



Hadley Junior High 2015 Space Utilization Updates

UPDATES TO 2008-09 REPORT

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7.0 Hadley Junior High

7.1	INTRODUCTION.....	1
7.2	OVERVIEW.....	2
7.3	UTILIZATION & EFFICIENCY.....	4
7.4	TEACHING STATIONS.....	6
7.5	OTHER OBSERVATIONS.....	7
7.6	CURRENT FACILITIES.....	9
7.7	RECOMMENDATIONS FOR ADDRESSING FACILITY CHALLENGES.....	12

7.1 Introduction

Since the 2007-08 Space Utilization Study was completed, Glen Ellyn School District 41 had continued to grow and evolve to meet the changing needs of its school community. Modifications to Hadley Junior High School have included changes to its operations, staffing, curriculum, program offerings, in addition to building renovations and additions.

This report represents an update to the 2007-08 Study for the purposes of understanding and documenting the facilities implications of these various changes. The report is intended to supplement Chapter 7.0 of the original report, thus, the chapter heading for the update is also numbered as Chapter 7.0.

The updated Space Utilization Study for Hadley represents a compilation of data, information and insights from a multitude of sources including architectural floor plans, building schedules, enrollment data, program offerings, and building tours as well as discussions with representatives from the school and district leadership.

The juxtaposition of educational needs with each building's floor plans illustrated areas of compatibility as well as areas of deficiency within all facilities. As part of the update for Hadley, several strategies for bringing the facilities into better alignment are included in this report.

The current enrollment of Hadley is approximately 1,200 students, approximately 50 students larger than the 2007-08 enrollment.

Since 2007-08, three permanent classrooms and six portable classrooms were added to the site, and various building renovations, general maintenance and updates have been implemented.

The remainder of the building has aged seven years since the original report.

The following recommendations are summarized from the data and observations documented throughout this report. Recommendations are generally

Hadley Junior High School - Space Utilization Study Updates

interdependent, meaning that taking any one action alone will not provide the intended collective benefit. Recommended short-term actions include:

- Add 10 classrooms
- Reassign several classrooms to enhance the clustering of grade levels
- Reduce class sizes to account for smaller classrooms as needed
- Enhance science facilities, particularly for 6th and 7th grades

It is also recommended that renovations other than regular maintenance avoid the 3-story portion of the building, as it is a prime candidate for near-future replacement. Originally constructed in the 1950's, this portion of the building is not only in poor condition, but also includes the majority of small classrooms. Many space challenges would be alleviated if, in the future, this portion of the building were to be replaced with new 21st century learning environments.

7.2 Overview



The Library Learning Center has been recently transformed.

(photo courtesy of FGM Architects)

The Hadley Junior High School facility continues to be undersized for the current enrollment and program offerings. With the addition of 6 portable classrooms and three special education classrooms, the updated functional capacity of all permanent and portable buildings at Hadley is 1,060 including self-contained special needs learning environments.

The mathematical analysis used to calculate functional capacity includes four components:

- The actual number and sizes of classrooms/teaching stations,
- the state guidelines for in-classroom square-footages per student,
- the District 41 class size cap of 28 students, and
- the desired utilization factor of 67% (classrooms scheduled for sections of students at an average of 6 of 9 periods per day).

While minor adjustments may be able to enhance the efficiency of the existing building, additional classrooms are needed to replace portable classrooms and to bring the school facility into better alignment with its given enrollment and educational goals.

In addition to undersized classrooms and the number of portable classrooms in use, Hadley's space challenges are also due to science labs that are small, awkwardly proportioned, and/or poorly equipped, the undersized lunchroom, inadequate music rooms, and periodic flooding in the lower level. In the event that additions and/or modifications to the existing building are planned, strategies for addressing these areas should also be explored and considered.

Hadley Junior High School - Space Utilization Study Updates

7.2.1 School Facility and Enrollment Data

Hadley Junior High School students are housed in a facility originally constructed on a 17-acre site in 1954. Additions and modernizations have been completed in 1957, 1970, 1998, and 2012, and 10 portable classrooms are currently in use on the site.

Site Size:	17	acres
Building Size (Sq. Ft.):	141,362	(not including portables)
Portable Classrooms:	10	(total area of portables: 8,650sf)
Current Enrollment:	1,200	(approximate)
Gross Area per Student:	118	square feet (<u>not incl.</u> portables)
Gross Area per Student:	125	square feet (<u>including</u> portables)
District "Target" Class Size:	28	(average # students per class)
Target Classroom Utilization:	67%	6 of 9 periods per day

7.2.2 Area Comparison Chart

The following chart compares Hadley with average data from throughout the US, and illustrates that Hadley facilities are smaller than the average American junior high school - a contributing factor for Hadley's current space challenges.

