

Functional Specification - AR.12

JUNE 1962

(Superseding issues dated November '61 & January '62)

BUILDING R.22 - LECTURE THEATRE

1. Building No. R.22.

2. Description

New Lecture Theatre to the west of, and adjoining, the new Restaurant R.22 consisting of a stepped Auditorium having seating for 200 people with additional 7' 0" wide crush space at the rear; Mechanical Plant Room; Storage facilities; and cloakroom for 180 people. Entrance Hall and assembly space of 1,200 sq. ft. to be provided linking with the Restaurant Building R.22. The Toilet facilities provided in the Restaurant will be available for use by occupants of the Lecture Theatre. A projection room is not required.

3. Function

To provide special facilities for lectures or discussions with ample circulation and assembly space.

4. No. of Occupants

Seated accommodation for 200 people. More people may be accommodated by use of crush space.

5. Accommodation for Ancillary Services

Apart from Plant Room - Nil.

6. Associated Drawings

SW/6655/R22/AK/20.

7. Roofs

Constructed of 2" wood wool slabs, screeded, and felted, on structural beams. No access walkways or special load-bearing requirements.

The heat transfer coefficient to be not greater than 0.2, also due to the fact that no cooling plant will be provided materials for roof to be selected so as to minimise solar gains.

8. Floors

Constructed in concrete throughout. Finish in Lecture Theatre, Cloakroom, Entrance and Assembly space, Rear Escape - Staircase, to be 3.2 mm linoleum. Stores and Plant Rooms to be  $\frac{1}{2}$ " integral grano finish with sodium silicate hardening solution. Step nosings to have "Ferrodol" type non slip trims. Mat wells are to be provided at the two external doorways. Floors to be designed for superimposed distributed loadings of 80 lbs per sq. ft.

Platform & aisles to be finished with Bulcenne Silence.

9. Ducts

No ducts required for client's services. Ventilation ducts between the plant room and auditorium will be provided to Mechanical Engineers requirements.

The noise produced by mechanical plant must be kept to an acceptably low level. Any duct covers to be capable of superimposed loads as stated in (8.) above.

No ducts required for radio active services.

#### 10. Walls

Constructed in load-bearing cavity brickwork, and load-bearing piers. Walls generally plastered internally, but in the Lecture Theatre will include a combination of plasterboard and acoustic panelling to achieve proper acoustic conditions. No special requirements in regard to decoration which is to be provided.

The heat transfer co-efficient of all main exterior walls other than glazed sections shall not be greater than 0.3.

#### 11. Ceilings

No suspended ceilings are to be provided. Absorbent areas will be provided where necessary to produce efficient acoustic effects. No special requirements in regard to decoration which is to be provided.

#### 12. Doors

Generally 6' 6" high, single doors 2' 6" wide and double doors 5' 8" wide. Consideration must be given to the sound-proofing of doors into Lecture Theatre where double sets of doors are not provided.

Doors to comply with the requirements of the N.I.R.N.S. Fire Committee in respect of fire resistance.

#### 13. Windows

No natural light or ventilation is required in the Auditorium. Windows will be provided elsewhere. Clients have no special requirements. No blinds provided.

#### 14. Height of Rooms

Height of assembly space to be the same as the section of the Restaurant which it adjoins.

Lecture Theatre to have 9' 6" height from the top floor level to the underside of the wood-wool slabs. Flat roofs generally. Height of Plant Rooms to suit M. & E. requirements.

#### 15. Anti-Vegetation Barrier

A 9" anti-vegetation barrier is to be included around all external walls.

#### 16. Road Approaches

No new roads to be provided. Footpaths provided to entrance doors and plant rooms as required.

#### 17. Furniture and Special Fittings supplied by Architects

- |                                   |                                           |
|-----------------------------------|-------------------------------------------|
| (a) Seating/writing accommodation | (e) Lecturer's Desk                       |
| (b) Service counter               | (f) 50 No. chairs, 20 No. tables & 35 ft. |
| (c) Cloakroom Fittings            | of straight bench seating & 15 ft.        |
| (d) Blackboard & Screen           | fitted seating in 3 No. pieces.           |

No other "Furniture" included. Sun blinds not included.

#### 18. Criticality

There is no possibility of criticality or requirement for shielding.

#### 19. Fire Fighting Appliances

To be supplied in accordance with the requirements of the N.I.R.N.S. Fire Committee.

20. Fire Warning System

Site Fire Officer, Harwell, to make recommendations.

