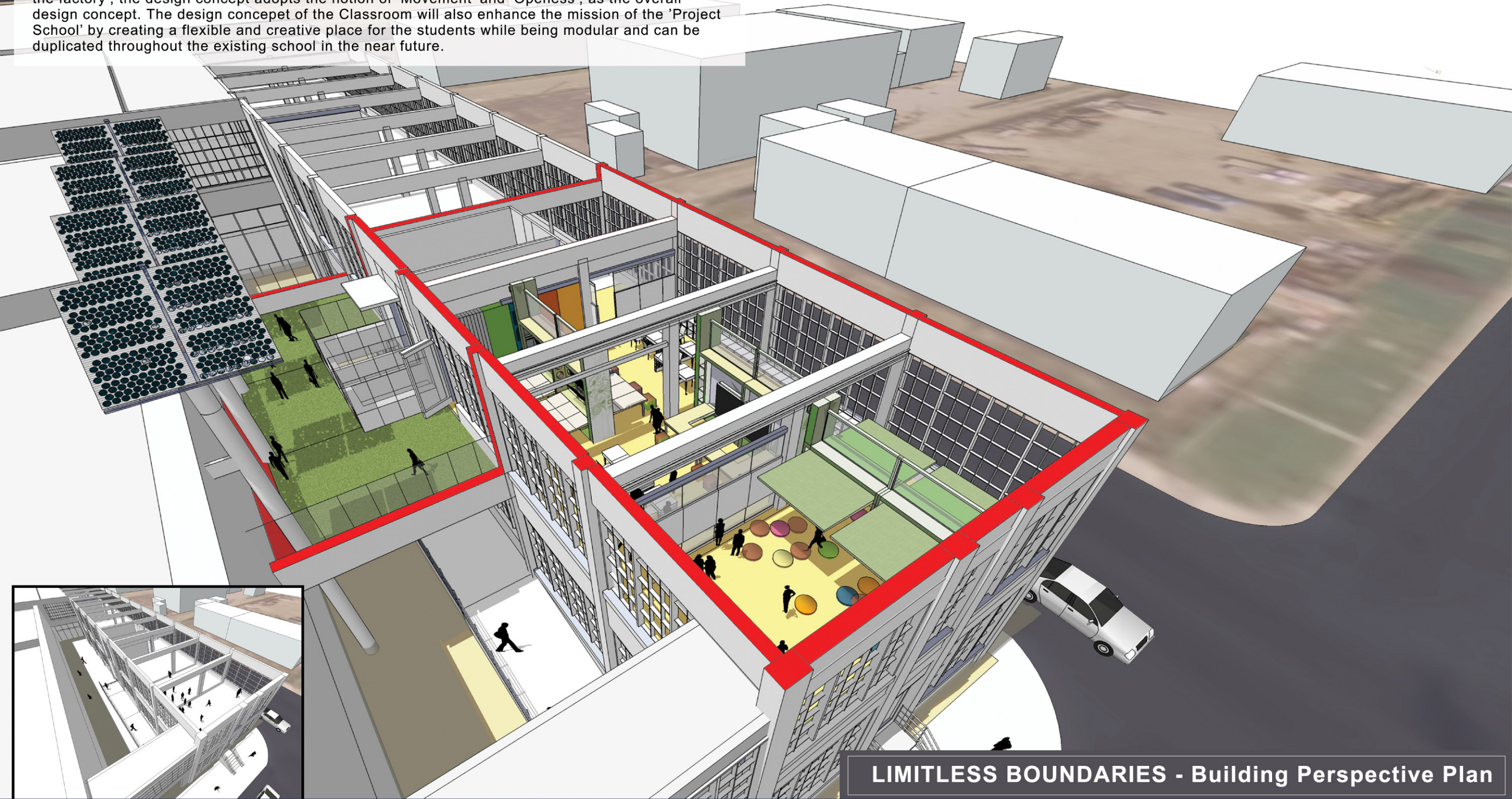


Design Solution

The Design concept of the Classroom with movable modules reflects the historical context of the existing building which was an automotive production plant. By reinterpreting the 'Production line of the factory', the design concept adopts the notion of 'Movement' and 'Openess', as the overall design concept. The design concept of the Classroom will also enhance the mission of the 'Project School' by creating a flexible and creative place for the students while being modular and can be duplicated throughout the existing school in the near future.



