A Better Place to Learn

New Ideas about how to design new or remodeled schools that focus on flexibility

Thursday, February 17, 2011, 9:00 am - 9:15 am

Plunkett Raysich Architects

Agenda

1. Introduction
2. Flexibility via Master Planning - Two Case Studies
   - Alamakee Community School District
   - Dunkerton Community School District
3. Flexibility of Floor Planning
4. Flexibility via Technology
5. Flexibility via Use of Furniture, PLTW Case Study

Introduction

- Schools being the “common denominator”
- Creating equal opportunity across our nation

Presenter

- Experience in designing educational facilities for over 10 years
- 20 years previous experience in the design of financial facilities
- In the past 3 years, assisted 24 school district with their planning efforts
Challenges of Rural Schools

- Changes in student population
- Rural schools do not have quite the flexibility that larger urban school districts have
- Often times cannot re-district and shift student population

Flexibility via Master Planning

Allamakee Community School District - Waukon, Iowa

- Waukon is located approximately 30 miles northwest of Prairie du Chien, Wisconsin
- Three elementary schools and a high school / middle school building
- Experiencing a projected enrollment drop

Flexibility via Master Planning

Allamakee Community School District - Waukon, Iowa

- Reverse engineered the facilities to account for the anticipated population decline
- 2009 - 2010 enrollment of just about 1,200 students
- Down 10% from 5-years ago when we designed their project
Allamakee Community School District

- Faced with declining enrollment
- Structurally unsound middle school building
- Desire to partner with the City of Waukon to create a Wellness Center and Northern Iowa Community College (NICC) satellite campus

The plan
- To add to the existing high school and create a high school / middle school
- The old junior high would be demolished
- Construct NICC and wellness center

Wellness Center
- Gym
- Running track
- Aerobics
- Weight room
- Teen game room
- Babysitting
- Senior center community room
"1 + 1 = 1.8"
with respect to cost and square footage

"1 + 1 = 2.2"
with respect to value received, and spatial efficiency

- New addition to the west contains a new high school
- Existing high school to the east is remodeled to the middle school
- Shared areas exist and create the efficiency and reduce duplication of spaces
- Resulting in my reference to the factor of 1.8 instead of 2.

- The west addition consists of high school administration, high school/middle school library, high school science, high school math, high school cafeteria and a new gym
- The east remodeled area has the middle school administration, middle school cafeteria, middle school gym and middle school classrooms
Allamakee Community School District

- Shared high school / middle school building design has a good balance of dedicated and shared spaces to educate in a flexible manner
- Population shifts and program changes can also be more easily accommodated to provide flexibility
- Success of the project is also evidenced in cost sharing by taxing entities
- Project has been completed for over 5-years

Allamakee Community School District

Dunkerton Community School District
Dunkerton, Iowa

- Dunkerton is located 20-minutes northeast of Waterloo
- The PK - 6 enrollment is just under 300, with 7-12 enrollment just over 200 students
The PK-12 campus is a series of connected buildings. The three buildings to the north and west are 30 to 40 years old. The southernmost building on campus is vintage 1921 which housed the high school.

Challenges

- The 1921 building has some structural issues.
- Accessibility and flexibility along with the configuration does not make the building conducive to contemporary education.
- Relatively confined building site and closely connected buildings.

The assignment

- Find a way to replace the 1921 Building.
- While keeping the school campus in operation.
- With a 10-20 plus year master plan.
Dunkerton Community School District

Dunkerton School

The capacity of Dunkerton Community Schools is governed by several factors. First, the number of students in each grade is influenced by the number of students in the school. The number of students in each grade is determined by the capacity of the school. The capacity of the school is determined by the number of students in each grade. The number of students in each grade is determined by the number of students in each grade. The number of students in each grade is determined by the number of students in each grade. The number of students in each grade is determined by the number of students in each grade.

Dunkerton Shared Spaces

Spaces such as the K-12 Art rooms are not of adequate size for the number of students this classroom is to accommodate. Shared classrooms such as Band and Choir may not be sufficient depending on current student enrollments in these classes as well as requirements by the district.

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The plan

Design a new addition to the south of the 1921 Building and another south of the newest building addition.
Dunkerton Community School District

- Addition adjacent to the 1921 Building to vacate a portion of the 1921 to the first floor of the new building
- The second floor was designed to be future build-out classroom space while the first floor was to be finished
- Provide flexibility to keep initial building construction costs lower while deferring vacating the 1921 entirely at the onset

Dunkerton Community School District

- The addition next to the 1921 was designed with a "soft connection" to allow future demolition of the 1921
- This building included administration, library, science, and general classrooms

Dunkerton Community School District

- The second addition was placed south of the band room and connected to the existing with a corridor
- This building will contain the industrial education rooms and fitness room, the latter to be used by community and students
- Space / program studies coupled with architectural studies of the west elevation
- The sequence was to build the new building, build out the upstairs in the future, demolish the 1921, replace the 1921 and remodel the other buildings
- This is envisioned to be a process which might span 10-years or more due to funding
Dunkerton Community School District

- The long range approach was predicated on studying the entire PK-12 space plan for present and future.

- Making sure that the plan would work at each phase without having to back up or re-do any previous phase.

- The project first phase will be ready to occupy in August of 2011.

Flexibility via Floor Planning

- Pass through stage provides flexibility.

- Breakout areas.

- Large group instruction.

- Provides security for after-school use.

- Breakout areas, teacher planning and departmental storage.
Flexibility via Floor Planning

Breakout areas
- Enables team teaching / learning
- Enables project based learning
- May be used by small or large groups
- Enrichment spaces

Breakout areas, teacher planning and departmental storage

Breakout areas able to become future classrooms.

Breakout areas need to be supervised.
Flexibility via Floor Planning

Breakout areas offer flexibility for learning

Grade level clusters surround breakout areas

Flexible spaces

Multi-functional spaces

Moveable walls

Moveable walls for team teaching and large group instruction
Flexibility via Floor Planning

Outdoor learning

Creating classrooms without walls.

Instructional program mapping

Educational space planning
Flexibility via Floor Planning
- Scan your building plan for opportunities

Flexibility via Technology
Use of technology
- Interactive boards, walls and tablets
- Overhead cameras
- Videos
- Internet access
- Security

Flexibility via Technology
- Wireless, overhead projection and document camera to support the learner

Flexibility via Technology
- Ceiling mounted projector
- Interactive mobile tablet
- Teacher technology docking station
- Interactive board or wall surface
- Teacher technology docking station
Flexibility via Use of Furniture

1 Room Approach
Multiple Flexible Geometries

1 Room Approach
Multiple Flexible Geometries
Flexibility via Use of Furniture

1 Room Approach
Multiple Flexible Geometries

Resources

Able Khatchadourian, AIA, NCARB, CSI, LEED®
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