Classifying and Reporting Facilities Data

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INTRODUCTION

Why are facilities data important?

- Because good planning and management of facilities are essential -

1. The amount and suitability of space directly affect the scope and quality of educational services;
2. Buildings consume most of the capital budget and a significant portion of the operating revenues;

INTRODUCTION (Continued)

3. Acquisition or construction of a capital asset represents a major commitment of current and future financial resources;
4. College and University facilities are highly visible components of an institution;
5. SC uses facilities data in calculating the operation and maintenance costs in the MRR; and for evaluating capital improvement projects;

INTRODUCTION (Continued)

In addition, Facilities data are used for:

1. Scheduling and assigning space for effective program delivery.
2. Accounting for the use of space in calculating program costs or indirect cost rates;
3. Planning future construction and capital financing needs; and
4. Providing useful institutional comparisons to assist in decision-making.

CHE uses facilities data for calculating utilization, determining maintenance needs and deferred maintenance, and for calculating the scores for capital requests.

BASIC PRINCIPLES

Facility data is an important tool for planning and management of higher education institutions, inter-institutional comparison, statewide planning, and the development of national policy. It is important that the classification structure be interpreted correctly so that like elements are compared.

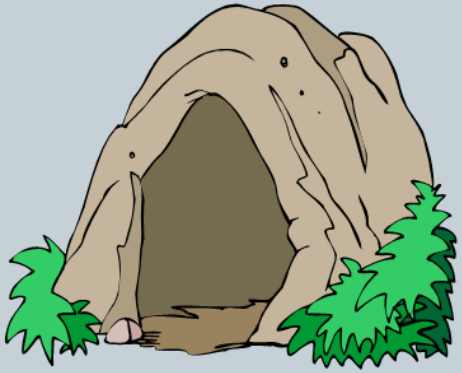
- Facility data should be capable of uniform summarization and interpretation
- The CHEMIS Facilities Component contains information about buildings, and rooms within buildings
- Some data elements are important for campus use but are meaningless for multi-institutional summaries or comparisons.
- Institutions may maintain more detailed data than are reported to the CHEMIS.

BUILDING DEFINITIONS

- A Building is defined as a roofed structure for permanent or temporary shelter of persons, animals, plants, materials, or equipment. Also included are marine and space structures, whether staffed or not.
- Examples include: research vessels, aquarium structures, and trailers used for offices, residences, or storage, and are not on wheels.

BUILDING DEFINITIONS (Continued)

The following are not usually defined as buildings even though they have a roof, walls and possibly a floor and lights:



In addition to the above criteria, a structure with lights must include at least one other utility service, such as a telephone, in order to be counted as a "building." One example meeting the criteria is a traffic control or information booth that if roofed, attached to a concrete pad, with lights and at least one other utility service such as a phone, and on a regular maintenance schedule. One that does not meet the criteria is a bus shelter, which is roofed and attached to a concrete sidewalk, but which has only lights as a utility service. Although parking garages may not meet the criteria, institutions may want to inventory them for internal use. Additional clarifications on this are provided in Chapter 2 pages 14-15 in the manual.

BUILDING MEASUREMENT TERMS

- **Net Assignable area = Sum of the Ten Major Space Use Categories**

  **The ten major room use categories are: classrooms, labs, offices, study areas, special use space, general use areas, support rooms, health care, residential, and unclassified. Page 17 in manual.*

- **Non-Assignable Area = Building Service + Circulation + Mechanical Areas**

  **Sum of the three non-assignable room use categories (building service, circulation, and mechanical.) The sum of all areas on all floors of a building not available for assignment to an occupant or specific use, but necessary for the operation of a building.*

- **Net Usable Area = Net Assignable Area + Non-Assignable Area**

  **Sum of all areas on all floors of a building either assigned to, or available for assignment to, an occupant or specific use, or necessary for the general operation of a building.*

- **Structural Area = Gross Area – Net Usable Area**

  **Gross Area – Net usable area. Examples include exterior walls, fire walls, permanent partitions, unusable areas in attics or basements, etc.*

BUILDING MEASUREMENT DEFINITIONS FOR NON-ASSIGNABLE SPACE

1. ***Building Service Area*** = the sum of all areas on all floors used for custodial supplies, janitorial sink rooms, janitorial closets, and public restrooms (p.24);

2. ***Circulation Area*** = the sum of all areas required for physical access to some subdivision of space, whether physically bounded by partitions or not. Examples are elevator lobbies, shafts, escalators, stairways, public corridors or walkways, and receiving areas such as loading docks (p.27).

