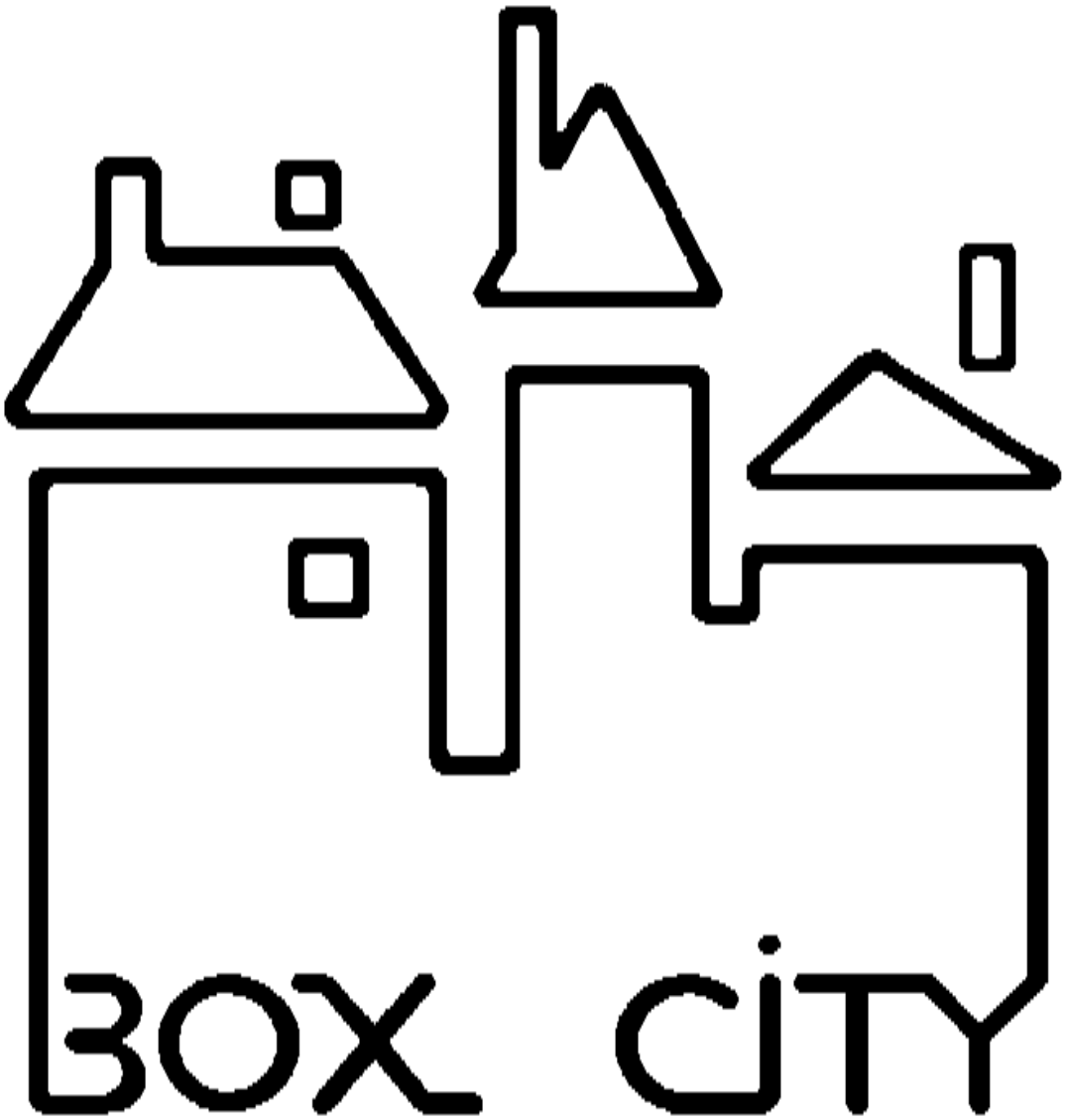
A Community-Based Education Resource from CUBE
(The Center for Understanding the Built Environment)



BOX CITY

An Interdisciplinary Experience in Community Planning

Ginny Graves, Honorary AIA
Dean Graves, FAIA

BOX CITY

•an interdisciplinary experience in community planning•

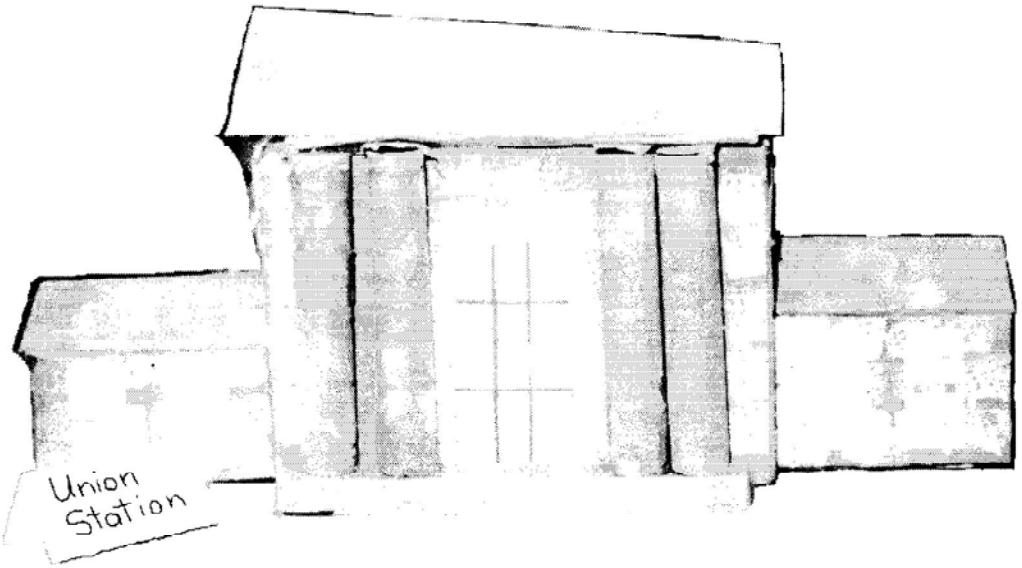
Ginny Graves, Honorary AIA
Dean W. Graves, FAIA

Photo Credit: Willis Winters, Dallas.
Sponsored by AIA/Dallas, 1,500 youth create a city out of boxes in Highland Park Village shopping center.

Box City Contents

Box City Contents

Box City Contents



How to Use Box City

The **Box City** curriculum is a starting place for an important journey—one where participants learn as much about themselves as they do about their communities. We hope you will personalize the curriculum as you apply it to your community, no matter how large or small; your neighborhood; your school and the focus group involved. It is purposefully open-ended and does not contain all of the answers. Those answers will come as you make the journey.

It is usual that adults will use this material as well as youth of all ages. The use of the word "student" throughout can mean either, since, at least in terms of understanding how communities work, we are lifelong students! Within the material you will see photographs of preschoolers as well as community citizens working through the various exercises, each able to bring to the core process their own levels of expertise, ability and interest.

It is hard to plan anew without understanding our past. Box City begins with a study of ancient civilizations and their plans by examining a Greek City. It is interesting that we also rely on the Greek methodological framework for heritage education to form a way of approaching this learning. Participants will experience:

•**The excitement of discovery** that occurs when participants retrieve the information themselves. Facilitators guide them through research materials, outdoor activities, and hands-on experiences to look for the answers.

•**Conflicting values** that emerge in the issues of community involvement, preservation and planning through role playing exercises.

•**Reality and difficulty of group decision-making** as they decide what changes they would like to make and find ways to fulfill those plans. At the end, as a culminating activity for the exercise, they take initiatives like presenting their results to the community, writing letters, visiting the mayor, even building a community garden or school project.

•**The consequences of responsible action** as they are involved in the outcomes of the various community projects. This participation demonstrates to participants the power of speaking out and taking responsible action. Learned early, this is a powerful tool for community development as well as an important lesson to learn in any stage of life!

Why does Box City work so well? It is a three dimensional manifestation of two dimensional plans. Because of its concrete nature, participants who may not clearly understand a two dimensional drawing, can "walk" through the city; see space and scale relationships; visualize architectural details; and examine the consequences of single-use zoning, cars and mass transit. As a planning tool, combining the visual with the written word helps everyone understand a common theme.

When we look at our cities, we see ourselves.

We hope our children will like what they see.

CUBE, 1993

What Is Box City?

An Interdisciplinary Experience in City Planning

At CUBE (Center for Understanding the Built Environment), people often ask, "Which is the one best activity which teaches the most about our cities and how they work?" All of the educators, architects and city planners who participate in our school programs would agree that **Box City** is a total learning activity which incorporates the knowledge base, skills, content relevance and citizenship values which are the "givens" for built environment education. A real city is too large in scale for students to handle. By reducing that scale, they are able to understand how a city works and the interdependency between the citizens, the buildings and nature. The fact that it can be offered in one session, as an introductory activity—such as at a festival—or over a semester or year as an in-depth school experience adds needed flexibility.

All of the skills which are a part of the emerging assessment changes show up during the **Box City** exercise. Team work and cooperative learning, participation, creative thinking, critical thinking, decision making and opportunities for developing confidence and reinforcing self esteem, multicultural issues, "real life" or community-referenced curriculum, and an integration of core curriculum are inherent in the **Box City** process.

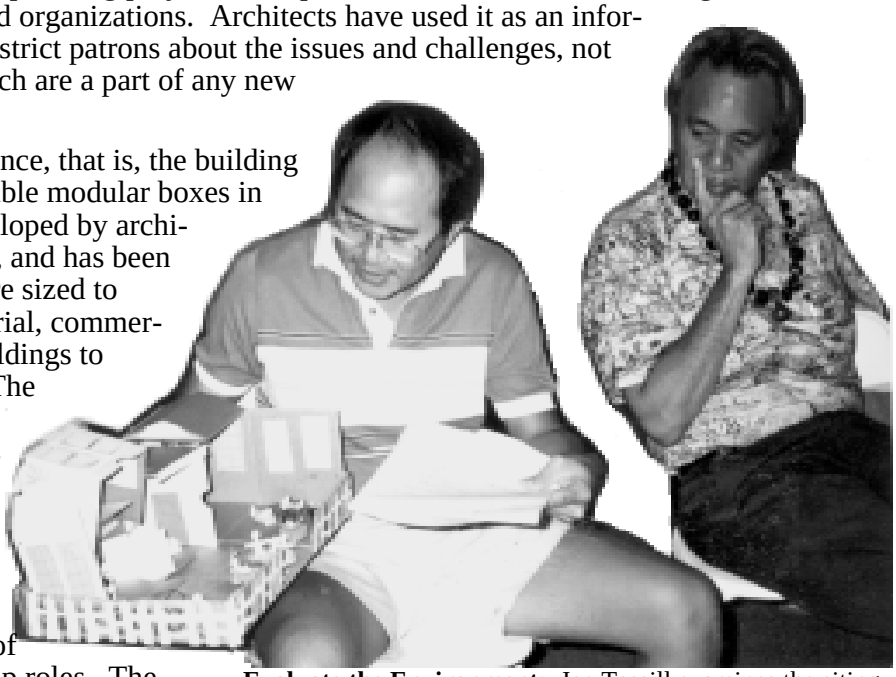
Kathleen Hunter, past director of education, National Trust for Historic Preservation, says, "Schools teach children **about** democracy, but few teach children how to be effective **in** a democracy. Most children never get to actually experience being a part of the process. They never get to explore real issues, consider real alternatives, make up their own minds, take a stand and voice their opinions." The **Box City** exercise allows students to practice these skills and prepares them for the actuality of being involved in the city. And... it is not too early for them to start. There are many examples of students who have made a difference in their cities, and at an early age. One of those examples: students in an area which is rapidly becoming urbanized, saved a round barn. Hunter cites others in the various materials which she published for the National Trust.

Once you have involved kids in **Box City**, the likelihood is that they will want to do more. Peter Barricelli, Maine, who builds a city over a three year period, notes that after the presentation has been made to the school board and the project is "technically" over for the year, the students are reluctant to move on and want to create additional buildings. It

Students, Our Lady of Guadalupe School

will be interesting to see if his students "come home" to view the expanding city after they have moved on to other grades. Barricelli's experience also included the following. His students' city was developing so well that he invited adjoining classrooms to come and view the project. These grades also decided that they would like to contribute to the city. They are developing a water treatment plant, to scale, and will build it after their visit to the local waterworks.

Box City is valuable as a teaching tool for adults as well. Ramona Mullahey, Honolulu planner, has used it to sensitize adults in a planning project for Kapuna. In 1993, she used it to target adults who are members of neighborhood organizations. Architects have used it as an informal way to educate school district patrons about the issues and challenges, not just the design elements, which are a part of any new school planning process.



Evaluate the Environment: Joe Tassill examines the siting and plan of Steve Yim's community center, Honolulu.

The CUBE **Box City** experience, that is, the building of a city with easily manageable modular boxes in 4," 5," and 6" sizes, was developed by architects, planners and educators, and has been tested with all ages. Boxes are sized to accommodate enough industrial, commercial, civic and residential buildings to form a representative city. The boxes are decorated with paper, paint or rubber stamps to encourage a developing knowledge of architectural details and styles. The "building" of the city itself teaches city planning concepts, and an understanding of neighborhoods and citizenship roles. The curriculum contains suggestions for pre- and post-activities. All ages can participate. Currently, a business teacher is using this method to help business students develop shopping center plans; a college professor is using it to explore spaces between buildings; and a fourth grade teacher is using it as a unit accompanying a city social studies emphasis.

Interdisciplinary Experience

The CUBE educators took a look at what kids are learning about in schools, and put it into a cohesive whole. Since it is community-referenced, student interest is high. **Box City** incorporates all curriculum areas: history, geography, art, politics, city planning, economics, social studies. **Box City** develops skills, in group cooperation, writing, art, mathematics, and spatial relationships. **Box City** develops an understanding of the development of cities, their present problems and successes and the need for future planning. **Box City** offers an opportunity for students of all learning styles to participate successfully in a classroom venture, and perhaps a neighborhood service project. **Box City** is experiential and exercises all thinking skill levels in Bloom's Taxonomy.

Time allotment

The **Box City** curriculum guide suggests ways for a teacher to work with students prior to an architect or city planner's visit. Students may prepare boxes in art class time or students can take a box home as an "at home" project. The educator or group leader works out plan for the city or helps

student committee to devise plan. Students spend one hour placing buildings or the "building of the city" can be combined with a visit from an architect or city planner. Total class time: 2-4 hours minimum, depending upon structuring of experience. (1. Decoration of Box 2. Grid plan 3. Placement of city 4. Architect or planner's visit.)

Many teachers expand the unit into a semester-long or yearlong project. **Box City** is also popular at festival events as an introduction to built environment education concepts.

This project works well when an art teacher and a social studies teacher cooperate on the unit. However, it can be run independently by an individual teacher in any curriculum area. If no professional is available (architect or city planner), this resource contains all necessary information.

Participants make the following comments after **Box City** workshops:

"I like the immediacy of this process. Within 45 minutes we had 'bought in' to accepting responsibility for the city." Educator.

"I'm going right back to do this with my architecture students." College professor.

"I want to do this at my child's school." Parent.

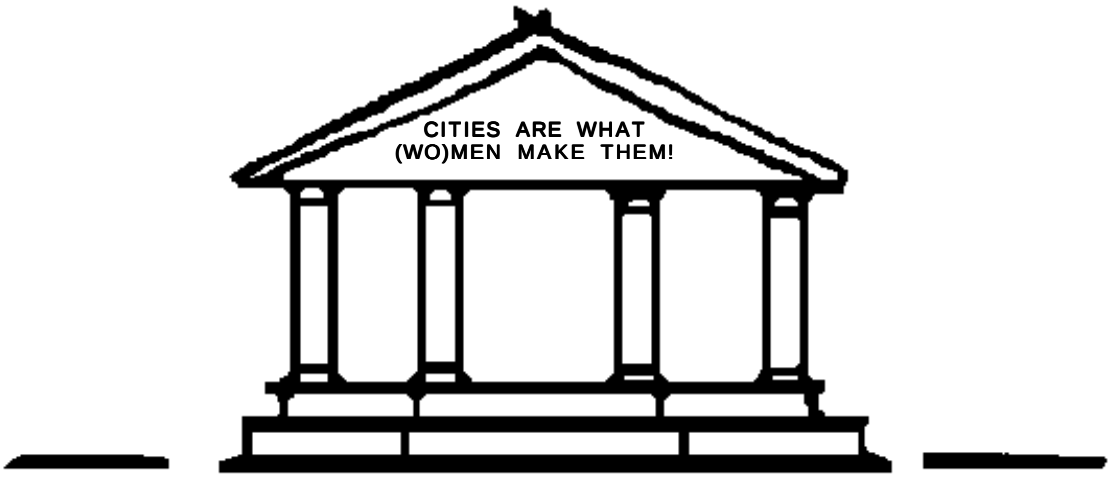
"We would like to try this process with the people who plan our theme parks." Disney Imagineering.

"This is great activity for my child's Scout Troop." Parent.

"My students will want to do this all year long." Educator.

At CUBE, we strive to provide curriculum ideas **plus** support assistance. Please call with your questions and, if you like, we will link you with other educators or organizations who have successfully created their own **Box Cities**.

We know you will enjoy and be challenged by your **Box City** experience and remember…



Adapted quote from the modern plasticized sign affixed to the classic stone City Hall Building, Larned, Kansas

Resource **Peter Barricelli, 55 Boutelle Ave., Waterville, ME 04901**

Box City…a program review

By Ginny Graves, Director, CUBE

CUBE has been making cities out of boxes for over a third of a century! What have we learned? What has changed? What has remained the same?

The first Box City occurred in 1969 as a joint programming effort of Discovery Series, an interrelated arts program at the Johnson County Libraries, and the American Institute of Architects/Kansas City. It had a lot to do with "decorating" the boxes and identifying architectural detail—little of it in 1969 on the "real" buildings of the International Style prevalent at that time. Through the years, the Box City activity, like the communities it represents, has evolved, grown, and seen many changes.

Through 1990, Box City concentrated on helping participants understand the current codes and zoning regulations and constructing "cities" which conform to those codes. In 1990, as our real cities began to tear down, redo, and rethink the actions of the 70s and 80s, the Box City process became one of questioning—mostly, how can we do it better?

The process of the Box Cities of the late 90s and early "Twos" is concerned with city planning and tends to focus on themes: understanding neo-traditional town planning; the need for consensus, the green movement and sustainable development; tools for political activism; the economy of cities and social responsibility issues such as affordable housing and universal access.

What have we learned?
That the Box City process is still a workable teaching tool, whether for adults or kids.

What have we learned?
That Box City participants will replicate what they know, unless they are exposed to a different way of doing things.

What have we learned?
How much we don't know—both as citizen participants and as professionals involved in trying to make communities better.

What have we learned?
That the Box City process works as well with adults as with younger people. Many types of organizations are using it to train volunteer preservationists, new city planning commissioners, neighborhood alliance coalitions.

What have we learned?
That this activity—chaotic, messy, frustrating, never-ending—is much like our cities, and as such, is one of the best training grounds we can provide to help people—youth or adults—understand their roles in the evolution of the city.

In the Future…
In CUBE's publication called **Community Connections: 10 Things You Can Do!** are additional ideas that you have shared with us—some of the extensions, variations and multiple ways that community-based education can bring institutions and communities together.

Box City…a curriculum review

By Caryn S. Canfield, preservation activist in Albany, New York

Box City is an innovative educational program designed to teach children of all ages (and adults) about the styles and structure of architecture, the concepts of community planning, and most importantly, the value of being a responsible citizen.

The Box City activity was developed in 1969 by Ginny Graves, an infectiously impassioned Kansas City art educator, and her equally dedicated and enthusiastic husband, architect Dean Graves. Both are involved in preservation efforts as well. The programs are continually evaluated, revised and refined through cooperation and assistance of educators, architects, planners, preservationists, historians and other community leaders.

What does Box City do?

Box City provides a hands-on experiential approach to community planning and design principles; it instills understanding of the development of communities and their present problems and successes. The curriculum allows students to make their own buildings (from cardboard boxes) and then to create their own communities by placing the boxes on a base plan, at the same time learning how geography, economics, ecology, history and cultures have affected the development of the community.

The participants create a community the way real communities get built, through a mix of collaboration, regulation, necessity and entrepreneurship. When the community is built, the participants evaluate it and compare its good and bad features with the community where they live.

The program aids students in better comprehending the built environment —why it is important to them personally and how they can influence and help to shape it. One technique is conducting a mock town meeting, with students assuming the roles of developers, government officials, neighborhood board activists, environmentalists and others with a stake in decisions.

Box City progresses through a community planning process, teaching vocabulary and the complexities of planning decisions. A main objective of the exercise is to raise the awareness of people who feel helpless about what's happening around them and to show them how them how they can be a part of the process. The culmination is a commitment to rebuild a sense of community, and to build communities that are designed to meet the needs of people.

Box City allows participants to think about their own city, to dream about what it could be, and teaches them to take responsibility for their actions and decisions.

Box City and its companion resource, **Walk Around the Block,** are especially appealing in an educational setting because they are interdisciplinary, multicultural, and involve complex thinking. The programs teach group cooperation in decision making, actively encourage service to the community, and offer an opportunity for students of all learning styles to successfully participate. Box City and Walk Around the Block exercise all thinking skill levels in Bloom's taxonomy, address multiple intelligences and align with national standards and the Iowa Test of Basic Skills. The activities demonstrate the need for preservation ethics and future planning.

Box City…an evaluator's review

By Dr. Kathryn Loncar, School of Education, University of Missouri Kansas City

Delivering Our Curriculum Through Built Environment Education

Built environment education is an important part of a balanced, and comprehensive elementary school curriculum. The programs and activities for built environment education which have been designed and promoted by **CUBE** are well constructed curriculum units which can easily be incorporated into the existing curriculum of our elementary schools. These activities allow us to bring into our classrooms valuable knowledge about the man-made environment and its affect on human events and history, as well as its affect on and the relation to the natural environment. For our children who must live and work in a modern industrialized society, this knowledge is critical if they are to be thoughtful and active citizens. The value of this knowledge for our students, delivered through **CUBE's** activities and programs, is alone sufficient reason to bring these activities into our elementary classrooms. Happily however, there are other educational benefits that these programs can deliver.

Integrating Box City into Curriculum

When we consider incorporating into our already full curriculum, programs such as built environment education, we are necessarily concerned with the time it takes and the impact it has on the delivery of our existing curriculum. Our elementary curriculums consist not only of knowledge, but also of many skills. We, as classroom teachers, are held accountable in many ways, often through the use of standardized tests, for the delivery of this knowledge and these skills to our students. That is why, no matter how valuable programs like built environment education may seem, we teachers understandably must say to ourselves, "This is a good program, but if it's one more thing on top of everything else I have to do, I just can't afford to include it."

That is a very justifiable response, and that is why it is so important to explore the usefulness of these built environment education programs beyond the valuable knowledge they provide. These programs also teach many of the practical skills we must develop in children. These programs for built environment education are not additions to our curriculum, they are our curriculum. They provide a vehicle, a thematically unified way of delivering the content and the skills of our existing curriculum.

This rich alignment of our curriculum, and the content and skills included in built-environment education programs can be demonstrated. Let us take a program like Box City and see how it aligns with the Iowa Test of Basic Skills (ITBS), which is one of the most frequently used measures of how well we have conveyed to our students the knowledge and skills that constitute our elementary curricula. Here are some of the skills drawn from Level 8 (grade 2) of the ITBS.

Test W-1: Visual Materials

* Identifies a location from directional clues on an illustrated map
* Recognizes the directional relationship of two locations on an illustrated map
* Identified density on an illustrated map

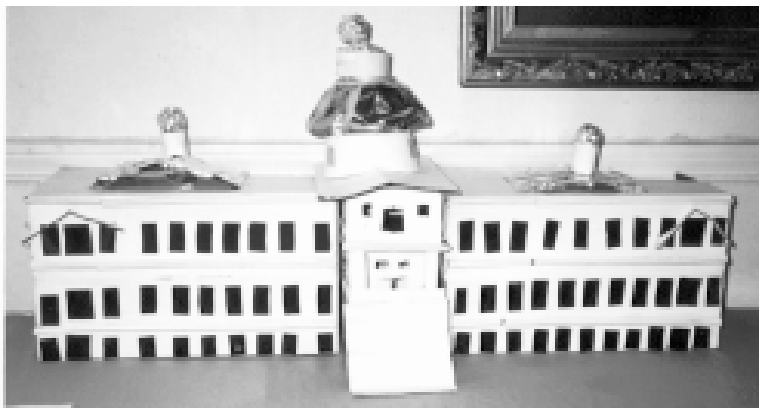
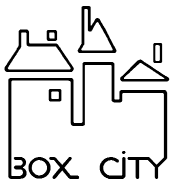


Photo Credit: Linda Dixon & Kathy Keck, Alta Vista Elementary, Cheyenne, WY

An evaluator's review



Test M-1 Mathematics Concepts

* Estimates length
* Selects a given geometric shape
* Answers a question based on the ordinal position of an object

Test - Social Studies

* Selects an example of a city service
* Demonstrates ability to interpret a map
* Recognizes the relation between geography and food production
* Distinguishes between needs, goods, and services
* Identifies cooperative behavior within a community

Test - Science

* Understands the principle of balance
* Identifies a weather condition associated with given safety precautions
* Identifies a harmful effect on man and the environment
* Identifies objects which can be classified together
* Recognizes physical features of the earth's surface

If we consider for a moment the activities of **Box City** alone**,** it becomes obvious how these skills are inherent in the activities. These are just a very few of the specific skills that the test covers which can be learned through **Box City** activities. A full examination of Level 8 of the ITBS revealed at least 54 individual skills that could be delivered to elementary students through **Box City**. Strong alignment of the activities and the skills at any level of the ITBS can be found. A curriculum alignment chart accompanies the **Walk around the Block** curriculum, materials with even broader scope than **Box City**.

Box City, Walk around the Block, and the other built environment education programs that CUBE offers can readily be incorporated into the elementary core subjects because they provide much of the knowledge and many of the skills that are a part of our **existing** curricula. We can give our students the benefit of the relevant and interactive learning, and the knowledge and skills which theses programs provide, without taking any time away from our regular curriculum. Knowing this, a classroom teacher can honestly say, "I can't afford **not** to bring built environment education into my classroom."

Box City…an interdisciplinary review

By Bobbi Sharbutt, Elementary Art Teacher, Shawanoe School, Shawnee Mission School District

Box City is an urban planning activity which was started in Kansas City in 1969 by area architects and educators to help develop an understanding of the built environment and its implications for students. It has been used in schools from the elementary to college level and in museum education. Box City has also been used in architectural education classes for teachers and presented at the 1987 and 1990 National Art Education Association conventions. As well as at national and local conferences of many disciplines. In the Box City project, students are given boxes to alter and decorate to represent a particular type of building: residential, industrial, commercial or public. Box sizes vary according to the particular building selected. Modular boxes are available commercially from CUBE, or students can bring cereal and shoe boxes from home. Since a variety of buildings are needed for a representative city, it is helpful to have a sign-up sheet or assign students to create a definite building type.

Box City may be an art classroom activity, but really works best if it is developed as a unit of study on the urban environment, lending itself to many social studies curriculum units and giving teachers a chance to team-teach a unit on the development and makeup of a city as well as what makes an esthetically pleasing environment. The aesthetics of architecture can be an important part of the discipline-based curriculum, teaching students to appreciate architecture as an important element of the environment. With this type of teaching in mind, students may be learning about urban planning and environment in one class, while creating their buildings in an art class. Students use many types of materials to create their buildings depending on their level of ability. Cut paper seems to be universally utilized as a material for roofs and chimneys. Other elements may be added to the basic box shape. Older students can research building styles and add actual architectural details from recognizable styles.

As a culminating activity, it is important to create an actual urban environment using the buildings that the students have made. A large surface is laid out with a street grid and the buildings are placed along the streets to approximate a city. This can be done as a group activity, with students gathered around and discussing the placement of the various buildings to make the city. Appointing a group to be city planners can help students understand the implications of zoning and planned development in city growth. The planners can approve or deny the placement of buildings, with the teacher acting as a facilitator to keep discussion going. When the buildings are all in place, students compare their constructed town with their own city or neighborhood and can add, at least conversationally, those buildings which are essential to a city, but missing from this one.

I have used Box City in classrooms from fourth grade up to adults and feel Box City is a valuable experience which will help students understand more about their built environment.

We shape our buildings. Thereafter, they shape us.

Winston Churchill, 1954

Procedure

Review the entire **Box City** resource in order to understand the variations and extensions that your Box City could take. Although Box City is a "stand alone" exercise, there are a number of activities in CUBE's **Walk Around the Block** curriculum which serve to establish knowledge base for understanding the community and how it works.

Box City can work at all levels: as a quick and dirty onetime event used to teach a particular concept, as a six-week event or a yearlong focus. Box City can work for all age groups and knowledge levels. It is open-ended and participants bring to it their own levels of expertise. It is the leader or organizer who determines what directions the Box City takes.

Adults utilize Box City in much the same way. Many neighborhood organizations and community groups are using Box City as a way to sensitize their leaders to community issues.

We have listed the activities which are most essential for understanding the Box City activity. There are many others included which reinforce particular curriculum objectives (science, math) or deal with specific concepts (housing or cities of the future).

Any or all of these activities are good warm-up exercises for the **Box City** exercise.

Important Buildings Questionnaire

Cognitive Mapping

GeoBlock Activity

Boomtown

If you are conducting **Box City** over a period of several days or weeks, you might divide the work according to the weekly format on the following page.

Reference **If your Box City unit is to be extensive or a year long experience, you will want to consult the archiSources catalogue for additional architivities and resources which would be helpful. A number of the activities are in the CUBE curriculum called *Walk Around the Block*.**

Procedure

WEEK ONE: If working with young children, these decisions may be made ahead of time by the leader or by a group appointed especially for this purpose. Box City lesson plans are italicized. Locate page number in Table of Contents.

Define:

guidelines for city
zoning which will control placement of buildings
type of base map material
layout (geographical, political, historical influences)

City Planning Principles
City Planning Factors
City Plan: The New "Old" Town

WEEK TWO : Identify city services and select building type
Important Buildings Questionnaire
Cognitive Mapping
GeoBlock Activity

Identify architectural elements and structural principles

WEEK THREE: Practice the visual, verbal and structural understanding of how communities work

- this could be a field trip, slide talk, walk around school or area

Select and research roles

WEEK FOUR: *Role Playing*
Informed Consent
Reinforce planning concepts and vocabulary
Building Assignments and *Understanding Land Usage*

WEEK FIVE: Apply knowledge of Building Usage and Architectural Components
City Plan

WEEK SIX: Land use issues and conflicts
Building the City
(Architect, city planner or other design professional can "lead" this exercise with the instructor.)
Evaluating the City

A Perspective on Assessment

Debbie Haltom, Assistant Director, High Plains Educational Cooperative #611, Ulysses, Kansas, offers an interesting perspective on evaluation. Haltom asked the teachers of gifted students in the Cooperative to use **Box City** as a project for the school year. She comments, "Innovations in education are often tested with gifted students and then move into the education mainstream. We are not saying that an activity or effort in this area is **only** for these students. In fact, in all of our #611 Cooperative programs we are trying to involve more kids. The decision may be made on a project by project basis. If a student functionally shows that a particular activity would be suitable, that student will be involved.

"In looking at various means of assessment, some consider that a paper/pencil test is objective and evaluating a product is subjective. However, evaluation needs to move much more toward product/outcome-oriented assessment. It is more inclusive and tells more about the student than traditional testing. For instance, even in the **entrance** to our programs, we are moving toward more functional assessment.

Community Referenced Curriculum

"**Box City** and all built environment education activities are particularly good for schools which are involved in an innovative teaching practice called *Community-Referenced Curriculum.* A class will choose a program in the community and attempt to solve it. **Box City** is wonderful for this because it involves real problems. Students are motivated when they are involved in real life situations. And it will ultimately make a difference in how our communities work."

Haltom requires a student and teacher evaluation as a part of any project. Using Box City as the activity, Haltom developed a *student evaluation*, a *teacher checklist* for formative evaluation with a *teacher report* for summative evaluation for the 300 gifted students and seventeen districts included in the High Plains Cooperative. The teachers were asked to include **Box City** as a part of their students' *Individualized Education Plan* as well. (The various forms follow.)

Box Format for the Student Evaluation

Haltom explains use of the box assembly for the Student Evaluation form, "It is fun and stimulating to use a format which varies from the usual question/answer test. The making of the box or cube reinforces a number of math and art concepts as well. Students in gifted programs or school reform programs are involved in self evaluation or metacognitive learning (Bloom's Taxonomy). They need to recognize at what level they are learning. We want our students to be aware of the *aha* moment when they are learning." As a teacher teaches **Box City**, it would be appropriate to have a conversation with the students which indicates the level at which learning is taking place. For instance,

…as students learn architectural details or how a building stands up
"Now you are gaining information (**developing a knowledge base).**"

…as students plan the grid for the city or establish the zoning and building use
"At this point you are **applying** the skills you have learned **(application)**."

…as students evaluate the city they have created
"Now you are discovering the problems you have caused: smog, gridlock, visual pollution **(evaluation)**."

Student Evaluation for Box City

CUBE

1. Cut figure on solid lines.
2. Fold all dotted lines, including tabs.
3. Glue each tab individually and bring together to form walls.

Check activities completed

_____ Important Buildings Questionnaire
_____ Cognitive Mapping
_____ GeoBlocks Activity
_____ Developed a City Plan
_____ Developed a Building
_____ Role Playing
_____ Evaluating the City

Check processes used

_____ Problem Solving
_____ Knowledge
_____ Comprehensive
_____ Application
_____ Analysis
_____ Synthesis
_____ Evaluation

TAB

Products I am proud of

1. _____
2. _____
3. _____

TAB

Check resources used

_____ Newspaper
_____ City Plans
_____ Library
_____ Maps
_____ Architects/ Contractor
_____ Designers
_____ Mayor/ Commissioners
_____ Museum
_____ Other

TAB

I could have made Box City better if ...

_____
_____
_____
_____
_____
_____
_____
_____

TAB

Box City evaluation

I rate my Box City project performance

_____ Excellent

_____ Above Average

_____ Average

_____
Student Name

TAB

The **Student Evaluation Box** provides an example of the kinds of alternative assessment methods and activities which are available. Students use this form after the completion of the **Box City** project. The **Box City** curriculum is available from CUBE.

Individualized Education Plan for Box City

Most gifted students are involved in some kind of Individualized Education Plan. In reference to the **Box City** activity, an example follows. Using the forms provided here, all activities will be measured by the *Student* and *Teacher Evaluation* with reference to the Individualized Plan.

GOAL: Student will **develop** creative and critical thinking skills by participating in the **Box City** project.

Objective I: **Gain** an understanding of the various ways that people influence the plan of a city when interacting with geography, government, history, and economics.

Activity 1: Student will **participate** in cooperative learning groups to create a base model plan for their **Box City** by completing *Understanding the Plan* and *Base Model Plan*.

Activity 2: Student will **complete** a *Buildings Questionnaire* and *Cognitive Mapping Activity*.

Activity 3: Student will **participate** in a discussion of *City Planning Principles and Factors* after listening to a guest speaker and reading information on city planning.

Activity 4: Student will **complete** the *GeoBlock Activity*.

Objective II: **Gain** an understanding of types of structures and services which are necessary for a well run city.

Activity 1: Student will **develop** a building according to pre-selected criteria.

Activity 2: Student will **assume** the role of an actual citizen and engage in role play.

Activity 3: Student will **collaborate** to design and build a **Box City**.

Objective III: **Develop** skill in evaluating processes and products.

Activity 1: Student will **record** completed activities and used resources and processes on the *Student Evaluation for Box City*.

Activity 2: Student will **sum up** the evaluation by completing the *Student Evaluation for Box City*.

Activity 3: Student will **cut and paste** the *Student Evaluation for Box City* and mold into a box for display with the products.

Teacher Evaluation for Box City

CHECKLIST: Student Name: _____

ACTIVITIES:

	Problem-Solving	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Important Buildings Questionnaire	____	____	____	____	____	____	____
Cognitive Mapping	____	____	____	____	____	____	____
GeoBlocks Activity	____	____	____	____	____	____	____
Developed a City Plan	____	____	____	____	____	____	____
Developed a Building	____	____	____	____	____	____	____
Role Playing	____	____	____	____	____	____	____
Evaluated the City	____	____	____	____	____	____	____
_____	____	____	____	____	____	____	____
_____	____	____	____	____	____	____	____
_____	____	____	____	____	____	____	____

REPORT FORM:

Describe the accomplishments of this student in terms of processes used and skill development.

_____

_____

Has the student completed the IEP objectives to meet the goal requirements? _____

_____

_____

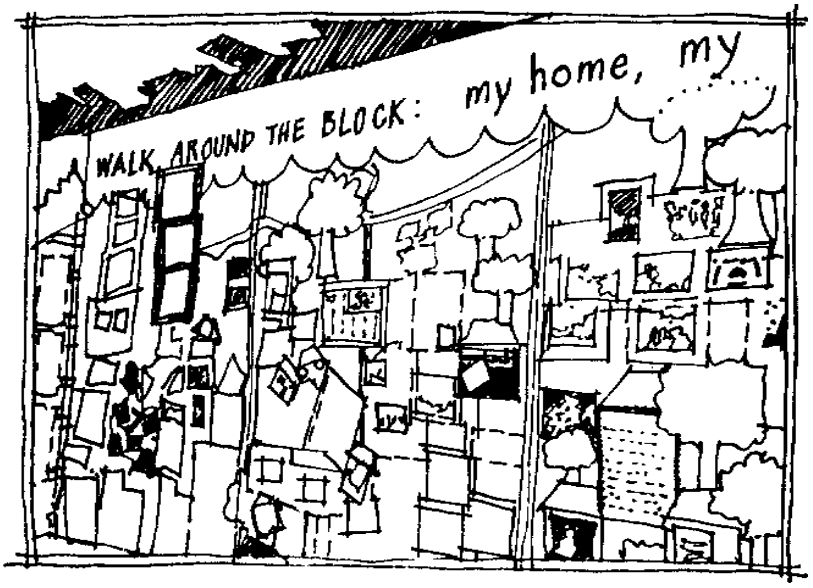
Reference **"Assessment Backs Built Environment Education." and "The Paradox of Assessment."** ***archiNews*****. 15 (1993): 1 & 2.**

Learning Center

Create a bulletin board or center which will serve to teach various building structure types which make up a city and to heighten awareness of architectural details.

- photos and pictures of building types and spaces (commercial, residential, industrial, agricultural, civic, recreational)
- photos and diagrams of architectural details, and possibly photos of actual houses and buildings from the school neighborhood

As the project continues, have students bring newspaper articles which illustrate how the city works and how decisions are made. They may discover that economics and politics outweigh considerations of historical context or aesthetics.



Red Bridge Elementary School

The Field Study

How do we take our students beyond what they know from their own experience to what is possible? Exploring the city provides a glimpse of other lives, other ways of doing things. Field studies are essential for a complete education.

A natural accompanying activity for any analysis of the city is the field study. With a basic understanding of planning terms like node, district, landmark, edge and path, students are able to identify strategic areas on a map of the field trip destination prior to the activity. Experiencing them on site provides motivation for continued investigation.

"How might the educational potential of the city be enhanced for children today?" asks Michael Southworth, College of Environmental Design, University of California at Berkeley. "One important way to learn from the city is to travel about within it. Mastery of the subway or bus system is an education in itself. Children must learn how the transit system is organized, plan their routes and plan their finances. They must learn how to read signs and maps and are exposed to the enormous physical and social variety of the city." If this is not possible due to school district restraints, it can be encouraged as an optional family activity.

How can communities help? In Portland, Maine, the city put together A Kids Guide to Getting Around Greater Portland, building on the theme of "Save Our Earth." The packet included free passes, an easy to use "how to manual" and buttons. The colorful map helps kids choose the appropriate kind of transportation for the place they are going. Emphasis is placed on kid-powered wheels and feet using those paths without cars which are especially good for bikes, skateboards, wheelchairs, or roller skates. Portland has made it possible for young people to get almost anywhere in town without having to ask their parents to drive.

Both **Box City** and **Walk Around the Block** curriculum are organized so that a basic knowledge base is established by using the home; the school and the blocks around the school neighborhood as a starting point for practicing skills like pace and scale, property survey, mapping, and building type recognition. However, the ultimate goal is for the students to have a broader experience, the city, through a field study, whether with the class or through some other mechanism.

With budget cuts and legal constraints, many educators find themselves with limited access to field studies.

The alternatives which teachers are currently using:

1) Private transportation provided by parents. Some classes are able to take as many as eight field trips per year.

2) A selection of field trip sites with directive questions for each site. Families or caregivers undertake on weekends or after school.

3) Enrichment programs or clubs (usually after school) which focus on community exploration.

Reference: **Southworth, Michael. "City Learning: children, maps, transit."** ***Children's Environmental Quarterly.*** **7(2): pp 35-48.**

"A Kids Guide to Getting Around Greater Portland," **Portland Metro, 207-774-0351**

Field Study "Finds"

What to look for on the field study? How to look? Follow these instructions:

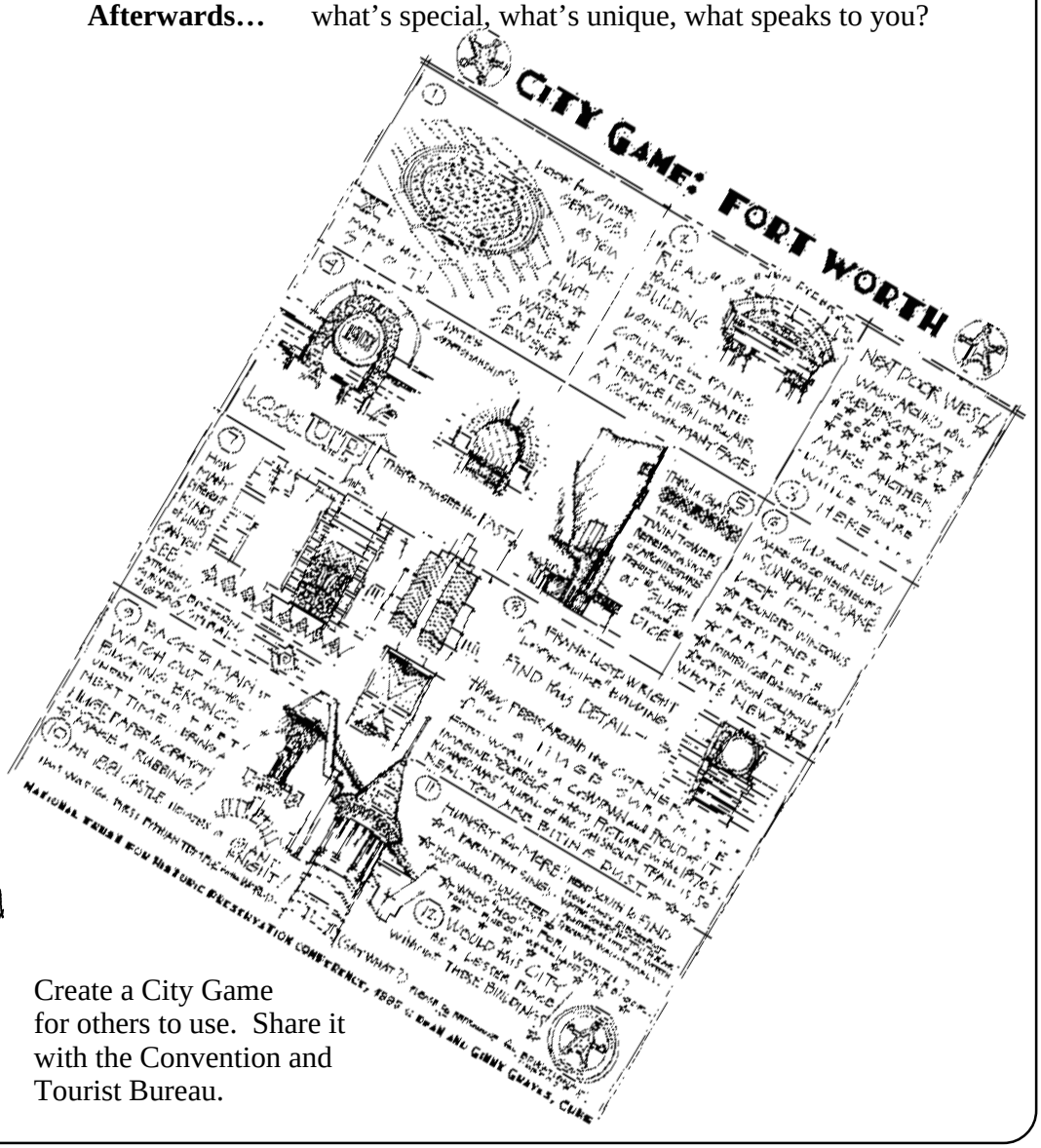
Look up… there you see the past.

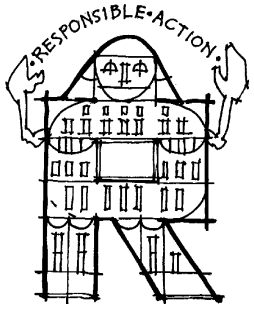
Look down… there you see how the city works.

Look through… *focus* your attention by looking through your fingers or a viewfinder.

Stand on your head… get a different point of view!

Afterwards… what's special, what's unique, what speaks to you?





Create a City Game for others to use. Share it with the Convention and Tourist Bureau.

Resources

The Box City activity is as much about the process of community-making as it is about the way buildings look. By choosing ready-made boxes, rather than making models, there is more time for that "organizing" process to take place.

Order boxes or devise a method for constructing your own buildings. If using donated boxes, try to establish a modular size which will help buildings to relate in scale. (See *More on Scale* in this curriculum.) If purchasing boxes, some teachers pay for the boxes and supplies by having children bring half of the costs, Parent Teacher Organization donates other. Local banks, real estate firms, planning and architectural organizations often sponsor Box City.

Other materials you will need:
Supply amounts will vary depending on size and type of boxes, amount of detail, and base model needs. Revise for your own program.

Supply:	**Festival amounts estimated:**	**Classroom:**
Boxes	1,000	25 - 40
Marking Chalk, white or yellow	2 boxes of 12	
Lecturers Chalk (3" long x 1" square)	1 box of 12 blue, 1 box of 12 green	
Plastic Rulers	2 dozen	1 dozen
Safety Scissors	8 boxes of 12	1 each child
Water Base Markers	25 packages of 8 assorted colors	8 packages
Wide Permanent Markers	2 yellow, 2 red, 2 blue, 2 purple	same
Colored Poster Board, 20" x 30"	100 gray, 100 brown, 100 assorted colors	
Colored Construction Paper, 9" x 12"	20 packages of 50 sheets	3 packages
Glue Sticks	50	10
White Glue, very small bottles	6 packages of 12	12
White Glue	2 gallon bottles	
Masking Tape, 1/2 or 3/4" x 60 yards.	20 rolls	4
Masking Tape, 2" x 60 yards.	5 rolls	
Magic Tape, 3/4 x 1296"	40 rolls	4
Cellophane Tape, 2" x 55 yards.	6 rolls (or white tape)	1 roll
Pens (narrow, black)	1 dozen	1 dozen
Pens (narrow, colored)	1 dozen	1 dozen
Pallets (4x8 ft. bases with 12-18 in. legs)	dependent on base model size	

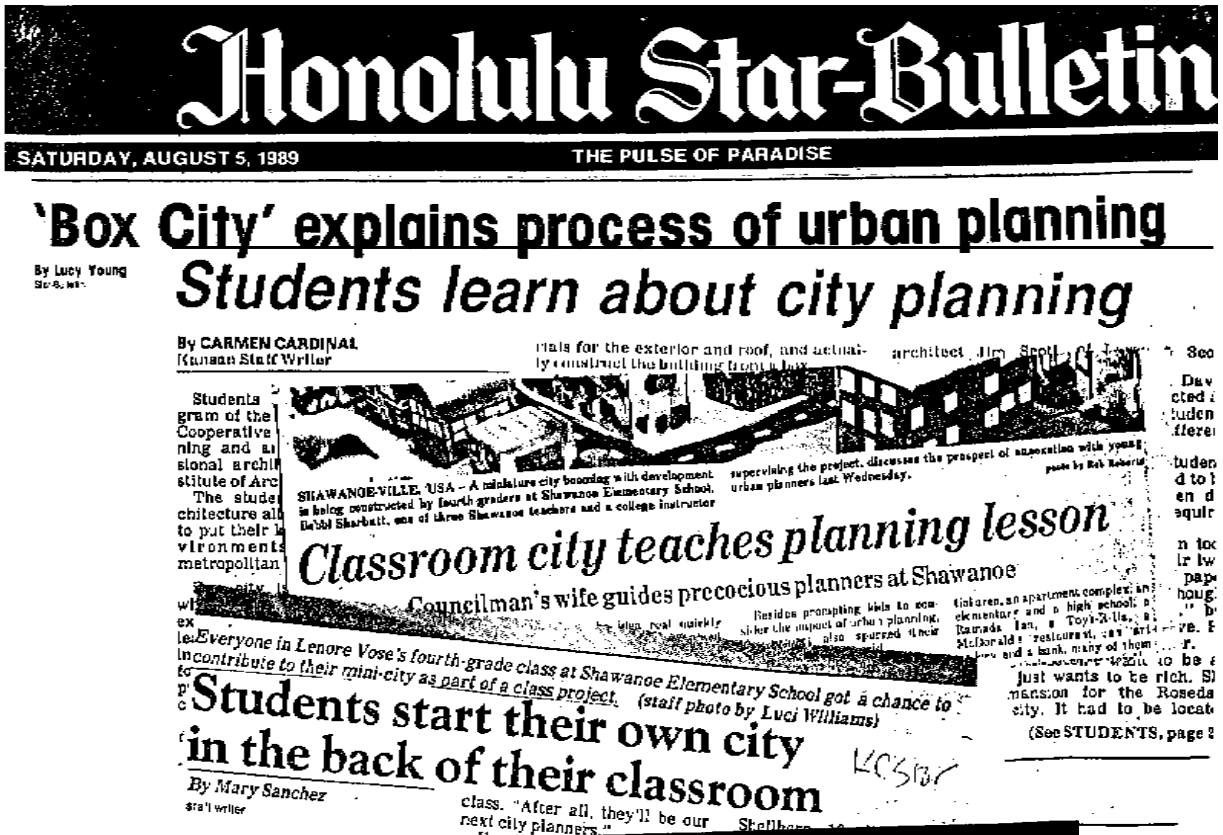
Books:
A variety of architectural nomenclature and style books for use in making the buildings; photographs of buildings in your community.

