

ARCHITECTURE BY CHILDREN 2010



REVISION

Produced and Developed by:
AIA Cincinnati
Architectural Foundation of Cincinnati



AIA Cincinnati
a chapter of
the American Institute of Architects



ABC 2010

Engaging Our Children's Minds Through Architecture

ARCHITECTURE BY CHILDREN is a committee of the Cincinnati Chapter of the American Institute of Architects. Through ABC, AIA Cincinnati aims to educate our community about the value of the role of the architect and how what architects do affects all our lives through the design and development of our shared environment.

For further information, please visit us online at www.architecturebychildren.org

ABC Committee Members

- Co-Chair:** Zoë Hardy
Architects Plus
- Co-Chair:** Tony Yunker
GBBN Architects
- Allison Beer
SHP Leading Design
- Ralph Perry
OKInteriors
- Matthew Spangler
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- Doris Uhlman
Artist, Retired Art Teacher, Batavia Schools
- Michael Bursin
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ABC materials designed by Parkey Design, www.parkeydesign.com

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ABC 2010 ONLINE CONTENT

Visit www.architecturebychildren.org to access the following handouts and activity guides:

(** = required)

DRAWING LIKE AN ARCHITECT

Plan, Section, Elevation **
Drawing to Scale **
Free-hand Drawing Exercises

DESIGN CONCEPTS

Size, Shape, Orientation, Location, Treatment

MODELING

GREEN DESIGN SOLUTIONS **

RESOURCE LIST

Books
Classroom Materials
Videos
Periodicals
Websites

These online resources (and more) will now be available year-round on the web!

QUESTIONS?

Contact the ABC Committee at AIA Cincinnati:
info@architecturebychildren.org or 513-421-4661



ABC 2010 PROGRAM CALENDAR—REVISION

November 19, 2009—Architects Assigned

Teachers: you will receive an e-mail shortly thereafter with your architect's information. Architects and teachers are responsible for coordinating the date and time for presentations and return visits. A planning meeting prior to the initial presentation is highly recommended.

December 2009—Architect Presentations

EARLIER THIS YEAR: Projects are due the last weekend of February! Teachers KEEP the CD Rom containing the PowerPoint presentation brought by the architect.

December 2009 – February, 2010—Research, Design and Production Period

Client Selection, Client Research, Programming, Drawing and Architectural Activities, Site Design, Schematic Design, Design Development, Modeling, Presentations, Selection of projects for submission.

February 27, 2010—Presentation Drop-Off

Time: 9:00 am – 12:00 pm
 Location: CINCINNATI MUSEUM CENTER, Collett Gallery
 1301 Western Avenue - Cincinnati, OH 45203-1130 (513)287-7000
 See page 5 for directions and drop-off instructions

Tuesday, March 2, 2010—Jury

See the Design Competition Details on page 10 for what the jury will be looking for.

February 27 – March 5, 2010—Public Exhibition of Work

Time: during normal Museum Center hours
 Location: CINCINNATI MUSEUM CENTER, Collett Gallery
 1301 Western Ave., Cincinnati, OH 45203
 for directions: (513)287-7000

March 6, 2010—Awards Ceremony and Reception

Reception: 11:00am – 12:00am
 Location: CINCINNATI MUSEUM CENTER, Collett Gallery

Awards: 12:00 pm - 1:00 pm (sharp!)
 Location: CINCINNATI MUSEUM CENTER, Reakirt Auditorium

T-Shirt Pick-Up 11:00am – 2:30pm
 Location: CINCINNATI MUSEUM CENTER, Collet Gallery
 Teachers or assigned classroom parent may pick up t-shirts for your class.
Unclaimed shirts left after 2:30 pm will be donated to charity.

Project Pick-Up 1:00pm – 2:30pm
 ALL PROJECTS MUST BE REMOVED FROM THE EXHIBITION SPACE
 NO LATER THAN **2:30 pm on SATURDAY, March 6.**

PROJECTS LEFT AFTER 2:30pm WILL BE DISCARDED

NOTE:

Document your students' work by photocopying, photographing, and scanning their work. This project is perfect for portfolios, especially if they might go into the design or art fields.



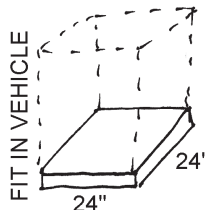
PROJECT SUBMISSION REQUIREMENTS

A MAXIMUM OF 3 PROJECTS MAY BE SUBMITTED FROM EACH CLASSROOM.

Due to the large number of participating classrooms, this limit will be enforced. Please note, projects with teams of more than four students will be disqualified from competing.

Final presentations submitted for the design competition must be in one of the following two formats:

Presentation Format 1: 3-Dimensional Model



- **Max Size:** 24" x 24" maximum base size. No part of any model may be outside this boundary. There is no minimum size. Height is limited only by imagination, gravity, and transportability. Recommend keeping models under 36" high.
- **Sturdiness:** Submitted models should be well-constructed and able to be moved without fear of destruction. Models will be shifted and arranged as-needed after drop-off. While every effort will be made to protect submitted projects, we do not take responsibility for any accidental breakage of models. A "fix-it" station will be available upon arrival with supplies for emergency repairs.
- **Labels:** Text labels on parts of models should be avoided if possible. Students are encouraged to render their building elements so as to negate the need for labels. If labels are desired, they should be discrete, legible and neat.
- **Scale:** Models created to scale will have slight weight over those which do not in the 4-6 grade age group. Models in the 7-8 and 9-12 grade groups which are not to scale will not be eligible for awards. Scale is not required for the K-3 projects.
- **Format:** Models will be viewed primarily from one side, lined up side-by-side along a table and back-to-back with other projects. The Exhibit Label will be attached to the front edge (taped underneath) of the model along the table edge. Layout and any labeling of elements should take this into consideration.
- **Exhibit Label:** Project title, student names, school, and summary should NOT appear on the model. This information is to be given on the half-sheet Exhibit Label provided in this packet.
- **Emergency Label:** Secure a COPY of the exhibit label, or otherwise permanently mark the underside of the model base with the Teacher's name, School Name, Students' names and Project Title.

