

LED Lighting upgrade

Custom Report

20/11/2017 - 15:46

Table of Contents

| | |
|--|----|
| 00-05-10 Project definition..... | 4 |
| 00-05-15 Works terminology..... | 5 |
| 00-05-20 Project participants..... | 8 |
| 00-05-70 Project location..... | 9 |
| 00-10-70 Works Contract Content..... | 10 |
| 00-20-70 Works contract..... | 11 |
| 00-40-70 Works Contract Establishment..... | 14 |
| 00-50-70 Works Contract Management..... | 19 |
| 00-60-70 Works Contract Verification..... | 24 |
| 00-70-70 Works Contract Administration..... | 29 |
| 00-80-70 Works Contract Completion..... | 33 |
| Outline Specification..... | 36 |
| 70-80-35/110 Hard wired general lighting system..... | 38 |

SPR13025 Campus Wide

Project Management

20/11/2017 - 15:46

00-05-10 Project definition

101 The Project

- **Project reference:** SPR13025
- **Project title:** Campus Wide - Energy Saving Projects
- **Project description:** Conversion of all luminaires to LED using LED fittings as specified

110 Project documents

- **Document type:** Drawings, Schedule and Performance Specification.
- **Title:** As above clause 101
- **Reference:** As above clause 101
- **Status:** As above clause 101
- **Provision:** Provided.

110 A Project documents

- **Document type:** Record drawings.
- **Title:** Asbestos records and existing services record drawings
- **Reference:** ESS electronic shared drive
- **Status:** Historical
- **Format:** Electronic
- **Provision:** Available at the offices of the Contract Administrator during normal business hours.
Telephone 0191 2087171 to arrange appointment

00-05-15 Works terminology

110 Terminology

- **Meaning:** Terms, derived terms and synonyms used are as defined in this section or in the appropriate referenced document.

210 Description terminology

- **Attendance:** Includes
The use of the Main Contractor's temporary roads, pavings and paths, standing scaffolding, standing power operated hoisting plant,
The provision of temporary lighting of an equivalent brightness to the finished lighting brightness,
The provision of water,
The clearing away of rubbish and paying all charges in connection with its disposal, the provision of secure hard standing space for the sub-contractor's own offices, plant and material storage,
The use of standing mess rooms, sanitary accommodation and welfare facilities and
The provision of all Health and Safety facilities and all Fire Safety precautions, services, equipment, signage, facilities, Marshalls and the like necessary to comply with the relevant parts of the Joint Fire Code.
Additional requirements should be described as 'Special attendance'.
- **Building Manual:** A document containing information of use to subsequent building owners, occupiers and users about the requirements and procedures for effective operation, maintenance, decommissioning and demolition of the building.
- **Construction Work:** Permanent work together with temporary work.
- **Contractor:** The party who undertakes to perform the services, supply goods or carry out work defined in a contract. Includes Main Contractor, Prime Contractor, Supplier, Service provider, Builder, Subcontractor, etc. as the context dictates, which may be defined terms in certain standard contract forms.
- **Contractor's choice:** Selection delegated to the Contractor, but liability to remain with the specifier.
- **Contractor's design:** Design to be carried out or completed by the Contractor, supported by appropriate contractual arrangements, to correspond with specified requirements.
- **Cost:** The amount paid or given by one party to another in exchange for goods, work or services.
- **Designer:** A person carrying out design on a project.
- **Deviation:** Difference between a specified dimension or position and the actual dimension or position.
- **Employer:** The party to the Contract for whom the goods, work or services are provided. Includes Client (in consultancy contracts and CDM Regulations), the Employer, Building owner or Purchaser (in construction contracts), the Developer (in development agreements and funding agreements), or the 'Main' contractor in contractor/ subcontractor agreements - which may be defined terms in certain standard contract forms
- **Estimate:** An approximate evaluation of either time or cost of part or the whole of a project.
- **Execute:** To complete a task fully and put into effect. To fix, apply, install or lay products securely, accurately, plumb and in alignment.
- **Existing:** Items retained in place to receive new work.
- **Fastener:** Device for mechanically attaching something to something else.
- **Manufacturer and Product reference:** Manufacturer - the body under whose name the particular product, component or system is marketed.
Product reference - the proprietary brand name and/ or reference by which the particular product, component or system is identified.

References are as specified in the manufacturer's technical literature current on the date specified.

- **Manufacturer's standard:** Where used in conjunction with a specified proprietary product, accessories to be those recommended by the product manufacturer.
- **Permanent Work:** Work to be constructed and completed in accordance with the Contract.
- **Price:** An indication of the amount required to be paid by one party to another in exchange for goods, work or services.
- **Product:** Material, both manufactured and naturally occurring, goods and accessories for permanent incorporation into the Works.
- **Requirements:** A description in outline or detailed form of the development, or a part of it, which one party requires another to design and/or build.
- **Schedule of rates:** The subdivision of product and execution prices by a pre-determined unit basis.
- **Schedule of Work:** The subdivision of work items by a pre-determined classification. Can form the basis of a pricing document where Bills of Quantities are not used.
- **Schematic:** A drawing of a system showing components, products, systems and their interconnections.
- **Site equipment:** The Contractor's apparatus, appliances, machinery, vehicles or things of whatsoever nature required in or about the construction for the execution and completion of the Works and the remedying of defects.
Includes Appliances, vehicles, consumables, tools, temporary work, scaffolding, cabins and other site facilities.
Excludes: Temporary work, Employer's products and equipment or anything intended to form or forming part of the permanent Works.
- **Specification:** Written description of requirements.
- **System:** Products, components, equipment, accessories, controls, supports and ancillary items, including installation, necessary for that section of the work to function.
- **Temporary work:** Incidental work to undertaken during construction but not intended to form part of the completed work.

310 Activity terminology

- **Advise:** See 'Communicate'.
- **Agree:** See 'Communicate'.
- **Approve:** Record conformance of work to specified criteria by giving formal or official sanction.
- **Communicate:** Includes advise, inform, agree, confirm, notify, seek or obtain information, consent or instructions, or make arrangements.
- **Confirm:** See 'Communicate'.
- **Ease:** Adjust moving parts of designated products, systems or work to achieve free movement and good fit in open and closed positions.
- **Fix:** Receive, unload, handle, store, protect, place and fasten in position; dispose of waste and surplus packaging; to include labour, materials and site equipment for that purpose.
- **Give notice:** Communicate in writing to the person administering the Contract at the address listed therein.
- **Inform:** See 'Communicate'.
- **Keep for recycling:** As 'keep for use' but relates to a naturally occurring material rather than a manufactured product.
- **Keep for reuse:** Do not damage designated products, systems or work. Clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer or Purchaser, or for use in the Works as instructed.

- **Make good:** Execute local remedial work to designated work. Make secure, sound and neat.
- **Match existing:** Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.
- **Notify:** See 'Communicate'.
- **Quote:** Use 'Estimate'.
- **Recycle:** Collect, sort, process and convert discarded or recovered components into raw materials for use in the creation of new products.
- **Refix:** Fix previously removed products.
- **Remove:** Disconnect, dismantle as necessary and take out the designated products or work, together with associated accessories, fixings, supports, linings and bedding materials. Dispose of unwanted materials.
Removal of a system includes this work.
- **Remediate:** Action or measures taken to lessen, clean-up, remove or mitigate the existence of hazardous materials existing on a property; in accordance with standards, specifications or requirements as may be required by statutes, rules, regulations or specification.
- **Repair:** Execute remedial work to designated products. Make secure, sound and neat. Excludes redecoration and replacement.
- **Replace:** Supply and fix new products matching those removed. Execute work to match the original new state of that removed.
- **Reuse:** Recover components to be fixed or used in the project or other buildings without the requirement for recycling.
- **Submit:** Deliver an item in a specified format to a specified person within a specified time frame.
- **Submit proposals:** Submit information in response to specified requirements.
- **Supply and fix:** Supply of products, components or systems to be fixed, together with their fixing.

00-05-20 Project participants

110 Project participants

- **Company:** Newcastle University
 - **Name:** Estate Support Service (Improvements)
 - **Address:** Agriculture Building, 1st Floor ESS Office
 - **Telephone number:** 0191 2087171
 - **Email:** ess-helpdesk@newcastle.ac.uk
- **Contact:** Improvements Engineer
 - **Name:** Sam Heppell
 - **Telephone number:** 0191 208 5256
 - **Email:** sam.heppell@newcastle.ac.uk
- **Title:** Project Engineer

00-05-70 Project location

110 Project location

- **Details:** Newcastle University - Campus Wide - Buildings as Specified
- **Address:**
 - **Street:** Newcastle University Campus
 - **City:** Newcastle Upon Tyne
 - **Post code:** NE1 7RU

170 Access

- **Details:** Details for each building are provided in the building list
- **Limitations:** No contractor parking on the University Campus

00-10-70 Works Contract Content

110 Preparatory work by others

- **Work:** Carried out by others and not forming part of this Contract work.
- **Details:** Lighting survey & asbestos survey carried out
- **Timescale:** Both surveys completed

120 The Works

- **Details:** Remove and dispose of luminaires, replace with new LED luminaires as per the system performance, execution and included schedules.

130 Work by others concurrent with the Contract

- **Details:** All areas of the building (administration, labs, offices etc) will be in use during the works
- **Timescale:** Normal office ours from 0800 to 1700 hrs

150 Work by, or on behalf of employer

- **Description of work:** Employer's directly retained workforce
- **Carried out by:** Employer's directly retained workforce.
- **General attendance:** Provide.
- **Special attendance:** None

160 Products provided by, or on behalf of employer

- **General:** Details of products to be fixed by the Contractor are given in the work sections. Use for no other purpose than the Works.
- **Handling:** Accept delivery, check against receipts and take into appropriate storage.
- **Surplus products:** Keep safe and obtain instructions.

300 Provisional sum for defined work

- **Details:** Provision for additional DALI luminaires and replacement existing diffusers or fluorescent end caps etc.

00-20-70 Works contract

JCT Minor Works Building Contract (MW)

- **The Contract:** JCT Minor Works Building Contract 2011 Edition, incorporating Amendment 1, March 2015.
- **Requirement:** Allow for the obligations, liabilities and services described

THE RECITALS

First The Works and the Contract Administrator

- **The work comprises:** Replacement of all luminaires in 35 buildings to LED. The project will take place over a 3 year period, where the chosen contractor will be expected to supply and install all LEDs/fittings (as detailed in this Tender) in accordance with a programme agreed with the University Representative. Works will commence 03/2018 in the Cassie Building, with all other buildings following on a rolling programme.

Second Contract documents

- **Contract drawings:** LED replacement legend for each building included in this project and building layout for the Cassie and Old Library Buildings.
- **Contract documents:**
 - **The following have been prepared which show and describe the work to be done:** A specification

Third Priced documents

- **Documents to be priced or provided by the Contractor:** Contract Schedules

THE ARTICLES

3 Architect/ Contract Administrator

4 and 5 Principal Designer/ Principal Contractor

- **Principal Designer:** Sam Heppell

CONTRACT PARTICULARS

Fourth Recital and Schedule 2 Base date

- **Base date:** 01 March 2018

Fourth Recital and clause 4.2 Construction industry scheme (CIS)

- **Employer at the Base Date:** Is not a 'contractor' for the purposes of the CIS.

Fifth Recital CDM Regulations

- **The project:** Is notifiable.

Sixth Recital Framework agreement

- **Framework agreement:** Does not apply.
- **Details:**

Seventh Recital and Schedule 3 Supplemental provisions

- **Collaborative working:** Paragraph 1 does not apply.
- **Health and safety:** Paragraph 2 does not apply.
- **Cost savings and value improvements:** Paragraph 3 does not apply.
- **Sustainable development and environmental considerations:** Paragraph 4 does not apply.
- **Performance indicators and monitoring:** Paragraph 5 does not apply.
- **Notification and negotiation of disputes:** Paragraph 6 does not apply.
- **Where Paragraph 6 applies:**

Article 7 Arbitration

- **Article 7 and Schedule 1:** Do not apply.

Clause 2.2 Commencement and Completion

- **Date for Commencement of the Works:** No later than March 2018
- **Date for Completion:** No later than 31 December 2020

Clause 2.8 Liquidated damages

- **Damages:**
 - **Rate:** Nil

Clause 2.10 Rectification period

- **Period:** Twelve months from the date of practical completion.

Clause 4.3 Percentage of the total value of the work etc.

- **Percentage:** 95 per cent.

Clause 4.4 Percentage of the total amount to be paid to the Contractor

- **Percentage:** 97½ per cent.

Clause 4.8.1 Supply of documentation for computation of amount to be finally certified

- **Period:** Twelve months from the date of practical completion.

Clause 4.11 and Schedule 2 Contribution, levy and tax changes

- **Clause 4.11 and Schedule 2:** Will be deleted.

Clause 5.3.2 Contractor's insurance - injury to persons or property

- **Insurance cover (for any one occurrence or series of occurrences arising out of one event):** £10,000,000.00 (Ten Million Pounds)

Clauses 5.4A, 5.4B and 5.4C Insurance of the works etc - alternative provisions

- **Clause:** 5.4C (Existing structures insurance by Employer in own name) together with 5.4A (Works insurance by Contractor in Joint Names) applies.

Clauses 5.4A.1 and 5.4B.1.2 Percentage to cover professional fees

- **Percentage:** 15 per cent.

Clause 7.2 Adjudication

- **The Adjudicator is:** To be confirmed
- **Nominating body:** The Royal Institution of Chartered Surveyors.

Schedule 1 paragraph 2.1 Arbitration

- **Appointor of Arbitrator (and of any replacement):** President or a Vice president of the: The Royal Institution of Chartered Surveyors.