Festivals
Festival amounts vary depending on the estimated attendees. It is desirable to have a wide variety of "enhancement materials" such as film canisters, odd-sized small boxes, cups, and paper plates, and aluminum foil (for shiny roofs). If you are planning Box City for a large city-wide event, contact CUBE for additional directions for the organization of your activity.

Public Relations

Box City offers an opportunity for positive public relations for your school or organization. Contact the local newspaper as the actual date of the city construction draws near. Prepare a simple handout which explains to the reporter the objectives of the city planning experience and why your school or grade is doing it. Built environment education is interdisciplinary and involves all curriculum areas and all skills.

Stewardship. Educators and students can have a positive effect on mayors and city council-persons. Some schools have involved these city officials in the final design of the Box City. It is important for these officials to know that citizens are interested and care. It is important for them to know that there is an informed constituency which they (the officials) can call on when they need help in planning for or maintaining a quality built environment.



Honolulu Star-Bulletin

SATURDAY, AUGUST 5, 1989 THE PULSE OF PARADISE

'Box City' explains process of urban planning

By Lucy Young

Students learn about city planning

By CARMEN CARDINAL

Classroom city teaches planning lesson

Councilman's wife guides precocious planners at Shawanoe

Everyone in Lenore Vose's fourth-grade class at Shawanoe Elementary School got a chance to contribute to their mini-city as part of a class project. (staff photo by Luci Williams)

Students start their own city in the back of their classroom

By Mary Sanchez

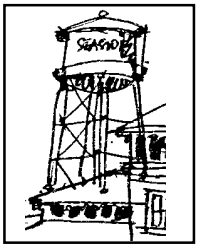
CSA | AIA NEWS

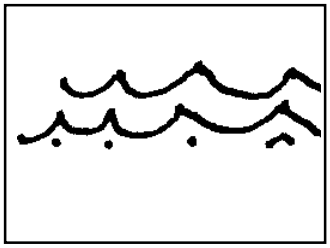
Newsletter of the Connecticut Society of Architects SEPTEMBER 1987

"Box City" — An Experience In City Planning For Young People

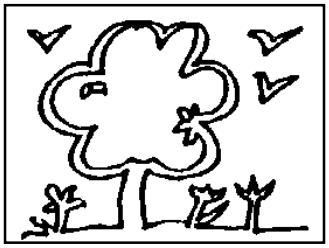
Understanding the Vocabulary

The "built environment" is a term used by design professionals, landscape architects and all those whose responsibilities include looking at a community as a whole, not separate parts. The term built environment means more than just buildings. It is usually defined as anyplace where humans have intervened, by intent or design or by accident, in the natural environment. Therefore, the built environment that we are teaching about includes:


Industrial


Natural Resources

Communications


The natural environment

The built and natural environments are one and interdependent.
The pollutants from a building affects the quality of air, the chemicals used in an orchard may erode a building or piece of sculpture in a nearby town. The preservation of a *trail swale* (changes or ruts in the surface of the earth) which remind us of the wagon train migration to the west, remain or are paved over because we, as citizens, have made a decision to preserve or destroy them. Other examples of the ways that people make decisions which impact on both the natural environment and built environment are:

- reserving places for green space in your community or paving over it for parking lots
- conserving trees and forests or allowing unchecked "harvesting"
- helping farmers to devise new successfully economic approaches to land use, such as farm-to-market planting, or letting farmland, by default, revert to development

Depletion is the scourge of the 90s. In Natick, Massachusetts, four million gallons of water are used each day. When municipalities draw out water to this extent, it's flushed down sewers and is not replenished. It never returns to the river. When you take out water, the flow of the river slows down, water gets warmer, bass can't breathe, nutrients and pollutants build up. **One and interdependent.**

Make a list of all the things that are a part of the built environment. Illustrate it with examples from your community.

People have always expressed their love of water through song. Dickens extolled the Mississippi and the Suwanee, Jolson sang of the Allegheny and its moon, the Blue Danube is measured by the waltz. What song would you write or sing about the rivers of today?

Clean Air, Clean Water

It all begins and ends with these important elements.

Without it, nothing else matters.

What cities look like, what amenities are available, how well they are planned—all of this becomes irrelevant if the basics are not in place.

Sustainable Cities is the theme of Expo 2000 in Germany.

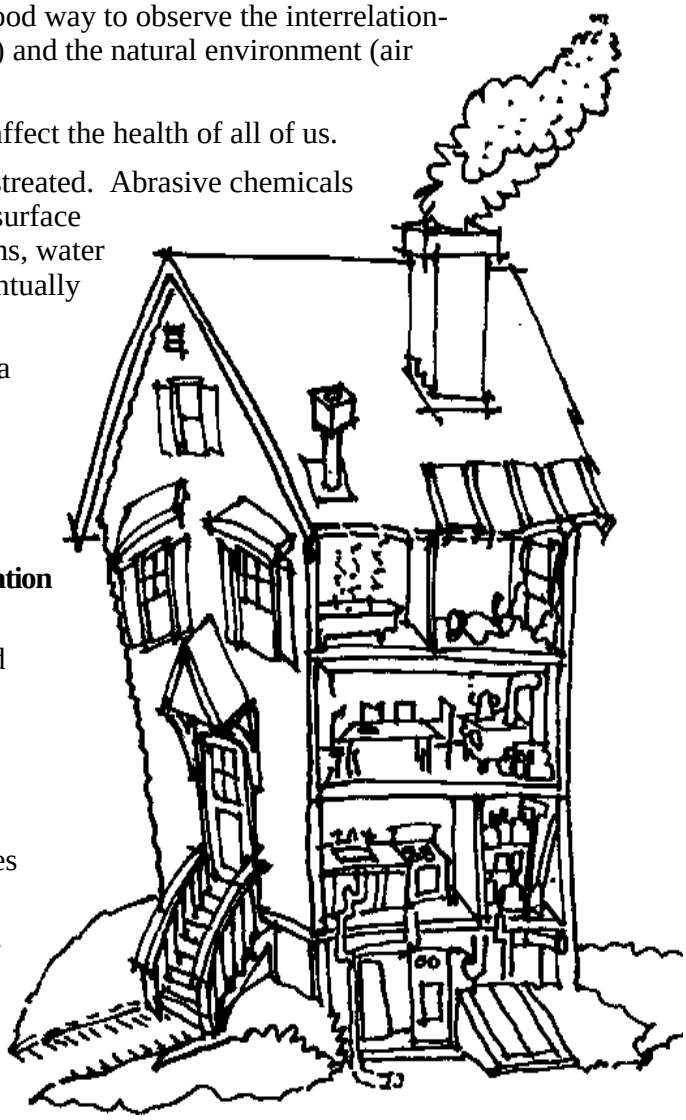
Living this theme is not just a goal, but an essential given, for inhabitants of Planet Earth for the 21st century.

Inspect a Building

Reading a building to analyze its safety is a good way to observe the interrelationship of the manmade environment (a building) and the natural environment (air and water).

You can see how they **are** one and how both affect the health of all of us.

Some buildings **are** sick. They have been mistreated. Abrasive chemicals have been used to clean them, destroying the surface membrane of the materials. When that happens, water and chemicals can seep into the brick and eventually destroy the building.



Some buildings can make **you** sick. Conduct a safety inspection for

1. your home
2. your classroom
3. your school

Look for:
Poor Ventilation/Inadequate Quantity of Ventilation

Asbestos
In insulation, floor and ceiling tiles, paints and joint compounds

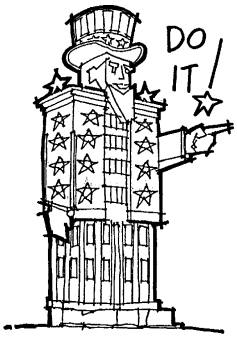
Radon
In rock and soil beneath houses

Combustion Gases
From gas appliances, wood stoves and furnaces

Household Chemicals
In pesticides, paints, paint strippers and cleaning fluids

Water Pollutants
Lead in water pipes or pipe solder and chemicals that leach into water supplies

Product Chemicals and High Maintenance Chemicals
In cabinets, bookcases and other furniture constructed with particleboard or plywood, as well as drapes, upholstery, carpets, wallpaper adhesives — formaldehyde in particular



Air Pollutants
Molds, bacteria dust and pollen that collect in air-conditioning vents, humidifiers, dehumidifiers, dirty ducts, and sticky surfaces, i.e. lots of surface area such as carpet

After your inspection, locate the person responsible for monitoring hazardous materials in the building. Write a letter which expresses your findings and also what you would suggest as a solution. (Effective Action Letters should always state the problem as well as suggest a solution.) In your own home, work with your family to correct the problem.

Discussing Built Environment Issues

Almost every built environment activity will generate all kinds of questions involving higher level thinking skills. This may be the time to begin to pull some of those ideas together into a cohesive thought pattern which will eventually evolve into a personal philosophy **toward** and **about** the built environment.

What is architecture?

Can a building be called architecture without an architect? Many early buildings were built by carpenters who used patterns out of books.

Are those buildings architecture? Is your school architecture? Is your house? Is any building?

Ownership

Who owns the land? Your home? Your school?

Who owns your neighborhood? Your city?

Services

What services or needs do people in a neighborhood or city share—police, fire, landfill?

Where are these places located? In your neighborhood? In your city?

Where should they be? Who decides where these will be? Do you want to live near them?

How do you get from one neighborhood to another? From one place in the city to another?

Which ways are the quickest? Why? Should there be more of these routes? If so, where will these go? What changes will need to be made in order for this to happen? What will be the positive effects? What will be the negative effects? If you were asked to move from your home to make way for highway construction, would you? Why or why not?

Green Space

Are there green spaces in your neighborhood? In your city? Why? Where?

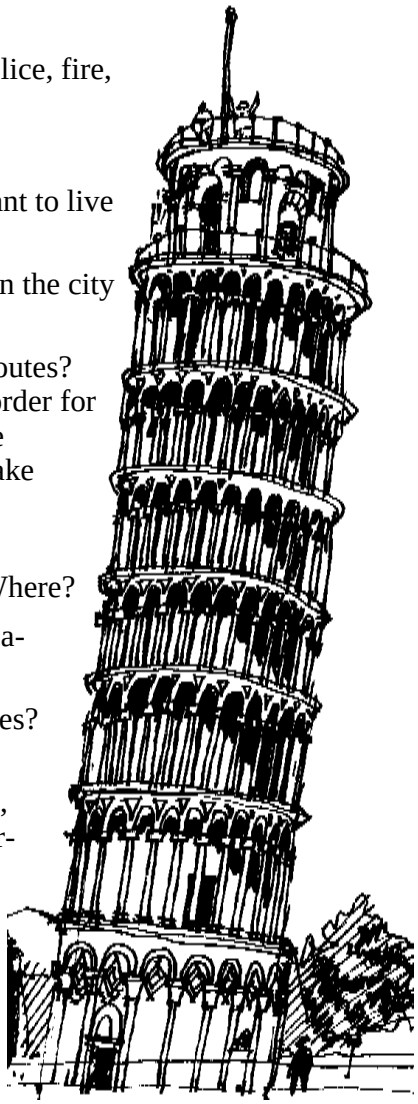
A green space is not always a park. It can be a planted area which separates two land use types such as residential from commercial.

Who takes care of the green spaces? Should there be more green spaces? Who should pay?

Some cities plan green spaces as a part of the overall planning process, but that space and its use become the responsibility of that neighborhood. What are the advantages and disadvantages of this kind of planning?

Rights

Does a building have rights? As the Leaning Tower of Pisa began to lean precariously to the point of collapse, the townspeople reluctantly discussed whether to correct its lean. Who would visit a country town to view a straightened tower?



Drawing by Dean Graves

Where Does Responsibility Begin?

Are you responsible for someone else's land? Your neighborhood? Your city? How far does that responsibility go? Does accepting responsibility also mean doing something— that you will act to take care of the place, remedy a problem, plan to make it better?

When do you say "my" neighborhood? When do you say "their" neighborhood?

- at the corner?
- when you step outside your house?
- across the street?
- a few blocks away?

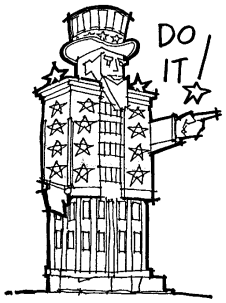
The Candy Bar Wrapper Exercise
Ask yourself this question: "How far will I lean out of bed to pick up a candy bar wrapper?"

Will you get out of bed to pick it up in your…
- bedroom?

Will you stoop to pick it up
- in the house?
- out on the street?
- at the corner?
- across the street?

Where is the frontier? Where is the property line that you won't cross? Where has someone made you feel you don't belong?

Making it a Better Place
What things can you do to make a better place for…



…your school? _____

_____

…your neighborhood? _____

_____

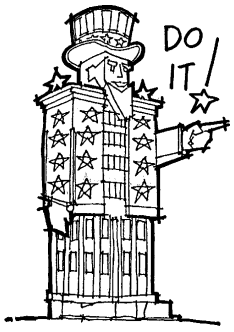
…your city? _____

_____

Does Your City Work for You?

Addressing what you want the community to do for **you,** is important to do before the plan and guidelines of the city are established. This activity can also serve as an evaluation matrix when the city is built. Generate additional questions which will serve as a guideline for city development.

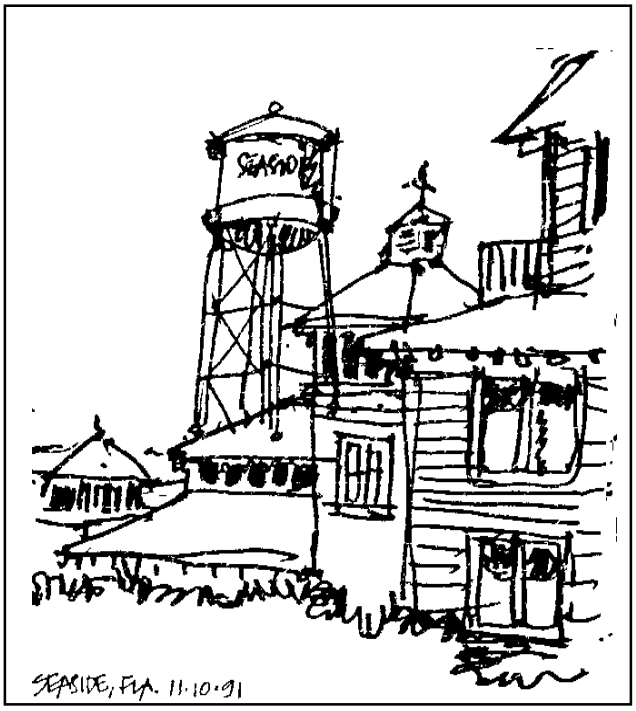
Have participants make a list of some of the things that make the city a good place for kids. Ask both adults and students to list the things that are important to them. The two lists may not be alike, but your city should include some of the things on both lists for it to work for all kinds of people. How could you get the city to make some changes?



What else?

Study a new community like the one designed by Andres Duany and Elizabeth Plater-Zyberk: Seaside, Florida. Their recognition of human scale and human needs establishes a model for new construction in our communities. It borrows successful planning from the past like that in Charleston and Savannah, while acknowledging that new construction will be ever present.

The challenge: to learn from the past while planning for the future without compromising either. It takes an entire team to make a project work. Robert Davis, the developer of Seaside, believed in Duany/Zyberk's plan. The architects, craftsmen, and even the people who live in Seaside accept responsibility for making the community a success.



Does Your City Work for You?

How does your city work for you? Choose one residence and pretend you live there. Ask these questions:

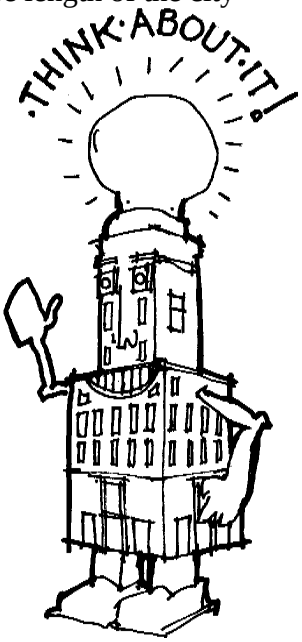
How easily can you walk to
1. school
2. your church
3. your grocery store
4. a library
5. work
6. day care
7. light shopping
8. small services shoe repair or drug store
9. a park or green space?

How easily can your family drive to
1. the place of work
2. a place to take a plane or train or bus
3. a museum or art gallery

Is there a designated place to
1. bicycle
2. walk a baby in a stroller
3. jog
4. sit and chat with a friend

How does your city work for others?

- Are people linked with surroundings, not cut off by automobile freeways?
- Is there a pattern of public squares, circles and crescents integrated with structures?
- Are residences closely linked to schools, churches stores and offices?
- Is there room for sidewalks, playgrounds, alleys and front porches?
- Are there narrow streets to inhibit speeding and to assist cyclists and pedestrians in crossing?
- Are there major streets or boulevards where you can look the entire length of the city (viewshed)?



Following the Box City activity, this page could also serve as an evaluation of the city that you developed.

Make the Connection

The buildings of a city, used as a visual history book, transcend language barriers and have a common theme which all children inherently understand to a certain extent and which they can be taught to understand even more. There is an implicit "preservation ethic" built in when the students realize how valuable the building is if only from a "history telling" point of view. Students can exercise the idea of "building as story teller" through a new kind of exchange whereby children would communicate with each other through their built environments—a common denominator for all. This idea works well between students in different cities within the United States and also between schools in different parts of a city where there are cultural differences. This exchange is ready-made for classes gathering information and embarking on Box City programs which include multi-cultural experiences as a part of the curriculum. With easily-accessed computer capabilities, the immediacy factor is compelling and motivating.

The possible student exchange might be:

Exchange #1: a picture (drawing, photograph, postcard or even a video) of their school

Exchange #2: a picture of their home

Exchange #3: a picture of an important landmark in the city

Exchange #4: a picture of a favorite building

In each Exchanges #1 and #2, the students would begin building the knowledge base by labeling the drawings or photos with:

a. architectural parts of the building,
b. materials and how the building stands up
c. a paragraph which tells the history of the building, and its chances for the future

Thus learning

a. architectural vocabulary and how to really look (read) buildings
b. building materials in the context of science, energy, geography, technology, structure
c. history as it has been affected by people and places
d. the issues and challenges of the built environment thus exercising higher level thinking skills, decision-making, judgment, aesthetics, and evaluation skills

In Exchange #3, participants would again do the labeling, but the communication would expand because the students are explaining what a landmark does, and why it is important.

In Exchange #4, students begin to evaluate the built environment by telling why a building is a favorite. (The last two, of course, lead to the higher level thinking skills.)

For international purposes, the drawings and photos eliminate the barrier of the language difference. Students pick up some vocabulary by the labeling in another language, but the picture tells the story. The possibilities for foreign language classes are infinite.

Resource **There are many activities in the *Walk Around the Block* curriculum which make this exercise easy to carry out: landmarks, mapping, reading a building, and adopting a building. As well as the value of the exchange itself, an exhibit or video would be a great culminating activity for this project.**

CUBE members in many parts of the United States and in a number of foreign countries informally participate in this exchange via mail and the Internet. If you would like to participate, set up your own program or inquire and we'll connect you with someone who has children who want to share their built environments!

Understanding the Plan

Work through the following steps in order to gain understanding of the various ways that people influence the plan of a city when interacting with geography, government, history and economics.

1. Begin with what the participants know
   - the plan for the neighborhood around the school
   - the plan for the neighborhood around the most frequently used shopping center
   - the plan for your town or city

   Review possible plans for your city by looking at specific city plans shown in this guide. Others are available by reviewing materials listed in the bibliography or looking at city planning resources in the library.
2. Call your city planning department to ask for a land use map of your city. Request one with the various zones delineated by color. If you decide to use a plan of your own city or even neighborhood in order to personalize the **Box City** experience for your students, this map can serve as a drawing guide for the plan.
3. The next step is defining the boundaries for the city. If curriculum outcomes would benefit, select a certain time period, a particular city or geographic location. Some educators begin with the early nucleus of the city and then have a second wave of construction which represents more current growth in the city.
4. Write a clearly defined description of the city before you begin. This can be a cooperative learning project if students can work together over an extended period of time. For instance:

   "This community is located in the rural Midwest in the early 1800s. It is located on the Missouri River near a place where fur traders had first established a trading post. The first settlers are just moving out of their soddies and beginning to build more permanent homes and structures. What buildings would they build first?"

Base Model Plan

Decide on the basic plan for the city. The "Base Model Committee" may be the assisting group of design professionals, a student committee, or a combination of the two. A discussion of the issues involved, long term repercussions of certain planning decisions, and what the base model will actually depict—imaginary or generic city, your own city, or your own neighborhood—need to take place prior to any design work.

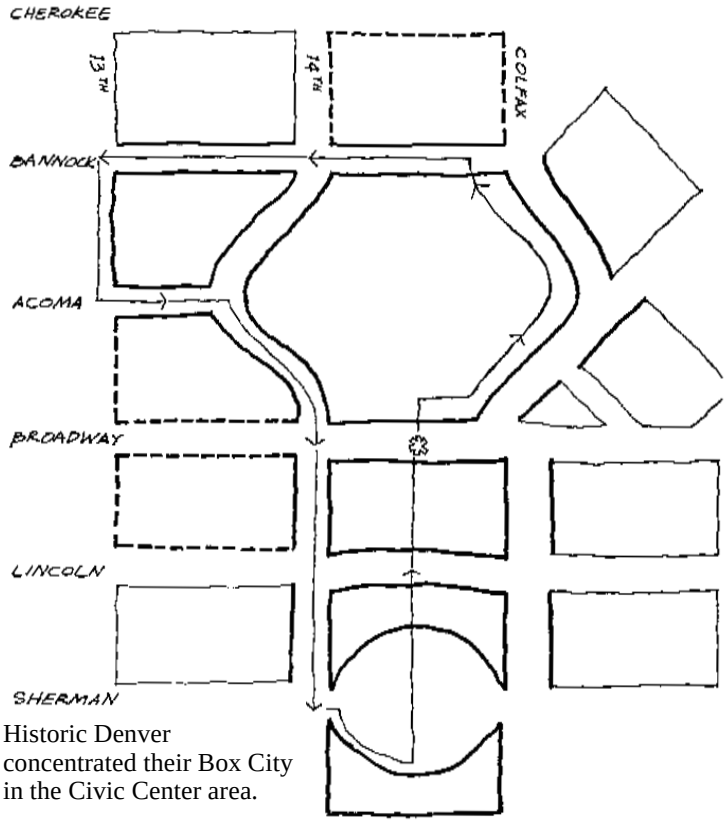
Discuss together:
How will you present it? What scale will it be? Where will the boxes come from? Does it need to be movable? Will it show topography forms?

A general guideline for land use is:

15% infrastructure (roads, bridges; utilities: water, waste, power; public transit)
15% urban fora (density, setbacks, use zoning, typical blocks)
20% civic spaces (parks, civic buildings, hospitals, fire/police stations, sports stadium)
15% social and cultural (schools, museums, libraries)
20% housing spaces (variety of choices in terms of lifestyle, cost, convenience)
15% working spaces (convenience, variety, flexibility and reusability)

Base Plan Materials
Strips of brown wrapping paper can be taped together and the plan painted or marked on this background. A large white sheet can be marked with permanent felt tip pens. One of the most flexible methods: a sheet dyed green, and black strips of construction paper which can be arranged and rearranged as the city grows and develops and as the students gain more understanding of city planning.

Base Plan Placement
Placing the grid plan on tables limits the amount of space and the direction the city might grow. (No room for urban sprawl or annexation.) The floor offers more flexibility.



Historic Denver concentrated their Box City in the Civic Center area.

Pace and Scale

Understanding pace and scale will help you lay out the base model for your city. When architects design a building they cannot draw its actual size—it would be as big as the building, maybe even a block! They use a technique called **scale** to show on paper how the completed building will look. Scale means that the drawing has the same proportions as the real building, only reduced in size. When drawing buildings to scale, architects usually use 1/4 inch to equal 1 foot. They use a triangular rule with scale markings calibrated for this purpose.

A less accurate, but often used method of measurement, is the pace. It will give you a "rough estimate" of the size of a large area such as a room or a yard. To determine your pace, stand against a wall, take three average or normal steps. Mark the place where the front of your foot lands on the third step. Measure the distance from the wall to the end of your third pace. Divide that distance by three. This is the average length of one pace. Repeat this process three times.

First Measurement: 1 pace = _____ ft. _____ in.

Second Measurement: 1 pace = _____ ft. _____ in.

Third Measurement: 1 pace = _____ ft. _____ in.

Based on your measurements determine your average pace:

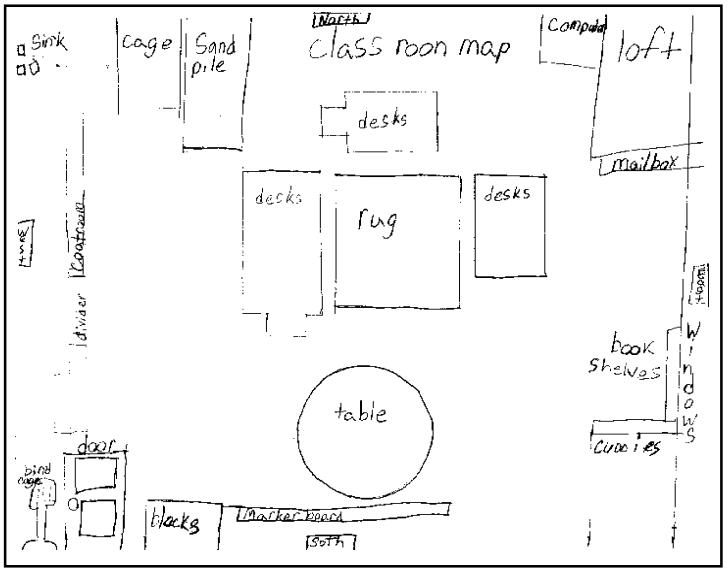
1 pace = _____ ft. _____ in.

How does your average pace compare to those of your classmates?

_____

_____

Using your average pace as the unit of measure, draw a floor plan of your school or the place where you are working. Include symbols to represent windows, doors, tables, and other furniture on your drawing so that others can read your plan. Note the scale on your drawing. Use 1/4 inch graph paper for your work.



Building Restrictions

The participants need to consider organization of Building Placement. When the boxes are decorated, how will they be placed in the city? If you have used a zoned grid pattern for the base model plan, this placement is already defined by area. If not, your city will develop willy-nilly and will eventually need some organization. Finding this out during the Box City placement can be a part of the learning process. (In reality, this is an expensive learning process for a city and its taxpayers.) The following may help the Base Model Committee think through the areas they want to define and their uses.

1. in normal city development, civic buildings are placed first
2. services are developed at the same time
3. industrial and commercial development efforts respond to population
4. residential neighborhoods develop around services

Appoint or elect a city planning and zoning commission among the students in order to become familiar with city planning principles and zoning laws. This group will rule on variances when laying out the city. In terms of zoning, the following restrictions are generally true. However, building restriction rules are changing with the new emphasis on multi-use communities. Even with a definitive code, exceptions are always made and this is why city planning and zoning commissions exist. Discuss the reasons for the following generic restrictions with the students.

Restrictions:

RESIDENTIAL: **must** build adjacent to:
- school
- library
- church
- park
- another residential development
- hospital

cannot build adjacent to:
- industrial development
- railroad track

COMMERCIAL: **must** build adjacent to:
- City Hall
- park
- library
- another commercial development

cannot build adjacent to:
- school
- church

INDUSTRIAL: **must** build adjacent to:
- river
- railroad
- highway
- another industrial development

cannot build adjacent to:
- church
- school
- library
- residence
- hospital

(**Adjacent** is considered to be across the street. **Diagonal** is not considered "adjacent".)

Discussion question: Find out if students know if their parents have ever attended a city zoning meeting and for what reason.

Building Restrictions Graphic

ZONING RULES

RESIDENTIAL	MUST	SCHOOL	LIBRARY	CHURCH	
		HOSPITAL	RESIDENTIAL	PARK	
	MUST NOT	INDUSTRIAL	RAILROAD TRACK		
COMMERCIAL	MUST	CITY HALL	PARK	LIBRARY	COMMERCIAL
	MUST NOT	SCHOOL	CHURCH		
	MUST	RIVER	RAILROAD TRACK	HIGHWAY	
MUST NOT	CHURCH	SCHOOL	LIBRARY	RESIDENTIAL	HOSPITAL

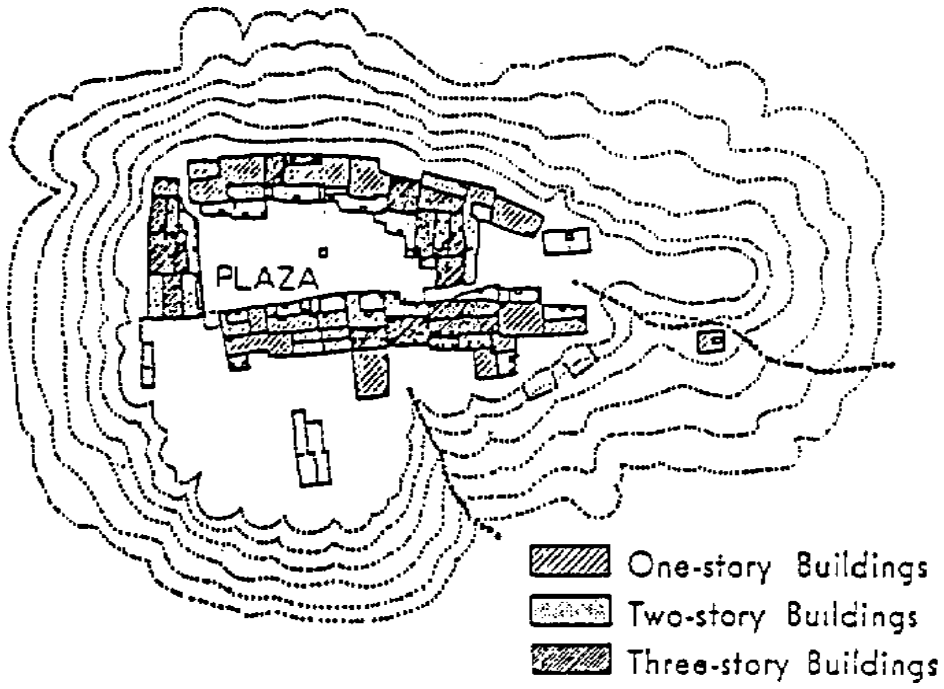
This is a visual "help sheet" to allow the zoning commission to quickly determine whether or not the placement of a particular building is allowed. This same information appears in written form on previous page, *Building Restrictions*.

No society is healthy without the will to create anew, the will to save the old.

The Organic Plan: Hopi Pueblo

HOPI PUEBLO, SHUPOLOVI

The Hopi Indian village of Shupolovi was the organization of a clan or group of clans who built their villages for protection from their enemies. An agrarian people, their society was communal in political organization. Perched atop the mesas of northern Arizona the people sought their scant water supply at lower levels where they carefully tilled small plots of level land.



City Plan: The Greek City

Although Greece and Rome are well known for their city planning, two of their principal cities were not planned, but evolved: Athens and Rome. They were impossibly noisy and hard to get through. Although the citizens recognized the problems, ancient civilizations never attempted to rebuild in an established city unless it had been completely destroyed by war or other natural disasters. They would build, instead, in a new place and when they did, planning principles which are common today were put in place. The rebuilding of the town of Miletus, by the Greeks in 479 B.C., in what is now Turkey, is a benchmark date for city planning.

The geography of Greece made travel difficult so it resulted in a nation of skilled seafarers. It also meant that each region of Greece was isolated from another. The citizens of Greece were independent and the land was poor. They soon set out in all directions to find new homes. Wherever they went, they took their democratic customs: land for new colonies was divided up into equal sections to insure that each family received a fair share of land for its own living quarters. Care was taken to allow for enough space for public buildings. A description of the Greek founding of Thurioi, 444 B.C., in Italy, is typical of most new towns planned by Greeks. The geographer and historian Deodorous says, "They divided the city lengthwise by four streets and breadth-wise by three streets."

The ancient Greeks spent little time at home. They had a great appreciation for public life. Because of the beautiful climate, they could gather in squares and marketplaces. The "shape" of their towns shows us the kind of people that they were. When we look at the ruins of Olynthus, destroyed during the Persian Wars, we see that the houses are nearly identical in size and construction suggesting that the citizens of the community put into practice some of the ideals of equality for which Greeks are widely known. Sections of land were set aside for each house and were equal in size. Main streets and cross streets were exactly the same width except for the street which led to the civic center.

There are common elements for all Greek towns. Have students contrast and compare these elements with those in the city in which you live:

The Acropolis
It served as the main fortress of each town. It was built on the highest ground. Each Greek city saw itself as an independent state. Therefore, it needed strong defenses. The Acropolis served as a military stronghold and also an important center of religious life. The Acropolis in Athens is the most famous.

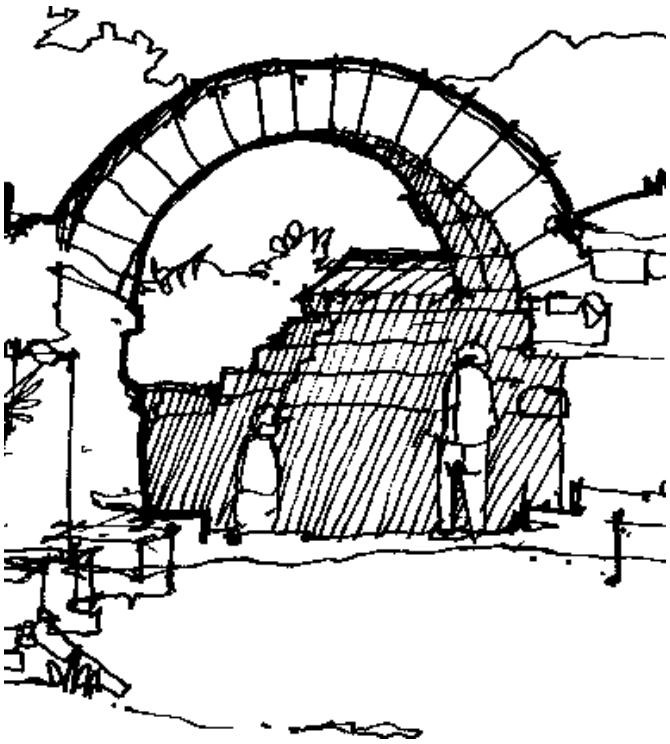
Walls
Fortress-like walls were built carefully of stones cut to fit together: no cement or mortar was needed. The walls followed an irregular path even though streets were at right angles. Three to four story stone tower lookouts occurred at strategic points.

Agora
This was the most important area of Greek Towns. It was a large public area which consisted of a square piece of land paved with stones and bordered on all four sides by several rows of columns. It had a narrow roof which kept out sun and rain. It was the equivalent of our City Hall: officials met here; statues and monuments of heroes were placed here; it served as a marketplace, and a gathering place on important social and religious occasions.

City Plan: The Greek City

Theater
Plays were performed only twice a year during religious festivals. The theater occupied a large open area, was semicircular in shape, and was surrounded by rows of seats.

Gymnasium
No Greek City was without a gymnasium. It was a long, narrow racing track rounded at one end and straight at the other. Seats for spectators lined both sides. As many as 45,000 spectators could gather. The original stone seats can still be seen.



Entrance to Stadium, Olympia, Greece

By the fourth century B.C., a bold and ambitious new leader, Alexander, III (The Great) had emerged and a new period of Greek expansion began. Alexander believed in an empire in which industriousness and knowledge of Greece would combine with the splendor of the East and all would live together in harmony. City planning was well known by this time and can be seen in dozens of planned towns which were built all along Alexander's conquest routes.

City Plan: The Greek City—Activities

The study of Ancient Civilizations is the focus for curriculum in many sixth grade classrooms. A number of educators have used Box City or an extension of it to teach the ways of life in a Greek or Roman City. Integrating across the curriculum is simple—math: a discussion of Greek columns and proportions; social studies: a review of all aspects of Greek life; art and geography: make a model or Box City of a small Greek town. To bring all of the learning together, conduct a compare and contrast discussion of present day life and Greek life with the intent of encouraging future analysis and comparison of cities and historical patterns.

Wanted: Town Planner

Dinocrates was a young architect who wanted the sought-after job as the architect for Alexander. He despaired of ever getting the job since there was so much competition. He dressed himself in a lion skin, the traditional costume of the mystical hero Hercules. When an opportunity arose, he leapt in front of Alexander, declaring in a loud voice that he wanted to accompany him on his military campaigns, and act as the city planner and architect. Alexander stopped to talk to him and agreed to hire him.

Pretend you are Alexander. How would you have described (in other words, a contemporary Want Ad) the job of Town Planner that you needed to hire for your explorations and conquests?

Pretend you are Dinocrates. What would you have included in your "job portfolio" which would convince Alexander that you were the person for the job?

Box City Greek City

Create a **Box City** in the Greek manner utilizing what your students have learned about ancient Greece, its geography, its people, its customs. The spotted history of Greek colonization and conquest provides ample opportunity for building and rebuilding while learning about Greek history at the same time.

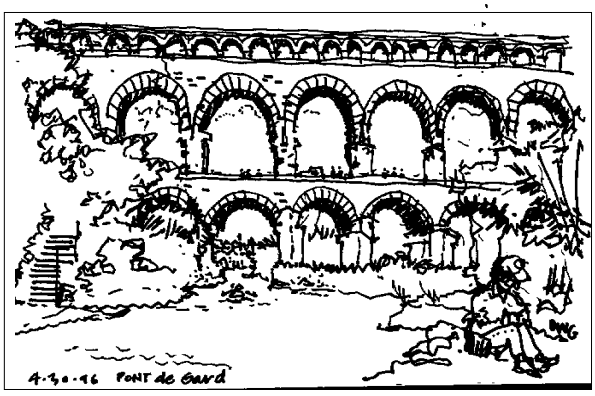
Plans for Greek Box City: Melinda Baker, art coordinator, Apache School.

City Plan: The Roman City

Masters of the art of city planning, the Romans, built new and exciting cities which functioned well for their citizens. They drew their strength and wisdom from two important sources: the civilization of the ancient Greeks who established many colonies in the south of Italy and whom the Romans admired for their artistic, cultural and scientific achievements and the civilization of the Etruscans, a people who inhabited the northern part of the Italian peninsula, living in a loose federation of independent cities and towns. The Etruscans were craftsmen: ironworkers, and ceramicists which meant they produced bricks, tiles and pottery. Their most important skill was architecture. The Etruscans taught the Romans how to build round or conical vaults of brick or stone, which they used to construct their burial mounds.

The **Greeks** loved stone and painstakingly cut and fit the stone. The **Romans** liked to use bricks and mortar because it was lighter, it could be mass produced making it cheaper to make, and the raw materials were plentiful, unlike stone. The most important factor was speed: the Romans needed to expand quickly. They were not building for colonization, like the Greeks, but to make military camps. Beauty and aesthetics came last. They quickly devised a standard plan: the cities were square or rectangular in shape; one main road ran through a colony from east to west; another from north to south. The center of town was where two roads met. The remainder of the city had streets which ran parallel to the two main roads. The entire town was enclosed by strong walls and two main roads passed through four gates, one in each of four walls.

Before construction began, the city's population and size were determined. Ample space was allowed for shops, public squares, temples and houses. Streets, sidewalks and sewer systems were designed and construction of water and drainage systems constructed. Public areas such as the forum and marketplace, shops, private homes, public baths and entertainment centers were intricately planned. These same steps are the basis of true city planning today. A look back at the building of Roman cities gives an interesting perspective on the plight of today's cities.



Pont du Gard, Nimes, France. A portion of the 31 mile, three-tiered aqueduct which was built about 2000 years ago to transfer water from Uzes to the Romans in Nimes. It was restored in the 19th century.

The Roman Arch made huge structures possible. It was used for theaters, aqueducts and bridges and monuments. Structures could be built as high as five stories without columns breaking up the central space.

Just as the Greek City had its main elements, the Roman City contained:

The Forum: All public life centered around this open area surrounded by arched porticoes or a series of columns that provided protection from the weather.

Basilica: An enclosed space next to the Forum served as a market and place for public business in winter

Public Bathhouse: The Bathhouse was located nearby with exclusive areas for men and women; it was like social clubs of today.

The author who documents this well is David Macaulay in his book, **City**. This book is great preparation for the **Box City** exercise for participants of all ages.

City Plan: The Roman City

The Romans built to honor the gods and to identify the State in an impressive way with their rituals, but also to please and shelter human beings. Interior space became a place for people and their day-to-day activities, for people to inhabit, to move about in (not outside and around as with the Greeks); a place in which to transact business, to administer law, to hold entertainments, and to decorate not only to honor the gods, but to record human accomplishments as well.

It was this desire in Roman society that made the arch an important building element for them.

In opening up interior public space, the Romans were the first of the ancient civilizations to utilize space in the way we use it today and for somewhat the same purposes. Space was used as a volume: to surround man, to enclose him, and to make his activities effective, functional, ordered and comfortable.

The Romans introduced many of the construction techniques and principles we use today. They invented concrete—a mixture of sand, gravel, pebbles, chippings of stone mixed with a cement of lime and water. Among other advances, their use of the arch form put high ceilings and second, third and fourth stories on the architects' drawing boards.

Compare the older buildings in your city with pictures of early Roman structures. Do you see structures that look very much the same as those in the pictures? Do you see similar architectural elements?

Look at newer buildings in your city. Recent styles in architecture have reintroduced the idea of bringing back classical designs. What is alike? What is different?

Reference **Abramovitz, Anita. *People and Spaces, A View of History Through Architecture.* New York: The Viking Press. 205 pp.**

Macaulay, David. *Works: City.* New York: Houghton Mifflin, 1974. 112 pp.

Why Did the Romans Like Concrete?

The Romans were interested in concrete for two reasons:

- it was lightweight
- it hardened under water making it perfect for building bridges

The Romans were so good at using concrete that some of the roads and bridges that they built are still standing and in use today.

A mystery
The knowledge of how to build cement and concrete was lost after the fall of the Roman Empire. In 1756, a British engineer, John Smeaton, rediscovered how to produce cement and how to use it to make concrete.

Today, portland cement (an improved form) is used to make concrete more durable. It is often reinforced with steel rods or pretreated to make it even stronger. It is fireproof, watertight and strong and therefore, easy to make and cheap to use. It can be crushed and recycled when a building is torn down or a road is replaced.

How did it happen that the knowledge of concrete was lost? What would be missing in your city if all things concrete suddenly disappeared or if the formula for making concrete was lost?

Make your own concrete.
Use prepackaged concrete (directions are on the sack). Line low, sturdy cardboard boxes (like stationery boxes) with plastic film, and pour in the concrete until it is about two inches thick. Smooth the wet concrete with trowels (Popsicle sticks are great trowels). Observe the concrete hourly:

1. How long does it take for concrete to begin to harden?
2. How does concrete change as it hardens?
3. How long does it take to harden completely?

You may want to test the strength of this homemade concrete with the estimated needed strength of concrete for a highway or building.

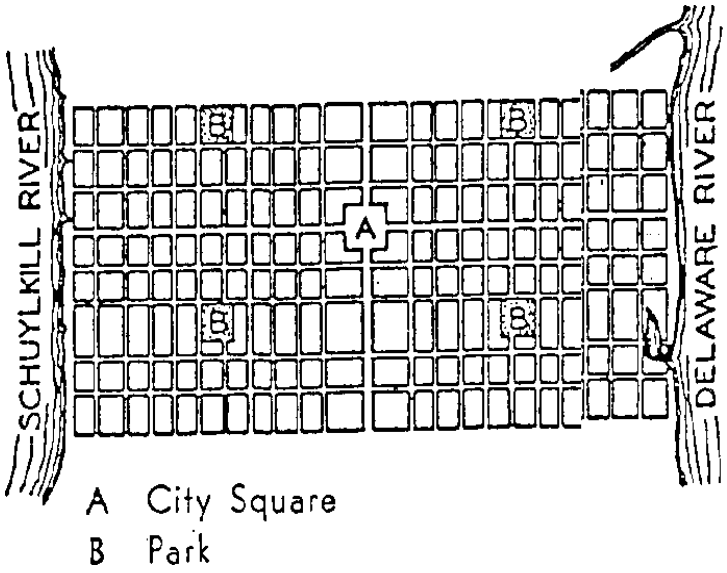
Reference **Markle, Sandra. "City Geology." *Instructor Magazine*. (May, 1989) 1.**

A good source of activities involving concrete is available from Southern Illinois University, Construction Department, Attn: Luke and Billie Snell, Edwardsville, IL 62025.

The Gridiron Plan: Philadelphia

PHILADELPHIA

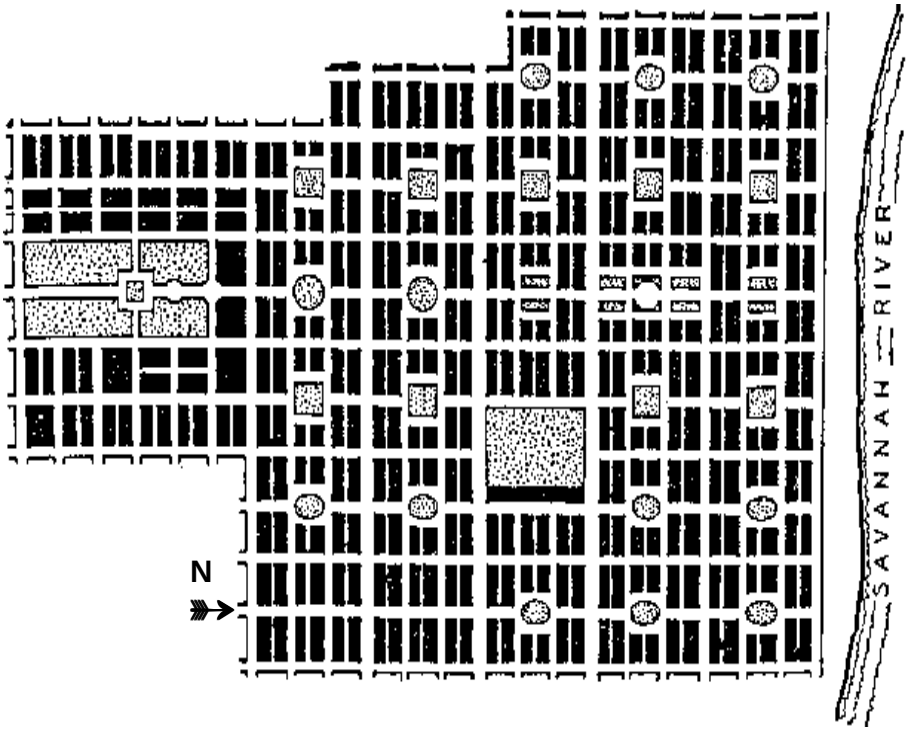
William Penn commissioned the surveyor Thomas Holme to lay out the city in 1682. A rigid grid-iron plan was adopted. Two major streets crossed in the center of the town and formed a public square. A square block park was placed in each of the four quadrants. The early dwellings were single-family houses. In the middle of the eighteenth century, it became a common practice to build dwellings on the side lot lines resulting in continuous rows of buildings which cut off access to the rear yards. Alleys were then cut through the center of the blocks. These alleys have since become the quaint and narrow business and residential streets for which the city is known today.



The Park Square Plan: Savannah

SAVANNAH
Laid out in 1733 by James Oglethorpe, the Savannah plan was a regular grid pattern of rectangular streets with park squares liberally spotted in alternate blocks. Each park is different in foliage and focus: sometimes a gazebo, sometimes a fountain or monument. The plan is similar to Philadelphia with a more generous allocation of open spaces. The streets linked these parks and created a continuity of open space when the town was built only with single houses.

Problem and Solution:
The Savannah Plan has since been forsaken by an intensive building coverage of the intermediate blocks. In Savannah's late 19th century Victorian district which adjoins the Historic District to the south for more than one square mile, a solution emerged. During the 1970s and 1980s, without displacing established residents, which were usually low income families, the Savannah Landmark Rehabilitation Project restored about 400 apartments and rented them back to the longtime residents. The unity of the neighborhood was not disturbed.



The gridiron plan adopted for these towns was not only the simplest form to survey; it was also a satisfactory form for a small village. A sense of unity was maintained by close relation of all dwellings to the town square and to the agricultural land on the outskirts. It is when this same pattern is repeated endlessly that the monotony of checkerboard lays heavily upon the town.

The Radial Plan: Washington, D.C.

WASHINGTON, DC
In 1649, the first American City to adopt diagonal avenues and circles as the basic plan was Annapolis, Maryland, a small settlement on the banks of the Severn River. It was followed by a more dramatic display, the classic plan for Washington, DC, by Major Pierre Charles L'Enfant, a French engineer.

Even before L'Enfant began, some basic decisions had been made. The city fathers had decided to:

- avoid existing urban centers like New York and Philadelphia
- place the site along banks of Potomac
- select L'Enfant, a French designer, with a background which embraced the Baroque planning of Paris (this appealed to the aristocracy of the United States)
- develop grand city woven into a geometrical order

L'Enfant began, not with the gridiron street system, as city planners of today might do, but with the principal buildings and squares. "Lines or Avenues" of direct communication were laid between these cardinal points. Washington was planned, therefore, as Lewis Mumford describes it, as a series of interwoven spider webs. Diagonal streets were overlaid upon a gridiron pattern.