BUILDING MEASUREMENT DEFINITIONS FOR NON-ASSIGNABLE SPACE

3. ***Mechanical Area*** = the sum of all floors of a building designed to house mechanical equipment, utility services, and shaft areas. Examples are central utility plants, boiler rooms, mechanical and electrical equipment rooms, fuel rooms, meter and telecommunications closets, and each of the floors footprint of air ducts, pipe shafts, mechanical service shafts, chutes, & stacks (p.29).

CHE USE OF FACILITIES DATA REPORTED THROUGH CHEMIS

BUILDING DATA
(* = Used in MRR)

- Institution Code*
  (FICE Code)
- Building Identifier/Building Name*
  (Building Number or Abbreviation)
- Report Year*
- Report Semester*
  (All MRR data and Utilization data are calculated based on the fall submission)
- Site ID
- Year of Construction
- Original Building Costs
- Ownership Status*
  (Building maintenance is not calculated on leased facilities unless it is part of the lease agreement approved by CHE and the facility is used for E&G purposes.)
- Type of Construction*

BUILDING DATA
(* = Used in MRR)

- Landmark Status
- Gross Area*

  (Used to calculate the Gross E&G Area in the MRR)
- Linear Feet*

  (Linear Feet of Perimeter is used in the calculation of the MRR)
- Building Condition
- Rehabilitation Estimate
- Replacement Cost*

  (Replacement cost must agree with the Annual Update Report published by the Insurance Reserve Office of the Budget and Control Board. It is used to generate maintenance costs for the facility.)
- Year of Last Major Renovation

BUILDING DATA
Used in MRR

Replacement Cost, Building (RCB)

- RCB is used in a number of the MRR Calculations and in the calculation of deferred maintenance.
- It must agree with the Annual Update Report from the Budget and Control Board published in the Spring of each year.
- The B&CB updates the replacement cost with an inflation factor based on an insurance valuation chart (uses location, construction costs, etc.)

(If replacement cost is not updated, the MRR will generate less than needed for routine maintenance. If the replacement cost is reported incorrectly, the calculation will be incorrect.)

BUILDING DATA
Used in MRR

MRR Calculation for Plant General Services

General Services =

SW ([(FTES+(2 x FTEE))] x 3.90) + (E&G **RCB** x .0028)

1. **SW** = Average hour earned for Services (Dept of Labor)
2. **FTES** = Full-Time Equivalent Students
3. **2** = two semesters
4. **FTEE** = Full-Time Employees
5. **3.90** = Estimated plant administrative cost
6. **RCB** = Replacement cost for the building
7. **.0028** represents the insurance factor on buildings

- RCB is used in the Plant General Services Calculation. Generally, Funding for O&M of the Physical plant is not included in the MRR for the technical colleges except for Denmark and TCL. O&M is the responsibility of the local service areas. The MRR does, however include funding for the physical plant administrative costs at the Technical Colleges.

BUILDING DATA
Used in MRR

Building Maintenance (E&G)

- MCF x RCB
  - MCF is based on type of construction
    1. Fireproof (incombustible with steel protected by masonry =.0125 (CHEMIS 01)
    2. Semi-Fireproof (incombustible with steel unprotected =.0145 (CHEMIS 02)
    3. Brick (masonry & wood construction) =.0190 (CHEMIS 03)
    4. Wood Frame (wood construction) =.0190 (CHEMIS 04)

BUILDING DATA
Used in MRR

Custodial Services

SW x I x (GSF/22,400) x 2080 x 1.2

1. **SW** = Average hour earnings for services
2. **I** = Labor and materials inflation factor
3. **GSF** = Total **E&G GSF** of the buildings
4. **22,400** = Number of ASF one person can clean in a year
5. **2080** = Hours worked in a year based on a 40 hour week
6. **1.2** = vacation/sick leave

BUILDING DATA
Used in MRR

Grounds Maintenance

SW (.70**P** + 122**L** + .50**E**)

1. **SW** = Average hour earnings for services
2. **.70 =** Hours to maintain 1 ft of perimeter w/shrubs
3. **P** = Linear feet of perimeter of all campus buildings
4. **122** = Number of hours to maintain 1 acre per year
5. **L** = Total acres of lawns & regularly maintained areas
6. **.50** = Time cleaning up after E
7. **E** = Headcount enrollment

BUILDING NAME

- If building name is not submitted correctly, it will be misspelled in the Inventory and, therefore, in all of the facilities reports produced by CHE.