THE CONDITIONS

Section 1: Definitions and Interpretation

Section 2: Carrying out the Works

Section 3: Control of the Works

Section 4: Payment

Section 5: Injury, Damage and Insurance

Section 6: Termination

Section 7: Settlement of Disputes

EXECUTION

- **The Contract:** Will be executed under hand.

00-40-70 Works Contract Establishment

ACCESS

110 Access to the site

- **Details:** Access to the site will be via the University security office.
- **Limitations:** Please arrange delivery details with the Principal Designer. However, it is expected that only the materials to be used per shift will be brought to site. No storage space is available on site for the full project.

120 Use of the site

- **General:** Do not use the site for any purpose other than carrying out the contract work.

145 Traffic and vehicles

- **Limitations:** Arrange delivery with Principle Designer and/ or Building Manager

150 Storage, accommodation, mechanical plant, temporary works and services

- **Position:** Storage will be agreed with Principal Designer and each respective Building Manager.
- **Maintenance:** Alter, adapt and move as necessary. Remove when no longer required and make good.

GENERAL INFORMATION

160 Cash flow forecast

- **Submission:** Before starting work on site, submit a forecast showing the gross valuation of the Works at the date of each Interim Certificate throughout the Contract period and based on the programme for the Works.

180 Site Waste Management Plan

- **Development:** The person responsible for developing the plan will be the Contractor.
- **Content:** Identity of proposed Principal Contractor.
Location of the site.
Description of the project.
Estimated project cost.
Types and quantities of waste that will be generated.
Resource management options for these wastes including proposals for minimization, reuse and/or recycling.
The use of appropriate and licensed waste management contractors.
Record keeping procedures.
Waste auditing protocols.
- **Submittal date:** Within one week of request

190 Environmental policy

- **Employer's Environmental Policy:**
 - **Availability:** Available from the office of the Principal Designer
- **Project Environmental Management System:**

- **General:** Develop a system compatible with the Employer's policy.
- **Supporting information:**
 - **Type:** Provide details of how the redundant equipment and tubes will be disposed of
 - **Format:** electronic
- **Submittal date:** Within one week of request.

PROGRAMME

250 Programme

- **Master programme:** When requested and before starting work on site, submit in an approved form a master programme for the Works.
- **Include:** Details of deliveries.
- **Planning:** Planning and mobilization by the Contractor including subcontractor's work.
- **Engineering services:** Running in, adjustment, commissioning and testing of engineering services and installations.
 - **Instructions:** Work resulting from instructions issued in regard to the expenditure of provisional sums.
- **Concurrent work:** Work by or on behalf of the Employer and concurrent with the contract. The nature and scope of which, the relationship with preceding and following work and relevant limitations are suitably defined in the Contract Documents.
- **Number of copies:** One electronic copy
- **Submittal date:** Within one week of request

280 Commencement of work

- **Notice:** Before the proposed date for commencement of work on site give minimum notice of two weeks

HEALTH AND SAFETY INFORMATION

300 Health and Safety information

- **Content:** Describe the proposed organization and resources to safeguard the health and safety of operatives, including those of subcontractors, and of any person whom the Works may affect.
- **Policy document:** A copy of the Contractor's health and safety policy documents, including risk assessment procedures.
 - **Records:** Accident and sickness records for the past five years and of any previous Health and Safety Executive enforcement action.
 - **Training:** Records of training and training policy.
 - **Personnel:** The proposed number and type of staff responsible for health and safety on this project with details of their qualifications and duties.
- **Submittal date:** Within one week of request

320 Outline Construction Phase Health and Safety Plan

- **Content:**
 - **Risk assessment:** Method statements on how risk from hazards identified in the pre-construction information and other hazards identified by the Contractor will be addressed. Procedures for carrying out risk assessment and for managing and controlling the risk.

- **Management system:** Details of the proposed management structure, responsibilities and arrangements for issuing health and safety directions. Include procedures for informing other contractors and employees of health and safety hazards.
- **Selection:** Proposed procedure for ensuring competency of other contractors, the self employed and designers.
- **Communication:** Procedures for communications between the project team, other contractors and site operatives. Include arrangements for cooperation and coordination between contractors.
- **Emergency:** Procedures including those for fire prevention and escape.
- **Records:** Arrangements for ensuring that accidents, illness and dangerous occurrences are recorded.
- **Personnel:** Procedures for ensuring that persons on site have received relevant health and safety information and training. Include arrangements for consulting with and taking the views of people on site, for preparing site rules and drawing them to the attention of those affected and ensuring compliance.
- **Monitoring:** Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements. Review procedures to obtain feedback.
- **Submittal date:** Within one week of request

330 Health and safety hazards

- **Limitations:** The nature and condition of the site and/ or buildings cannot be fully ascertained before they are opened up.
- **Information:** The accuracy and sufficiency of this information provided about existing hazards is not guaranteed by the Employer/Purchaser or their representative. Ascertain if additional information is required to ensure the safety of persons and the Works.
- **Training:** Ensure that all relevant personnel are aware of the hazards listed and have received appropriate training to deal with them.

340 Preconstruction information

- **Availability:** Integral with the project specification, including but not restricted to the following:
Description of project.
Client's consideration and management requirements.
Environmental restrictions and on-site risks.
Significant design and construction hazards.
The Health and Safety File.

350 Execution hazards

- **Common hazards:** Not listed. Control by good management and site practice.

360 Product hazards

- **Hazardous substances:** Site personnel levels must not exceed occupational exposure standards and maximum exposure limits stated in the current version of HSE document EH40: Guidance Notes: Environmental Hygiene (EH): Workplace exposure limits. Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002 (as amended).
- **Common hazards:** Not listed. Control by good management and site practice.

370 Construction phase health and safety plan

- **Delivery to the Client:** One week prior to starting on site

- **Confirmation:** Do not start construction work until written confirmation is received that the Construction Phase Health and Safety Plan includes the procedures and arrangements required by the CDM Regulations.
- **Content:** Develop the plan from and draw on the Outline Construction Phase Health and Safety Plan and the Preconstruction information.

MANAGEMENT AND STAFF

400 Management and staff – Contract minimum requirement

- **Details:** Allow for compliance with contract obligations.

TEMPORARY ACCOMMODATION

430 Temporary accommodation – Contract minimum requirement

- **Details:** Allow for compliance with the Contract obligations.

460 Temporary accommodation made available

- **Accommodation made available by the Employer:** The following may be used for the duration of the Contract without charge provided that:
It is used solely for the purposes of carrying out the Works.
The use to which it is put does not involve undue risk of damage.
Temporary adaptations are approved by or on behalf of the Employer before being carried out.
It is vacated on completion of the Works or determination of the Contract.
When vacated, its condition is at least equivalent to its condition at the start of the Contract.
- **Details:** Staff common room, kitchen & ground floor wc.
- **Provider:** Employer
- **Available services and facilities:** Welfare facilities

TEMPORARY SERVICES

500 Temporary Services – contract minimum requirement

- **Details:** Allow for compliance with Contract obligations.

TEMPORARY SECURITY

600 Security – contract minimum requirement

- **Details:** Allow for compliance with Contract obligations.

TEMPORARY SAFETY AND CONTROL

630 Safety and environmental protection – contract minimum requirement

- **Details:** Allow for compliance with Contract obligations.

670 Control and protection – contract minimum requirement

- **Details:** Allow for compliance with Contract obligations.

730 Mechanical plant – contract minimum requirement

- **Details:** Allow for compliance with Contract obligations.

TEMPORARY WORKS

760 Temporary works – contract minimum requirement

- **Details:** Allow for compliance with Contract obligations.

790 Name boards and advertisements

- **General:** Obtain approval, including statutory consents, and provide a temporary name board displaying:
 - Title of Project.
 - Name of Employer/ Purchaser.
 - Names of Consultants.
 - Names of Contractor and Subcontractors.

00-50-70 Works Contract Management

GENERALLY

SUPERVISION, COOPERATION AND COORDINATION

130 Supervision

- **Requirement:** The whole of the contract work and any significant parts must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality, progress and coordination.
- **Evidence:** Provide names, CV's, qualifications and any other documentary evidence.
- **Submittal date:** Within one week of request
- **Replacement of supervisory personnel:** Give maximum possible notice before changing supervisory personnel.

PROGRESS

150 Monitoring

- **Progress:**
 - **Records:** Record on a copy of the programme kept on site.
 - **Delays:** Minimize. Take appropriate action to recover lost time.
 - **Corrective action:** Submit proposals.
 - **Submittal date:** As soon as possible.
 - **Completion forecast:** Submit on the last working day of each week.
- **Key Performance Indicators:**
 - **Details:** Variations and damaged existing luminaires
 - **Performance:** Record against each of the KPI's. If performance against KPI falls short of target, Submit proposals for re-mediation as soon as possible.
 - **Corrective action:** Submit proposals.
 - **Submittal date:** As soon as possible.

160 Progress meetings

- **General:** Meetings will be held to review progress and other matters arising from administration of the Contract.
- **Frequency:** Weekly (Friday)
- **Venue:** Agriculture ESS Office
- **Accommodation:** Ensure availability at the time of such meetings.
- **Attendees:** Contractor and Employer
- **Chairperson:** Principal Designer
 - **Name:** Sam Heppell
 - **Duties:** The Chairperson will send invitations, receive apologies, distribute agendas, take and distribute minutes

OPERATION

200 Employer's representatives inspections

- **Access:** Provide at reasonable times.
- **Inspections:** Agree dates and times several days in advance, to enable affected parties to be present.
- **Safety:** Submit details in advance of safety provisions and procedures (including those relating to materials, which may be deleterious), which will require compliance of the Employer and Employer's representatives when visiting the site.
- **Provide:** Protective clothing and/ or equipment site for the Employer, the Employer's representatives and other visitors to the site.

210 Removal or replacement of existing work

- **Extent and location:** Agree before commencement.
- **Execution:** Carry out in ways that minimize the extent of work.

220 Ownership of materials

- **Alteration or clearance work:** Materials arising become the property of the Contractor except where otherwise stated. Remove from site as work proceeds.

230 Measurement

- **Covered work:** Give notice before covering work required to be measured.

240 Service runs

- **General:** Provide adequate space and support for services, including unobstructed routes and fixings.
- **Ducts, chases and holes:** Form during construction rather than cut in situ.
- **Coordination with other works:** Submit details of locations, types and methods of fixing of services to fabric and identification of runs and fittings.

250 Access

- **Extent:** Provide at reasonable times access to the Works; also to other places where the Contractor or subcontractors are preparing work for the Contract.
- **Designate:** Principal Designer

260 Security

- **Protection:** Safeguard the site, the Works, products, materials, and existing buildings affected by the Works from damage and theft.
- **Access:** Take reasonable precautions to prevent unauthorized access to the site, the Works and adjoining property.

280 Stability

- **Responsibility:** Maintain the stability and structural integrity of the Works and adjacent structures during the Contract.
- **Design loads:** Obtain details, support as necessary and prevent overloading.

290 Occupied premises

- **Extent:** Existing building will be occupied and/ or used during the Contract.
- **Details:** Even though contract is out of hours, some building occupants may be present.
- **Works:** Carry out without undue inconvenience and nuisance and without danger to occupants and users.
- **Overtime:** If compliance with this clause requires certain operations to be carried out during overtime, and such overtime is not required for any other reason, the extra cost will be paid to the Contractor, provided that such overtime is authorized in advance.

300 Access control

- **Controlled areas:** Building entrances and most floors main corridors, some offices and labs.
- **Control type:** Swipe Card System
- **Authorized persons:** Submit a list of the names of persons requiring access together with other related information reasonably required.
- **Return of equipment:** On request or on completion of the work to which it relates.

310 Occupier's rules and regulations

- **Occupier's rules and regulations:** Comply.
- **Details:**
 - **Location:** Included "Contractors induction booklet"

330 Working precautions and restrictions

- **Hazardous areas:**
 - **Description:** Some labs and hazardous storage areas.
 - **Precautions:** These areas will be cleared of all hazardous equipment and materials for works to be carried out.
- **Permit to work:**
 - **Area:** As detailed in clause 310
 - **Procedures:** As detailed in clause 310

430 Nuisance

- **Duty:** Prevent nuisance from smoke, dust, rubbish, vermin and other causes.
- **Surface water:** Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.

440 Asbestos containing materials

- **Requirement:** Report immediately suspected materials discovered during execution of the Works. Do not disturb and agree methods for safe removal or encapsulation.

450 Fire prevention

- **Requirement:** Prevent personal injury or death, and damage to the Works or other property from fire.
- **Standard:** Comply with 'Fire prevention on construction sites' - the joint code of practice on the protection from fire of construction sites and buildings undergoing renovation.

460 Smoking on site

- **Smoking on site:** Not permitted.

470 Burning on site

- **Burning on site:** Not permitted.

480 Moisture

- **Wetness or dampness:** Prevent, where this may cause damage to the Works.
- **Drying out:** Control humidity and the application of heat to prevent:
Blistering and failure of adhesion.
Damage due to trapped moisture.
Excessive movement.

500 Infected timber and contaminated materials

- **Removal:** Where instructed to remove material affected by fungal and/or insect attack from the building, minimize the risk of infecting other parts of the building.
- **Testing:** Carry out and keep records of appropriate tests to demonstrate that hazards presented by concentrations of airborne particles, toxins and other micro-organisms are within acceptable levels.

510 Waste

- **Includes:** Rubbish, debris, spoil, containers and surplus material.
- **Requirement:** Keep the site and Works clean and tidy. Remove rubbish, dirt and residues before closing voids and cavities in the construction.
- **Waste:** Remove frequently and dispose off site in a safe and competent manner as approved and directed by the Waste Regulation Authority.
- **Recyclable material:** Sort and dispose at a Materials Recycling Facility approved by the Waste Regulation Authority.
- **Documentation:** Retain waste transfer documentation on site.