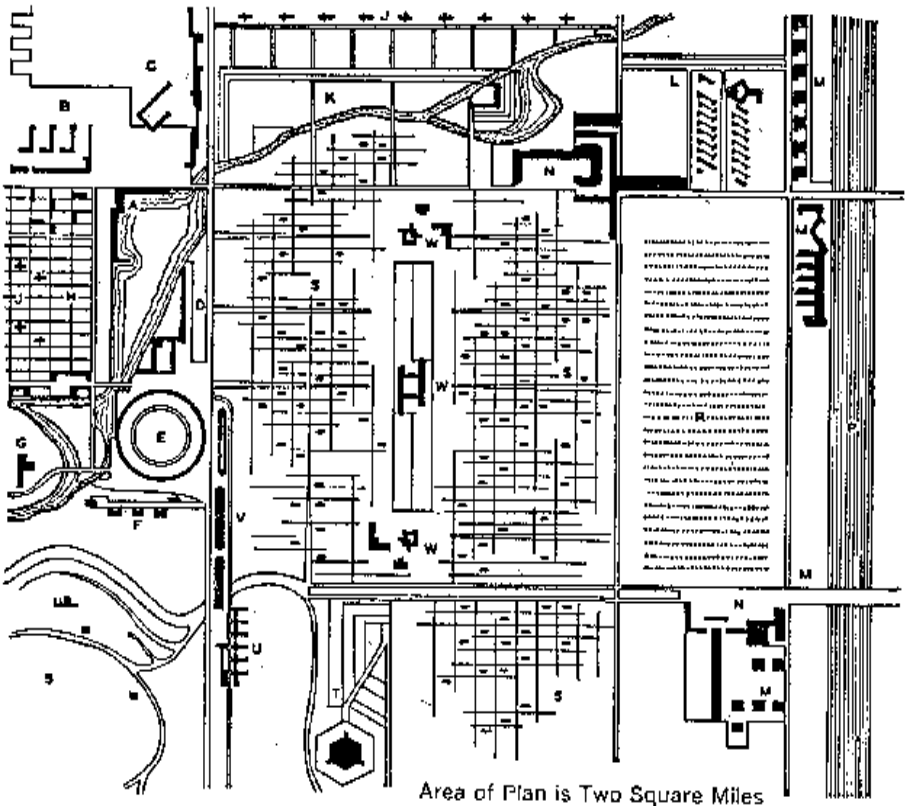
Discussion
Of the 60 thousand odd acres included in his plan, 3,606 were required for highways. Only 541 acres were allotted to public buildings and grounds. What do you think of this apportionment between dynamic and static space, between vehicles and buildings? How does it compare with today's apportionment?

The Linear Plan: Broadacre City

BROADACRE CITY

Essentially a "linear" city form, Frank Lloyd Wright's proposal distributes industry, commerce, housing, social facilities, and agriculture along the railroad artery and has access to highways. The unit which dominates this plan is the minium of one acre of land for each family rather than the neighborhood unit, although the various neighborhood facilities are provided.

A County Seat Administration
B Airport
C Sports
D Professional Offices
E Stadium
F Hotel
G Sanitarium
H Small Industry
J Small Farms
K Park
L Motor Inn
M Industry
N Merchandising
P Railroad
R Orchards
S Homes and Apartments
T Temple and Cemetery
U Research
V Zoo
W Schools



Leave the City Behind

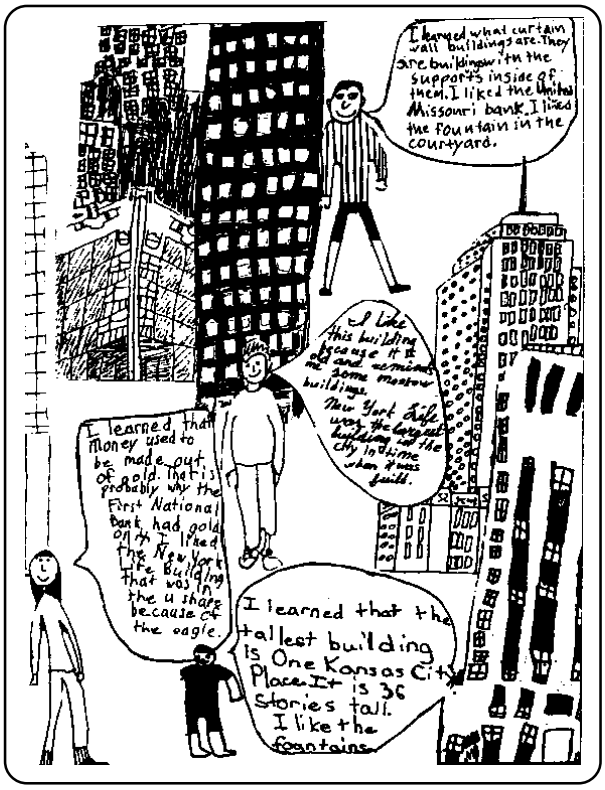
BROADACRE CITY

Created in the 1930s, during the Depression, the architect, Frank Lloyd Wright began a series of drawings of Broadacre City to show what living could be like for those who would leave the city behind. He had the notion that every individual was entitled to an acre of land (rather than the neighborhood unit) and that the auto would render dense city cores obsolete. In Broadacre City, there would be a mix of high rise buildings and low ones, set on a grid intermixed with farmland. Wright focused less on houses than on the connective tissue between them: highways, cars, gas stations, air travel, even broadcast media figured in his grand continental design for a decentralized urban America. His houses showed simplified open exteriors and prominently placed carports. More than private dwellings, they were fragments of a dispersed, redefined public domain.

Wright saw before anyone that the suburban landscape needed occasional bigger buildings and in a way predicted "Edge Cities." The biggest criticism of Broadacre City was that it seemed to have room for only one kind of person, a person just like Wright, a person who loved democracy, family, order and the agrarian landscape.

Wright's residential architecture beckoned to city dwellers with the promise of a bold adventure in living that could be theirs if they would leave the city behind. For Wright, the city was the "triumph of the herd instinct." His houses offered the independence of life on the prairie, but with all of the modern conveniences. As the century unfolded, increasing numbers of Americans responded to his call. In the postwar years, Wright lent cultural prestige to those who abandoned the city for the suburbs. Yet Wright believed that his vision was urban. He understood perfectly that architecture cannot exist without a public realm.

Just as Wright's **images** enticed people away from the city, **images** now can graphically reinforce the urban center as the superstructure of all infrastructures—airports, subways, buses, highways, trains, and above all, the street.



Building graphic: PS1

Reference **Goldberger, Paul. "Not an Urbanist, Only a Genius."** ***New York Times.*** **Feb. 13, 1994. p. 48- 49.**

City Plan: Edge City

Whatever you call it, Edge City, Urban Villages, Technoburbs or just plain Sprawl, an emerging phenomenon is challenging almost every community in America.

"The American people are on the edge of developing a new kind of American City," according to Joel Garreau, author and correspondent for *The Washington Post*. In his book **Edge City**, he explains that Edge Cities grow up around older urban centers, notably New York, Boston, Los Angeles and Washington, DC. Garreau lists 123 Edge Cities in North America. The definition of Edge City includes 5 million square feet of leasable office space or more (and thus is clearly a work center and not a suburb), has at least 600,000 square feet of retail of a type that makes the area a destination, and is located in a place that 30 years ago was overwhelmingly residential or rural in character. According to Garreau, there are another 78 incipient Edge Cities (five near Toronto). Edge Cities have the accidental character which is so typical of the new urbanization.

Edge Cities are not defined as a governmental unit, such as a town or county, and more people work than live there. The shopping mall takes the place of the town square as a place to meet and the long commute from suburbia is gone. Edge Cities began to flourish in the 1970s when women entered the workplace. "Individual Americans are once again inventing a brand new future—this is the biggest change in 100 years in how we build cities."

Garreau provides 65 (tongue-in-cheek) rules for developers who develop Edge Cities. A few of those rules:

1. The average distance from the main office to the chief operating officer (CEO) of a company cannot be more than eight miles.
2. A commuter will put up with 0 switches in travel mode.
3. Americans will climb up or down only one story.

Have the participants define whether or not there is an Edge City developing or developed as a part of their community. What are its characteristics? Are citizens concerned about development of Edge Cities?

Reference **Stubbs, Stephanie. "Edge City Here We Come!" *AIA/Memo.* (Nov-Dec 1991): 6 & 7.**
Garreau, Joel. *Edge City: Life on the New Frontier.* New York: Doubleday, 1991.

City without a Plan: Sprawl

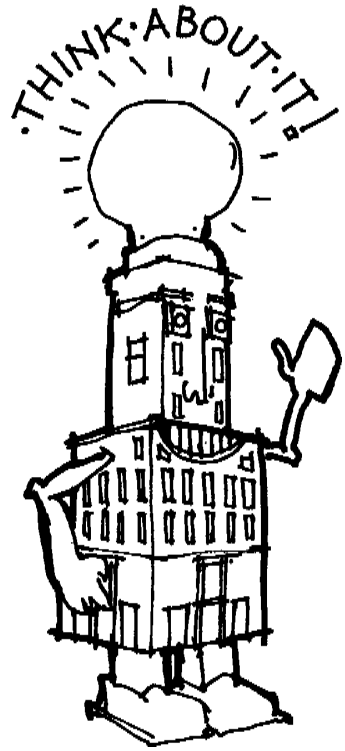
The dictionary definition of the word "sprawl" means to spread out carelessly. Sprawl is uncontained and unplanned development which stretches as far as the eye can see and usually sparked by commercial enterprises out of scale with existing communities. Sprawl often gluts communities with more commercial space than the local economy can absorb, killing off existing (often locally owned) businesses, turning downtowns into ghost towns.

Our cities actually plan sprawl. In the average city plan, three times as much space is designated for commercial development as residential development.

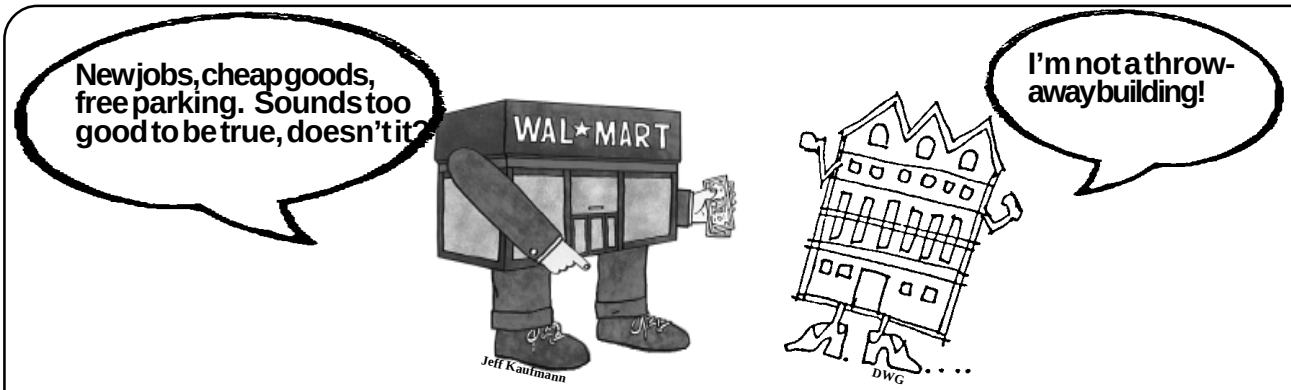
How do you get to the newly planned commercial shopping center, usually located in an undeveloped outlying area? (There is a reason for the colloquial designation "cornfield mall" which designates a geographically remote shopping center.) You get there by automobile. Development will occur as far out as your city subsidizes infrastructure (such as roads and sewers). If this "sprawl" mentality is curtailed and a policy is put in place which says, "We will not extend infrastructure until the amenities we have are used up (filled buildings, shopping centers, residences— often in older parts of town) then everyone wins: communities are dense and easily accessible; taxpayers do not pay for unneeded infrastructure; our older buildings are re-used, thus saving energy costs and preserving our cultural landscape.

Land away from the center city appears to be cheap. Who has paid for the roads to get there, the sewers to make it habitable? **We** have. Look for hidden costs.

Purchasing products at Big Box stores located away from the city center appears to be a bargain. Try the *Bargain Shopping* activity to discover the real truth about your "good buy."



The Superstore Dialogue



What happens when a Big Box Store comes to your community?

A number of studies have been completed which tell the true economics of what happens when the Big Box or Superstore comes to your community. A community needs to be prepared for the hidden truths in the Superstore dialogue.

The Superstore Developer says:
"This will create new jobs. "

The Hidden Truth is:
Don't assume that local people will take these jobs. These employees may come from elsewhere. In addition, generally the new jobs are minimum wage jobs, and the salaries generated add little to the local economy. In fact, more will be required in terms of community services for those who are in minimum wage job categories. Eventually, local stores will lay off help because they cannot do business at the previous level.

The Super Store Developer says:
"The tax base will be increased."

The Hidden Truth is:
The gains will be offset by losses from existing property. We are in the habit of underwriting big business with financing mechanisms which may include tax deferment for 20 years or more. When a local business pays taxes, those taxes go immediately to the local school district. Not so with business brought into the community through tax deferring incentives. Finding alternative uses for existing available property/space could **increase** the tax base.

The Super Store Developer says:
"If you don't let us in your community, we'll build nearby and then you'll really be hurt."

The Hidden Truth is:
There is probably no suitable location nearby, especially in a saturated market. They will build in your town or go **far** away.

The Superstore Developer says:
"The downtown merchant will be helped because it will bring more shoppers to the area."

The Hidden Truth is:
This is unlikely. Studies show this would be a unique situation.

The Superstore Developer says:
"We will recapture sales now lost to some other area."

The Hidden Truth is:
The shopper who shops elsewhere is looking for specialized goods and will probably not be shopping at generic brand super stores.

The Superstore Developer says:
"It is undemocratic if you don't let us come."

The Hidden Truth is:
Each community must weigh the potential land-use against the potential harm. It is the community's right to make a decision about what is best for the community. Some developers have gone so far as to bring SLAPP (Strategic Lawsuit Against Public Participation) suits against communities who "speak out." The Conservation Law Foundation has prepared a variety of materials to help communities fight SLAPP suits.

Bargain Shopping
Is it really a bargain?

Hidden values and hidden costs may demonstrate a more revealing economic story than the amount on the price tag. To simplify this story, assign an arbitrary value of $1 as the hidden value **or** cost for each item. In real world terms, these items will have vastly different values. When you work the problem a second time, assign a subjective (how much does it mean to you?) value of $1-$10 to each item. Be a smart shopper. Apply this formula to other products that are important to you. A bicycle? Household products? Clothing? Hint: choose an item which costs more than $10 when using the $1 hidden value formula. On items of lesser value, use 10% of cost of item for equivalency to $1 hidden value.

Product purchased from local merchant

☐

Subtract $1 for each item which returns **Hidden Value** to the community

- ☐ When local stores stay in business, tax base of downtown is maintained
- ☐ Less auto/energy is spent to drive to outlying shopping area than to walk or drive short distance to community shopping
- ☐ Local property owners continue to support community events
- ☐ A differentiated (unique) product is available. This is a personal value.

= ☐

Product purchased from Super Store

☐

Add $1 for each item which reflects a **Hidden Cost** to the community.

+ ☐ Loss of tax base from downtown merchants when Superstore causes local stores to close

+ ☐ Cost of infrastructure (sewers and highways) to outlying Superstore is born by local taxpayer

+ ☐ Cost of energy and vehicle to drive to outlying store

+ ☐ Loss of local store owner sponsorship and participation in community events

= ☐

How does this add up for you and your community?

Activity extension: reread the accompanying information about Sprawl and its effect in communities. Increase your knowledge by researching the Resource List and asking questions in your own community. Your city planning department can help you find a real cost and equate it to comparative dollars. Attach real numbers to each item. Create new problems. What cost/value items would you add? Show your Bargain Shopping math problems to the local Chamber of Commerce or Planning Commission. **Everyone** wants good communities. **They** may not know as much about Bargain Shopping as **you**!

Transportation Infrastructure

Public works give architects and planners the ability to shape landscapes and mold cities, to create community. They regard infrastructure as a means to link buildings, neighborhoods and regions that have become disconnected. They see it as a way to link themselves with their art to a sense of common purpose and to an ethical ideal. Infrastructure has become the code word for a rebuilt public realm.

Throughout the century, transportation infrastructure—highways, communications, even mass transit—has been the major force responsible for dismantling American cities. Frank Lloyd Wright was one of the first architects to produce such enticing images of leaving the city behind with his plan for Broadacre City. Increasing numbers of Americans responded to a call of "life on the prairie but with all of the modern conveniences." A new kind of town and lifestyle began to immerge as a result of post World War II planning in which the automobile receives more planning attention than the individual. What can be done?

However it takes more than enticing images to bring these same people back into the urban arena. It will take policies that link infrastructure to housing. Andres Duany and Elizabeth Plater-Zyberk are looking for a new model for the workable city. They are trying to free homeowners from the tyranny of the automobile. Their solution: a different kind of planning called Traditional Town Planning or even Neo-Urbanism. In thinking about alternatives to the car problem, it is necessary to think about planning as a series of small communities, complete unto themselves, and with limited services in order that a resident might walk or bicycle for food, drugstore needs, post office operations, and maybe small business. These small towns connect to each other and large services and that connection is made via mass transit, whether it is an aerial, a high tech people mover, an underground subway, or as unpretentious as a local bus, much like the *wiki-wiki* that we see in rural areas of Mexico or Hawaii.

The elimination of cars is **not** the answer. What **is** necessary is to weigh the automobile as a community asset against its liabilities or consequences.

Consequence: energy
Ed Katos, speaking to architects at their 1991 annual conference, suggested a Post-Petroleum City. "Spread-out cities cannot function without petroleum. Architects and planners **must** conceive of cities which **can** function without it. With this as a central issue of design, the Post-Petroleum City will emerge."

Consequence: cars are killing the great cities of the world
It isn't just inefficiency or scarcity of energy or a reduced quality of life that is a part of the car dependency problem. Cars are killing the great cities of the world. Gwinn Owens of the *Baltimore Evening Sun*, states the case:

> Priceless sculptures are crumbling, ancient monuments are trembling, you can't hear the bells of the chapels over the grinding gears and the strident whining of motorbikes, the sweet air is poisoned with lead. Internal combustion machines have spoiled our right to enjoy the historical, architectural, artistic and scenic wonders of the world.

Florence, Rome, London, Athens. All survive on tourism. All have made that tourist experience less than what the travel brochures project. These cities are going to have to decide if they are going to give up the very quality that made them famous to the onslaught of the vehicle.

The Automobile

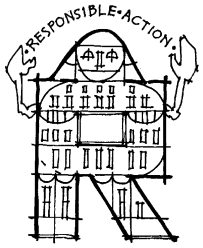
What can be done?

Cars could be banned from the central city with shuttle buses available from peripheral parking places.

Install an odd-even license plate arrangement that allows private motorists to bring their cars into the city only every other day, as in Athens.

Will they come?

Can a city survive if it bars automobiles from its downtown and historic districts? By accident of nature, Venice provides the answer. It is simply not possible to motor in Venice with its canals and high bridges. Therefore, Venice is one of the quietest cities in the world, and one of the most delightful, and yes, the tourists are still coming.



- Write an Action Letter. Property owners will appreciate your help in improving the quality of the experience which tourists have when visiting your city. Send copies of your correspondence to the Convention and Tourist Bureau as well as the City Planning Commission.
- Suggest that the parking of tourist buses or other vehicles not be allowed in front of historic properties. Begin with your favorite landmarks in your city. (Have you ever tried to take a picture of a historic site without the intrusion of present day transportation?)
- Suggest that tourist bus parking not intrude on the historic neighborhood. It can be located several blocks away as is the case with the Frank Lloyd Wright Home and Studio in Oak Park, IL.
- Encourage tourist sites to insist that the buses not be allowed to run their engines while parked. Less air and noise pollution will be the result. There is little consequence of a bus boycott if the Convention and Tourist Bureau and all tourist and historic properties work together. Your tax dollars pay for this bureau to exist. Make your opinions known.
- Design the Post Petroleum City, that is, a city which operates with minimal use of automobiles. Discuss what kind of city plan and transportation system would allow for this kind of a city. Ask questions like: are you willing to do without a shopping mall? Are you willing to do without a car? Do you know anyone without a car? Are you willing to take a bus to work? What would convince you to do so? Discuss cities where citizens are not auto-dependent.
- Analyze a section of your community for ease of transportation.
- Design a workable transportation system which links one community to another. Share your idea with the city traffic engineer, the city planning commission, the mayor.

Credit **Muschamp, Herbert. "Roadside Attractions to Reckon With." *New York Times*. Feb. 28, 1993. p. 34.**

Take a Bus? Forget It!

"It's a habit. It's an American right. It's an attitude," says Elaine Adams, newspaper reporter and advocate for livable communities. Seventy percent of all Americans want to, love to, and are going to drive alone. What would it take to change it? Forty percent of the people interviewed in a recent study said that nothing would change their minds—they will continue to strap on 3,500 pounds of metal armor and go out to fight the world twice a day as they leave and return home.

In an average American small city, with little congestion and relatively cheap parking, the love of the automobile remains strong. About 65 percent of commuters to a Downtown-Midtown corridor drive to work by themselves every day. And 41 percent of those who drive at least once a week say nothing could pry them from their cars.

People don't want to give up their cars. Some can't. Seventeen percent said their jobs required a car. Thirty percent said transit was unavailable or inconvenient. Eighteen percent said they drove family members to or from day-care centers or other destinations. Many also regularly stop to do errands.

The picture is not pretty. Here are more "car potato" figures for you.

70% of commuters drive alone at least three days a week

8% ride the bus

14% car pool

6 to 20 miles is the average distance of most commutes

69% of commuters arrive at work within 30 minutes of leaving downtown

Take the bus? Maybe.

Is it hopeless? What are the opportunities?

New transit riders might be found among the following:

51% who don't use their cars during the day

45% of those who rarely make a stop on the way to work

20% said they might consider mass transit if they were guaranteed a ride home in an emergency

36% of people said they would consider a car pool (probable car poolers)

20% of those "probable car poolers" group said they would consider doing so if they were given a ride home in an emergency

What can be done?

Changing attitudes is perhaps the most difficult part of making a difference. In the short term, making changes which affect the pocketbook or address real problems (sick child, emergency) will make the most difference. Some cities are doing it. In the long term, planning is the solution.

Short term: Offer incentives

Companies on transit routes can offer discounted transit passes to workers

Bus System can offer emergency cab rides home to companies who offer discounted passes

Long term: Plan differently

Plan transit **pods** instead of a typical bus stop/shelter which would offer day care, services like dry cleaning and shoe repair, limited shopping. The model exists in the subways of New York, Boston and other large cities with a history of mass transit. Knowing what we know about people and their walking habits, transit stations would have to be within a 5-10 minute walk or parking would have to be relatively inexpensive, accessible and near the transit stop.

Take a Bus? Forget It!

Talk to a commuter. Ask these questions.

Do you like your drive to work?

Is it enjoyable?

Would you like to read or relax on your way to and from work?

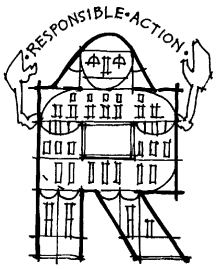
Would you like to avoid the tension of driving in heavy traffic?

Would you like to save over $5,000 a year? (This is the 1996 average cost of owning a second car.)

What would help you to change your commuting pattern?

Conduct a survey for your own community.

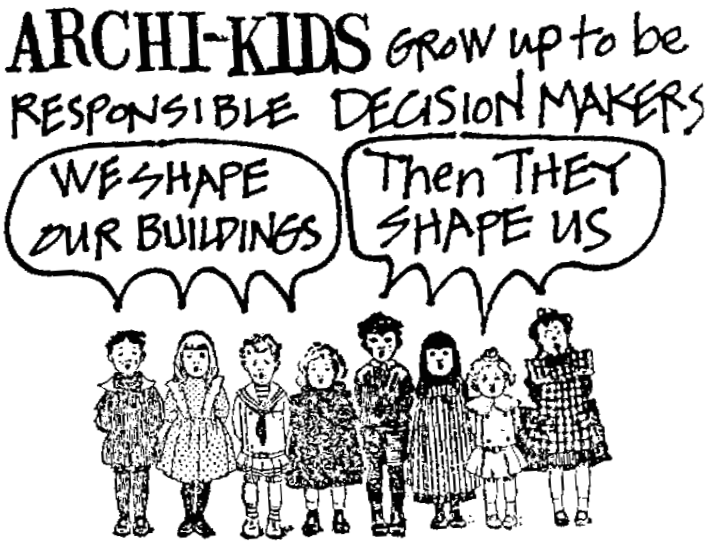
Are the statistics comparable with those given here? If they are, does this suggest to you that this is a national or local problem?



How could you or your class make a difference in the commuting/automobile plans for your city?

- plan and carry out a survey
- write an action letter
- display your results
- talk to a reporter

You can make a difference!



Credit **Material for this page adapted from "Commuters speak: They like their cars." Elaine Adams. *Kansas City Star*. February 21, 1994. pg B-1.**

Sustainable Development

The post-World War II paradigm for land use development and community design was based on low-density zoning, "slum" clearance and building new infrastructure to promote outlying development. This encouraged urban sprawl, the erosion of neighborhood commercial centers and downtowns, the wasteful use of land, and the loss of community character and cohesiveness.

In response to that type of planning and to an awareness of energy restraints, new trends are emerging. One of these is emphasis on sustainable development.

Sustainable Development
The sustainable-development movement amounts to a fundamental rethinking of the post World War II approach. It advocates policies that encourage development that is environmentally benign and respectful of community character.

1. Recycling a building uses fewer new materials and addresses resource efficiency. This avoids adverse environmental effects from logging, mining, or other resource extraction and from the manufacture and transport of new building materials. In addition, adaptive use does not require new land or infrastructure.
2. Government spending should be targeted toward rebuilding existing decaying roadways, bridges, utility lines, rail corridors, transit corridors, and parks rather than creating new infrastructure to service new areas this will also stimulate growth in older neighborhoods.

   Many of the goals and precepts of this movement, though grounded in environmental advocacy, seek to achieve the same goals preservationists have long advocated.
3. Emphasis is placed on land use controls designed to reduce adverse environmental impacts by channeling new growth into existing development corridors.

   Land use controls can be designed to reduce total vehicle miles traveled and consequent air emissions. Channeling new growth into developed areas reduces community distances.
4. Place emphasis on town character planning and traditional community design based on open-space conservation, vernacular architectural styles and traditional small town land-use patterns. These design principles are all taken from older residential communities. The same objectives could be served by revitalizing existing historic neighborhoods instead of creating such communities anew.

Most of us live in a suburb planned after World War II. Although we speak of "Grandmother's House" as the ideal home type or village we want to achieve, there are only a few who remember any kind of "over the river and through the woods" experience and it would be those who are now **great** grandparents who do.

This presents several challenges, not only for student understanding, but for planners trying to help a citizenry institute a type of planning they have never experienced.

In terms of the Box City exercise, or any community visioning process, how can you take participants from what they know to what is a new solution? Understanding how we got here and new trends in planning is a first step.

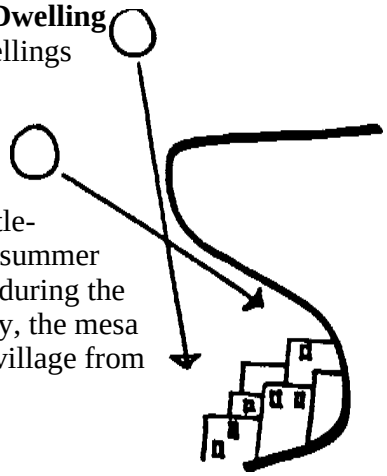
Learning from the Past

Learning from the past

Early civilizations exhibited sustainable development characteristics by using easily available materials, existing geographic formations, and natural energy sources. What can we learn from them?

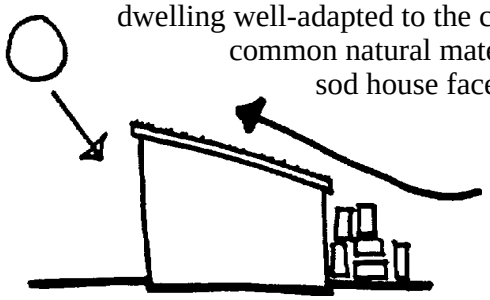
Mesa Verde Cliff Dwelling

By locating the dwellings within south facing cliffs, the Anasazi Indians on Mesa Verde were able to both shade their settlements from intense summer sun and absorb sun during the winter. Additionally, the mesa itself protected the village from winter winds.



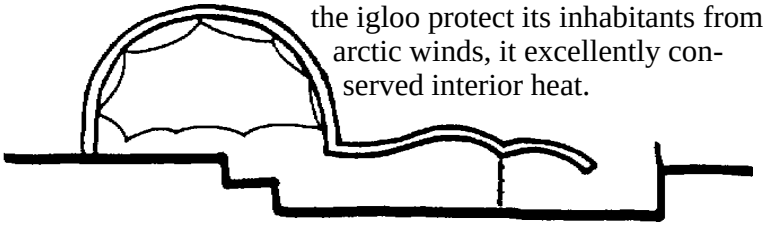
Midwest Sod house

The pioneer settlers of the Midwest also produced a dwelling well-adapted to the climate. Built of a common natural material, the Midwest sod house faced south to absorb winter sun while protecting the structure from cold winter winds.

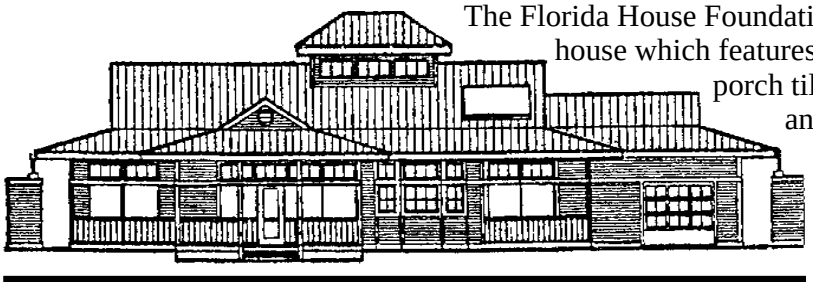


Alaska Igloo

Similarly, the Native Americans of Alaska adapted to their climate through the construction of the igloo. Not only did the igloo protect its inhabitants from arctic winds, it excellently conserved interior heat.



Planning differently for the future



The Florida House Foundation has designed an Eco-Friendly house which features recycled materials for carpets and porch tile, energy conscious landscaping and appliances, and typical Florida architectural elements: lanais, overhanging roofs, and cross ventilation.

What is Box City/Eco City?

In the same way that a real city might begin the endeavor to retrofit the community and make it more responsive to ecology issues, the Eco City can proceed in three phases and concern itself with the following issues:

Phase I: conservation of water and energy, reduction of waste stream, metro-wide recycling, consumer and academic education and planning for future resource use, urban gardens, preservation of neighboring agricultural lands

Phase II: development of mass transit, urban tree-planting program, urban agriculture, pedestrian-friendly developments, retrofitting older buildings, creating social programs to meet local needs, strategy and forecasting system, tracking of all social and environmental services both paid and volunteer to create a coherent whole

Phase III: localized markets rather than imported, fossil-fuel intensive goods, energy credit cards, full-scale recycling program of all commodities, life-cycle analysis costs of all products, cost of environmental degradation and resource depletion counted into gross national product, eco-tourism such as arboretums, zoos, eco-theme parks, "envirotainment" such as children's museums and theatre.

The Mayor of Eco City/LA ponders the actions of the citizens.

A Case Study: Box City/Eco City/LA

Los Angeles kids from Watts and a city-wide Magnet School worked on Box City for one semester. Design professionals visited classrooms assisted with box-making and coordinated classroom Box Cities. They helped kids learn things like city planning vocabulary, land usage, building types, and what makes a city and its buildings economically viable and ecologically responsible.

Kids discussed hard issues like, "What's the best place to be in Los Angeles?" "What would we like to add to the city?" "What do you think is Los Angeles' biggest problem?" "What will the **post-petroleum** city be like?" "Can you live without a super store?" "Is **bigger** the only answer?" They demonstrated their skills and laid out a city on the convention floor of the national conference of the American Institute of Architects in May 1994. Prior to the convention, the students "tried out" their city on their neighborhood planning commissions and mayors.

City Plan: The New "Old" Town

Urban theorists have bemoaned the role of the automobile for years. Developers of "new towns," such as Reston, Virginia have tried to address the problem by mixing some old ideas, such as town centers and neighborhoods, with a contemporary challenge: the automobile culture.

Recently, a new "new town" is emerging based on the ideas of Andres Duany and Elizabeth Plater-Zyberk (DPZ). Says Duany, "If you look at our society, you would say that the single most important aspect of our society is the happiness of cars. The happiness of humans is another matter." DPZ is leading an effort to revive the principles of old-fashioned neighborhood design as a way of putting the brakes on excesses of the automobile age.

Duany and Plater-Zyberk explain that they took a look at the "hometown" that all of us remember or see when we go to Grandmother's: front porches where families can sit; nearby houses close enough that neighbors can speak; alleys for services; shops and businesses where one can walk to work; vehicles moving slowly. DPZ restructured the Traditional Neighborhood Development guidelines which cities use to govern development. (Duany says, "Zoning says nothing about the quality of life. It addresses noxious substances and getting somewhere fast. The very guidelines which are supposed to make our lives better, make it worse.")

It is interesting to take a look at some of the most significant guidelines which determine the construction regulations in Seaside, Florida, one of DPZ's new "old" towns. Only residences were coded allowing public structures to be quite individualistic. The guidelines which make the most difference in how the town looks and works are these:

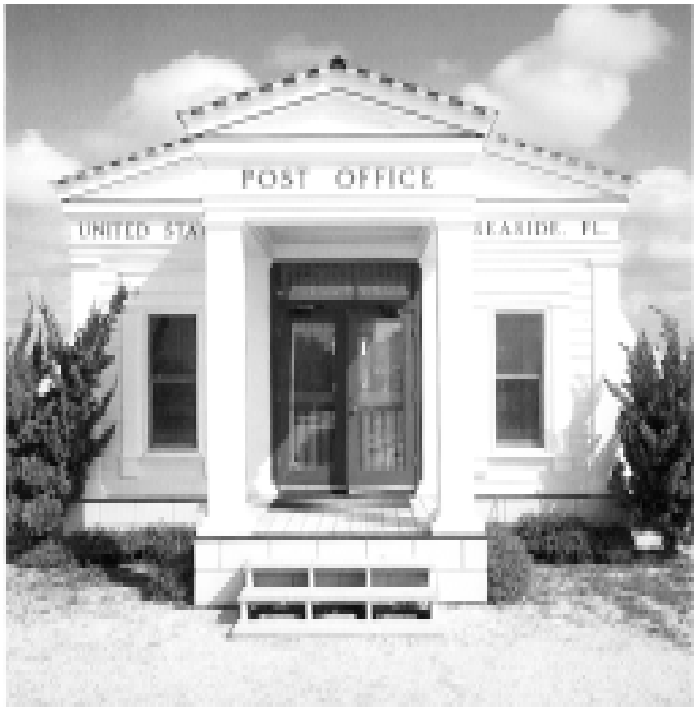
- The percentage of buildable space on a lot is greater than normal (houses are close to neighbors).
- White painted wood picket fences are required. Individual fence patterns shall not replicate another on the same street.
- Curb cuts are sharp to slow traffic.
- Streets are relatively narrow.

A typical street in Seaside, Florida.

Reference **Morganthaler, Eric. "Architects Argue Merits of Returning to Towns of Yesterday." *The Wall Street Journal*. March, 1993.**

City Plan: The New "Old" Town

Other guidelines:



- Residential construction shall be generally of wood.
- Utility cables must be run underground.
- No fakery. For instance, shutters must be operable.
- Porches must cover a given percentage of the facade
- Garages are the exception rather than the rule.
- Driving within the town is discouraged.
- Street to fence is gravel surface for off street parking.
- Commercial and residential areas are not segregated.
- Houses are close together.
- People are within a five minute walk of the center.
- Existing vegetation shall remain undisturbed during construction. (No lawns as such.)
- Openings for paths and walkways shall not exceed four feet or openings for driveways, ten feet.
- Paint samples must be submitted before construction begins. A sample 3 foot square must be painted to demonstrate the color.
- The town utilizes a grid plan, which diffuses traffic, rather than cul-de-sacs, which collect it.

The work of DPZ is controversial. With definite codes, **Progressive Architecture** maintains they "are challenging the very idea, widely held in this country since the Civil War, that people have a right to do what they want with their property, as long as it does not endanger their own health and safety and that of others."

Controversial or not, the economic success of a community like Seaside, means that Seaside "look-alikes" are popping up like toadstools and that at least some of the ideas will be incorporated into the new developments. Humanizing the American suburb, asking what is a congenial place for modern life, and trying to achieve that ideal, is an idea worth exploring.

Our City, Our Children: A New Kind of Planning

Although we consider the needs and rights of a number of citizens, we tend to ignore those who may be in the most need: our children. Harvey Gantt, former Mayor of Charlotte, NC, suggests that we design our neighborhoods to meet the needs of a ten year old child. Howard Gardner, director of Project Zero at Harvard, suggests that five year olds can figure out most things they need to know. Harry Teague, an Aspen architect, suggests that there should be a **Bill of Rights** for kids. Here are some of the items on Teague's Bill of Rights. Have the students you know create their own.

Bill of Rights for Kids

The city shall be:

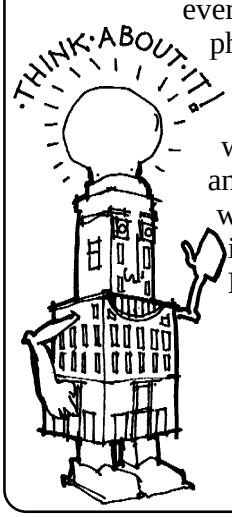
1. safe
2. in appropriate scale—no walls over four feet
3. accessible—youth will have the ability to get from one place to another
4. integrated—nature, the community, work, ages, sexes—all will be a part of the whole

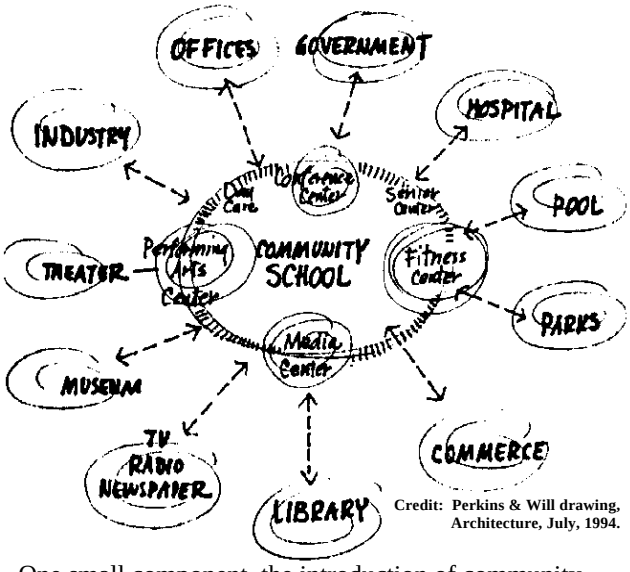
   (An example: are health services convenient and integrated into the town. Can youth access health services by themselves?)
5. manifestation of tradition—youth will be able to identify cultural anchors whether they be building types and styles, monuments, landmarks, or natural areas

   (Youth are bombarded with wonderful things, but they want traditional anchors.)

"Who is the enemy of the child?" asks Teague. "Our economy. Our culture is organized so that those who are in the business of making money only want 'easy in, easy out' projects. Our banks, our planning commissions, our citizens—so far—support this 'bottom line' approach to planning."

The community designed for young people will work for everyone—the physically challenged, our elders, parents with toddlers and strollers, kids who want to be independent. Let's do it!





Credit: Perkins & Will drawing, Architecture, July, 1994.

One small component, the introduction of community schools, would allow youth to operate independently and efficiently.

Reference **Teague, Harry. Lecture. Aspen Design Conference, Aspen Colorado. 1991.**

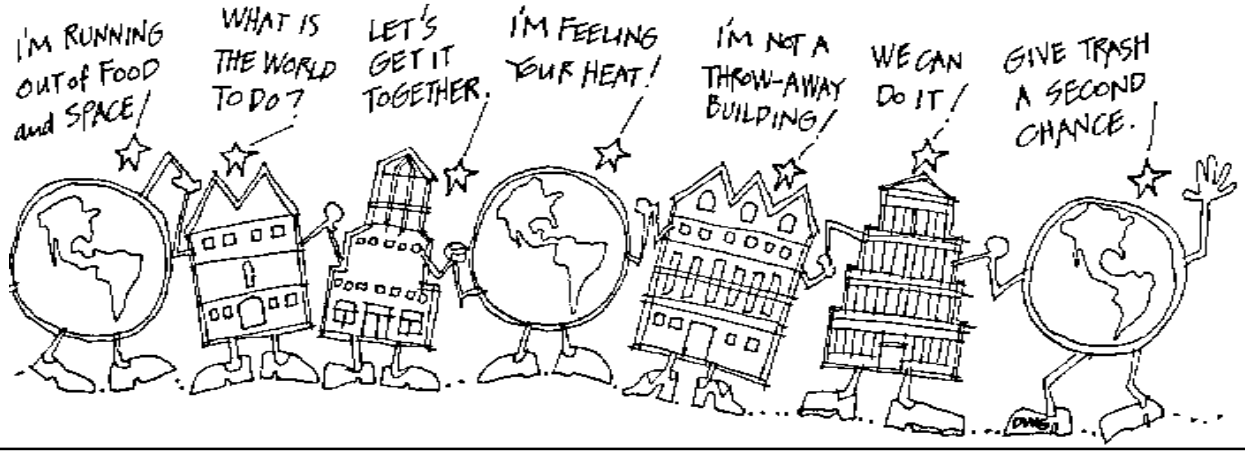
Tell me the landscape in which you live, and I will tell you who you are.

José Ortega y Gasset

City Planning Principles

Participants need to be aware that non-planning is a decision just as planning is a decision. It is a given for all cities: If you plan it, you can make it planned. If you don't, it (non-planning) will happen to you.

1. The city always has a **pattern**. Three factors influence that pattern: the physical shape of the land; the socio-political environment of the community and the economic condition of the community. Factors two and three lead the physical factor. The pattern develops from Land Values and the Developers' thoughts about Land Values. Compare this pattern to a piece of plaid material with each color or thread of the material representing the various departments and persons who are responsible for the city's plan.
2. There are various kinds of **land use** categories. City planners always use the same colors to designate these categories: green for agricultural: yellow for residential; red for commercial; violet for industrial; blue for civic/institutional/governmental. Call your city planning department to obtain a city plan or projected city plan for your city. If you are doing the **Box City** project, use this plan, a very familiar one to your students, as the street map for your city (choose only the most important streets). If there is a **future** city plan available, compare the existing plan with the changes which the city planner is projecting.
3. **Zoning** is a series of regulations that controls development. Planning commissions recommend zoning changes. City commissioners approve. Staff implements. The public complies. Since the public is represented by these hired and elected officials, the public's wishes and needs are defined through them. If you, a citizen, are not happy about the growth of your city, can you make changes for improvement? How would you go about it?
4. **Public Infrastructure** is a means to develop growth. Most generally it leads to development. The public infrastructure consists of a series of linkages: streets and boulevards, utilities, public conveyances (subway or mass transit, train stations, airports), sports facilities. What happens if there is no future planning for these kinds of things? How is the ordinary citizen penalized?
5. **Private Sector** development always requires big money. Why?
6. The **Development Process** involves a gamble or **risk**. What is the element of risk that we are talking about? Should there be a larger payoff for risk?



City Planning Factors

Factors which influence city development:

1. The **political system** of the people who are/were building the planned city
   - Were they ruled by king or dictator who made all decisions?
   - Did they live in democratic system in which many members of the community could participate?

2. The **reason** for building the city
   - Is it a military center? It needs to be well defended.
   - Is it a center of religious worship? If so, land is set aside for shrines and temples.
   - Is it a harbor? Port planning and an infrastructure which supports water traffic is put in place.
   - Is it a center of government? Space is allocated for numerous structures related to government.

3. **Technology** (level of technology of the society)
   The Romans developed the science and technology of architecture in several important ways.
   - strong durable arches which could support structures rising high above the ground
   - aqueducts

4. **Wealth** of the society
   - great and powerful societies built palaces
   - they are able to finance huge public works

5. **Site**
   - all planned cities of ancient world were built out in the countryside or at a location of older settlements
   - geographic influence
   - climatic influence

Composite drawing by students at P. S. 1.

Federal Policies

To understand what has happened to communities in the 20th century it is necessary to look at the laws which have brought it about. When we look at major **policy changes** in planning, it is apparent that some of the largest changes—and some that have been most detrimental to community—were engineered by our federal policy makers. These people are appointed by leaders we have elected to represent us. They are carrying out **our** wishes. Therefore, we the citizenry, have the communities we have asked for through the democratic process.

The landscape of America can basically be broken into two periods:
First Era Towns representing the earliest Colonial settlements and which exhibit a multi-use pattern

- the agrarian grid with 640 acre sections and 6 square mile townships which can be seen in the East and Midwest
- the Spanish land grants which are seen in California and the Southwest

Second Era Towns, which began in 1938 when the Federal Government began work on a national planning code which decreed separation of uses. These exhibit a single use pattern.

- office parks
- shopping centers
- residential PUD (planned unit development)

Since the Second Era town is the one in which most of us live, let's look at the policies and legislation which have shaped those towns.

1938 Planning for Minimum Property Standards began.

1945 The Federal Housing Administration (FHA) established Minimum Property Standards (MPS) for residential development which determined the way we would live after World War II. Without observing these guidelines, a developer would not receive Federal Mortgage insurance. This document affected postwar suburbs because it was based on the belief by its organizers that the American gridiron town could not accommodate the automobile, it affected postwar suburbs by imposing a pattern of enclaves rather than a continuous urban fabric; traffic was restricted to arterials and houses stood on curving cul de sacs.

1956 ***National System of Interstate and Defense Highways***
An increase in the population growth between 1950 and 1960 (179 million), with a number of middle class families moving from cities to new suburban developments led to an increase in traffic and pollution. The Interstate Highway Program allocated 25 billion dollars, 90% of the total estimated cost, for cities to develop new highways over the next 12 years. With this kind of subsidy, a number of

Federal Policies (2)

(1956) cities did as Boston, San Francisco and Fort Worth did—they built freeways which separated the city from its historic neighborhoods, waterfronts and downtowns. In 1968, the total mileage was expanded to 44,000 miles. In those same cities, in the 90s, those highways are being torn down and replaced.

1962 ***Communications Satellite Act***
This act opened up worldwide voice communications and data and has influenced the ways that people can work. There is less need for a centralized office environment and as a result, many businesses left downtown locations for suburban office parks.

1966 ***National Historic Preservation Act***
The destruction of our past, built and natural, and the need for preserving it began as early as 1872 when Congress proclaimed the Yellowstone region of Wyoming as a national park and established for the first time a national governmental role in protection and administration of such areas. Conservation and preservation came to be seen as necessary to the quality of life in America.

Just prior to the 1966 Preservation Act, an aluminum siding craze swept through many Midwestern communities. Historic buildings were covered over; their character (and stories) lost.

1966 ***Model Cities program***
This program evolved from the establishment of a new cabinet level department, the Department of Housing and Urban Development. It tied together a vast array of federal and local programs in trying to attack the problems of major blighted areas with massive federal aid.

1969 ***National Environmental Policy Act***
The environment became a major social issue in the 1960s when the evidences of our technologically advanced society began to show themselves in smog/oil slides, overflowing landfills of rotting garbage, toxic wastes and contaminated waterways.

1973 ***Federal Aid Highway Act***
This act stopped planned construction and instead, allowed funds for mass transit. It was a revolt against the freeways of the 60s.

1990 ***Amendments to Federal Clean Air Act***
States were encouraged to adopt land use controls designed to reduce total vehicle miles traveled and consequent air emissions.

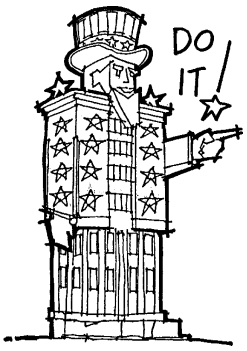
1991 ***Intermodal Surface Transportation Efficiency Act (ISTEA)***
ISTEA allowed funds for mass transit systems and "enhancement" activities that can be hooked onto transportation systems. These could include the restoration of older neighborhoods affected by mass transportation.

Federal, state and local policies are constantly in a state of change. Add the new policies since 1991. Note how they have affected the environment in good or bad ways.

Reference **Solomon, Daniel. "Fixing Suburbia." from *The Pocket Pedestrian, a new suburban design strategy.* Kelbaugh, Doug. Princeton Architectural Press, 1989.**

The Decision Making Process

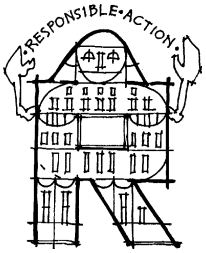
The decision making process—how it works or doesn't!
Understanding who makes the decisions demonstrates the need to become involved in the decision-making process. Understanding that process in your own neighborhood planning and then in the wider governmental sphere of city, county, state and national is one piece of responsible action.



Who has the final say so?

- in a strong mayor form of government, the Mayor has the most power—he is the Chief Operating Officer.
- in a weak mayor form of government (City Manager form of government), the city manager is the CEO—the Mayor's power is only as a member of the City Council.

Is this the process used in your city? Do you know how the process works? If not, what is the process for your neighborhood, city, county? Describe it in terms of who has power. How do you reach those people? Can you make a difference?



Responsible Action involves:

1. understanding how it works
2. getting involved
3. voting and electing public officials who represent **you**

Who Makes the Rules?

The Mayor

- elected by the citizens

If the citizens are unhappy with the way the city is run, the mayor is not re-elected.

Decides and reports decisions to

The City Council

- elected by the citizens
- makes decisions
- can lobby
- political

Advises

The Planning Commission

- appointed by Mayor
- approved by City Council
- technically can't lobby

This body is created to get the political process (City Council and Mayor) out of the decision making process.

Advise

The Citizens

- write letters, testify and lobby through City Council
- Bring plans to Planning Commission
- Elect Mayor and City Council

Citizen Power

Citizens can call for a referendum or organize a petition to get something on the ballot if they do not like decisions of City Council.

Mayors Speak Out

Mayor Harvey Gantt, Charlotte, NC

We need to treat historic preservation, not as an amenity, but as an essential policy. By not doing so, we miss opportunities to not only remember our past, but we will also lose the potential benefit of using preservation as a tool to uplift the psyche of the entire community.

Design your neighborhood to meet the needs of a ten year old child.