LIMITLESS BOUNDARIES - Building Perspective Plan

partner school:

 **The Project School.** Indianapolis, IN



Open Architecture Network Classroom Competition – Curriculum Plan

Lesson 1: Instinct & Big Ideas

- Meet students and do introductions
- Introduce competition & goals
- Timeline for semester
 - 9 classes (one per week)
 - Sessions to include studying: materials, environmental factors, model building
 - Students to develop ideas in teams – work in groups of 3
 - The class is currently studying “The American West”, so each group will be assigned a different “Western” site/location
 - Students to present their designs at 9th and final class
 - Our office to take student designs and further them into one design to submit to competition
- Slide Show – Show our firm’s work, images of where we find inspiration, images of the ‘big idea’ for each of our projects
- Brainstorming – students group brainstorm on butcher paper about places that are positive & negative learning spaces (favorite space to learn in vs. least favorite space to learn in)
- Homework: Each team (5 teams) researches different “Western Site”
 - Forest, Desert, Mountains, Plains, & Edge
 - Pick a medium to document w/ words, sketches, photos, film and give a 5 minute presentation at the next class. Include information about climate, flora, fauna. . . .tell a story about your site

Lesson 2: Portable/Mobile/Nomadic Design

- Students present climate/Western Site research
- Slideshow about nomadic architecture/design – show 15 slides and each student is assigned one slide. The student needs to answer the following questions:
 - Where is this building going?
 - How often does the structure move?
 - How does it move?
 - Is it weatherproof?
 - Is it durable?
 - In what way is this nomadic?
 - In what way is this portable?
 - Is there good natural light?
 - Can one person carry it?
 - Why is it important that it can move?
 - What economic status do the inhabitants have?
 - If the structure is not mobile, why is it considered nomadic?
- Students to present their answers to the class
- Homework: Each team to bring a “found object” to the next class
 - Object should relate to your site/climate
 - What story does your object tell?

Lesson 3: Site and Environmental Analysis

- Student groups present “Found Object” assignment to class
- Solar Path-finder demonstration – take students outside and show them how the Solar Pathfinder works
- Describe to students the path of Sun in winter (low in sky) vs. summer (high in sky)
- ‘Sense of Scale’ in-class project: define classroom size
 - Students to work at 1/2” scale = 1'-0” and cut out tables and chairs to scale with construction paper and scissors (bring measuring tapes for students to measure sizes of actual objects)
 - Arrange construction paper tables and chairs into different learning arrangements or groupings for 20 students and 1 teacher. Trace out the different options of arrangements before moving on to a new arrangement.
 - Pick your favorite arrangement and now draw walls to enclose that space – give enough room for circulation.
 - Measure size of designed room when you are done. How big is your space?

Lesson 4: Sustainable Building & Materials

- Case Study presentation on mobile architecture – present Loblolly House by Kieran Timberlake
 - Discuss inspiration for building design
 - Off-site prefabricated pieces
 - Entire house assembled on-site in 6 weeks
 - Each piece of house has a barcode that can be scanned to identify what it is
 - House can be disassembled and moved elsewhere
- Slideshow presentation of different materials that are specific to “5 Western Sites” :
 - Forest = wood, bamboo
 - Desert = rammed earth, earth bag construction, earth blocks
 - Mountain = stone
 - Plains = strawbale
 - Edge = thin-shell concrete
- Discuss concept of: sustainable to build vs. sustainable to maintain
- In-class project: Material Research
 - Each group to research materials for their building/site
 - Hand out a sheet of applicable websites to each group
 - <http://materia.nl/>
 - <http://transmaterial.net/index.php/about/>
 - <http://www.architectmagazine.com/content.asp?sectionID=1008&articleID=744548>
 - <http://www.architectmagazine.com/content.asp?articleID=629500§ionID=1550>
 - <http://www.architectmagazine.com/content.asp?articleID=646343§ionID=1550>
 - <http://www.green2green.org/>
 - <http://www.oikos.com/>
 - <http://www.thegreenguide.com/>
 - <http://www.goodtobegreen.com/>
 - <http://www.greenbuildingpages.com/>
 - <http://www.resourceyard.org/>
 - <http://www.strawsticksandbricks.com/>
 - <http://www.thenaturalhome.com/>
 - <http://www.ferrocement.com/>

