

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCEANCILLARY BUILDING FOR THE 7 GeV PROTON SYNCHROTRON

1. Working space is required during the constructional period of the accelerator, for large-scale experiments leading to final design and also for preliminary assembly of components of the accelerator, which cannot be provided in normal laboratories. The Preparation Area of the main buildings will not be available because it will be completely occupied by the routine testing of the 336 magnet yoke blocks until the end of 1959. From the middle of 1958 onwards, about 10,000 square feet of additional space will be needed, the earliest requirements being for assembly and experimental development of the radiofrequency system and the vacuum system and storage of the first few magnet yoke blocks.
2. The full extent of these requirements became clear only recently, since it is intimately concerned with the phasing of the various items on the time programme and could not be reliably assessed during the design study stage of the project.
3. It is proposed to erect a prefabricated factory-type building in view of the urgency, but to make the building conform aesthetically to the permanent buildings. The building can then be made to serve ultimately as a central mechanical and electrical workshop for the Institute, to be made ready by the time accelerator construction is complete. The timing of these two functions will satisfy the development of the accelerator programme, and the wasteful procedure of erecting a temporary building will be avoided. A traditional type building, similar to the main buildings, could not be completed in less than 15 months.
4. The A.E.R.E. Building Sub-Committee has approved the plans for siting purposes, and the Director of A.E.R.E. has approved the architectural design of a proposal based upon an "Arcon" building manufactured by Messrs. Taylor Woodrow (Exports) Ltd. The Project Committee has discussed the proposal in detail and has given its approval. Funds are available in the current A.E.R.E. budget to cover the cost.
5. The estimated cost of the building is £70,000, made up as follows:

Building structure (Messrs. Taylor Woodrow)	£25,000
Civil engineering	£17,000
Mechanical and electrical services	£16,000
7 ton Crane (to be added later)	£ 6,000
Fees	£ 6,000
	<u>£70,000</u>
6. A survey has been made of prefabricated structures available from industry, and the building made by Messrs. Taylor Woodrow (Exports) Ltd. is the only one which can be made, with minor modification, to reach a sufficiently high architectural standard. Other buildings, with north-light or pitched roofs, are made but have been rejected by the Director and the two committees in view of their unsatisfactory appearance for the prominent position which the proton synchrotron buildings will occupy on the Harwell site. The building proposed has a flat roof and its appearance can be further improved by the addition of brick facing on the front. The estimated cost includes this brick facing, and is comparable with the cost of a traditional building of the same size. The building will have a floor area of approximately 10,000 square feet, and a clear internal height of 26 feet. Provision is made in the structure for subsequent installation of a 7 ton travelling crane.

7. Although the building will first be used, in part, to support the design team at Harwell, the cost of which has not been included in the approved estimate for construction of the accelerator, it is considered proper to submit the proposal to the General Purposes Committee. The building will be a permanent part of the site, and will eventually house central workshop facilities to support the research use of the accelerator.

8. The Project Committee recommend:

(i) That the General Purposes Committee approve the proposal at a total cost of £70,000, and approve single tender and contract action on Messrs. Taylor Woodrow (Exports) Ltd. for the building structure on the basis of a forecast price of £25,000 for this part of the work, subject to the usual proviso that a further submission will be made if the quoted price exceeds the forecast by more than 10%.

(ii) That the total sum of £70,000 be added to the building estimates as a sub-head, as shown in the Quarterly Report (N.I.(G.P.)(57) 4).

D. W. Fry
Chairman, Project Committee

A.E.R.E., Harwell.
7th November, 1957.