Joseph P. Riley Jr., Hon. AIA, Mayor of Charleston, SC

A city's beauty or lack of it shapes a metropolitan area's sense of itself—indeed the reality of itself.

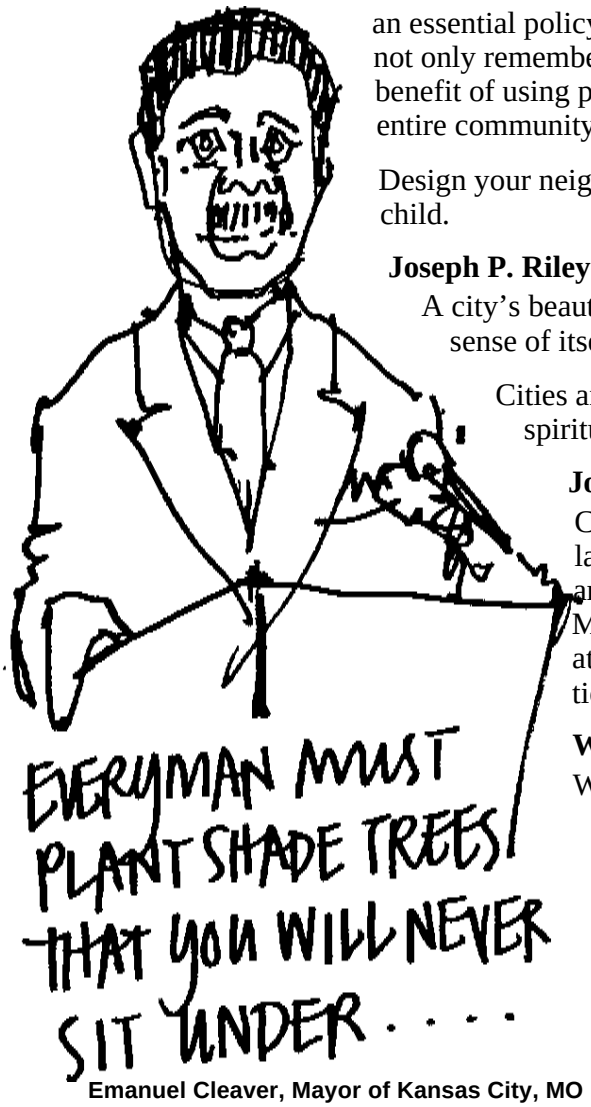
Cities are things of many dimensions. They have spiritual qualities just as their citizens do.

John Norquist, Mayor of Milwaukee, WI

Convention centers that have been built in the last 20 years are not a pretty sight; most of them are ugly. We want people to come to come to Milwaukee, not only because of the variety of attractions the city has but because the convention center itself is an attraction.

William Schaefer, Mayor of Baltimore, MD

Why can't a garage look like any other building?



Emanuel Cleaver, Mayor of Kansas City, MO

No matter how well meaning the average citizen, it is impossible to make the kinds of changes which will affect life on a large scale without political power. At the same time that citizens are making personal contributions to the built environment—recycling, building energy efficient houses, serving on preservation boards and neighborhood organizations—it is necessary to ensure that elected officials are informed and committed to an environment which contributes to the quality of life of all individuals. Charleston citizens, more aware of their heritage of historic buildings and noteworthy planning which has led to a livable community which all enjoy, have elected a **series** of Mayors with an understanding of what it means to the community to retain its character. Individually, other mayors are speaking out for good city planning and design.

How Does Your Mayor Talk?

Review *Mayors Speak Out* and discuss what these Mayors are saying. Do their efforts apply to your city?

For example, you might note these values expressed by Mayors Gantt, Cleaver, Riley and Norquist. What else?

saving old buildings is of economic value to a city
buildings should be human-scaled
identify important street corners and save them for something besides a parking lot

Your notes: _____
_____
_____
_____
_____
_____

Over a period of time, scan your local newspaper to find out what your Mayor is saying about **your** city.

Interview your mayor, a city official, a member of the planning commission, the city planner. Use the following questions to establish a dialogue. If you do not understand the question, review other pages in **Box City** to insure that you are knowledgeable about the topics.

Does our city have a plan? an **updated** plan? If not, is it working toward a plan?

Does the plan create workable streetscapes?

What is the state of preservation in our city today?

What is the city doing to preserve or bring back a sense of community to its neighborhoods?

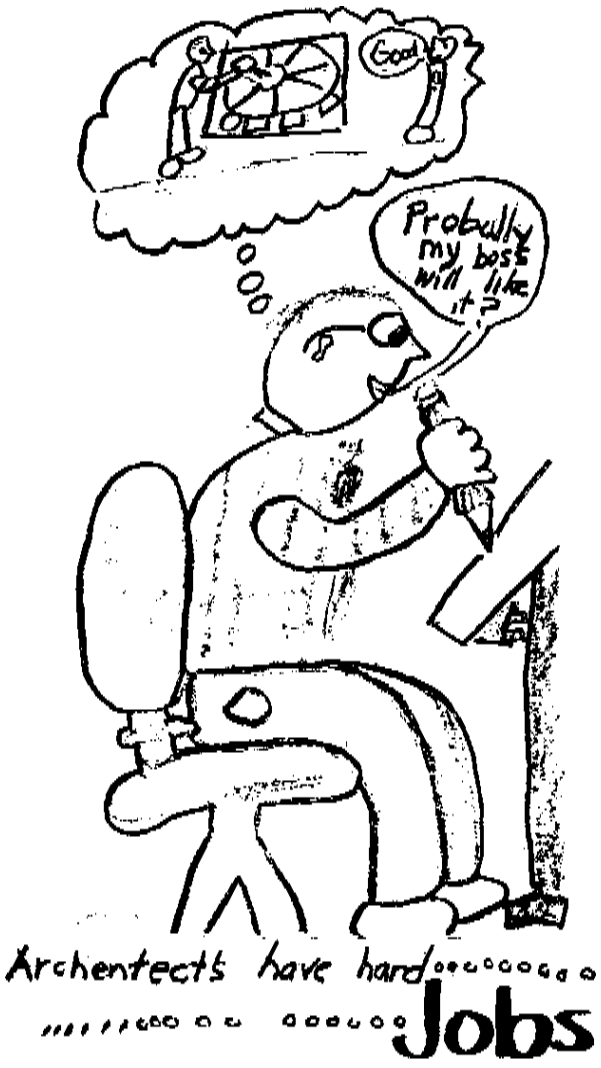
What incentives are there for developers to re-use old buildings? for businesses to re-establish themselves in older parts of the city rather than move to the suburbs?

What are the qualifications of those appointed to planning commissions and other committees responsible for the aesthetic as well as physical quality of life in our city?

Create other questions through your reading and talking with friends, neighbors, and others who have an interest in the quality of life in your community.

Creating the Design Guidelines

Because we tend to replicate what we know, Box City will usually only reflect the same kinds of neighborhoods and communities where the participants live—this is true for adults as well as children. If you accept as a given that planning since WWII has not been particularly conducive to good communities, then one of the purposes of taking people through the process is to demonstrate how a different kind of planning might improve the quality of life in their communities. Although there may be a reason relating to curriculum focus or particular community needs for creating a Box City which demonstrates how people lived, for example, in 1880 or 1930 or even today, it makes good sense to also add a component which shows how people might live in the future.



To be able to lay out the community in a different way requires the participants to have a vision of something else. Creating that vision, which will include a different kind of planning, is the first task of the new Box City. Understanding alternative planning patterns is the background work for that process.

The project coordinator or Plan Committee may choose to create a base plan for Box City which reflects the Traditional Neighborhood Development (TND) guidelines (See *City Plan: The New "Old" Town* in the ***Knowledge Base*** section) and thus the Box City will be forced to conform to the new codes and demonstrate a different pattern of living. The informative part of the discussion will take place once the Box City buildings are arranged and the post construction discussion can address, "How is this different from the place where you are living? Are there things you like about it? Things you don't like about it? What would you change?" You may discover that there are older neighborhoods in your community which already look like this. You may discover that there are developers who are planning "new towns" that you can study. You may discover that your city is already considering a change in the code that would encourage a new kind of planning.

Responsible action step: Invite a developer, architect, planner or city official visit a Box City 2000 or City of the Future to hear kids talk about the importance of being able to walk to work, shop near home, take public transportation to more distant points and to show that this kind of planning supports sustainable development, reduces traffic, and reinforces cohesive neighborhoods, all things that city officials are interested in.

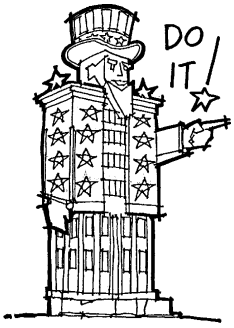
Creating the Design Guidelines

Creating Guidelines for Box City
As one member of the Arrow Rock, Missouri community says, the guidelines cannot be more sophisticated than the group for which they are intended. One-page guidelines work fine for a small community like Arrow Rock.

This is also true for youth or activist citizens at the beginning of the learning curve. The guidelines will not look the same as the guidelines for Seaside, FL, a "new town." Seaside has a lengthy code which is understood by the town founders and the people who want to build there. These inhabitants include many sophisticated business persons with a depth of educational background and travel experiences related to architecture not found in most communities. Many of them have chosen to build in Seaside because it does have a stringent code. Review *City Plan: The New "Old" Town.*

A number of architects and planners have established general guiding principles for planning new towns. Peter Calthorpe, a leader in the sustainable development movement, suggests these:

1. housing is no longer separated by income or age
2. break tradition with the automobile—it will change the character of streets, landscaping and the actions of inhabitants
3. create a commons with shared response by schools and recreation districts
4. plan ecologically—save existing habitat; incorporate ecology into development; keep water on the surface, not in storm drains



Have students investigate the code ordinances (or lack of them) for their own communities and for new town sites like Reston, Virginia; Columbia, Maryland; or Seaside, Florida. Do they contribute to or inhibit the quality of life? The restrictions for historic districts are not unlike the tightly drawn codes for some of the new towns we have mentioned. What are the advantages and disadvantages of living in such a neighborhood?

Ask this question: "Although homogeneity of design may offer a more pleasing aesthetic environment and economic enhancements, are you, the homeowner, willing to live by these restrictions?"

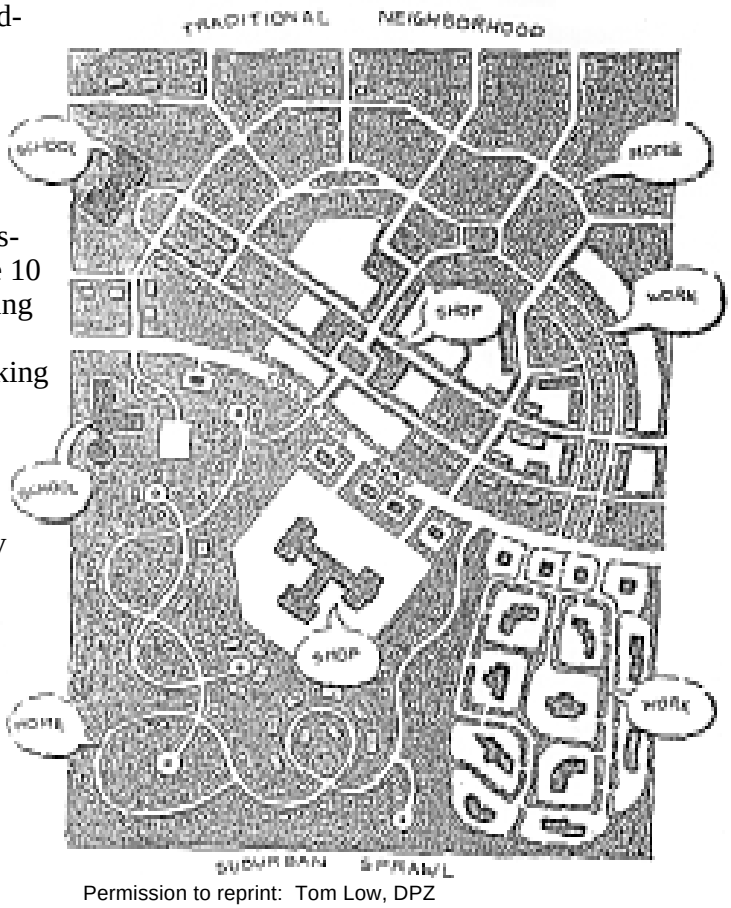
Planning for Cars or Planning for People?

Do people prefer the suburbs just as they are? They continue to buy houses there. Children of the suburbs stay there or move to other suburbs. Examine the half of the plan entitled **Traditional/ Suburban Plan** and note "separated use." Jonathan Barnett describes a typical driving experience in a community with single-use zoning.

Someone with business at a suburban office park might stay overnight at a hotel in one quadrant of the cloverleaf, and face an intricate drive in the morning to reach the office park diagonally across the intersection. At lunch a cavalcade of cars takes everyone to the restaurant in yet another quadrant. The distances might be walkable, but no one should cross so many lanes of swiftly moving traffic, and the highway department usually puts up fences, removing any temptation to be a pedestrian.

Elsewhere in suburbia, a morning's errands might start with a trip from a residential neighborhood out to the strip to leave clothes at the dry cleaners, followed by driving a mile along the strip to the hardware store, and then two miles in the other direction to the supermarket. Other cars are using the highway to and from one town to another. Moving on and off the highway to reach local businesses inevitably conflicts with "through" traffic, particularly when cars make mid-block left turns from "suicide lanes" in the middle of the roadway.

Traditional/Suburban Plan



Permission to reprint: Tom Low, DPZ

Some Solutions

Shared parking is the key to suburban design. A shopping center parking lot is rarely filled. It **can** happen, but usually only on a few peak weekend days between Thanksgiving and Christmas. It is planned for those 10 key days. Because each conventional shopping center, office building and hotel is planned independently, each must satisfy its own parking requirement on its own property—if shared parking could be utilized, area given to this function could be reduced. LeCorbusier foresaw the city of the future as towers in a park. He did not imagine that the new reality would be towers in a parking lot.

To give you an idea of average 1990s space requirements for parking:

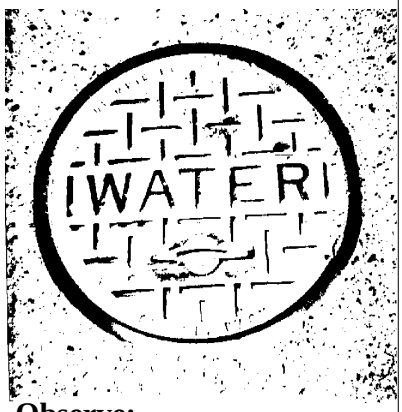
Shopping Center—five parking places per 1,000 square feet

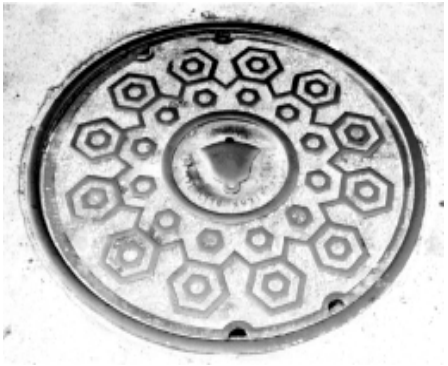
Office Building—ten times the land area devoted to the building

Credit **Barnett, Jonathan. "Accidental Cities: the deadly grip of outmoded zoning." *Architectural Record.* (Feb. 1992): 94-101.**

Reading the Streets

In the simplest sense, understanding how the city works means understanding the basic services which need to be provided. An investigation of what happens **under** the street can be done by conducting a manhole cover survey.



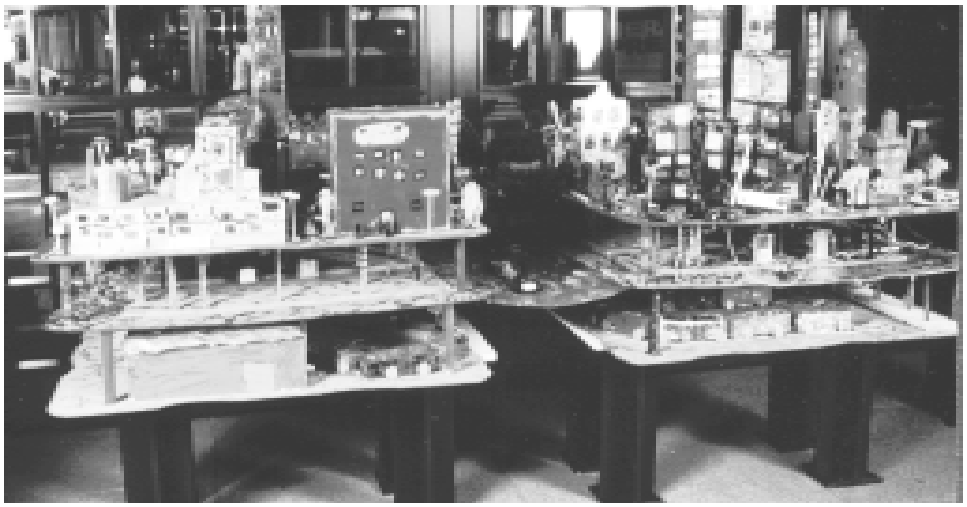


Observe:

water	telephone	storm water runoff
gas	television	curbs and gutters
electric lighting/streets		inlets and catch basins
power		drainage canals
sewer		ponds, lakes, rivers

Analyze transportation infrastructure by determining how people move from place to place.

Observe: streets, boulevards, highways, subways, bridges and tunnels; trolleys, buses and streetcars (surface and elevated); airports, train stations, bus depots.



Students at *Studio in a School*, New York City, depict what's **on** the city street as well as what's **under** the city.

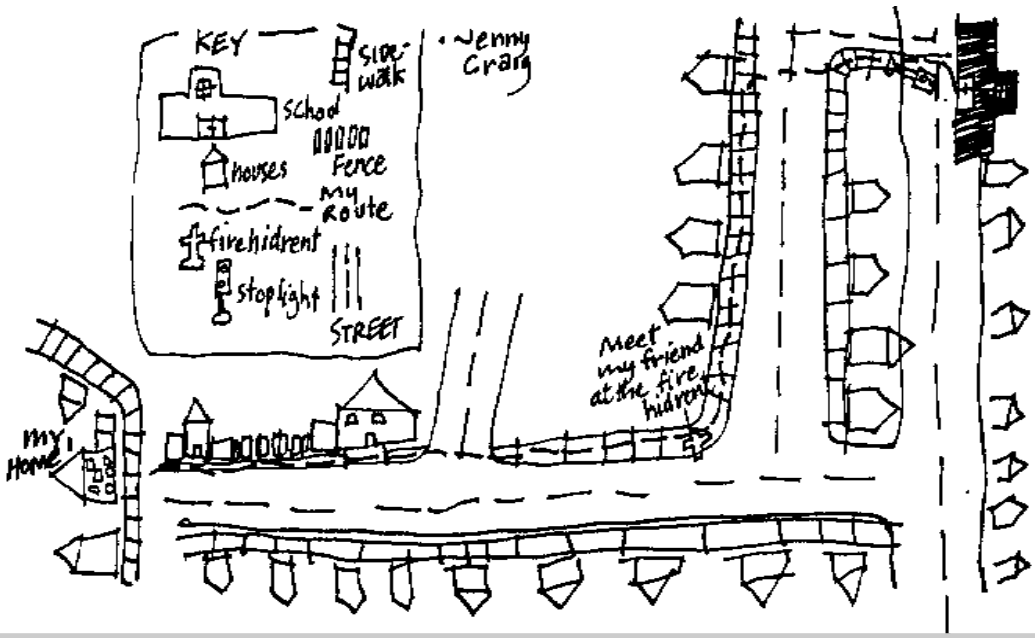
Cognitive Mapping

Start thinking about how the city works by considering how people move from place to place and what helps them to do that.

Begin with a map that shows the area between your home and school or work. Before you begin, think about the same things that city planners think about when they help to plan or organize the city. You are the city planner.

1. The driving path that you use to go from your house to your school/work. (MAJOR PATH)
2. Other paths that you use (perhaps you return home using a different route) or you walk to school. (MINOR PATH)
3. Boundaries between two regions. (EDGE)
4. Major "signals" that help you to reach your destination. (LANDMARK)
   For example: shopping centers, an ice cream parlor, a fast food restaurant, gas stations.
5. Busy "gathering" places along the route. (NODE)
   For example: a place kids gather in front of the school, a dry cleaners, a fountain, a bus stop.
6. An area that is so identifiable or of such scale that you could give it a name. (DISTRICT)
   For example: a neighborhood, a small city.

When you have completed this visualization exercise, map the route between home and school/work.



Reference **The capitalized vocabulary is the language of city planners. Consult Kevin Lynch's, *The Image of the City*, for further description.**

City Planning Vocabulary

Once you have drawn the map, you can write the words and symbols that city planners use on a specific area of your map. If very young children are doing the exercise, they might arbitrarily use color to differentiate the designations, i.e., red for path, blue for landmark and so forth.

PATH

Paths are the channels along which you move. Walkways, streets and highways are paths.

Edges are boundaries between two regions. Rivers forests, mountains, and hills all create edges.

EDGE

NODE

Nodes are strategic spots in a city, sometimes junctions or crossing of paths. A concentration.

District is an inside area of recognizable character. Every city is made up of a number of districts.

DISTRICT

LANDMARK

Landmark is a simply defined physical object, such as a sign or a building. Some are visible from a distance.

In school, you can "practice" what the students have absorbed from this activity by pretending the classroom is a city: the desks represent a block; the rows are streets. To really grab their attention, have them "map" theinterior of their desks, their backpacks or purses.

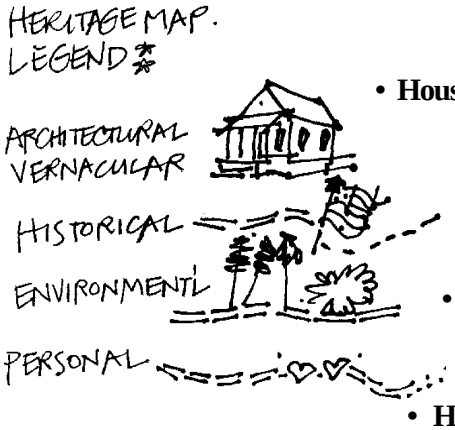
Mapping the Special Places

It is only by recording the special places that we can begin to identify what is important in our communities, those places which cry out for assistance, or what we need to pay attention to—those things that represent the "essence" of our communities and make our neighborhoods or cities unique and special. Start a *Mapping the Special Places* activity for your own neighborhood or community.

The purpose of the mapping activity is to record those special places that could be

- shared
- enhanced
- protected and preserved

It is easiest to map an area that you know well. If you are mapping a very large area with a group, break it into smaller parts and have each person map the areas they know best. The information on the maps can be combined at the end.



- **House—Architectural/Vernacular**
- **Flag—Historical site**
- **Tree—Environmental**
- **Heart—Personal significance**

To help you get started, close your eyes, mentally roam your chosen area, and see what visual images appear. It may be a building, a tree or flower, a sunset, a stand of cottonwood trees, a building silhouetted on the skyline, or a monument. Ask yourself, **"**Would my community be a lesser place without this _____ (building, place, statue)?" If the answer is "yes," put that place on your map. Begin now. Record one of those images on your map in the appropriate place with a dot. Use the map legend symbols to identify the image.

Mapping the Special Places

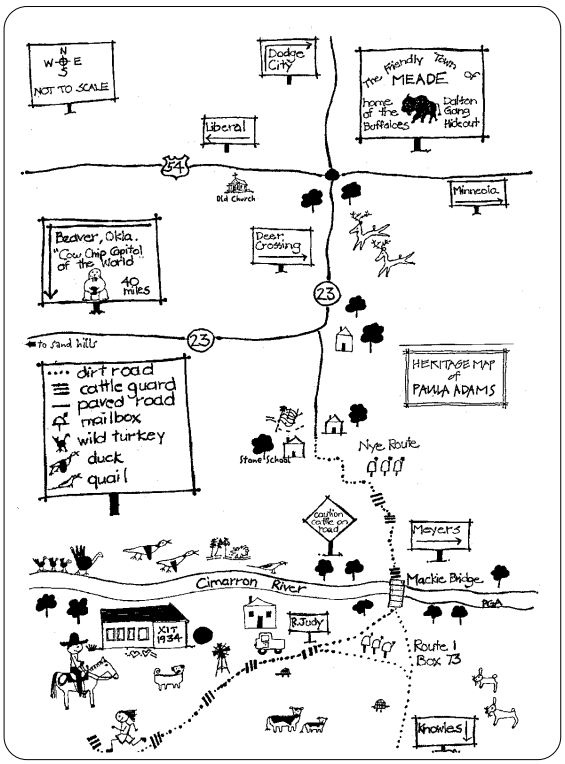
Draw a line from the dot to an unused place on the map (white area) and describe or name it. For example, you may want to record that there is one place that is better than any other for viewing the skyline of your community. Mark a dot at that place, draw the appropriate map legend symbol, draw a line from the dot to a blank area and write, "best place to view the skyline." This information will help if you are gathering together information from a number of maps.

For this exercise, map at least five "sacred spots" on the map (you may do more). Consider the following to make sure you haven't left out anything. There may be overlap.

- historical interest—monument, landmark, building, geographical, birthplace, archaeological
- architectural interest—design, style, planning, materials, site, who "slept" there
- environmental interest—trees, fishing hole, bike trail, walking path
- someplace that's neglected or forgotten but shouldn't be
- places for children
- "used-to-be place"
- personal interest

At the end: Make a Map Title Block and write the name of the area you are mapping and **your** name.

Repeat the exercise with someone you know who could contribute valuable information: an old-timer, a person new to the area, a group of kids. Each map will be different. Each map will tell you a lot about your city.



Mapping exercises work in both urban and rural areas. Only the scale changes. In a classroom situation, it is interesting to compare the differences in individual maps, especially if the group is involved in any kind of exchange program such as that explained in *Make the Connection.*

Reference ***"Situando en un mapa los lugares especiales"*** **or Mapping the Special Places, Spanish version, is available in** ***Camina alrededor de tu Cuadra*****, an abbreviated version of Walk around the Block. See Resources section.**

Important Buildings Questionnaire

Select and list the ten most important buildings and sites in your city. "Important" can mean old, architecturally significant, historically significant because of a person or event, or significant due to its site or presence. This list will give you a head start on buildings you **know** you will want to include in your city.

Building, Site, District, Art	Date	Why Important?	Category
Example:			
Empire State Building	1931	world's tallest building for years (1,250 feet)	building
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Art/monument/sculpture			
Example:			
Picasso Sculpture, Daley Plaza, Chicago	1967	accessibility, info in Braille, best known use of Corten weathering steel	public sculpture
11.			
12.			
Site/recreational area/district			
Example:			
Taos Pueblo	Pre-1776	early culture	site
13.			
14.			
Structure with personal meaning			
Example:			
Great-Grandmother's House	1924	still belongs in family	residential
15.			
16.			
17.			

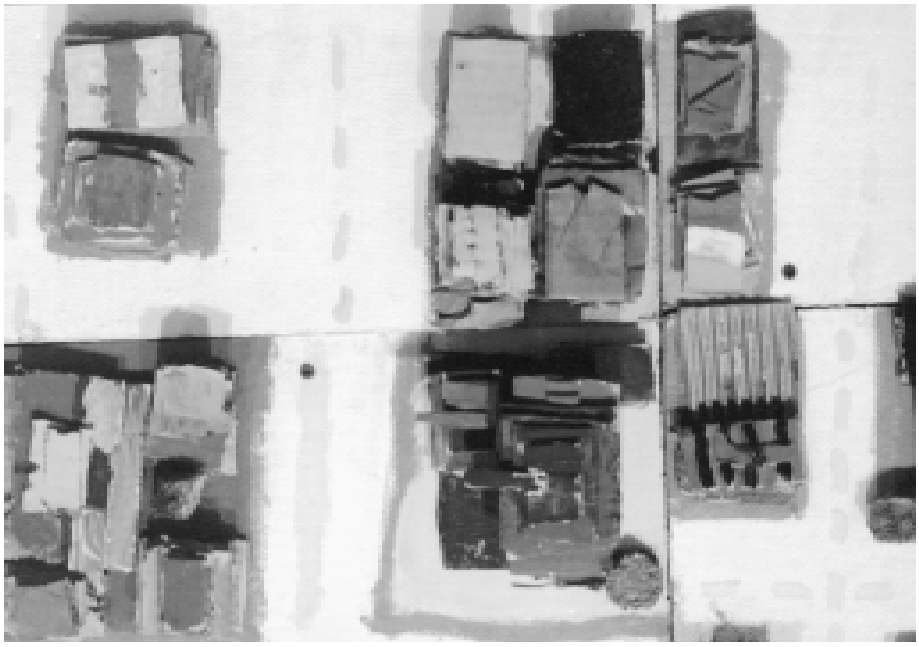
Give each building an approximate date and tell why it is important.
If you did not list a piece of sculpture, a monument, a work of art, add that to your list.
If you did not list a site, recreational area or district, add that to your list.
Finally, add three buildings or sites to the list which are important to you personally.

City Mapping with Recycled Cardboard

Using the cognitive maps they have drawn, students can begin to work at translating two dimension into simple three dimension by building the designated structures using pieces of cardboard recycled from grocery store boxes. They can work with the idea of scale as they measure the building and build up. Each layer is attached with glue. Note use of corrugated cardboard to give texture. This particular "city" even had a skyscraper.

This "city" can be hung on the wall when completed—great for display in a school hallway. Paint "buildings" with tempera paint.

Three layers of cardboard ∅



◆ Corrugated cardboard

Credit:Studio in a School, Sandy Ellinson.

Small bits of recycled material

Utilize a variety of maps to increase participant understanding of the levels of information which are contained in maps. Many are available from your City Hall at only a small charge. Maps may also be available from various internet sites. Ask for these kinds of maps: aerial; general city; general aerial; survey; Bird's Eye; plan; plat; property; insurance; land use. (Also see *Understanding Land Usage*.)

Understanding Land Usage

Enlarge the map shown here and have students outline each use type with the correct color, or use existing maps of your city or neighborhood. Explain that pictures can be symbols (map legend) and that colors can also be symbols. When one "reads" a Land Use map, each "use" area will be a different color.

Commercial Buildings
red

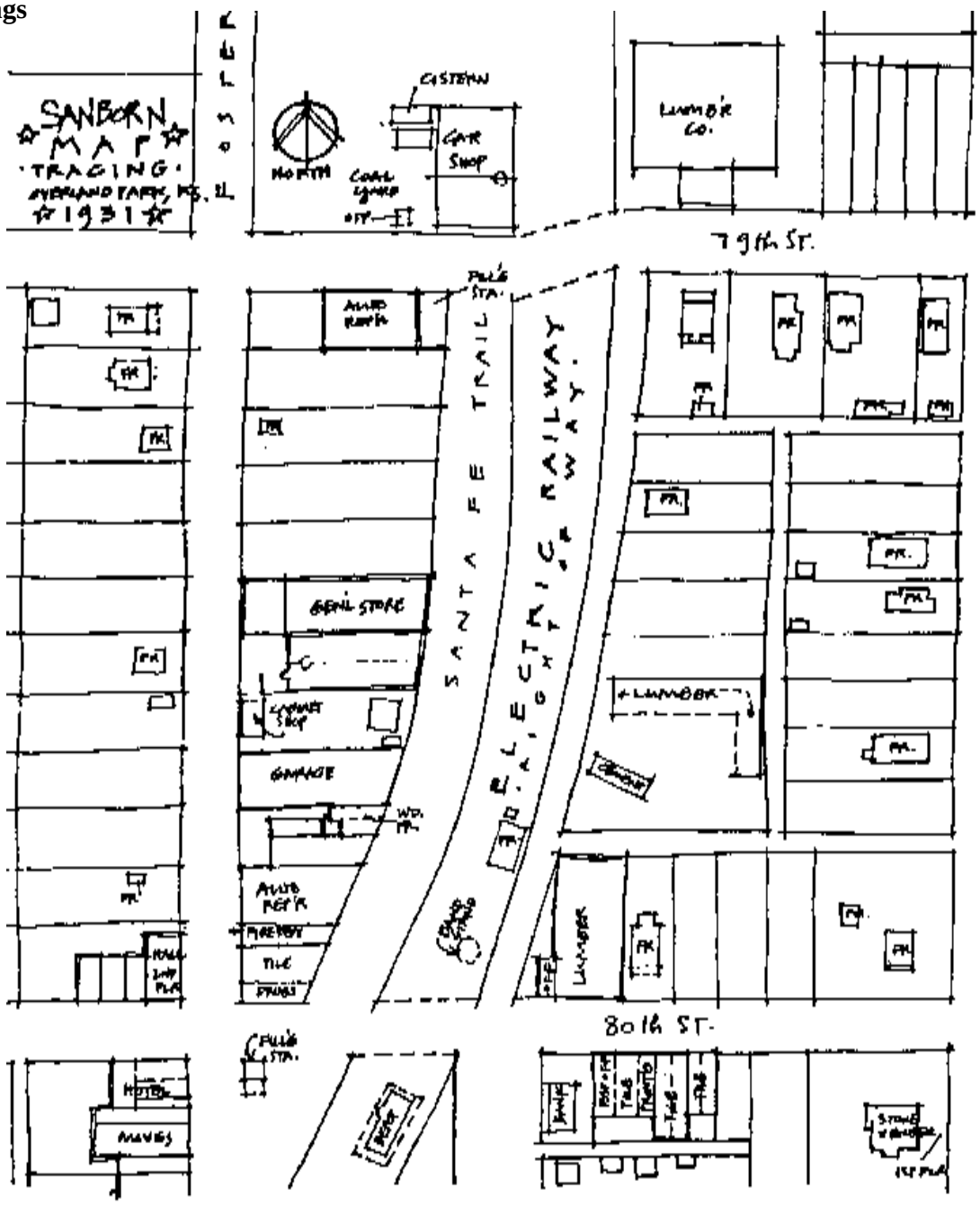
Civic Buildings
blue

Residential Buildings
yellow

Parks
green

Industrial Buildings
purple

Agricultural areas
yellow



The Pieces of the Streetscape

Before you begin to design your base model plan, think about these elements which are a part of the streetscape.

The Street
The width of the street determines the speed of cars. Determine who owns the street—people or cars. It will help you in your planning. Remember that not too many years ago a basketball goal would face the street. Streets served multiple purposes. For your Box City think about making an ideal street, not just replicating an existing street.

> Street furniture is a part of "furnishing" the street. Signs, benches, places to throw trash, lights—all play a role on the street. Can they enhance the street?

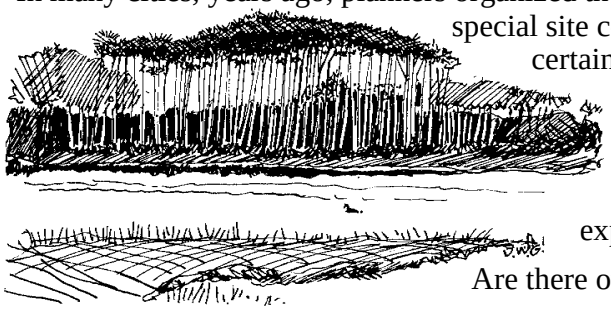
Gateways
One road that deserves special consideration is a community's gateway or main entry artery. This is the welcome to your city. This is the front door to your city. Most people remember the first time they see a place. That image is the one that they always carry with them. What do people remember first about your city as they enter from the east? the west? From which direction would you tell people to enter in order that they would have the best memory of your city?

Trees
Landscaping and street trees are not frills. Not only do they contribute to the enjoyment of the streetscape, they provide needed shade and contribute to economic development. Cities need ordinances which protect existing trees and require the planting of new trees—particularly, shade trees.

Sign Control
The more your city looks like every other city, the less incentive there is to visit. Preserving older signs with historic merit is as important as encouraging new signs which will contribute to the streetscape. Signs give us direction and information. But when misused, poorly planned, oversized, badly located or too numerous, they lose their effectiveness and they cannot do their job.

Cultural Landscape
Historic properties and tourist sites are economic draws for any community. Their ambiance or qualities extend beyond their front doors. Preserving a "viewshed," making sure that the approach to a particular place is in keeping with that particular destination are all a part of the experience visitors have when they approach a particular place. Americans need to understand how to make a commercial activity that is not ugly. The visual envelope is as important as the site itself. This is also true of the area around your own home or school. What a visitor sees as they approach the front door is as important as what is seen inside.

The Viewshed
In many cities, years ago, planners organized the city in such a way that an uninterrupted view of a special site could be seen from anywhere in the city, or along a certain street. These buildings or natural vistas not only provide a landmark, but have a certain symbolic value which may inspire, encourage, motivate, or energize. Interrupting these views not only disrupts the plan of the city, but takes away the symbolic experience. Plan at least one of these.



Are there other topics to address before you begin designing?

Boomtown

Instant City
It is helpful to have students participate in some kind of "quick and dirty" city building situation to further their understanding of the activity to come. Two possibilities in **Box City** are:

Boomtown
GeoBlock Activity

The following **Box City** processes may occur prior to the *GeoBlock Activity*, but consensus and preservation ethics will have been illustrated during *GeoBlocks* and students will have greater understanding of their application following that activity.

Informed Consent
Preservation Issues

The *GeoBlock Activity* is played with blocks. The Boomtown activity is played with boxes. If you are planning on doing a more in-depth **Box City** over several weeks, you might use plain boxes labeled with the building-use name tags in this curriculum to move the activity along. Those boxes will be reused for the long term project. Those *GeoBlock* directions follow.

Boomtown
In northern Virginia, architect Wayne Hughes and planner Patrick Kane visit schools with a variety of materials. Historic city plans are discussed as the prototype for the plan the children will place their buildings in:

- star/radial
- grid
- random

In a recent class, a planner presented a sketch prepared as a part of a redevelopment scheme which showed a megastructure which used air rights and reflected a great deal of vertical development. The purpose of the sketch was to point out how a traditional suburban development could be contained in a fraction of the land by this one megastructure, leaving enough land to accommodate other uses such as agricultural and recreational. At the next class, the students would use the session to discuss the kind of community that students would want to live in…their dream community.

In the Boomtown activity, a series of stations are set up around the perimeter of a cafeteria or gymnasium. Students and their families are assigned to construct a variety of building types such as industrial, commercial or residential using the materials that they brought with them such as cardboard boxes, mailing tubes, straws and other assorted building materials. While the students and their parents assemble their buildings, the planner lays a basic road system and creates natural features such as a river, lake or mountain.

The construction process lasts about an hour. The planner assists the group in locating the buildings. Based on the assumption that Boomtown was created by an economic boom or enterprise, such as the establishment of a factory, the beginning point for the "community" in this case, becomes the location of that factory. Frequently the factory is proposed for the river's edge where shipping the basic materials and the finished products could be by water and water would also be used in the processing.

Boomtown

Environmental issues all play a role.

- prevailing winds
- solar orientation
- geography

Government structures are placed next so that ownership of land can be recorded. The city proceeds with churches, office buildings, homes, transit stations and commercial buildings. Emerging issues in the community building process could include the proper allocation of space to fulfill a variety of building needs, placement of above ground or underground utility lines, where to locate buildings if you run out of space in the prime areas, and so forth. These issues provide opportunities to develop problem solving and critical thinking skills.

Patrick Kane comments on the Boomtown procedure. "We have made some rules. Boomtown is what the citizens need. The planner's role is to make the city what they want. One rule is that we never place anything into the community unless there is a reason for it. For instance, if the idea of an Opera House is introduced, we ask, 'Why do you need an opera house? Are there people in the town who will attend? Are there businesses to support it?'

"In a recent Boomtown a group wanted to introduce a railway by the river because, they said, 'That's where railways always are.' As a planner I introduced the idea that transportation should connect things which have the potential of interacting. They'd never thought of it like that before."

Reference **Adapted from the article *Boomtown — Building Tomorrow's Constituency*, by Patrick F. Kane, Resources, APA Newsletter. Contact Kane for info: 11232 South Shore Rd., Reston, VA 22090.**

GeoBlock Activity

In order to provide a quick practice session which demonstrates the interrelatedness of geography and planning, and the part which the individual plays in disrupting or improving this interdependency, create a *GeoBlock* game. Discuss *City Planning Principles*.

Use colored counting cubes defined by building use-type to make cities: red, yellow, green, blue and violet. See **Building Assignment** or **Understanding Land Use** for color designation. Participants work in small groups on large "maps," each with a different land form or geographical feature—river, lake, mountain, ocean, plains. Some givens are also included such as a railroad and airport. The cities are designed within the limits of the zoning rules.

Teachers can stimulate further discussion after students say they are "finished" by introducing additional topics:

Cities are subject to natural disaster: tornados, hurricanes, floods

Discuss the positive and negative aspects of disasters: for instance, a fire can lead to rebuilding the city in a more thoughtful manner.

Cities which have emergency plans in place are able to carefully evaluate conditions and proceed (i.e., Charleston after Hurricane Hugo, 1989).

Cities which have not planned for emergencies, often tear down or destroy needlessly, thus jeopardizing the character of the city (i.e., San Francisco after 1989 earthquake).

Cities are subject to manmade disasters: urban renewal; fires; explosions (Chicago, 1871); environmental pollution (Chernobyl, Russia, 1986; Love Canal, Niagara Falls area, 1978)

Discuss what happens when a city council votes to add "skywalks". For example skywalks in Des Moines, IA cut off the view of the capitol building and destroyed scale and street level shopping activity. (This also occurred in other American cities.)

Discuss what happens when a developer plans a building and tears down existing housing or structures, but the new building is never built (interruption of street scape, loss of "visual history" of city).

Other possibilities to introduce:

- it is discovered that a historic trail cuts through the city
- a freeway bond issue passes

Finish by photographing the finished cities (blocks and maps) with Polaroid instant film. Attach to paper and have members of each group sign.

As a group, compare the differences in the various maps. What difference does the particular geographic feature make in the organization of the city? Document what was discovered during this process. Use the work sheet called *Group Record.*

Reference **The *GeoBlocks Activity* was created by Patricia Beasley Thomas, P.S. 1.**

Group Record for GeoBlock Activity

Members of Group:

_____

_____

_____

_____

_____

_____

City Plan Number:

_____

Description of City: _____

_____

_____

_____

Photograph of City:

How Things Work

At this point in your Box City experience, it may be time to review what you have learned about the larger issues and challenges which face our "community builders." It is one thing for one person to create a neat little plan for a city on paper; it is another to involve community citizens and actually get approval for the plan. What have you already learned?

Who makes the rules/nationally?

Federal Policies

Who Makes the Rules/locally? How do changes get made?

How Does Your Mayor Talk?

Who Makes the Rules?

How can we get people to agree?

Informed Consent

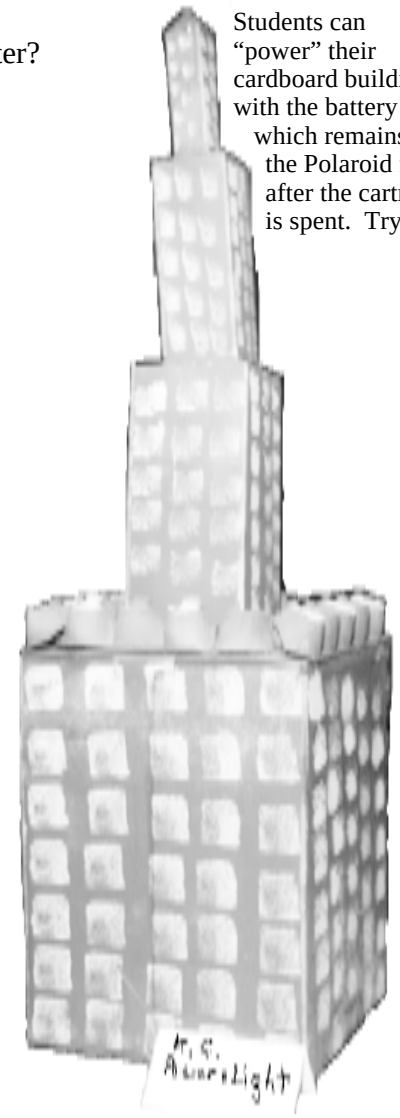
How do you change the rules to make common visions work better?

City Plan: The New "Old" Town

How do you begin to think about issues from all points of view?

Role Playing

Preservation Issues



Students can "power" their cardboard buildings with the battery life which remains in the Polaroid film after the cartridge is spent. Try it.

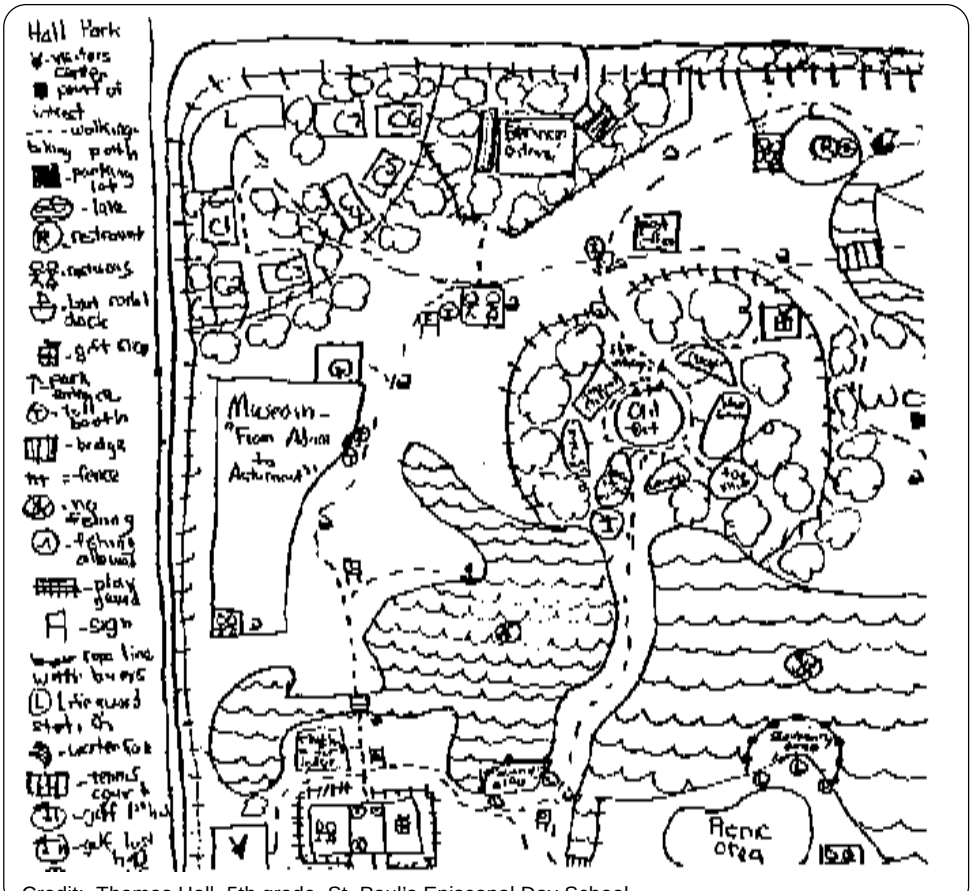
Informed Consent

In cities, in classrooms, in families, many plans are made, but few are implemented. For a variety of reasons, a vote may pass, but those who were against the project do not fully "buy" into the project and ultimately the idea fails. The process called *Informed Consent* is one way to achieve a higher degree of "buy in" and more possibilities that the plans will be implemented. It is not only a good process for students to understand in creating their Box Cities. It is a process for them to use when, as adults, they are involved in making decisions which range from neighborhood development and changes up through major city planning strategies. (It also works well as a governing mechanism in the classroom.) In devising a strategic plan, the City of Loveland, Colorado used this process with its citizen groups, but also in the youth component of that project.

According to Margaret P. Schmatz, Ph.D., there were several activities, including cognitive mapping, to encourage students' participation in the *Agenda for the 90s: Loveland Project*. In regard to the use of the *Informed Consent* process, facilitator Schmatz says, "Specifically, the students were divided into small groups to do collages. Each group was randomly given a piece of poster board to illustrate either "what they would want for Loveland" in the future or "what they would **not** want" for the future. The only rule was that everyone in the group had to agree before something could go on the poster board. This idea came from the informed consent process we had used with adults. With this process everyone had to be able to agree before moving on to the next topic or idea.

Each group presented their posters to the class, and there was a discussion of their general hopes and fears for the future. These meetings with the elementary students appeared to be fun for the students. They provided additional input for writing the Visions and Goals."

In 1993, Kansas City's FOCUS (Forging Our Comprehensive Urban Strategy) committee taught the process to hundreds of Kansas City school children involved in the Kansas City: Kid City activity. The students identified what makes a city good for kids.



Credit: Thomas Hall, 5th grade, St. Paul's Episcopal Day School

Reference **Adapted from the article "Involving Kids in a Community Planning Process." *Resources.* Ramona Mullahey, editor, 225 Queen Street, #7H, Honolulu, HI 96813.**

Informed Consent

Guidelines for Arriving at Informed Consent

Informed Consent Definition:

> "The achievement of an agreement with which all the people present can feel comfortable and none disagree strongly enough to blackball — not total agreement, merely agreement not to obstruct."
>
> Kirkpatrick Sale
> Human Scale
> Page 501

Background:

1. Traditional method for doing business
   a. Rule of majoritarianism (majority rules)
   b. I win, you lose, the game of zero - sum
   c. Voting on decisions

2. Agenda 90s method for doing business
   a. Informed consent (aka consensus)
   b. I win, you win
   c. No voting on decisions

Does *Informed Consent* work?

1. Yes. *The Agenda for the 90s* is living proof
   a. Decision to do the project
   b. Decision to form an initiating committee
   c. Decision to form a steering committee
   d. Design of the process
   e. Tonight's meeting

How do we make *Informed Consent* work?

