June 18, 2010

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FROM: Morris Mikkelsen

SUBJECT: FACILITY ASSESSMENT AND PRELIMINARY BUILDING CONCEPT  
         STATEWIDE RESEARCH AND DEVELOPMENT SCHOOL

We are forwarding a copy of the Facility Assessment and Preliminary Building Concept for a Statewide Research and Development School that has been prepared by the consulting firm, Perkins and Will.

A CD with this same information is also being transmitted to the President's Office and a CD will remain in Facilities Planning.

SF470 Legislation required that a facility study be completed of Price Laboratory School and this document has been prepared to fulfill that request.
EXISTING FACILITY ASSESSMENT
and Preliminary Building Concepts for a
Statewide Research and Development School

June 15, 2010
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</table>
Introduction

The purpose of this study was to evaluate the long-term facility needs and facility costs for Malcolm Price Lab School (MPLS), which will become a Statewide Research and Development School.

The main focus of the study was to evaluate the costs and benefits of new construction versus renovation of the existing building. The question for this study became: would it be better to build a new research and development school than to renovate the existing Malcolm Price Laboratory School? This question of the study had multiple facets that needed to be addressed, including the required size and configuration of the school, the educational and environmental qualities required for the school, and the costs.

In order to understand what would be included in the building of the future, the planners and staff went through a process called space programming. The existing school was evaluated in terms of space utilization. All rooms in the existing building were listed in terms of area. The group then evaluated whether each room in the building was functioning adequately for its current and future intended use. In some cases, rooms were thought to be adequate in size and quantity. In other cases rooms were thought to be inadequate in either size or quantity or both. While the capacity of the school is not planned to increase beyond the current size of a two section K-12 school, a number of areas require additional space in order to accomplish their mission. Overall the total programmed area proposed for a new school did not grow beyond the existing area. A complete proposed space program is included.

In addition to accounting for the area of each of the building functions, the staff and planners discussed the desired organizational qualities and functional relationships for a more ideal new Statewide Research and Development School. While more abstract in nature and more difficult to quantify in dollars, the space organization and flow in a new school will have an enormous impact on the effectiveness of the learning environment, and must be seriously considered when evaluating options of a new building and a renovation option. Qualities such as identity by learning community or grade level that are lacking in the existing building were thought to be important for new and improved version of the school. This reinforced the need for some additional spaces and functions beyond those in the existing building, as well as idealized layouts.

After the space program was completed, two building concept options were developed for improvement of the school. A renovation option proposes to renovate and add on to the academic area of the existing school to meet the program, code and environmental requirements. A new construction option proposes to demolish the existing academic area of the school and to replace it with new construction to meet the needs identified in the space program. For each option, a sustainability assessment and preliminary budget were estimated and are included.
Project Goals

Goals of Study

• Define the physical space needs of the Malcolm Price Laboratory School.
• Identify the amount of space currently utilized by the school.
• Identify the physical challenges of the existing space to the educational process of the school.
• Create a model space program that matches the educational needs of a statewide research and development school, both for present and for 20-30 years into the future.
• Identify the ideal functional and organizational relationships for the school.
• Evaluate the costs of building new space to meet the needs identified for a statewide research and development school.
• Evaluate the costs of renovating the existing space to meet the needs identified for a statewide research and development school.
• Evaluate the costs and potential for achieving Leadership in Energy and Environmental Design (LEED) certification for both renovation and new construction options.

Educational Goals

• Provide a high quality learning and teaching environment in order to fulfill the mission of a statewide research and development school.
• Improve the quality of and configuration of space to allow innovative teaching methods and flexibility for changing learning processes.
• Provide a variety of learning settings for students and teachers.
• Integrate learning technologies throughout the facility.
• Maintain current enrollment capacity.
• Improve learning facilities for University of Northern Iowa (UNI) students.

Environmental Goals

• Make the building accessible as required by the American with Disabilities Act (ADA).
• Provide proper indoor air quality.
• Provide higher quality, energy efficient lighting throughout the building.
• Provide adequate heating, ventilation and air conditioning, with adequate temperature control throughout the building.
• Provide adequate waste and supply plumbing.
• Provide adequate electrical power to support current and future needs.
Existing Facility Assessment

Malcolm Price Lab School was constructed in three phases: 1953, 1955, and 1957. The building was innovative and well-designed for its original use. The classrooms are adequately sized. The staff offices are a feature seldom found in comparable schools, and are well-integrated with the classrooms. The classrooms for the primary grades are currently organized in an open, flexible manner that supports teams of students and staff. The upper grade classrooms are organized along double-loaded corridors, as self-contained individual units, and are not organized by group or grade level.

There are many aspects of the building that are less than adequate for a modern educational facility. Even with regular maintenance and periodic remodeling, the building is showing signs of aging. Some of the usable spaces are undersized. The educational delivery is being negatively affected by the limitations of the building. Following are plan diagrams showing the organization of the existing facility and a list of specific shortcomings.

Table 1: Existing Facility Area Summary

<table>
<thead>
<tr>
<th>Spaces</th>
<th>T.S.*</th>
<th>Students</th>
<th>Net Area (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Development Center</td>
<td>4</td>
<td>52</td>
<td>3,148</td>
</tr>
<tr>
<td>Elementary School (K-5)</td>
<td>12</td>
<td>216</td>
<td>12,466</td>
</tr>
<tr>
<td>Middle School (6-8)</td>
<td>9</td>
<td>126</td>
<td>5,695</td>
</tr>
<tr>
<td>High School (9-12)</td>
<td>9</td>
<td>162</td>
<td>8,496</td>
</tr>
<tr>
<td>Shared Learning Spaces</td>
<td>5</td>
<td></td>
<td>9,244</td>
</tr>
<tr>
<td>Administration</td>
<td></td>
<td></td>
<td>6,147</td>
</tr>
<tr>
<td>Public Areas</td>
<td></td>
<td></td>
<td>8,591</td>
</tr>
<tr>
<td>Library/Media Center</td>
<td></td>
<td></td>
<td>4,000</td>
</tr>
<tr>
<td>Music</td>
<td>3</td>
<td></td>
<td>4,658</td>
</tr>
<tr>
<td>Drama and Performance Arts</td>
<td>1</td>
<td></td>
<td>8,752</td>
</tr>
<tr>
<td>Building Support</td>
<td></td>
<td></td>
<td>11,946</td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
<td></td>
<td>37,470</td>
</tr>
<tr>
<td>Capacity (PK-12 only @ 18 students/classroom)</td>
<td>34</td>
<td>556</td>
<td>120,613</td>
</tr>
</tbody>
</table>

*T.S. = Teaching Stations
The following areas are undersized or non-existent in the existing building:

- Receiving Area (figure 1a)
- Project Spaces (non-existent) (figure 2a)
- Early Childhood Classrooms (non-existent) (figure 3a)
- Student Commons (undersized) (figure 4a)
- Swimming Pool (undersized for competitions) (figure 5a)
- Faculty offices (undersized) (figure 6a)
- Cafeteria / Food Service (undersized with poor location) (figure 7a)
- Storage (undersized) (figure 8a, 9a)
- Team Resource Spaces (non-existent)
- Small Group Spaces (non-existent)
- UNI student classrooms / seminar rooms (non-existent)
As a K-12 school, the school is well integrated. Students of all ages mix in many areas of the building. This is a source of pride and identity in the school that all of the students recognize and respect each other. However, there is also no sense of hierarchy or identity about the groups within the existing building (figure 1b, 2b). Making an identifiable area for the Child Development Center (CDC), elementary, middle and high school areas is not possible with the present organization of space.