Presentation Format 2: 2-Dimensional Presentation Boards



- **Size:** Two 24" x 18" boards. One board should lay flat, the other will be propped up vertically behind it. Both boards are oriented horizontally (see sketch). Mounting brackets will be provided at the time of drop-off, if you do not provide your own.
- **Text:** The goal is to communicate as much as possible through graphic representation. Information may be written on the presentation boards, but should not dominate the submission.
- **Format:** 2D presentations will be viewed from one side, lined up side-by-side along a table and back-to-back with other projects. The Exhibit Label will be attached to the front edge of the flat board along the table edge. Layout of presentation boards should take this into consideration.
- **Depth:** 2D presentations do not have to be FLAT. Collage & relief may be used to a maximum 3" overall board depth.
- **Scale:** Drawings done to scale will have slight weight over those which do not in the 4-6 grade age group. Drawings in the 7-8 and 9-12 grade groups which are not to scale (where appropriate) will not be eligible for awards. K-3 projects are not required to be to scale. Plans and elevations to scale should be legibly and discretely labeled as such below the drawing title. (eg: SCALE: 1/8" = 1'-0")
- **Exhibit Label:** Project title, student names, school, and summary should NOT appear on the boards. This information is to be given on the half-sheet Exhibit Label provided in this packet.
- **Emergency Label:** Secure a COPY of the exhibit label, or otherwise permanently (and discretely) mark the backside of each board with the Teacher's name, School Name, Students' names and Project Title.

General:

- Reports, papers or drawings not contained within the context of the presentation format elected will not be reviewed or accepted.
- EVERY PROJECT SUBMITTED FOR EXHIBIT MUST HAVE AN EXHIBIT LABEL IN THE FORMAT PROVIDED, and have an emergency label as described above.

REQUIRED LABEL FOR ALL PROJECTS SUBMITTED TO THE EXHIBIT AND COMPETITION

In addition to this label, it is strongly recommended that a small, fully-taped label containing the teacher name & phone number, school name and student(s) name(s) be affixed to the back of each piece of 2d work and to the bottom of models in case the exhibition label becomes lost or separated.

Please photograph the presentations before bringing them to the Library for submission, and keep photocopies of the exhibition labels in the event a label is lost and needs to be replaced.

The sample exhibition label below is provided for your use to copy and fill out. It is available online at www.architecturebychildren.org

Exhibition Label Instructions

Teachers and parents will be asked to fill out an exhibition label at the drop-off/check in for projects arriving without this label. **Note: this label is the primary information for jurors.**

Project Description Activity: CREATIVE WRITING ASSIGNMENT

Ask students to use the building data they collected and their design ideas to write three paragraphs speaking in the first-person from the point of view of the building.

- 1. I was a...
- 2. I am a...
- 3. I will be a...

The building can express how it feels/felt during each of its phases of life whether or not it felt it did a good job providing for its occupants, and how it sees its future looking with the new use.

On the Exhibition Label, the three opening sentences may begin the project description. A fourth sentence can then describe a little of HOW the building will change. Remember, this information is the only additional data the jurors have to know about the projects. Remind students that their primary communication of the project is through the graphics or models. Have them tell about things others may not be able to SEE in the drawings or models themselves.



SCHOOL: _____ **TEACHER:** _____

TITLE: _____

NAME: _____ **GRADE:** _____

NAME: _____ **GRADE:** _____

NAME: _____ **GRADE:** _____

NAME: _____ **GRADE:** _____

PROJECT DESCRIPTION: _____

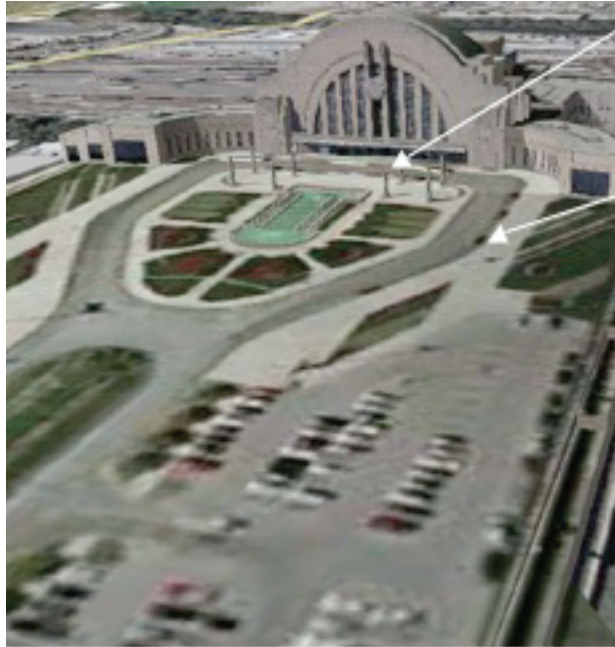


DROP-OFF & EVENT LOCATION DETAILS

Drop-Off Details:

Projects for submission to the public exhibit and design competition (**max 3 per class**) are to be brought to the Cincinnati Museum Center between 9:00am – 12:00pm on February 27, 2010. For driving directions, visit www.cincymuseum.org or call 1-800-733-2077.

Please review the competition rules and restrictions elsewhere in the teacher packet.



DROP OFF ZONE in front of entry doors.

9:00am – 11:00am ONLY

ABC volunteers will be on hand to assist with unloading projects.

SHORT TERM PARKING

A small number of free 15-minute spaces are available along the right side of the access lane. May be used to walk models into the building or hand-off to ABC volunteers.

EVENT PARKING at each side of causeway.

COST: \$4 weekdays, \$6 Sat/Sun,
Standard rates for drop-off day and weekday visitors.

