High Rate Area for Trackers

Fermilab Test Beam Facility

http://www-ppd.fnal.gov/FTBF/

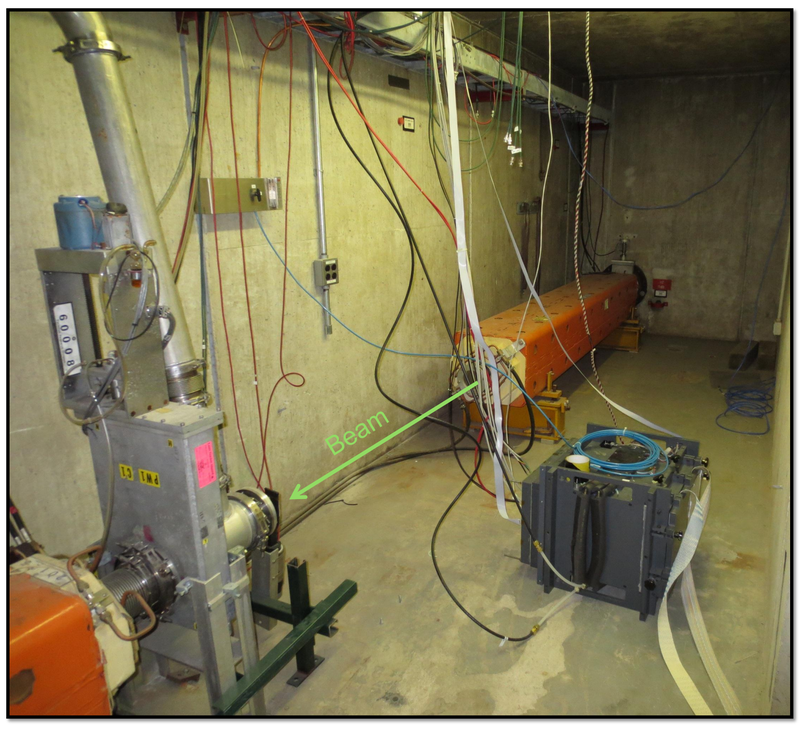
poster by Aria Soha

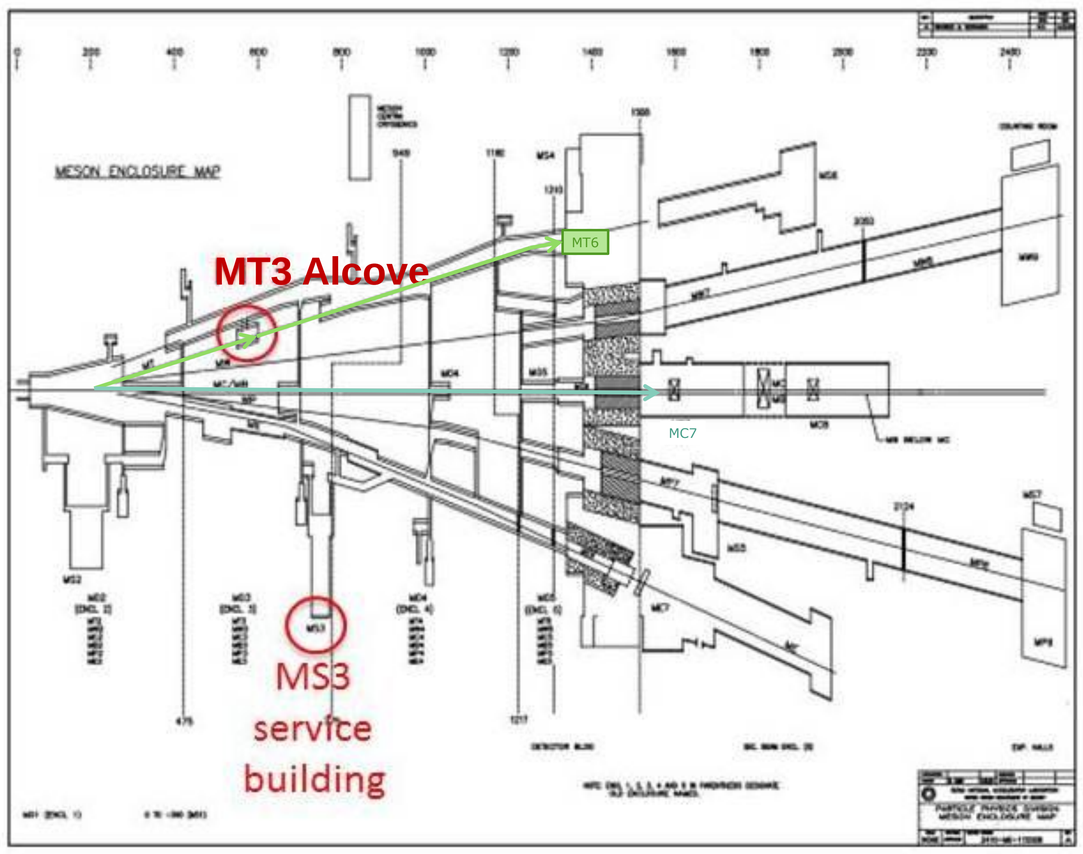
A new area for beam tests of high rate tracking devices has been created in the Fermilab Test Beam Facility. The area is located in the MTest beamline upstream of the pinhole collimator in the MT3 Alcove. This area is suitable for tests of detectors with modest transverse dimensions and ***Interaction Lengths of less than 3%***