520 Electromagnetic interference

- **Duty:** Prevent excessive electromagnetic disturbance to apparatus outside the site.

540 Power actuated fixing systems

- **Use:** Not permitted.

550 Invasive species

630 Existing features

- **Protection:** Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features, which are to remain in position during execution of the Works.

640 Existing work

- **Protection:** Prevent damage to existing work, structures or other property during the execution of the Works.
- **Removal:** Minimum amount necessary.
- **Replacement work:** To match existing.

650 Building interiors

- **Protection:** Prevent damage from exposure to the environment, including weather, flora, fauna, and other causes of material degradation during the execution of the Works.

660 Existing furniture, fittings and equipment

- **Protection:** Prevent damage or move as necessary to enable the Works to be executed. Reinstall in original positions.
- **Removal by Employer:**
 - **Timing:** Before work starts in relevant areas.
 - **Item:** All

680 Especially valuable or vulnerable items

- **Protection:** Ensure provision and maintenance of special protective measures to prevent damage.
- **Items:** Computer and lab equipment
- **Method statement:** Submit within one week of request describing special protection to be provided.

METHOD AND SEQUENCE

780 Use or disposal of materials

- **Specific limitations:** Correct disposal of all materials following Site Waste Management Regulations

790 Working hours

- **Specific limitations:** All work is to be carried out, out of hours after 18:00 and 08:00 seven days a week and between 08:00 and 18:00 Saturday and Sunday. (Unless arranged otherwise with Building manager in certain circumstances).

00-60-70 Works Contract Verification

STANDARDS OF PRODUCTS AND EXECUTIONS

110 Substitute products

- **Details:** If the contractor can provide luminaires of a better performance than those specified, the contractor may submit details with the tender giving reasons for each proposed substitution. Substitutions which have not been notified at tender stage may not be considered until the next available Tender review. Evidence that substitutes perform to at least the same as the performance specification must be provided at the Tender interview stage.
- **Compliance:** Substitutions accepted will be subject to verification requirements detailed in the specification.

120 Substitution of products

- **Products:** If an alternative product to that specified is proposed, obtain approval before ordering the product.
- **Reasons:** Submit reasons and relevant information for the proposed substitution.
- **Information to be submitted:** Manufacturer and product reference.
Cost.
Availability.
Relevant standards.
Performance.
Function.
Compatibility of accessories.
Proposed revisions to drawings and specification.
Compatibility with adjacent work.
Appearance.
Copy of warranty or guarantee.
- **Alterations to adjacent work:** If needed, advise scope, nature and cost.
- **Manufacturers' guarantees:** If substitution is accepted, submit before ordering products.

130 Equivalent products

- **Inadvertent omission:** Wherever products are specified by proprietary name the phrase 'or equivalent' is to be deemed included.

140 Substitution of standards

- **Specification:** To British Standard or European Standard.
- **Substitution:** May be proposed complying with a grade or category within a national standard of another Member State of the European Community or an international standard recognized in the UK.
- **Ordering:** Submit notification of all such substitutions before ordering.
- **Documentary evidence:** Submit for verification when requested. Submitted foreign language documents must be accompanied by certified translations into English.

DOCUMENTS AND INFORMATION

150 Currency of documents

- **Currency:** References to published documents are to the editions, including amendments and revisions, current on the date of the Invitation to Tender.

160 Incomplete documentation

- **Products and executions:** Where and to the extent that products or executions are not fully documented, they are to be as follows.
- **Requirements:**
 - **Standard:** Of a kind and quality appropriate to the nature and character of that part of the Works where they will be used.
 - **Suitability:** Suitable for the purposes stated or reasonably to be inferred from the project documents.
- **Contract documents:** Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from obligations or liabilities under the Contract.

210 Record drawings and information

- **Record drawings:**
 - **Drawings scope:** Provided drawings detail installation requirements for each area (office, lab etc.) on each floor.
 - **Drawings format:** Physical Drawing
- **Record specification:**
 - **Specification format:** CAD
 - **Submittal date:** Upon completion of work

220 Technical information

- **Retain:** Available on site for reference by supervisory personnel.
- **Information:** Manufacturer's current information and relevant British Standards, relating to products to be used in the Works.

230 Compliance

- **Compliance:** Retain on site evidence that the proprietary product specified has been supplied.
- **Submit:** Evidence of compliance with performance specifications, including test reports indicating properties tested, pass or fail criteria, test methods and procedures, test results, identity of testing agency, test dates and times, identities of witnesses and analysis of results.

PRODUCTS AND EXECUTION

240 Workmanship skills

- **Operatives:** Appropriately skilled and experienced for the type and quality of work.
- **Registration:** With Construction Skills Certification Scheme.
- **Evidence:** Operatives must produce evidence of skills and qualifications when requested.

250 Quality of products

- **Generally:** New.
- **Supply:** Each product from the same source or manufacturer.

- **Quantity:** Whole quantity of each product required to complete the Works of consistent kind, size, quality and overall appearance.
- **Tolerances:** Where critical, measure a sufficient quantity to determine compliance.
- **Deterioration:** Prevent. Order in suitable quantities to a programme and use in appropriate sequence.
- **Recycling:** Proposals for recycled products may be considered.

260 Quality of execution

- **Generally:** Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.
- **Colour batching:** Do not use different colour batches where they can be seen together.
- **Dimensions:** Check on-site.
- **Finished work:** Not defective, damaged, disfigured, dirty, faulty, or out of tolerance.
- **Appearance:** Adjust joints open to view so they are even and regular.

270 Inspections

- **Standard:** Inspection, or other action, of products or executions must not be taken as approval unless confirmed in writing including the following:
Date of inspection.
Part of the work inspected.
Respects or characteristics which are approved.
Extent and purpose of the approval.
Associated conditions.

280 Related work

- **Details:** Provide trades with necessary details of related types of work. Before starting each new type or section of work ensure previous related work is approximately complete, in accordance with the project documents, to a suitable standard and in a suitable condition to receive new work.
- **Preparatory work:** Ensure necessary preparatory work has been carried out.

290 Manufacturer's recommendations and instructions

- **General:** Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to Tender.
- **Submit:** Details of changes to recommendations or instructions.
- **Execution:** Use ancillary products and accessories supplied or recommended by main product manufacturer.
- **Products:** Comply with limitations, recommendations and requirements of relevant valid certificates.

SAMPLES AND APPROVALS

330 Samples

- **Products or executions:** Comply with specification requirements and in respect of the stated or implied characteristics:
To an express approval.
To match a sample expressly approved as a standard for the purpose.

340 Approval of products

- **Programme:** Undertake or arrange submissions, samples, inspections and tests to suit the Works programme.
- **Approval:** Relates to a sample of the product and not to the product as used in the Works. Do not confirm orders or use the product until approval of the sample has been obtained.
- **Retain:** Complying sample in good, clean condition on site. Remove when no longer required.

350 Approval of execution

- **Programme:** Undertake or arrange submissions, samples, inspections and tests to suit the Works programme.
- **Approval:** Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal, or proceed with affected work until compliance with requirements is confirmed.
- **Retain:** Complying sample in good, clean condition on site. Remove when no longer required.

ACCURACY AND SETTING OUT GENERALLY

370 Accuracy of instruments

- **Measurement:** Use instruments and methods described in BS 5606, Appendix A.
- **Accuracy:** Maintain

380 Setting out

- **General:** Submit details of methods and equipment to be used in setting out the Works.
- **Levels and dimensions:** Check and record the results on a copy of drawings. Notify discrepancies and obtain instructions before proceeding.
- **Completion of setting out:** Give notice before commencing construction.

400 Critical dimensions

- **Critical dimensions:** Set out and construct the Works in accordance with the critical dimensions and tolerances stated.

410 Setting out records

- **Record drawings:** Include details of grid lines, setting-out stations, benchmarks and profiles. Retain on site throughout the Contract and hand over on completion.

SERVICES GENERALLY

430 Services regulations

- **Services:** New and existing services must comply with the Bye-laws or Regulations of the relevant Statutory Authority.

440 Water regulations and bye-laws notification

- **Requirements:** Notify Water Undertaker of work carried out to or which affects new or existing services. Submit required plans, diagrams and details.
- **Consent:** Allow adequate time to receive Undertaker's consent before starting work. Inform immediately if consent is withheld or is granted subject to significant conditions.

450 Water regulations and bye-laws Contractor's certificate

- **Content:**
 - **Installation:** Describe the new installation and/ or the work carried out to an existing installation, including the address.
- **Statement:** Confirm that the installation complies with the relevant Water Regulations or By-laws.
 - **Inspection:** Provide the Contractor's name and address, the name and signature of the individual responsible for checking compliance and the date on which the installation was checked.
- **Submit:** Certificate on completion of the work, include a copy to the Water Undertaker.

460 Electrical installation certificate

- **Certification:** The original certificate is to be lodged in the Building Manual at the completion of relevant electrical work.

480 Mechanical and electrical services

- **Final tests and commissioning:** Carry out so that services are in full working order at completion of the Works.
- **Confirmation:** Provide a Building Regulations notice, signed by a suitably qualified person, to Building Control that systems have been commissioned in accordance with approved procedures.
- **Records:** A copy to be lodged in the Building Manual.

QUALITY CONTROL

540 Proposals for rectification of non-compliant products and executions

- **Non-compliant items:**
 - **Opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution:** Submit proposals
 - **Submittal date:** So soon as possible after discovery of items which are or appear to be non-compliant.
- **Acceptability:** Such proposals may be unacceptable and contrary instructions may be issued.

550 Measures to establish acceptability

- **General:** Wherever inspection or testing shows that the work, materials or goods are not in accordance with the Contract and measures (e.g. testing, opening up, experimental making good) are taken to help in establishing whether or not the work is acceptable, such measures will be at the expense of the Contractor and will not be considered as grounds for revision of the completion date.

00-70-70 Works Contract Administration

USE OF DOCUMENTS

100 Freedom of information

- **Records:** Retain, make available for inspection and supply on request information reasonably required to allow response to requests made under the provisions of the Freedom of Information Act.
- **Received requests:** Obtain instruction before proceeding.
Do not supply information to those who are not project participants without express written permission.
- **Confidentiality:** Maintain at all times.

110 Drawings

- **Definitions:** Record Drawings
- **CAD data:** Electronic CAD

120 Cross references

- **Accuracy:** Check remainder of the annotation or item description against the terminology used in the cited section or clause.
- **Related terminology:** Where a numerical cross-reference is not given the relevant sections and clauses of the Specification will apply.
- **Relevant clauses:** Clauses in the cited specification section dealing with general matters, ancillary products and execution also apply.
- **Discrepancy or ambiguity:** Before proceeding, obtain clarification or instructions.

130 Referenced documents - conflicts

- **Precedence:** Specification prevails over referenced documents.

140 Dimensions

- **Dimensions:** Do not scale.

DOCUMENT AND DATA INTERCHANGE

DOCUMENTS PROVIDED ON BEHALF OF THE EMPLOYER

230 Additional copies of drawings and documents

- **Additional copies:** Issued free of charge

DOCUMENTS PROVIDED BY CONTRACTOR, SUBCONTRACTORS AND SUPPLIERS

280 Schedule of Rates

- **Schedule of rates (unpriced):** Provided. The Contractor may insert additional items. Fully price all items.
- **Fully priced copy - submittal date:** With tender.

410 Alternative time proposals

- **General:** In addition to and at the same time as undertaking to complete the contract work by the date for completion or period specified in the Contract, an alternative proposal based upon a different date or period may be submitted.
- **Date for Completion:** If any such proposal is accepted, the date for completion or period inserted in the Contract will be the date stated in or determined from the alternative proposal.

470 Outline construction phase health and safety plan

- **Content:**
 - **Risk assessment:** Method statements on how risk from hazards identified in the pre-construction information and other hazards identified by the Contractor will be addressed. Procedures for carrying out risk assessment and for managing and controlling the risk.
 - **Management system:** Details of the proposed management structure, responsibilities and arrangements for issuing health and safety directions. Include procedures for informing other contractors and employees of health and safety hazards.
 - **Selection:** Proposed procedure for ensuring competency of other contractors, the self employed and designers.
 - **Communication:** Procedures for communications between the project team, other contractors and site operatives. Include arrangements for cooperation and coordination between contractors.
 - **Emergency:** Procedures including those for fire prevention and escape.
 - **Records:** Arrangements for ensuring that accidents, illness and dangerous occurrences are recorded.
 - **Personnel:** Procedures for ensuring that persons on site have received relevant health and safety information and training. Include arrangements for consulting with and taking the views of people on site, for preparing site rules and drawing them to the attention of those affected and ensuring compliance.
 - **Monitoring:** Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements. Review procedures to obtain feedback.
- **Submittal date:** Within one week of request.

480 Health and safety file information

- **Information:** Provide as required by Principal Designer.

INFORMATION

740 Proposed instructions

- **Estimates:** If a proposed instruction requests an estimate of cost, submit without delay and in any case within seven days.

800 Insurance

- **Documentary evidence:** Before starting work on site submit details and/ or policies and receipts for the insurances required by the Conditions of Contract.

820 Insurance claims

- **Notice:** If an event occurs which may give rise to a claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, immediately give notice to the Employer, the person administering the contract on behalf of the Employer and the Insurers.
- **Failure to notify:** Indemnify the Employer against loss, which may be caused by failure to give such notice.

830 Climatic conditions - records

- **Climatic conditions:** Record accurately and retain.
- **Information:**
 - **Air temperatures:** Daily maximum and minimum, including overnight.
 - **Delay records:** Due to adverse weather, include description of the weather, types of work affected and number of hours lost.