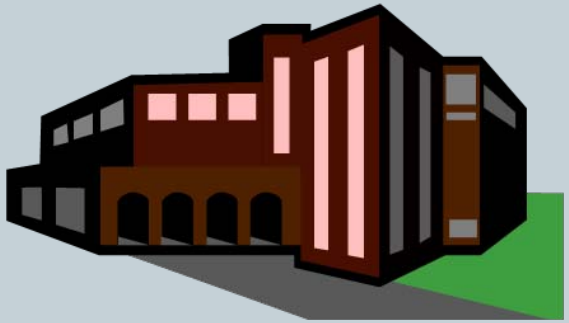
- Building Names should be submitted in Sentence Case, and abbreviations should "make sense." Some examples received: "West" "GRN" "HSB" "UMWWM" and "79-81-83-85-87A,B,89-91-93-95" It is difficult to determine what these facilities are.

REPORTING NEW BUILDINGS

- Report new buildings as soon as they come online. Report the RCB as the budgeted construction cost until the B&CB picks up the building in its Annual Update.

- If a facility is coming online in the next MRR year, go ahead and provide an estimate of the assignable square footage, the type of construction, and the budgeted cost to CHE in the Fall. CHE will use the data to include estimates for routine maintenance and utilities in the MRR for the year the building comes online.

BUILDING CONDITION



BUILDING CONDITION CODES

Building condition codes are reported individually and defined as follows:

- **Satisfactory Gross** – 95-100 Building requires no more than 5% restoration;
- **Remodeling A Gross** – 76-94;
- **Remodeling B Gross** – 51-75;
- **Remodeling C Gross** – 26-50;
- **Demolition or termination** – 01-25 Restoration is greater than 75% of the building; building should probably be demolished.

BUILDING CONDITION CODES

- Every three years CHE asks each institution to complete a building survey of all building systems. Using the results of the survey, an aggregate condition code for each building is determined. The result of this survey should be the code reported in CHEMIS. Institutions are responsible for ensuring the correct condition code is listed and/or updated for each building.

BUILDING CONDITION CODES

- It is important that each institution maintain an accurate record of the building condition code.
  - Condition codes reported to CHEMIS are used to calculate maintenance needs;
  - Condition codes reported to CHEMIS are used in the scoring process for Capital Bond Requests.
  - Condition codes are often used to verify requests for deferred maintenance $

BUILDING CONDITION CODES

- Some problems with reporting building condition codes:
  - Code category misunderstood – a facility rated 70 is actually reported as 30, believing that 70 means the facility is 70% good.
  - Condition codes not updated –
    - all facilities reported as 1.00; or not updated to reflect changes
    - a building completely renovated continuing to be listed at its old condition code.
  - Condition codes incorrectly calculated

CLASSIFYING ROOMS

CLASSIFYING ROOMS

- Each room within a building must be assigned a unique number
- Room numbers, or the lack of them, are a potential problem in relating utilization to teaching areas.
  - Problem areas: one room, two doors – each with a different number;
  - Un-numbered rooms
  - Suites where only the outer door to the suite is numbered
  - Proration and Phantom Walls

  - Each room must be assigned according to its primary use. Most of the time, this is easy. However, when a room serves several purposes or users, the institution may choose to prorate and allocate the square footage between two or more space uses, functions, etc to identify how each room is used. Proration can be done either on the basis of relative time expended on each activity or on the basis of the proportion of the room used for each activity. You may want to prorate based on "phantom walls," indicated by dashed lines as artificial boundaries to separate adjacent uses. This requires that each "space" be given a unique space identifier. See page 40 in the manual for additional information on proration.

CLASSIFYING ROOMS

- Each room must have a Room-Use Code indicating the classification of the room based on the primary use or activity that occurs in the room.

- Each room must also have a Functional-Use code – such as instruction, research, academic support, student services, physical plant, administration, or auxiliary.

