IS A CONTRACTOR DESIGN PORTION (CDP), THEREFORE THE CONTRACTOR WILL NEED TO TAKE IN CONSIDERATION THE ACOUSTIC AND FIRE STRATEGY REQUIREMENTS. WHERE DOOR UNDERCUTS ARE THE SELECTED METHOD, THEY SHALL BE A MINIMUM OF 10MM AND NOT EXCEED 15MM. VENTILATION SYSTEMS DUCTWORK PASSES THROUGH AND EXTERNAL FABRIC ELEMENT TO ATMOSPHERE THROUGH AN ADEQUATE WEATHER SEAL.
 - GRILLES ARE TO BE PROVIDED FOR VENTILATION TO THE CEILING SPACES WHERE GAS PIPEWORK IS PRESENT IN LINE WITH (G&M-UP-2). ANY EXISTING RETAINED GAS SERVICES WITHIN THE CEILING VOID ARE TO BE DETERMINED BY INTRUSIVE SURVEYS.

LEGEND

- DISCHARGE AIR
- EXTRACT AIR
- INTAKE AIR
- SUPPLY AIR
- VCD DAMPER
- SUPPLY GRILLE
- EXTRACT GRILLE
- ATTENUATOR
- CO2 SENSOR

- ACRONYM LEGEND:**
- VAV = VARIABLE-AIR-VOLUME
 - CAV = CONSTANT AIR VOLUME
 - VCD = VOLUME CONTROL DAMPER
 - DX = DIRECT EXPANSION
 - AHU = AIR HANDLING UNIT
 - EF = EXTRACT FAN
 - SG = SUPPLY GRILLE
 - EG = EXTRACT GRILLE
 - BM = BELLMOUTH
 - ATT = ATTENUATOR
 - IA = INTAKE AIR
 - DA = DISCHARGE AIR
 - SA = SUPPLY AIR
 - EA = EXTRACT AIR
 - LL = LOW LEVEL
 - HL = HIGH LEVEL
 - RT = RISE TO



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NOTES

- DO NOT SCALE FROM THIS DRAWING.
- ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
- ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

BUILDING SERVICES NOTES

- THIS DRAWING SHOWS THE INTENDED LOCATIONS OF PLANT ITEMS AND SERVICE ROUTES IN SUCH DETAIL AS TO REPRESENT THE DESIGN. THE DRAWING DOES NOT INDICATE THE PRECISE POSITION OF SERVICES BUT INDICATES THEIR GENERAL ROUTES. THE CONTRACTOR IS RESPONSIBLE TO PRODUCE "COORDINATED WORKING DRAWINGS" OR "INSTALLATION DRAWINGS".
- THE CONTRACTOR IS TO PRODUCE ALL FINAL SETTING OUT OF THE BUILDING SERVICES. THIS SHALL BE UNDERTAKEN IN CONJUNCTION WITH THE ARCHITECT AND STRUCTURAL ENGINEERS.
- SIGNIFICANT COM/HEALTH AND SAFETY RESIDUAL RISKS ARE HIGHLIGHTED ON THESE DRAWINGS. HOWEVER, BEFORE COMMENCEMENT OF WORKS ASSOCIATED WITH THESE DRAWINGS, THE CONTRACTOR IS TO REVIEW THE DESIGN STAGE RESIDUAL RISKS AND PRODUCE THEIR OWN RISK DOCUMENTATION, FOR REVIEW BY THE ENGINEER.
- ANY DISCREPANCY FOUND BETWEEN INFORMATION SHOWN ON THIS DRAWING, ASSOCIATED DRAWINGS, SCHEDULES AND SPECIFICATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEERS IN WRITING.

PO1	STAGE 4a ISSUE	25/10/24	BS	RS
Rev	Description	Date	By	App
Revision Schedule				

STAGE 4a ISSUE

STOPFORD LABS

RAMBOLL

tel 0161 827 1890 manchester@ramboll.co.uk
www.ramboll.co.uk

**VENTILATION & AC SYSTEMS
GENERAL ARRANGEMENT
LEVEL 00
PROFESSIONAL SKILLS
SHEET 1 OF 1**

Project No:	Scale (B A3):	Date:	Drawn:
1620013964	1:50	25/10/24	BS
Drawing No:			Rev:
3964-RAM-SS-00-DR-M-S70001			PO1