21. Handrails on Staircases, Access Ladders and Walkways

A platform ladder to be designed to suit tiered floor in Lecture Theatre for access to lighting fittings, otherwise no special requirements.

22. Heating and Ventilation

(a) Lecture Theatre

Area to be heated by a plenum system to give a temperature during heating season of  $68^{\circ}\text{F} \pm 2^{\circ}\text{F}$  with outside temperature of  $30^{\circ}\text{F}$ . The plenum and extract plant is to be provided with variable speed fans and is to be used during the summer period to give a minimum of 15 A.C.H.

The plenum input is to be filtered. Anti frost coil, fly and anti vermin screens are also to be provided to air input louvres.

Background heating is to be provided to maintain a temperature of approx.  $40^{\circ}\text{F}$  when the plenum system is not operating.

(b) Circulation Area

Area to be heated by L.P.H.W. radiators to maintain a room temperature of  $65^{\circ}\text{F}$  when outside temperature is  $30^{\circ}\text{F}$ . No ventilation is provided for in this area except over service counter for coffee still.

(c) Plant Room

Area to be heated by L.P.H.W. coil fixed at high level.

Note: L.P.H.W. for background heating in Lecture Theatre, heating in circulation area and Plant Room is to be obtained from Calorifier Room in Restaurant.

23. Air Sampling

Not required.

24. Lighting

(a) Lecture Theatre

General Lighting - Tungsten lighting in glass fittings to give an average illumination of 12 FC - 3' 0" from floor level. Three way switching is to be provided to enable lights to be switched either at entrance or centre of crush space, or adjacent to blackboard. Switching is also to be arranged to give partial lighting during showing of slides etc. Local light to be provided over blackboard with local switch. Flush floor socket outlet to be provided in platform for desk light.

Exit Signs - To be lit from both primary and secondary supplies.

Note: No dimming, maintained secondary lighting, seat lighting or Cleaners lights are included.

(b) Circulation Area

Fluorescent tubes in architectural feature along roof beams.

(c) Ancillary Areas

Tungsten lighting as required.

(d) Emergency Lighting

● Provided on stairs and in Lecture Theatre.

25. Cranes etc.

Nil.

26. Drains

No special requirements.

27. Site Services

(a) Steam - Mains working pressure is 100 P.S.I. and approximately 275 lbs per hour of steam will be required during maximum demand.

(b) Condensate - Condensate return will be a gravity system.

(c) Water - Fire

Fire Officer to state if hose reels are required.

(d) Water - Raw Domestic

A cold water point is required adjacent to service counter for coffee still.

(e) Gas

None required.

(f) Electricity

A 3 phase 415 volt 50 cycle A.C. supply is to be obtained from the Restaurant Switchboard. An approximate total load of 31 kW will be required.

(g) Drains

|                                                |                |
|------------------------------------------------|----------------|
| 1) Effluent                                    | } Not required |
| 2) Trade Waste                                 |                |
| 3) Sewage                                      |                |
| 4) Storm Water - connected to existing system. |                |

(h) Telephones

Two required (at foot of stairs).

(i) Street Lighting

No special requirements.

(j) Compressed air and vacuum

Not required.

(k) Electrical Services

- 1) Single phase 230 volts A.C. for lighting and socket outlets.
- 2) 3 phase 415 volts AC for fan motors
- 3) D.C. voltage (battery) for secondary lighting to exit signs in Lecture Theatre and Emergency Lighting.
- 4) 2 - Empty 1" conduits to be run in Lecture Theatre from Platform to Crush area.

Note: 1, 2 & 3 above to be obtained from Restaurant.

5) Earthing requirement

Normal earthing.

6) Electric Clock Requirements

- 1 - Illuminated dial synchronous surface mounted clock in Lecture Theatre on Ventilation Dust.
- 1 - Synchronous surface mounted clock over coffee bar.

7) Socket Outlets

- 1 - A panel is to be provided on North wall in crush area.
- 1 - A panel is to be provided at rear of stage in Lecture Theatre.
- 2 - 5 amp single phase socket outlets in circulation area.
- 1 - Low voltage point for hand-lamp in Plant Room.
- 2 - 5 amp single phase socket outlets on east and west walls of Lecture Theatre for Cleaners.

28. Security

No special requirements.

29. Plant

Plenum and Extract system complete with filters, heater battery and anti frost coil.

30. Machine Tools

Nil.