1. General Rules
   a. Everyone is invited to actively participate in all decisions
   b. Everyone is treated equally (level playing field)
   c. Everyone's opinion is valued, and diverse opinions are welcomed
   d. Issues are discussed, not people
   e. No voting on group decisions
   f. Issues which cannot be resolved will be left unresolved

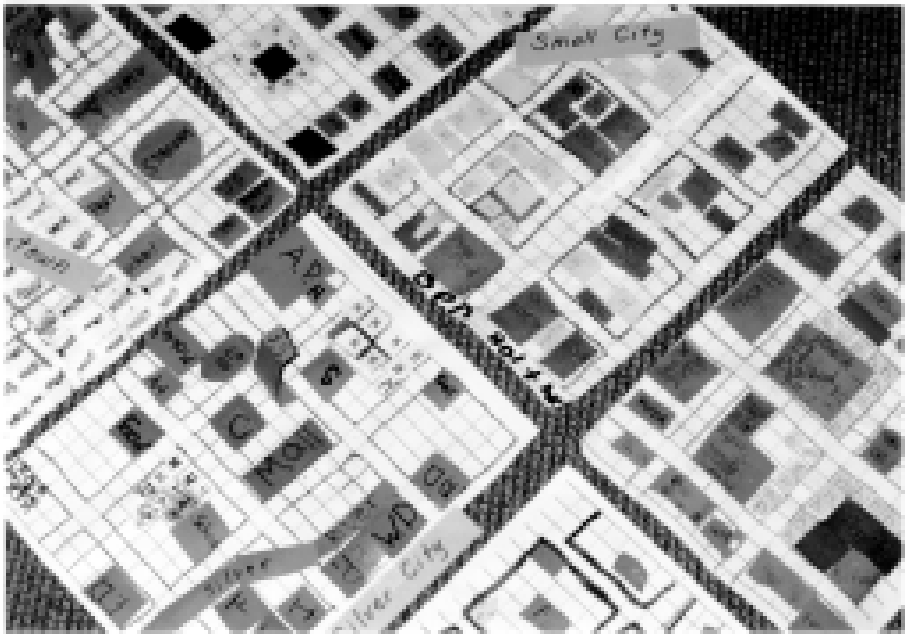
2. To arrive at informed consent on an issue:
   a. All comments are valid and are to be discussed by the group
   b. All comments should be phrased in as brief and clear manner as possible
   c. All comments should be phrased in a non-judgmental fashion
   d. At the conclusion of discussion, the facilitator will ask if anyone in the group strongly disagrees with the conclusions to the point that they cannot support a group recommendation. If even one person can't grudgingly agree, that issue will be left on the table for later discussion.
   e. After all the issues have been discussed and informed consent reached, the group will then revisit the issues where informed consent was not reached the first time. If after further discussion, informed consent cannot be reached, that issue will remain on the table and be reported as lack of consent.

Informed Consent

f. Before the recommendation of the group can go forward and be reported to the audience at the meeting, everyone in the group must be able to support the entire report based on informed consent.
g. Finally, after all the presentations have been presented to the general audience, the audience will be asked if they can support the recommendations of the group based on informed consent. This process will follow the same process as described in **e.** and **f**. above.

How will *Informed Consent* work with individual groups?

1. The above process should be used for the initial meetings and should be followed for all individual groups as they develop visions and goals.
2. All information, text, on the individual issue/vision worksheet will require informed consent as to content and recommendations.



Patti Compton's second and third graders glue small colored squares to grid paper demonstrating their knowledge of city land use.

Reference ***Agenda of the 90s Summary Report and Recommendations.*** **May, 1992. 500 E. Third Street, Loveland, CO. 303/667-6130**

Role Playing

For older students, assuming the role of an actual citizen can stimulate an interest in city government and in individual ownership rights. Assign roles five to six weeks ahead of time. Students research their roles by reading the local newspaper, watching local television news, or speaking to someone in a particular business, as a way of becoming informed prior to the **Box City** exercise. Introduce writing into the curriculum by having students write a short paragraph describing the role.

In the role description students should describe their role personage including the workplace, what transportation is used to get to and from work and what stops are made during that process.

The following example adapted from *Dilemmas of Development* gives you an idea of a well rounded role description. Although the pre-developed "roles" are helpful, writing an individual site specific description researched by the student will provide more community-referenced learning.

Homeowner/Local Businessperson

You have lived in this county for nearly 20 years and own two children's shoe stores. For most of your career, your business has provided your family with an excellent income, and people have relied on your stores for good service and a high-quality product. They may have to pay a little more than they would pay at the shopping mall, but you make special efforts to fit shoes properly, and you keep records on children's growth and provide other services that people like. Business has been declining for several years, however. People seem to want to go to central shopping areas, even if the service is not as good. You think perhaps the time has come for you to move your store into a more developed area. You've had some preliminary discussions with this developer, and you have an opportunity for a favorable lease if you agree to sign a lease early in the process. The developer has also told you that the area in which your store would be located is in the first part of the development to be built. With all the new residential construction that is going to take place, you see this as an excellent opportunity to rebuild your business.

You do have one concern, however. Since you bought your house, housing costs in this county have skyrocketed. While this may be good for some people—in fact, it has been good for you—the children you've served all these years can't afford to live here when they grow up. Some of their parents are finding it equally difficult to stay in the community. You think that's wrong. You think it enriches a community to have different types of people living in it, and you'd like to be sure that the developer is planning some residential units that lower-income people can afford. Otherwise, no young people will live here, and there will be no children's feet to shoe.

Special role: The Mayor

The mayor, as a representative of all of the people, needs to be sensitive to issues of race, poverty, "ghetto" districts and other sensitive issues. Use the strategy of mandating the citizens' committee to "improve" less desirable areas with enhancements such as trade-offs for zoning adjustments. A building owner might be allowed to violate a height ordinance in exchange for running a child-care center in the building or a developer might be given the right to develop in a high rent district with the proviso that low-cost housing be provided elsewhere.

Reference **The Urban Land Institute's resource called *Dilemmas of Development* contains role descriptions for many roles.**

Role Playing

As a spin-off of this activity, students also learn
1. career possibilities
2. real neighborhood or city issues

Following the Box City exercise and role playing:
Be sure to "come down" or debrief after the city placement is over. Make sure that all students have returned to their own identity and have relinquished their assumed persona which was adopted for the purposes of organizing the city.

Instructions for role nametags. Copy the "roles" onto full-sheet label paper or tagboard and cut down so all participants can wear a nametag defining their roles. It is important for the names to be large enough to be easily read across the city or classroom.

Role playing gives the students an opportunity to evaluate through someone else's eyes. It further encourages students' need to understand that in their roles they may have to do something which they personally object to.

Role playing gives students an active opportunity to exercise problem solving, decision making, logic/argument, critical thinking and precise and accurate recording.

Nametags for role playing. This listing is not definitive. You will want to create specific roles that reflect your community, government, politics and issues. Use the blank templates at the end of this listing.

Preservation Issues

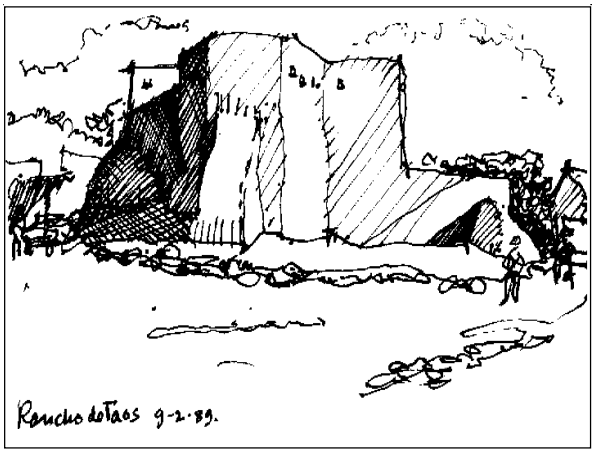
The restoring, reconstruction or preserving of old buildings is viewed differently by various cultures. It is not unusual in Alexandria, Virginia to see buildings that are several hundred years old, lovingly preserved by their owners. However, in some American cities, old buildings are only saved and preserved through legislation. In Santa Fe, New Mexico, the walls of the Palace of the Governors, still in use as a museum, date to the 1600s The archaeological site of the Puye Cliff Dwellings, on the nearby Santa Clara reservation, date from 1100 to 1300 A.D.

Rina Swentzell, a teacher, former advisor of the National Trust for Historic Preservation, an architect, and a spokesperson for all things Native American, provides a fresh view on preservation. She relates that in the Pueblo Indian culture, a building was allowed the cycle of life and death, much as a person. The house was regarded as a living organism. It was alive. It was treated appropriately. Once the building process had begun, even before construction, offerings were placed at its four corners. Later, during the house building, prayers would be said, and more offerings were placed within the walls and ceiling beams to bless and protect the completed whole. Thereafter, the structure was blessed and fed cornmeal during specific ceremonies. Houses could suffer illnesses and special ceremonies addressed that. A house could die. The bricks, made of soil and water, melted back into the earth. There was a natural cycle of life and death.

She tells a story from her childhood. On her way to school each day she passed an old house. "One day," she writes, "I noticed a crack… I asked my great grandmother why the people who lived in that house were doing nothing about fixing the crack. She shook her finger at me and said that it was not my business to be concerned about whether the house fell down or not: 'It has been a good house; it has been taken care of, fed, blessed and healed many times during its life, and now it is time for it to go back into the earth.' Shortly afterward the house collapsed, and, in appropriate time, the same materials were reused to build a new structure in the same place. On the reservation, it was not always easy to tell if walls were going up or falling apart."

Swentzell is also the person who alerted us to the habit of "house tasting." She tells that children would lick their fingers and put those fingers on the adobe brick and back into their mouths. Each house had a different taste. She refers to the house mentioned in the story above as a "particularly tasty house."

Discussion: it is interesting to talk about the building habits of a different culture or even a different time. Most builders today do not build with easily available local materials; they do not make their own sun dried adobe bricks. Compare the Pueblo idea of allowing a building to "die" with the materials, technology and attitudes prevalent today in the building industry.



Is it possible to return to a different way of doing things? Many anthropologists, appalled at the environmental disasters of our country, have posed the question, "What if the first European explorer in North America had looked at the American Indian way of life and said, 'I see a different way of living here. I think I'll take a look at it and see if there is anything I can learn.' "

Reference **Gillette, Jane Brown. "On Her Own Terms." *Preservation News.* Nov-Dec. 1992.**

Swentzell, Rina. Workshop notes from Architecture and Children course, University of Seattle. June 1991.

Neighborhood Planning Groups Utilize Box City

In the 90s, many American cities initiated new planning efforts. Some were planning for the first time since the years following World War II. In these new efforts, cities recognized that the planning needed to take place horizontally, involving all agencies and all citizens. New ways of working were needed. Citizens needed an understanding of how cities worked. Professionals needed to hear what citizens needed and were willing to pay for.

New tools for group process assisted these efforts. Hands-on activities, visualization activities, and consensus building activities assumed importance as beginning steps. Many groups utilized the activities in **Walk around the Block** and **Box City**, the same activities as the ones we had been using with teachers and students. Because they are hands-on, reality-based, and self-initiated, the outcome is that the group is more committed and takes more ownership. A constituency develops between the participating members as they work to solve mutual issues and concerns. Picking up a box and moving it is a concrete way to demonstrate what can happen.

The following documents just one such neighborhood planning effort.

For five weeks, residents and kids, planners and architects, met to discuss their dreams and wishes for the Washington Wheatley neighborhood. Their vision would be created out of cardboard and glue in the process called **Box City.** Peter Dreyfuss, former director, Kansas City's Metropolitan Energy Center and now, special assistant at the Department of Energy, says, "I've worked with these residents for years. I've never seen as clear a vision as what residents wanted to see on Prospect." Hakim Yamini, Atlanta consultant for the project, commented, "There's an excitement that comes with creating your ideas with paper and glue and scissors." He told the participants, "This 'model' will become as real as your commitment to it." He refers to the Box City process as the 'missing piece,' the piece that makes plans come true."

Reprint permission: Kansas City Star.

That missing piece may be the hands-on experience of seeing it, making it, changing it, and being able to call it "mine." Others call it the moment of self-realization or refer to it as the civic engagement piece. It is the activity that catches the attention of the members of the group and helps them to decide that **they** are community, and it will only be as good as the personal investment **they** make in it.

For other examples of the kinds of activities that "grab" or make "the connect," see CUBE's **Community Connections: Ten Things You Can Do!**

The wise man preserves that which he values and celebrates that which he preserves.

Old adage

Structure Type and Design

Identify the types of structures and services which the students want or consider necessary for a well-run city. For instance, a city will include buildings in the following categories:

Industrial:	waterworks, factories, electric company
Services:	railroad, airport, bus, mass transit, fire department, police station
Commercial:	what kinds of businesses? parking lots?
Public Use or Civic:	city hall, courthouse, jail; art gallery, music hall, library, museum
Residential:	single family homes, apartments, condos, subsidized housing, trailer courts, row housing
Recreational:	parks, sports facilities, theaters
Religious:	synagogues, churches, mosques, cathedrals

Procedure:
Brainstorm types of buildings and structures found in cities and their uses. This activity is structured to begin with what students already know and to put vocabulary (use types) or symbol (color) to that knowledge after their pre-knowledge is identified.

Ask students to volunteer to develop a building for each type contained in the city. Make a work sheet similar to the one called **Building Assignment**.

Background Info:
New England communities were developed with the idea that specific buildings symbolized certain principles or attributes. For instance, New England communities always had a:

1. library representing knowledge
2. courthouse representing justice
3. town hall representing government
4. church representing spirit

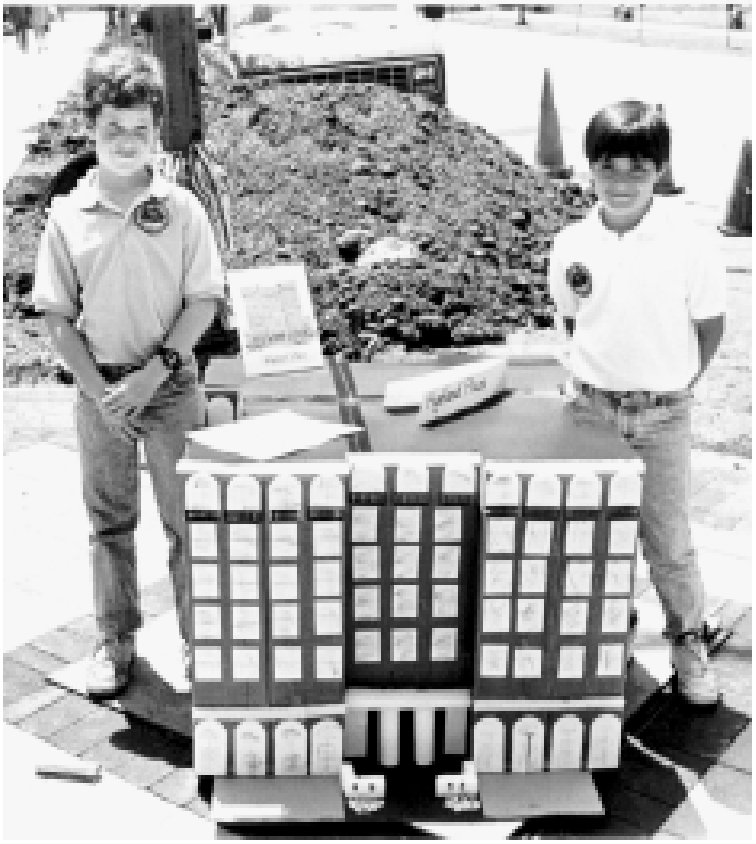


Photo credit: Birmingham Historical Society

Building Assignment

In selecting the buildings for a city, think in terms of these Land Use categories: Public and Semi-Public; Industrial; Commercial; Residential and Parks and Recreational. Urban planners think in these terms and create color coded Land Use Maps. Services, such as transportation have no color, but link one usage area to another. Services may be housed in one of the areas (such as a bus station in a downtown commercial area) but the service itself cuts across the entire range of zoning districts. There are many other kinds of buildings to add to each list. Make a list on a long sheet of construction paper using the appropriate color and post it on the board. Ask students what kind of buildings make up the city, and write them in the appropriate category, or tell them the categories and what they mean, and ask them to think of buildings for each category. This sheet can serve as an assignment sheet for building construction.

Public/SemiPublic (BLUE)	**Industrial** (PURPLE)	**Residential** (YELLOW)	**Commercial** (RED)	**Parks/Recreation** (GREEN)
Public City Hall Courthouse Fire Department Jail Police Elementary School Secondary School **SemiPublic** Art Gallery History Museum Synagogues Churches Sports Facilities Hospital	Waterworks Factories Power Plant **Housing for Transportation** Airport Train Station Bus Station Heliport	Single Family Duplexes Apartments low rise (2-4 story) high rise (5 and up) Retirement Motor Home	**Small Business** Fast Food Barber Shop Drug Store Grocery Store **Large Business** Bank Insurance Co. Law Office Movie Theatres Office Building	**Parks** **Green Belts**

In working with older students, you may want to refine the understanding of land-use colors to a greater extent. The following colors are generally used on most Land Use maps.

YELLOW GREEN	Agriculture
YELLOW	Low Density Residential
YELLOW ORANGE	Medium Density Residential
ORANGE	High Density Residential
LIGHT PINK	Office
PINK	Neighborhood
RED	Commercial
PURPLE	Industrial
STRIPED WHITE	Mobile Home Use
BLUE	Public and Semi Public
WHITE	Vacant Land

Reference **Graves, Graves, Schauber, Beasley. "Defining the Block." *Walk Around the Block.* Kansas City: CUBE, 1993**

Building Assignment Distribution

Since the size of the groups who may be developing a city vary, the lists below represent the minimum number of buildings you will need to create a city with enough challenges to maintain student interest. When time permits, each student can make a residence in addition to another assigned building.

21 participants

3 apartment houses
5 single family houses
1 school (your own, please)
2 churches
2 office buildings

suburban commercial

1 gas station
1 7-11
1 fire department
1 museum
1 historic building
1 city service building (waterworks, park dept.)
1 railroad station
1 City Hall

If students are making more than one building, or there are more participants, add the following:

7 single family houses (remember that 1/2 of land is usually allotted to residential)
1 school
1 hospital
1 church

office or commercial

1 retail department store
1 high rise
1 corporate headquarters building

suburban commercial

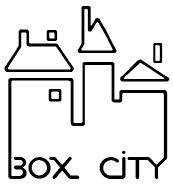
strip shopping center
1 small office building
1 museum

Building Labels

When time is a constraint, students can use the "building usage labels" and affix them to generic boxes for a quick exercise in City Planning. In a real Box City, affix label on top of the finished decorated building for easy visibility when "organizing" the city. The mix of types on this page is essential for running of a well-rounded **Box City** exercise. If more participants, add second page and so on through all labels. You will want to add some ideas of your own. Each student makes a residence in addition to another structure.

	City Hall
	Courthouse/Jail
	Library
	Art Gallery
	Elementary School
Warehouse	Mass Transit Station
Post Office	Service Station/Quik Trip
Sewage Plant	Historic House/District
Landfill	McDonald's/Drive-In
Shopping Center	Monument
Shopping Mall	Railroad Station
	Airport
	Department Store
	Movie Theatre
	Church
	Hospital
	Ten Unit Subdivision

Building Labels



Apartment Building	
Neighborhood	
Shops	
Office Buildings	
Municipal Plant	
Fire Department	Health/Tennis Club
Grocery Store	Retirement Home
Museum	Newspaper Office
High School	Convention Center
Hotel	Day Care Center
Solar Collector Farm	Recycle Center
Restaurant	Residences
Tavern/Saloon	
Tattoo Parlor	
Lumber Company	
Half-Way House	
Adult Book Store	

Recycling Old Buildings

In making the building selection and assignment, address the creation of new buildings as well as the preservation of older buildings.

Re-using an old building for another purpose represents as strong a model for ecology as recycling glass or aluminum or newspaper. Saving a structure built in another time, of no longer available materials, by craftsmen trained in now-lost techniques and in a style representative of another era, is parallel to those efforts we make to save an endangered species whether it be animal, vegetable or mineral.

Look around in your community for examples of structures which were built for one use, but are now used for another. Add these to the specific list of buildings for your city.

Given the realities of multiculturalism and the scarcity of resources available to cities, the grand old structure that we have so often preserved—museums, symphony halls, railroad stations, churches and libraries—must be adaptively and creatively used to address current needs. They cannot be empty monuments that drain the community's financial resources while returning little of educational, cultural or civic benefit. What was a school may become a home for the elderly; an old department store may become a magnet school for the visual arts; an old hotel cold accommodate the homeless; and an old theater could become a Buddhist Temple.

An old fire station becomes the home of the Institute of Contemporary Art in Boston.

Too often, however, we witness a different outcome. Structures designed as historic that are strapped for funds to restore their lost grandeur are under-utilized or not used at all, while the surrounding community is in need of space for vital community civic and education functions. (Harvey Gantt, Charlotte NTHP conference.)

What else?
The National Trust for Historic Preservation uses the term "embodied energy." It includes the amount of energy which was used to create the building, both human and material, and also the fuel for the engines which were used to construct the project. They encourage cities to add this cost into the new building cost when comparing the expense of preserving an old building with constructing a new one. Learn how to use these formulas and apply them when high preservation costs are an issue.

In San Antonio, the Golden Arches of McDonald's are nestled happily and discreetly among columns and capitals of a late 19th century structure.

Reference **Whiddon, William I. "The Concept of Embodied Energy."** ***New Energy from Old Buildings***

Understanding Context

As the students begin the creation of their buildings, it offers an opportunity for them to begin to see a structure in the context of the whole city, and to think about the building they are creating replicating the same thinking process that architects use. The following may serve as material for discussion:

Are the surrounding buildings, as well as the whole city, a better place or a worse place because of the addition of this building?

The architectural firm for the Society Center Tower and Center in Cleveland offers this advice:

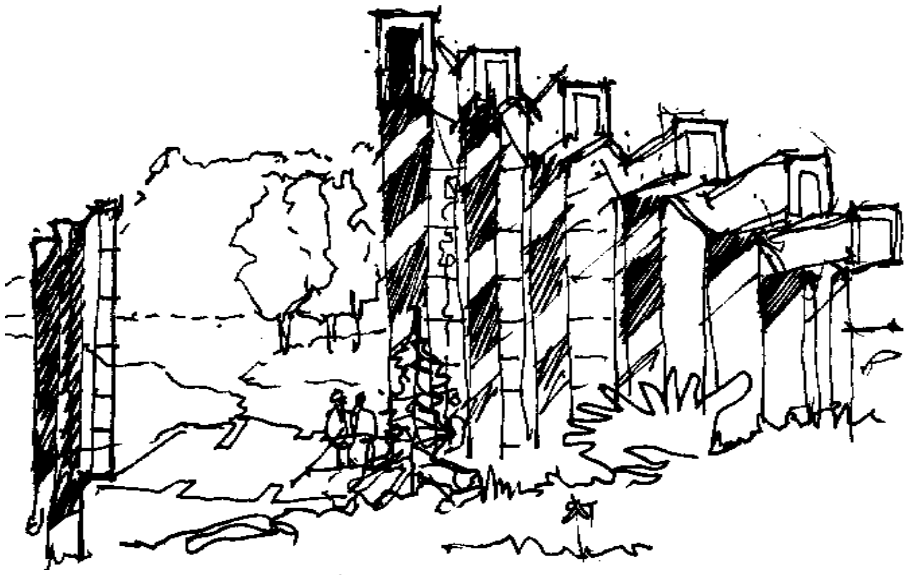
- although the building design may be questionable, if it improves the context of the area, then it is an addition to the city
- if the context is worse, then its merit for placement in the city is questionable, even if the building has architectural merit

Architects think about things like:

- How does the building relate to a historic building already in the area? Does it imitate the building which would destroy its uniqueness? A new building must relate to the future. Its life will take place 100 years in the future.
- How can the materials enhance the building?

  Stainless steel, used on the Chrysler building in New York City, makes a brighter sparkling building. The use of granite will signal a return to the past; granite was used for many 1900s buildings.
- How does the building look on the skyline? Does it connect with other tall buildings?

  It takes three points to define a space. Will the building do that or just be one more unrelated tall structure?
- Will the building help inhabitants recognize the character of the city from a distance?



At the Vancouver Museum of Anthropology, architect Arthur Erickson translates the post-lodge construction methods of the Kwakiutl Indians into concrete and glass in a perfect example of contextual blending of culture and technology.

Selecting the Materials

Procedure: determine the time which can be committed to creating the box. If time is limited, consider these alternatives:

1. students take box home for individual decorating
2. work with art instructor for box decoration during art period
3. do in classroom as group or individual project

Designing the box will allow students to demonstrate knowledge of architectural details, building materials, and relative scale through the creation of a particular building type.

Design possibilities and materials: paint, magic marker, rubber stamps, sponges, wax crayons, photographs, cut construction paper, magazine cutouts, mixed media or a combination of materials. Hint: although some parameters may be helpful for less confident students, gifted or more interested students will appreciate having the freedom to pursue and practice their active knowledge. A selection of Polaroid photos taken on walking tours or reference books with photos of your city's buildings will help students recall specific architectural details. For students who enjoy research, this is an opportunity to choose a style they have always wanted to learn about.

Resources

Four vocabulary and style books which educators consistently use are:

Clues to American Architecture. Marilyn W. Klein and David P. Fogle. (For younger children.)

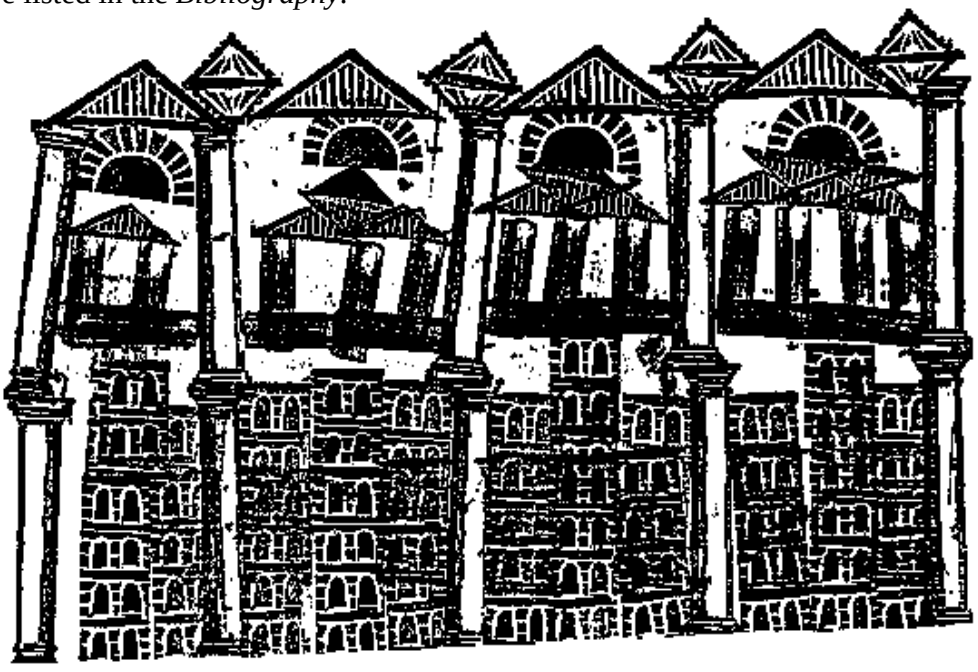
House Styles at a Glance. Maurie Van Buren.

Identifying American Architecture. John J.-G. Blumenson.

Under Every Roof, a Kids' Style and Field Guide to the Architecture of American Houses. Patricia Brown Glenn

Discover America's Favorite Architects. Patricia Brown Glenn

Others are listed in the *Bibliography*.



The Scale of the Buildings

What is scale?

- It is something you can use to weigh yourself, an object.
- It is a certain set of rhythmical interludes in music.
- It is a tool for measuring. Carpenters carry one in their pockets.
- Scale is a relative element. A unit of measure.

Architects and designers use scale daily. It would be inconvenient to make their drawings the actual size of the buildings. Scale helps to reduce the drawing to reasonable proportions for viewing and working. In the same way, we cannot reproduce our box buildings in actual size. Therefore, we use smaller boxes to represent the real building.

If you are not using the **Box City Classroom Pack**, try to select your donated boxes in sizes that relate one to another. For instance, you might use milk cartons covered with paper in various sizes and assign a use type related to the half pint, pint and quart size. Your city will be more realistic if you follow this simple rule.

If you are using the **Box City Classroom Pack**, the boxes are 4 inch, 5 inch and 6 inch boxes.

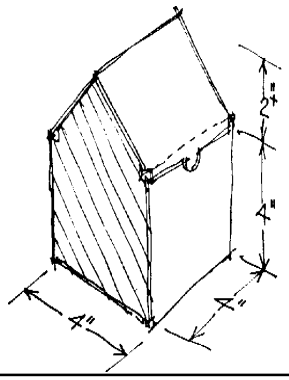
The fours are generally used for residential. Please note that some of the fours have gable roofs.
The fives for commercial or apartment buildings.
The sixes for larger buildings, such as high rise or industrial buildings.
Tape two or more together for extra height or width.

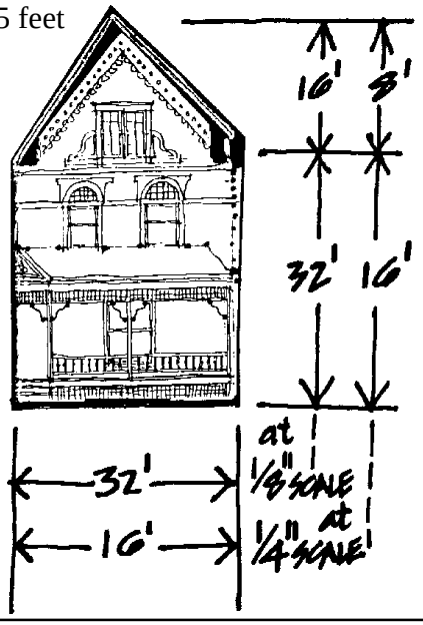
There are a number of scale problems that you can apply during **Box City.**

The boxes are in an approximate 1/8" scale. Therefore, every inch equals 8 feet. This means that the four inch box represents a house which is 32 feet wide and 32 feet tall. A good exercise for students: have them figure out the height of the gable roof boxes. The four inch boxes represent an almost three story house. Floor to floor is generally a ten foot measurement.

Residential drawings are usually done at 1/4" scale. Commercial at 1/8" scale. Which would give more detail?

Many zoning commission ask that houses not be greater than 35 feet to top of the peak of the building.





Lot Size and Scale

When students investigate the lot size of their own school, house or apartment, or the businesses in their community, the use of scale becomes much more relevant. See the activity called *The Scale* of the Buildings in the Box City curriculum for scale related to recycle items such as shoe and cereal boxes and chip cans.

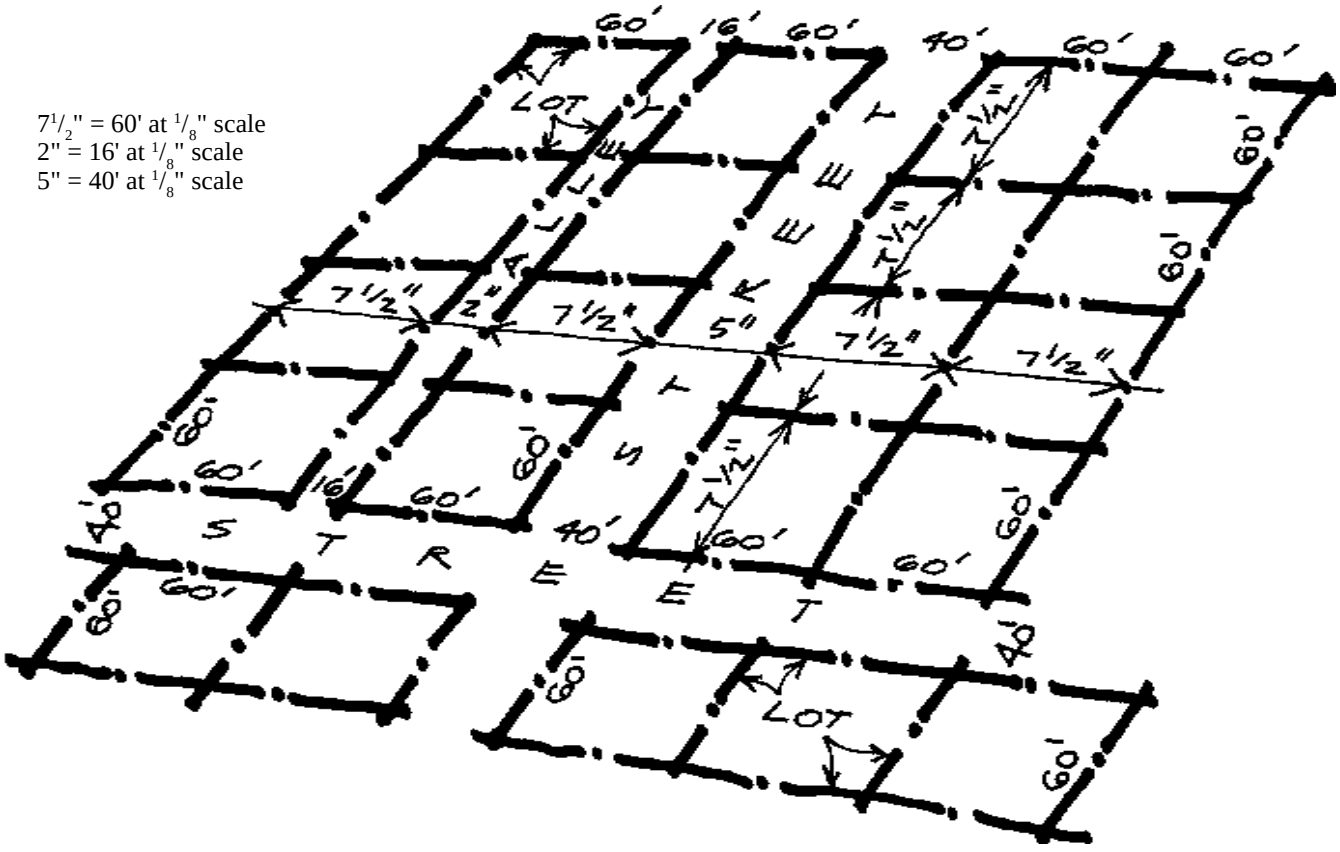
The square outlined here is scaled to match the size of the boxes provided in the **Box City Classroom Pack**. However, whatever boxes you are using, you can use it for a relative scale measure.

It is 7½ x 7½ inches or comparable to a 60 x 60-foot lot at ⅛" scale, which is also the scale used for the boxes. You can reproduce a number of these and form into blocks. You can add two together for an apartment building or a very large house. You can add several together for a grocery store or office building.

When you lay out your Box City, you will usually have variation: winding streets, streets which follow geographic paths such as streams or rivers, streets interrupted by landmarks or highways.

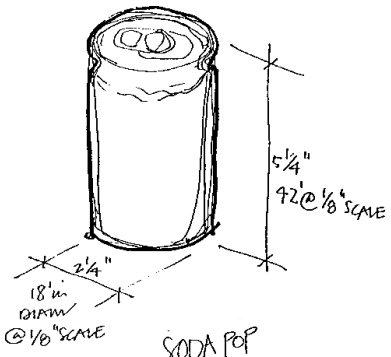
In terms of current planning trends, think about making blocks with alleys (12 to 15 feet wide is ample) and narrow streets such as those indicated on the graphic.

7½" = 60' at ⅛" scale
2" = 16' at ⅛" scale
5" = 40' at ⅛" scale

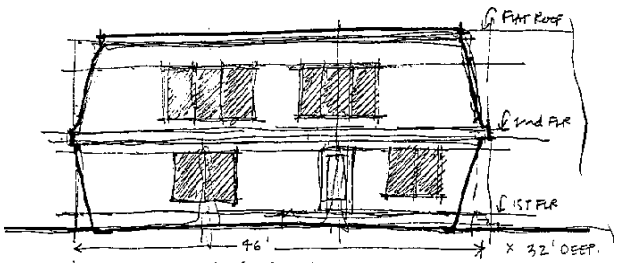


More on Scale

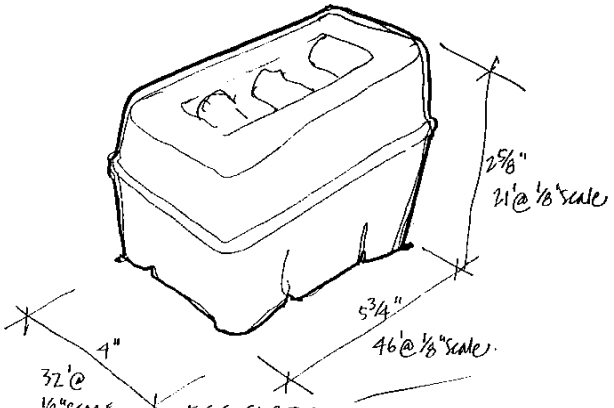
The food containers shown here will give you a chance to show what you have learned about scale. The suggested use relates to 1/8" scale. You may want to add to your city with found materials.



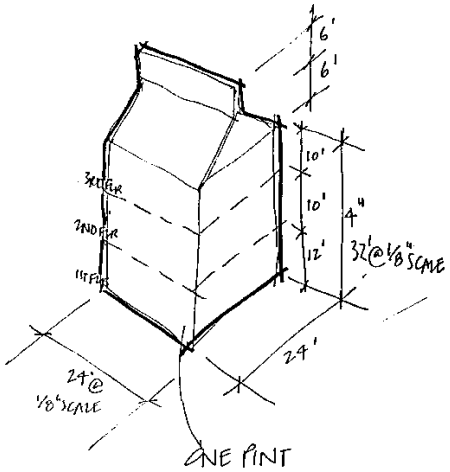
SODA POP CAN · 12 OZ.
56 SF @ 1/8 scale.



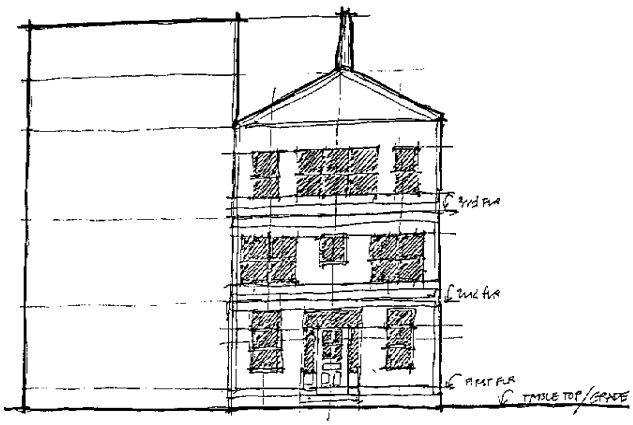
1/2 DOZ EGG CARTON
2 STOREY CONTEMPORARY RESIDENCE
1500 SF/FLR or 3000 SF HOUSE.



EGG CARTON
1/2 DOZ.
1500 SF @ 1/8" SCALE



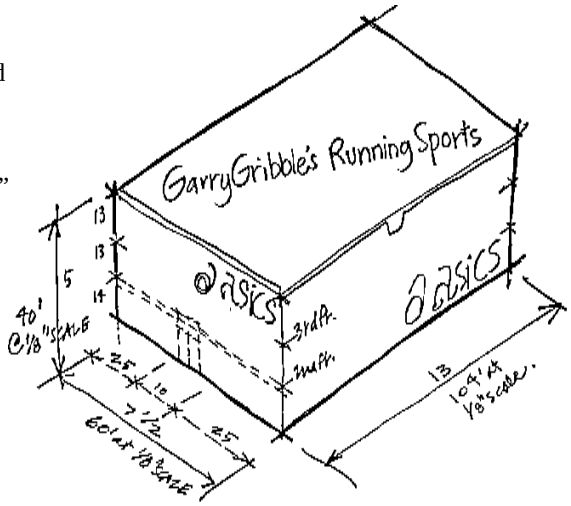
ONE PINT CONTAINER.
680 SF @ 1/8" SCALE



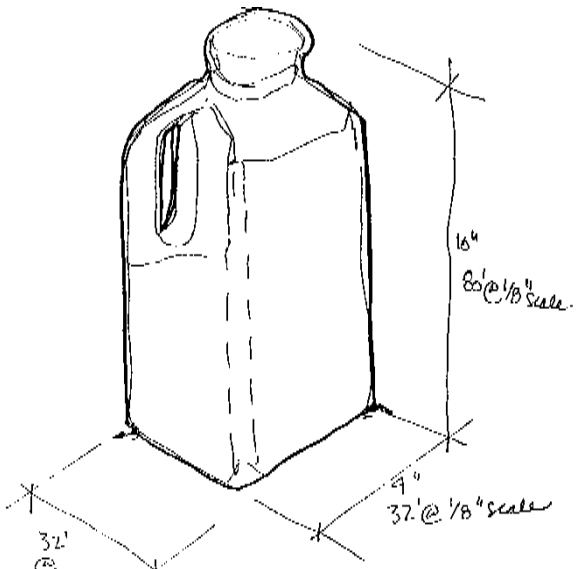
One pint milk carton · 2 deep i.e.
3 STOREY WALK-UP APTMTS 1/FLR.

More on Scale

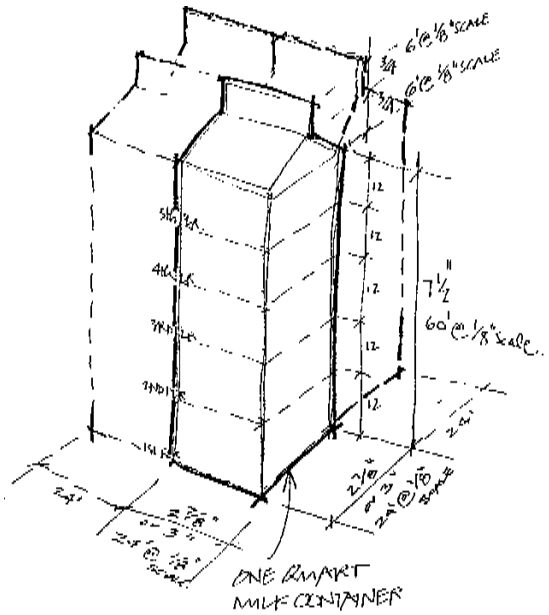
The Houston Children's Museum is scaled to meet the needs of its primary audience: kids. Giant "Cary-kids" serve as visual supports for the building.



SHOE BOX STORE with LIVING SPACE ABOVE.



ONE HALF GALLON PLASTIC MILK-CARTON
1 000 SF @ 1/8" SCALE



FOUR CARTONS GROUPED = 2 300 SF/FLR
5 STOREY CONDOMINIUM OR APARTMENT BLDG
CO-OPERATIVE

The Perfect House

Since housing occupies a large part of the city, and each student will be making a house (also it is the building type which is most familiar)—it is worth spending some additional time on the topic. Define the perfect house for your geographic area reflecting all of the design criteria addressed in this curriculum or that you have learned about.

Consider:
- geography
- climate
- economy
- materials
- site position

What is perfect for Kansas City?

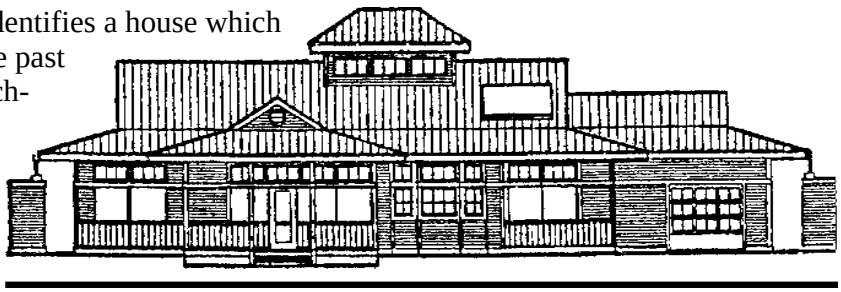

Shawnee Indian Mission

The Shawnee Indian Mission North Building is a practically perfect building in terms of the climatic needs of the Midwestern area: it is oriented to the south, and has deep porches and overhanging roofs to keep out the intensity of summer sun, but let in winter sun.

Don Hoffman, former architectural critic for the Kansas City Star, says this about the style of the Mission buildings: "It is as authentic as any architectural style in Kansas City. As you would build adobe in the southwest, you would build this kind of building in Kansas City. Although identified as Greek Revival, the references to Ancient Greece are so slight as to free the building to be itself. The square columns have only the most elementary capitals and the regularity of the eight bays is classical."

What is perfect for Florida?

The Florida House Foundation identifies a house which echoes materials and styles of the past while employing eco-friendly techniques for today and the future. Tin roofs, porches and lanais are reminiscent of the vernacular houses, mostly built by owner/craftsmen, which are seen all over Florida. Eco features include landscaping which is planned to reduce impact to nearby water bodies, cisterns which collect rain for washing clothes and irrigating native plants; nontoxic carpet; landscaping timbers made from recycled plastic and sawdust.


Florida Eco-House

What is perfect for your community?

How High is Too High?

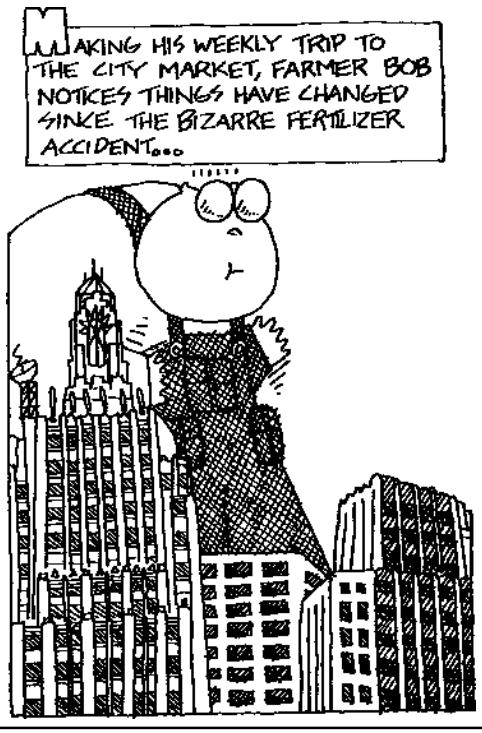
The relationship of height to width, of tall buildings to shorter buildings, of large buildings to smaller buildings, is a function of scale. When this relationship is considered, there is a pleasant ratio between buildings and the streetscape. The "scale" of Georgetown, where the homes are of relatively small scale, is considered desirable and makes the property in Georgetown quite expensive. Although the value of appropriate scale is well known, it is an often violated rule of aesthetics in our cities.

Cities have always established limits. Height is only one of them. Some limits were informal understandings. The hat on the statue of Billy Penn atop the Philadelphia City Hall for years was the visual limit for the height of buildings in Philadelphia. It was only a Gentlemen's Agreement. This height restriction was broken in 1984 by the developer of Liberty Place This has created a disparate scale between the historic buildings, which are generally low rise, and the high rise buildings downtown.

Developers on the island of Kauai built high-rise hotels in the 1970's and 1980's. The high rise buildings were not in scale with the small buildings which give Hawaii its unique style and flavor. The people of Kauai decided that this was **not** an appropriate height or scale for an island community. The restriction now is particularly local: no builder shall build higher than the tallest palm tree.

Is there a trade-off? Can everyone benefit? When a city allows a limitation (density, height, size) to be broken, can the city exact some compensation? Some cities demand a trade-off. For instance, in exchange for building beyond established limits, a builder would be required to locate day care centers downtown amidst offices or create low cost housing in an area which needs development.

Have students look at the height restrictions for **your** city. What is the tallest building in your city today? What was the tallest building in 1898? In 1939? In 1950? Does your city have a height restriction written into code? Should there be one? Has a previous height limit been broken? Has it improved the city? Who benefited? What would be a good reason for building higher? (There may be a very good reason to build a tall building among smaller buildings: the surrounding land might be used for parks and other recreational purposes.) It is the work of the Planning Commission to decide what is the greatest need for your city. It is the work of the citizens to voice their opinions to the officials they have elected.



A vehicle for negotiation of height restrictions has recently emerged. It allows benefits for both special interest groups and developers. It is called **TDR** or **Transfer of Development Rights**. This is a publicly created mechanism within the zoning code that is designed to transfer excess development potential from small scale city-certified, locally landmarked properties to sites being developed as dense skyscrapers on selected major downtown streets.

Using TDR, Philadelphia established the first local historic preservation incentive in 1991. It affords more than 200 historic property owners to sell unused development rights to developers of new buildings. The result: they can invest proceeds in critical maintenance or capital improvements.

Mirror Math: How Tall Is It?

This activity allows students to practice pace and scale and mathematics concepts.

Objective: The student will use similar triangles to find the height of an object (building, tree, sculpture) and write a reaction to their findings and use of estimation.

In layman's terms, similar triangles are the equivalent of triangles of the same shape. Similar triangles have the following properties:

1. all corresponding angles are congruent
2. all corresponding sides proportional (which means, the same ratio)

The word corresponding means that they have the same relative position (i.e., largest to largest and smallest to smallest).

It is possible to measure inches and feet as long as proportionate:

$$\frac{\text{inches}}{\text{feet}} = \frac{\text{inches}}{\text{feet}}$$

Applications: Algebra I, Algebra II, Applied Geometry, Geometry, Trigonometry, Architecture.

Equipment Needed: a mirror with a line on it and a measuring device—a fifty foot tape measure is best, however a shorter one will work. (Our mirrors are $^1/_8$" thick and 4" x 6" with sanded edges. They are taped together with heavy fiber strapping tape. The "line" is the crack.)

Prior Procedures: students must have a working knowledge of the relationship that exists between the sides of similar triangles.

Procedure. The class period before going out to find the height of an object, have the students copy the following sketch large enough so that they can write measurements on it.

1. Have students work in pairs, threes or fours depending on the amount of equipment and supervision you have available.
2. Have the students place the mirror a given distance from the object on the ground—for instance, twenty paces. Estimate the distance in feet, yards, meters.
3. The students should have the mirror between them and the object, then back away from the mirror until the line of the mirror is lined up with the top of the object.
4. The partner places a mark on the ground at the bunion of their foot.
5. They must measure the distance from the object to the mirror line (g), the distance from the mirror line to the mark on the ground (d) and the distance from their eye to the ground (a) and label the figure.
6. Then, from a **similar triangles relation**, use the following formula to find a better estimate of the height of the object.:

$$\frac{\text{height}}{\text{g (feet)}} = \frac{\text{a (inches)}}{\text{d (inches)}}$$

For convenience, the following two worksheets are student directed.

Mirror Math: How Tall Is It?

