

COMPUTING FACILITIES

Computing Facilities: Computing Facilities are rooms dedicated to computing systems. Computing Facilities house systems used for communication, data storage, and computations. Most University of Illinois Computing Facilities fall under one of the three types described in this *General Guideline*.

References:

1. *University of Illinois at Urbana-Champaign Facilities Standards* (coils, fans, control valves, specific equipment specifications)
2. CITES computing facility requirements
3. Campus Data Centers policy

Cooling: All facilities and equipment requiring cooling must utilize Campus Central Chilled Water (CCCW) at sites where CCCW is available. A chilled water capacity charge for new or additional capacity may be due and should be part of the initial project budget. In cases where CCCW is not available or deemed to be less cost-effective than another cooling option, the design team must request a Variance to the *University of Illinois at Urbana-Champaign Facilities Standards* and provide documentation with details and comparisons of the proposed solution and the CCCW solution. In addition to primary cooling systems that may utilize CCCW, unitary cooling systems not utilizing chilled water may be installed at facilities requiring secondary, emergency cooling systems to ensure reliability and high availability of the computing equipment.

Other Utilities: Availability of other Campus utilities, especially electricity, must be reviewed and will have a significant impact on locating Computing Facilities.

Facilities: Computing Facilities can be categorized as follows:

Communications Equipment Room: A Communications Equipment Room (CER) houses networking and telecommunications equipment and potentially some server equipment. The equipment operates at all times.

Server Room: A Server Room houses a small number of computing servers, a small

computing cluster, or data storage machines. Typically, a server room houses one or two racks of computers and ancillary equipment. This equipment may operate at all times or may only be needed for daily work or when research is being conducted. This equipment is typically owned by an individual department or research group. As the U of I moves toward using strategically located and specially designed data centers, it is expected that few Server Rooms will remain in operation.

Data Center: A Data Center is a secure, dedicated area that houses large computing clusters, data storage machines, communications equipment, and/or machines serving research group, departmental, or campus functions. A Data Center can be housed in an existing building or may be a building dedicated solely to the housing and support of computing equipment. These facilities are expected to be operating at all times. Data Centers will be classified in a tiered class system, with requirements for reliability and security in terms of utilities, internet connectivity, and physical attributes. Campus Data Centers policy, CITES, and the *University of Illinois at Urbana-Champaign Facilities Standards* must all be consulted to ensure compliance with all U of I requirements for Data Centers.

Data Center Consolidation Plan: Communications equipment rooms, server rooms and data centers are widely distributed around campus. A plan to consolidate these types of spaces into several locations has been determined to be more efficient and cost effective. Any proposed project involving new or existing computer facilities should reference the current status of the Campus Data Center Consolidation Plan (currently under development.)