The Fermilab Silicon Detector Center (SiDet) is a premier microdetector assembly facility. It was originally conceived for the purpose of building and testing silicon vertex detectors for elementary particle physics. SiDet has at five clean rooms for assembly and testing. There are several wirebonding machines, numerous coordinate measurement machines, and electrical and mechanical technicians and engineers who maintain and operate the equipment. The CDF [1], D0 [1, 2], and CMS experiments, to name a few, have relied on the capabilities and infrastructure available at SiDet. Figure 1 shows a montage of some of the detectors assembled within recent years at the facility.

Fig. 1. Silicon vertex detectors for CDF and D0 Experiments.

Assembly of the SNAP CCD packages requires specialized electronics handling facilities because of the devices extreme susceptibility to damage from electrostatic discharge. SiDet has converted a 2000 sq-ft, class 10,000 clean room, “Lab C South” (see Fig. 2a), into an ESD-safe area for packaging and handling CCDs. The area is thermally controlled and maintains a high relative humidity. CCD packaging is performed under a laminar flow hood with ~ Class 100 cleanliness and ionized airflow. The technicians are trained in electrostatic discharge safety and proper use of protection equipment (see Fig. 2b). The CCD wirebonding is performed in the bonding room, another area especially setup for ESD-safe handling of sensitive devices. See Fig. 3.

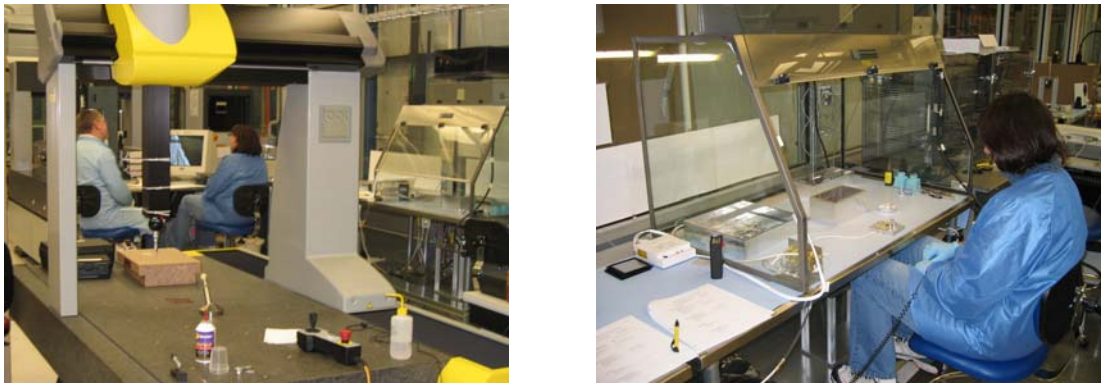

Fig.2. A view of Lab C South showing a mechanical engineer and a mechanical technician through one of the numerous CMMs (left). The ESD-safe CCD gluing clean air hood and the CCD specialist.

Fig. 3. Part of the wirebonding room at SiDet.

The former 15' Bubble Chamber Control Room at SiDet is now the CCD testing laboratory. It is an ESD-controlled, clean environment for safe handling of CCDs. Figure 4a shows the part of the interior including some of the "Cubes", vacuum dewars used to cool the CCDs to cryogenic temperatures for tests. Figure 4b shows the Multi-CCD test vessel that we will use for performing tests of the prototype focal plane at operating temperature and for multi-CCD readout as we develop the Monsoon electronics. This large dewar was provided to FNAL by University of Chicago.

Fig. 4. CCD central. Above left is the former 15' Bubble Chamber Control Room and now CCD testing laboratory. Note the rectangular "Cubes" on the near end and left side of the optical table. Above those are "autofill" systems that control the cryogens used to cool the CCDs to operating temperature. Above right is the Multi-CCD test vessel.

SiDet is becoming proficient at handling and assembling CCD packages [3]. The experience gained will provide direct synergistical benefit to both DES and SNAP.

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