The classroom configuration of this building is architectural rather than educational. The majority of classrooms are laid out along efficient double-loaded corridors. Most of the learning spaces are traditional classrooms, without a great deal of flexibility. This layout has worked well for mostly self-contained classrooms grouped by grade level or subject (figure 3b). The layout does not allow much variety of learning settings or group sizes. Learning activities that include the use of group work, project work and technology resources are not facilitated by the organization of spaces (figure 4b, 5b).
Existing Facility: Circulation

Consistent with the double loaded corridor layout of the classrooms, the circulation within the existing building has a long, linear nature (figure 3c). Traffic tends to flow through adjacent areas of the building to get to common shared areas (figure 4c). The elementary students from the south side of the building need to go through the middle and high school areas to get to the library and to the gymnasium (figure 1c, 2c). High school students pass through the lower level grade levels to get to the cafeteria.

Without any overflow space from the classrooms, student often use the corridors for all kinds of activities such as seating, waiting, and reading (figure 5c). Congestion and noise occur as a result of the corridor traffic conflicts.
Existing Facility: Technology

Teachers would like to incorporate the use of LED projectors and smart boards into the classrooms (figure 1d, 2d). These technologies could be retrofitted into the existing building as part of the renovation or provided in the new building options.

There is also a need for video networking in the building for videotaping teaching and learning activities to evaluate student teachers and to demonstrate best practices in the classroom. This would allow the videotaping and sending of video signals to and from many if not all classrooms. It would also allow videotaped events to be broadcast to other classrooms and seminar buildings.

There are several computer labs within the building that have been upgraded and are functioning well. In the future building, it is planned that computer use would be more dispersed, personal with the use of laptops and integrated into classrooms and shared resource areas (figure 3d, 4d, 5d, 6d).

The current building infrastructure is stretched beyond its limits to support new instructional technology (figure 7d). The electrical system is under capacity and needs to be upgraded significantly to support current and expanded use of computers and other technologies in the school (figure 8d).

Some existing computer stations are not conveniently located (figure 9d).

FIGURE 1d: Video networking and smart boards are needed additions to the classroom environment.

FIGURE 2d: Video projection equipment is not integrated in the classroom setup.

FIGURE 3d: The use of dispersed technology needs to be increased.

FIGURE 4d: Teacher computer stations are located wherever they fit.

FIGURE 5d: Some computer classrooms have lack of proper integrated furniture.

FIGURE 6d: Data and electric hookups are not integrated in the facility.

FIGURE 7d: The network infrastructure has been added to over the years and needs to be more efficient.

FIGURE 8d: The current technology capacity is limited due to inadequate electrical capacity.

FIGURE 9d: Computer stations are not conveniently located.
Existing Facility: Interior Spaces

Many interior and exterior walls are in need of repair (figure 1e, 2e, 3e).

An asbestos survey has been conducted and abatement will need to be completed prior to any construction work. There are materials present in the facility that are commonly found to contain asbestos:

- The 9” x 9” floor tile present throughout the facility (figure 4e)
- Plaster especially in the older sections (figure 5e)
- Pipe insulation (figure 6e)

Moisture problems need to be evaluated. (figure 7e, 8e, 9e).
Existing Facility: Life Safety Code Issues

The current building code requires installation of a sprinkler system in all E-1 Educational Occupancies. The existing building is currently not sprinklered.

The existing corridors require improved fire ratings at all doors and stairs.

All corridor walls and doors do not provide the required fire rating for an educational facility (figure 1f).

Fire separation partitions and doors at the stairs need improved fire ratings (figure 2f).

Exit door restrictions include (figure 3f, 4f):
• Rooms that are over 1000 sq. ft. require 2 exits that are spaced more than half the distance of the diagonal of the room.
• Labs using hazardous chemicals require 2 exits.

Fire ratings must continue to the exterior for life safety exiting requirements (figure 5f).

Due to existing long corridors, all current stair locations would need to be retained if the facility was renovated to comply with exit travel distance restrictions and dead-end corridor codes. (figure 6f.)
Existing Facility: Accessibility Issues

Not all of the exterior doors are accessible (figure 1g).

Many interior doors are not wheelchair accessible (figure 2g, 3g).

Many drinking fountains are not wheelchair accessible (figure 4g).

The current toilet facilities do not meet current accessibility code standards (figure 5g).

Some teaching stations are not wheelchair accessible and do not meet current accessibility code standards (figure 6g).

The current handrail and guardrail design at the stairs do not meet ADA requirements (figure 7g, 8g, 9g).
Existing Facility: Exterior Envelope Issues

All of the windows need to be replaced throughout the entire facility due to condition and lack of insulated glass and frame properties (figure 1h, 2h).

The exterior walls appear to be un-insulated masonry which may hinder its overall energy efficiency. Areas of brick and stonework throughout the entire facility need to be tuck-pointed (figure 3h, 4h, 5h, 6h).

Exterior caulking and joint sealant needs to be replaced in many areas (figure 7h).

The condition of the roof membrane is adequate from a visual inspection. The condition of some of the roof coping does not demonstrate the use of current building systems and techniques (figure 8h).

Evidence of moisture issues and staining seen on the exterior brick (figure 9h).

Areas of exterior trim need to be painted.
Existing Facility: Mechanical & Electrical Issues

What little cooling capabilities exists is through window mounted air-conditioning units (figure 1j).

There is a need for improved lighting quality and the use of efficient lighting technologies (figure 2j).

There is a general lack of code-required amount of mechanical ventilation (figure 3j).

There is a lack of adequate temperature control to the classrooms (figure 4j, 5j).

The existing mechanical equipment and controls are out-of-date and are both ineffective and inefficient (figure 6j, 7j, 8j). The facility does not have access to a central chilling plant and is connected to the university steam distribution system.

There is a great need for an increased capacity of the electrical power distribution system. The current distribution system is not adequate and cannot accommodate any future needs capacity (figure 9j).

FIGURE 1j: The building's cooling system is through window mounted AC units.

FIGURE 2j: Inadequate and inefficient artificial lighting systems.

FIGURE 3j: Evidence of mechanical deficiencies and need for maintenance.

FIGURE 4j: Mechanical systems need repair and lack adequate controls.

FIGURE 5j: Building mechanical systems are not capable of building automation and intelligent control.

FIGURE 6j: Existing mechanical equipment is out-of-date and requires an upgrade.

FIGURE 7j: Existing mechanical equipment is out-of-date and requires an upgrade.

FIGURE 8j: Existing mechanical equipment is out-of-date and requires an upgrade.

FIGURE 9j: Existing electrical system is out-of-date and inadequate.
Programmatic Components

The existing program of the model research and development school was evaluated on its current functionality and future expansion abilities. In some cases, rooms were thought to be adequate in size and quantity while others were thought to be inadequate in either size or quantity or both. While the capacity of the school is not planned to increase beyond the current size of a two section K-12 school, a number of areas require additional space in order to successfully integrate the main functions of a statewide research and development school. An example would be the Child Development Center (CDC) which grew by 8,000 sq. ft. Even though additional program spaces were added, some spaces were reduced such as dedicated computer labs. Overall the total area proposed for the new school did not grow beyond the existing area. This is due to optimizing the programmed areas while still allowing for growth in the learning areas with larger classrooms. A summary space program is shown below with supplemental detailed area breakdowns in the following pages.