FREE PARKING MARCH 6 ONLY

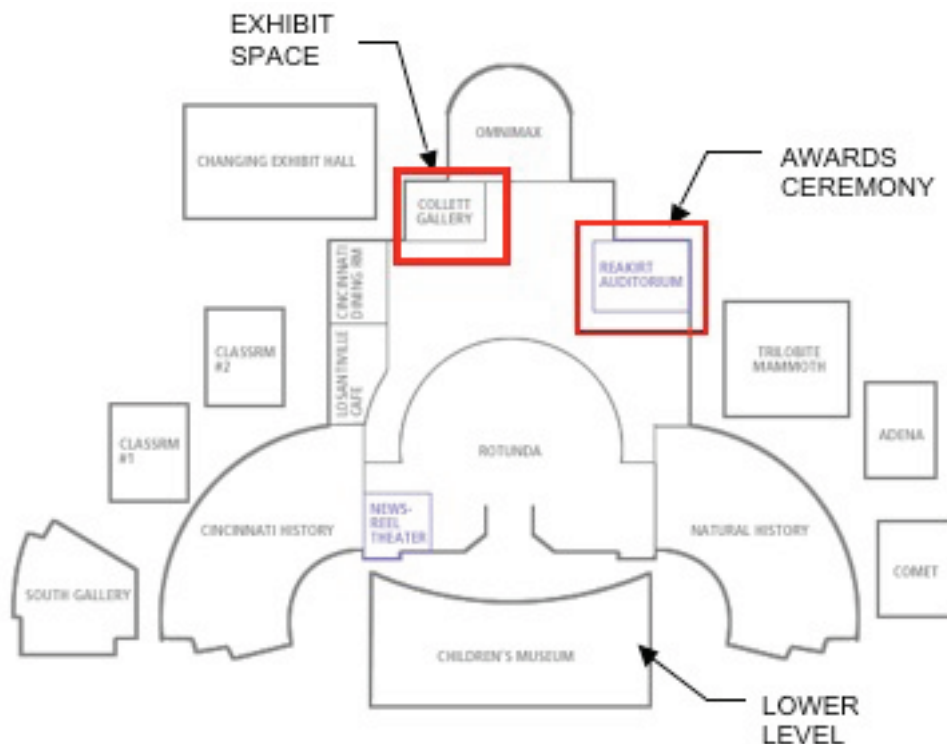
for ABC participants:

Pay the standard rate at arrival and validate your parking receipt at the awards reception to receive parking fee back upon exiting.

Design competition entries will be on exhibit in the Collett Gallery located on the left hand side as you proceed from the Rotunda towards the Omnimax Theater.

The Awards Reception will be held in the exhibit space.

The Awards Ceremony will be from 12:00 – 1:00 on Saturday, March 6 in the Reakirt Auditorium across the corridor from the Exhibition.



ABC 2010 DESIGN PROBLEM & PROJECT OUTLINE**DESIGN PROBLEM**

Thousands of buildings in our region and throughout the country stand empty. The name of the game is **Adaptive Reuse**. Students will select an existing building type and re-design it for a new use, look and identity of their choosing. They may select from one of the two building types provided (fire station or big-box store) or elect to re-design an actual vacant building in their community. The students' task is to give new life to their chosen building by imagining what it can be then modifying the building for the new use. Proposed uses can be fanciful or reflect a real life community opportunity or need. Sustainable [Green] Design will again be an integral component of the design problem and competition prerequisites.

PROJECT OUTLINE & RULES

NOTE: READ THROUGH THE ENTIRE PROCESS BEFORE BEGINNING. REVIEW YOUR PREFERENCES AND STRATEGY WITH YOUR ARCHITECT PRIOR TO THE INITIAL PRESENTATION.

Projects submitted for exhibition should demonstrate that students have performed the following tasks at an expected competency for their grade level. Design Competition Jurors will be given a copy of this outline for use in their deliberations. For a more in-depth experience, the first four steps below may be assigned to students individually, before teams are formed.

1. IDENTIFY

- Students are to identify what building they want to work with.
- Plans and elevations are provided for a local Cincinnati Firehouse and Big-Box store (Walmart).
- Students may also choose an existing building in their neighborhood.
- Teachers may elect to have all their students focus on a particular building, or each group may choose which building to work on.

2. RESEARCH

Before designing can begin, students must understand the history of the building they have selected. Students should demonstrate a grade-level appropriate understanding of the following:

• **HISTORY**

- What year the building was built? What was the community/city/country/world like at that time.
- Who built it?
- What it was designed for?
- How long was it used for what it was intended?
- Has it been used for anything else between now and then?

• **SIZE, SHAPE, ORIENTATION, LOCATION, TREATMENT**
(see Five Design Concepts handouts & activities online)

- Figure out the building's dimensions: length, width, height, floor-to-floor height.

Refer to the drawings provided for using the Firehouse or Big-Box store. Review these drawings to see the level of detail and information needed. If selecting a real building in the community, students should visit the building and either measure or use the pacing method to determine the size. You may also use the Measure tool on Google Earth to guesstimate the building dimensions. This may also be used to make site plans. While it's not perfectly accurate, it's close enough for this project.

- Draw the existing building to scale in plan, elevations and section (first, think about what the final presentation will be (2D or 3D) and decide what you want to show, then at what scale it will fit in the required presentation restrictions to determine the best scale to use before beginning.



- Take or find photos of your building and its surroundings. (web search, site visit)
- Locate the building on a map and note what side faces South. Draw a north arrow on your floor plan.
- What is the building made of? What materials can you see? List the materials inside and outside for: walls, floors, roof, ceilings, etc.
- What holds up the roof? (6-12) walls? columns? Are there parts of the building that are not needed for it to stand up? (in other words, are there opportunities for bigger windows, adding onto the building, or combining interior rooms?)

- **CONTEXT:**

- What is the building used for now?
- If it has been abandoned, why?
- What kinds of buildings are around it and what are their uses?
- What part of the community is it in: Urban, suburban, rural?
- Study & print out birds-eye views at: **www.bing.com/maps** or with Google Earth: **http://earth.google.com** (free download)
- What activities happen in the neighborhood surrounding the building? (If you were to be at this building for a whole day, what would you see happening outside? Inside?)