840 Ownership of products

- **Ownership:** At the time of each valuation, supply details of those products not incorporated into the Works which are subject to reservation of title inconsistent with passing of property as required by the Conditions of Contract, together with their respective values.
- **Evidence:** When requested, provide evidence of freedom of reservation of title.

880 Defects in existing work report

- **Undocumented defects:** When discovered, immediately give notice. Do not proceed with affected related work until response has been received.
- **Documented remedial work:** Do not execute work which may hinder access to defective products or executions, or be rendered abortive by the remedial work.

890 Tests and inspection schedule

- **Timing:** Agree and record dates and times of tests and inspections to enable affected parties to be represented.
- **Confirmation:** Provide one working day prior to each test or inspection. If sample or test is not ready, agree a new date and time.
- **Records:** Submit a copy of test certificates and retain copies on site.

900 Commissioning programme

- **Submittal date:** Two weeks (minimum) before commissioning commences.
- **Format:** Electronic
- **Commissioning manager:** Submit proposals.

910 Performance testing programme

- **Submittal date:** Two weeks (minimum) before performance testing commences.
- **Format:** Electronic
- **Commissioning manager:** Submit proposals.

920 Maintenance instructions and guarantees

- **Components and equipment:** Obtain or retain copies, register with manufacturer and hand over on or before completion of the Works.
- **Information location:** In Building Manual.
- **Emergency call out services:**
 - **Telephone numbers:** Provide for use after completion.
 - **Extent of cover:** Twenty four hours seven days a week.

00-80-70 Works Contract Completion

NOTIFICATION

100 Notice of completion

- **Requirement:** Give notice of the anticipated dates of completion of the whole or parts of the Works.
- **Associated work:** Ensure necessary access, services and facilities are complete.
- **Period of notice (minimum):** Two weeks.

COMPLETION WORK

170 Work before completion

- **General:** Make good damage consequent upon the Works. Remove temporary markings, coverings and protective wrappings unless otherwise instructed.
- **Cleaning:** Clean the Works thoroughly inside and out, including accessible ducts and voids. Remove splashes, deposits, efflorescence, rubbish and surplus materials.
- **Cleaning materials and methods:** As recommended by manufacturers of products being cleaned, and must not damage or disfigure other materials or construction.
- **COSHH dated data sheets:** Obtain for materials used for cleaning and ensure they are used only as recommended by their manufacturers.
- **Minor faults:** Touch up in newly painted work, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.
- **Moving parts of new work:** Adjust, ease and lubricate as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.

180 Security at completion

- **General:** Leave the Works secure with, where appropriate, accesses closed and locked.
- **Keys:** Account for and adequately label keys. Hand over to the duly authorized person with an itemized schedule. Retain a duplicate schedule signed by that person as a receipt.

190 Rectification and defects

- **Notice:** Give reasonable notice for access to the various parts of the Works.
- **Access arrangements:** 1 Smart card is to given out for access.
- **Completion:** Give notice when remedial works have been completed.

INFORMATION

240 The Building Manual

- **Responsibility for production:** The Contractor
- **General:** Obtain and provide comprehensive information for owners and users of the completed Works. Include an overview of the main design principles and describe key components and systems within the finished Works to enable proper understanding, efficient and safe operation and maintenance.

- **Format:** Electronic
- **Number of copies:** One
- **Delivery to:** CA
- **Latest date for submission:** Upon practical completion

250 The Health and Safety File

- **Responsibility for production:** The Contractor
- **Format:** Electronic
- **Delivery to:** CA
- **Latest date for submission:** Upon practical completion

310 Content of the Building Manual

- **General:** Details of the property, the parties, fire safety strategy, operational requirements and constraints of a general nature.
- **Building fabric:** Design criteria, maintenance details, product details, and environmental and trafficking conditions.
- **Building services:** Description and operation of systems, diagrammatic drawings, record drawings, identification of services, product details, equipment settings, maintenance schedules, consumable items, spares and emergency procedures.
- **Documentation:** Guarantees, warranties, maintenance agreements, test certificates and reports.

320 Presentation of Building Manual

- **Format:** A4 size, plastics covered, loose leaf, four ring binders with hard covers, each indexed, divided and appropriately cover titled
- **Selected drawings:** Where these are needed to illustrate or locate items mentioned in the Manual: if larger than A4, to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings.
- **As-built/ record drawings:** The main sets may form annexes to the Manual.

340 Information for commissioning of services

- **General:** Submit relevant drawings and preliminary performance data to enable the building user's staff to familiarise themselves with the installation.
- **Submittal date:** At commencement of commissioning.

350 Training

- **Objective:** Before completion, explain and demonstrate to designated maintenance staff the purpose, function and operation of the installations including items and procedures listed in the Building Manual.
- **Level of training:** Direct works staff
- **Time Allowance (minimum):** One day

410 Tools

- **General:** Provide any unique or special tools and portable indicating instruments for the operation and maintenance of all services plant and equipment (except any installed under Named Subcontracts) together with suitable means of identifying, storing and securing.
- **Quantity:** Two complete sets.
- **Submittal date:** At completion.

SPR13025 Campus Wide

Outline Specification

20/11/2017 - 15:46

Outline Specification

70-80-35 General lighting systems

110 Hard wired general lighting system

Existing lighting circuits to be modified as per the drawings and scope of works for the installation of new LED light fittings. The circuits will be upgraded with new presence, photovoltaic or switch controls where required in line with University campus wiring schemes.

The project must be covered by a minimum of a 5 year warranty for all luminaire parts and labour.

Some light fittings will be replaced as per the drawings and schedule, the replaced fitting will be connected to the existing circuits via 'Klik' type connectors.

The work is to be carried out "out of normal hours" between 1700 hours and 0800 hours 7 days a week and between 0800 hours and 1800 hours Saturday and Sunday.

Access to the site and leaving the site will be via the University security office.

SPR13025 Campus Wide

Specification

20/11/2017 - 15:46

70-80-35/110 Hard wired general lighting system

System outline

70-80-35/110 Hard wired general lighting system

- **System Performance:** 70-80-35/210 Design of general lighting systems type A;
70-80-35/240 Lighting performance type A;
70-80-35/210 Design of general lighting systems type B;
70-80-35/240 Lighting performance type B;
70-80-35/240 Lighting performance type C;
and 70-80-35/240 Lighting performance type D.
- **Final circuit cabling:**
 - **Type:** Existing.
- **Containment:** Existing.
- **Containment accessories:** Existing.
- **Rewireable installation:** Required.
- **Concealed installation:** Required.
- **Luminaire types:** 90-60-50/405 General purpose luminaires type A;
90-60-50/405 General purpose luminaires type Linear LED Replacement;
90-60-50/405 General purpose luminaires type Linear PL LED Replacement;
90-60-50/405 General purpose luminaires type 600x600 Panel fitting;
and 90-60-50/405 General purpose luminaires type "2D" LED Replacement.
- **Connections to luminaires:** As existing installation reuse existing luminaire connections.
Fittings with replacement LED tubes to be modified with 1mm single pvc colour coded cable.
- **Lighting controls:** 90-65-05/410 Combined daylight and occupancy detectors;

and 90-60-25/325 Light switches.
- **Electrical identification:** and .
- **Execution:** 70-80-35/620 Modifying existing lighting systems
- **System Completion:** 70-80-35/810 Testing and commissioning of general lighting systems and
70-80-35/820 Documentation relating to general lighting.

System performance

70-80-35/210 Design of general lighting systems type A

- **Design:** Complete the design of the general lighting systems and Complete commissioning check list in accordance with Commissioning Code L, Appendix LA2.
- **Standard:** As scope of works
- **Average power density energy consumption (maximum):** As scope of works
- **Initial circuit luminous efficacy (minimum):** As scope of works
- **Proposals:**
 - **Submit the following information:** Luminaire layout drawings. Luminaire photometric data including flux fraction ratios, polar intensity curves and utilization factors. Luminaire spacing tables;
Lamp and luminaire technical information. Computer generated point calculations with contribution from inter-reflected light showing isolux contour plots for working plane and

room surfaces;
Room surface reflectance values. Schedule of design and calculated maintained average illuminance values;
and Schedule of design and calculated uniformity values.

70-80-35/240 Lighting performance type A

- **Type:** A
- **Task area:** Desktop and Floor. General areas, offices (computer based), lecture theatres etc.
- **Maintained average illuminance level (Ix):** In accordance with CIBSE SLL code for lighting
- **Colour temperature (K):** 4000K
- **Colour rendering class (Ra):** 80-89.
- **Means of control:** Local.

70-80-35/240 Lighting performance type B

- **Task area:** Laboratories, workshops, art studios, paper work areas etc
- **Maintained average illuminance level (Ix):** In accordance with CIBSE SLL code for lighting
- **Colour rendering index (Ra):** 80-89
- **Colour temperature (K):** 4000
- **Means of control:** Local

70-80-35/240 Lighting performance type C

- **Task area:** Circulations space; corridors, staircases, toilets etc
- **Maintained average illuminance level (Ix):** In accordance with CIBSE SLL code for lighting
- **Means of control:** Local

Products

90-60-25/310 Products generally

- **Standards:**
 - **Accessories generally:** To BS 5733.
 - **Switches:** To BS EN 60669-1.

90-60-25/325 Light switches

- **General requirements:** 90-60-25/310 Products generally.
- **Manufacturer:** Submit proposals.
- **Application:** Internal.
- **Rating:** 10 A.
- **Actuating method:** Manufacturer's standard.
- **Mounting:** Submit proposals.
- **Poles:** Single pole.
- **Execution:** 90-60-25/640 Installing light switches.

90-60-50/405 General purpose luminaires type Linear LED Replacement

- **General requirements:** Must be covered by a minimum of a 5 year warranty for luminaire parts

and labour.

Must be CE Kitemarked.

- **Manufacturer:** Submit proposals.
- **Standards:** To BS EN 60598-1.
- **Supply circuit conductor connections:** Manufacturer's standard.
- **Input voltage:** 230 V a.c.
- **Luminaire power factor:** Correct to minimum 0.9 lagging.
- **Luminaire type:** Suspended/ surface mounted (600/900/1200/1500mm)
- **Features:** Submit proposals.
- **Ingress protection (minimum):** To BS EN 60529, IP20.
- **Control gear position:** Integral within luminaire.

90-60-50/405 General purpose luminaires type A

- **Type:** Circular PL Downlight LED Replacement
- **General requirements:** Must be covered by a minimum of a 5 year warranty for luminaire parts and labour.
Must be CE Kitemarked.
- **Manufacturer:** Submit proposals.
- **Standards:** To BS EN 60598-1.
- **Supply circuit conductor connections:** Manufacturer's standard.
- **Input voltage:** 230 V a.c.
- **Luminaire power factor:** Correct to minimum 0.9 lagging.
- **Luminaire type:** Surface/recessed mounted
- **Features:** Submit proposals.
- **Ingress protection (minimum):** To BS EN 60529, IP20.
- **Control gear position:** Integral within luminaire.

90-60-50/405 General purpose luminaires type Linear PL LED Replacement

- **General requirements:** 90-60-50/440 Control gear generally.
- **Manufacturer:** Must be covered by a minimum of a 5 year warranty for luminaire parts and labour.
Must be CE Kitemarked.
- **Standards:** To BS EN 60598-1.
- **Input voltage:** 230 V a.c.
- **Luminaire power factor:** Correct to minimum 0.9 lagging.
- **Luminaire type:** Submit proposals.

90-60-50/405 General purpose luminaires type 600x600 Panel fitting

- **General requirements:** Must be covered by a minimum of a 5 year warranty for luminaire parts and labour.
Must be CE Kitemarked.
- **Manufacturer:** Submit proposals.
- **Standards:** To BS EN 60598-1.
- **Photometric performance:** To BS EN 13032-1.
- **Input voltage:** 230 V a.c.
- **Luminaire power factor:** Correct to minimum 0.9 lagging.

- **Luminaire type:** Surface/recessed mounted

90-60-50/405 General purpose luminaires type "2D" LED Replacement

- **General requirements:** Must be covered by a minimum of a 5 year warranty for luminaire parts and labour.
Must be CE Kitemarked.
- **Manufacturer:** Submit proposals.
- **Standards:** To BS EN 60598-1.
- **Photometric performance:** To BS EN 13032-1.
- **Input voltage:** 230 V a.c.
- **Luminaire power factor:** Correct to minimum 0.9 lagging.
- **Luminaire type:** 2D Fitting - Surface mounted

90-60-50/440 Control gear generally

- **Third party certification:** ENEC.
- **Digital addressable control gear:**
 - **For digital addressable self-contained emergency lighting:** To BS EN 62386-102 and BS EN 62386-202.
 - **For digital addressable LED modules:** To BS EN 62386-102 and BS EN 62386-207.

90-65-05/410 Combined daylight and occupancy detectors

- **Manufacturer:** Ex-Or (Gold Series Microwave)
- **Daylight sensitivity:** Manufacturer's standard.
- **Equipment interconnectivity:** Wired.
- **Occupancy sensitivity:** Manufacturer's standard.
- **Range:** Manufacturer's standard.
- **Field of view:** Manufacturer's standard.
- **Remote setup/ override:** By infra-red controller.
- **Mounting:** Ceiling;
Flush;
and Surface.
- **Ingress protection (minimum):** Manufacturer's standard.
- **Adjustable sensor settings:** Required.
- **Execution:** 90-65-05/630 Installing combined daylight and occupancy sensors.

Execution

90-60-25/640 Installing light switches

- **Multigang switches:** Connect so that there is a logical relationship with luminaire positions.
- **Unused switch spaces:** Fit with blanks.
- **Segregation:** Internally segregate each phase with phase barriers. Include warning plates.