31. Testing

A test team comprising Site Construction representatives and members of N.I.R.N.S. Engineering Group will be formed at the appropriate stage of the project. It will be the responsibility of the S.O. to formulate the terms of reference of tests.

32. Spares and Operating and Maintenance Manuals

Contractors are to provide a list of recommended spares for major plant items, also four copies of plant operation and maintenance manuals.

33. Planning Approval

Architects to obtain necessary approvals.

34. Noise

The noise level within the Lecture Theatre due to the plenum and extract plant is not to be greater than 40 decibels.

Signed

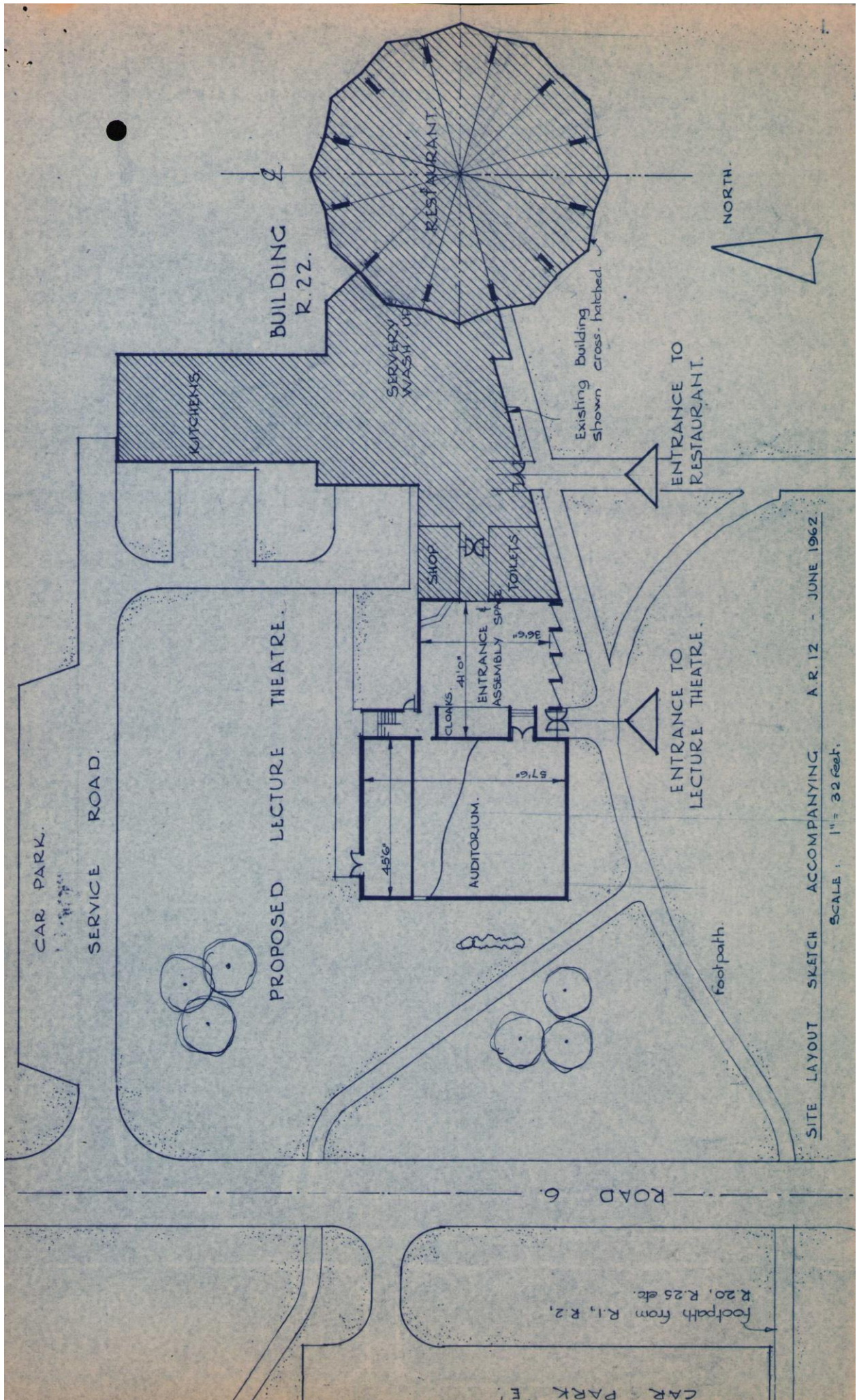
N. Noble  
Senior Architect

R.G. Bowers  
Senior Engineer

M. Snowden  
Project Officer

Date:

S.W.O. Tadley.  
June 1962.