3. DOCUMENT

Students must document (photographs, drawings, model, etc.) their chosen building. If utilizing one of the two buildings provided, students must re-draw or model the buildings in their own hand. Using SCALE is not required for grades K-3. Drawing and modeling to scale is recommended but optional for grades 4-6. **2D and 3D projects by students in grades 7 – 12 MUST be to scale to be accepted to the exhibit and competition.** See the Drawing to Scale exercises and handout online at www.architecturebychildren.org.

4. EVALUATE

In determining the future use of the building, students should explore the questions: "How can this building be used to better serve the community?" and "What would I do with the building if it were mine?" Have students complete the writing assignment on the Exhibition Label page. This activity can be done prior to forming groups, and can be used to make groups of students with like-ideas.

5. COLLABORATE

- Projects may be developed in teams or individually. **Teams may not be of more than 4 students.** Projects brought to the exhibit listing teams consisting of more than 4 students will not be accepted for display or competition.
- Break down each task into jobs for the team members. Every student should have a part of the process, and be able to communicate their work to the team for use in the project development. (see Sustain below)
- Each team should start a binder or folder for collection of ideas, drawings and completed activities that inform their design process.
- Allow time for discussion, but make sure students take NOTES of their decisions. Having to re-create discussions when coming back to the project will waste time. Have them include sketching in their team binder.

6. SUSTAIN

Students should have a basic understanding of the Green Design Solutions categories and the goals for each (Site, Water, Energy, Materials & Resources, Indoor Environmental Quality) prior to starting their design work. K-6 must incorporate at least one green design solution. Grades 7-12 must incorporate at least two green design solutions. *The Green Design Solutions handouts and teacher guide are available on the ABC web page.*

Example inquiries:

- How can we make the building more energy efficient? (use less, generate own power, insulate, etc.)
- How can we improve the interior environment for the new use? (air, light, heating, cooling)



- Where does the water go? (rain that hits the roof & site, water from toilets & sinks, etc.)
- What materials are made locally or regionally that can we use in our design?
- What materials can we use that are recycled? Renewable?
- Where does the trash go? How are recyclables collected? Where does compostable waste go (food scraps, solid waste, etc.)?

Suggestion (7–12): For teams wanting to incorporate as many Green Design Solutions as possible, one team member could be assigned to be the “green guru” who then keeps an eye on sustainability goals throughout the design process, documents how the project addresses each of the 5 areas, and is in charge of making sure the final presentation contains information to convey their work.

7. FORMULATE

Once teams have determined their building’s proposed new use, they should turn to modifying the building they have just documented to accommodate it.

First Step:

- Teams fill out the first half of the Design Ideas Form. Decisions made regarding the questions below should be checked back to the program goals.

Beginning with sketch overlays on the existing building drawings or photographs, students can begin to identify how the existing building addresses the following in relation to their proposed use:

Internal environment & flow:

- Where is the main entrance? What happens once you’re inside?
- Who works here? What do they need?
- Who visits here? What needs to be provided for them?
- What kinds of spaces are needed for the new use? How large do they need to be?
- Will existing spaces be enough? Do we need to add-on?

External environment & setting:

- How can we know what happens here without a sign?
- What building features should be added, removed or changed to reflect the new use?
- How is the building seen from the surrounding street(s)? What changes could help identify the place from a distance (if that is desired).

8. COMMUNICATE

Time should be set aside (1 class period) at regular intervals for teams to review their project in-toto with their teacher, architect or other mentor. Students should also be encouraged to charette (brainstorm/discuss) their projects with one another.

- (K-12) Student teams place their work in front of the class or adult mentor for a verbal presentation and receive feedback.
- (6-12) Student teams are paired (two teams) for a charette hour where half the period is spent presenting and discussing each team’s projects.

9. EVALUATE & RE-FORMULATE

After a team has received feedback from either the teacher, architect or fellow students, team members should list the suggestions and discuss the pros and cons of each. Students should be encouraged to utilize the ideas of others to make their projects better. The class period following feedback, encourage groups to tell what they learned, and what they changed, if anything and why or why not.



10. PRESENT

See the Submission Requirements page elsewhere in this packet for presentation requirements. Your jury will be a combination of design professionals and community leaders who will have reviewed these program materials. Below are some expectations and tips for each presentation format:

3-Dimensional Model:

- Materials do not matter. However, attention to detail and scale accuracy greatly impacts the reading of 3D models.
- Craftsmanship: items that are cut should have clean edges, and be glued or secured neatly.
- Ingenuity: Creative use of 'unconventional' and/or re-used materials is encouraged. (See "Modeling" activity guide available online.)
- 'Outside the box': 3D presentations need not show the entire structure, or can show more than just the building. They can highlight particular views or details of the design, or be a small-scale birds-eye view of the building and surrounding site/community.
- Scale: Models submitted in the 7-8 and 9-12 grade groups which are not to scale (where appropriate) will not be eligible for awards. K-3 projects are not required to be to scale. Scale is optional for 4-6 grade projects, but models done to scale will have slight weight over those which do not in the 4-6 grade age group. Scale models should include a figure representing an adult person somewhere on the model or have a label with the model's scale written or graphically near a corner of the model.

2-Dimensional Presentation Boards:

- These are presentation drawings, not construction documents. Images should include as much information as possible to communicate the design intentions. Each board may include more than one or two drawings, and have color.
- Graphic representations should be clear and easy to read by someone standing over the project (2-3 feet distance).
- Scale: Drawings in the 7-8 and 9-12 grade groups which are not to scale (on appropriate images) will not be eligible for awards. K-3 projects are not required to be to scale. Scale is optional for 4-6 grade projects, but drawings done to scale will have slight weight over those which do not in the 4-6 grade age group.
- On floor plans & sections, walls should be solid-hatched, windows and doors indicated clearly, and rooms/areas neatly labeled. (see Plan Section Elevation activities available online) Each drawing should have a discreet label with the drawing title (eg: Floor Plan or South Elevation) as well as the scale it is drawn at (eg: SCALE: 1/8"=1'-0"). Graphic scales are also acceptable.
- Ink reads better than pencil.
- Photocopies of original work are acceptable. Consider copying student drawings and having them arrange them & manipulate electronically in programs like Photoshop or Corel Draw for printing.
- Printed plans and elevations can be embellished and/or rendered in color by hand.
- Be Creative! Consider collages, photo-montage and other eye-catching graphic presentation techniques.
- 2D presentation format does not have to be FLAT. Consider low-relief build-up of images, mini-models and other methods of giving dimension to the presentation. (max. 3" depth)



DESIGN COMPETITION DETAILS

Projects selected for the exhibition at the library are entered into an informal design competition.