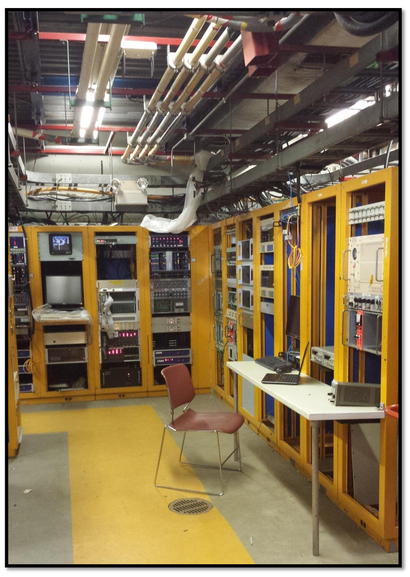
Beam Types

- **120 GeV: Protons**
  Max Rate: 2.5 GHz/cm² (1E10 particles/spill)
- **66 - 8 GeV: Pions** (Low Rates)

A 61-inch long air gap has been created in the beam line. The beam is 19.5 inches above the floor.

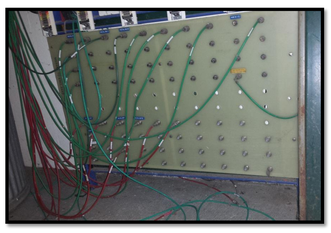






Infrastructure

- Signal and High Voltage cable patch panels link the enclosure alcove area with the MS3 service Building.
- Network fiber is installed between the two areas, with capabilities for general network access and private network capabilities.
- A Gas System is set up so users can send inert gasses from the service building to their apparatus in the beam.

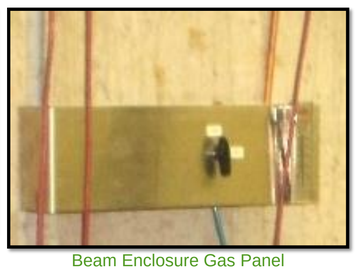


Network panel in Beam Enclosure

An area in the MS3 service building is set-up for users to monitor their experiment while the beam is on.

Entrance to the M03 enclosure is through the southern gate of the MS3 Service Building. To enter the M03 enclosure, users will need ODH training, as well as RadWorker and Controlled Access training.

Service Building Gas Storage

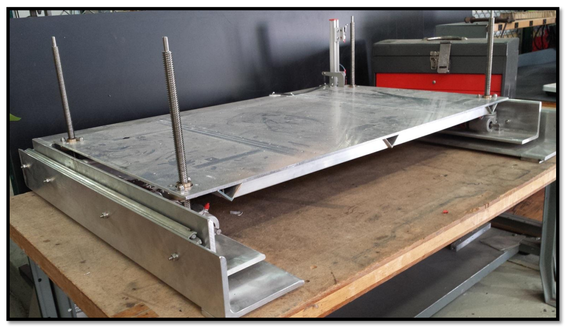


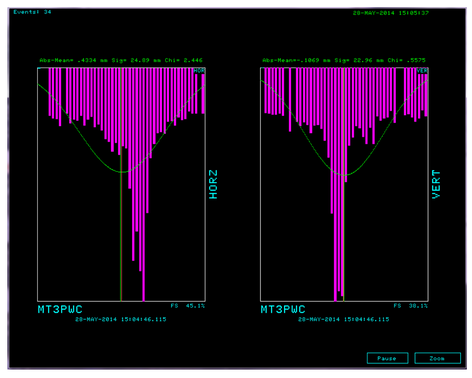
Beam Enclosure Gas Panel

Motion Table

A remotely controllable motion table is located in the air gap so users can perform beam scans, and move detectors completely into and out of the beam, without making accesses to the beam enclosure.

The table is 38 inches along the beam axis and 18 inches wide. It has been load tested to 490 pounds. It's range of motion is 30 cm vertical, and 58 cm horizontal.



Beam Instrumentation

The MT3PWC SWIC is located directly behind the detector area and can give a profile of the beam exiting the Device Under Test.