Table 2 - New Program Area Summary with Comparison to the Existing Program

<table>
<thead>
<tr>
<th>Spaces</th>
<th>T.S.</th>
<th>Students</th>
<th>Proposed Net Area (SF)</th>
<th>Existing Net Area (SF)</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Development Center</td>
<td>10</td>
<td>140</td>
<td>11,620</td>
<td>3,148</td>
<td>369%</td>
</tr>
<tr>
<td>Elementary School (K-5)</td>
<td>12</td>
<td>216</td>
<td>16,450</td>
<td>12,466</td>
<td>32%</td>
</tr>
<tr>
<td>Middle School (6-8)</td>
<td>7</td>
<td>126</td>
<td>10,110</td>
<td>5,695</td>
<td>178%</td>
</tr>
<tr>
<td>High School (9-12)</td>
<td>7</td>
<td>126</td>
<td>10,630</td>
<td>8,496</td>
<td>25%</td>
</tr>
<tr>
<td>Shared Learning Spaces</td>
<td>3</td>
<td>54</td>
<td>6,240</td>
<td>9,244</td>
<td>68%</td>
</tr>
<tr>
<td>Administration / Faculty</td>
<td></td>
<td></td>
<td>5,530</td>
<td>6,147</td>
<td>10%</td>
</tr>
<tr>
<td>Public Areas</td>
<td></td>
<td></td>
<td>12,300</td>
<td>8,591</td>
<td>43%</td>
</tr>
<tr>
<td>Library/Media Center</td>
<td></td>
<td></td>
<td>4,200</td>
<td>4,000</td>
<td>5%</td>
</tr>
<tr>
<td>Music</td>
<td>4</td>
<td>88</td>
<td>5,660</td>
<td>4,658</td>
<td>22%</td>
</tr>
<tr>
<td>Drama and Performance Arts</td>
<td></td>
<td></td>
<td>5,700</td>
<td>8,752</td>
<td>65%</td>
</tr>
<tr>
<td>Building Support / Storage</td>
<td></td>
<td></td>
<td>9,670</td>
<td>11,946</td>
<td>81%</td>
</tr>
<tr>
<td>New Capacity (PK-12 only @ 18 students/classroom)</td>
<td>36</td>
<td>608</td>
<td>98,110</td>
<td>83,143</td>
<td>18%</td>
</tr>
</tbody>
</table>

*T.S. = Teaching Stations
Programmatic Growth Capacity

Model research and development schools historically have a higher square foot per student ratio than a typical K-12 school. In many cases, a typical K-12 school will have overlapping programs in a space due to budget, teacher and/or space limitations. This overlap is detrimental to a successful model research and development school since the four guiding functions are to test, model, determine and share effective instructional practices and techniques. These functions can be compromised by a lack of adequate teaching and learning space.

To optimize the functional requirements of a new statewide research and development school and to provide for potential future growth of the student population, the new program increases the typical classroom size from 750 square feet to 900-1200 square feet. This area increase allows for greater curriculum flexibility and enhanced instructional practices while allowing the facility to comfortably contain future student growth (Table 3).

Table 3 - Classroom Capacities for Future Facility Growth

<table>
<thead>
<tr>
<th>Classroom Size Projections for Future Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students per Classroom</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Child Development Center (14 students max)</td>
</tr>
<tr>
<td>Elementary School (K-5)</td>
</tr>
<tr>
<td>Middle School (6-8)</td>
</tr>
<tr>
<td>High School (9-12)</td>
</tr>
<tr>
<td>Total Students</td>
</tr>
<tr>
<td>New Square Foot (1) per Student</td>
</tr>
<tr>
<td>Current Square Foot (2) per Student</td>
</tr>
<tr>
<td>(1) New Construction Gross Area (5F)</td>
</tr>
<tr>
<td>(2) Existing Gross Area (5F)</td>
</tr>
<tr>
<td>(3) Existing Student Population @ 18 students per classroom</td>
</tr>
</tbody>
</table>

The following section provides a numerical breakdown of each major program proposed for the preliminary building concepts. Graphical representations are also used to compare to scale the relative sizes of each program component and how the major program groups may be organized to enhance collaboration, community and identity.
### Table 4 - Child Development Center Program

<table>
<thead>
<tr>
<th>Spaces</th>
<th>T.S.</th>
<th>Students</th>
<th>No.</th>
<th>T.S.</th>
<th>Students</th>
<th>Area (SF)</th>
<th>Subtotal (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom</td>
<td>1</td>
<td>14</td>
<td>3</td>
<td>3</td>
<td>42</td>
<td>600</td>
<td>1,800</td>
</tr>
<tr>
<td>Staff Office</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Storage</td>
<td>3</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>Restroom</td>
<td>3</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,220</td>
</tr>
<tr>
<td><strong>Toddler</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom</td>
<td>1</td>
<td>14</td>
<td>3</td>
<td>3</td>
<td>42</td>
<td>600</td>
<td>1,800</td>
</tr>
<tr>
<td>Staff Office</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Storage</td>
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<td>50</td>
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<td></td>
<td>100</td>
</tr>
<tr>
<td>Restroom</td>
<td>2</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
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<td></td>
<td></td>
<td>2,220</td>
</tr>
<tr>
<td><strong>2-3 Year Olds</strong></td>
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</tr>
<tr>
<td>Classroom</td>
<td>1</td>
<td>14</td>
<td>2</td>
<td>2</td>
<td>28</td>
<td>900</td>
<td>1,800</td>
</tr>
<tr>
<td>Staff Office</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Storage</td>
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<td></td>
<td>50</td>
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<td></td>
<td>100</td>
</tr>
<tr>
<td>Restroom</td>
<td>2</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
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* T.S. = Teaching Stations

---

**Diagram:**

- Infants
- Toddlers
- 2-3 Year Olds
- 3-5 Year Olds
- Shared Areas

**Legend:**
- Classroom
- Storage
- Restroom
- Staff Office
### Table 5 - Elementary School (K-5) Program

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*T.S. = Teaching Stations
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*T.S. = Teaching Stations
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*T.S. = Teaching Stations
Table 8 - Shared Learning Labs Program

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*T.S. = Teaching Stations
Table 9 - Administration Program

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### Table 10 - Community Space Program

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<td>Area (SF)</td>
<td>Subtotal (SF)</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----</td>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td>Library/Media Center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library/Reading/Study Area</td>
<td>1</td>
<td>1,100</td>
<td>1,100</td>
</tr>
<tr>
<td>Books/Periodicals</td>
<td>1</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Reference/Circulation</td>
<td>1</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Computer Lab</td>
<td>1</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Tech Production Workroom</td>
<td>1</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Staff Workroom/Office</td>
<td>1</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Storage</td>
<td>1</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Tech Production Storage</td>
<td>1</td>
<td>150</td>
<td>150</td>
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<tr>
<td><strong>Grand total</strong></td>
<td></td>
<td></td>
<td><strong>4,200</strong></td>
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</table>
### Table 12 - Physical Education Program

<table>
<thead>
<tr>
<th>Spaces</th>
<th>No.</th>
<th>T.S.</th>
<th>Students</th>
<th>Area (SF)</th>
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<tbody>
<tr>
<td>Physical Education Spaces</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Gymnasium (exist.)</td>
<td>1</td>
<td></td>
<td>17,377</td>
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</tr>
<tr>
<td>Main Pool</td>
<td></td>
<td></td>
<td>801</td>
<td></td>
</tr>
<tr>
<td>Kid's Pool (to be repurposed)</td>
<td>1</td>
<td></td>
<td>1,057</td>
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<tr>
<td>Gymnasium Lobby (exist.)</td>
<td>1</td>
<td></td>
<td>1,839</td>
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<tr>
<td>Gymnasium Storage (exist.)</td>
<td>7</td>
<td></td>
<td>21,114</td>
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</tr>
<tr>
<td>Physical Education Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Locker Room (exist.)</td>
<td>1</td>
<td></td>
<td>828</td>
<td></td>
</tr>
<tr>
<td>Men's Locker Room (exist.)</td>
<td>1</td>
<td></td>
<td>2,837</td>
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<tr>
<td>Women's Locker Room (exist.)</td>
<td>1</td>
<td></td>
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<tr>
<td>Public Toilet Room</td>
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<tr>
<td>Concessions</td>
<td>1</td>
<td></td>
<td>234</td>
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</tr>
<tr>
<td>Office/Staff Lockers (exist.)</td>
<td>5</td>
<td></td>
<td>994</td>
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<tr>
<td>PE Classroom (exist.)</td>
<td>1</td>
<td>1</td>
<td>18</td>
<td>789</td>
</tr>
<tr>
<td>Aerobics Classroom (exist.)</td>
<td>1</td>
<td>1</td>
<td>18</td>
<td>789</td>
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<tr>
<td>Weights/Fitness Room (exist.)</td>
<td>1</td>
<td>1</td>
<td>18</td>
<td>1,695</td>
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<tr>
<td>Grand total (net)</td>
<td>3</td>
<td>54</td>
<td>33,470</td>
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<tr>
<td>Grand total (gross)</td>
<td>3</td>
<td>54</td>
<td>40,537</td>
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</table>