AGE GROUPS:

In the interest of comparing "apples to apples" as much as possible, the projects are divided into age groups by grade: [K–3] [4–6] [7–8] [9–12] In the case of multi-grade groups, projects will be placed according to the highest grade level represented.

AWARD CATEGORIES:

One project in each of the following categories will be selected from each of the four age groups, for a total of 16 winning projects. Below are descriptions of what the jurors will be looking for in each category.

Future Architect

The 3D model or 2D presentation provides unique and compelling elements that fit the overall theme (Revision). The overall project provides solutions that the theme inherently has which are notable compared to the rest of its peer group. The design has a cohesiveness which allows for the natural flow of both the occupants and vehicles through and/or around the design.

Master Craftsm'n

The 3D model or 2D presentation was constructed/drawn accurately to demonstrate a realistic example of the final structure. The model or drawing was created with great precision and attention was paid to the smallest details. There are few if any flaws in the model/drawing that detract from the overall design of the structure. Special attention will be paid to models/drawings with complicated designs that would require greater skill to construct/draw.

Most Successful use of Green Design Solutions

The project design demonstrates how the structure (and/or site development) will lessen its impact on the environment. Included in the structure is one or more green design solutions in the categories of Site, Water, Energy, Materials, or Indoor Environmental Quality that is implemented in the design in a seamless way, as an integrated part of the overall parti.

Most Creative Use of Materials

The model includes materials that are used in a unique and distinctive way. The materials add to the overall concept of the design and bring a new dimension to the structure. Forethought of the materials used for different elements of the design is evident. This award may be given to drawn designs which demonstrate unique and distinctive ways to use materials in the final construction of the structure.

Additional awards will be given as follows:

Juror's Choice

Jurors are invited (but not required) to identify a maximum of 2 outstanding projects in each age group.

People's Choice

Throughout the duration of the exhibit, visitors are invited to vote by write-in slip for their favorite project. All votes will be tallied at the end of the week to reveal a single People's Choice winner.

JURY:

The Jury will be made up of professionals from the local architecture, art, and real estate communities and city leaders. The group of approximately 12 jurors will be placed in teams divided amongst the award categories. Jury teams will consult one another for the Juror's Choice Awards.

AWARDS:

Awards Ceremony

On March 6, 2010, we will have an awards Reception and Ceremony, after which the projects are to go home. The Reception begins at 11:00am, and the Awards Ceremony will begin at noon at the Cincinnati Museum Center. We ask that projects be left in place for the duration of the reception and ceremony to give everyone a chance to look around at all the projects. Often, this is the only chance students have to see the work of others. (class t-shirts are also picked up at this event)



PRIZES:

Students producing the winning projects will each receive a prize of art/drawing supplies geared for their age level and a prize ribbon. Afterward, a photo of their model, their names, school name, teacher name, and project title will be listed on the ABC web page.

PROJECT COLLECTION:

Projects this year will be both signed in and signed-out. T-shirts will also be signed-out in order to minimize confusion on the awards day.

Certificates:

Blank Certificates of Participation are enclosed with this packet and are to be filled out for each student participating individually or on a project team. If you require additional certificates, please e-mail the program chair.

T-Shirts:

T-shirt orders will be confirmed in early February via e-mail before our order is placed. T-shirt bundles may be picked up from the library on the day of the awards ceremony. T-shirts not claimed before 2:30 pm on March 6, 2010, will be donated to Goodwill unless special arrangements have been made.



DESIGN IDEAS FORM

THE ORIGINAL BUILDING:

Building Name (or what people call it) _____

Address _____

Part of Town (community name) _____

Year Built _____ Who Built it? _____

Original Use _____

HISTORY: On a separate sheet of paper:

1. Describe the community at the time the building was constructed.
2. Find two national and two local major news headlines from the year the building went into service.

BUILDING DATA: On a separate paper:

1. sketch the plan outline of the building footprint.
2. use Google Earth or visit the building with a large tape measure and record the overall dimensions. (or measure your pace to guestimate)
3. While on site, sketch or take photos of the elevations so you can draw them later.
4. Guestimate, or use trigonometry to determine the building's height and heights of major elements so you can draw the elevations to scale. See how at: <http://www.tiem.utk.edu/bioed/bealsmodules/triangle.html>

Outside Walls are made of _____

Inside Walls are made of _____

Structure is: (circle all that apply) bearing walls columns trusses wood
 steel concrete masonry

CONTEXT: (use additional sheets if necessary)

What is the building used for now? _____

If empty, how long has it been empty? _____

What places/buildings are adjacent to it? _____

across the street? _____

within 500'? _____

EVALUATION: (use additional sheets to explain)

How could this building be used to better serve the community? _____

What would I do with the building if it were mine? _____



NEW USE:

"The greenest building is the one that's already built." Why? Because of the embedded energy in the manufacture and placement of all the building's existing parts. When you re-use a building, you capture that energy. It takes more energy to knock a building down and build from scratch.

The building will be a _____

The new use will serve the community by _____

We will change... (complete the sentence describing the changes you will make to what's there)
 ...the outside by _____

because _____

...the inside by _____

because _____

...the site by _____

because _____

GREEN DESIGN SOLUTIONS:

Remind your teacher to give you the Green Design Solutions Handouts available online. The ideas you list below are "possibilities". Your team may eventually decide to focus on only one or two.