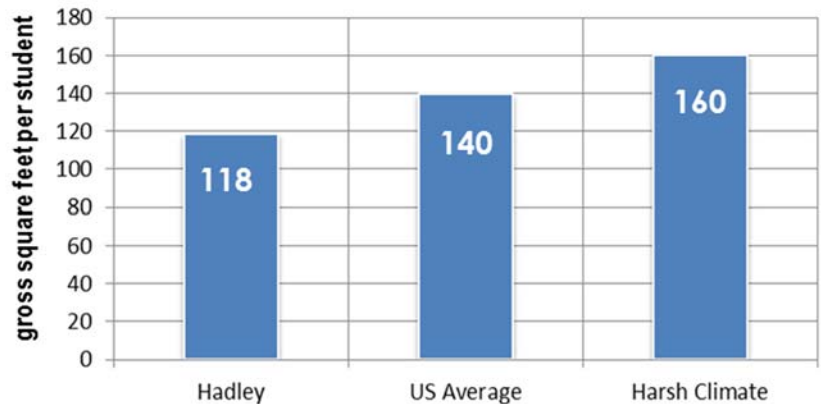


Figure 7.1
Gross Area per Student Comparison

7.3 Utilization & Efficiency

Efficiency for the use of teaching stations is calculated in two ways:

- The number of periods per day the space is used (time)
- The number of students assigned to the teaching station (class size) as compared to the size (square-footage) of the room

Note that mathematical calculations are intended to illustrate objective space utilization data. As the intent of this report is to analyze the overall use of space, anomalies addressing unique needs of individual and small groups of students, staff and programs are not specifically accommodated. While these anomalies do contribute to the culture, quality and legacy of the school, they do not significantly affect the overall accuracy and intent of the data and findings in this report.

7.3.1 Time

Classroom utilization is a function of time. It is affected by the extent of shared classrooms as well as the number of planning/collaboration/prep periods granted to teachers. At Hadley teachers teach an average of 6 of 9 periods, with one lunch period, one team planning and one prep period. The target utilization factor refers to the use of the classroom, as opposed to the use of the Teacher.

According to the current schedule of classroom use, most classrooms are meeting the targeted 67% utilization rate.

7.3.2 Class and Classroom Sizes

The desired average class size (referring to number of students per section or "class") at Hadley is 28 students for regular education; however classroom sizes (square-footages) vary widely throughout the school. For some of the smaller classrooms, accommodating 28 students is challenging.

In general, optimal classroom sizes are determined by a number of factors such as subject/course, activities to be supported, the extent of in-room resources, and of course the number of occupants.

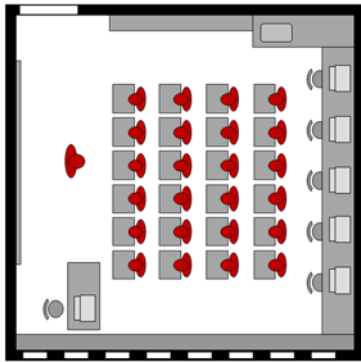
A national standard square-footage requirement for general classrooms does not exist, however some states (including Illinois) do have such requirements and they range from 25 to 45 net square feet per student. The Illinois Administrative Code calculates the available capacity of a classroom by dividing the net classroom area by 35 square feet.

For the purposes of the calculations in this report, an average of 35 square feet per student for general classrooms (including math, language arts, social studies and world languages) is used.

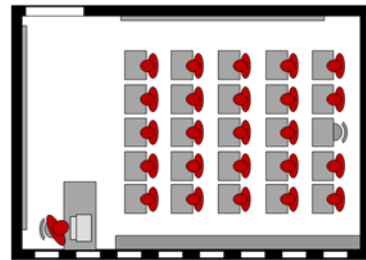
Adjusting classroom capacity to accommodate the Illinois calculations, nearly 3/4 of the teaching stations in the current facility are undersized for their intended uses and enrollments. Thirteen of these classrooms are less

For the purposes of this study, an average of 35 square feet per student for general classrooms is used.

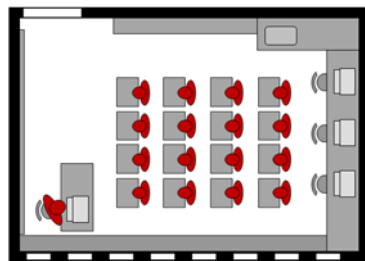
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Regular Classroom Example



Small Classroom Arrangement A:
Reduced furniture & equipment



Small Classroom Arrangement B:
Reduced class size (# of students)

The diagrams above illustrate a comparison of regular and smaller sized classrooms. Smaller classrooms must either limit in-room furniture and equipment or reduce the number of students in the class.

than 700 square feet. Using an average of 35 square-feet per student, a 700 square foot classroom would accommodate 20 only students.