CLASSIFYING ROOMS

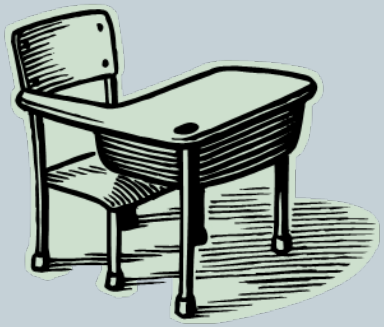
- **Assignable Area** – The assignable floor area of the room, measured in assignable square feet – the total floor area of the room available to the assigned occupant for use.

- **Number of Stations** – The capacity of the room in number of seats, desks, workstations, etc. While capacity is a consideration in all rooms, it is critical when assigning stations to classrooms. Make sure each room has the appropriate number of stations.

CLASSIFYING ROOMS

- **Disabled Access** – Indicates whether a room is barrier-free for its assigned use, normally through a simple notation for accessibility. A room is accessible if it can be reached without assistance from immediately outside of the building by a person in a wheelchair and it has at least one accessible station. In addition, for a room to be accessible, the building itself must have at least one accessible restroom.

UTILIZATION



Classroom Use and Utilization

- Classroom Use and Classroom Utilization are two distinct measures
  - Classroom Use means simply that the room is occupied. This can occur through scheduled use, such as for a credit course, or unscheduled use, such as a drop-in course or a meeting. Only scheduled assignment of classrooms is recorded and used in utilization analysis.
  - Classroom Utilization is a measurement of the number of stations occupied in relation to the total number of stations in the room.

Classroom Use and Utilization

Scheduling

- A campus is unusual if its instructional facilities are in use continuously every hour from 8:00 a.m. until 10:00 p.m. On most campuses, daytime courses normally end by 4:00 p.m. Some institutions offer evening programs which run from about 6:00 p.m. until 9:00 p.m.

Classroom Use and Utilization

Use or Assignment of Rooms

- To account for periods of "no use," most institutions target a percentage of classrooms as a standard for use. One common goal is to target the use of 67% of classrooms over a 45 hour per week (9 hours per day, 5 days per week) period as an indication of full room use.
- A classroom would need to be scheduled for two-thirds of the 45-hour week, or **30 hours**, to be considered in full use.

SC Standard is 30 hours

Classroom Use and Utilization

- **Utilization**, by contrast is a measure of the number of stations (seats) occupied during each class period.
- A target utilization, or classroom occupancy, rate of 60 percent of the seats in a room is considered full utilization. In other words, a classroom is considered to be fully utilized if **60% of the stations are occupied** over the duration of the instructional week.

SC Standard is 60%

Utilization Terms

Room Utilization Rate (RUR)

= Average weekly room hours of instruction

(Hours per week that the room is scheduled for use = Total room hours of instruction (rounded to nearest ½ hour of use) / the number of classrooms.)

- For each course, if the minutes are between 1 and 30, it's rounded to 30; if the minutes are between 31 and 60, it's rounded to 60.

i.e., If a class meets on M-W-F 9:00 -1:00; and

T & Th 8:30-noon = 19 room hours

[4 hrs per day X 3 days wk. + 3.5 hrs per day X 2 days wk.]

Utilization Terms

- **Capacity Enrollment Ratio** is the amount of instructional and library space directly used in an institution's instructional programs to the instructional activity of the campus.

$$\text{C/E Ratio} = \frac{\text{Instructional \& Library Space}}{\text{Total weekly student clock hours}}$$

Utilization Terms

Student Clock Hours

Measure of the total hours of scheduled instruction for all of the institution's students

(Computed for each course by multiplying the number of times the course meets weekly by the number of hours of each course meeting, and multiplying the product by the number of students.)

Example:

A course with 20 students meets T & Th from 9:00-10:30 a.m.

Student Clock Hours for that class would be

60 (2 mtgs per wk X 1.5 hrs per mtg X 20 students)

Utilization Terms

Distribution of Space

- ASF per student station:
  - "Typical" ranges from 14.5 (lecture rooms) to 22.1 (Computer Classrooms)

SC standard for ASF per student station is "22"

Utilization Terms

Space Factor

- A common measure of efficiency is the result of a calculation called **"Space Factor."**
- SC uses the more detailed methodology for measuring utilization: $\frac{\text{ASF per Student Station}}{\text{(Wkly Room Hrs X \% Station Utilization)}}$

SC Space Factor Standard is 1.22

- The 1.22 is used as a standard measure to determine how "efficiently" SC institutions use space. The lower the space factor, the more efficient an institution is.