*T.S. = Teaching Stations
Table 13 - Music Education Program

<table>
<thead>
<tr>
<th>Spaces</th>
<th>T.S.</th>
<th>Students</th>
<th>No.</th>
<th>T.S.</th>
<th>Students</th>
<th>Area (SF)</th>
<th>Subtotal (SF)</th>
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<tr>
<td>Music</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Band Rehearsal</td>
<td>1</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>18</td>
<td>1,400</td>
<td>1,400</td>
</tr>
<tr>
<td>General Music Room</td>
<td>1</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>18</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Orchestra Rehearsal</td>
<td>1</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>18</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Vocal Music</td>
<td>1</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>18</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Ensemble Room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
<td>300</td>
</tr>
<tr>
<td>Practice Room</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>80</td>
</tr>
<tr>
<td>Staff Office</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>Storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>160</td>
</tr>
<tr>
<td>Instrument Storage</td>
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<td>Grand total</td>
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*T.S. = Teaching Stations
Table 14 - Drama and Performance Arts Program

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</thead>
<tbody>
<tr>
<td><strong>Drama</strong></td>
<td></td>
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</tr>
<tr>
<td>Costume Storage</td>
<td>1</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Drama Classroom</td>
<td>1</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,400</td>
</tr>
<tr>
<td><strong>Performance Area</strong></td>
<td></td>
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</tr>
<tr>
<td>Stage</td>
<td>1</td>
<td>2,500</td>
<td>2,500</td>
</tr>
<tr>
<td>Control/Lighting/ Sound Room</td>
<td>1</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Dressing Rooms/ Restrooms</td>
<td>2</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Prop/Scene/ Costume Storage</td>
<td>1</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Scene/Project Shop</td>
<td>1</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4,300</td>
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<tr>
<td><strong>Grand total</strong></td>
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<td>5,700</td>
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</table>
### Table 15 - Building Support / Storage Program

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<th>Area (SF)</th>
<th>Subtotal (SF)</th>
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</thead>
<tbody>
<tr>
<td>Building Support</td>
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<td></td>
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<tr>
<td>Facilities Office</td>
<td>1</td>
<td>120</td>
<td>120</td>
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<tr>
<td>Receiving</td>
<td>1</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Workshop/Shop</td>
<td>1</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Building Maintenance Supplies</td>
<td>1</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>General Building Storage</td>
<td>2</td>
<td>500</td>
<td>1,000</td>
</tr>
<tr>
<td>Mechanical Equipment Rooms</td>
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<td>1,500</td>
<td>6,000</td>
</tr>
<tr>
<td>Electrical Service</td>
<td>1</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Communications</td>
<td>4</td>
<td>50</td>
<td>200</td>
</tr>
<tr>
<td>Custodial</td>
<td>4</td>
<td>75</td>
<td>300</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td></td>
<td></td>
<td><strong>9,670</strong></td>
</tr>
</tbody>
</table>
### Table 16 - Exterior Physical Education Program

<table>
<thead>
<tr>
<th>Spaces</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior Physical Education</td>
<td></td>
</tr>
<tr>
<td>CDC Playground</td>
<td>1</td>
</tr>
<tr>
<td>K-5 Playground</td>
<td>1</td>
</tr>
<tr>
<td>Basketball Court</td>
<td>2</td>
</tr>
<tr>
<td>Football/Soccer/Practice Field</td>
<td>1</td>
</tr>
<tr>
<td>Tennis Court</td>
<td>2</td>
</tr>
</tbody>
</table>
Preliminary Building Concepts

Two building concept options were developed to facilitate the expansion of the existing Malcolm Price Laboratory School into a Statewide Research and Development School. The first option identified proposes to renovate and add on to the academic area of the existing school to meet the program, code and environmental requirements. The second option proposes to demolish the existing academic area of the school and to replace it with new construction to meet the needs identified in the space program.

Each option was given equal opportunity to address the inclusion of the new program requirements, adhere to the current life safety, building and accessibility codes while achieving the mandatory sustainability goals established by the Board of Regents. While there are inherent limitations to the renovation option, each building concept includes these essential upgrades and improvements:

- The addition of an increased receiving area, cafeteria, CDC, commons and project areas;
- Technology upgrades facilitate the educational transition from dedicated computer labs to decentralized laptop use within the classroom space;
- Network infrastructure is upgraded to current technological standards;
- Interior finishes are upgraded for durability, sustainability, are procured from local facilities and made of regionally available materials when possible;
- Healthy interior finishes are used to reduce airborne toxins and promote high indoor environmental quality;
- All classrooms, corridors, and exit stair enclosures are constructed with code-compliant fire rated partitions while providing superior acoustic performance for an enhanced educational environment;
- All interior doors and glazed openings will be installed with the required fire ratings;
- All programmed spaces will adhere to the regulations in the American with Disabilities Act;
- The exterior envelope will use insulated glass window units along with high-performance wall assemblies to enhance thermal efficiency and promote high quality indoor spaces regarding air and daylight;
- The building will be equipped with an automatic fire sprinkler system;
- All areas of the building will be air-conditioned;
- The mechanical system will use a vertical closed loop geexchange system combined with ground source heat pumps to heat and cool the building. These systems are the most energy-efficient, environmentally clean, and cost-effective space conditioning systems available with a relatively short payback period;
- The electrical system will be completely upgraded to provide for current and future demand.

Preliminary site and plan diagrams were developed to illustrate how the building concepts are organized and how they may functionally address the expanded requirements of a Statewide Research and Development School.
Option: Renovation

DESCRIPTION
The renovation option proposes to retain and renovate the entire academic area, athletic facility and auditorium. The gymnasium is relatively new, having been reconstructed after a fire in 1995, and would be retained in its entirety with no planned renovation. This option proposes to repurpose the swimming pool area for the academic program and also proposes to add a small addition for a new commons and second level media center.

EDUCATIONAL ORGANIZATION
• The fundamental organization of the teaching areas would largely remain as currently organized due to the physical constraints of the building footprint.
• Each grade level would have non-centralized project/team areas for interdisciplinary opportunities.

SUSTAINABILITY
(See Sustainability section for more detail)
The renovation option could safely achieve LEED Silver certification using LEED for Schools 2009. Due to the embedded spatial restrictions of the existing building, higher levels of sustainability/efficiency could only be achieved with a higher cost. By reusing 75% of the existing structure, this option would have an additional LEED point (MRc1.1) available that the new construction option would not have available.

BENEFITS
• The remodeling and renovation of the existing facility could be done incrementally over several years. Heavy and invasive construction could be done during summer months when the facility is less occupied or not in session.
• The existing superstructure could largely be reused since the basic structure appears to be very sound.