- Bring a stack of books and magazines that students can flip through and flag materials they are interested in using
- Students to present 3-5 materials that they found to the class

Lesson 5: Structure and Systems - Wall Section

- In-class project: Build a wall section model
 - Assign a type of wall construction to each group: Stick frame, Masonry, SIPs, Strawbale, Curtain Wall
 - Present information about each type of construction/material to students
 - Give print-out of a drawing detail of each type of wall construction to each group
 - Students to build models at 1 1/2" = 1'-0" scale
 - Models to represent a section of wall at least 8' long and 8' high
 - Each model should include one door and one window opening
- As students work, ask them: How do other building systems fit into wall section? Water, electricity, HVAC.....

Lesson 6: Big Idea development for Portable Classroom Design

- In-class project: In order to move forward with design ideas, have students answer the following questions with drawings and written descriptions:
 - What is your dream classroom? How does this classroom relate to your climate?
 - If you were here for a week, what would you want to do here, and what would you need to do it?
 - If you were the teacher, what would you want the students to do/learn about at your site/climate area? Create a lesson plan for the day. What do the students do/learn and how? What time of day does learning occur?
 - What is the #1 factor/element of your climate that your classroom needs to provide protection from? How much protection is needed, and how will your classroom do this?
 - How is your classroom useful to learning about this place?
 - How does your found object relate to your classroom?
 - How often does the classroom move (how is it transported)? How long do you need it to be at your site? Your structure needs to move a minimum of 100 miles by road, water, or air transport, and your structure needs to move a minimum of 500 feet by an alternate mode of transportation (human-power, bicycles, something non-mechanized?)
 - How does the size of your classroom change in its "fixed" state versus its "mobile" state? (Note, for highway transportation, loads can be a maximum of 12' wide and 40' long). Note: your classroom in its "fixed" state needs to be a minimum of 15' wide.
 - Tell us about how the classroom converts itself from its "mobile" state to its "fixed" state? Motors, inflated, human-power?
 - How do you inhabit the classroom? Do you sit in chairs, on the floor? Do you have desks, group tables? How is the furniture arranged?
 - Choose a shape for your classroom that is a good space to learn in. Does the climate dictate the shape of the classroom?
 - Besides students and a teacher, what do you need in a classroom? Blackboard? Computers? Display space?
 - How tall is your classroom?
 - What shape is the ceiling/roof?

- How does your building attach to the ground?
- What do you want to stand on in your classroom? What's its relationship to the ground?
- How do you go in and out of your classroom?
- How do you let light into your classroom? Where? How often?
- What pieces of your curriculum occur outdoors vs. indoors? Do the outdoor portions of your curriculum use your classroom building from the outside in any fashion?
- Your classroom needs to be able to exist in your climate in all 4 seasons (all year round). How does the classroom change between the seasons?
- What types of materials do you want to utilize to make your classroom?

Lesson 7: Physical Model Building – Paper Modeling

- Tutorial on building quick models by folding, cutting, and stapling paper
- In-class project: Students to develop floor plan of their classroom and then to three-dimensionalize it by making a paper model.
 - Groups need to determine the dimensions of their classroom and how many students the space can hold.

Lesson 8: Physical Model Building and Final Drawings

- Tutorial on building models
- Students to build models of their Portable Classroom designs at $\frac{1}{4}'' = 1'-0''$ scale using bass wood, cardboard, chip board, tracing paper, acetate.....
- In addition to the model, each group needs to create a sheet of drawings/text that summarizes the group's projects and process. The sheet will include:
 - A floor plan drawing at $\frac{1}{4}''$ scale (drawn with a straight edge), show furniture and windows and doorways, include labels as descriptions
 - An elevation/section/sketch type drawing of the front of your building
 - A sketch of a detail (one small piece of your building)
 - List your climate/location and any key factors (key elements, is your building sited a certain direction?)
 - Sum up your big idea in a sentence or two.