SITE (EARTH MATTERS)

WATER (USE LESS, KEEP ON THE SITE)

ENERGY (MAKE WITHOUT FOSSIL FUELS OR MAKE OWN & USE LESS)

MATERIALS & RESOURCES (SAFE, EFFICIENT, RECYCLED, RECYCLABLE, LOCAL)

INDOOR ENVIRONMENTAL QUALITY (COMFORTABLE AND HEALTHY ON THE INSIDE)

OTHER DESIGN IDEAS: (2D and 3D forms & shapes, textures, colors, materials, equipment, lighting, heating/cooling, shade, floors, walls, ceilings ...) USE MORE PAPER IF NEEDED

PROJECT TITLE: (give your adaptive reuse project a name)

Collect ALL ideas: sketches, images, research, reports, interviews, etc.

KEEP ideas drawings and research organized in a binder or folder that is accessible to the team and your teacher for checking work.

Check Back often with your ideas as you work to see if the design still meets your goals. (one team member may be placed in charge of this)



STATE OF OHIO ACADEMIC CONTENT STANDARDS

Through the design process, multiple curricula are required to be utilized, synthesized and directed at the common goal of solving the design problem. With the annual ABC project, students in all grades engage at a personal level with the social, societal, and physical properties of the built environment through thoughtful assessment, collaboration, communication and self expression.

The following State of Ohio ACS standards can be addressed through the process of completing an Architecture By Children project. This list is not exhaustive, but meant to show the breadth of knowledge and information which can be incorporated into the program. Participating educators are encouraged to use the project across multiple disciplines and utilize their assigned architect and ABC Committee members in identifying ways to tie desired benchmarks to related activities within the design process for the specific ABC project.

Science

Standard 1: Earth and Space Sciences

Benchmarks:

- Grades K – 2 Explain that living things cause changes on Earth. Describe what resources are and recognize some are limited but can be extended through recycling or decreased use.
- Grades 3 – 5 Describe Earth’s resources and the ways in which they can be conserved.
- Grades 9 – 10 Describe the finite nature of Earth’s resources and those human activities that can conserve or deplete Earth’s resources.
- Grades 11 – 12 Explain that humans are an integral part of the Earth’s system and the choices humans make today impact natural systems in the future.

Standard 4: Science and Technology

Benchmarks:

- Grades K – 2 Explain why people, when building or making something, need to determine what it will be made out of and how it will affect other people and the environment. Explain that to construct something requires planning, communication, problem-solving, and tools.
- Grades 3 – 5 Describe and illustrate the design process.
- Grades 6 – 8 Design a solution or product taking into account needs and constraints (e.g., cost, time, trade-offs, properties of materials, safety, and aesthetics).
- Grades 9 – 10 Explain the ways in which the processes of technological design respond to the needs of society.
- Grades 11 – 12 Predict how human choices today will determine the quality and quantity of life on Earth.

Social Studies

Standard 3: Geography

Benchmarks:

- Grades K – 2 Explain how environmental processes influence human activity and ways humans depend on and adapt to the environment.
- Grades 3 – 5 Identify and explain ways people have affected the physical environment of North America and analyze the positive and negative consequences.



- Grades 6 – 8 Explain how the environment influences the way people live in different places and the consequences of modifying the environment.
- Grades 9 – 10 Analyze the cultural, physical, economic, and political characteristics that define regions and describe reasons that regions change over time.
- Grades 11 – 12 Explain how the character and meaning of a place reflects a society’s economics, politics, social values, ideology, and culture.
Evaluate the consequences of geographic and environmental changes resulting from governmental policies and human modification to the physical environment.

Standard 6: Citizen Rights and Responsibilities

Benchmarks:

- Grades K – 2 Describe the results of cooperation in group settings and demonstrate the necessary skills.
Demonstrate personal accountability, including making choices and taking responsibility for personal actions.
- Grades 3 – 5 Explain how citizens take part in civic life in order to promote the common good.
- Grades 6 – 8 Show the relationship between civic participation and attainment of civic and public goals.
- Grades 9 – 10 Explain how individual rights are relative, not absolute, and describe the balance between individual rights, the rights of others, and the common good.
- Grades 11 – 12 Explain how the exercise of a citizen’s rights and responsibilities helps to strengthen a democracy.

Standard 7: Social Studies Skills and Methods

Benchmarks:

- Grades K- 2 Obtain information from oral, visual, print, and electronic resources.
Communicate information orally, visually, or in writing.
Identify a problem and work in groups to solve it.
- Grades 3 – 5 Obtain information from a variety of primary and secondary sources using the component parts of the sources.
Use a variety of sources to organize information and draw inferences.
Use problem-solving skills to make decisions individually and in groups.
- Grades 6 – 8 Analyze different perspectives on a topic obtained from a variety of sources.
Organize historical information in text or graphic format and analyze the information in order to draw conclusions.
Work effectively in a group.
- Grades 9 – 10 Evaluate the reliability and credibility of sources.
- Grades 11 – 12 Critique data and information to determine the adequacy of support for conclusions.
Develop a research project that identifies the various perspectives on an issue and explain a resolution of that issue.
Work in groups to analyze an issue and make decisions.