CONSTRAINTS
• Many of the current room and room sizes would need to remain in their current configuration due to the building's narrow floor width.
• The fundamental circulation pattern would remain largely as it exists in order to reuse the existing structure.
• Most of the existing rooms would need to be entirely demolished down to bare structure and remodeled to meet current life safety, building and accessibility codes.
• Completely new above ceiling mechanical ductwork would have to be installed for the required heating, cooling, and ventilation systems along with a required fire sprinkler system and electrical distribution lines.
• The corridors would need to be completely redesigned since the current doorways do not meet ADA regulations. This will decrease the available area in the corridors or in the classrooms either or which will be detrimental to the function of the school.
• Since the floor slabs and grade cannot be significantly modified, numerous ramps would need to added to each exit to comply with ADA regulations.
• If phasing the construction cannot be accomplished, off-site temporary facilities would need to be identified to accommodate a potential 2 year construction schedule. (estimated cost up to $2 million - not shown in preliminary budget)

PROJECT COST
(see Budget Section for detailed cost breakdown)
Estimated Project Cost: $30,070,354

AREA SUMMARY (square feet)

<table>
<thead>
<tr>
<th></th>
<th>Renovation</th>
<th>New Construction</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renovation</td>
<td>178,412</td>
<td></td>
<td>11,333</td>
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<tr>
<td>New Construction</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>189,745</td>
<td></td>
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</tr>
</tbody>
</table>
Option: New Construction

DESCRIPTION
The new construction option would demolish and reconstruct the entire academic area of the existing school. This option proposes to retain and renovate the athletic facility except for the swimming pool wing which will be repurposed for academic functions. The gymnasium is relatively new, having been reconstructed after a fire in 1995, and would be retained in its entirety with no planned renovation.

EDUCATIONAL ORGANIZATION
- Teaching areas such as the Child Development Center (CDC), elementary, middle, and high school are suited to provide identity and distinctiveness from the other teaching groups.
- Grade levels are grouped around centralized team/project areas for interdisciplinary opportunities.
- University classrooms are provided for each teaching area and are centrally located near a project area for collaboration and connectivity.
- Shared areas such as the library/media center, commons and cafeteria would be centrally located providing community and identity. This reduces the amount of traffic through grade levels and provides for a quieter and more productive learning environment.

SUSTAINABILITY (See Sustainability section for more detail)
The new construction option could safely achieve LEED Silver certification using LEED for Schools 2009. Due to more opportunities inherent to new construction, higher levels of sustainability/efficiency could be achieved with little to no cost increase.

BENEFITS
- The academic area of the building would be designed specifically to support the current and future educational vision of the Statewide Research and Development School.
- All of the classrooms areas of the building would be of new construction which would immediately be compliant with current life safety and accessibility codes and standards.
- The floor levels could be adjusted to align with the existing gym. floor levels to address accessibility issues.
- Ineffectively sized program & circulation areas within the existing facility would be constructed to proper size.
- The mechanical, electrical, plumbing and communications systems within the new construction would meet current codes, standards, efficiency and environmental standards at a lower cost than installing the same systems in the renovated space due to the difficulties in routing options within an existing structure.
- The building would have a longer life expectancy (50+ years).

CONSTRAINTS
- The construction would need to be planned as much as possible to avoid the existing facility. However, some portions of the building at the athletic facility would have to be demolished prior to the completion of the new building which could cause some significant challenges over a potential construction period of up to two years.
- Temporary entrances for the existing facility would need to be utilized during construction.
- The existing outdoor playfields, ball courts and playgrounds would be compromised due to construction activity so smaller and temporary structures would have to be used.

PROJECT COST (see Budget Section for detailed cost breakdown)
Estimated Project Cost: $31,012,783 (3% premium over renovation)
Sustainability Assessment

The sustainability options and opportunities were assessed for both renovation and new construction building options using the LEED 2009 for Schools-New Construction and Major Renovations rating system. Due to the amount of interior demolition and reconstruction and a complete systems upgrade, the renovation building option would use the same rating system as the new construction option.

Each option has the potential of achieving a Silver level LEED certification. This would comply with the Board of Regents mandate of ‘all major projects (new buildings and major capital renovations) initiated after April 1, 2009 shall meet or exceed the U.S. Green Building Council’s guidelines for silver level LEED certification.’ Developed by the U.S. Green Building Council (USGBC), ‘LEED is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.’

Key Sustainable Targets achievable by each option include the following:
• Reduced energy consumption by 30/36% (renovation/new) compared to standard K-12 schools;
• Reduced potable water use by 30% compared to standard K-12 schools;
• Divert +50% of construction waste from landfills;
• Use materials with high recycled content and/or are locally manufactured regional materials;
• Use Forest Stewardship Council (FSC) wood throughout the facility;
• Use energy efficient lighting and lighting systems combined with daylight sensors and dimming;
• Use U.S. EPA EnergyStar components or U.S. EPA WaterSense appliances;
• Conserve energy at its point of consumption through dynamic measurement and verification systems

Due to the inherent restrictions of using an existing building footprint and structure, the new construction option has great potential in achieving higher certification levels than the renovation option. The new building form affords more opportunities in developing the site, effectively integrating the stormwater design with the building, optimizing the use of materials with high recycled content in the buildings superstructure and interior and providing an acoustically superior environment for the faculty and students. There is also increased potential in embedding efficiencies into the building’s form, orientation and spatial organization which will continually boost the energy and water efficiency of the building. These efficiency improvements will increase the savings for the life of the building and potentially decrease the overall payback period.

**Sustainability: Renovation**

![LEED Schools Version 2009 PRELIMINARY Forecast - RENOVATION](image)

**LEED Schools Version 2009 PRELIMINARY Forecast - RENOVATION**

<table>
<thead>
<tr>
<th>Statewide Research and Development School</th>
</tr>
</thead>
<tbody>
<tr>
<td>$</td>
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<tr>
<td>17</td>
</tr>
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**Sustainable Sites**

<table>
<thead>
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<th>Credits</th>
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<td>4</td>
<td>Construction Activity Pollution Prevention</td>
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<tr>
<td>5</td>
<td>Environmental Site Assessment</td>
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</tr>
<tr>
<td>6</td>
<td>Site Selection</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Development Density &amp; Community Connectivity</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Brownfield Redevelopment</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Alternative Transportation, Public Transportation Access</td>
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</tr>
<tr>
<td>10</td>
<td>Alternative Transportation, Bicycle Storage &amp; Changing Rooms</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Alternative Transportation, Non-Emergent</td>
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</tr>
<tr>
<td>12</td>
<td>Site Development, Protect of Restore Habitat</td>
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</tr>
<tr>
<td>13</td>
<td>Site Development, Maximize Open Space</td>
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</tr>
<tr>
<td>14</td>
<td>Stormwater Design, Quantity Control</td>
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<tr>
<td>15</td>
<td>Water Quality and Quantity Management</td>
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<tr>
<td>16</td>
<td>Site Master Plan</td>
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<td>17</td>
<td>Joint Use of Facilities</td>
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**Water Efficiency**

<table>
<thead>
<tr>
<th>Credits</th>
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<tr>
<td>1</td>
<td>Water Use Reduction 20%</td>
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<tr>
<td>2</td>
<td>Water Efficient Landscaping, Reduce by 50% (2) 100% (4)</td>
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</tr>
<tr>
<td>3</td>
<td>Innovative Water Technologies</td>
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<tr>
<td>4</td>
<td>Water Use Reduction 30% (2) 55% (3) 40% (4)</td>
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</tr>
<tr>
<td>5</td>
<td>Process Water Use Reduction</td>
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**Energy & Atmosphere**

<table>
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<tbody>
<tr>
<td>1</td>
<td>Fundamental Commissioning of the Building Energy Systems</td>
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<tr>
<td>2</td>
<td>Minimum Energy Performance</td>
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</tr>
<tr>
<td>3</td>
<td>Fundamental Refrigerant Management</td>
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</tr>
<tr>
<td>4</td>
<td>Optimize Energy Performance 12% to 15% for new buildings, 5% for existing buildings</td>
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</tr>
<tr>
<td>5</td>
<td>On-Site Re Energy 1% (3) 2% (5) 3% (4)</td>
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</tr>
<tr>
<td>6</td>
<td>Enhanced Commissioning</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Enhanced Refrigerant Management</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Measurement &amp; Verification</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Green Power</td>
<td></td>
</tr>
</tbody>
</table>