90-65-05/605 Installing automatic lighting controls generally

- **Standard:** In accordance with BS 7671.
- **Equipment and sensor identification labels:** Provide.

90-65-05/630 Installing combined daylight and occupancy sensors

- **General requirements:** 90-65-05/605 Installing automatic lighting controls generally.
- **Position:** Ceiling mounted, located to suit the occupancy pattern of the area under control. Shielded from erroneous influences.
- **Interconnection:** Submit proposals.
- **Cable type:** Submit proposals.

System completion

70-80-35/810 Testing and commissioning of general lighting systems

- **Commissioning:** In accordance with CIBSE Commissioning Code L.
- **Test results:** Submit two copies of system commissioning completion certificate.
- **Certificates of calibration for meters and instruments:** Submit.

70-80-35/820 Documentation relating to general lighting

- **Operating and maintenance instructions:**
 - **Scope:** Submit for the system giving optimum settings for controls.
 - **Product information:** Include product description, date of purchase, performance characteristics, application (suitability for use), method of operation and control, and cleaning and maintenance requirements.
 - **Format:** Electronic copy
 - **Number of copies:** One
- **Record drawings:**
 - **Content:** General arrangement drawings showing the location of luminaires, lighting circuit distribution boxes, master and slave distribution boxes, switch modules, manual and automatic switches and controls including timeswitches, passive infra red detectors, and daylight sensors.
 - **Format:** Electronic copy
 - **Number of copies:** One
- **Submittal date:** At handover

Ω End of system

SPR13025 Campus Wide

Schedules

20/11/2017 - 15:46



SPR13025

CAMPUS WIDE LED PROJECT

TENDER SPECIFICATION

General Specification (Electrical)

The whole of the electrical works contained within this particular specification and the contract drawings shall be executed in accordance with the Standard Electrical Specification, the current edition of the IET Regulations and all other statutory regulations that may apply.

The contractor shall supply all necessary labour materials, fixings etc. to ensure a complete installation. It is the contractors responsibility to visit the site to familiarise themselves with the scope of works. If necessary fuse finder to be used to identify circuits.

Containment

Installation of trunking and conduit, manufacturer's standard fittings shall be used for all connections and changes of direction, sets, and terminations etc. including adapters to surface boxes. Cutting and bending of trunking to form flanges and attachments, and leaving bare ends to trunking will not be permitted.

Wiring

Lighting cabling to be 1.5mm

All final connections to light fittings will be made with 0.75mm² heat resistant 3-core flex, via flex 7 connectors.

Any other cabling will be as specified in the specification.

Testing and Inspection

The installation shall be tested in accordance with the current IET Regulations.

A completion and inspection Certificate as prescribed in the IET Regulations shall be prepared and completed in full by the electrical contractor who shall authorise the person carrying out the tests to sign on his behalf.

The Electrical Contractor shall be entirely responsible for the testing of all earth circuits for continuity, impedance, and resistance and the provision of all equipment required to, ensure the requirements of the current IET Regulations.

All test certificates to be supplied to University Estates Office F.A.O. Sam Heppell

Tender Details and Expected Outcomes

This project is for the Campus wide retrofit of LED luminaires, the scheme involves 35 of Newcastle University's buildings to be completed within a 3-year period to be completed in December 2020. The successful contractor will complete the project on a building-by-building programme, the majority of which will be out of hours working. However, some areas may be completed in regular hours where agreed with Sam Heppell and the building managers.

Due to the scale of the project, the final number of luminaries may change, due to other projects taking place etc. The final number of luminaries to be replaced on this project will only be reduced there is no scope for additional buildings or other areas to be added.

The table below details the buildings to be completed in each of the 3 years. Please note that the order the buildings are displayed is only for which year they will be completed, not the order they are intended to be completed.

| Year 1 | Year 2 | Year 3 |
|-----------------|----------------------------------|-----------------------|
| Cassie | Building Science | Baddiley Clark |
| Old Library | Culture Lab | Blyth Marine Station |
| Stephenson | Kings Gate | Campus Coffee |
| Architecture | Longbenton Sports Centre | Devonshire |
| Dove Marine Lab | Merz Court | Fine Art |
| ICFL | NUBS | Hadrian Bridge |
| Law | Politics | Kings Road Centre |
| Paul O'Gorman | Robinson Library | Medical Dental School |
| Ridley 1 & 2 | Windsor Terrace Accommodation | Music |
| Bedson | Windsor Place 1 & 2 | Newburn Boathouse |
| Herschel | King George VI | Students Union |
| | | Wolfson Unit |

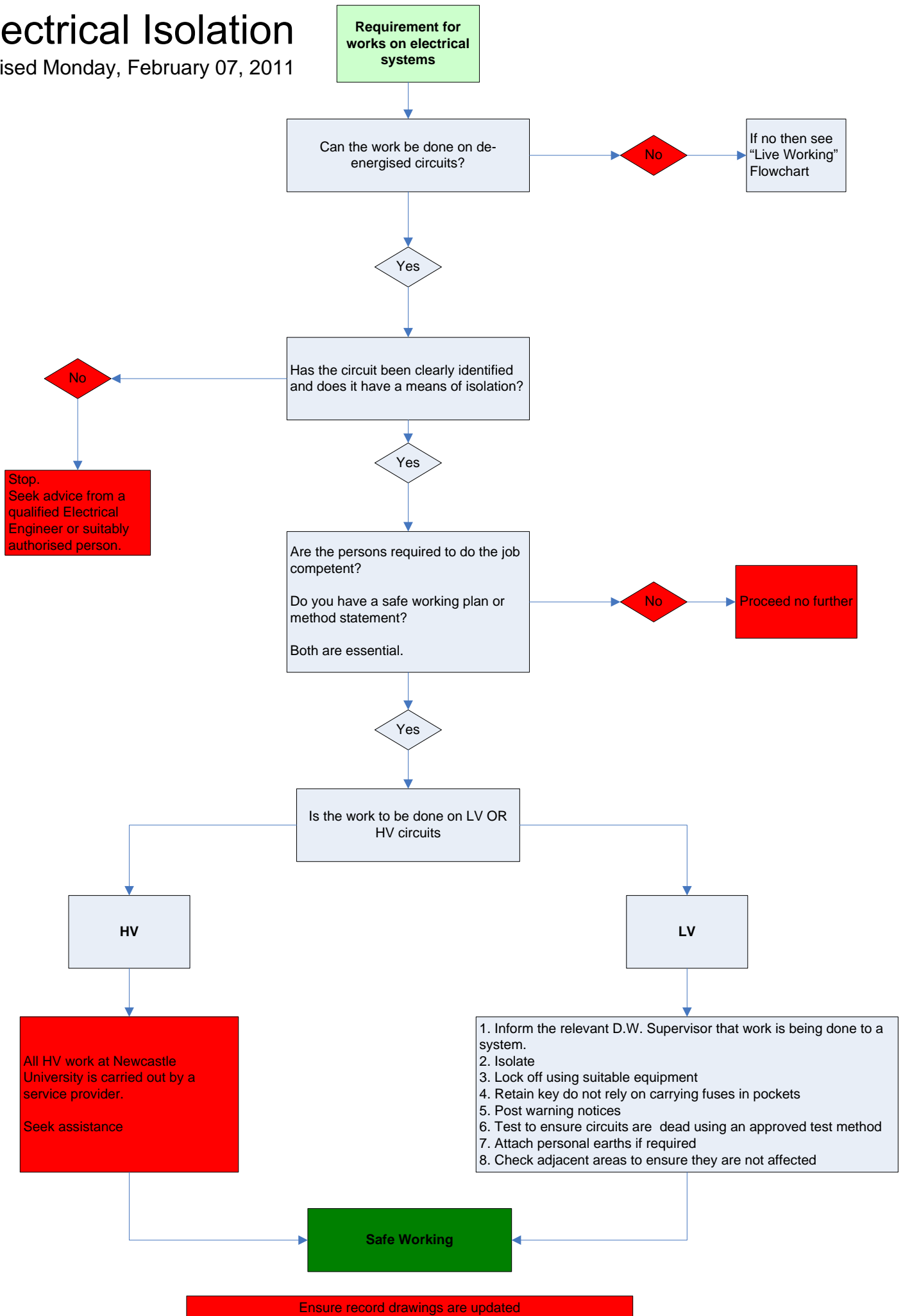
The contractor will provide a cost for the whole project, all 35 buildings over 3 years. The contractor will also complete the schedule of rates for all the items priced for and any suggested items the contractor wishes to put forward for the project. The cost schedule will be fix for the first year; on year two and year three, the contractor will complete the cost schedule again to assess the availability of a cheaper alternative. However, the contractor will stand by the total project cost if there is no cheaper alternative.

The contractor will complete a full tender and programme for the first two buildings of year 1, the Cassie and the Old Library buildings. This will be used to assess the contractor's processes and intentions for carrying out the project and the overall capability of completing the project. The contractor will utilise the included building schedules to complete the tender programme. Please note the Cassie and the Old Library are the only building schedules which need to be completed for the tender stage, the other building schedules have been included for reference only to give the contractor an idea of the total scale of the project.

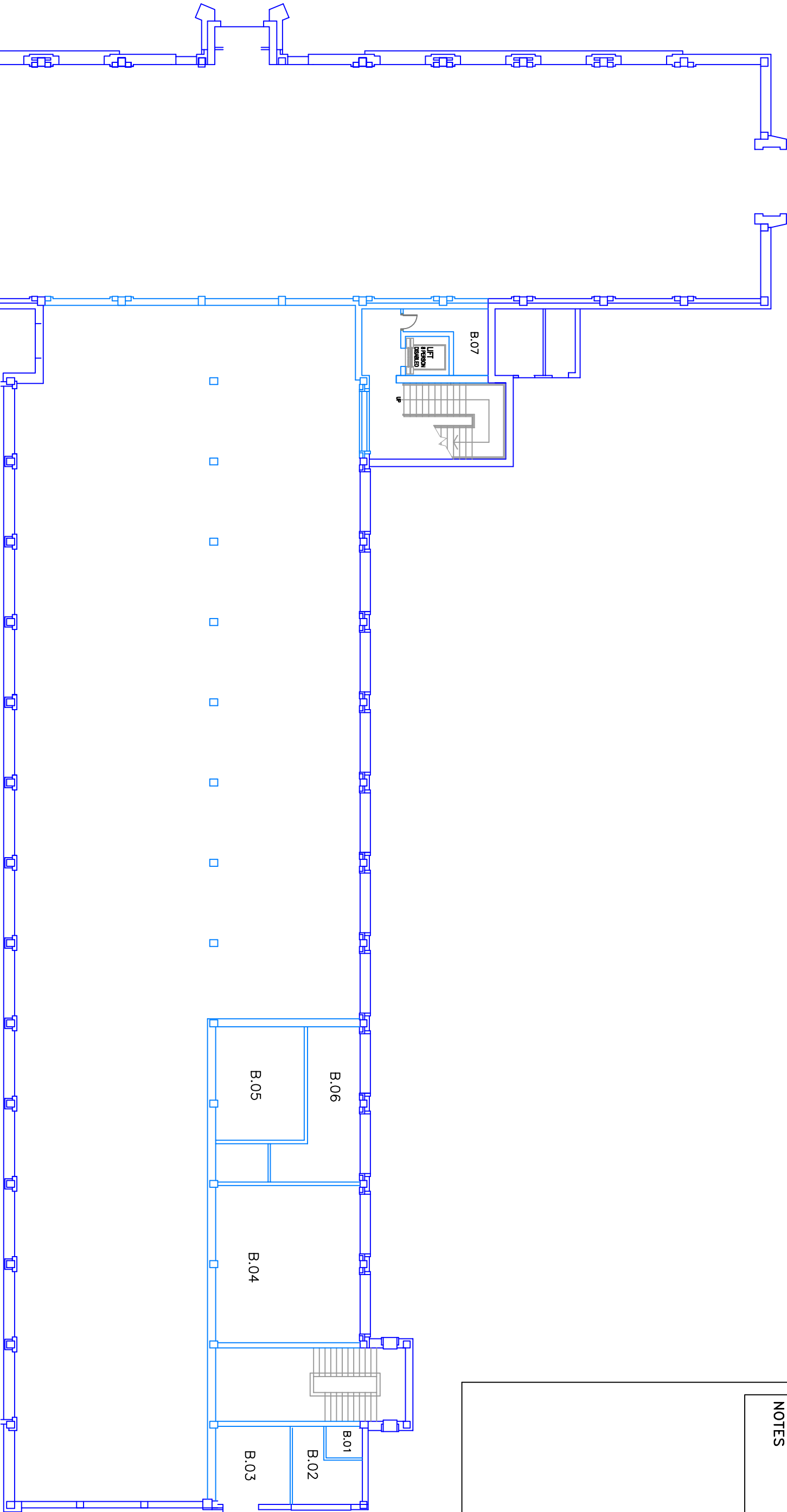
There is no definitive order for the completion of buildings as this is still in discussion with the building managers and faculty coordinators. Therefore, for this two building tender exercise; the contractor will assume the work will commence on Thursday 01/03/2018 and be completed on Thursday 28/03/2018, a period of 4 weeks. Two weeks in the Cassie building and two weeks in the Old library. The contractor will assume there are no access issues for the tender exercise, and take into account the working hours stipulated in the tender package.

