The Department of Operations and Maintenance at the University of Maryland College Park operates a Campus-wide Central Control & Monitoring System (CCMS). Installation of a system that interfaces with the central equipment on the College Park campus of the University of Maryland are required. The CCMS system must be an extension of the campus system and not an independent system. This system is used to override local building control systems, but does not replace them. Therefore, a complete local (stand alone) system must be provided and integrated with the CCMS. Connection to the College Park CCMS can be achieved via modem and phone lines.

The scope of the CCMS design shall incorporate the operating characteristics for the proposed facility with regard to the capabilities of the existing CCMS, resulting in an optimally designed CCMS in terms of effectiveness and cost. The guiding principles for this design are to provide metering (and submetering by campus department as feasible) for all utilities; to provide remote start/stop and reset for all HVAC systems and other major equipment; to monitor energy-using systems for actual loads and conditions and all systems for alarm status and critical malfunctions. The desired CCMS shall provide surveillance and optimal operation of the HVAC and other systems and provide metering information as to actual utility usage.

CCMS is a microprocessor based, Environmental Management and Control System (EMCS) which uses a distributed processing architecture to achieve a high degree of system efficiency and reliability. It is an extension of the owner-provided Staefa Control System (SCS) Phoenix/System II model CCMS system.

Systems' requirements include:

A. The system design and architecture shall be compatible with the existing CCMS campus system. The system shall be designed and the equipment shall be selected to achieve the highest possible system wide reliability, serviceability, maintainability, and provide flexibility to meet both current sequences of operation and any anticipated future needs. Specific directions of approach are presently being developed.
B. A digital communication line connection shall be made between the existing owner-provided CCMS and the CCMS extension within a facility.

C. Supervisory remote control and monitoring of the system is accomplished through the CCMS unit which has an intelligent, stand-alone capability. The EMS/CCMS system will digitally communicate with stand-alone microprocessor-based DDC controllers installed in control panels associated with each mechanical system including the air handling units and the chilled and heating hot water systems. The CCMS will also communicate with stand-alone microprocessor-based controllers installed at each peripheral or terminal mounted equipment affecting a building's environment.

D. Control of equipment will be direct digital control DDC with electric and electronic actuation. Power actuation for isolation valves, two position in design, shall use pneumatic pressure (30 psig).

Director of Operations & Maintenance shall be contacted in order to obtain the present capabilities of the CCMS and to provide the University with a plan for the energy efficient operation of the HVAC systems. This plan shall be coordinated with the life cycle costing and HVAC load analysis in the Energy and Energy Analysis section to produce the most energy efficient facility design. It shall also delineate the scope of control between local controls, CCMS override control and fail-safe arrangements by HVAC systems.

Provisions shall be made for the complete system installation, including:

A. All sensors, contacts, equipment, and system interfaces and metering points.

B. All electrical and mechanical interface to the building systems and equipment.

C. All electrical and mechanical system components required by the CCMS.

D. Interfacing the new building CCMS to the existing CCMS central equipment. This includes all necessary alterations to the central processing units and their software routines located in the Service Building (003).
on the UMCP Campus.

E. Extension of underground duct bank and communication cables from the existing CCMS to the proposed facility.