

## I.1: Civil and construction activities

### (A) Construction of Peta Watt Laser Lab (PWLL) building:

Peta Watt Laser Lab (PWL) building is constructed by Construction & Services Division. The building consists of (a) two story Reinforced Concrete Cement (RCC) framed structure and (b) Radiation shielded column free hall of size 16 m x 16 m with 4.4 m of clear head room space. Salient features of the building include isolation of the shielded area, appropriate use of ground topography, well planned man and material movement network and the passive solar architecture for energy efficient design. The passive solar architecture features include (i) Construction of sun breaker to external wall of the building using precast concrete louvers, (ii) Fabrication & erection of Mild Steel (MS) shed using galvanized color coated sheet with rock wool insulation on the roof of radiation shielded area and (iii) Construction of hollow core concrete slab over laser hall roof. This minimizes solar radiation and load on air conditioning. The building has been integrated with the existing R&D block D1, to enable optimum use of resources. The civil works for PWL lab have been completed. The plinth area of the building is 1818 sq. m.



*Photograph showing front view of PWL Lab building*

### (B) Construction of Accelerator Components Design & Fabrication Lab (ACDFL) building:

The Accelerator Components Design & Fabrication Lab (ACDFL) building is a two story RCC framed structure. Salient features of the building are effective utilization of space with integration to existing ACDFS workshop buildings & the upcoming Pre Engineered Building (PEB) structure. The ground floor of the building consists of store & supervisor rooms. The first floor consists of offices, labs & a conference room. The plinth area of the building is 377 Sq.m. PEB is a pre-fabricated steel structure of size 20m x 57 m & 12m height. It consists of fabricated steel sections as structural members and standing seam sheet cladding & roofing with rockwool insulation. An Electrical Overhead

Travelling (EOT) crane of 10 Metric Ton (MT) capacity is proposed for material handling.

### (C) Construction of the Extension of Accelerator Test Facility (ATF) building:

This is an extension of the existing accelerator test facility building. It is a two story RCC framed structure with a high bay of size 10 m x 18 m, having 11 m height. It also consists of labs, offices, conference room and a lift block. The building has provision for use of a EOT crane of 10 MT capacity installed in the existing building. The plinth area of the building is 670 sq. m.



*Photograph showing front view of ATF extension*

### (D) Construction of Cavity Processing Lab (CPL) building:

It is a RCC framed structure building. It consists of a high bay of 8 m x 34 m with provision of 5 MT capacity EOT crane for material handling, a processing hall of size 16 m x 14 m having 11 m height covered with steel trusses and color coated sheet roofing. The Plinth area of the building is 920 sq. m. The roofing sheets have been provided with thermal insulation using liner sheets thereby enabling durable configuration.



*Photograph showing inside view of CPL building*

*Reported by:  
G. Parchani (parchani@rrcat.gov.in), S.S. Kulkarni and  
colleagues*