Lesson 9: Final Touches and Final Presentations

- Students to finish models and drawings during first half of class
- Review what each group should speak about during their presentations:
 - Describe your site and climate
 - List the key factors of your climate
 - Describe the big idea of your project
 - Walk the audience through your floor plan. Where do you enter the building? Where do you sit? Tell us about your space – are there windows....
 - Tell the audience how your building is portable – how it moves
- Students to pinup work and present

**PROJECT TITLE:
INCIDENT IN THOLOPOTAMION VILLAGE**

Our Design Curriculum

Having “*Curriki*” was a great inspiration to our team since it provided the very basis for our own conceptual approach and design curriculum, adapted to the students of the 5th grade and our personal “needs”. We accomplished a frequent communication with the students through their teacher, which happens to be related to one of the team members and, thus, was an endless source of valuable information. One of the members of our team visited the school in person so as to have an impression first-hand and trace down important features and dimensions.

In close cooperation with their teacher, we created a series of lessons-sessions where the children were initially provided with some general architectural knowledge (architect’s role, building materials being used, construction methods etc). They sat in with their teacher for several days, studied the material we suggested, made some important observations on the information given and their experience of the current classroom and eventually dedicated time to work on expressing their own ideas, as well as craft work.

More analytically, the lessons were organized in 5 general sessions with the students, taking place during the regular school hours. Surprisingly, there were also “pleasant” interventions-suggestions for additional discussion topics and ways of presentation by the school ‘team’, which was welcomed by the architects:

1. Introducing Architecture

Acquaintance of students with simple architecture terminology. Explanation of the role of the architect. What is design? Architectural terminology (scale, units, etc). Is their current classroom “designed”, architecturally studied? What are the reasons? Some “free” discussion on designing the school classroom “of tomorrow”. The students’ opinions.

The second part of the session included “field work” in the courtyard, where the students had to locate their classroom in the topographic site, provided “in sketch” by the architects. (documentation of fieldwork is provided by the architects).

2. ‘Simple’ building materials acquaintance

The teacher presents a construction detail of the wall section in “sketch”. Class discussion follows on the material use. Explanation of what construction failure is. (Documentation of original design shown is provided by the architects).

3. Think of your favorite classroom

The teacher presented the questions below in an ‘open’ discussion:

“Think of your favorite place for studying. What place is comfortable and inspiring? Is it grandpa’s village house? Is it a favorite room at home? The kitchen? Is it outside in the courtyard? Is it “underneath the stars”? On the contrary, what is a difficult place for you to learn?”

In the end of the open discussion, the teacher archives the answers in a text list, including positive and negative qualities. The list is eventually given back to the architects for feedback. (documentation of the list is provided by the architects).

At the same time, the students were also presented pictures of contemporary school architecture examples and a short discussion followed with the teacher.

4. Draw your favorite classroom

The students are asked to draw their ‘favorite classroom. It was clear that the pictures shown in the previous session was an inspiration to them! Based on their drawings, the architects acquire a pretty good impression of what a child, at this age, looks for in his classroom space. Issues of intimacy, privacy, team-gathering, even color aesthetics, have amazingly appeared: more surfaces for artwork exhibition, ceiling and non vertical surfaces both serving as the alternative place for hanging artwork, “unusual” places for the traditional blackboard and the teacher’s desk, sitting ‘organic sculptures’, red carpets that give a ‘cozy’, home-like atmosphere to the inside, are some of the students ‘suggestions’ to the architects. Now, the tough work is to please them...

5. Make your favorite classroom (our favorite session)

For the last session, we provided the students with their classroom developed in grey cardboard elevations and plan (scale 1:100) so that they actually 'make', with their own collages and models, their "ideal space". They imagined it with plentiful vibrant colors, 'unconventional' roof openings and shelter-sitting places, using a variety of representational materials ranging from simple paper and cardboard to green cloth and gelatin, bringing out in this way their own architectural (amazing if we might say) aspirations...what a lovely surprise! (photos of their work were taken by their teacher and are provided by the architects).

6. Grande Finale!

Students and teacher gather all of their precedent original work (notes, drawings, paintings, as well as photos of the models) and submit them to the architects. With the teacher's help a short talk about impressions and conclusions follows. What we like and, ultimately, what we want to change, how to draw attention to the architects, what they shouldn't neglect, what to include in the subsequent design intervention, etc.

During these sessions, the students' creativity and enthusiasm triggered off our working process, as their observations and work has been gradually incorporated in the design 'requests'. We strongly believe that, in return, this 'cooperation' enabled them to somehow identify with their classroom space and added to the educational experience. Who knows, one of them might become the architect of tomorrow!