For science classrooms, according to the National Science Teachers Association (NSTA), a good middle school science room generally requires 45 square-feet per student for a stand-alone lab and up to 60 square-feet per student for a combination lab/classroom. The Illinois Administrative Code allocates 40-50 net square feet for science rooms. The average science room at Hadley is roughly 920 square feet, which Illinois and NSTA recommendations would limit to roughly 20 students each. While this may be impractical, it does illustrate an important component of the space challenges at Hadley.

Calculating utilization in these terms, regular education and science classrooms at Hadley accommodate an average of 22 students each – approximately only 77% of the intended 28 students per class. This equates to overcrowded classroom spaces.

In general, undersized classrooms can cause challenges such as:

- limited student enrollment for courses scheduled in those rooms,
- crowded rooms and limited student & teacher movement,
- limited student activities such as hands-on projects and collaboration,
- reduced room for teaching and learning resources such as references, in-room libraries, materials and supplies, (particularly if the room is shared among dissimilar disciplines)
- increased use of non-classroom space such as hallways for educational activities,
- inequity among teachers,
- difficult testing situations,
- acoustical challenges,
- and/or
- life-safety and egress concerns

The wide variety of classroom sizes can also complicate scheduling and room assignments, as administrators attempt to recognize room size when assigning teachers and scheduling courses within the building.

To accurately account for the smaller classroom sizes, the targeted 28-student classes are adjusted using 35 square-feet per student for general classrooms and 45 square-feet per student for science classrooms. Based on the actual classroom sizes at Hadley, the average number of students each classroom should contain is only 22 students.

HOWEVER, when also factoring specialty and exploratory learning environments (such as music, art, FACS, etc.) the average capacity of students per all teaching spaces is 24 students. This number is used for the teaching station calculations that follow.

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7.3.3 Existing School Capacity

The mathematical analysis used to calculate functional capacity of Hadley facilities includes four components:

- 56 The actual number of classrooms/teaching stations,
- 10 Number of temporary/portable classrooms in use,
- 24 Average number of students per teaching station at a time or “class size”. (The average of actual size of each classroom/teaching station divided by the state guidelines for in-classroom square-footages per student)
- 28 Maximum class size (# students), regardless of room size.
- 67% the desired utilization factor (classrooms used 6 of 9 periods/day).

For the existing school, including portable classrooms, the calculated capacity is 1,060. The formula for calculating school capacity is:

Based on the actual classroom sizes at Hadley, the calculated average student capacity per classroom is 24 students.

$$\begin{array}{rcl} & \# \text{ of teaching stations} & \\ X & \# \text{ of students per class, to maximum} & \\ X & \text{utilization rate} & \\ = & \text{functional capacity} & \end{array}$$

66 X 24 X 67% = 1,060 students (with minor rounding)

Hypothetically, if all classrooms at Hadley were “right-sized”, then the student capacity would be approximately 1,240 students.

7.3.4 Hypothetical School Capacity

Hypothetically, if classrooms at Hadley averaged say 950 square feet, then they would support an average of 28 students each and the functional capacity would be:

66 X 28 X 67% = 1,240 students (with minor rounding)

7.4 Teaching Stations

Teaching stations (T.S.) are defined as learning environments that are regularly scheduled to support a class of students for core curriculum and elective courses. A wider definition than simply "classrooms", teaching stations include gymnasiums, music rooms, science labs, etc.

Classrooms for special programs are not typically included in teaching station counts because they are often pull-out programs and/or smaller class sizes which would skew the results. Requirements for special needs classrooms are determined primarily by the needs of the student population served. Therefore classrooms for special programs are in addition to the teaching station calculation.

Hadley Junior High School - Space Utilization Study Updates

The sum of regular and special programs requirements is included below. Note that current teaching station counts DO NOT include portable classrooms.

space:	required:	current:*	deficit:
Regular Ed Teaching Stations	64	54	10
Special Education Classrooms	9	9	-
Totals:	73	63	10

* Although 3 classrooms (special education) have been added since the 2007-08 report, a few classrooms have been converted to other uses (one example is the Media Creation Lab, a former teaching station, is now part of the Library Learning Center). Thus the total number of teaching stations within the permanent building totals 63.