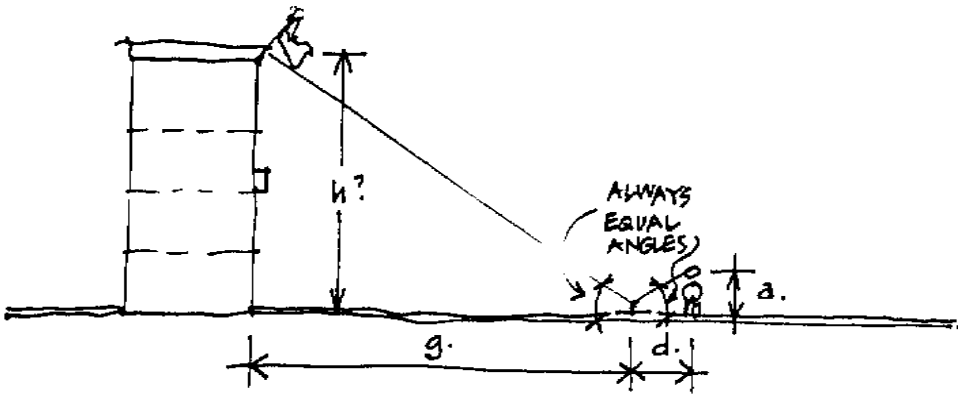
You will be working with a partner(s) on this project. Each will do all the work, but you will only make one set of measurements to conserve time. Do not look ahead at future instructions.

Activity One: Estimating

1. Pick an object (door, ceiling) or part of the school building and estimate its height. _____
2. Walk 20 paces from the object and place the mirror on the ground. Estimate the distance from the object to the mirror. _____

Activity Two: Proving Your Estimate

3. Measure the distance from the object to the mirror in feet and label the figure in feet on the back of the paper. With the mirror between you and the object, you will move back from the mirror until the top of the object is lined up with the line in the mirror to the bunion of your foot in inches and mark on the diagram. Measure the distance from your eye to the ground in inches and label the diagram.
4. Use the figure on the back to find a better estimate of the height of the object you chose. Do you feel that you made a reasonable estimate of the object? Why or why not?
5. Write a paragraph or more explaining why you chose this object, how you feel about estimating from this experience, and make a sketch of the object if time permits.

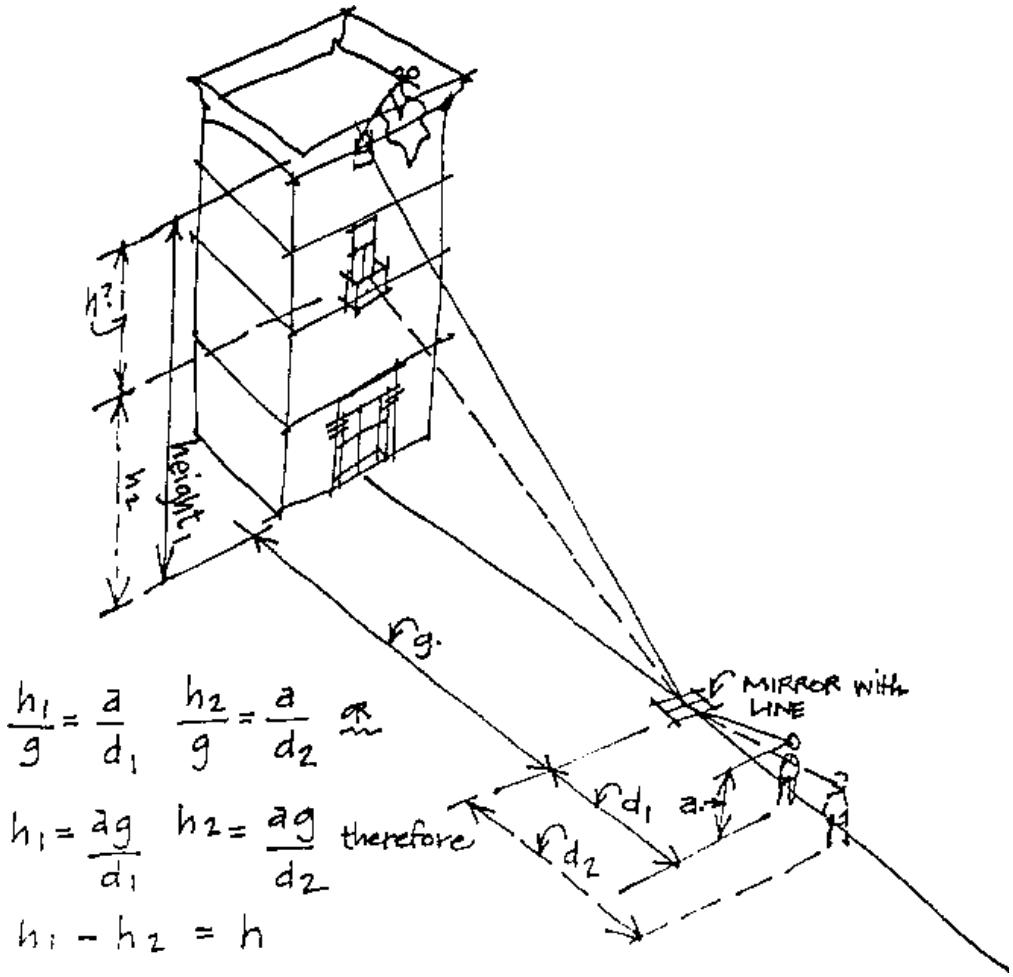


$$\frac{h?}{g\,(\text{FEET})} = \frac{a\ (\text{inches})}{d\ (\text{inches})}$$

Mirror Math: How Tall Is It?

Activity Three: Follow Up Assignment
Find the height of a specific object that is attached to the building (for instance, the height of a piece of sculpture or sign). This will require two sets of triangles and subtracting one result from the other.

A number of such fun and educational activities are available from an old textbook called: **Excursions in Outdoor Measurement**, Donavan A. Johnosn, published by J. Weston Walch.



Thanks to Gene McCurdy, math teacher, Olathe North High School, for this neat idea.

Abbreviated Instructions for Leader

These abbreviated instructions give an overview to the teacher or design professional who actually supervises the "placement" of the city buildings.

Amend the following directions to reflect your conversations and previous interaction with class or teacher. Begin with your personal introduction and orientation, i.e., "I am _____. I am a (city planner, architect, interested citizen.) This is what I do:_____ ."

1. Lay down grid. Assign zoned areas by laying out colored construction paper, which responds to special use, i.e., green for park facilities. You can do this by yourself, or with group if you have time. Pass out role playing nametags. Name the streets.
2. Reconfirm the guidelines for this particular city. For instance, "This is a Boomtown. A factory has located on the river. There are no pre-existing buildings, however there are highways, bridges," and so forth.
3. Appoint mayor and zoning committee (3) from among students and give them zoning restriction sheet for easy referral.
4. Begin with the most appropriate area for placement: usually Civic, unless there is a special situation.
5. Allow students to describe their building, its use, its most important architectural detail (materials, ornamentation, roof, plan, walls, openings, etc.) as they place their buildings. Please prompt them if they do not verbalize. (This is an opportunity for them to use the vocabulary they have learned.) You might bring in structural knowledge by asking how their building stands up.
6. If building placement seems fine, issue an occupancy permit, move on to the next one. If not, ask for opinions from the zoning commission. Here is an opportunity for you, as a professional, to insert your knowledge.
7. When city is completed, conduct an overall discussion of what else the students would add to make it better, or what is missing? Finalize the discussion by asking, "What did you learn today?"
8. Students usually want another week to add additional buildings that they have left out. As a professional, you will have all kinds of other ideas based upon your own expertise, but this is a beginning.

There is always a certain amount of rule breaking. If there is a huge problem, the issue may need to go back to the city for referendum.

The Process

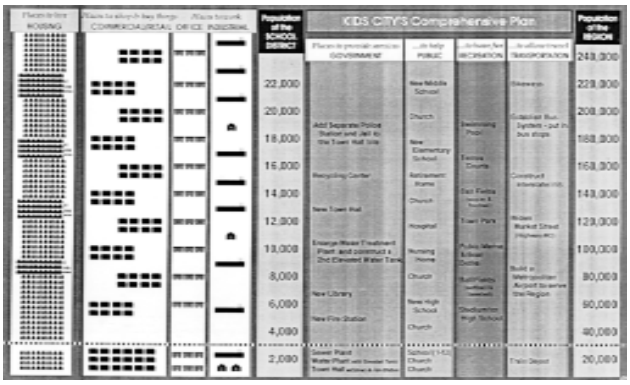
A Growth Barometer
Two members of the South Carolina Chapter of the American Planning Association (SCAPA), funded by a grant from the American Planning Association (APA), developed a curriculum to teach planning education. This program is helping participants to understand the role of planning and growth. SCAPA underwrote and tested their curriculum, **Kids' City** using **Box City** as the beginning tool.

They incorporated the addition of a chart which monitors growth and which emphasizes the relationship between people and buildings: a giant 8 foot x 12 foot **Growth Barometer.** In **Kids' City**, a certain number of houses must be built before other structures are added to the city: places to work, places to have fun, educational facilities. A bar on the Growth Barometer is moved up as building permits are checked off on the **left hand side**, issued in the right ratios for residential, commercial and industrial uses. When development occurs and the population increases, the **right hand side** of the "scoreboard," the **Comprehensive Plan**, indicates when to locate a fire station, new school, or stadium—whatever the mayor, council or school board deem necessary by the new development.

Besides the Growth Barometer, SCAPA introduces several new good features to the Box City experience. A base map 40 feet by 80 feet, made out of indoor/outdoor carpeting. The background surface serves as streets. The carpet can be easily transported from location to location and eliminates the need to define the streets with chalk or other materials.

But **Kids' City** is not only built BY kids, FOR kids, but is also GOVERNED by kids! High school students are trained to "run" **Kids' City**—as building officials, contractors, engineers, architect-designers, mayor and council, and school board members—based on good decision-making. With the help of the "Growth Barometer" they are the stars of the day's events!

The groundwork for SCAPA's approach starts in schools in a local community and ends with a final event usually held at an established Town or Neighborhood Festival. The Festival event is the most visible aspect of the process, but curriculum to support the classroom efforts, which take place in the weeks prior to the festival, is the important part of the project. Students brought their "beginner" cities to the Festival event.



With the **Growth Barometer** or "scoreboard," a basemap made of indoor/outdoor carpeting, and high school students emceeing the growth and development of **Kids' City**, an educational process becomes a fun and sporting event.

Reference **Lexington County Planning Department, Charlie Compton, 803/359-8121.**

Templates

In the following pages you will find templates for:

1. *Building Permits*
2. *Occupancy Permits* (may be especially helpful in Festival situations)
3. *Nametags for Role Playing*

A you move into the process of Box City, and begin to experience the intense involvement of the participants, remember the importance of self-discovery. Julia Shahid, Curriculum Director, McKinney School District, sums it up, "Through planned involvement in the **Box City** exercise, the participants have to deal with the real issues as they define the parameters. They truly are the active learners while CUBE Cadre facilitates. Pretty neat!"

Photo Credit: Birmingham Historical Society

Building Permit: Place to Live

Note to organizer: the setbacks will vary from those given here depending on the size of your layout and boxes. Please adjust accordingly.

BUILDING PERMIT

PLACE TO LIVE (YELLOW ZONE)

THIS PERMIT entitles

_____

(Name)

To construct one **Place to Live** of the following type (circle):

Apartment	Boarding House
Condominium	Dormitory
House	Retirement Home
Other _____	

This building is to be placed within a **Yellow Zone** with the following minimum setbacks:

Front Yard (also Side Yard on Corner Lot): 6 inches
Side Yard: 5 inches
Rear Yard: 10 inches

Places to Live may be placed adjacent to the following:

Church	Hospital
Library	Office
Park	Place to Live
School	

Places to Live may not be placed adjacent to the following:

Factory	Railroad Track

BUILDING PERMIT FORM

NAME _____

HOME ADDRESS _____

CITY, STATE, ZIP _____

SCHOOL DISTRICT _____

SCHOOL NAME _____

SIGNATURE _____

AGE GROUP (check one)
5-8 years _____
9-12 years _____
13-18 years _____

GRADE _____

(Print on yellow paper)

Building Permit: Place to Buy Things

Note to organizer: the setbacks will vary from those given here depending on the size of your layout and boxes. Please adjust accordingly.

BUILDING PERMIT

PLACE TO BUY THINGS OR WORK (RED ZONE)

THIS PERMIT entitles

_____

(Name)

To construct one **Place to Buy Things** of the following type (circle):

Bakery	Gas Station
Restaurant	Store
High Rise Office	Low Rise Office

This building is to be placed within a **Red Zone** with the following minimum setbacks:

Front Yard (also Side Yard on Corner Lot): 6 inches
Side Yard: 5 inches

Places to Buy Things may be placed adjacent to the following:

Apartment	Condominium
Dormitory	Office
Park	Place to Buy Things
Place to Help People	

Places to Buy Things may not be placed adjacent to the following:

Church	Factory
House	Retirement Home
School	

BUILDING PERMIT FORM

NAME _____ AGE GROUP (check one)

5-8 years _____

HOME ADDRESS _____ 9-12 years _____

13-18 years _____

CITY, STATE, ZIP _____

SCHOOL DISTRICT _____ GRADE _____

SCHOOL NAME _____

SIGNATURE _____

(Print on red paper)

Building Permit: Place to Work

Note to organizer: the setbacks will vary from those given here depending on the size of your layout and boxes. Please adjust accordingly.

BUILDING PERMIT

PLACE TO WORK (VIOLET ZONE)

THIS PERMIT entitles

_____

(Name)

To construct one **Place to Work** of the following type (circle):

Factory Industrial High Rise Office
High Hazard Storage Low Rise Office (less than five stories)

This building is to be placed within a **Violet Zone** with the following minimum setbacks:

Front Yard (also Side Yard on Corner Lot): 0 inches
Side Yard: 0 inches
Rear Yard: 0 inches

Places to Work may be placed adjacent to the following:

Open Land

Places to Work may not be placed adjacent to the following:

Places to Live Restaurant
Places to Help People Bakery/store

BUILDING PERMIT FORM

NAME _____

HOME ADDRESS _____

CITY, STATE, ZIP _____

SCHOOL DISTRICT _____

SCHOOL NAME _____

SIGNATURE _____

AGE GROUP (check one)
5-8 years _____
9-12 years _____
13-18 years _____

GRADE _____

(Print on violet paper)

Building Permit: Public Places

Note to organizer: the setbacks will vary from those given here depending on the size of your layout and boxes. Please adjust accordingly.

BUILDING PERMIT

PUBLIC PLACES (BLUE ZONE)

THIS PERMIT entitles

_____

(Name)

To construct one **Public Place** of the following type (circle):

Church	Fire Station
Hospital	Library
Police Station	Post Office
School	Government Buildings
Art Gallery	Music Hall
Theater	Coliseum

This building is to be placed within a **Blue Zone** with the following minimum setbacks:

Front Yard (also Side Yard on Corner Lot): 0 inches
Side Yard: 0 inches
Rear Yard: 0 inches

Public Places may be placed adjacent to the following:

Office	Park
Places to Buy Things	Public Places
Place to Live	

Public Places may not be placed adjacent to the following:

Factory	Railroad Track

BUILDING PERMIT FORM

NAME _____ AGE GROUP (check one)

5-8 years _____

HOME ADDRESS _____ 9-12 years _____

13-18 years _____

CITY, STATE, ZIP _____

SCHOOL DISTRICT _____ GRADE _____

SCHOOL NAME _____

SIGNATURE _____

(Print on blue paper)

Occupancy Permit

OCCUPANCY

CITY _____

DATE _____ PERMIT NO. _____

LOCATION _____

OCCUPANCY GROUP _____ ZONING _____

BUILDER _____

This is to certify that the above location was inspected by the Codes Administration Department and complies with the Code requirements for Group and Division of Occupancy as classified. For any change of occupancy, consult the Building Official. This Certificate of Occupancy shall not be removed except by the Building Official.

_____
(Building Official)

_____
(Organization Name)

OCCUPANCY

CITY _____

DATE _____ PERMIT NO. _____

LOCATION _____

OCCUPANCY GROUP _____ ZONING _____

BUILDER _____

This is to certify that the above location was inspected by the Codes Administration Department and complies with the Code requirements for Group and Division of Occupancy as classified. For any change of occupancy, consult the Building Official. This Certificate of Occupancy shall not be removed except by the Building Official.

_____
(Building Official)

_____
(Organization Name)

Nametags for Role Playing

This listing is not definitive. You will want to create specific roles that reflect your community, government, politics and issues. Use the blank templates at the end of this listing.

DEVELOPER

_____

MAYOR

_____

ARCHITECT

_____

CONTRACTOR

_____

PRESERVATIONIST

_____

POLICEMAN

_____

MEMBER ZONING COMMISSION

_____

MEMBER
ZONING COMMISSION

_____

HOMEOWNER

_____

SMALL BUSINESS OWNER

_____

PRESIDENT
CHAMBER OF COMMERCE

_____

ENVIRONMENTALIST

_____

CITY DEVELOPMENT OFFICE

_____

MEMBER
SCHOOL BOARD

_____

MEMBER
CITY COUNCIL

_____

BANKER

LAWYER

OWNER
HISTORIC HOUSE

PARKS COMMISSIONER

MINISTER

DOCTOR

HOUSEWIFE

CHILD

CHILD

RETIREE

HOUSEHUSBAND

TEACHER

MOVIE STAR

PROFESSIONAL ATHLETE

SLUM LANDLORD

REAL ESTATE SALESPERSON

INSURANCE SALESPERSON

MUSEUM DIRECTOR

NEWSPAPER EDITOR

MEMBER ART COMMISSION

NIMBY

(Not In My Backyard)

Place is where we are. Place is where we want to be. Place is what we want to create.

Theodore Holappa, Ojibwa

Keweenaw Bay Tribe, 1993

Evaluating the City

Following the **Box City** exercise, students evaluate the city with teacher or with design professional in architecture or city planning in order to promote higher level thinking skills by using comparison, judgment, evaluation, future planning. Is there a parent architect or a city planner in your school or classroom? If not, contact the local **American Institute of Architects or American Planning Association** to be a part of the city planning and evaluation process. Be sure to share this curriculum with them prior to their visit. A pre-planning discussion with them will help them to understand how this activity needs to reinforce the curriculum.

You may also want to use the activity called *Does Your City Work for You?* as a post-evaluation guide.

How does the **Box City** you created compare to community where you live? Are there things you like better? Worse? **What would you change?**

Some students may recreate their own city along with all of the problems that go with it. How can you extend a student's frame of reference beyond what he knows?

Wrap-Up Question:
What did you learn from this activity?

Extension:
If students have the time to continue the **Box City**, use some of the following pages to strengthen their understanding of how cities are planned and what citizens can ask for and expect. They may begin anew or make changes to the existing **Box City** as their knowledge grows. (When space permits, students like to work with changes to the city over a period of time.)

Photo Credit: Birmingham Historical Society, Marjorie White.

An Architectural Value System

	-100 always	-75 usually	-50 sometimes	-25 seldom	+25 seldom	+50 sometimes	+75 usually	+100 always	
Destroys pure air									**Creates pure air**
Destroys pure water									**Creates pure water**
Wastes rainwater									**Stores rainwater**
Produces no food									**Produces its own food**
Destroys rich soil									**Creates rich soil**
Wastes solar energy									**Uses solar energy**
Stores no solar energy									**Stores solar energy**
Destroys silence									**Creates silence**
Dumps its wastes unused									**Consumes its own wastes**
Needs cleaning and repair									**Maintains itself**
Disregards nature's cycle									**Matches nature's cycles**
Destroys wildlife habitat									**Provides wildlife habitat**
Destroys human habitat									**Provides human habitat**
Intensifies local weather									**Moderates local weather**
Is ugly									**Is beautiful**

Negative score, out of a possible 1500.	**Positive score, out of a possible 1500.**

Final score:

Malcolm Wells, an energy saving designer and a leader in the practice of environmentally responsible architecture, has created a way for us to value the architecture that we live, work and play in. He identifies how satisfied one feels by living and working in responsibly designed shelters that enable one to save energy, enjoy silence and a feeling of security.

Whether our community or home is underground, in a city or out in the suburbs, we face many large problems in the world. They are something much wider than any one type of responsible shelter alone can hope to solve. Most descriptions of the problem address these topics:

- water
- energy
- population
- ozone/global warming
- natural resources
- soil
- forests
- overconsumption

An Architectural Value System

Nature is a very efficient system. Wells speculates that if our value system for the built environment was similar, we would be able to live in closer harmony with nature.

For that reason, Wells developed a diagram to use in evaluating the buildings we live in and the buildings we are going to build. It can also be used to evaluate a collection of buildings: your neighborhood, a shopping mall, your city, or as in the example below, a collection of educational buildings, a university campus. It's a simplified version of all the things natural systems always do, arranged in such a way that all people can rate the things they do in contrast to them. "It's highly subjective and very unscientific, but, "comments Wells, " even when he cheats badly in favor of himself, the message is still there. If the score comes out plus, I'm going forward; negative, back."

How to use the diagram? Wells demonstrates by using Oklahoma State University campus. Here is how it rates on the wilderness values scale:

	-100 always	-75 usually	-50 sometimes	-25 seldom	+25 seldom	+50 sometimes	+75 usually	+100 always	
Destroys pure air		■	■	■					Creates pure air
Destroys pure water		■	■	■					Creates pure water
Wastes rainwater			■	■					Stores rainwater
Produces no food		■	■	■					Produces its own food
Destroys rich soil	■	■	■	■					Creates rich soil
Wastes solar energy		■	■	■					Uses solar energy
Stores no solar energy	■	■	■	■					Stores solar energy
Destroys silence				■					Creates silence
Dumps its wastes unused	■	■	■	■					Consumes its own wastes
Needs cleaning and repair	■	■	■	■					Maintains itself
Disregards nature's cycle			■	■					Matches nature's cycles
Destroys wildlife habitat		■	■	■					Provides wildlife habitat
Destroys human habitat					■	■	■	■	Provides human habitat
Intensifies local weather				■					Moderates local weather
Is ugly				■					Is beautiful

Negative score, out of a possible 1500.	Positive score, out of a possible 1500.
-950	+100

Final score: -850

An Architectural Value System

In order to complete the diagram, Wells asks questions like:

- What was the land like before the buildings and lawns covered it?
- Was it healthier then?
- Where does all the rainwater go now?
- Where does the food come from?
- Is sunlight used to run the university?
- Then where does it energy come from?
- At what cost?
- Where do all the wastes go?
- Do these buildings respond to natural cycles, to the seasons?
- Where is all the wildlife?
- Would you want to live here all your life?
- Is a bitter windy day—or a blazing hot one—tempered or intensified by the architecture of this campus?
- Is OSU beautiful?
- Does it please the eye the way a natural landscape does?
- Or is it simply a collection of human-centered ego trips?

Imagine: a large and well-endowed seat of learning in a state which depends upon healthy land for much of its income, earning a destructively negative score on a scale of life values any eighth grader could understand!

Wells writes, "The minus 850 score is the grinding truth about all of the OSUs in America and about the civilization that continues to produce them. However, when we visit OSU, we only see football teams, wide lawns, brick buildings, and another generation of young Americans being educated. If we don't see, how can we understand what we are doing?"

ACTIVITY

Using the incomplete diagram at the beginning of this article, rate a natural area and then rate the school or building in which you are working. Wells has graciously given permission and, in fact encouraged, the duplication of this material. For further information, read **Underground Designs** by Malcolm Wells.

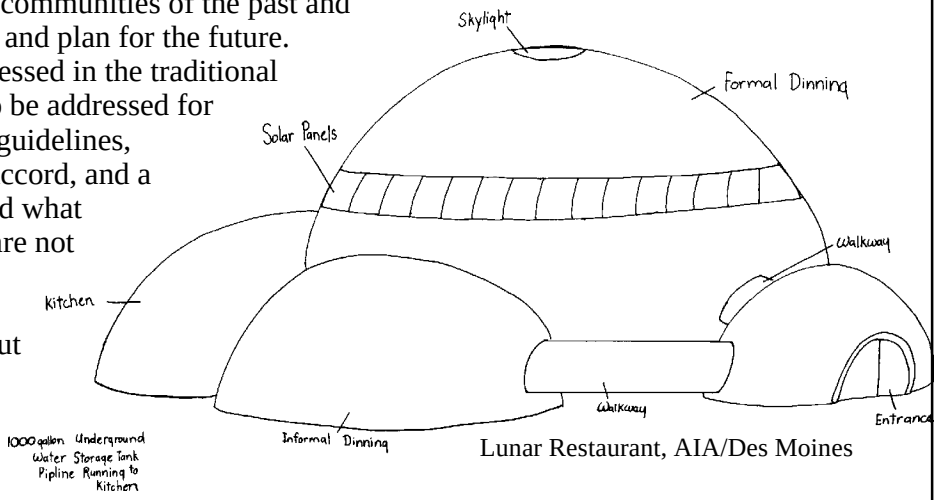
Consciously helping students to "see" is what much of built environment education is all about, whether it's City Games, Visual Scavenger Hunts, Reading the Streets, Report Card for a Building or using the Architectural Value System, all activities are attempts to slow down the observers and help them to consciously take a look at what the environment us telling us, and what that means. Wells' Diagram is just one more tool in our bag of tricks to help both young people and adults stop, look, listen, and think about the world around them.

Gary Rapp, Colorado Springs planner comments, "This may be the most important activity in the book. When people use the Value System matrix, they can finally understand what a 'good building' is."

Reference **Wells, Malcolm. 218-Soft Technology: "The Absolutely Constant Incontestably Stable Architectural Value System."** ***Architectural Standard.***

Planning for the Future

When your class understands communities of the past and present, it is time to construct and plan for the future. Many of the same issues addressed in the traditional Box City construction need to be addressed for the city of the future: design guidelines, planning, a means for group accord, and a look at future technologies and what tools might be available that are not available today. This kind of thinking means not only assessing what you know about new products on the drawing boards, but inventing the tools you need, which may be entirely new ideas, to achieve your goals.



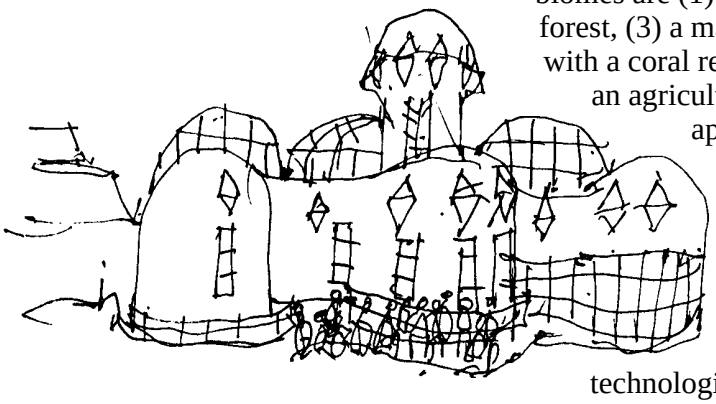
Lunar Restaurant, AIA/Des Moines

Designing a City of the Future is not new. Two remarkable experiments in Arizona approach this idea from very different points of view. What you learn from their endeavors will help you to better design **your** City of the Future.

Biosphere 2
Sonora Desert, 30 miles north of Tucson, AZ
Designed by: Sarbid, a London architectural firm
Construction by Pearce Structures
Begun in September 26, 1991

It looks like a giant terrarium. It is a glass and steel construction in the foothills north of Tucson. It mimics another closed system, Biosphere 1, the Earth. The original idea was to use Mother Nature and technology to build a self-sustaining system that recycles everything—open only to sunshine and information. Each crew member was assigned two private phone lines and a fax to the outside.

It would test strategies and systems for preserving the Earth's environment and serve as a prototype for a space colony, perhaps on Mars. It includes seven biomes or well defined ecosystems. The biomes are (1) a tropical savannah, (2) a tropical rain forest, (3) a marsh, (4) a twenty five foot deep ocean with a coral reef, waves and tides (5) a coastal desert (6) an agricultural farm and (7) a human habitat with apartments, laboratories, a library, a gymnasium and an amphitheater.



It is owned by Space Biospheres Ventures, a for profit company financed primarily by Edward Perry Bass of Forth Worth, TX. Bass was to recover his investment by selling environmental technologies spun off from the project and by tourism at the site. It is considered to be a one hundred year project.

Planning for the Future

The experiment: four women and four men were sealed inside the 3.15 acre airtight structure for two years. They were to depend on Biosphere 2 for the air they breathe, the water they drink, the food they eat. The laboratory would support 3,800 species of plants and animals in its attempt to duplicate the earth's natural harmonies. One problem after another frustrated the Bio-Spherians who entered the closed environment Sept. 26, 1991.

Possible problems were suggested when Biosphere was sealed: bad air, bad water, disease, personality clashes, starvation. Indeed, the project has had to supplement the biological control of the atmosphere with carbon dioxide scrubbers and oxygen tanks because carbon dioxide built up in the air and oxygen plummeted. Two of the cloudiest winters ever recorded in the history of southern Arizona have meant crops were stunted and food supplies ran low and also had to be supplemented. Only under pressure did project managers admit that this had been done. However, human dynamics, not science, proved to be the biggest challenge.

1995 Update. Secrecy, intrigue, and questions about management have caused the Biosphere 2 project to go awry. However, Columbia and Harvard University have forged ties with the Biosphere project. This alliance will reassure future potential teams of scientific users of the credibility of the project. Some of the original project scientists have rejoined the effort.

Arcosanti
North of Phoenix, near Cordes Junction
Designed by Paolo Soleri
Begun in 1970

Arcosanti owes its beginnings to the spiritual idealists of the '60s. Paolo Soleri calls his experiment in urban design "arcology". Soleri, an Italian born architect and social philosopher, developed Arcosanti as a model for a new kind of city. His vision includes a series of interconnected concrete structures that rise vertically on a small piece of land. The city (of 5,000) would be densely populated, but free of the wasteful automobile, and provide space for work, entertainment and culture. Several thousand workers, almost a volunteer corps, have worked at Arcosanti since building began.

Two huge concrete vaults give Arcosanti its distinctive look, but here also are housing modules and work and recreation areas. More than 4,000 acres are owned or leased, but construction is limited to about 10 of them. Its projected density has alarmed critics, but since only several dozen people live and work there now, it is not yet a problem. The size of this resident population has remained steady, all working for short time periods—some pay to work there; some work at minimum wage.

Arcosanti and Biosphere 2 demonstrate that our planet has problems, but that there are people who are willing to work on the solutions. How would you design the City of the Future? How would you address (1) technical problems and (2) people problems?

Diverse Groups Utilize Box City

Planners—Big Bucks for Gifted & Talented
In Abilene, TX, planner Mike Bieniek fine-tuned Box City details and added an economic factor. He worked with the Alternative Learning Programs for Gifted and Talented Students (ALPS) who regularly earn ALPS Bucks—credits for good performance and behavior. These bucks encouraged an entrepreneurial citizen: one participant sold the rights for students to have their names on businesses in her three story mall for a total of $2,800.

"We open the lid and let them go as far as they can. Box City is a perfect marriage with the kids in our ALPS program," comments Kathy Aldridge, Educator, Abilene ALPS Program.

Architects—ArtFest
Each Memorial Day weekend, a large art festival is held in the City of Dallas. For several years, AIA/Dallas conducted Box City in a shopping mall. The Box City operates for $2^{1}/_{2}$ days and 1300 building permits are issued. A number of chapter members have coordinated the program including Mark Watford and the Education Committee which first instituted the idea.

Museums—Family Day
The Virginia Museum of Fine Arts and Virginia Historical Society used "Make It A Block Party" as a theme for the annual Family Open House. Other events in the Marble Hall, besides Box City, included: It's All a Facade, drawing the face of your own building; Body Building workshops: learning more about the structure of architecture by creating arches, buttresses and bridges with your own body; Life Stories of Buildings; discovering the story of the Virginia Museum and various architectural styles; Architecture on Film; Sandcastles, a building we have all created at one time or another; Draw It Out: drawing the architectural elements of the Virginia Museum; and Built in Virginia: The Special buildings of the State of Virginia, an exhibit. Suzanne LeBlanc, Virginia Museum of Fine Arts comments on Box City at the Museum Family Day, "I have never seen families spend so much time together on a project—the average time was one hour and fifteen minutes while many people spent up to three hours creating their building to go into Box City. It was the perfect complement to our exhibition of Virginia architecture."

Preschoolers
The Lawrence Arts Center and the Kansas Arts Commission believe in early design education. Preschoolers began by learning about their own communities through **Box City**.

High School Business Class
Bob Davis adapted Box City for his high school business course. The students used the boxes to study, lay out and refine the plan for a shopping center.

Diverse Groups Utilize Box City

Fourth Grade
Elaine Bethke wrote, “I couldn’t believe the positive response. My room was filled all evening with parents who brought cameras to back to school night to photograph the city.” Elaine’s PTA helped to pay for half of the boxes; students brought fifty cents to pay for the other half. Elaine enlisted the help of Katherine Smith, art coordinator, who participated in all phases of the project with Elaine. Elaine’s most telling comment, “A little girl who normally doesn't participate built a wonderful bridge with girders, pilings, and all bridge construction details. She was proud; the other kids in the class were proud of her. Box City is a wonderful way to combine social studies and art.”

First Grade
Susan Christensen’s approach for young children: “In order to structure the project a little for our younger children, we had them create the house and yard, too, in the lid of a shoe box. This brought in some environmental ideas and extended the idea of the Box City into the landscaping area, too.”

Classrooms—Adopt A Building
The Birmingham Historical Society sponsors *Buddy Up*, a program where architects, architecture students and educators work together. “Architects and architecture students are building Box Cities in inner-city school gymnasiums throughout Birmingham every Friday,” comments Marjorie White, President, Birmingham Historical Society. The components of the program, also called *Fabulous Fridays*, include a series of events including a tour, video, and adoption of a downtown building. Students draw and construct their adopted building and build a city. “The secret of the success of this project is in the collaborations,” explains Susan Atkinson, AIA/Birmingham. The City of Birmingham and Birmingham City Schools all help us to make the program work.”

Photo Credit: Birmingham Historical Society

Diverse Groups Utilize Box City

School Play: Fixing Up the City
Under the direction of **Beverly Miller**, Birmingham fourth grade students traced the restoration of Birmingham buildings. They wrote a play, *Fixing Up the City,* about all of the people who have to do with the built environment of a city: architects, developers, carpenters, landlords, city planners, even the Mayor. They created large buildings out of cardboard boxes—on the front of the building was the way it used to look. On the back, the way it looks since it has been preserved.

They gave the play at business meetings and for many adult groups, letting them know how kids feel about the city. A local filming studio video taped the performance for distribution to other audiences. Fourth graders **can** make a difference! The students at **Advent Day School** are waiting for another class to **share** a play with **them.**

This activity is only one of a number of projects sponsored by Birmingham Historical Society under the direction of Marjorie White. Students become tour guides for adults during Preservation Week. You will see photographs of Birmingham Box Cities throughout this curriculum.

Parent's Night and Combined Resources
Shawanoe School. Lenore Vose's class at Shawanoe School meant to be finished by Parent's Night but they liked their city so much, that they added more—annexation or urban sprawl? Brenda Hambleton, librarian, helped to assemble books and resources; Bobbi Sharbutt, art teacher, supervised the building creations using visuals from Historic Kansas City Foundation. The city began with "frontier town" and moved in several stages to the city of today.

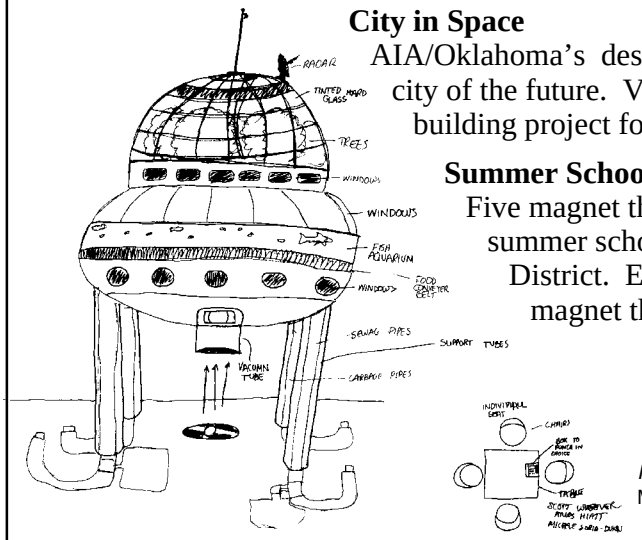
Special Ed
Judy Moore, teacher of the severely disabled, used some of the map reading activities to help her students learn the meaning of traffic signs. In collaborative work groups, the students worked on questions which involved travel between destinations. In other classroom situations, it has often been found that students who traditionally do not excel at traditional read/write activities, "discover" themselves in the hands-on, dimensionality of a Box City.

Paper Bag City
Alan Feigenberg, a New York City educator, combines recycling and a need for a low cost "building unit" by utilizing brown paper grocery bags to make the buildings of the city. The brown bags are stuffed with newspaper to make them sturdy.

University Architecture Course
Todd Achepohl told us about his architecture design class at the University of Kansas which used the same idea as Box City to study the shape of the spaces in between!

Diverse Groups Utilize Box City

Gifted and Talented
Nancy Gerardy, Center for the Gifted Education in Columbia, Missouri, does architecture for 10 weeks with the Gifted and Talented students. These students choose their own focus areas. Box City is the culminating activity. See also *A Perspective on Assessment*.



City in Space
AIA/Oklahoma's design program focuses on building a space station or city of the future. Visits from astronauts and field trips enhance this city building project for the entire state.

Summer School
Five magnet theme schools explored Box City for the six weeks of summer school in the Kansas City Missouri Unified School District. Each school did in-depth activities related to the magnet theme, and built a city reflecting that theme.

Iowa Architect, May/June, 1985

Boat City
Bits of styrofoam and buoyant materials were substituted for cardboard boxes when the American Institute of Architects/ Des Moines developed "Boat City" at Lake Okoboji for families and their children.

AIA/Kansas City featured archiBoats at their annual Boat Float on Brush Creek. The activity became a science lesson as well as an exercise in building construction.

CS1 shows off archiBoats.

School Enrichment
In Maine, Peter Barricelli does his own version of Box City with 180 fifth graders. Students create their box buildings in two phases: one at 1/4 inch = 1 foot scale. Everybody has calculators. Everyone figures out the square footage of his own house. All roofs lift up so that students can see house plans. The buildings are put on foam core or cardboard. In the second phase, students create the entire city at a scale of 1 inch = 50 feet. A park and wetlands are included. See reference in Resources Section, **Create a Co-op City** by Peter Barricelli.

Preservationists—Children Learn History
Quaker Heritage Day in Salem, Ohio is a day when area school children are invited to learn about the rich history and ancestry of the Salem area. In 1994, the children were invited to choose a building in downtown Salem to study. They visited the building and discussed the history, architectural and local significance of the building before returning to tents in project center to create the building. The construction took place until early afternoon when all of the buildings were placed in a cityscape. The "city" was open to the public throughout the afternoon.

Diverse Groups Utilize Box City

This experience was the kick off activity for a year of work in Salem Schools coordinated by the Salem Preservation Society and the City of Salem. The program received a grant from the US Department of the Interior through its Certified Local Government program. Sherri Bowman coordinated the event with the collaboration of Janis Yereb, Salem Senior High School visual arts instructor.

Brick City: a Box City adaptation in New Mexico

The students at Zuni Elementary Magnet School in Albuquerque, New Mexico learned respect for another architectural and cultural tradition and learned how to work together as well when they created a Pueblo Indian community of today, utilizing both old and new traditions. Their program director, Sara Otto-Diniz, coordinator of Albuquerque's all-volunteer Art in the School, Incorporated program has since supervised the project in over thirty schools.

Zuni Elementary School

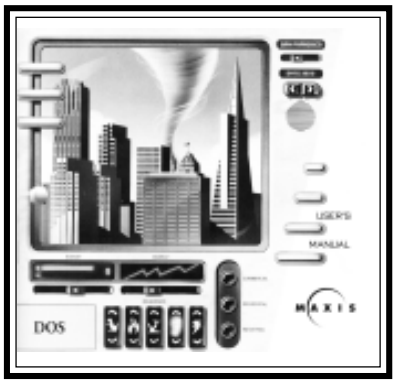
The students studied two Anasazi sites, Mesa Verde and Chaco Canyon, and a contemporary pueblo, Acoma. Each school becomes a community and each class is responsible for making several of the buildings for the site. One-fourth inch thick adobe bricks, made by hand, are the obvious building materials. The buildings are constructed in a traditional way, i.e., a slab floor, load-bearing walls, and the roof which consists of four layers: vigas, *latillas*, brush and clay on top. Most classes divide into various occupations: adobe-makers, brick masons, spiritual leaders, poets. After each class delivers their buildings to the pueblo site, ceremonial blessings are held including the reading of poems and chanting, a blessing of the buildings by sprinkling cornmeal over them and the traditional feasting—on blue corn chips, of course!

Box City in four week academic program

The National City project occupied students in Newport News public schools for four weeks one summer while they constructed National City. They lined their schools with city landscapes that the students designed, learned to design their own megopolis on the computer and eventually filled the gymnasium of Dunbar Erwin School with their plans, including a zoo with animals. "Cities: their design, their architecture, how they work and what it means to be a good citizen," is what Box City is all about. Adapting it for a specific site is the flexibility we need to provide the real-life learning that the students want and need," comments Elise Harrison, instructional specialist for the program.

Belle Oshansky, a funder of the Achievable Dream program said she was overwhelmed by the art work and creativity. "How can you not be impressed? The students were able to explain everything about the city. You couldn't help but think how come every elementary school can't be like this?

Reinforcing with Technology



For those of you who would like to add a technological aspect to Box City, Sim City is one such program. It is now available with multiple variations. Although available through most of the computer program outlets, the version CUBE prefers because of its teacher-friendly approach, comes with a Teacher Guide by Doreen Nelson, Professor of Environmental Education and Professor of Environmental Design at California State Polytechnic University at Pomona. Nelson has long espoused the building of a city in a classroom as a yearlong activity. Her familiarity with city building and educational needs makes her an ideal choice to author the teacher's manual. Nelson asks the ultimate question that we deal with in building knowledge about community planning, "How do we invent the future instead of replicating it?"

Sim City provides detailed animation and sound effects which bring simulated cities to life. SimCitizens move in and build homes, hospitals, churches, stores and factories, or move out in search of a better life elsewhere. Although slightly unrealistic from a real world point of view (the city is periodically destroyed through a series of natural disasters which allows rebuilding the city, hopefully in a better manner), Sim City introduces all of the principles of city planning which are pertinent to the topic. Guy Hager of Ellicott City, MD has used Sim City successfully with a Cub Scout Troop. He comments that the "feed back system" is great—working against a budget is a well understood device. Hager simply disables the disaster mode.

CUBE's recent workshops with Sim City for the Kansas City Missouri School District revealed some interesting new information. The workshops were structured in such a way that a basic talk encompassing planning issues and particularly local issues preceded the Sim City training. Architects from AIA/Kansas City as well as architectural students from the University of Kansas School of Architecture Community Intern Program assisted with the workshop. In addition, a middle school student and a high school student familiar with Sim City demonstrated and spoke about their interest in the program.

In earlier workshops involving technology, educators had seemed concerned about knowing every nuance and variation within a program and hesitant to use materials unless they had mastered the programs themselves. In this workshop, perhaps because the younger student demonstrators seemed so confident with the program or because we are entering a second phase of technology familiarity, these workshop participants only wanted to see what the program would do in general and how it fit into curriculum. Whether using Sim City as a tool to familiarize students with technology or as a tool for teaching social studies, geography, and art/architecture related topics, the educators expressed confidence in their abilities to use the program compatibly with existing curriculum. The various Sim City versions offer schools and organizations an additional tool to expose students to city planning principles and to excite educators about long term commitments to built environment education programming in the classroom.

While technology is captivating and exciting, it is the hands-on aspect of creating a box building, and the eye-hand-brain connection of making it your own that provides the special connection that leads to future responsible action in the community and the environment. Use technology for knowledge building and hands-on for the ultimate learning experience that is inherent in Box City.

Festival Planning

A number of organizations have successfully organized **Box City** as an all-day children's activity. Quite often it is incorporated into a larger festival such as **Connecticut's Kid Fest**, or the **University of Virginia's** Museum Family Day. Recently, **AIA Dallas** conducted a Box City for 1500 participants at a shopping mall and videotaped the entire event.

In order to add an in-depth educational component, work with specific schools or classes ahead of time to create landmark buildings which will be incorporated into the city. Usually these buildings will have been created over a period of time and will show more details than the festival boxes. Scrap fabric, ribbon and wallpaper samples add to the diversity of the appearance of the buildings. Members of the AIA/South Carolina chapter painted and drew a "generic" base model layout including rivers, mountains, and streets on six foot indoor-outdoor carpeting (purchased or donated). The squares can be numbered and lettered for re-use at any location.

Platform pallets, available from rental businesses, raise the city off the ground. Ask architects and developers to add "real life" models to the student's city. At festival sites, where heat or rain may be a problem, arrange for covered areas where students can create the buildings. Inevitably, they want to spend a long time.

A dramatic Box City, "life-size" at least for very small children, can be created with scrap appliance cartons such as those for refrigerators and stoves. Chalk, oil-based crayons or decorating materials which go on easily and cover a lot of area are needed for the larger boxes.

The organization of a Festival Box City is somewhat different from the classroom version which takes place over a period of time. When you order a Box City Festival pack, CUBE will provide an excellent set of suggestions specifically for festivals. See Resources in the **Preplanning Section** for suggested amounts for Box City Festivals.

A Model for Statewide Dissemination

In January 1991, the Tennessee Chapter of the American Planning Association (APA) launched a pilot program, Planning Education Kid Style (PEKS), in the four third grade classes of Sequoyah Elementary School in Knoxville, Tennessee. Tennessee Chapter President Nancy Brown had been intrigued with the **Box City** ideas presented at the 1990 APA Conference in Denver, Colorado, and saw a tremendous potential for APA members to provide planning education in the schools. The third grade was targeted because the students in the Knox County system use a McGraw Hill textbook, **Communities**, which covers related material.

Box City, available through CUBE/ArchiSources, was chosen as the tool for the program. Ginny Graves of CUBE provided invaluable advice and support in developing PEKS. AIA's Community Techtonics funded the pilot program at Sequoyah and assisted in teaching the students.

The program is designed to take place over **four weeks**. During the first week classroom teachers introduce the vocabulary of planning and architecture—words like "residential," "commercial," "plan," "zone." During the second week APA members visit each class for one hour to discuss planning with the students. From questions about planning their vacation to a slide show on land use and buildings (including popular fast food restaurants such as McDonald's), the planners introduce concepts and relate them to the children's experiences.

In some cases, relating to the children's experiences can challenge the planners. For instance, in inner city schools the children may be more familiar with apartments than single family homes. Land uses that the planners perceive as incompatible, such as gas stations and single family homes, may be more of the norm for the children.

During the second week architects spend an hour talking to the children about design, posing such questions as why a *tipi* is different from a church. They also show the children elevations and teach children how to recognize buildings based on their form and function. At the end of the hour the children are given boxes and assigned one of 37 building types, ranging from homes to an airport to a homeless shelter. The students have one week to complete their designs and decorate their boxes.

The final week involves both APA and AIA members who assist the students in building their Box City in approximately two hours. Students must build around a lake, mountain, river and cul-de-sac. As each student places his or her building in the city, two student planning commissioners discuss and approve or disapprove the location of the building using the APA and AIA members as "staff." The students call on an honorary Box City Mayor who makes the final decision.

In building the city the students experience many planning dilemmas. When the gas station attempts to locate next to a nice house, there are plenty of objections. The noise of the airport and the traffic near the school are all considered. In the middle of the exercise, a park must be located. Near the end, a new road is built, and only then are the students allowed to move off of their original town map.

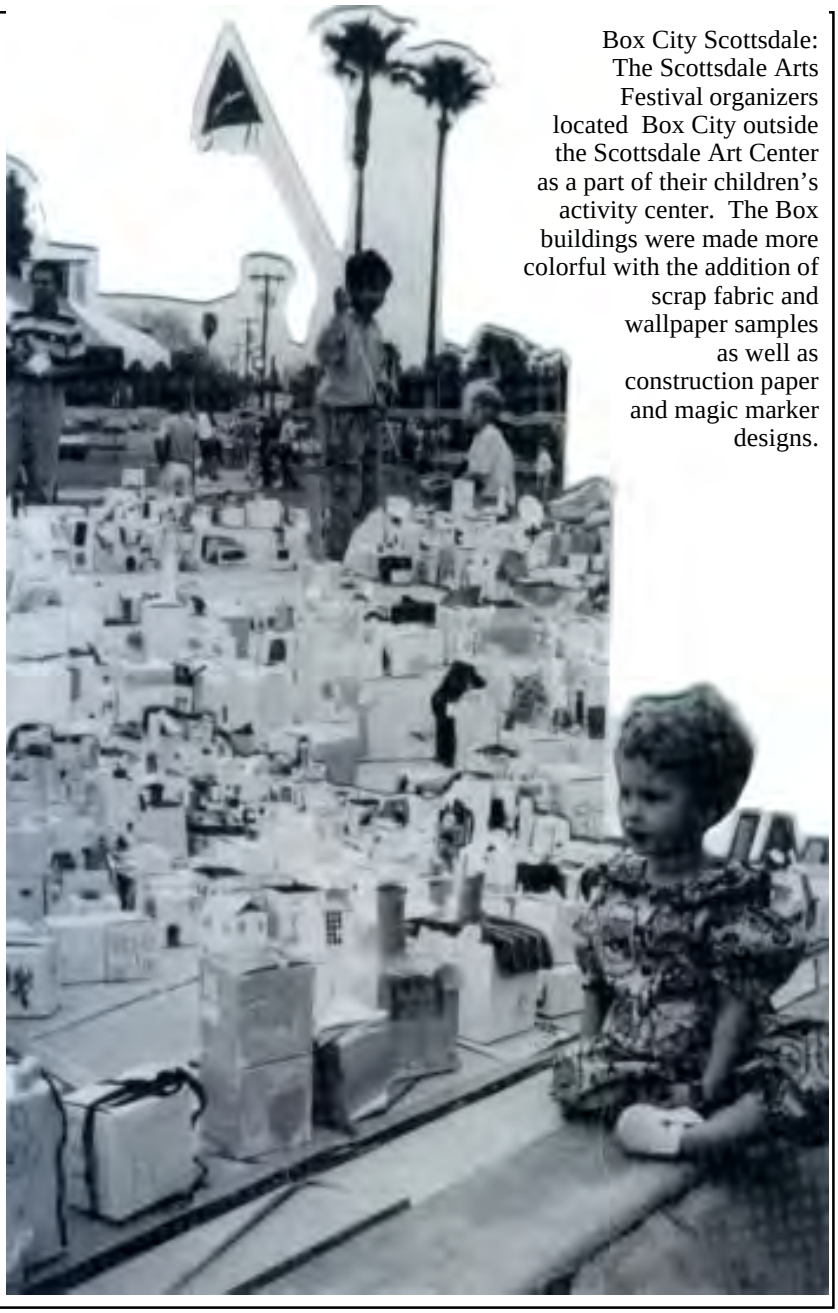
Since January 1991 the Tennessee Chapter has offered a number of Planning Education Kid Style sessions across the state in a variety of situations for grades from one through six. Planning Education Kid Style has won two national awards: ICMA's Local Government Education Award and APA's Karen B. Smith Chapter Achievement Award. The chapter has advised other APA chapters about establishing education programs.