Technology

Standard 1: Nature of Technology

Benchmarks:

- | | |
|----------------|--|
| Grades K- 2 | Recognize the characteristics and scope of technology.
Describe the relationships among technologies and the connections between technology and other fields of study. |
| Grades 3 – 5 | Compare and discuss the relationships among technologies and the connections between technology and other fields of study. |
| Grades 6 – 8 | Analyze information relative to the characteristics of technology and apply in a practical setting.
Apply the core concepts of technology in a practical setting.
Analyze the relationships among technologies and explore the connections between technology and other fields of study. |
| Grades 9 – 10 | Apply technological knowledge in decision-making. |
| Grades 11 - 12 | Examine the synergy between and among technologies and other fields of study when solving technological problems. |

Standard 2: Technology and Society Information

Benchmarks:

- | | |
|---------------|---|
| Grades K- 2 | Recognize that technology has an interrelationship with the environment.
Describe and demonstrate how technology has had an influence on our world.
Collect information about products and discuss whether solutions create positive or negative results. |
| Grades 3 – 5 | Define responsible citizenship relative to technology.
Investigate and explain the interrelationships between technology and the environment. |
| Grades 6 – 8 | Analyze technologically responsible citizenship.
Describe and explain the impact of technology on the environment.
Describe how design and invention have influenced technology throughout history. |
| Grades 9 – 12 | Demonstrate the relationship among people, technology, and the environment.
Interpret and evaluate the influence of technology throughout history and predict its impact on the future. |

Standard 3: Technology for Productivity Applications

Benchmarks:

- | | |
|---------------|---|
| Grades K- 2 | Use productivity tools to produce creative works. |
| Grades 3 – 5 | Use productivity tools to produce creative works and prepare publications. |
| Grades 6 – 8 | Use productivity tools to produce creative works, to prepare publications, and to construct technology-enhanced models. |
| Grades 9 – 12 | Identify, select, and apply appropriate technology tools and resources to produce creative works and to construct technology-enhanced models. |

Standard 5: Technology and Information Literacy

Benchmarks:

- Grades K- 2 Use a simple research process model which includes deciding what to use, finding resources, using information, and checking work to generate a product.
Apply basic browser information and navigation skills to find information from the Internet.
- Grades 3 – 5 Use the Internet to find, use, and evaluate information.
- Grades 6 – 8 Use technology to conduct research and follow a research process model which includes the following: developing essential question; identifying resources; selecting, using, and analyzing information; synthesizing and generating a product; and evaluating both process and product.
- Grades 9 – 12 Apply a research process model to conduct research and meet information needs.

Standard 6: Design

Benchmarks:

- Grades K- 2 Identify problems and potential technological solutions.
Understand that changes in design can be used to strengthen or improve an object.
- Grades 3 – 5 Describe and apply a design process to solve a problem.
Describe how engineers, architects, and designers define a problem, creatively solve it, and evaluate the solution.
Understand the role of troubleshooting in problem-solving.
- Grades 6 – 8 Evaluate the aesthetic and functional components of a design and identify creative influences.
Recognize the role of engineering design and of testing in the design process.
Understand and apply research, innovation, and invention to problem-solving.
- Grades 9 – 12 Identify and produce a product or system using a design process, evaluate the final solution, and communicate the findings.
Recognize the role of teamwork in engineering design and of prototyping in the design process.
Understand and apply research, development, and experimentation to problem-solving.

Standard 7: Designed World

Benchmarks:

- Grades K – 2 Develop an understanding of the goals in physical technologies.
Develop an understanding of the goals of informational technologies.
- Grades 3 – 5 Develop an understanding of how physical technologies enhance our lives.
Recognize appropriate modes of technical communication across technological systems.
- Grades 6 – 8 Develop an understanding of and be able to select and use physical technologies.
Develop an understanding of and be able to select and use information technologies.
- Grades 9 – 12 Classify, demonstrate, examine, and appraise energy and power technologies.





Classify, demonstrate, examine, and appraise transportation technologies.
 Classify, demonstrate, examine, and appraise manufacturing technologies.
 Classify, demonstrate, examine, and appraise construction technologies.
 Classify, demonstrate, examine, and appraise communication technologies.

Fine Arts

Standard 1: Historical, Cultural, and Social Contexts

Benchmarks:

- Grades K – 4 Identify art forms, visual ideas, and images and describe how they are influenced by time and culture.
- Grades 5 – 8 Compare and contrast the distinctive characteristics of art forms from various cultural, historical, and social contexts.
- Grades 9 – 12 Explain how and why visual art forms develop in the contexts (e.g., cultural, historical, political, and historical) in which they were made.

Standard 2: Creative Expression and Communication

Benchmarks:

- Grades K – 4 Develop and select a range of subject matter and ideas to communicate meaning in two- and three-dimensional works of art.
- Grades 5 – 8 Create two- and three-dimensional original artwork that demonstrates personal visual expression and communication.
Use current available technology to refine an idea and create an original, imaginative work of art.
- Grades 9 – 12 Create expressive artworks that demonstrate a sense of purpose and understanding of the relationship among form, materials, techniques, and subject matter.

Standard 3: Analyzing and Responding

Benchmarks:

- Grades K – 4 Identify and describe the visual features and characteristics in works of art.
Contribute to the development of criteria for discussing and judging works of art.
- Grades 5 – 8 Apply the strategies of art criticism to describe, analyze, and interpret selected works of art.
Establish and use criteria for making judgments about works of art.
- Grades 9 – 12 Explain how form, subject matter, and context contribute to meanings in a work of art.
Critique their own works, the works of peers, and other artists on the basis of formal, technical, and expressive aspects in the works.

Standard 5: Connections, Relationships, and Applications

Benchmarks:

- Grades K – 4 Create and solve an interdisciplinary problem using visual art processes, materials, and tools.
- Grades 5 -8 Demonstrate the role of visual arts in solving an interdisciplinary problem.
Apply and combine visual art, research, and technology skills to communicate ideas in visual form.

Grades 9 – 12 Formulate and solve a visual art problem using strategies and perspectives from other disciplines.

Language Arts

Standard 1: Acquisition of Vocabulary

Benchmarks:

Grades 4 – 12 Use multiple resources to enhance comprehension of vocabulary.

Standard 3: Concepts of Print, Comprehension Strategies, and Self-Monitoring Strategies

Grades K – 3 Demonstrate comprehension by responding to questions (e.g., literal, informational, and evaluative).

Grades 4 – 7 Make meaning through asking and responding to a variety of questions related to text.

Grades 8 – 12 Demonstrate comprehension of print and electronic text by responding to questions (literal, inferential, evaluative, and synthesizing).

Standard 4: Informational, Technical, and Persuasive Text

Grades K – 3 Ask clarifying questions concerning essential elements of informational text.