Electrical Isolation

Revised Monday, February 07, 2011



NOTES



BUILDING

CASSIE BUILDING

PROJECT

BASEMENT

SCALE

DRAWN BY

MCB

DRAWING NAME

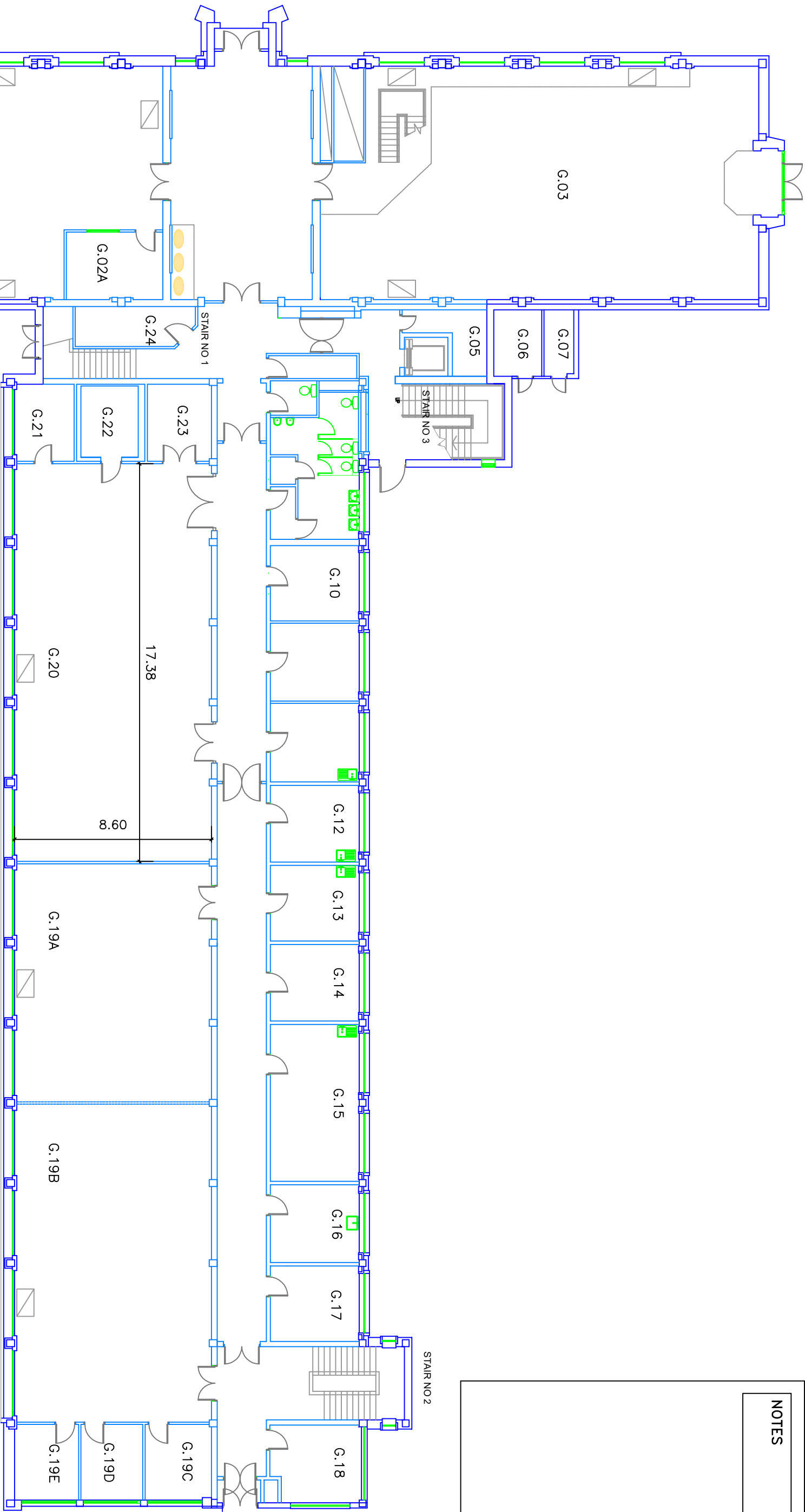
CASS B

DATE

JULY 2004

REV.No

NOTES



BUILDING

CASSIE BUILDING

PROJECT

GROUND FLOOR

SCALE

DRAWN BY
MGB

DRAWING NAME

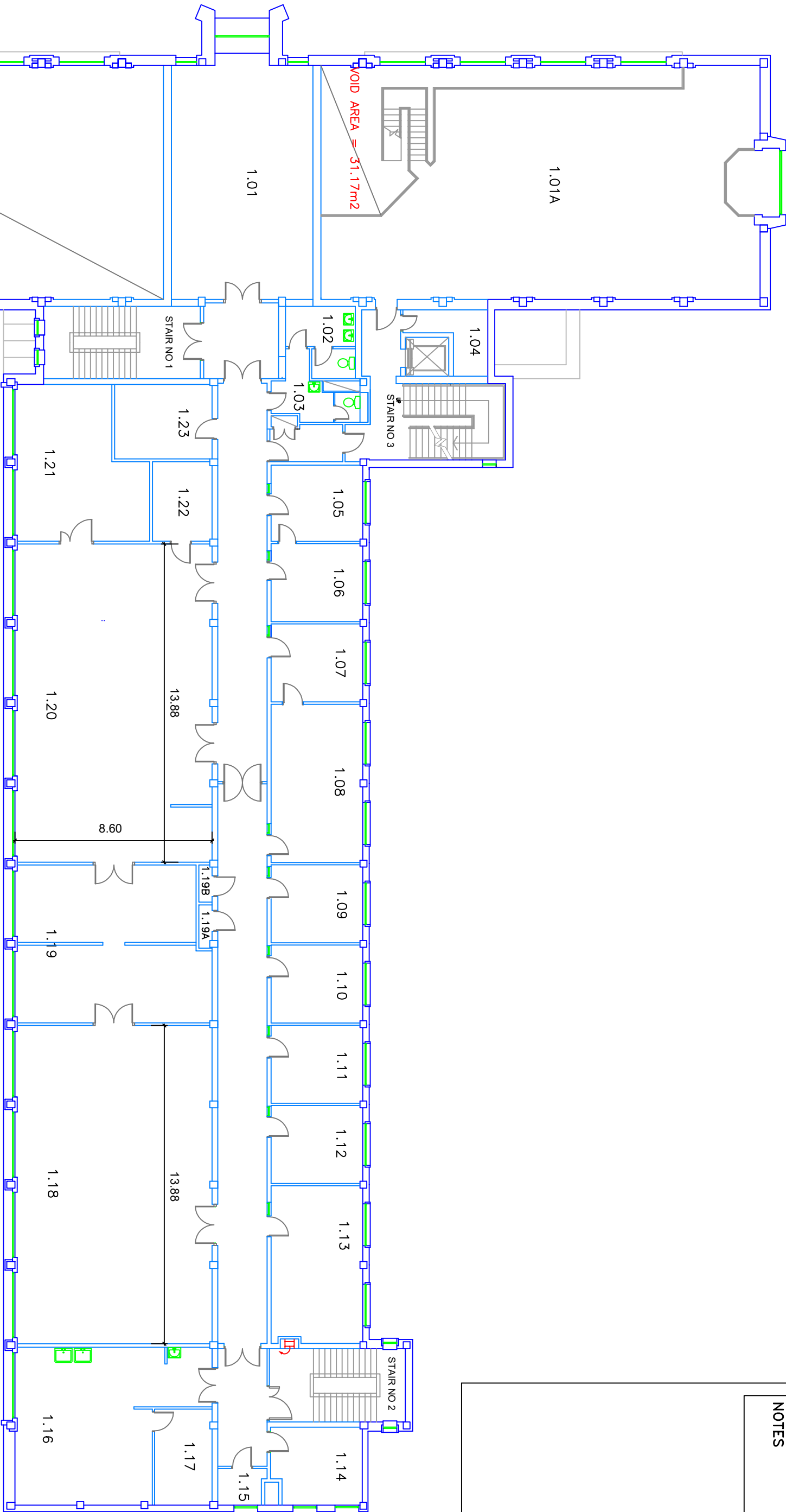
CASS G

DATE

JULY 2004

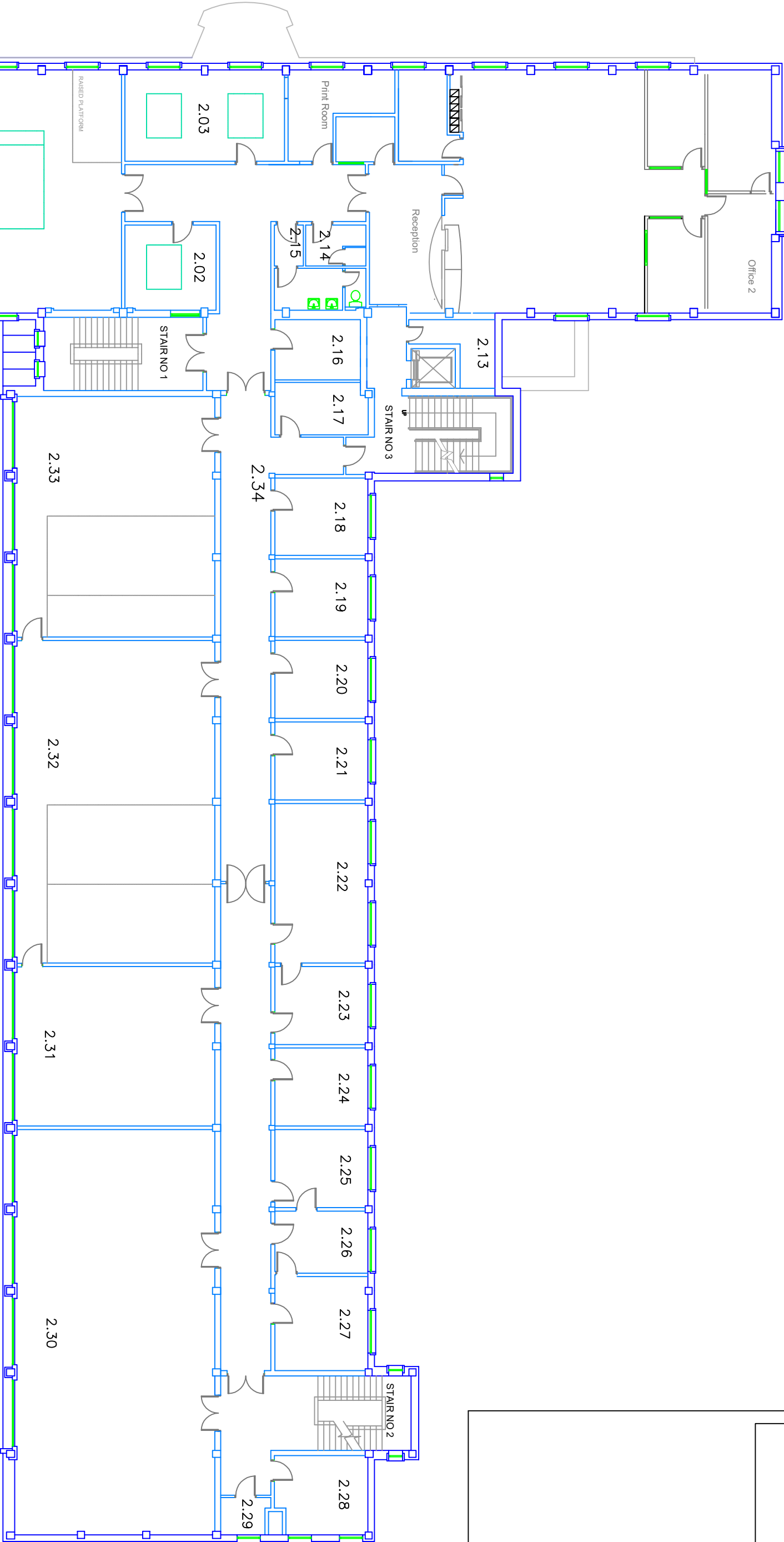
REV.No

NOTES



| | |
|-----------------|----------|
| BUILDING | |
| CASSIE BUILDING | |
| PROJECT | |
| FIRST FLOOR | |
| SCALE | DRAWN BY |
| | MGB |
| DRAWING NAME | |
| CASS 1 | |
| DATE | REV.No |
| NOV 2001 | JULY 04 |