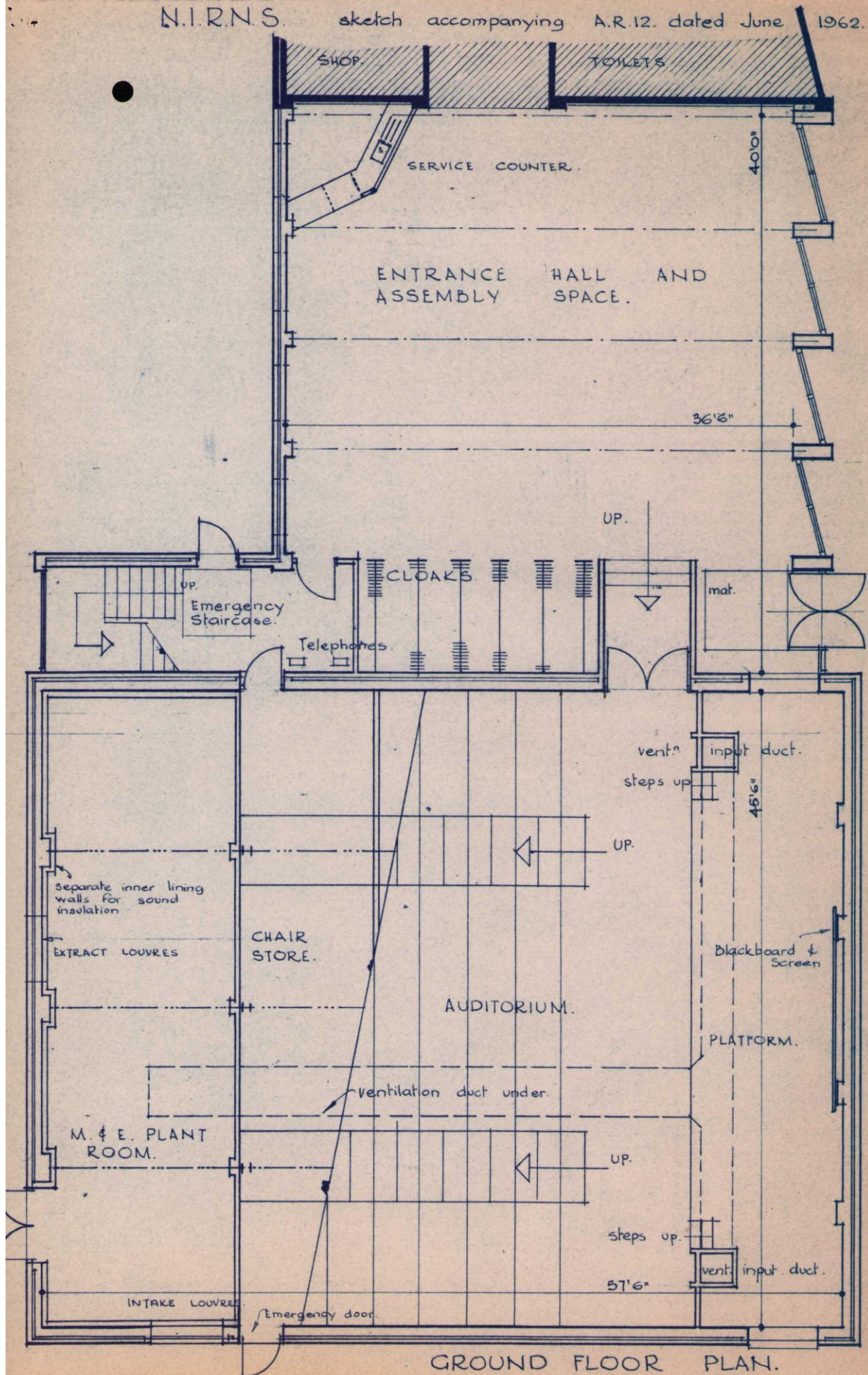


# PROPOSED LECTURE THEATRE

2.

N.I.R.N.S.

sketch accompanying A.R.12. dated June 1962.



GROUND FLOOR PLAN.

# PROPOSED LECTURE THEATRE

3.

N.I.R.N.S.

sketch accompanying A.R.12 dated June 1962.