**Materials & Resources**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Storage &amp; Collection of Recyclables</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Building Reuse, Maintain 5% of Existing Walls, Floors &amp; Roof</td>
<td>1 to 2</td>
</tr>
<tr>
<td>3</td>
<td>Building Reuse, Maintain 50% of Interior Non-Structural Elements</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Construction Waste Management, Divert 50% / 75% from Disposal</td>
<td>1 to 2</td>
</tr>
<tr>
<td>5</td>
<td>Materials Reuse, 5% / 10% Salvaged Materials</td>
<td>1 to 2</td>
</tr>
<tr>
<td>6</td>
<td>Recycled Content, 10% / 20% post-consumer + 1% pre-consumer</td>
<td>1 to 2</td>
</tr>
<tr>
<td>7</td>
<td>Regional Materials, 10% / 20% Extract, Process, Manufactured Regionally</td>
<td>1 to 2</td>
</tr>
<tr>
<td>8</td>
<td>Rapidly Renewable Materials 2 / 2 %</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Certified Wood 50%</td>
<td>1</td>
</tr>
</tbody>
</table>

**Financial Impact**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Minimum IAP Performance</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Environmental Tobacco Smoke (ETS) Control</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Minimum Acoustical Performance</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Outdoor Air Delivery Monitoring</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Increased Ventilation</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Construction IAQ Management Plan</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Construction IAQ Management Plan, Before Occupancy</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Low-Emitting Materials, Adh &amp; Seal, Paint, Floor, Composite Wood &amp; Ag</td>
<td>1 to 4</td>
</tr>
<tr>
<td>9</td>
<td>Low-Emitting Materials, Furniture and Furnishings</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Low-Emitting Materials, Ceiling and Wall Systems</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Indoor Chemical &amp; Pollutant Source Control</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Controllability of Systems, Lighting</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Controllability of Systems, Thermal Comfort</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Thermal Comfort, Design</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Thermal Comfort, Verification (1)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Daylight &amp; Views, Daylight 75% / 95% of Classroom Spaces</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Daylight &amp; Views, Daylight 75% Regular Space - 75% for Classrooms</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Daylight &amp; Views, Views for 90% of Spaces</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Enhanced Acoustical Performance</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Mold Prevention</td>
<td></td>
</tr>
</tbody>
</table>

**Innovation & Design Process + Regional Priority**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Innovation in Design, Green Education Center</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Innovation in Design, Low-Mercury Bulbs</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Innovation in Design, Green Educators</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Innovation in Design, Green Educators</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LEEED Accredited Professional</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>School as a Teaching Tool</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Regional Priority Credit 4.1</td>
<td>1 to 4</td>
</tr>
</tbody>
</table>

**Sustainability: Renovation**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SSc4.4: Parking Capacity</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SSc5: Site Development</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>MRc2: Constr. Waste Management</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>WEc3: Water Use Reduction</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>WEc4: Process Water Use Reduct.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>EA1: Fundamental Commission’s</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>EA1: Optimize Energy Perf.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>EA5: Measurement &amp; Verification</td>
<td></td>
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</tbody>
</table>

**Credit with Savings Potential**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Process Water Use Reduct.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Water Use Reduction 30% (2) 55% (3) 40% (4)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Low-Emitting Materials, Adh &amp; Seal, Paint, Floor, Composite Wood &amp; Ag</td>
<td>1 to 4</td>
</tr>
<tr>
<td>4</td>
<td>Low-Emitting Materials, Furniture and Furnishings</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Low-Emitting Materials, Ceiling and Wall Systems</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Indoor Chemical &amp; Pollutant Source Control</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Controllability of Systems, Lighting</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Controllability of Systems, Thermal Comfort</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Thermal Comfort, Design</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Thermal Comfort, Verification</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Daylight &amp; Views, Daylight 75% / 95% of Classroom Spaces</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Daylight &amp; Views, Daylight 75% Regular Space - 75% for Classrooms</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Daylight &amp; Views, Views for 90% of Spaces</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Enhanced Acoustical Performance</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Mold Prevention</td>
<td></td>
</tr>
</tbody>
</table>

**Additional points possible**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Process Water Use Reduct.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Water Use Reduction 30% (2) 55% (3) 40% (4)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Low-Emitting Materials, Adh &amp; Seal, Paint, Floor, Composite Wood &amp; Ag</td>
<td>1 to 4</td>
</tr>
<tr>
<td>4</td>
<td>Low-Emitting Materials, Furniture and Furnishings</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Low-Emitting Materials, Ceiling and Wall Systems</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Indoor Chemical &amp; Pollutant Source Control</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Controllability of Systems, Lighting</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Controllability of Systems, Thermal Comfort</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Thermal Comfort, Design</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Thermal Comfort, Verification</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Daylight &amp; Views, Daylight 75% / 95% of Classroom Spaces</td>
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</tr>
<tr>
<td>12</td>
<td>Daylight &amp; Views, Daylight 75% Regular Space - 75% for Classrooms</td>
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<td>13</td>
<td>Daylight &amp; Views, Views for 90% of Spaces</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Enhanced Acoustical Performance</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Mold Prevention</td>
<td></td>
</tr>
</tbody>
</table>

**Estimated point range**

- Silver: 50 to 59 points
- Gold: 60 to 79 points
- Platinum: 80+ points

**Certified: 40 to 49 points** Silver: 50 to 59 points Gold: 60 to 79 points Platinum: 80+ points

* Includes a 10% credit contingency for preliminary point forecasting

Statewide Research and Development School, University of Northern Iowa: Existing Facility Assessment and Preliminary Building Concepts

**June 15, 2010**

**PDRE**

**POTENTIAL CERTIFICATION LEVEL**

<table>
<thead>
<tr>
<th>Estimated point range</th>
<th>55-61</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>17</td>
</tr>
<tr>
<td>Additional points possible</td>
<td>45 credits</td>
</tr>
</tbody>
</table>

**CONSTRUCTION COST IMPACT**

6-7% (~5+ yr. payback)

**Credits with no-low cost impact**

12 credits

**Credits with mid-high cost impact**

12 credits

**Credits with Savings Potential**

(construction cost savings)

SSc4.4: Parking Capacity

MRc2: Constr. Waste Management

(lifecycle cost savings)

WEc1: Water Efficient Landscaping

WEc3: Water Use Reduction

WEc4: Process Water Use Reduct.

**EAc1: Optimize Energy Perf.**

EAc5: Measurement & Verification

**(productivity cost savings)**

EAc1: Min. Acoust. Performance

EAc1: Outdoor Air Monitoring

EAc2: Increased Ventilation

EAc3: Constr. IQAM Management

EAc4: Low-emitting Materials

EAc5: Indoor Chemical Control

EAc6: Controllability of Systems

EAc7: Thermal Comfort

EAc8: Daylight and Views

**Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points**
Sustainability: New Construction

Table 18 - Preliminary LEED Checklist for New Construction Option

LEED Schools Version 2009 PRELIMINARY Forecast - NEW CONSTRUCTION

<table>
<thead>
<tr>
<th>Sustainable Sites</th>
<th>24 Points</th>
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<tbody>
<tr>
<td>Credit 1</td>
<td>Construction Activity Pollution Prevention</td>
</tr>
<tr>
<td>Credit 2</td>
<td>Environmental Site Assessment</td>
</tr>
<tr>
<td>Credit 3</td>
<td>Development Density &amp; Community Connectivity</td>
</tr>
<tr>
<td>Credit 4</td>
<td>Brownfield Redevelopment</td>
</tr>
<tr>
<td>Credit 5</td>
<td>Alternative Transportation, Public Transportation Access</td>
</tr>
<tr>
<td>Credit 6</td>
<td>Alternative Transportation, Bicycle Storage &amp; Changing Rooms</td>
</tr>
<tr>
<td>Credit 7</td>
<td>Site Development, Protect of Restore Habitat</td>
</tr>
<tr>
<td>Credit 8</td>
<td>Site Development, Maximize Open Space</td>
</tr>
<tr>
<td>Credit 9</td>
<td>Stormwater Design, Quantity Control</td>
</tr>
<tr>
<td>Credit 10</td>
<td>Stormwater Design, Quality Control</td>
</tr>
<tr>
<td>Credit 11</td>
<td>Heat Island Effect, Roof</td>
</tr>
<tr>
<td>Credit 12</td>
<td>Heat Island Effect, Roof</td>
</tr>
<tr>
<td>Credit 13</td>
<td>Light Pollution Reduction</td>
</tr>
<tr>
<td>Credit 14</td>
<td>Site Master Plan</td>
</tr>
<tr>
<td>Credit 15</td>
<td>Joint Use of Facilities</td>
</tr>
</tbody>
</table>

