

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

Rutherford Laboratory Building Committee

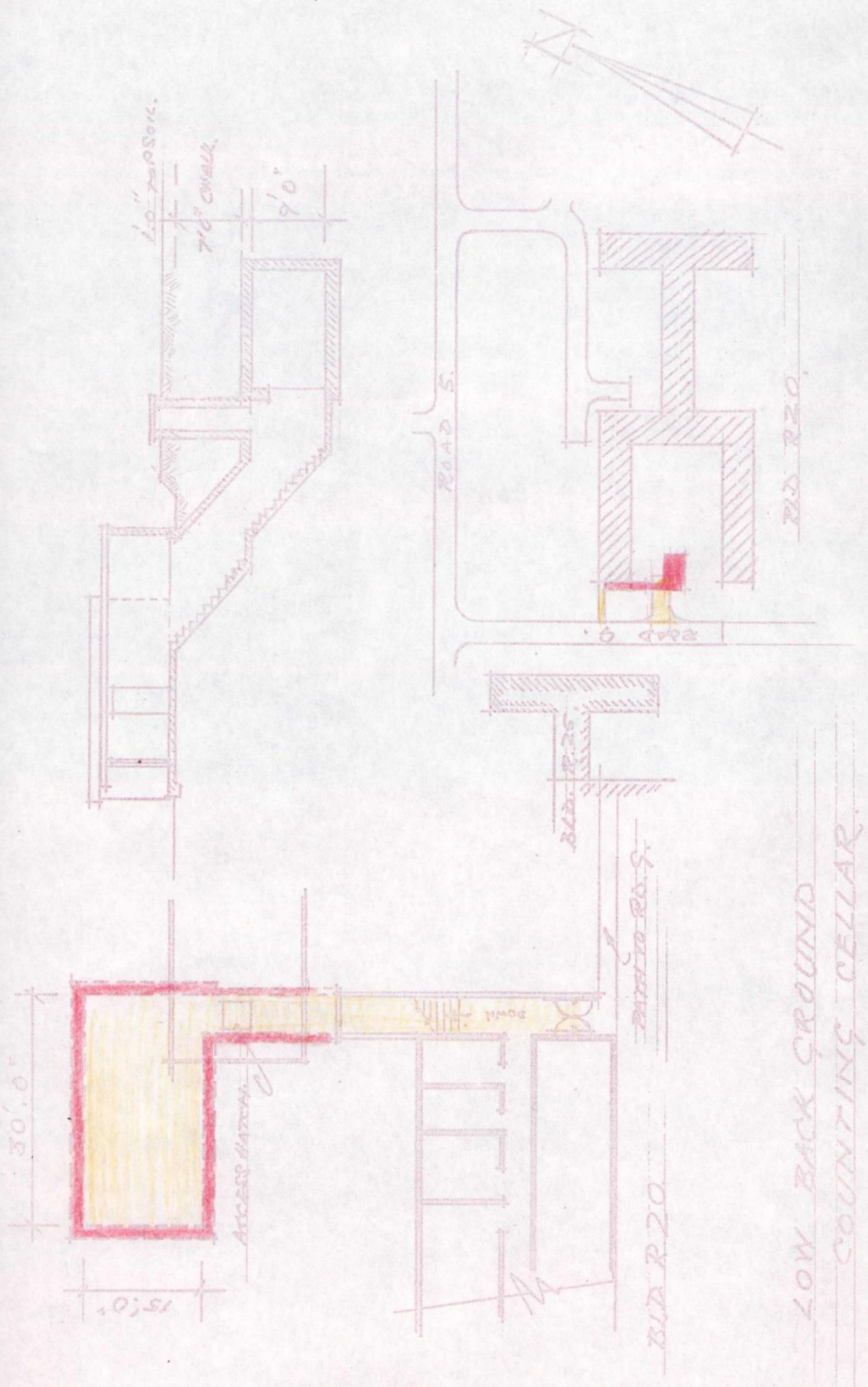
Low Background Laboratory for Radiation Protection Group

1. The Radiation Protection Group is to be housed in Bldg. R.20 on a permanent basis in the wing nearest the entrance to Bldg. R.1.
2. It is therefore proposed that the requirement for a low background counting laboratory for use by Radiation Protection Group should be met by linking it to Bldg. R.20.
3. The site proposed is shown on the accompanying sketch and consists of a room 30 ft. x 15 ft. x 9 ft. high constructed below ground and having 7 ft. of chalk shielding on its roof.
4. Access will be by way of stairs in a corridor adjoining the end of the Radiation Protection Group wing of Bldg. R.20. In addition a removable hatch will allow heavy equipment to be lowered by crane into the laboratory.
5. A spur off Road 9 will be needed to provide satisfactory access for vehicles.
6. The only services required are electrical and a standard air conditioning unit will be used for ventilation and heating.
7. A token estimate of £7000 - £8000 plus fees has been provided by S.J.O. No special furniture is required.

M. Snowden

Rutherford Laboratory

2nd April 1963.



Mr. Bowler's copy

Note by the Chairman of the Rutherford Laboratory Building Committee

Low Background Laboratory for Radiation Protection Group

1. The Radiation Protection Group is to be moved from Building R.1 to make space available for experimental groups working on NIMROD. It is now due to be rehoused on a permanent basis in a wing of R.20 where some of the present offices will be converted for use as light laboratories. In addition to this existing accommodation the Group has a requirement for a low background counting laboratory and this can now be conveniently sited near R.20 and joined to it by a short covered passage.

This laboratory is needed for measuring low level activities built up in foils exposed in occupied areas around the accelerator installations. In order to obtain the required sensitivity, counting down to as low a background as possible is necessary. Near sources of radiation this is best done by using a cellar and this Laboratory is fortunate in being built on chalk which has a low background activity.

2. The proposal therefore is to construct a cellar 30 ft. by 15 ft. by 9 ft. high having 7 ft. of chalk shielding over its roof. Access to the laboratory will be by the way of stairs in a corridor adjoining the end of the Radiation Protection Group wing of Building R.20 and an escape hatch is provided which will also permit heavy equipment to be lowered by crane into the Laboratory.

3. Few services are required, these being electricity for the apparatus and to provide for a standard air conditioning unit to give the required ventilation rate and heating. The design is special only in three respects which have been taken into account in arriving at the Project Estimate: They are

- (a) steel reinforcing is to be kept to a minimum and preferably kept 9 inches from the inside surfaces of the laboratory,
- (b) the use of asphalt for tanking is ruled out and plastic sheeting will be used instead, and
- (c) limestone aggregate instead of granite is to be used for the concrete.

4. An estimate has been made of the cost of this building by the Quantity Surveyor which is as follows:-

Building and Civil	£ 8,000
Mechanical and Electrical	1,200
External services, roads, etc.	<u>500</u>
Total	9,700
Fees 15 %	<u>1,450</u>
Grand Total	<u>£11,150</u>

5. Approval is sought for this scheme to go ahead immediately, financial provision having been made in this year's estimates.