Utilization Terms

- There is another way to calculate a space factor by using assignable square feet and student clock hours:

Space Factor = ASF / Student Clock Hours

(This calculation does not consider the ASF per student station in the efficiency measure.)

Utilization Terms

- Another way we measure utilization is to calculate the ASF of "Academic Space" per FTE for Teaching and Two-Year Institutions.

National Standards =

- Teaching 93 ASF/FTE
- Two-Year 70 ASF/FTE
- Academic Space includes all space used for instruction, research, and the administration or support of instruction or research.

Another Interesting Efficiency Measure

Net-to-Gross ratio = NASF/GSF

This is generally used as a measure of the efficiency of a building. The higher the net-to-gross ratio, the more space that can be assigned to the various programs offered in the building.

QUESTIONS

- Are all Classrooms coded as space use code 110?

  Yes. If a room is limited by configuration or equipment to a particular discipline, it is not a classroom – it's a lab.

- How should I report facilities such as uncovered parking lots, uncovered tennis courts and swimming pools?

  Those are not "buildings" and should not be included.

- How do I code mechanical rooms? Elevators & shafts?

  These are un-assigned

QUESTIONS

- How should day care centers be coded?

  They may be coded as Demonstration (550) or Day Care (640). If they are used for practice, within an instructional program, they would be coded as 550. If they are used as a central service center for faculty/staff, and students, they would be coded as 640 (function auxiliary enterprise).

QUESTIONS

- What about spectator seating in an outdoor stadium?

  Outdoor stadiums are not, by definition, buildings. So, permanent seating is not assignable area. However, the space under the seats may meet the definition of a building. Rooms under the seating may be coded as Athletic, Physical Ed. Service, or Offices depending on their use.

QUESTIONS

- Can I report a special character (#) as part of my building name?

  No, CHEMIS will not accept special characters.

- How should I go about including leased space used for E&G purposes?

  When you lease a building (or part of a building) each of the required data elements must be supplied. Estimated replacement cost must be calculated (or provided by the leasing agent); null values must be supplied for all elements not supplied.

QUESTIONS

- If null values are allowed, should we differentiate between the case where the field is not applicable and the case where the data are not available?

  No, just report null values.

- If a course is taught on my campus by another college or university will it be credited to my utilization?

  Yes, provided the institution offering the course includes a correct site ID, Building ID, and room ID in their course records.

QUESTIONS

- How do I report linear feet for a building having an inner courtyard?

  Simply report the exterior linear feet for each facility. MRR funding is provided for linear feet of maintained area around the perimeter.

QUESTIONS

- How do I report a parking garage with a shop on the first floor?

  Beginning in 1985, parking deck space was coded as non-assignable – However, parking structures with assignable square footage may report the standard assignable areas (offices, etc.) with appropriate space use codes. Ramps and other driving areas are classified as non-assignable circulation area (p.33).

QUESTIONS

- How do I report non-assignable space? Do I use the XXX or YYY codes in the manual?

  Do not report non-assignable space to CHE. We calculate it by comparing net to gross. The XXX and YYY codes are for internal use at the institution.

QUESTIONS

- We have taken a janitor's closet (non-assignable) and made it into an office. Is it still non-assignable?

  No. You have assigned the space to a specific purpose – it should be coded an office.

- We have a central energy building which has a roof, walls, floor and lighting. How can we code it so it will generate maintenance in the MRR?

  It is not considered a building and should not be included unless there is a telephone or other service in the facility.

QUESTIONS

- We have underground pedestrian tunnels and above ground pedestrian walkways that connect buildings. How should these be reported?

  They should be included in your gross area in your inventory but the interior space is non-assignable (circulation).

MORE QUESTIONS?

There are lots of answers on pages 94-100 of the manual.

The manual and page numbers referenced in this presentation are from the Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition.
The manual can be viewed at:
http://www.nces.ed.gov/pubsearch/index.asp?HasSearched=1&searchcat2=subjectindex&L1=189&L2=0