Water Efficiency | 11 Points |

| Credit 1 | Water Use Reduction 20% | Required |
| Credit 2 | Water Efficient Landscaping, Reduce by 50% (2) 100% (4) | 2 to 4 |
| Credit 3 | Innovative Water Technologies | 2 |
| Credit 4 | Water Use Reduction, 30% (2), 50% (3), 40% (4) | 2 to 4 |
| Credit 5 | Process Water Use Reduction | 1 |

Energy & Atmosphere | 33 Points |

| Credit 1 | Fundamental Commissioning of the Building Energy Systems | Required |
| Credit 2 | Minimum Energy Performance | 1 |
| Credit 3 | Fundamental Refrigerant Management | Required |
| Credit 4 | Optimize Energy Performance 12% (1) 17% (2) 22% (3), 9% (4) 11% (6) 15% (7) | 1 to 7 |
| Credit 5 | On-Site Re Energy 1% (1), 3% (2), 5% (3), 6% (4) 9% (5) 13% (6) 13% (7) | 1 to 7 |
| Credit 6 | Enhanced Commissioning | 1 |
| Credit 7 | Enhanced Refrigerant Management | 1 |
| Credit 8 | Measurement & Verification | 2 |
| Credit 9 | Green Power | 2 |

Certified: 40 to 49 points
Silver: 50 to 59 points
Gold: 60 to 79 points
Platinum: 80+ points

$ Yes No ? |
| $ Materials & Resources | 13 Points |
| Credit 1 | Storage & Collection of Recyclables | Required |
| Credit 2 | Building Reuse, Maintain 75% / 95%of Existing Walls, Floors & Roof | 1 to 2 |
| Credit 3 | Building Reuse, Maintain 50% of Interior Non-Structural Elements | 1 |
| Credit 4 | Construction Waste Management, Divert 50% / 75% from Disposal | 1 to 2 |
| Credit 5 | Materials Reuse, 5% / 10% Salvaged Materials | 1 to 2 |
| Credit 6 | Recycled Content, 10% / 20% (post-consumer + ½ pre-consumer) | 1 to 2 |
| Credit 7 | Regional Materials, 10% / 20% Extract, Process, Manufacture Regionally | 1 to 2 |
| Credit 8 | Rapidly Renewable Materials 2 / 2% | 1 |
| Credit 9 | Certified Wood 50% | 1 |

Indoor Environmental Quality | 19 Points |

| Credit 1 | Minimum IAQ Performance | Required |
| Credit 2 | Environmental Tobacco Smoke (ETS) Control | Required |
| Credit 3 | Minimum Acoustical Performance | 1 |
| Credit 4 | Outdoor Air Delivery Monitoring | 1 |
| Credit 5 | Increased Ventilation | 1 |
| Credit 6 | Construction IAQ Management Plan, During Construction | 1 |
| Credit 7 | Construction IAQ Management Plan, Before Occupancy | 1 |
| Credit 8 | Low-Emitting Materials, Ash & Seat, Paint, Floor, Composite Wood & Ag | 1 to 4 |
| Credit 9 | Low-Emitting Materials, Furniture and Furnishings | 1 |
| Credit 10 | Low-Emitting Materials, Ceiling and Wall Systems | 1 |
| Credit 11 | Indoor Chemical & Pollutant Source Control | 1 |
| Credit 12 | Controllability of Systems, Lighting | 1 |
| Credit 13 | Controllability of Systems, Thermal Comfort | 1 |
| Credit 14 | Thermal Comfort, Design | 1 |
| Credit 15 | Thermal Comfort, Verification (1) | Required |
| Credit 16 | Daylight & Views, Daylight 75% / 95% of Classroom Spaces | 1 to 2 |
| Credit 17 | Daylight & Views, Daylight 75% Regular Space - 75% for Classrooms Required | 1 to 2 |
| Credit 18 | Daylight & Views, Views for 90% of Spaces | 1 |
| Credit 19 | Enhanced Acoustical Performance | 1 |
| Credit 20 | Moisture | 1 |

Innovation & Design Process + Regional Priority | 10 Points |

| Credit 1 | Innovation in Design Green Education Center | 1 |
| Credit 2 | Innovation in Design Low-Mercury Bulbs | 1 |
| Credit 3 | Innovation in Design School as a Teaching Tool | 1 |
| Credit 4 | LEED® Accredited Professional | 1 |
| Credit 5 | Regional Priority Credit 1-4 | 1 to 4 |

**POTENTIAL CERTIFICATION_LVL**

**Estimated point range**: 62-68
**Rating**: Gold
**Additional points possible**: 16

**CONSTRUCTION COST IMPACT**

5-6% (Gold) (~4 yr. payback)
3-4% (Silver) (~3 yr. payback)

Credits with no-low cost impact 44 credits

Credits with mod-high cost impact 12 credits

Credits with Savings Potential (construction cost savings)

SSc4: Parking Capacity
Ssc5: Site Development
MRc2: Constr. Waste Management
(lifecycle cost savings)

WEc1: Water Efficient Landscaping
WEc3: Water Use Reduction
EAC5: Measurement & Verification

(productivity cost savings)

EQc1: Min. Acoust. Performance
EQc1: Outdoor Air Monitoring
EQc2: Increased Ventilation
EQc3: Constr. IAQ Management
EQc4: Low-emitting Materials
EQc5: Indoor Chemical Control
EQc6: Controllability of Systems
EQc7: Thermal Comfort
EQc8: Daylight and Views

* Includes a 10% credit contingency for preliminary point forecasting

Statewide Research and Development School, University of Northern Iowa: Existing Facility Assessment and Preliminary Building Concepts

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June 15, 2010
www.perkinswill.com
Project Budget

Both the renovation and new construction option were preliminarily priced for comparison. The unit costs values used were derived from previous K-12 school construction in Iowa and were adjusted for inflation and historical labor and material cost increases. Each building option budget was divided into construction and non-construction costs. Construction costs are the direct costs of constructing a building while non-construction costs include design fees, contingency funds, supervision fees, furniture and equipment and miscellaneous owner costs. The total construction costs have been divided into site construction, new construction and remodeled construction costs for a finer breakdown in the preliminary budgets.
### Table 19 - Preliminary Budget: Renovation

| Renovation Option | Area Summary (square feet) | |
|-------------------|-----------------------------|
|                   | New Construction | 11,333 |
|                   | Remodeled Construction | 178,412 |
|                   | Total Combined Area | 189,745 |

