Classroom Design Overview

Presentation to University Space Priorities Working Group
by
Space Planning Working Group
October 8, 2013
USPWG Classroom Questions

• When new classrooms are designed, what's the avg. square footage for 20, 30, 50-student classrooms at NYU?
• What's the square footage for large, theatre-style classrooms of 100 or 200 students?
• What factors influence classroom design, especially in relation to square footage?
• Have there been any dramatic changes in the way that NYU thinks about classroom design and design priorities?
• Is there an industry-standard for classroom size in North America?
Determining Classroom Size

• The ASF/student depends on the type of instruction
• The ASF/student can vary widely ranging from 15 – 40 ASF
  – Lecture rooms with tablet arm chairs require the least ASF/student
  – Group working arrangements require the most ASF/student
  – Large auditorium rooms typically require 10-15 ASF/student though these rooms may also require double height space to accommodate tiered seating.
    • For example, a 100 seat auditorium would require 15 ASF/student but a 300 seat auditorium, closer to 10 ASF/student
  – Group working arrangements require the highest ASF/student ratio
Determining Classroom Size

• There is no one standard size for 20, 30, 50 student classrooms
  – As an example, 20 student classrooms can range from 350 ASF to 750 ASF
  – For high level planning, a range of 20-30 ASF is used as a general rule of thumb

Example: Variation in classroom size to accommodate 20 seats in different seating configurations

<table>
<thead>
<tr>
<th>ROOM CAPACITY</th>
<th>SECTION PEDAGOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lecture rooms</td>
</tr>
<tr>
<td>20-STATION</td>
<td>discussion rooms</td>
</tr>
<tr>
<td>350-750 SF</td>
<td>seminar rooms</td>
</tr>
<tr>
<td>20 stations 350 sf</td>
<td>25 stations 500 sf</td>
</tr>
<tr>
<td>17 sf/station</td>
<td>20 stations 600 sf</td>
</tr>
<tr>
<td></td>
<td>30 sf/station</td>
</tr>
<tr>
<td></td>
<td>group work rooms</td>
</tr>
<tr>
<td>20 stations 750 sf</td>
<td>37 sf/station</td>
</tr>
</tbody>
</table>
Determining Building Design

Assignable Square Feet (ASF)
- The interior size of a room

Gross Square Feet (GSF)
- The sum of all assignable and non-assignable spaces
- Typically GSF = ASF x 2
Determining Building Design

• Building Efficiency is defined as GSF/ASF; the lower the ratio, the more efficient the building

• Impacts to building efficiency
  – Width and number of hallways
  – Vertical egress/ingress pathways (number of elevators and stairs)
  – Infrastructure (for example, can a building carry rooftop HVAC equipment or require distributed interior plants)
  – Number of rest rooms (regulated by code)
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Classroom Design Considerations

- Classroom design standards are generally developed by each University for their own use given their own particular circumstances

- **Standardization**
  - Classroom Sizes
    - Build according to Instructional needs and not according to building limitations
    - Take into account sight lines and internal room circulation needs especially with respect to technology
    - Do not unnaturally force classroom sizes into existing column grids.

- **Flexibility**
  - From semester to semester
    - Opt for classroom sizes that can accommodate a wide range of seating configurations at different capacities to adapt to changing needs through furniture modifications to allow for flexibility from semester to semester
  - Over the long term
    - Construct classroom facilities (anticipating infrastructure design) in such a way that one has the ability to resize rooms to accommodate for more dramatic shifts in the delivery of instruction.

- **Traffic Control**
  - Classrooms to be located no more than two floors above or below the ground floor
  - Open stairs provide greater accessibility to classrooms
  - Sufficiently wide corridors to manage class change and waiting
## NYU Classroom Standardization

<table>
<thead>
<tr>
<th>SMALL</th>
<th>MEDIUM</th>
<th>LARGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type I</strong></td>
<td><strong>Type II</strong></td>
<td><strong>Type I</strong></td>
</tr>
<tr>
<td><img src="image1" alt="Small Type I Diagram" /></td>
<td><img src="image2" alt="Small Type II Diagram" /></td>
<td><img src="image3" alt="Medium Type I Diagram" /></td>
</tr>
<tr>
<td>250 SQ. FT. 10-14 stations</td>
<td>350 SQ. FT. 10-20 stations</td>
<td>500 SQ. FT. 13-30 stations</td>
</tr>
<tr>
<td><img src="image1" alt="Small Type I Diagram" /></td>
<td><img src="image2" alt="Small Type II Diagram" /></td>
<td><img src="image3" alt="Medium Type I Diagram" /></td>
</tr>
<tr>
<td>14 stations</td>
<td>18 stations</td>
<td>20 stations</td>
</tr>
<tr>
<td>18 sq/station</td>
<td>17 sq/station</td>
<td>15 sq/station</td>
</tr>
<tr>
<td><img src="image1" alt="Small Type I Diagram" /></td>
<td><img src="image2" alt="Small Type II Diagram" /></td>
<td><img src="image3" alt="Medium Type I Diagram" /></td>
</tr>
<tr>
<td>10 stations</td>
<td>10 stations</td>
<td>13 stations</td>
</tr>
<tr>
<td>23 sq/station</td>
<td>35 sq/station</td>
<td>31 sq/station</td>
</tr>
<tr>
<td><img src="image1" alt="Small Type I Diagram" /></td>
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<td><img src="image3" alt="Medium Type I Diagram" /></td>
</tr>
<tr>
<td>18 stations</td>
<td>20 stations</td>
<td>18 stations</td>
</tr>
<tr>
<td>28 sq/station</td>
<td>30 sq/station</td>
<td>42 sq/station</td>
</tr>
</tbody>
</table>

NEW YORK UNIVERSITY
Classroom Flexibility Illustration

• Standard classroom sized to accommodate desk and chairs
• Standard classroom size provides flexibility for different teaching environments from semester to semester by changing furniture
Classroom Flexibility Illustration

*Long-term Change*

- Standard classroom size offers flexibility to adapt to changing class size needs over time