Grades 4 – 7 Analyze and draw inferences from text content to gain additional information.

Standard 6: Writing Process

Benchmarks:

Grades K – 2 Publish writing samples for display or sharing with others using techniques such as electronic sources and graphics.

Grades 3 – 4 Prepare writing for publication that follows an appropriate format and use techniques such as electronic resources and graphics.

Grades 5 – 7 Select more effective vocabulary when writing or editing by using a variety of resources and reference materials.

Grades 8 – 12 Prepare writing for publication that follows an appropriate format and uses a variety of techniques to enhance the final product.

Standard 7: Writing Applications

Benchmarks:

Grades K – 2 Compose writing that conveys a clear message and includes well-written details.

Grades 3 – 4 Write informational reports that include facts, details, and examples to illustrate important ideas.

Grades 5 – 7 Produce informational essays or reports that convey a clear and accurate perspective and support the main ideas with facts, details, examples, and explanations.

Grades 8 – 10 Use documented textual evidence to justify interpretation or to support a research topic.

Grades 11 – 12 Produce functional documents that report, organize, and convey information and ideas accurately.



Standard 9: Research

Benchmarks:

- Grades K – 2 Generate questions for investigation and gather information from a variety of sources
- Grades 3 – 4 Identify a topic of study, construct questions, and determine appropriate resources for gathering information.
Communicate findings orally, visually, and in writing.
- Grades 5 – 7 Formulate open-ended research questions suitable for inquiry and investigation.
Communicate findings orally, visually, and in writing.
- Grades 8 – 10 Formulate open-ended research questions suitable for investigation and adjust questions as necessary while research is conducted.
Communicate findings, reporting on the substance and processes, orally, visually, and in writing.
- Grades 11 – 12 Formulate open-ended research questions suitable for inquiry and investigation and adjust questions as necessary while research is conducted.
Communicate findings, reporting on the substance and processes, orally, visually, and in writing.

Standard 10: Communications (Oral and Visual)

Benchmarks:

- Grades K – 2 Use active listening strategies and ideas to identify the main idea and to gain information from oral presentations.
Connect prior experiences, insights, and ideas to those of a speaker.
- Grades 3 – 4 Demonstrate active listening strategies by asking clarifying questions and responding to questions with appropriate elaboration.
Respond to presentations by stating the purpose and summarizing main ideas.
- Grades 5 – 7 Use effective listening strategies, summarize major ideas, and draw logical inferences from presentation and visual media.
Explain a speaker's point of view.
- Grades 8 – 10 Use a variety of strategies to enhance listening comprehension.
Analyze the techniques used by speakers to evaluate the effect it has on the message.
- Grades 11 – 12 Use a variety of strategies to enhance listening comprehension.
Select and use effective speaking strategies for a variety of audiences, situations, and purposes.

Mathematics

Standard 1: Numbers, Number Sense, and Operations

Benchmarks:

- Grades 5 – 7 Use models and pictures to relate concepts of ratio, proportion, and percentage.
- Grades 8 – 10 Estimate, compute, and solve problems involving ratio, proportion, and percentage and explain solutions.

Standard 2: Measurement

- Grades K – 2 Select appropriate units for measurement.
Develop common referents for units of measure to make comparisons



	and estimates. Apply measurement techniques.
Grades 3 – 4	Develop common referents for units of measure to make comparisons and estimates. Identify appropriate tools and apply counting techniques for measuring length, perimeter, and area.
Grades 5 – 7	Select appropriate units to measure angles, circumference, and surface area. Convert units of measure within the same measurement system. Identify appropriate tools and apply appropriate techniques for measuring. Select a tool and measure accurately to a specified level of precision. Use problem-solving techniques and technology as needed to solve problems involving measurement.
Grades 8 – 10	Solve increasingly complex non-routine measurement problems and check for reasonableness of results. Use formulas to find surface area for specified three-dimensional objects accurately and to a specified level of precision. Estimate and compare various measurement attributes to a specified level of precision. Write and solve real-world multi-step problems and verify reasonableness of solutions.
Grades 9 – 12	Apply various measurement scales to describe phenomena and solve problems. Estimate and compute areas in increasingly complex problem situations.

Standard 3: Geometry and Spatial Sense

Benchmarks:

Grades K – 2	Describe solid objects (cube, sphere, etc.) and identify them in the environment. Describe location using comparative, directional, and positional words.
Grades 3 – 4	Use attributes to describe, classify, and sketch plane figures and to build solid objects. Describe, identify, and model reflections, rotations, and translations using physical materials.
Grades 5 – 7	Use proportions to express relationships among corresponding parts of similar figures. Describe and use the concepts of congruency, similarity, and symmetry to solve problems. Apply properties of equality and proportionality to solve problems involving congruent or similar figures (e.g., create a scale drawing).
Grades 8 – 10	Draw and construct representations of two- and three-dimensional geometric objects using a variety of tools. Solve problems involving two- and three-dimensional objects represented within a coordinate system. Establish the validity of conjecture about geometric objects, their properties, and relationships with inductive and deductive reasoning.
Grades 11 – 12	Use trigonometric relationships to verify and determine solutions in problem situations.



Standard 6: Mathematical Processes

Benchmarks:

- Grades K – 2 Use a variety of strategies to understand problem situations (e.g., discussing with peers, stating problem in own words, modeling problems with diagrams or physical materials).
Draw pictures and use physical models to represent problem situations and solutions.

- Grades 3 – 4 Use mathematical strategies that relate to other curriculum areas and the real world.

- Grades 5 – 7 Apply and adapt problem-solving strategies to solve a variety of problems including routine and non-routine problem situations.
Relate mathematical ideas to one another and to other content areas.

- Grades 8 – 10 Apply mathematical knowledge and skills routinely in other content areas and practical situations.
Use a variety of mathematical representations flexibly and appropriately to organize, record, and communicate mathematical ideas.

- Grades 11 – 12 Communicate mathematical ideas orally and in writing with a clear purpose appropriate for a specific audience.
Apply mathematical modeling to workplace and other situations.