NOTES



BUILDING

CASSIE BUILDING

PROJECT

SECOND FLOOR

SCALE

DRAWN BY

JW

DRAWING NAME

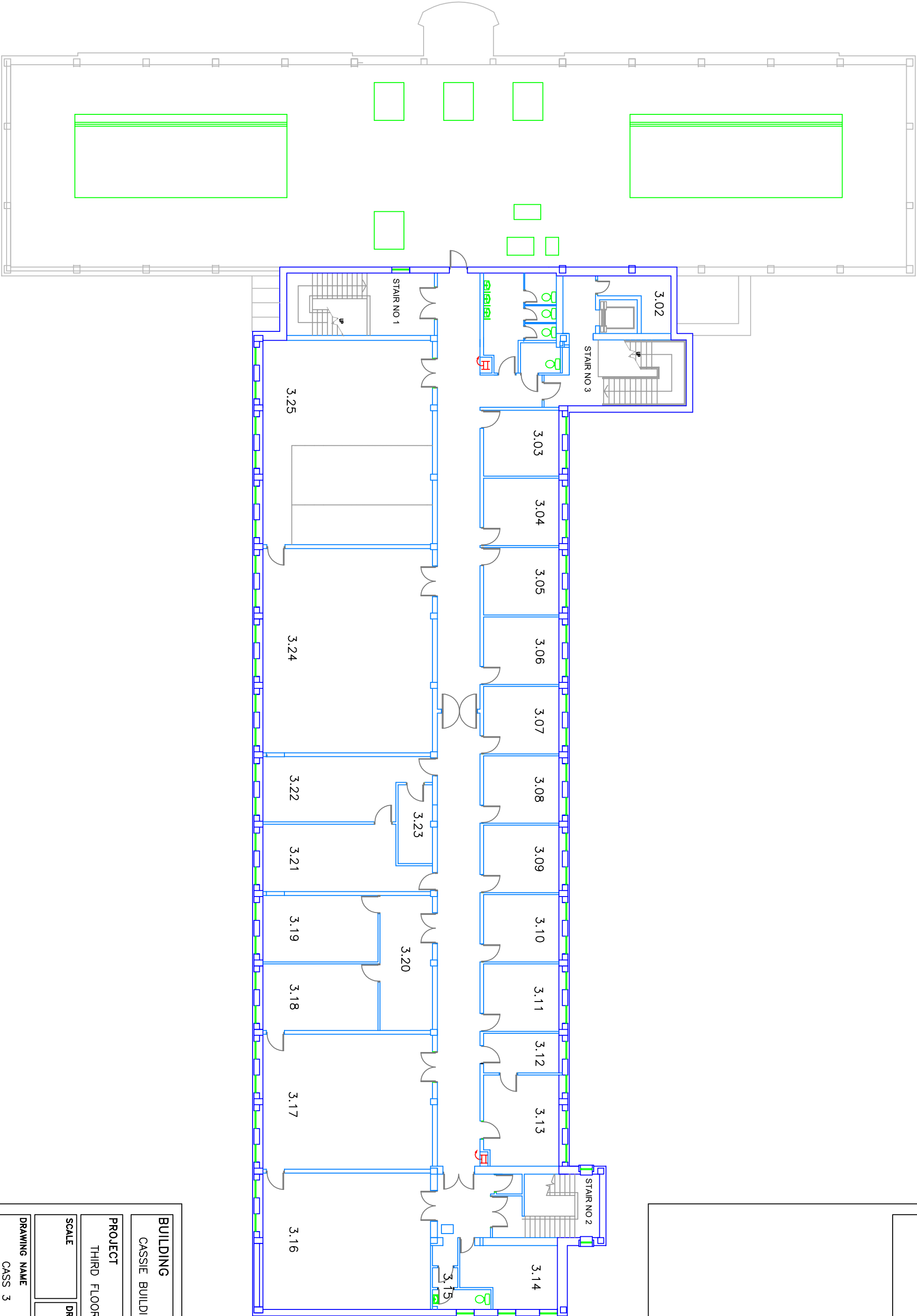
CASS 2

DATE

Nov 16

REV.No

NOTES



BUILDING

CASSIE BUILDING

PROJECT

THIRD FLOOR

SCALE

DRAWN BY

MGB

DRAWING NAME

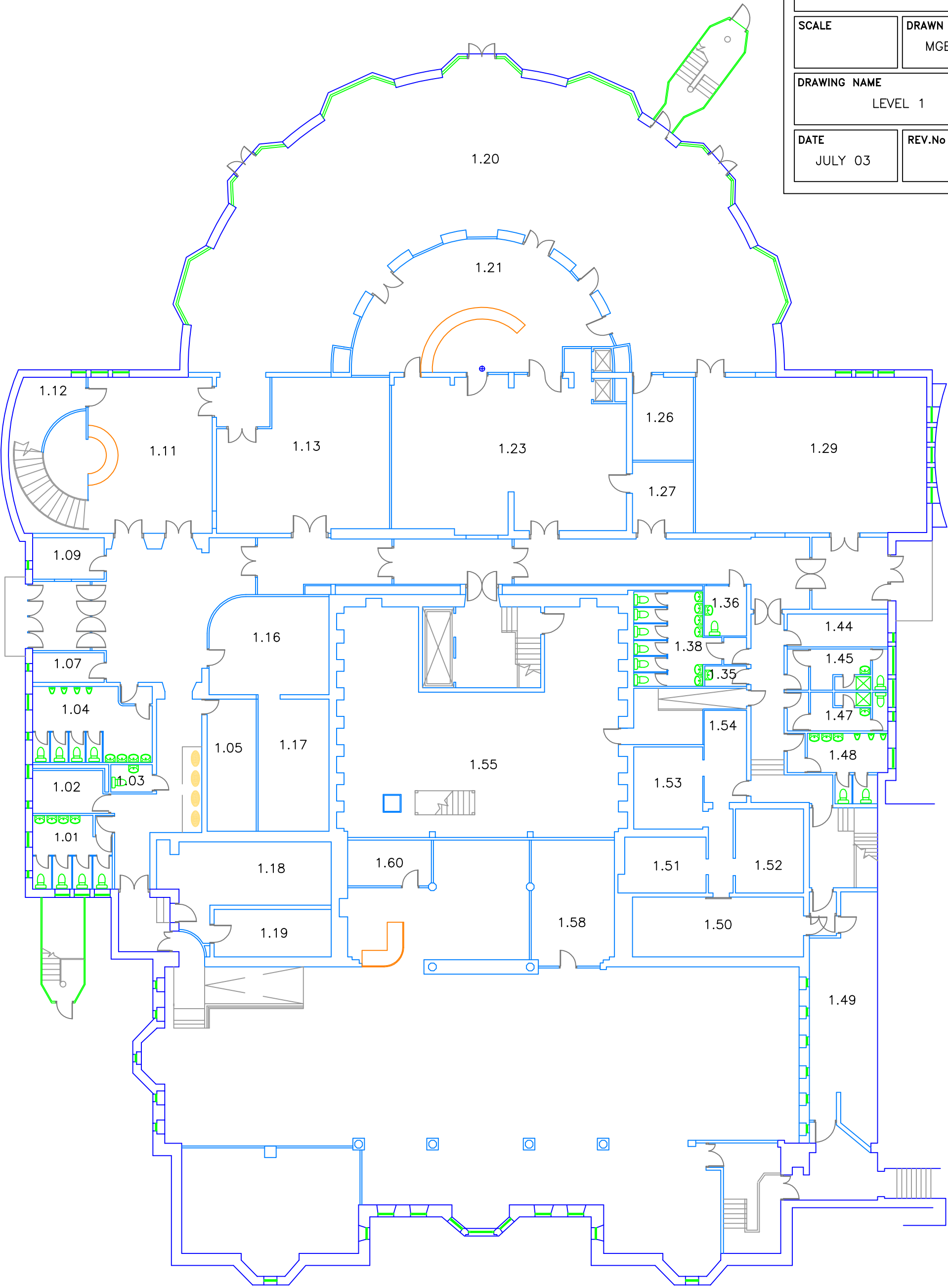
CASS 3

DATE

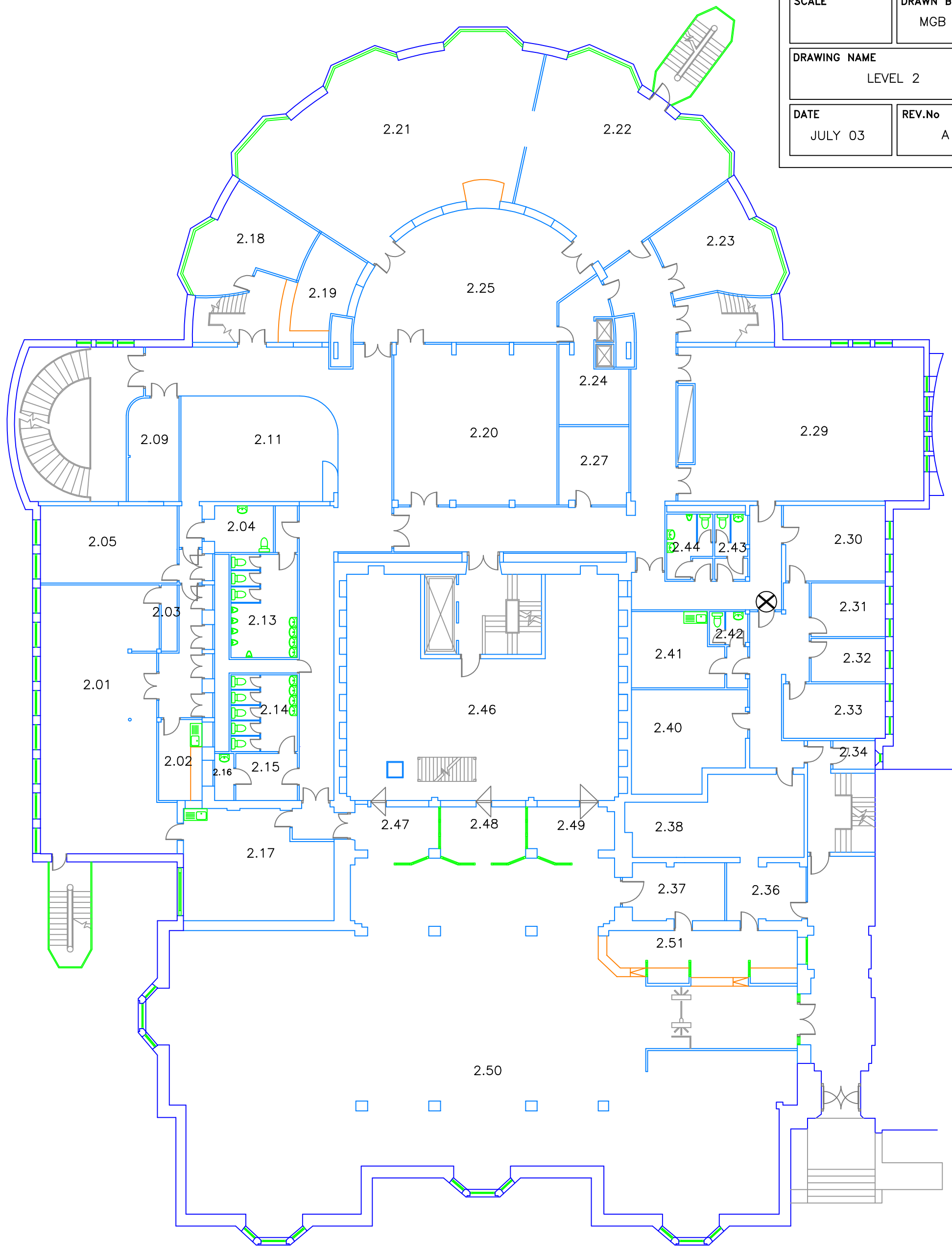
JULY 2004

REV.No

| | |
|-------------------------|-----------------|
| BUILDING OLD LIBRARY | |
| SCALE | DRAWN BY MGB |
| DRAWING NAME LEVEL 1 | |
| DATE JULY 03 | REV.No A |

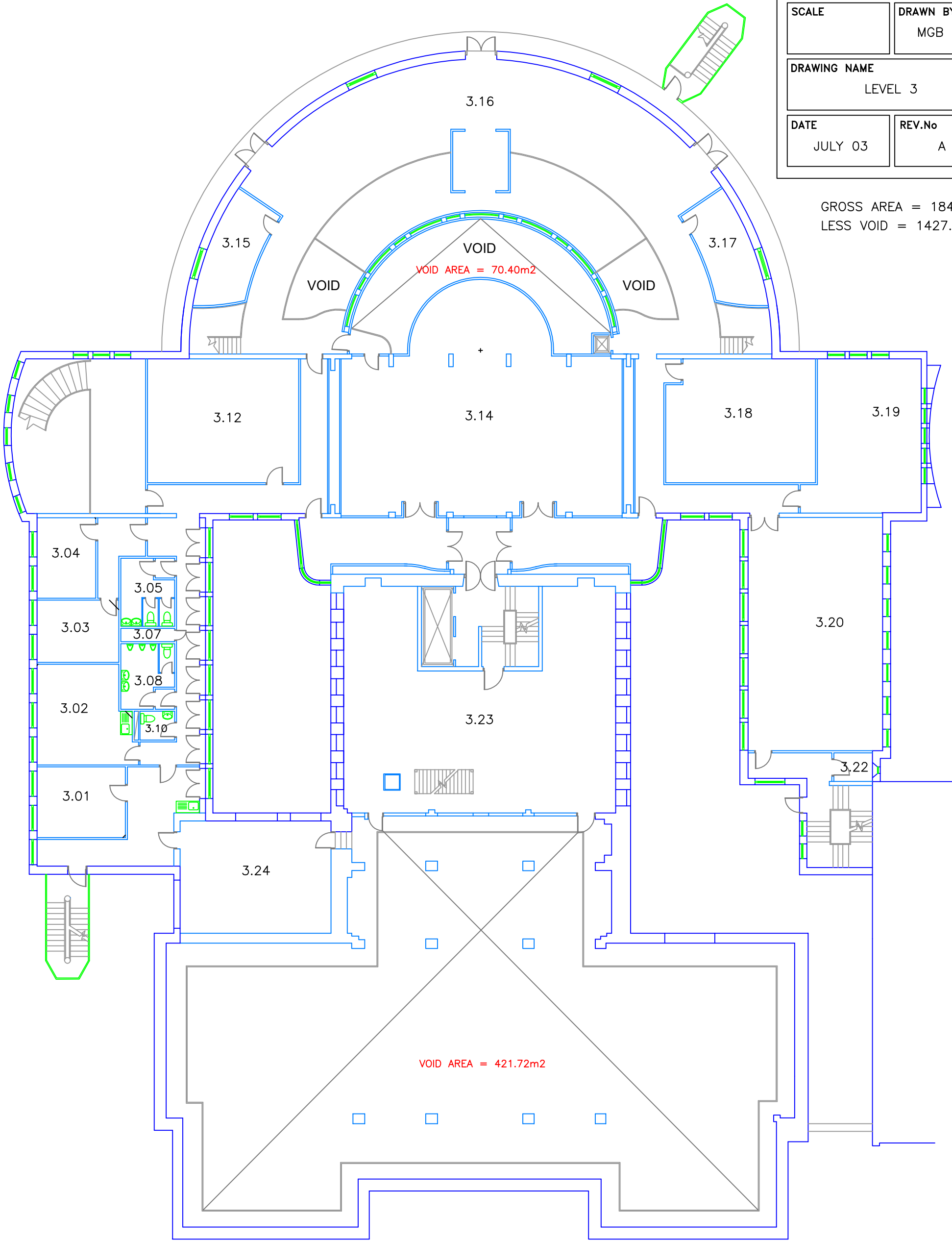


| | |
|-------------------------|-----------------|
| BUILDING OLD LIBRARY | |
| SCALE | DRAWN BY MGB |
| DRAWING NAME LEVEL 2 | |
| DATE JULY 03 | REV.No A |