<table>
<thead>
<tr>
<th></th>
<th>$/SF</th>
<th>COST</th>
<th>PERCENT (%) OF PROJECT COST</th>
<th>PERCENT (%) OF CONSTR. COST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site Construction Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site (incl. utilities)</td>
<td>$2.30</td>
<td>$436,414</td>
<td>1.5%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Existing Building Demolition</td>
<td>$-</td>
<td>-</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Geo-Thermal Wells</td>
<td>$1.70</td>
<td>$250,000</td>
<td>0.8%</td>
<td>1.1%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$4.00</td>
<td>$686,414</td>
<td>2.3%</td>
<td>3.0%</td>
</tr>
<tr>
<td><strong>New Construction Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Construction</td>
<td>$85.00</td>
<td>$963,305</td>
<td>3.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Mechanical Construction</td>
<td>$28.00</td>
<td>$317,324</td>
<td>1.1%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Electrical Construction</td>
<td>$17.00</td>
<td>$192,661</td>
<td>0.6%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Tech Cabling, Sound, Security</td>
<td>$5.25</td>
<td>$99,616</td>
<td>3.3%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Gen Cond, GC Fee (incl site)</td>
<td>$7.50</td>
<td>$142,088</td>
<td>4.7%</td>
<td>6.2%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$142.75</td>
<td>$3,892,539</td>
<td>12.9%</td>
<td>16.8%</td>
</tr>
<tr>
<td><strong>Remodeled Construction Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Building Interior Demolition</td>
<td>$2.00</td>
<td>$336,244</td>
<td>1.2%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Remodeled Existing Construction</td>
<td>$97.00</td>
<td>$17,305,664</td>
<td>57.6%</td>
<td>74.8%</td>
</tr>
<tr>
<td>Gen Cond, GC Fee</td>
<td>$5.00</td>
<td>$892,060</td>
<td>3.0%</td>
<td>3.9%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$104.00</td>
<td>$18,554,848</td>
<td>61.7%</td>
<td>80.2%</td>
</tr>
<tr>
<td><strong>Total Construction Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$121.92</td>
<td>$23,133,800</td>
<td>76.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Non-Construction Costs</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>IT&amp;E</td>
<td>$10.20</td>
<td>$1,500,000</td>
<td>5.0%</td>
<td></td>
</tr>
<tr>
<td>Owner Costs</td>
<td>$6.00</td>
<td>$1,138,470</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>Public Art</td>
<td>$1.00</td>
<td>$134,000</td>
<td>0.4%</td>
<td></td>
</tr>
<tr>
<td>Design, Supervision Fees</td>
<td>$13.00</td>
<td>$1,850,704</td>
<td>6.2%</td>
<td>8%</td>
</tr>
<tr>
<td>Contingency</td>
<td>$1.59</td>
<td>$231,380</td>
<td>7.7%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$31.79</td>
<td>$6,936,554</td>
<td>23.1%</td>
<td></td>
</tr>
<tr>
<td><strong>Total Project Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$30,070,354</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 20 - Preliminary Budget: New Construction

<table>
<thead>
<tr>
<th>Component</th>
<th>$/SF</th>
<th>Cost</th>
<th>Percent (%) of Project Cost</th>
<th>Percent (%) of Constr. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Construction Option</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Area Summary (square feet)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Construction</td>
<td></td>
<td>137,354</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remodeled Construction</td>
<td></td>
<td>39,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Combined Area</strong></td>
<td></td>
<td>176,854</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Site Construction Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site (incl. utilities)</td>
<td>$6.38</td>
<td>$876,319</td>
<td>2.8%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Existing Building Demolition</td>
<td>$3.00</td>
<td>$450,000</td>
<td>1.5%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Geo-Thermal Wells</td>
<td>$1.70</td>
<td>$250,000</td>
<td>0.8%</td>
<td>1.0%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$11.08</td>
<td>$1,576,319</td>
<td>5.1%</td>
<td>6.5%</td>
</tr>
<tr>
<td><strong>New Construction Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Construction</td>
<td>$84.12</td>
<td>$11,554,218</td>
<td>37.3%</td>
<td>47.7%</td>
</tr>
<tr>
<td>Mechanical Construction</td>
<td>$28.50</td>
<td>$3,914,589</td>
<td>12.6%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Electrical Construction</td>
<td>$16.60</td>
<td>$2,280,076</td>
<td>7.4%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Tech Cabling, Sound, Security</td>
<td>$5.25</td>
<td>$721,109</td>
<td>2.3%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Gen Cond, GC Fee (incl site)</td>
<td>$7.50</td>
<td>$1,030,155</td>
<td>3.3%</td>
<td>4.3%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$141.97</td>
<td>$19,501,147</td>
<td>62.9%</td>
<td>80.6%</td>
</tr>
<tr>
<td><strong>Remodeled Construction Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remodeled Exst. Gymnasium Area</td>
<td>$48.00</td>
<td>$897,600</td>
<td>2.9%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Remodeled Exst. PE Support Area</td>
<td>$97.70</td>
<td>$2,032,160</td>
<td>6.6%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Gen Cond., GC Fee</td>
<td>$5.00</td>
<td>$197,500</td>
<td>0.6%</td>
<td>0.8%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$79.17</td>
<td>$3,127,260</td>
<td>10.1%</td>
<td>12.9%</td>
</tr>
<tr>
<td><strong>Total Construction Cost</strong></td>
<td></td>
<td>$136.86</td>
<td>$24,203,726</td>
<td>78.0%</td>
</tr>
<tr>
<td><strong>Non-Construction Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F&amp;E</td>
<td>$10.20</td>
<td>$1,500,000</td>
<td>4.8%</td>
<td></td>
</tr>
<tr>
<td>Owner Costs</td>
<td>$6.00</td>
<td>$1,061,124</td>
<td>3.4%</td>
<td></td>
</tr>
<tr>
<td>Public Art</td>
<td>$1.00</td>
<td>$175,000</td>
<td>0.6%</td>
<td></td>
</tr>
<tr>
<td>Design, Supervision Fees</td>
<td>$13.00</td>
<td>$1,810,193</td>
<td>5.8%</td>
<td></td>
</tr>
<tr>
<td>Contingency</td>
<td>$1.59</td>
<td>$2,262,741</td>
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</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$31.79</td>
<td>$6,809,057</td>
<td>22.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Total Project Cost</strong></td>
<td></td>
<td>$31,012,783</td>
<td>100.0%</td>
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</tr>
</tbody>
</table>
Conclusions

Both of the building options assume that the final outcome of each would have an equal amount of classrooms, and an equal amount of usable space. Given that premise, it is the conclusion of this study that the new construction option offers a greater long-term value for a Statewide Research and Development School than the renovation option. In the experience of Perkins+Will, it is generally thought that new construction is the better option when the cost of a complete renovation exceeds 60% of the cost of new construction. In this case, the current cost estimate for renovation is about 97% of the cost of new construction.

Thought has been given to renovating the existing school incrementally in a series of smaller projects. Unfortunately, this option does not reduce the need to do all of the required upgrades. Accessibility, code compliance, mechanical and electrical work all still need to be done. While the approach of renovating smaller areas incrementally may reduce the initial capital expenditures, the long term costs would be higher as construction costs are likely to rise over the course of a long term renovation master plan. Likewise, the construction costs would not have the benefit of the large scale of the entire project, so the series of smaller renovations would likely have a higher per square foot final cost.

The benefits are great in creating a new learning environment instead of remodeling the existing building. The new school could be designed specifically to create the type of flexible learning environment needed in the school for many years to come. A new environment that is not constrained by a footprint of a previous educational model would afford this model school the ability to fully embrace the four primary functions of a research and development school: research, demonstration, development and dissemination. Newly designed teaching areas would allow the study, practice and testing of new innovative teaching and learning practices while effectively sharing and demonstrating these practices for replication in Iowa's classrooms. While these primary functions may be present in the renovation option, they would not have the same impact, longevity or impression as they would in a newly designed facility. Building a new Statewide Research and Development School would not only function as an archetype for innovative teaching practices but become an image of the educational environment of the future.