Based on the above assumptions, 64 regular education teaching stations (including general classrooms, science, art, music, gymnasiums, etc.) are required. The current facility includes 54 teaching stations plus ten portable classrooms for a total of 64. Note that classroom counts for special programs are not accounted for in this calculation. The teaching station (T.S.) calculation is illustrated below:

$$\begin{array}{r}
 \frac{\text{total enrollment}}{\text{avg. classroom capacity}} \quad \times \quad \frac{\text{total periods/day}}{\text{\# periods T.S. is used}} \quad = \quad \text{number of T.S. required} \\
 \\
 \frac{1,200 \text{ students}}{24 \text{ students}} \quad \times \quad \frac{9 \text{ periods}}{6 \text{ periods}} \quad = \quad 64 \text{ teaching stations required}
 \end{array}$$

The above calculation, in comparison with the counts of existing classrooms illustrates the need for 10 additional classrooms. Hadley is currently meeting this need through portable classrooms in use on site.

7.5 Other Observations

7.5.1 Performing Arts

Hadley's current facility utilization includes a unique arrangement of facilities for music and performing arts. Movable partitions around the music rooms can open up to become the audience seating area for the auditorium. While this is an extraordinarily efficient use of square-footage, it is not optimal for either music instruction or performances, particularly due to the amount of equipment, instruments and instructional supports for music that need to be moved or otherwise secured during performances where audience seating is needed. Acoustics are also of concern in the music rooms.

Hadley Junior High School - Space Utilization Study Updates

While current music rooms are adequate in size, their educational and functional adequacy is challenged by the dual use of space.

7.5.2 Food Services

Hadley's current food services kitchen and cafeteria are nearly adequate in size, however, the location in the building (a lowered floor level) and location on the site for deliveries causes challenges. A more appropriate location and configuration for the cafeteria should be considered.

7.5.3 Future Expansion

The current site is relatively constrained for future development. Any additions to the existing building should consider leaving room for future classroom expansion(s).



Above: small, narrow science labs are crowded and lack space for hands-on activities. (photo taken 2/8/15)



Above: Music classrooms must find ways to protect instruments and equipment when area is needed for audience seating. (taken 2/8/15)

7.7 Recommendations for Addressing Facility Challenges

The following recommendations include diagrams which illustrate potential strategies for alleviating some of the space-related challenges at Hadley.

Diagrams are intended to illustrate possible room reassignments and functional relationships only. Further interpretation is required to accommodate staffing, budgeting and operational concerns, and to coordinate with all applicable building and life-safety codes and regulations.

Proposed strategies address the following concerns in various ways:

- Removing all portable classrooms
- Adding 10 teaching stations (whether general classrooms or science labs)
- Adding or enhancing science classrooms
- Clustering grade-level classrooms together
- Accommodating Special Needs programs
- Allowing space for potential future expansion

Optional areas addressed:

- Music & Performing Arts
- Cafeteria & Food Services

Teams

In the diagrams representing various recommendations, classrooms are noted by grade level and team. For example the designation, "8a" indicates a space for "8th Grade Team A". The quantities of classrooms and science labs per grade level team matches the current master schedule. In other words, no changes to team's quantity of spaces are proposed. All teams include one science lab.

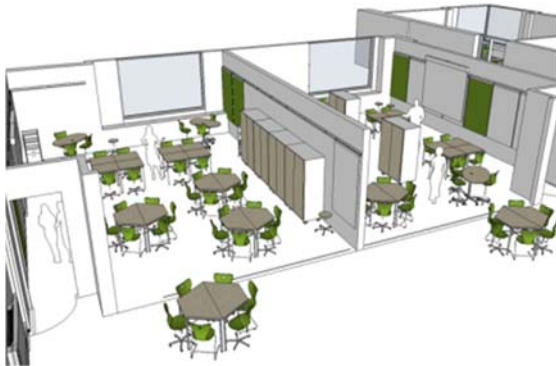
No Lower Level Changes Proposed

There are no recommended changes to spaces occupying the lower level of the building. Therefore, diagrams of the lower level are excluded in the following diagrams.

7.7.1 IDEA A

Overview:

Idea A illustrates a strategy for adding 10 teaching stations while also enhancing facilities for science. Four of the new teaching stations are shown as science labs which are larger than regular classrooms and include additional casework and equipment to support the science curriculum. The four new labs are centrally located with easy access to 6th and 7th grade classrooms. With new science labs serving 6th and 7th grades, the inadequate science labs in the 3-story portion of the building can be converted to regular classrooms, more suitable to the size and proportion for language arts, math social studies or even languages.