Reference **For more information, contact Nancy Benzinger Brown, AICP, Past President Tennessee Chapter APA, 4023 Stilwood, Knoxville, TN 37919.**

Talk Back

Objective: to make improvements for your next **Box City** experience and to pass on suggestions and ideas to CUBE for future **Box City** materials improvement.

Did the city develop in the way you anticipated? What problems arose? What would you change or add to it?



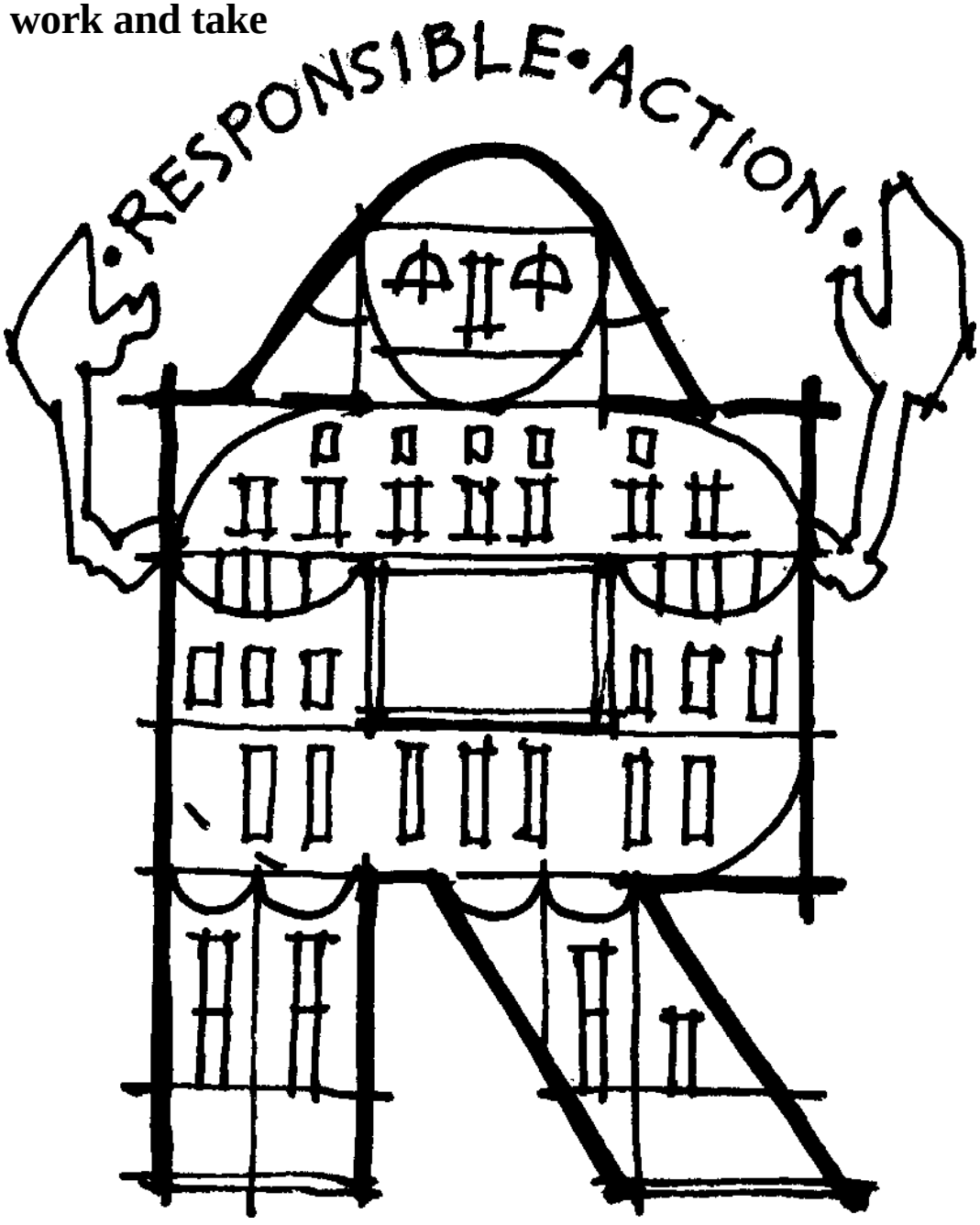
Box City Scottsdale: The Scottsdale Arts Festival organizers located Box City outside the Scottsdale Art Center as a part of their children's activity center. The Box buildings were made more colorful with the addition of scrap fabric and wallpaper samples as well as construction paper and magic marker designs.

Please mail your suggestions, comments, or photos to **Box City**, Attn: Ginny Graves, 5328 W. 67th Street, Prairie Village, Kansas 66208. If you have a newspaper article, we would like to see that, too. We are accumulating built environment education information for the American Institute of Architects and will publish your Box City experience in **archiNews.**

Responsibility: Taking Ownership

It is not enough to study a building, a block, a neighborhood, a city. The only way to make it a better place is to put **your** knowledge to work out in the community. The study of the built environment includes the **3 Rs** plus an important 4th R: **Responsibility.** Help participants to understand that they are never too young to make a difference. In this curriculum you will read about all ages: preschoolers, high school students, adults. What can **you** do?

Let's get to work and take



Only Connect. To grab my interest, buildings and designs will have to show that they can pull together people, things and ideas that have become fragmented. I want to see new links between housing, transportation and public space; between government and the intellect; between the natural environment and the cultural imagination.

Herbert Muschamp, New York Times, 1992

Bibliography and Resources

Abramovitz, Anita. **People and Spaces, A View of History Through Architecture.** New York: The Viking Press, 205 pp.

Bacon, Edmund N. **Design of Cities.** Penguin, 1967. 336 pp.

Bardwell, Kit and Graves, Ginny. **This is the House that Jack Built.** archiSources, 5328 W. 67th St., Prairie Village, KS 66208. 913/262-8222x2.

Barricelli, Peter. Create a Co-op City. Waterville, ME: J.L.B. Enterprises:1998 78 pp.

Bennett, Burnham, Moore & Schaffer. **Wacker Manual of the Plan.** 1909 Plan for the City of Chicago. New York: Princeton Architectural Press, 1993.

Blumenson, John J. G. **Identifying American Architecture.** Nashville: American Association for State and Local History, 1981. 120 pp.

Boulder Historical Society. Video: **Using Your Community as a Classroom (Box City)**. archi-Sources. 5328 W. 67th St., Prairie Village, KS 66208. 1996.

Bremer & Nelson. **Sim City Classic with Teacher's Guide.** Orinda, CA: Maxis Corporation, 1993.

Brown, Nancy. **Planning Education Kid Style** and **Knoxville Video.** Nancy Brown, AICP, TVA, 4023 Stilwood, Knoxville, TN 37919.

Burton, Virginia Lee. **The Little House.** Houghton Mifflin, 1942/1969. 40 pp.

Chapman, Levy, Wurman. **Our Manmade Environment.** Philadelphia: Group for Environmental Education , 1970.

Compton, Charlie and Smucny, Diane. **Kids' City components & Growth Barometer**. Newburgh Heights, OH: Smucny, 1995.

Coleman, Hila. **City Planning, What It's All About — in the Planner's Own Words.**

CUBE (Center for Understanding the Built Environment), an organizational resource which produces a newsletter; archiSources, a catalogue of built environment education materials; and Technical Bulletins encompassing a variety of topics. Also see CUBE/archiSources home page: **www.cubekc.org**. CUBE. 5328 W. 67th St., Prairie Village, KS 66208. 913/262-8222x2.

D'Alelio, Jane. **I Know That Building. Discovering Architecture With Activities.** Washington: Preservation Press, 1989. 88 pp.

Dilemmas of Development. Washington D.C.: The Urban Land Institute, 1990.

Fleming, Ronald Lee and Renata von Tscharner. **New Providence: A Changing Cityscape.** Washington: Preservation Press, 1992. 32 pp.

Fogle, David P. and Klein, Marilyn W. **Clues to American Architecture.** Washington and Philadelphia: Starrhill Press, 1986. 63 pp. (For younger children.)

Forsyth, Adrian. **The Architecture of Animals**. Camden House, 1989. 72 pp.

Gallagher & Giallourakis. **Discovery Through Architecture: Eyes on Insects.** New York: Gallagher & Giallourakis, 1993.

Bibliography and Resources

Gallion, Arthur B. **The Urban Pattern: City Planning and Design.** Van Nostrand, 1975.

Gibbons, Gail. **Up Goes the Skyscraper.** Macmillan, 1986. 31 pp.

Glenn, Patricia Brown. **Under Every Roof, A Kids' Style and Field Guide to the Architecture of American Houses.** Washington, D.C.: Preservation Press. 1993. 112 pp.

Graves, Loncar and Schauber. **An Evaluation of Built Environment Education in the Curriculum, A Study to Identify Methods for Integration, Teaching Strategies and Alternative Assessment for Built Environment Education.** Prairie Village, KS: Center for Understanding the Built Environment. 1994. 24 pp.

Graves, Dean & Ginny. **Box City Curriculum, Classroom and Festival Pack.** archiSources, 5328 W. 67th St., Prairie Village, KS 66208. 913/262-8222x2. Festival Pack also available.

Graves, Ginny. **Community Connections, Ten Things You Can Do!** archiSources, 5328 W. 67th Street, Prairie Village, KS 66208. 913/262-8222x2. 1998.

Graves, Ginny. **Picture This!** A scientific approach to community exploration. Slides and activities. **archiSources**. 5328 W. 67th St., Prairie Village, KS 66208. 913/262-8222x2. 1999.

Graves, Graves, Schauber, and Beasley. **Walk Around the Block.** archiSources, 5328 W. 67th St., Prairie Village, KS 66208. 913/262-8222x2. 138 pp. See abbreviated Spanish version below.

Graves, Ginny. ***Camina alrededor de tu Cuadra***, *Edicion en Espanol*. Abbreviated. archiSources: 5328 W. 67th St., Prairie Village, KS 66208. 913/262-8222x2. 1999.

Isaacson, Philip M. **Round Buildings, Square Buildings and Buildings That Wiggle Like a Fish.** Random House, 1988. 121 pp.

Lewis, Barbara A. **The Kid's Guide to Service Projects: Over 500 service ideas for young people who want to make a difference.** Minneapolis: Free Spirit Publishing, 1995.

Lewis, Barbara A. **The Kid's Guide to Social Action.** Minneapolis: Free Spirit Publishing, 1992.

Macaulay, David. **Works.** Houghton Mifflin.

Castle. 1977. 79 pp.

Cathedral. 1973. 79 pp.

City. 1974. 112 pp.

Great Moments in Architecture. 1978. Unpgd.

Mill. 1983. 128 pp.

Pyramid. 1973. 80 pp.

Unbuilding. 1980. 79 pp.

Underground. 1980. 112 pp.

The Way Things Work. 1988. 400 pp.

Melcher, Joan. **Connections: A Curriculum in Appropriate Technology for the Fifth & Sixth Grades.** Butte, MT: National Center for Appropriate Technology, 1980. 107 pp.

Bibliography and Resources

Mullahey, Ramona K. **Community as a Learning Resource, A Teacher's Resource & Guide.** Honolulu, HI: Ramona K. Mullahey, 1994.

Mumford, Lewis. **The City in History.** New York: Harcourt, Brace and World, 1961. 657 pp.

Nelson, Doreen. **Transformations: Process and Theory.** Santa Monica, CA: City Building Education Program, 1984. 218 pp.

O'Connor, Maura. **Living Lightly in the City.** Schlitz Audobon Center. 1983. 177 pp.

Rowland, Kurt. **The Shape of Towns.** New York: Van Nostrand Reinhold, 1966.

Salvadori, Mario. **The Art of Construction.** Chicago Review Press, 1990. 149 pp.

Segal, Arthur. **City Planning in Ancient Times.** Minneapolis: Lerner Publications, 1977. 83 pp.

Slafer, Anna and Cahill, Kevin. **Why Design?** Activities and Projects from the National Building Museum. Chicago: Chicago Review Press. 1995. 196 pp.

Van Buren, Maurie. **House Styles at a Glance.** Atlanta: Longstreet Press, 1991. 130 pp.

Walker, Lester. **Housebuilding for Children.** Overlook Press, 1977. 175 pp.

Whyte, William H. **City.** Doubleday, 1988.

Wilson, Forrest. **What It Feels Like to be a Building.** Washington: Preservation Press, 1988.

Studio in a School, New York City

We have included some "oldies but goodies" in our listing. Although out of print, they are well worth searching for in libraries or architectural archives.

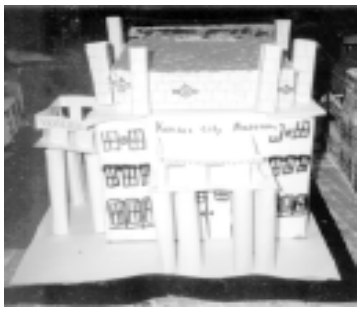
History

1969 **The Beginning**

Box City began as an environmental education activity at the Johnson County Library's Discovery Series interrelated arts program. Dean Graves, President of AIA/Kansas City, and Ginny Graves, Director of Discovery Series, initiated this effort. Rodger Wilkin, Crichton Singleton, Glen LeRoy, Vince LaTona, Scott Slaggie, Dan Sabatini and other dedicated AIA/KC members (as well as the University of Kansas Fifth Year Design Studio) have continued to support the activity through the years.

1970 American Institute of Architects/Kansas City, adopted Box City as an in-schools education program.

1971 *The Memo*, the AIA newsletter, documented Box City in Kansas City and nationally.



1973 "Box City, An Experience in Environmental Education" featured the KC project in the January issue of *School Arts* magazine.

1979 Box City was the hands-on participatory experience for kids at the National AIA convention in Kansas City. For many years Box City was used by AIA chapters as another way to introduce built environment learning into school classrooms.

1986 Box City re-emerges in teacher training. Two hundred teachers participated in Box City in an Urban Archaeology class offered by Ottawa University. It was the culminating activity for a city planning unit. The hands-on city building was preceded by playing the "My Town, Your Town, Our Town Game."

1986 Kids participated in a giant Box City experience at the Nelson Gallery family day. Kansas State, the KC AIA, and the Nelson-Atkins Gallery cooperatively planned this experience. George Thompson, Jay Tomlinson and Ann Brubaker, Nelson Gallery education director, were the coordinating individuals.

1987&90 Box City featured as one of the "experience institutes" at the National Art Education Association meeting in Boston. Ginny Graves, Bobbi Sharbutt, Babs Nikoomanesh and Barbara Coffman have acted as Archi-Net presenters.

1989 Box City featured in *Honolulu Examiner* as planning "game" for neighborhood activists.

1989 250 Gifted and Talented students in Kansas City, Kansas schools create five Box Cities.

1989 National Building Museum, Washington, D.C., incorporates Box City into workshops.

1990 Box City presented at American Planning Association National Conference, Denver Colorado.

1990 Box City featured at Aspen Design Institute. (Dean and Ginny Graves, presenters)

1992 Museum of Science, Boston. Kids Build at National AIA Convention.

1992 AIA/Dallas, sponsors Box City for 1500 kids at shopping mall.

1993 CUBE trains 140 teachers at five Kansas City Missouri School District summer school sites (500 students/ site) to use Box City for six weeks of summer school.

1993 Tennessee Chapter/APA launched statewide pilot program introducing schools to Box City concepts.

1994 "Eco-City" conducted at National AIA conference, Los Angeles.

1994 CUBE conducts Box City exercise according to the Traditional Neighborhood Development (TND) guidelines in Seaside, FL, the award winning neo-traditional community.

1995 Of the ones we know about, an average of one **Box City** was done every school day throughout the entire year.

1995 Three-day Box City event at the foot of the Flatirons, Chautauqua Park, Boulder CO involves Mayor Leslie Durgin, educators, activist citizens, staff from the Mountains Plains office of the National Trust for Historic Preservation and youth from summer recreation programs.

History

Box City at the National Building Museum, Washington, DC.

1996 Box City/Kid City presented at national conference of American Planning Association

1997 Mayor Kay Granger, Fort Worth, recognizes the importance of children and celebrates Our City, Our Children week with a city-wide gathering of neighborhood Box Cities

1998-99 Houston/AIA celebrates 75th anniversary with 80 classrooms joining together for Box City 2024, Houston as it will be!

1998 The Metropolitan Energy Center, with help from the Department of Energy and Environmental Protection Agency, utilize Box City in neighborhood planning.

1999 Box City celebrates 30th birthday!

2000 Since its 30th anniversary, Box City events have increased exponentially. In additions to the hundreds of classrooms and after-school programs that use Box City each year, our conferences and festival-events are speaking to new audiences. Examples of some of the new institutions utilizing Box City are listed below.

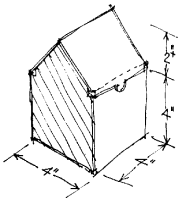
- A county-wide festival bringing together the city, the schools, the design professions and the Monona Terrace Conference Center, a Frank Lloyd Wright design, resulted in a celebration of architecture. Dan County and Madison, Wisconsin sponsored Terrace town 2000. A similar event will take place in 2002.
- The Kennedy Center for the Arts presented Box City workshops and approved the workshop format for its national partnership program. Workshops are taking place nationally in 2002.
- The Colorado Chautauqua Association instituted the annual Classroom Hometown seminar featuring Box City as a culminating exercise. This was built on its initial conference seminar in 1995.
- The Michigan Council of Foundations integrated the Box City exercise into its summer youth training programs. A Livability Index became an integral part of their program which trains youth from Michigan and other parts of the country to oversee youth programs in their own states. For several consecutive years, over 500 youth each summer have been trained in decision-making skills using the hands-on activities of Box City.
- Box City was the centerpiece of the President's Town Hall Conference for Sustainability, Detroit. Thousands of conference attendees as well as participating local schools participated in the Box City training exercises.
- The Alliance of National Areas, Charleston, chose Box City as a keynote workshop at its national conference, Charleston.
- The National Design Museum (formerly Cooper Hewitt) has included Box City and other community-based education activities in its summer seminar, New York City.

Box City Ordering Information

An interdisciplinary experience in city planning
The **Box City** curriculum teaches how cities are planned, or unplanned; what makes a quality city, and how citizens—yes, kids too!—can participate in the improvement of the built environment. Occupancy permits, role playing name tags, building assignments—all are included in the curriculum and reproducible for education purposes. It has been tested in all curriculum areas; in all classroom levels K-12; and with adult neighborhood activists. It is a smashing success as a culminating project for back-to-school night and festival events, school or community related.

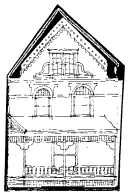
Box City…

- incorporates concepts from these areas: history, geography, art, politics, city planning, economics
- instills understanding of the development of cities and their present problems and successes
- encourages skills in group cooperation, writing, art, mathematics, spatial relationships
- offers an opportunity for students of all learning styles to successfully participate
- is experiential and exercises all thinking skill levels in Bloom's Taxonomy
- demonstrates the need for preservation ethics and for future planning



About our boxes: they are sturdy **white** cardboard, ready for decorating, and strong enough to stack to form high-rise buildings. They are especially made for us in the square module format which simplifies problems of scale and math and contributes to an aesthetically pleasing city.

The Classroom Pack/Box City unit: $69.00 plus $12.00 shipping
Forty assorted-size boxes ready to assemble and contained in their own shipping box: 8 six-inch boxes for industrial buildings; 10 five-inch boxes for commercial and civic buildings; 12 four-inch plain boxes and 10 four-inch boxes with gable roof to be used for residential structures. Also included: the **Box City** Curriculum with information regarding pre-planning, design, layout, evaluation, a check list of simple city planning concepts and patterns, "masters" for occupancy permits, and a bibliography; and a large grid which can be replicated for larger cities.



TableTop Box City (70 3-inch boxes, 35 gable)**: $65 plus $12.00 shipping**

The Festival Pack/Box City unit: $600.00 plus shipping. Please ask for shipping quote.
1,000 boxes: 495 plain four-inch boxes; 405 gable four-inch boxes; 50 five-inch boxes; 50 six-inch boxes, curriculum and Box City video. **Please allow 3-4 weeks for delivery.**

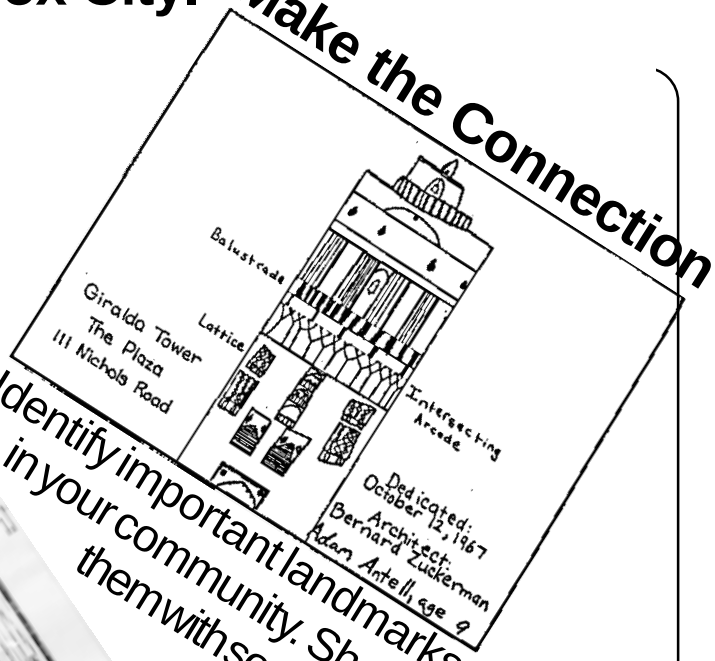
The Curriculum/Box City is available as a separate component w/o box order: **$30.00** plus **$5** shipping.

Box City has been tested in all curriculum areas; in all classroom levels, kindergarten through high school; and with adults in neighborhood planning processes. It is a smashing success as a culminating project for back-to-school night and festival events, school or community related.

To order **Box City**, send check, Visa/MC or purchase order number to:
CUBE/archiSources, 5328 W. 67th Street, Prairie Village, Kansas 66208. Fax: 913/262-8546.
Telephone: 913-262-8222x2 E-mail: ginny@cubekc.org (Prices: 2001)

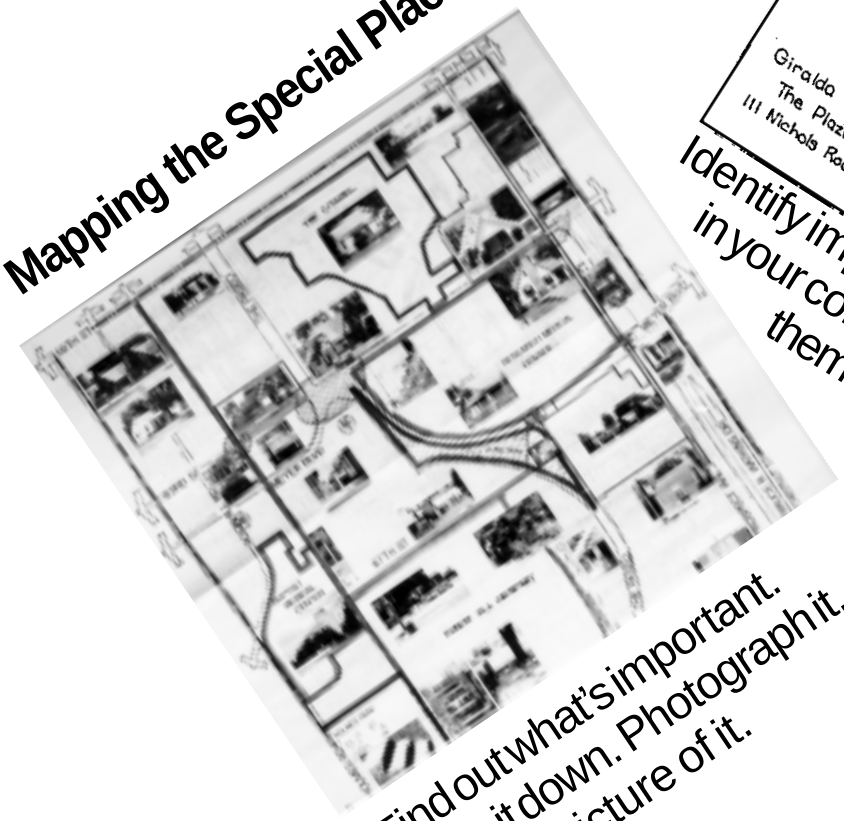
Make your neighborhood or city a better place—Try these community-building activities from Box City.

Make the Connection



Identify important landmarks in your community. Share them with someone.

Mapping the Special Places



Find out what's important.
Write it down. Photograph it.
Draw a picture of it.

Get involved!

BOX CITY

A Community-Based Education Resource from CUBE

(The Center for Understanding the Built Environment)

What is Box City?

It's a way to think about your city, to dream about what it could be, to put that dream into three dimensional and understandable expression through the use of everyday recycled materials like cereal boxes, shoe boxes, cracker boxes and detergent boxes. It is an opportunity to invite your city planner and council person and mayor and anyone else who will listen and look, to actually see (not just read about or talk about) what good ideas might be tried in your city. (When kids design a city for kids, it works for everyone! Check it out.) Above all, **Box City** is a **celebration** of our community: its strengths, its weaknesses, its issues and challenges. And, learning what we can do to make it a better place! Box City is deciding that you **can** make a difference, that **you** must be that difference. Bonus: adults can learn from **Box City**, too. Box City is a way to train **everyone** in your community about planning issues. **Begin with kids!**

Box City, Boulder Children's Museum.

"There is no question that these children will truly learn the value of good planning from a hands-on project such as Box City." Richard Moe, President, National Trust for Historic Preservation.

"Almost every problem we havein cities today leads back to an educational deficiency. Beginning activities like Box City early can help improve decision-making, consensus building and the knowledge of how our cities really work." Charlie Compton, Lexington County, SC Planning Department.

"This was the best educational project that I've seen to bring community and schools together!" Dr. Ron Hubright, District Superintendent for the Northeast Area Office of Greenville County Schools.

"I don't know when I've been more elated and hopeful. This program would do a world of good not just for the education of children, but for the future of our city. Box City is an essential experience for children." Mike Greenberg, reporter, San Antonio Express.

"Practical and usable for any community embarking on city-wide planning or community building." Vicki Noteis AIA, Director of Planning, Kansas City, MO."

"It's awesome to be an architect!" "I liked learning about my own city." "We liked the arguments best!" Kids. Kids. Kids.

"We have never had this kind of positive reaction to any workshop or curriculum. I can't keep the materials on hand." Stephanie Norby, Social Studies Coordinator, Kansas City Missouri School District.

ISBN 0-9632033-1-2

9 780963 203311 53000>

CUBE*5328 W. 67th Street*Prairie Village, KS*66208*913/262-8222x2 ISBN: 0-9632033-1-2 $30.00

THE ADDENDUM

BOX CITY

•an interdisciplinary experience in community planning•

Ginny Graves, Honorary AIA
Dean W. Graves, FAIA

Photo credit Willis Winters

Sponsored by AIA/Dallas, 1,500 youth create a city out of boxes in Highland Park Village shop.

Box City Addendum

Contents

Box City and Schools Alignment

Jan Ham, Program Director of Learning by Design in Massachusetts, explains about current teaching trends and state and school requirements. "A Box City—whether built in a school setting or at a community site—teaches a myriad of skills and concepts, while bringing the members of a school community together. Visitors to the city appreciate that the youngest child has appreciated as much as the older child." Current stringent demands for testing as opposed to "education" ignore a result that demonstrates the fact that every child has created at his/her own level. Or that a child went far beyond capabilities that the "test" measured. Or that the participants tend to discuss what they are learning with their parents. Or that kids are begging to stay "after school" to complete their box buildings." An activity like Box City meets all the standards and much much more. Jan has managed it all. She broke down the activities for Box City to align with Massachusetts standards: English Language Arts; Science and Engineering/Technology; Engineering Design; Mathematics Visual Arts; and History and Social Science. Since every state, every county and every school have standards of their own in addition to the national standards, her alignment would give a teacher or facilitator a head start on establishing standards for an individual site. To view Jan's Learning Standard Alignments, go to the Learning by Design web site.

The Cadre Favorites

The CUBE National Cadre members have participated in Box City activities in almost every kind of situation. Although we have lots of ideas for you to look at, Box City On-line and in the new Addendum, you might want to see what these experienced teachers have to share. Since many of you may have a curricula from the first years we were printing, and page numbers may vary as we improved and added lessons, we are only listing the titles of the activities and not the page numbers.

Jan Ham.
Program Director, Learning by Design in Massachusetts
arch-ed@mindspring.com
http://www.architects.org/education/index.cfm?doc_id=34

Jan has facilitated Box City with an entire school, as a community intervention activity, and in her graduate credit course. She is responsible for the curriculum alignment standards also mentioned in this *Addendum*. Jan added a strong component when she brought "pipe cleaner citizens" to the activity. Extended Lesson Plans/City People City Stories at www.cubekc.org. Others have added cars, buses, recycle containers, and even "cities below the surface." Jan recommends:

Base Model Plan

Building Assignments

City Planning

Permits and Role Playing

Scale Citizens (Addendum)

Standards Alignment (Addendum)

"I am convinced that with participants of ANY age, making a scale pipe cleaner (or other: cut out from a pattern and mounted on oak tag) person is a necessity. Not only are all issues of SCALE resolved, but they have a figure to relate to and design for. One of my Box City groups had the first Box City wedding!"

The Cadre Favorites

Heather Sabin, Tourism Coordinator
Monona Terrace Convention Center
Madison, WI
hsabin@ci.madison.wi.us
2004 Photo Highlights: **http://www.mononaterrace.com/educatorspage/terracetown/photogallery.php**

Heather is the director of *Terrace Town*, a fourth grade planning unit with a culminating Box City activity held on the floor of the Convention Center. Her unit also includes classroom mentors and a six-week in-class student training. Heather maintains a List Serve for all the participant teachers and volunteers so they can help each other. Update on Monona Terrace's program: "Terrace Town Green" has received funding for 2008. Terrace Town is featured numerous places on the web. Do a site search for "Monona Terrace" or "Terrace Town." Heather recommends:

Hard Hats were paid for by local business funding.

List Serve

Committee Structure (Addendum)

How Does Your City Work for You?

Mapping the Special Places

Our City Our Children

Pace and Scale

Laurie Bottiger, Head of School at Esperanza Academy, School of Hope, Lawrence, MA
esperanzahead@hotmail.com

Laurie co-authored *Picture This!* with Ginny Graves and has conducted Box City workshops at several historic sites in Kansas City and nationally. Laurie is formerly Kansas City CUBE Director. Laurie brings her academic, brain-based expertise to the CUBE learning experience. Laurie points out how exercises from **all** CUBE curricula can be adapted to the Box City experience.

Bulletin or Blog for teacher communication

Dramatic Read Through (*Picture This!*)

Informed Consent

Report Card for a Buiilding (*Walk around the Block*)

Rigor and Relevance Framework (www.leadered.com/rigor.html)

LB: Using the "Rigor and Relevance" model allows teachers to embrace local, state and national standards while aligning authentic learning experiences connected to real life. This model helps the teacher to organize their units honoring the individual learning experiences with the basic standards and benchmarks. CUBE lessons can be easily embraced within this model.

Role Playing

Understanding by Design

The Cadre Favorites

LB: Using Wiggin and McTighe's "Understanding by Design" curriculum planning model helps the teacher to identify the essential questions. By identifying the essential questions, educators are better able to prescribe the necessary objectives and lessons to support the greater understanding. This model allows us to connect the learning experiences for our students in a way that helps them find true meaning. CUBE curricula embraces this planning model.

Ginny Graves, CUBE National Director
ginny@cubekc.org
www.cubekc.org

Ginny and her architect husband Dean Graves created the Box City exercise and then wrote the book on how to do it, training kids and teachers all over the country with an international stop here and there. Since Ginny gets the phone calls, she recommends activities that she is most often asked about.

BoomTown

Creating the Guidelines

Making the Grid (& Addendum)

Mayors Speak Out

SuperStore Dialogue

Who Makes the Rules?

Ginny and Dean waving the flag for Kansas City's Liberty Memorial and Union Station, side-by-side and still tell-telling their stories.

FAQ

How to Use this Document: Frequently Asked Questions

At the end of each question/answer there may be a reference to a particular section in the curriculum. Since you may be using materials that have appeared since the first Box City curriculum in 1969, we will not refer to page numbers, but to the section in which the lesson plan appears. For example: "BC: In the Classroom/Boom Town." Also, try a site search for the topic. We do suggest that you buy the latest on-line version since it includes 50 new pages of information, lesson plans, web sites, and updates. Following are *Frequently Asked Questions.* (Also refer to FAQ on the home page.) They are lumped into categories for easier use.

What is CUBE?

CUBE, a community-based education organization, provides workshops, curriculum and technical assistance to create an awareness of America's special places and to enable young people and their grown-ups to take responsible community action. *www.cubekc.org/whatiscube.html*

What is the CUBE Methodology?

Web site: *Architivities: What is Community Based-Education?*

Integrating Ages

Do the students work together or separately? Gifted teachers really like Box City because of its flexibility.

The Box City exercise integrates all ages very well if you form committees for signage, streets, design guidance, and so forth. One third grade class uses it to teach cooperative learning. *Addendum: Pre-Planning/Committee Interaction.*

I teach Kindergarten through 4th grade. Can each of these units be easily adapted for different ages?

We have preschool through adults using Box City. Third graders use it to learn about community; Kindergartners: family, neighborhood, and city helpers; Fourth and Fifth graders to learn about state and local history; Sixth graders: Ancient Civilization; Middle school students: Government; High school students: leadership skills; College students: business and design applications. Math, Writhing, History, Music, Art and Citizenship (and even Motorcycle Safety) can be woven into any unit.

Time

How much time does Box City take?

There is a suggested six week program in the Box City curriculum. However, Box City can be done in 2-3 hours for an entire semester. *BC: Pre-Planning/Procedure.*

What activities could you use as a quick "warm up" for the actual Box City experience?

"BoomTown" can be completed in about two hours. *BC: In the Classroom/Boom Town.*

The GeoBlock Game provides an "entry" into the Box City process or can be used for conference or workshop activity. Essentially it means assigning standard building-use types to colored counting cubes and appropriately placing the cubes on different kinds of land forms. See *BC:* ***In the Classroom/GeoBlock*** **activity** for a brief description of a particular adaptation of the GeoBlock activity.

FAQ

The "print only" materials include the building-use labels, the landforms (to be enlarged) and instructions for using the GeoBlock Game. See the CUBE archiStore on the web site: www.cubekc.org/archiStore.

If you do not own six-color counting cubes, you can buy from a local school specialty store such as Learning Resources, Specify set of 100; wooden cubes, six colors. 1-800-222-3909, Item #LER 0136. Search the web for other sources.

Space Needs

What is the best grid size?

We have told people to allow a space of about 24x24 feet. Very ample. That way you can allow for "sprawl" or a suburb or park. We have done it in a 15x15 foot space, a little crunchy, but good density for some of the new planning regulations.

You may also be helped by *BC: Pre-Planning/Base Model Plan; Construction Phase/Abbreviated Instructions for Leader.*

How large is Box City when set up? I have some space issues and do not want spend money and then not be able to use it.

Most people do the "project" for about six weeks and set up their entire Box City for only a day or two in a special place at the school where everyone can see it, or even at a neighborhood place like a Library or City Hall. If you have that capability, then you would want the Classroom Pack which is 40 boxes in 4,5,and 6 inch dimension with half of the 4's having a gable roof.

Box City comes in two dimension programs. If space is an issue, you would want the 3 inch size which is called *Table Top Box City (70 boxes)*. The boxes are in approximately 1/8 inch scale. *BC: Construction Phase/The Scale of the Buildings.*

What is the configuration of the boxes?

Configuration of Classroom Box City boxes.

8 six inch
10 five inch
12- four inch plain
10-four inch gable.

FAQ

The configuration for the Festival Pack Box City

495 four inch
405 four inch gable
50 five inch
50 six inch

Shipping Costs

Since I plan on ordering several things, will the shipping costs be less?

Shipping varies on price forecast from UPS (United Parcel Service). Shipping for the Box City Classroom Pack is approximately $18. If you are ordering more than one, or are ordering other items, please call us to figure your shipping more efficiently based on your total order. Note: costs are variable depending on current rates. Costs may have changed since this information was mounted.

If you are using the on-line Pay Pal, it is set up for one-item ordering. In the notes box, indicate that CUBE has authorized you to add a specific amount for shipping.

Canadian Information

Yes, we can deliver CUBE's Box City Classroom Pack to you in Canada. We ship via UPS Ground and depending on your postal code/zip code, the cost would be between approximately $20-30 US dollars. Please include your postal code with any order you place so we can figure exact shipping.

Curriculum Only

If I am repeating the Box City program and already have the curriculum, is it possible to order the boxes without the curriculum? Or the curriculum only?

Yes. See the archiStore for details and costs.

Supplies

What supplies are involved? The Box City classroom pack includes 40 boxes with curriculum. In addition you will need miscellaneous art supplies that most teachers have on hand. However, it is motivating to have some unusual things, usually recycle, as well—not all buildings are square. Examples would be cellophane, aluminum foil, popsicle sticks, fun things from an architectural office. Each Box City is unique, but the curriculum contains a generic listing for both classroom and festival settings. *BC: Pre-Planning Resources.*

If you are on a tight budget, recycle boxes may be used. National Cadre member Jan Ham suggests a quicker method than "wrapping" the box. Have the students lay the recycled container on paper and draw each side. Cut out these pieces and adhere to the box. *BC: Construction Phase/More on Scale.*

Time Factor

Is there a quick way to have the Box City experience as a "getting ready" tool?

BoomTown can be completed in about two hours. *BC: In the Classroom/Boom Town.*

FAQ

The GeoBlock Game provides an "entry" into the Box City process or can be used for conference or workshop activity. Essentially it means assigning building types to colored counting cubes and appropriately placing the cubes on different kinds of land forms. See In the Classroom/GeoBlock activity for a brief description of a particular adaptation of the GeoBlock activity.

The "print only" materials at this time are $12: this includes the building use labels, the landforms (to be enlarged) and instructions for using the GeoBlock Game. See the CUBE archiStore on the web site: www.cubekc.org.

Community Interaction

I am a facilitator from the City Planning Department. How can the school be involved?

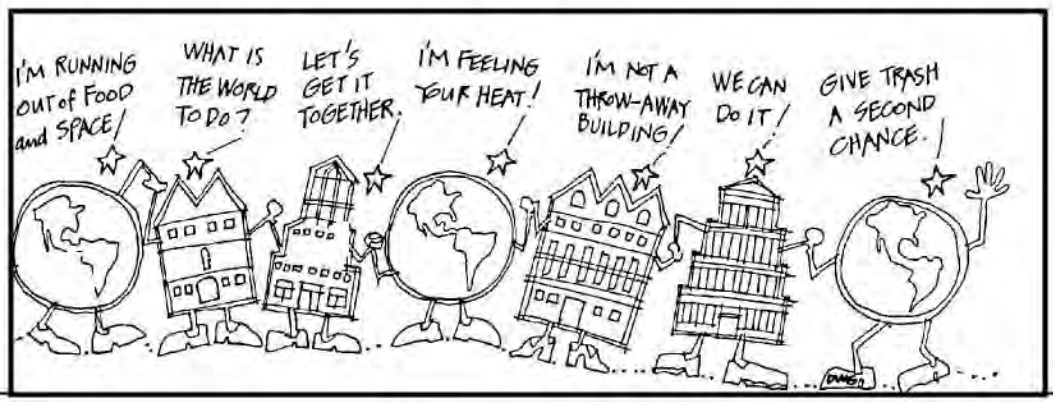
It is important to have the school/classroom as an equal partner. You are providing time and expertise. They may furnish basic supplies from the art department? Will they buy the boxes? Will they provide release time for a teacher to have these discussions with you or for a workshop if more teachers are participating? Will they provide a large space for your final Box City set up? Display afterwards? Family night or Open House provides a great opportunity for Box City to be seen by other teachers, students, their families. Often First Grade students will bring their families to the Box City set up and remark that they are looking forward to doing this when they are in, for example, fifth grade.

How do I explain Box City to those who might help support a community interaction project?

Here are several one-paragraph descriptions that may help you develop your own site-specific description of the activity and possible outcomes.

(1) Box City, known as a great educational tool for kids, is that rare activity that seamlessly crosses the lines between youth and adults. In most neighborhood planning situations, interested and well-meaning citizens come unprepared to read maps, follow information presented in charts, transform scale and the hundreds of other skills planning professionals take for granted. Box City helps to build this knowledge base in adults as well.

Hakim Yamini, nationally recognized facilitator, helped with a Washington-Wheatley neighborhood transportation-focused workshop in Kansas City, MO. Yamini said, "I have never felt so hopeful about the outcome of a workshop. With the Box City process, the participants know and understand in a concrete way what they are asking for."



FAQ

Furthermore, there may be something very special that takes place during the Box City process that is just not attainable with high tech tools or less hands-on experiences. Hakim Yamini calls Box City "the missing piece. The piece that will make the plans come true."

(2) Neighborhoods can use Box City to build models of how they would like their future to look.

(3) Julie Herman of Place Matters has put on the APA Monograph, Sustainable Tools section of the APA web site and describes it this way.

> Box City is an effective low-tech visioning and hands on learning exercise for communities. Using cardboard boxes, construction paper, scissors and glue, participants work together to construct three-dimensional models of selected sections of their neighborhoods and move the pieces around to realize their own vision of what would make a great place to live. The fun non-intimidating nature of Box City draws people, young and old, into a process of discovery about how their community currently works and moves them quickly into rich discussions about how it could, or should, be like.

Workshops

How can I receive training?

The CUBE Cadre plus other sites, carry out on-site training in connection with their annual or monthly activities. Please inquire about recently planned workshops. There are also facilitators who can come to your school or organization to conduct on-site workshops. CUBE home page/Workshop Presenters.

Web Sites

To learn more about Box City, visit our web site at www.cubekc.org and click on the side buttons: *Teacher Resources/Kids/Box City tour*. There are other images and descriptions in our Scrapbook. Use the site search engine for even more leads and use your computer's search tool to find Box City at other sites. Please feel free to call if you have any questions: 1-913-593-5328 (Graves' cell.) *BC: Box City Tour, Who's Doing It?* contains program descriptions and the names of people who are making it happen.

Outreach

How can I spread the word about what my school/organization is doing?

Send us a pix with a paragraph describing your event and we will put it on the CUBE web page scrapbook. For other outreach hints, see *Addendum: Press Release.*

Resources

How can I order Box City?

1. Use the archiStore on the web site and utilize the easy credit card Pay Pal option (Mastercard or Visa). www.cubekc.org/archiStore.
2. Send a check to the address below.
3. Talk to a real person and pay by credit card or PO #.

ACA/Chris Schowengerdt
5401 College Blvd., Suite 212
Shawnee Mission, KS 66211 Tel: 913-491-1960/Chris

Schools Information

Note: The following informatioin will give you an idea of how a particular type of organization has "personalized" Box City to meet its national and state standards. The facilitator or education chair may have changed. Please contact the organization directly for updated information.

Santa Fe Trail Elementary. The architect made a 4'x 8'map of the school attendance area. We built what the kids thought was important. The teachers were shocked at what was important to the students.

Contact: Liesa Schroeder, 816/521-2730

Buckman Road Community Center. This summer adventure camp had three groups working on the city: the Bad guys, ages 4-6; the Superstars, ages 7-10 and the Ruff Ryders, ages 11-14. "We couldn't get the older group to stop planning and start building. In the *Talk Back* section of Box City, you asked if the city developed the way we anticipated. Not at all. It turned out better!"

Contact: Patricia Cooper and Mary Gabrielle, 703-360-6094

Architectural Education Resource Center. I have just finished doing my biggest-by-far Box City—an entire school, K-8, 385 kids in the school gym of a small town in New Hampshire. The whole town came. It was amazing to walk the halls of the school for the three previous days. City-building going on every where you looked. Another thank you for Box City. Building that city in the gym, was, as even the jaded middle school students finally had to admit, AWESOME!

Contact: Jam Ham, 508-528-4517

St. Edward School, Youngstown

From the plannning of streets to the discussions over zoning, students in eight grades participated in the Box City experience. The teaches were trained by Lisa Frederick in a summer workshop sponsored by Ohio Geographic Alliance and YSU's geography department.

Contact: Lisa Frederick, 330-332-8921

The Michigan Council on Foundations used Box City to train 250 State Youth Board members (high school) in decision-making. The youth were from Michigan and 12 other communities around the country. We said to them, '"This is your city. You need to make the decisions.' The group did better when we (the leaders) stayed out of it. One group debated and debated. "No...we need to have this. No...we need **this**!"

Robb Collier comments, "I saw Box City at the President's Town Hall meeting on Sustainability. I feel in love with it. I thought, 'I've got to use this crazy thing!' "

Procedure: We took the students on buses throughout the state to learn about their communities. While on the bus, they were led by selected Box City materials such as "How does your community work for you." They came back and did five box cities in a three hour period.

Contact: Robb Collier, Programs Manager; www.mcfyp.org; link to Adventure. 616/842-1360

Festival Information

University Cultural Center and Detroit Arts Festival: "Our teachers wrote lesson plans after they received the curriculum. You should have seen the things that teachers did before: archiHats was a big success!"

Contact: Janice Wilson, 313/822-0641

City of Liberty

The City Planning Department conducts Box City on the square at the spring festival. The Department acts as the coordinator and community outreach agency. The **boxes:** We thought that the donated boxes had too much scale variance for the amount of time that we had. We bought Box City boxes.

The volunteers: Begin working on getting volunteers early. You need quite a number on Festival day. Get more than you think you'll need.

Base Model grid: We marked the grid on the street. Some classrooms marked a sheet.

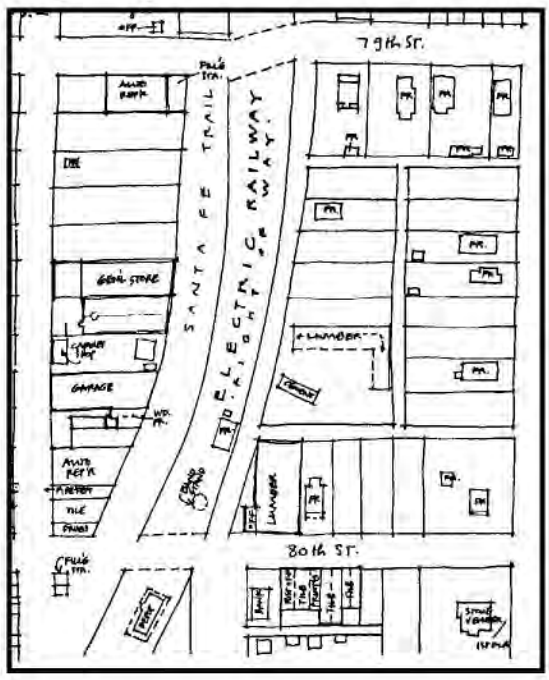
Finances: If you can't afford to buy boxes, get a donation. We did not use paint for a public activity. We had parents bring recycle stuff for decorating as well as using the typical: construction paper, glue, tape, magic markers and wallpaper sample books. It's a cheap event when you realize how many parents and children you reach.

Summation: we like this project., We intend to do it again and again.

Contact: Carolyn Fulk: 816/792-6000/x3109

Liberty Update: Shawnee Town

Gay Clemenson reports that their Shawnee Town Box City is organized around the Sanborne maps. Incidentally, Gay was trained by Carolyn Fulk in Liberty. Box City on the road!



Gay Clemenson: gclemenson@cityofshawnee.org

American Institute of Architects/Houston

Conference Center: Include the conference center as a partner so that their display boards, tables, and so forth will be available to you without charge.

Base Model Grid: Our steering committee prepared a City Map and each participating school picked an area.

Problem: our biggest delay was the issue of size of buildings with the planning committee. They just didn't realize that the scale, just as in real life, need not be an issue.

Refreshments: It is typical that a group must buy their refreshments through the Conference Center cater-

ing which can be quite expensive. The best thing we did was to have coffee, juice and bagels for those who set up.

Publicity. We hired a public relations firm to focus on publicity. This person needs a "shadow" in case they become unavailable. We had the most luck with neighborhood supplements and the business journal.

Scale: Our Children's Museum with its "Kids' Carytids" gave us a perfect example for explaining scale.

Contact: Martha Murphree,713/520-5134

Lexington County Planning Department, Lexington, SC

General comments: Almost every problem can be traced back to an educational deficiency. The public does not make the connection between the problem and the solution. Box City makes this connection very clear.

Procedure: we start with a small town that grows. Youth can see how one little building is a part of something bigger and smaller. We teach history with it.

Layout: The Steering Committee makes a base grid plan for the exact city involved. Sometimes we have used carpet squares which could be laid down right in the street. activity over and over as a family event.

Base Model: A simple 20x40 foot base model plan is painted on a piece of heavy sail canvas. A survey map is projected on the canvas for ease of scale. They can reuse and also take to Box Cities at other sites.

Time: We had several families who spent the day. We never have any trouble accommodating all ages.

Intervention: We usually have a tornado or other natural disaster. The Emergency committee provides relief, routing of traffic, and so forth.

Summary: Best event we've ever had. Each school put together their own neighborhood.

Contact: Charles Compton, 803/359-1821.

