

## **\*2A. NET TO GROSS RATIO**

**Purpose:** This section is to provide guidelines to apply to conceptual programs in order to arrive at the gross area of a proposed facility. The building "shell" cost portion of the conceptual estimate can then be calculated using the costs displayed Series A Structural/Building Configuration Matrix.

**Background:** The existing data base of university facilities catalogues the net assignable areas of various uses on the basis of floor area between the faces of the dividing walls and partitions. The gross area is generally catalogued on the basis of the total area measured to the exterior face of the exterior walls. The net to gross ratio is expressed as the percentage of net assignable area to the gross area. Non assignable areas include public spaces, corridors, toilet facilities and utility spaces.

There are a number of variations in definitions between higher education and general industry practice, which can be attributed to how floor areas are measured. Higher education inventory systems focus upon the amount of space that can be assigned to a program as defined in the *Postsecondary Education Facilities Inventory and Classification Manual*. State and Federal auditors also use the definitions provided in this manual. Another measuring system includes the area taken by interior partitions (e.g., American Institute of Architects and Building Owners and Managers Association, BOMA). This illustrates the differences between design practice and maintaining a facilities inventory of existing buildings. These deviations will not create problems with preparing conceptual cost estimates, but must be recognized when comparing net to gross ratios.

The net to gross ratio of any building depends on the configuration of the design. There is a wide variation in ratios for buildings of similar uses based on the configuration. The data in this section presents rough statistical averages for various uses commonly found in higher education facilities. The raw data was obtained from the three universities in Arizona and from universities in Ohio, Nebraska, Indiana and Oklahoma.

**Definitions:** Net assignable area is the area required for specific uses such as; classrooms, laboratories, offices, conference rooms, auditoriums, dining rooms, storage rooms, shops and other functional spaces. Assignable area is measured to the interior face of enclosing walls.

Non assignable area is the area required to support the functions located in the assignable spaces such as circulation spaces, rest rooms, utility spaces and other service areas.

Gross area is the total area of the building measure to the exterior face of the exterior walls.

\* Added April 29, 2002

Net to Gross Ratios:

Building Type:	High	Low	Average	# of buildings Analyzed	# of Universities
Auditorium/Arena/Phys Ed.	88%	21%	63%	27	6
Classroom	76%	54%	60%	47	5
Laboratory	78%	30%	58%	46	4
Library	83%	64%	71%	9	4
Office	87%	46%	62%	17	5
Residential	82%	44%	68%	21	4
Storage / Warehouse	98%	77%	88%	22	3
Student Union	79%	57%	61%	7	3