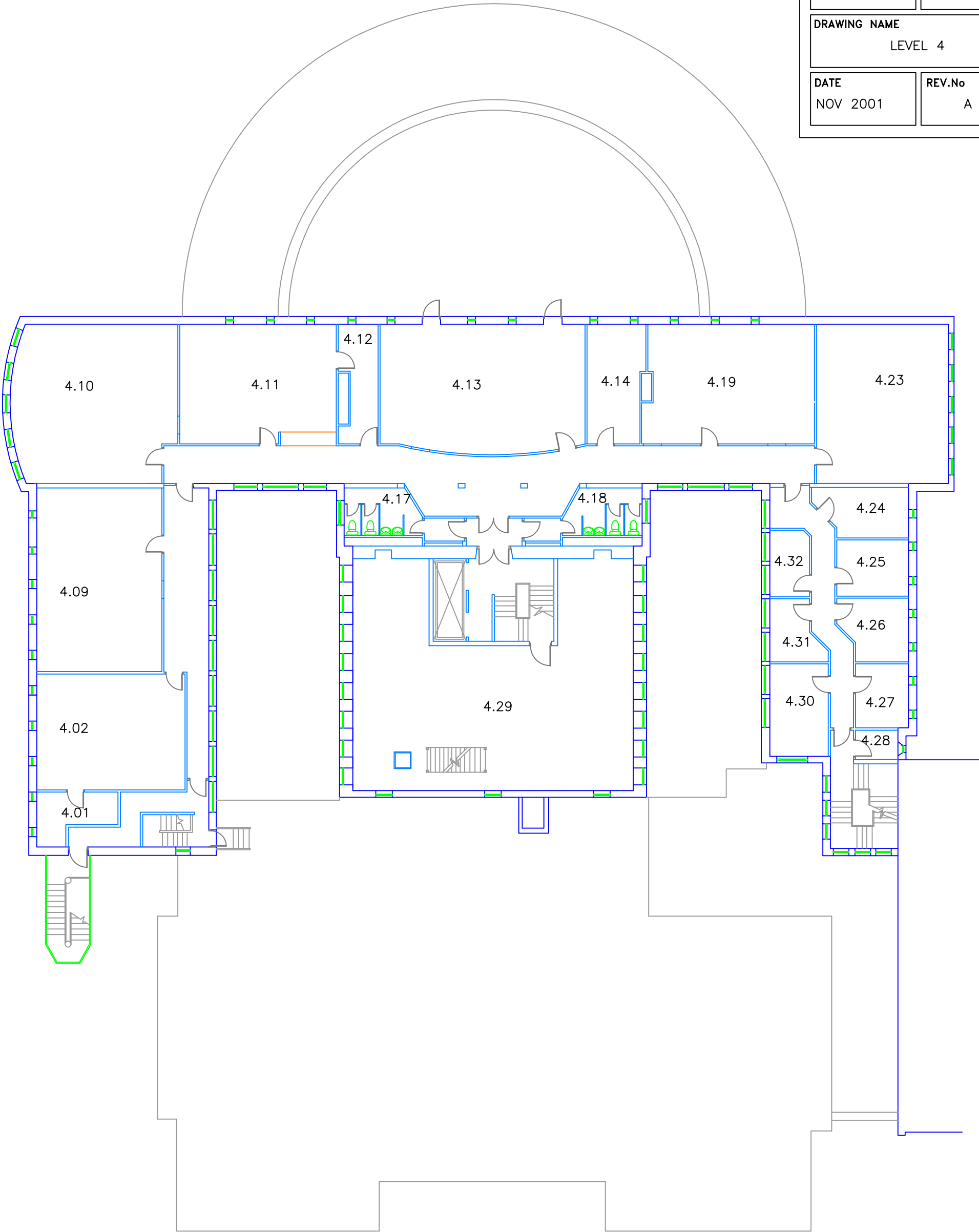


| | |
|-------------------------|-----------------|
| BUILDING OLD LIBRARY | |
| SCALE | DRAWN BY MGB |
| DRAWING NAME LEVEL 3 | |
| DATE JULY 03 | REV.No A |

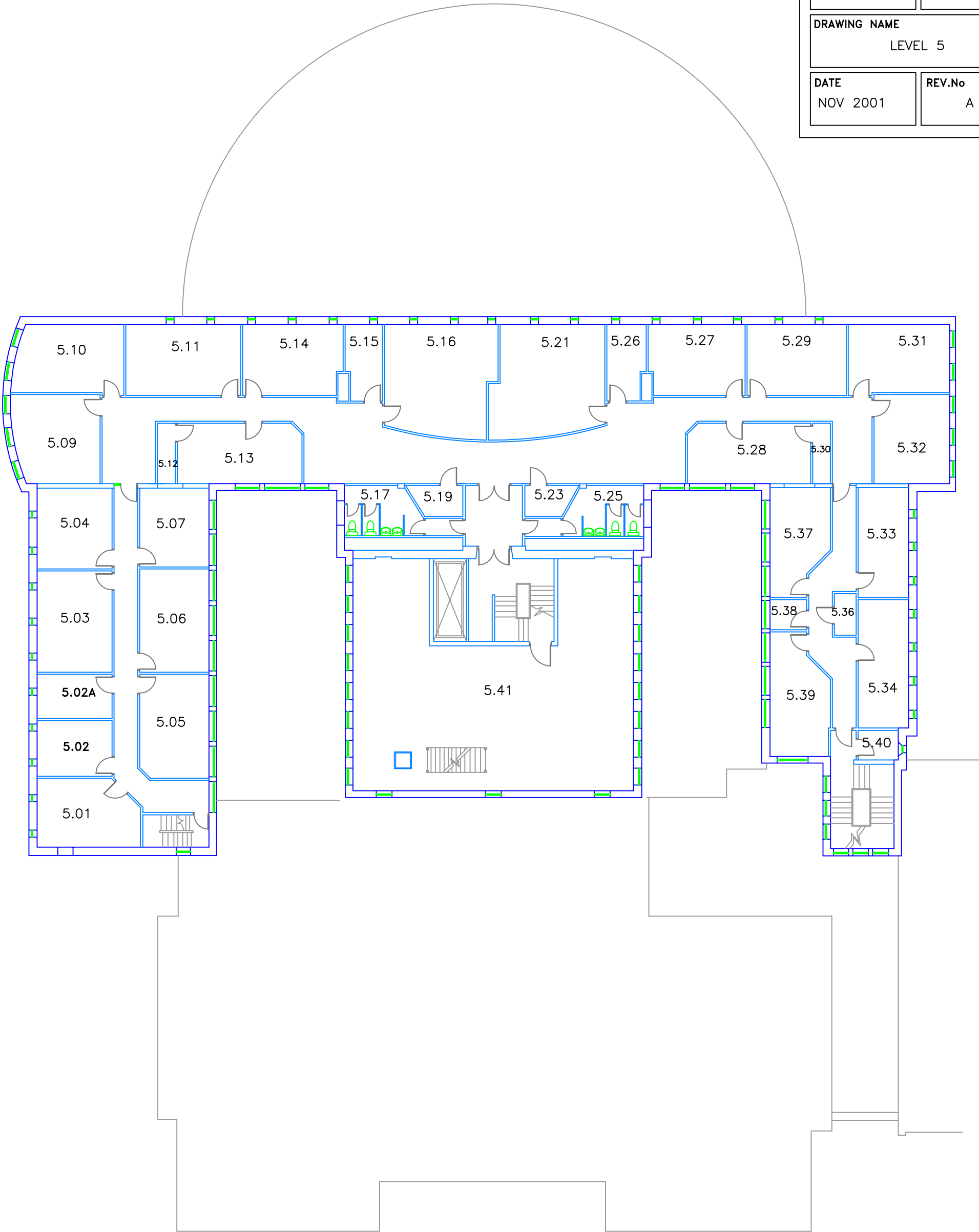
GROSS AREA = 1849.03
LESS VOID = 1427.31



| | |
|-------------------------|-----------------|
| BUILDING OLD LIBRARY | |
| SCALE | DRAWN BY MGB |
| DRAWING NAME LEVEL 4 | |
| DATE NOV 2001 | REV.No A |



| | |
|-------------------------|-----------------|
| BUILDING OLD LIBRARY | |
| SCALE | DRAWN BY MGB |
| DRAWING NAME LEVEL 5 | |
| DATE NOV 2001 | REV.No A |



| | |
|-------------------------|-----------------|
| BUILDING OLD LIBRARY | |
| SCALE | DRAWN BY MGB |
| DRAWING NAME LEVEL 6 | |
| DATE rev DEC 16 | REV.No A |



BUILDING
OLD LIBRARY

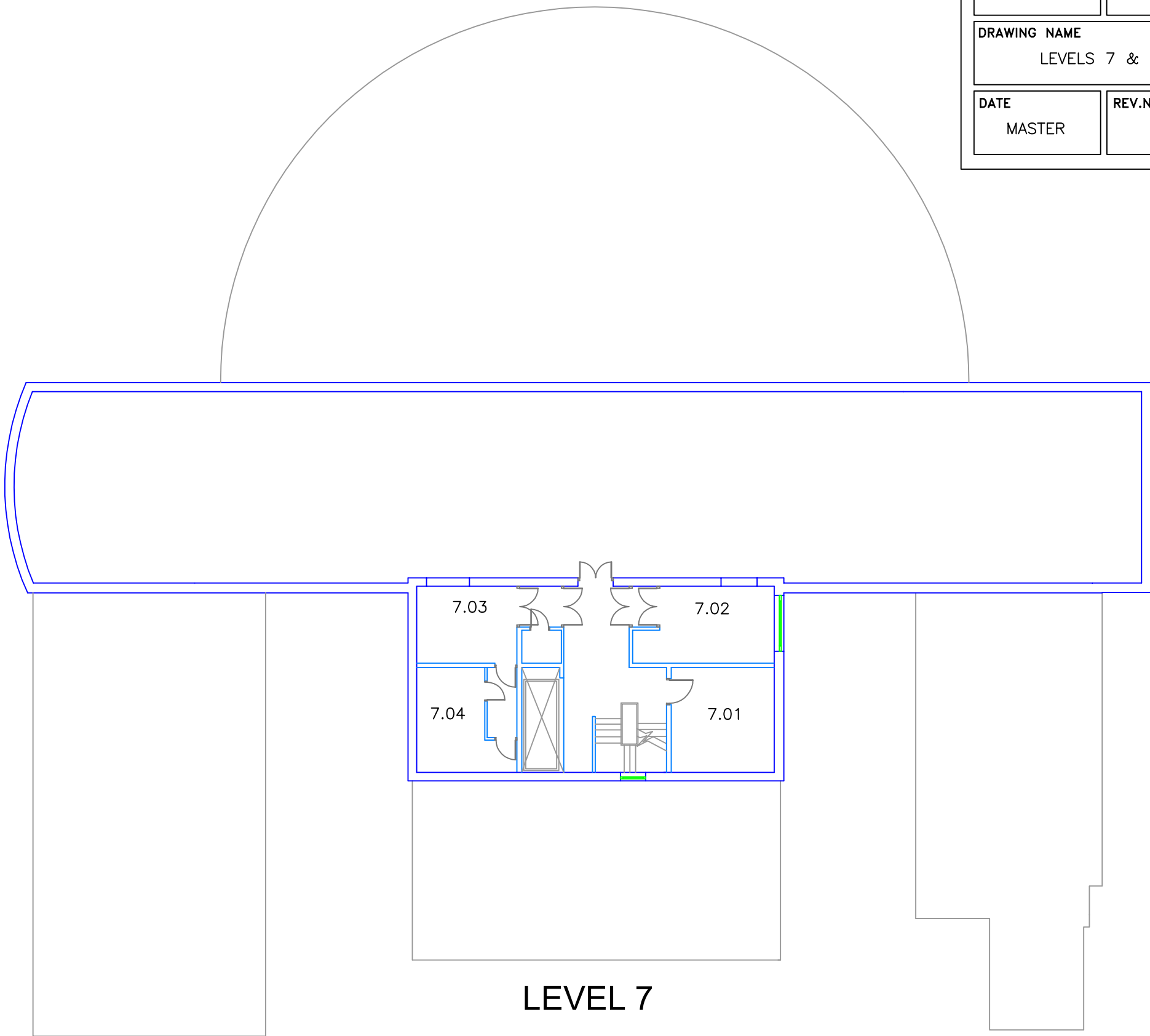
SCALE

DRAWN BY
MGB

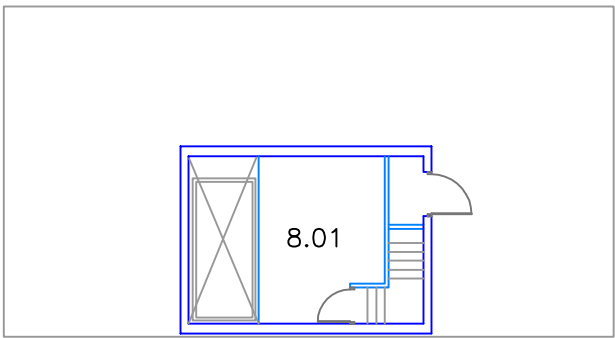
DRAWING NAME
LEVELS 7 & 8

DATE
MASTER

REV.No



LEVEL 7



LEVEL 8