Extended Learning

Historic Landmarks Foundation of Indiana

Create a Landmark Competition, a model-building and research contest, awards seven cash prizes for landmark models. A People's Choice award was added this year for the favorite model of people attending the Children's Museum where the models were displayed. The Society of Architectural Historians provides financial support for the contest.

Contact: Suzanne Stanis 317/639-4534.

Planning Department of Loveland, Colorado

Technology: These planners made a great web page explaining their procedures. See **www.ci.lakewood.co.us/cdbg/boxcity.htm**

Procedure: The third and fourth grade students went through a development process that included obtaining building permits, constructing buildings, obtaining Certificates of occupancy and placing buildings in the city. The city was set up in Villa Italia Mall.

Interaction: Assume that teachers know nothing about city planning and that planners now nothing about teaching.

Contact: Tom Charkut, 303/987-7527

National Building Museum

This organization repeats a generic Box City

Base Model: A simple 20x40 foot base model plan is painted on a piece of heavy sail canvas. A survey map is projected on the canvas for ease of scale. They can reuse and also take to Box Cities at other sites.

Extension: The National Building Museum has also painted a plan more typical of a rural area and have used the same idea to explore the idea of vernacular housing.

Contact: Eileen Langholtz, 202-272-2448x3404

Boston's Parcel 25

Involving all citizens in the planning processes is necessary for citizen satisfaction. In Boston, AIA/ Boston and Jan Ham involved fifth grade Boston campers who spent 10 hours creating a good design for Boston's "parcel 25", a very ugly couple of vacant lots at the crossroads of several interesting-neighborhoods, adjacent to a subway stop. They built up from an enlarged b&w photo of the site. I particularly liked this girl's clay "sculpture of girl hanging from a fountain holding a blue globe that lights the world at night. **Jan Ham, CUBE Cadre member. arch-ed@mindspring.com**

Charlotte Involves Youth in Civic Forum http://cubekc.org/scrapbook.html

Washington-Wheatly Transportation Planning. *BC: In the Classroom/Neighborhood Planning Groups*

Charter High School for the Future, Philadelphia.

We shape our buildings. Thereafter, they shape us.

Winston Churchill, 1954

The Grid

We probably get more questions about creating a grid than for any other topic. Look through the curriculum illustrations and you can see the number of ways that people create the base grids. The directions here discuss a specific plan, in this case, the plan that might be used for a new kind of planning called TND (Traditional Neighborhood Development.) They would apply, however, to whatever plan you are working with.

Following are the directions which CUBE uses if producing a generic grid. You would use the same directions if you are reproducing your own city plan. The material (paper, fabric, heavy plastic) is "immaterial, but the approach to what you make will change depending on whether you want a plan for general use with many groups, want a plan that will teach a new kind of planning, or are reproducing the plan for your own city.

Another alternative to the sheet is to tape together sheets of brown wrapping paper at least 36" wide to produce the approximate dimensions of 12x14 feet. Draw the grid on these sheets. This is time consuming hard on your back, and not permanent.

Glen LeRoy, the planner who helped with the development of the Box City curriculum, only uses sheets of loose 12x18 feet construction paper. He spends no time on the layout and has audience participation beginning with a discussion of

1. Where did the town begin?
2. What were the streets named?
3. Where were the railroad tracks?

The Grid

4. Are there other geographic features?

As these things are mentioned, the participants put down colored paper to designate zoning areas or features. You will often find a group in the corner making a bridge, cutting railroad tracks, or otherwise enhancing a particular area.

*If reproducing your own city plan, you may want to emphasize **specific important streets**, and not include every single street and detail.

1. Buy one sheet, King Size, for the grid. Usually you can find this on sale. I like a mixture of cotton and polyester so that the wrinkling isn't as great. We use a minimum grid of 12 x 14 feet for an average city or classroom. Remember, you can always have sprawl. You will be happier with a denser city than one where the grid is too large for the number of kids involved.

2. Buy Sharpie permanent pens, chisel and fine point, for marking the grid on the sheets. Have boxes (from Box City classroom pack) of each dimension to use as "sample" for scale.

3. Wash sheets so they are ready to go.

4. Reserve a room with large workspace (at least two library size tables) for outlining. Working on the floor is not very comfortable unless you are middle school age or below.

5. Call two or three other people to help. If you have an advisory committee that includes architects, planners or artists, this will be easier. However, it is doable for anyone.

6. Decide if you need to order in pizza or something else to eat. Otherwise, your crew will head out early and you'll be left to finish up. We find that food is a critical part of any volunteer planning.

7. Lay your map beside the sheets and put dots at key point areas.

8. You may want to add one or two significant areas to the TND map, such as a lake, a mountain, a river, a railroad track, a major highway. You will definitely want to add local geographic information to a customized map.

9. Add in enough detail to give the idea of scale, but not so much as to be restrictive.

10. **Stop!** Remember, you are creating the grid that will leave the most flexibility for individual presenters. Box City is a process. Creating the grid gets all stakeholders involved from the beginning.

When you begin the Box City process with the group, use pieces of colored construction paper to lay down in areas that you want for a particular zoning use: yellow for residential and so forth. In this way, when the city is completed and the construction paper removed, you still have a flexible grid to use another time.

You can lay down strips of gray construction paper for streets and name the streets.

The Grid

The temptation is to make the grid ever more detailed. The students and participants are the ones who should do that if time allows. If there is not enough time, then a "BoomTown" or other quick and dirty does not really need that amount of detail for the Box City activity. *BC: In the Classroom/Boom Town.*

SIMPLE base model plan

For those of you who want a reusable "mat" but one that is simple and generic, the following directions were created by Patricia Beasley Thomas, founder of PS1, a community one-room school. It is about 12 feet by 12 feet. See photo previous page.

1. Buy fairly thin fabric such as you might buy to make tablecloths. The paint helped stiffen it and if heavier fabric is used, it would have taken more paint, i.e., would have absorbed more and therefore cost more.

2. Buy the least expensive acrylic paint in pint containers and dilute with water. (Keeps expense down.)

3. Does not need to be done with any precision—hence varying shades.

4. Paint the fabric on top of heavy-duty plastic, approx. 6 ml.

The result was that the acrylic dried and created the slick finish on the underside. Also, the fabric did not stick like it would have to newspapers.

AND ONCE AGAIN WE WILL SAY: RELAX! It hardly matter what you do, this project will take on a life of its own, just like any city! You can prepare a plan for the city, but that doesn't mean the participants will honor your plan, appreciate it, abide by it or continue it into the next generation. The challenge of planners!!!

The Civic Index

Knowing **what** the rules are and knowing **who** makes the rules are an important part of responsible citizenry. This exercise, The Civic Index, provided by an unknown provider,* does a good job of outlining some thoughtful questions. (*If you are the creator, please let us know. We like to give credit. Contact information in *Addendum/FAQ/What is CUBE?*)

MINDSETS

1. How do things get done in your town? How do people think things get done? If there is a difference, why? If there was a serious problem in a neighborhood, what would normally happen? If there were a city-wide problem, what would happen? In other words, what is the mind-set or what are the mind-sets that shape the way people in the city usually respond to problems?

PRACTICES

2. Are there problems in the city that can't be solved or issues that won't be addressed unless everyday citizens or the public at large responds? When the public needs to respond, what usually happens? Why? What role do rank-and-file citizens usually play in responding to problems: are they typically on the playing field or on the sideline? How much responsibility does the citizenry take for what happens in your town?

3. Who gets to say what the issues in the city are? Who names them? Do most people see a connection between their deepest concerns and the way issues are presented?

4. How are public attitudes about problems usually formed? By public relations or public education campaigns? Leadership rhetoric? Media messages? Direct citizen-to-citizen interaction, either informal or formal?

5. Does the public typically express itself more through first impressions, initial reactions, and popular opinion or more reflective and shared public judgment?

6. When things need to be done, how are the decisions made? Who makes them? Are citizens more likely to be engaged in confronting the hard choices about what they can do or are citizen's meetings more likely to be for describing needs?

7. When decisions are made is there a habit of putting all the options for action on the table and carefully weighing the pros and cons of each? Or is it more the custom to hear about one particular solution and depending on which side has the floor, its advantages or disadvantages.

8. What institutions provide space for citizens as citizens to come together and make decision about major problems. In other words, what kind of public talk is most common in decision-making? Debate? General Discussion? Deliberative Dialogue?

9. Does the audience for these gatherings normally cut across or fall along the geographic, social, economic, and ideological divides in your town? How connected are the various public gatherings? Are there the civic equivalents of cross streets that connect different sections, interests, and so forth? Where are the boundary spanners?

RELATING AND ACTING

10. When the city acts, is it more likely that different actors will act in their own way and that the sum of their efforts will be fragmented or is it more likely that actions will be mutually reinforcing and that the whole of the enterprise will be greater than the sum of the parts? If the response is different on different occasions, why?

11. How would most people characterize their relationship with the major institutions in town—government agencies, the schools, the media? Which institutions do they feel are really "theirs"? Do people see themselves more as clients or customers of those institutions or as partners.

LEARNING

12. How are outcomes or results of acting usually assessed? Are people more likely to measure success against predetermined goals or are they prone to judge what they have done by what they have learned? Who owns the process of assessing results? How does it affect the way the community learns?

The Survey Report

In the classroom, a standard practice has been to allow each participant to make a short report on his/her building as he places it in the cityscape. This creates a greater sense of ownership and also assists in constructing the building.

As you are on site or researching your building, make notes and drawings and take photographs for The Survey Report. The Report is a short oral description of your building that you make when placing it in the city. These research materials will also help you in constructing the building. The Survey will include, but is not confined to:

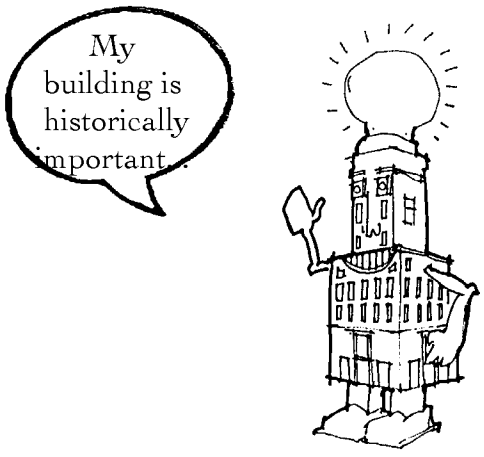
a. the date built

b. the architect or family who built it and interesting architectural features

c. the materials, construction and the way it fits into the neighborhood

d. anything historically significant (particularly great quotes)

e. issues and challenges that may affect the building's fu-



The City Profile

If you have limited time to devote to Box City, you may want to use a pre-developed description. As students become more familiar with the process, or if you are working with adults, they can develop their own community profile. Two examples are provided: a very simple description of a beginning city and a description that could be used for the facilitator's knowledge base or for an advanced group of students. The technical vocabulary in the second example would need to be provided or explained for many groups. What concepts are addressed in both examples?

For younger students, it could be as simple as the following: This town developed along the riverbank of the Missouri River. What are the first buildings that would have been needed? It moved south to provide housing and larger commercial buildings. More pre-planning took place. What do you think was needed?

New City

The settlement consists of a central square juxtaposed at an approximate 45 degree angle against the surrounding urban grid. Two major boulevards extend diagonally through the central square to peripheral corners. All minor throughways intersect with the axial boulevard, thus creating a hierarchical network of streets. This settlement is now enclosed by the urban fabric of a major city—to the southeast is a grid-like extension of the settlement; to the southwest is a smaller grid of streets; and to the northwest and northeast, immediate to the settlement, are forested areas.

The settlement also reveals a hierarchical usage of space and diversity of building typology. This was accomplished through an integration, rather than a separation, of building types. Beginning with the square, the urban design builds upon a centralized plan. Major public buildings and mixed-use buildings are placed along the immediate periphery of the square. By limiting the building height to three stories, a residential and pedestrian streetscape is maintained. Other buildings within the settlement consist of a mixed typology of residential housing. Multifamily residential structures are woven into the building fabric of the central square. Progressing outwards toward the perimeter of the settlement, the buildings are transformed from a public/semi-public and medium density usage to detached multifamily residences and private single family houses. Three quarters of the project are made up by these low-density residential buildings. The architectural style of the buildings draws upon the local vernacular and regionalistic approach to design.

Doing some kind of an evaluation following each activity reinforces learning and raises new questions.

How would you like to live in a place that looks and works like this?

What are the strong points?

- a definable center
- the definition of public and private realms
- a sense of place and community
- pedestrian access to the entire site
- a defined periphery
- a sense of linkage
- the use of public transportation

The City Profile

This plan closely addresses the theories of Andres Duane and Elizabeth Plater-Zyberk, Peter Calthorpe, Harrison Franker, Daniel Solomon, Barbara Stauffacher and other urban designers who, in the early years of the twentieth century are addressing the importance of traditional neighborhood planning.

Learning from the past to plan for the future is a long understood, although not always practiced, dictum. Actually this community description (second description) reflects an actual settlement, Wekerle Settlement, a suburban subdivision of Budapest, designed as a small town, and later incorporated into Budapest. It is currently being revitalized with new building along the periphery of the central square. This revitalization does not directly borrow elements of existing architectural design, but it gives more than a nod to the urban design precedent established in 1908 by the Hungarian architect and urban designer Kaoly Kos.

For more information about Traditional Neighborhood Planning: *BC: Knowledge Base/City Plan: The New Old Town and Sustainable Development.*

Credit: *Architectural Traveler*. Hungarian Paradigm for Urban Design. Charles Scott. p. 63, Inland Architect.

A New Kind of Planning

"Who is the enemy of the child?" asks Harry Teague, an Aspen architect. "Our economy. Our culture is organized so that those who are in the business of making money only want 'easy in, easy out' projects. Our banks, our planning commissions, our citizens—so far—support this 'bottom line' approach to planning."

Although we consider the needs and rights of a number of citizens, we tend to ignore those who may be in the most need: our children. Harvey Gantt, former Mayor of Charlotte, NC, suggests that we design our neighborhoods to meet the needs of a ten year old child.

Howard Gardner, director of Project Zero at Harvard, suggests that five year olds can figure out most things they need to know.

Teague suggests that there should be a **Bill of Rights** for kids. On this page are some of the items on Teague's Bill of Rights. What would be on yours? **Create your own Bill of Rights for Kids. What would help your city to work better for you?**

Bill of Rights for Kids

The city shall be:

1. safe
2. in appropriate scale—no walls over four feet
3. accessible—youth will have the ability to get from one place to another
4. integrated—nature, the community, work, ages, sexes—all will be a part of the whole (An example: are health services convenient and integrated into the town? Can youth access health services? by themselves?)
5. evidence of tradition—youth will be able to identify cultural anchors whether they be building types and styles, monuments, landmarks, or natural areas. (Youth are bombarded with wonderful things, but they want traditional anchors.)

Your list

1.
2.
3.
4.
5.
6.
7.
8.
9.

The community designed for young people will work for everyone—the physically challenged, our elders, parents with toddlers and strollers, and kids who want to be independent.

Let's do it!

Committee Structure

Committee Structure for Planning Box City

The purpose of these committees in the Box City training process or in the process itself is to raise the consciousness of the individual members about specific issues. (When time is not a constraint, i.e., in the classroom, all students can familiarize themselves with all issues through the use of speakers, research and current publications.) In the training situation, when we operate on an accelerated schedule, the committee meeting device enables at least a portion of the participants to inform themselves about certain issues and to be able to react, during Box City, with some knowledge. Packets for information-building will be assembled by the facilitator or coordinators.

The following committees/teams will help to determine the form of the city. Each team will be responsible for the discussion of issues involved in and long term repercussions of design decisions. A team leader, chosen in advance, will be responsible for presenting the research material about the team's subject area, and generating discussion.

I Base Model Committee

This committee plans the general layout of the town.

Assignment

Make decisions and lay out base model to include all phases of Box City topography including natural land forms future city needs in relation to new planning trends: New Urbanism, Sustainability, Traditional Neighborhood Development, Sprawl issues

Assignment

Develop a master plan and be able to explain to group

A general guideline for land use is:

15% infrastructure (roads, bridges; utilities: water, waste, power; public transit)
15% urban foras (density, setbacks, use zoning, typical blocks)
20% civic spaces (parks, civic buildings, hospitals, fire/police stations, sports stadium)
15% social and cultural (schools, museums, libraries)
20% housing spaces (variety of choices in terms of lifestyle, cost, convenience)
15% working spaces (convenience, variety, flexibility and reusability)

II Community Development Committee

This group takes big chances but also can receive big rewards.

Assignment

Prepare design guidelines for Future City.
Review Informed Consent process. If time permits, take entire group through process
Acts as City Council during Box City process

III Social and Environmental Issues Committee

Background

A new trend in city planning calls for a Planner as well as a Social Planner on the city planning staff (Vancouver). The Social Planner addresses the needs of the people rather than being only involved with code adherence. Another new trend puts planning decisions in the hands of smaller neighborhood areas, perhaps as small as ten blocks. The result is that very different kinds of planning decisions are being made.

Review

Housing Issues (affordable, diverse, "perfect house" for particular area
Discuss other issues as pertinent to specific city
Livable City literature
Eco City guidelines
Discuss what elements are important for community making (landmarks, places to congregate, places for celebration and so forth.)

Prepare recommendations for
Diverse housing including subsidized housing
Growth
Community centers (one-stop schools?)
Xeriscaping, Tree Conservation
Children in the city
Other economy/ecology related issues

IV Governance Committee

Assignment
Plan Mayoral election with best candidates
Appoint Planning Commission/acquaint with issues
Review governmental process and be prepared to intervene during Box City simulation whe needed

Assignment
Be prepared to intervene in Box City process by calling for:

1. referendum
2. mayoral election
3. escorting Mayor out of town so that Deputy Mayor can act
4. what else?

Planning Commission Authority

(Subgroup of Governance committee)
Planning Commission authority: recommends to City Council
Review available literature on

Effects of past zoning
New urbanism (new town planning ala Duany)
Design Guidelines for Seaside
Master Plan Proposal

Discuss
Transportation hubs (include services, day care centers, etc.)
Affordable Housing---all aspects

Assignment

1. Recommend individual building design guidelines for this particular city scenario (front porches, detached buildings, fences, lot coverage, etc.)
2. Interact with other committees
3. Intervention

Be prepared to interrupt Box City process with one of the following

1. historic trail discovered/changes
2. historic site/village discovered/appropriate archaeological intervention
3. catastrophic natural event such as tornado, hurricane, earthquake

Advertising Committee (Optional if enough participants)
Prepare

The word picture of the city
Visuals
Press release
Tourist postcards

Procedure
Review materials in your packet.

No society is healthy without the will to create anew, the will to save the old.

Outdoor Sculpture

The character of urban centers is created not by buildings but by open spaces. Can you imagine New York without Central Park? San Francisco without the Golden Gate bridge?

As your students evaluate the city they have created, they can begin to think about some things they may have forgotten. One organization, **Save Outdoor Sculpture**, thinks that green spaces and monuments are as important as buildings. They quote 19th century essayist, John Ruskin, "The measure of any city's greatness is to be found in its public spaces." How does your city measure up?

In an article by Susan Nichols in *Historic Preservation News*, Nichols comments on the memory recall inherent in outdoor sculpture: "Outdoor sculpture reminds us of our cultural roots, of the people and events that shaped our society, and of our community and national values. Found in virtually every American town, outdoor sculpture is part of our historic fabric. It is a significant component of our public spaces— from Chicago, to Shreveport, from Albany to Albuquerque."

Nichols continues, "This vital cultural resource suffers from neglect, environmental pollution, and vandalism. Outdoor sculptures have become the orphans of America's cultural property. Yet, sculpture has always been a significant component of the American arts and is useful to the achievement of a more complete understanding of our communal and national identities. Provided in so many of these works are the history and ideas of our nation, the records of history, and the reaffirmation of our value as Americans. To allow outdoor sculpture to remain neglected, ignored, and unnoticed is to lose a fundamental aspect of our American heritage. Even more crucial, our neglect of these important works results in their untimely deterioration."

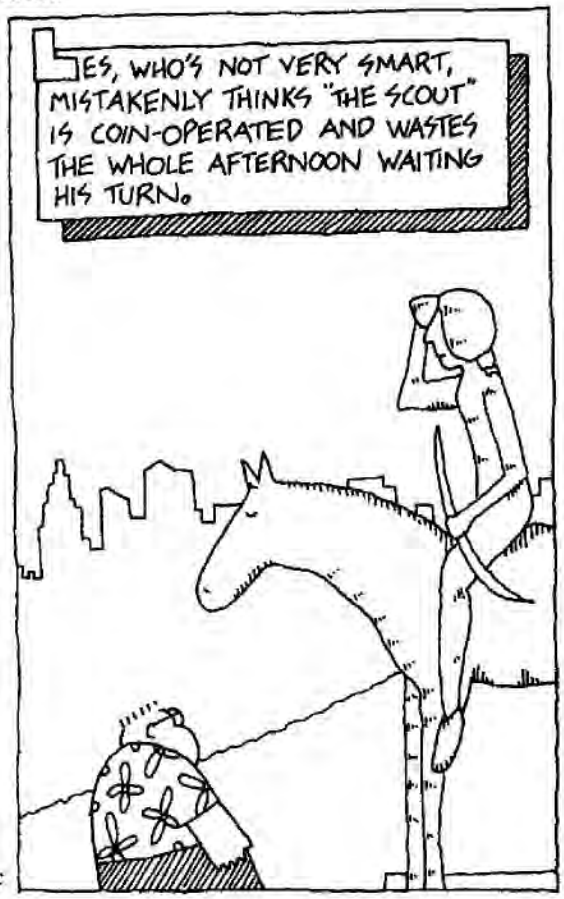
Save Our Sculpture is canvassing the country, locating all outdoor sculpture, documenting the history and present condition of each piece, and adding these findings to the **Inventory of American Sculpture**, which is maintained for public use at the National Museum of American Art, Washington, D.C.

Community Service

It is possible that students might participate in this effort? Determine if such an inventory is taking place in your city. What governmental body would be responsible? Are volunteers needed? At the least, inventory the most well known memorials and sculpture in your city and incorporate them into your **Box City** exercise.

Project Opportunity

A significant celebration year, 2000, brought much in the way of memorials and sculpture, and impacted on public spaces. Look back at the variety of commemorations which celebrated the nation's bicentennial. The beginning of the 21st century should provide an equal opportunity for public manifestation.



Cartoon Credit: Charlie Podrebarac

Outdoor Sculpture

Establish criteria to evaluate the effectiveness of these. What bicentennial memorials and projects were significant? Enduring? Had meaning? Is it possible that the ideas of your school might be considered?

Remember that it was a young student, Maya Linn, who designed one of the most significant memorials of the 20th century, the Vietnam War Memorial. Incorporate a space for a Second Millennium Memorial in your Box City.

Reference. Nichols, Susan. "A Plea to Save Outdoor Sculpture." *Historic Preservation News*. January, 1991. Write SOS, National Institute for Conservation of Cultural Property, 3299 K Street, NW, Suite 403, Washington, DC 20007 for more info.

Outdoor Sculpture can be as simple as a manhole cover or the delicate vegetable and fruit patterns imbedded in the pavement at

After your Box City is complete, stand on a tall ladder and examine the opportunities for public grounds, sculpture, memorials, vest pocket parks, and other ways to celebrate our cities.

Artists Speak Out

Artist and writers constantly evaluate the city through their work. When you look at many of the popular songs that have become standards, you note that they represent Americana in the lyrics that sing of towns and cities and their architectural sites. They also speak of human concerns.

Listed below are lyrics which express frustration and dislike of the direction the built environment is taking.

Written in 1962, the little boxes in this song are the houses built during the post World War II suburbia expansion, with every little house looking just the same. They lament the conformity that has befallen the people who continue to live in these houses. The melody, rhyme and rhythm are as monotonous as the lyricist sees the lifestyle and people.

Little Boxes
by Malvina Reynolds

Little boxes on the hillside,
Little boxes made of ticky tacky,
Little boxes on the hillside,
Little boxes all the same.

There's a green one and a pink one
And a blue one and a yellow one,
And they're all made out of ticky tacky
And they all look just the same.

And the people in the houses
All went to the university,
Where they all were put in boxes
And they came out all the same.

And there's doctors and there's lawyers,
And bus'ness executives,
And they're all made out of ticky tacky
And they all look just the same.

And they all play on the golf course
And drink their martinis dry,
And they all have pretty children
And the children go to school.

And the children go to summer camp
And then to the university,
Where they are put in boxes
And they come out all the same.

And the boys go into business
And marry and raise a family
In boxes made of ticky tacky
And they all look just the same.

Artists Speak Out

A poem which relates to these same concerns of the 1960's is **Squares and Angles**, translated by Seymore Resnick.

Squares and Angles
by Alfonsina Storni

Houses in a row, houses in a row,
Houses in a row.
Squares, squares, squares.
Houses in a row.
People already have square souls,
Ideas in a row,
and angles on their backs.
I myself shed a tear yesterday
Which was - good heavens - square.

Joni Mitchell's, **Big Yellow Taxi** address environmental concerns and the ubiquitous parking lot which has overtaken, as Mitchell expresses it, "Paradise."

Big Yellow Taxi
by Joni Mitchell

They paved paradise
And put up a parking lot
With a pink hotel, a boutique
And a swinging hot spot
Don't it always seem to go
oThat you don't know what you've got
Till its gone
They paved paradise
And put up a parking lot.

Took all the trees
And put them in a tree museum
And they charged all the people
A dollar and a half just to see 'em
Don't it always…

Hey farmer, farmer
Put away that DDT now
Give me spots on my apples
But leave me the birds and the bees
Please!
Don't it always…

Late last night
I heard the screen door slam
And a big yellow taxi
Took away me old man
Don't it always…

Observe the Box City you created and write a song or poem about it.

Referencel Thanks to Sue Farley and Donna Maddox for their research.

Place is where we are. Place is where we want to be. Place is what we want to create.

Theodore Holippa, Ojibway

Box City and Beyond

The City has been built, the placement and replacement has taken place. What next? What else is there to do with Box City? These events can take place after a classroom Box City or a Festival Box City. Help students reflect on the Box City they have created. For younger students, provide cardboard tubes or "lookers" (paper towel or other) to focus their thinking as they critically gaze at what they have created.

Evaluation

Create a "Report Card for a Building" or a community using the guidelines you set up for developing the city. You may have used the theme of Kid Friendly, or Sustainable, or used the tenets of Traditional Neighborhood Development or New Urbanism. As with all activities, the creation of such activities is not necessarily the instructor's responsibility. Older or the most motivated students can participate in the creation of this activity and others. See *An Architectural Value System* in **Box City** or *Report Card for a Building* in **Walk around the Block.**

Box City News

Students can write an article with illustrations for *The Box City News*. Younger students may simply draw a view of the city.

Travel Brochure

Who will want to visit the city? What will they experience? What should they see first? A travel brochure or video (an opportunity to bring in technical skills) is a natural. This might be presented to guests or parents in order to help focus *their* thinking.

Grid the City

Set cones at intervals around the edge (in a gym, use about 7 cones down one side, 5 cones across the other way) making 24 grid spaces. Station a student at each cone, with the job of string holder, to create a grid. Between each pair of cones, seat another student who holds up a coordinate sign .e.g.1,2,3... A, B, C. This engages two classes worth of students at a time. Then we move people around inside of the grid, doing directional stuff, figuring out what grid is where, etc.

Michael Gray's Box City, Young Canadians Challenge.

Scale Plan View

And finally, if we have plenty of spare time and had prepped the kids with a grid drawing activity beforehand—have every student accurately draw a scale plan view of what's in his grid. Put the squares up all together on a wall to make a great map of the city,

This is a way to remember the city after it is gone.

Scavenger Hunt

Everyone likes a good Scavenger Hunt or City Game. The older students can create them. Run them off for people to do as they tour the city. Keep them to about 10 items, with simple illustrations, sometimes with tie-ins to their real town buildings, if they replicated their own communities. Ask questions like: Can

you find the clock tower? What time is it in Box City? Where is the eagle on a flagpole? What does it stand for? How many domes can you find? Can you find a building with three round windows? Can you find the hospital on Washington Street? Who is sitting on the bench in front of town hall?

The Layout

Pat Rossman of Madison's Monona Terrace Convention Center Terrace Town Box City project, has devised a base model layout material that really works for her class. She buys large tarpaulins from a building supply place like Home Depot and paints on it with grey paint. The village is gridded and numbered so that students have an orientation as to where they are (and develop mapping skills). They tell everyone in the school about their Box City project, inviting a great deal of comment and enthusiasm for the next years.

World Town Planning Day

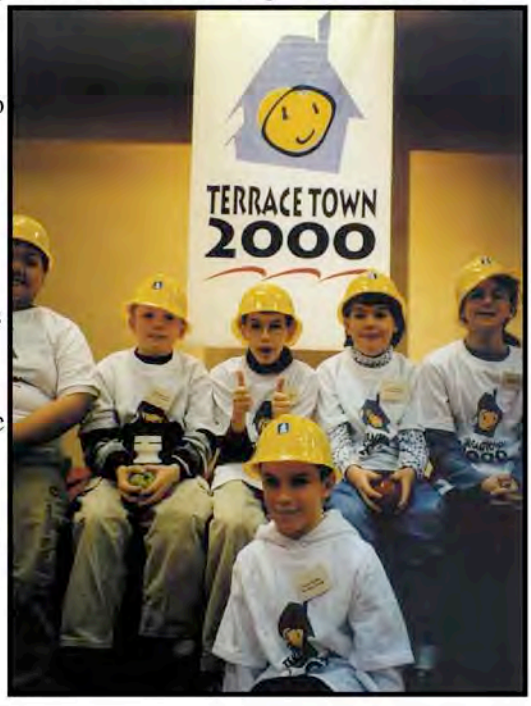
In 2001, World Town Planning Day was November 8. Visit www. planning.org./abtaicp/world.htm for more information.

Placement of buildings

When Katherine Glass conducts a Box City (Tabletop), each student makes a building and in addition makes his/her own house. The buildings are all placed before the students are asked, "Now, where would you like for your house to be?" A lively discussion and a lot of rearranging take place in order to develop the neighborhoods that the "citizens" want.

The Wild Card

An assessment of sorts (and excitement) involves the introduction of a "Wild Card" building after the initial Box City is completed. Ask a the City Planner, Neighborhood Activist, or design professional who is coming to help with the placement to produce this building unbeknownst to the students. It could be the building that is usually not initially welcome in the neighborhood: a halfway house, an inappropriate bookstore, multi-family housing, or a prison,

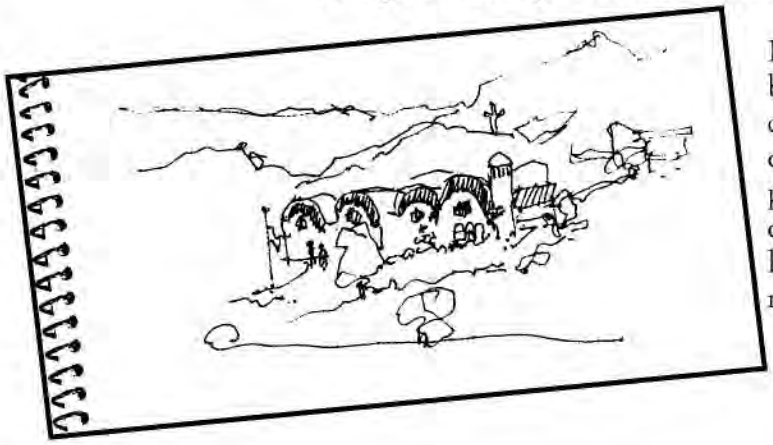


The Wild Card could be a zoning issue such as Zero Population Growth or a Green Belt. It could be the introduction of a use not formerly allowed such as a "Granny Flat" or an outbuilding. It could be a building that is overscale (Big Box Store, hotel or skyscraper) or a new plant that would offer benefits to the community, but could be environmentally or aesthetically incorrect. As the students deal unexpectedly with this new issue, the skills they have developed during the Box City process will become apparent. Refer to the GeoBlock Activity, Natural and Manmade Disasters, in the **Box City** curriculum.

This element was a big success at Box City II at Monona Terrace in Madison, WI. The local paper featured this outcome as an important part of the learning process. Web site: mononaterrace.com/educatorspage/workshops/bc-standards.php

Arcosanti, Cordes Junction, north of Phoenix Arizona.

Design the Biosphere or Arcosanti Project

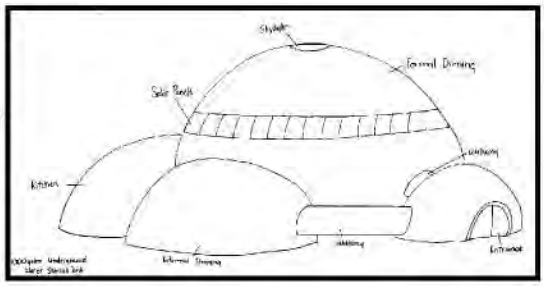


Use the criteria addressed in Box City/*Planning for the Future,* but to develop complete criteria, consult one of the many books or reference articles about this project that are available. Find out what recent developments have changed the project goals or management of either project.

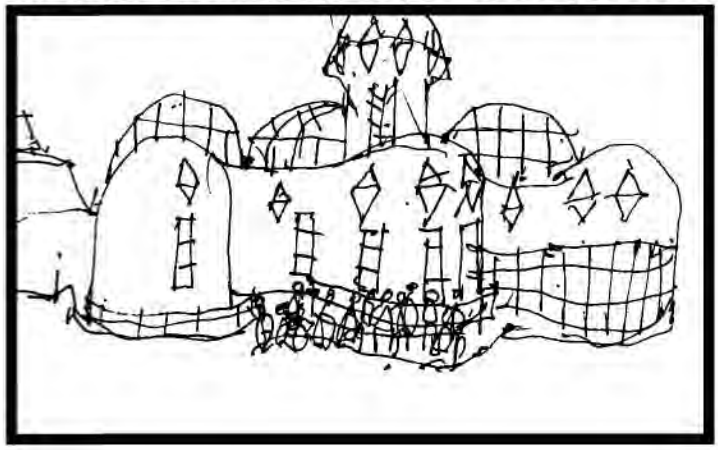
Write about being a Biospherian or Arcosantian. Keep a log of what is going on. Discuss the technology. Explain how the personal relationships **might** work or **not** work in these two places.

Extension

Designing a Space Station is an extension of this idea but requires certain technological base knowledge information to make the designing experience a "real" one as opposed to an imaginary place. Both approaches are interesting. Ask your local AIA or planning chapter to assist with a design charrette such as the one carried out by AIA/Iowa. See the reference below.



Reference: AIA/Iowa. Design a Lunar Restaurant. 1000 Walnut, #101, Des Moines, IA 50309



Biosphere, Arizona desert, near Tucson

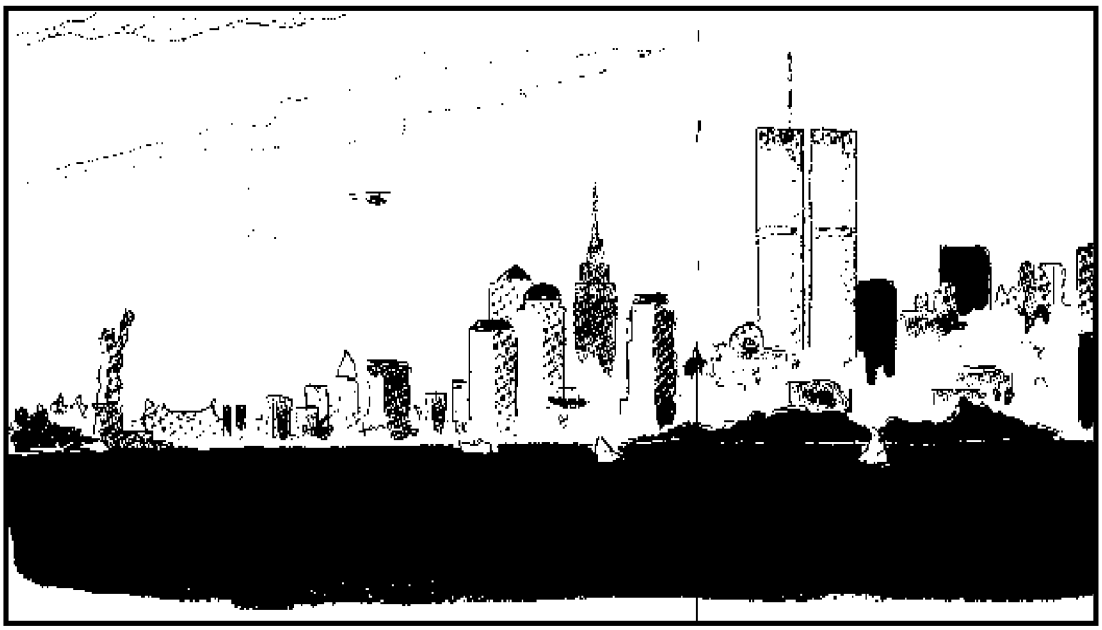
15 Ways to Design a Better Suburb

Use this list as criteria when planning your GeoBlock or Box City. Use it as a Report Card when you are evaluating how well your city will work.

1. **Give up Big Lawns**
2. **Bring Back the Corner Store**
3. **Make the Streets Skinny**
4. **Drop the Cul-De-Sac**
5. **Draw Boundaries**
6. **Hide the Garage**
7. **Mix Housing Types**
8. **Plant Trees Curbside**
9. **Put New Life into Old Malls**
10. **Plan for Mass Transit**
11. **Link Work to Home**
12. **Make a Town Center**
13. **Shrink Parking Lots**
14. **Turn down the Lights**
15. **Think Green**

This helpful list comes from a **Newsweek** article, *Bye Bye Suburban Dream, 15 Ways to Fix the Suburbs*, May 15, 1995. To learn more, you will want to read the entire article (in the same issue) and other updated information about Traditional Neighborhood Development

An Opportunity for Rethinking



Credit: Elisha Cooper

Written: Sept. 14, 2001, World Trade Center Attack

A tragedy has occurred. As a result, two very tall buildings have crumpled. These buildings were a landmark on the skyline of an important city. They could not be anything else. They were one-half to one-third taller than any other building nearby.

Many lives were lost. They were lost in an incident that broke all of the rules of war. Innocent people, not individuals with military-preparedness, were killed. More people than have been killed in any other single day in the history of our country.

What is our response to this new site, the **former** World Trade Center? It **is** the first battleground of what is being called a retaliation, or by some, The New War. We do not know now the scope of this response or when or if it will ever end. How do we treat this ground? How can we retain its old story and tell the new story that it reveals? How can it become a positive response to incredible feats of heroism? How can it be such a powerful symbol that we make sure, as a country, that nothing like this can ever happen again? How can we not trivialize it and put it in the category of just another memorial that will be fought over and degraded to a political trade off?

This is property that is very valuable in a very dense city. The previous building response was to layer buildings and people upwards in a three dimensional way instead of stretching it out in the usual two dimensional manner, an urban sprawl solution in a different dimension. Author David Macaulay said, "The human response to walking in the area of these buildings was to make me feel **even** smaller." Is this how we want our buildings, our communities to make us feel?

Have we learned anything in the last 100 years about buildings or about behavior? Was the "Ego Building" of the 80s and 90s just another way to once-again subvert the environment to our own needs. And what did this symbol of power and money say to those who are less fortunate,

An Opportunity for Rethinking

How do others—less fortunate, impoverished, dis-empowered—react to this kind of a statement? Could this construction of out-size buildings be compared to the playground bully who acts in an "in your face" manner? "I'm bigger, I'm taller, I'm richer, I will win at this game." In other times, we would not let this behavior "go by" on the playground. It **is** time for America to begin again to govern its own behavior. It **is** time for America to realize that as adults act, so do our children, and as we have learned the hard way, so do our global neighbors. We have "done" unto others, and it is being "done" to us.

We have built "in your face" buildings; our behavior in foreign lands has bestowed on us the name of "Ugly American"; we have acted as a "Me First" country for too long. And we are reaping the results of that behavior. This incident just magnified what has been happening every day in every way.

It is going to be a long time before we know exactly, and we may never know, why anyone could hate us so much that they would perform this irrational act. There are many components that will need to be addressed. However, there are parts of it that we can understand, and one is that when you are as lucky as Americans have been, then you need to act smaller, act in a more humble way, give more, and understand that always being the winner of the game, may not win the war. In fact, it has started The New War.

Let us not automatically go back and do exactly as we would have done on "The Day before Tuesday." Can we think of a different way to address this site? Can we end the "Mine's Bigger" mentality that has existed since the first buildings of skyscrapers: the contest that has led to the tall buildings of New York, Chicago, Hong Kong, and wherever money and power exist. Can we correct the behavior that has governed us since the first white man came to America? Can we say, "What can I learn here?" instead of "What can I force on this place?" **Design** is not the only answer, but it is one part of the answer.

It is too soon to use the old trite response, "From something bad will come something good." It is too soon to begin to work with the children in our schools on an answer for this site. It is **not** too soon for the grown-ups (all of them, not just the design professions) to understand that what we build and how we build it speaks of who we are, how we treat people, and as we have learned this week, how people treat us. **There has to be another way.**

Sept. 14, 2001

A note from Dean and Ginny Graves, founders of CUBE and Box City

On Tuesday of this week, the worst incident in the history of espionage in the United States occurred. The World Trade Center (WTC) buildings (the tallest buildings in the United States and second tallest in the world) were hit intentionally by suicide-pilot planes. As I write this, the injury count is unknown, but so far, no one has been removed alive.

How one responds to a tragedy of this order can never be anticipated even if that response is in an area of one's interest or expertise. Dean and I immediately discussed whether or not there would be more tall buildings built and how this monstrosity could be explained to children. Since the WTC buildings were constructed in the era of the "Ego" Building style—mine's bigger, mine's taller, mine can do more things—we had hoped that there would be another design response that would be appropriate for this time and place. By Thursday, the developer of the World Trade Center had announced that the buildings would be rebuilt.

An Opportunity for Rethinking

On Friday morning I was fortunate enough to accidentally catch the National Public Radio commentary of David Macauley, author of *Pyramid*, Cathedral and many more books about architecture. David is a national advisory board member of CUBE. David clarified our thinking even more by discussing the buildings as just another form of urban sprawl, a vertical form. He also commented that we had made the World Trade Center a monument, but that we can not mix up our monuments with places where people work and live. They are two different things.

Dean and I are responding to the incident, at least today, in the way that we have been able to explain the value of community to the thousands of teachers who have participated in the community-based education network, in a way that children might understand, in a way that will address the things that we have learned out our environment and the needs of the people who share it. It is simplistic, but it is one way to think about the events of this week and to put them in some kind of order. A rethinking of the site is a positive response to what until now has been too vast, too much, too awful to comprehend.

Update on World Trade Center Design Plans

Six years since the Sept. 11 event and in spite of many public meetings and discussions, final solutions for the World Trade Center are not resolved. Use the Web search engine to update the status of the Center's design today. Explain how designing the site is very much like designing a small town or city area with the exception that strong emotions are a part of the solution. Is it fair to design a solution so soon after the tragedy? Have we learned anything from this process?

Background material

This project is reminiscent of a design challenge that occurred around ten years ago, another wake-up call. People in the design professions were asked how they would designate a dangerous nuclear-contaminated site too toxic for anyone to approach thousands of years from now. However, it would be a "message or sign" that would have to work for the ages. People in a time and place very far from this time, people who no longer spoke this or any current language, would need to be able to identify that this was a site that was ruined forever and that they should not approach it.

References:

Cooper, Elisha. *A Year in New York*. 1995: City and Company. p,76. The illustration cited above is included in this delightful book. We will never look at this image and see it the same way again.

Graves, Dean and Ginny: "How High is Too High?", Box City. Prairie Village, KS, 2001.

Lemonick, Michael D. "Should They Be Rebuilt?" Sept. 24, 2001. p. 66.

New York Times Magazine: "To Rebuild or Not." Sept. 23, 2001. p. 18.

Vidler, Anthony. "A City Transformed: Designing "Defensible Space' ". Sept. 23,2001: New York Times, p. 6WK.

Only Connect.

To grab my interest, buildings and designs will have to show that they can pull together people, things and ideas that have become fragmented. I want to see new links between transportation and public space; between government and the intellect; between the-natural environment and the cultural imagination.

Herbert Muschamp, New York Times, 1992

For Immediate Release

To participants:

Participation in Box City is usually a wonderful positive public relations opportunity for your class and your school. Your local newspaper or shopper, your school district newsletter, and a personal radio/TV station contact are possibilities. If your district has an active public relations program, the director of that program can be helpful. We are providing you with the attached press release example and recommend that you enclose it with a school or organization letterhead and cover letter that contains something similar. You will want to rewrite the release to include particular details for your Box City experience or your outreach project. If a funder is involved, this is a good time to provide him with media exposure as well.

It is necessary to have a critical mass to change the thinking of the world. It is not just by reaching only fourth graders, or seniors, or citizens of voting age. Every exposure of your community-based education projects is an opportunity to expose others to the ideas of community involvement.

Suggested content for a Press Release. Be sure to ask if your newspaper/radio/television source would like info Emailed, Faxed or Hard Copy mailed. If text is involved, double space and use readable font size, usually 12 point.

Press Release Example

Contact Information: Your Name and Best Phone #
Photo Opportunity: Date, approximate time, and your phone number at the site as well as office phone.
Re: CUBE kicks off training year with Box City 99

Over 70 participants, educators, architects, planners, concerned citizens and student architects participated in Box City 99, an innovative program designed to educate and empower Kansas City's youth in the public consultation process. This pro-active community learning tool empowers students to take a leadership role in educating their peers and other community members to the benefits of youth inclusion in planning. This is done through the creation of a community made out of boxes and the organization of that community with participants playing the role of typical community members. Box City, now a nationally acclaimed resource for both youth and adults, began in Kansas City in 1969 and will celebrate its 350th anniversary in 2004.

The participants included nine schools, four school districts, and two universities. It will result in the training of over 3,500 students. Underwriting for Box City 99 included The American Institute of Architects/Kansas City, The Metropolitan Energy Center, The Kansas Arts Commission, NationsBank and American Century Companies, Inc.

Laurie Bottiger, co-chair of the CUBE Education Committee and an educator at Center Middle School, brought an entire interdisciplinary team: science, social studies, gifted, language arts, home economics, special education and art. Liesa Schroeder, Santa Fe Trail Elementary, sponsored 10 educators from within the Independence District. "Integrated or thematic learning is the way to teach. We have better retention and more student investment. Community-based education, such as the training offered by CUBE, is the ideal model for what we want to accomplish."

Sue Minor, chair of the Box City '99 event, will follow the classroom visits and assist the educators with special requests. A veteran of ten years of third grade Box Cities, Sue remarks,

For Immediate Release

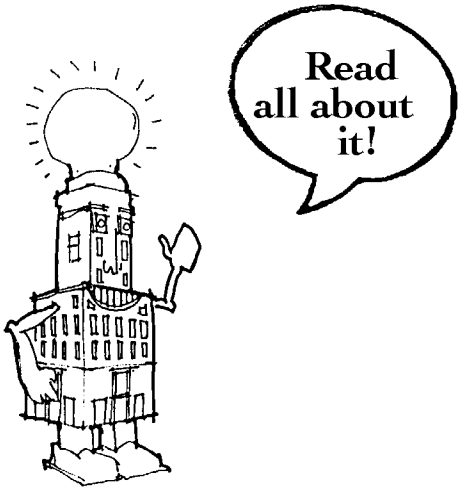
"Cooperative learning and higher level thinking skills are a natural outgrowth of the Box City experience. In addition, kids love it. A win-win situation for all concerned." Students will display their work throughout the year and at a community event to be held in the spring of 1999.

Educators will be assisted by architectural students from the University of Kansas Urban Design Studio and UMKC School of Architecture. Glen LeRoy, professor for the Urban Design Studio, cites the advantages of the architectural student involvement. "This gives our students a chance to practice what they have learned in a non-threatening and supportive environment. In addition, Box City is a consensus process that they will use many, many times in their professional lives."

CUBE is a community-based education organization providing workshops, curriculum and technical assistance to create an awareness of America's special places and to enable young people and their grown-ups to take responsible community action. Founded in 1983, it develops curriculum materials, produces manipulatives, publishes a newsletter and books, and recognizes outstanding built environment educators. Consult the web site for more information about building cities, building kids: www.cubekc.org.

Post Event

By this time you will have established contacts with local media. Try to get a feature story following this activity or a writer/photographer to visit the Box City site if it remains standing for more than the event day. Some schools move to a public building where it could be on display for a month or more. Provide handout materials explaining what the students were trying to achieve and asking for the public's comment. Drawing parents and other adults into the Box City activity is a way for your knowledge and training to spread throughout various age groups.



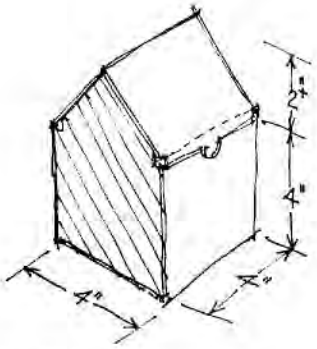
Ordering Information

For the latest ordering information (shipping, handling, new items), visit the archiStore at the web site:

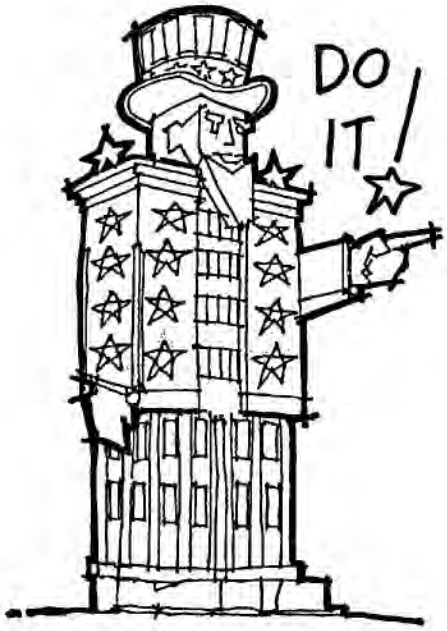
http://cubekc.org/archistore.html

What's available?

Box City Curriculum
Box City On Line
Box City Classroom Pack
Box City Festival Pack
Table Top Box City
Walk around the Block
Community Connections
Picture This!
Special Offers



4 "Gable Box



Click here !

A limited number of hard copy Box City (printed) is still available. Please inquire.