Example layout of new 21st century learning environments

Achievements:

- Six 8th grade classrooms are added to replace portables.
- Four new science labs are added, 2 each for 6th and 7th grades.
- 7th grade classrooms occupy the entire 2nd floor.
- 7th grade gets 2 new science labs.
- Four 7th grade classrooms are reassigned to 8th grade, creating more contiguous 8th grade area of the building.
- Locating 4 new science labs more central to the building (as opposed to locating them where current portables are) allows for new facilities to be easily accessed by 7th and 8th graders.
- By locating 4 new labs more central to the building, only six new classrooms need to be constructed on the west to replace portables. This allows land area for future classroom expansion on the site.

Remaining Challenges:

- One 6th grade team does not get a new science lab (Room 170 remains a lab for team "6a").
- The music/performing arts area remains unchanged in this option, meaning that challenges in this area are not addressed.
- The cafeteria / food service area remains unchanged in this option, meaning that challenges in this area are not addressed.
- Lower level remains unchanged, even though there are technical challenges, such as flooding, that cause challenges in the area.

Hadley Junior High School - Space Utilization Study Updates

7.7.2 IDEA B

Overview:

Idea B illustrates a strategy for adding 10 teaching stations while also enhancing facilities for science. Six of the new teaching stations are shown as science labs which are larger than regular classrooms and include additional casework and equipment to support the science curriculum. The six new labs are centrally located with easy access to all grade levels. With new science labs proposed, the inadequate science labs in the building can be converted to regular classrooms, more suitable to the size and proportion for language arts, math social studies or languages.



Example design of new 21st century Science Labs

Idea B also proposes to reconfigure the existing kitchen and lunchroom into music facilities, including sound-controlled enclosed rooms for band, orchestra, general music as well as teacher support space and storage for instruments, music, and uniforms.

In the current performing arts area, the audience floor area can be leveled to accommodate a new lunchroom/cafeteria space as well as a kitchen with easy access for deliveries. The floor space of the lunch room can still serve as audience seating as needed for events and performances.

Achievements:

- Ten classrooms replace 10 portables:
 - Two 8th grade classrooms
 - Six new science labs (on 2 floors)
 - Two support classrooms (ELL & G.I.P)
- 7th grade classrooms and science labs are clustered together on the 2nd floor.
- 7th grade classrooms currently on the 1st floor are reassigned to 8th grade, creating more contiguous 8th grade area of the building.
- Locating 6 new science labs more central to the building (as opposed to locating them where current portables are) allows for new facilities to be easily accessed by all grades.
- Locating 8 new classrooms central to the building allows a large amount of land now occupied by portables to remain open for future classroom expansion on the site.
- Relocating music rooms to the existing food services area alleviates challenges of joint use with the auditorium.
- Relocating the food services/cafeteria to share space with the auditorium minimizes challenges of joint use space while also allowing easier access of deliveries to the kitchen.

Hadley Junior High School - Space Utilization Study Updates

7.7.3 IDEA C

Overview:

Idea C illustrates a strategy for adding 10 teaching stations while also enhancing facilities for science. Four of the new teaching stations are shown as science labs which are larger than regular classrooms and include additional casework and equipment to support the science curriculum. The four new labs are centrally located with easy access to 6th and 7th grades. With new science labs proposed, four of the inadequate science labs in the building can be converted to regular classrooms, more suitable to the size and proportion for language arts, math social studies or languages.



Example layout of 21st century classroom

Idea B also proposes to reconfigure the existing kitchen and lunchroom into music facilities, including sound-controlled enclosed rooms for band, orchestra, general music as well as teacher support space and storage for instruments, music, and uniforms.

In the current performing arts area, the audience floor area can be leveled to accommodate a new lunchroom/cafeteria space as well as a kitchen with easy access for deliveries. The floor space of the lunch room can still serve as audience seating as needed for events and performances.



Example layout of Band Room

Achievements:

- Ten classrooms replace 10 portables:
 - Six 8th grade classrooms
 - Four new science labs (on 1 floor)
- 7th grade classrooms are clustered together on the 2nd floor, with only 2 science labs located on the 1st floor.
- 7th grade classrooms currently on the 1st floor are reassigned to 8th grade, creating more contiguous 8th grade area of the building.
- Locating 4 new science labs more central to the building (as opposed to locating them where current portables are) allows for new facilities to be easily accessed by 6th and 7th graders.
- The new science labs occupy a 1-story addition, allowing potential natural light into the music rooms
- Locating 6 new classrooms in the configuration shown allows a large amount of land now occupied by portables to remain open for future classroom expansion on the site.
- Relocating music rooms to the existing food services area alleviates challenges of joint use with the auditorium.
- Relocating the food services/cafeteria to share space with the auditorium minimizes challenges of joint use space while also allowing easier access of deliveries to the kitchen.

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