

NATIONAL BUILDING MUSEUM

EDUCATOR RESOURCE PACKET GRADES K-5



CITY BY DESIGN



National Building Museum

About the National Building Museum

The National Building Museum is America's leading cultural institution dedicated to advancing the quality of the built environment by educating people about its impact on their lives. Through its exhibitions and educational programs, including innovative curricula for students, as well as online content and publications, the Museum tells the stories of the world people design and build.

The Museum is an independent, non-profit institution and is located in a historic landmark structure at 401 F Street NW, Washington, D.C. 20001. Connect with the Museum online at www.nbm.org, on Twitter at [@BuildingMuseum](https://twitter.com/BuildingMuseum), and on Facebook at www.facebook.com/NationalBuildingMuseum.

For Students and Families

The Museum's youth programming has won the Washington, D.C., Mayor's Arts Award for Outstanding Contributions to Arts Education and been recognized by the National Endowment for the Arts. Each year, 50,000 young people and their families participate in hands-on learning experiences at the Museum. The Museum offers school programs for grades preK–9 as well as three innovative outreach programs for secondary school students. The Museum hosts three free family festivals annually; drop-in family workshops; programs helping Cub and Girl Scouts earn activity badges; book-of-the-month readings; and more.

Table of Contents

To the Educator | 4

Program Description: Goals, Objectives, and Skills Used | 5

National Standards of Learning | 6

Lessons Matrix | 9

1. City and Urban Planning Essentials

What is City Planning Teacher Reading | 12

Which Buildings and Places Go Where? Teacher Reading | 14

City and Suburb: An Overview of Urbanization in the United States Teacher Reading | 18

2. Lessons on Building a Foundation

Understanding Land Use | 26

Land Use Posters | 28

I Spy Buildings and Places Student Worksheet | 34

My Perfect City | 35

My Perfect City Student Worksheet | 38

3. Reinforcement Lessons

Mixing It Up | 40

Where You Live: Take a Closer Look | 43

Fun Field Trips: Exploring Your Community | 44

4. Resources

Building Survey | 46

Architecture and City Planning Vocabulary | 48

Books | 50

Websites | 53

Local Agencies | 54

To The Educator

Thank you for selecting the National Building Museum for your field trip. This Educator Resource Packet is designed to supplement the *City by Design* program and is intended to help both teachers and students, kindergarten through grade five, become familiar with city planning concepts.

The information, lessons, and activities found in this packet should help you teach city planning concepts to your students. The lessons suggested in this booklet are designed for classroom use before and after your students visit the Museum. They encourage young people to explore the complexity of cities and help them understand the impact of people's everyday decisions on the places where they live, work, and play.

Why Study City Planning?

Each of us plays a part in creating livable cities. The layout of a community reflects the beliefs and values of the people who live there. When students learn about the variety of forces and people that shape communities, they can become more responsible citizens and learn how they can impact the quality of life in their own communities. Students are able to identify and prioritize the services and amenities that affect a city and address real problems a city faces, such as traffic, pollution, waste disposal, transportation options, and sprawl.

Why Use Design as an Education Model?

The *City by Design* program and all other education programs at the National Building Museum inspire students to examine the people, processes, and materials that create buildings, places, and structures. All of the Museum's youth education programs use the design process as an educational model. This model requires young people to identify problems or needs, imagine solutions, test them before building a suitable design, and evaluate their ideas throughout the process.

Learning by doing is central to design education in general and to the *City by Design* program in particular. After engaging in a variety of hands-on lessons that stimulate exploration of cities, communities, and the built environment, students gain a fresh perspective on their surroundings and begin to understand how design decisions impact the built environment.

What Are the Learning Benefits?

The *City by Design* program and supplementary lessons in this Educator Resource Packet meet national standards of learning in language arts, science, social studies, technological literacy, and visual arts. The specific standards are described on page 6. The lessons in this curriculum encourage young people to explore and recognize how and why cities are planned. Through hands-on, interdisciplinary lessons that address multiple learning styles, the *City by Design* program encourages and fosters life skills such as critical thinking, problem solving, team building, and communication.

The Educator Resource Packet Includes:

- A list of national standards of learning addressed in the program.
- A matrix of optional lessons to enhance students' learning experience.
- Introductory lessons to more fully prepare students for the *City by Design* program.
- Reinforcement lessons for use after the Museum field trip to help students continue their exploration of city planning.
- Vocabulary and lists of supplementary resources.

Program Description

Each of us plays a part in creating a livable city. The layout of a community reflects the beliefs and values of the people who live there. In this museum program on land use, students are introduced to the variety of forces and people that shape communities. While at the Museum, students identify and prioritize the services and amenities that affect the large community known as a city and address real problems a city faces such as traffic, pollution, and waste disposal. While making their own buildings out of boxes and colorful materials and placing them in a model city, students come to understand the complexity of issues associated with building a modern community and how they can contribute to improving the quality of life in any community, including their own. After the program students take their buildings home with them.

Goals

After completing the *City by Design* program students will:

- Have an increased awareness of the communities in which they live.
- Understand how people's use of land and buildings affects the built and natural environment.
- Understand the numerous forces that shape cities and communities.
- Understand the impact of transportation choices—walking, driving, riding trains, buses or Metro, and biking—on the natural and built environment and on the way people live.

Objectives

During and after completing the *City by Design* program, students will be able to:

- Identify functions and places that people need and want in a city.
- Categorize buildings and places by use.
- Identify issues facing modern cities, such as pollution, traffic, transportation, waste disposal, and urban sprawl.
- Propose solutions for environmentally friendly and livable cities.
- Construct buildings for a model city out of recycled materials.
- Identify various ways that cities grow and change over time.

Skills

- Identification
- Analysis
- Problem solving
- Cooperative learning
- Experimentation with art materials
- Evaluation
- Application of art-making techniques

National Standards of Learning

City by Design meets local and national standards of learning in several disciplines. The national standards are listed below by discipline.

Standards for the English Language Arts, National Council of Teachers of English & the International Reading Association

Students will...	Standard
conduct research on issues and interests by generating ideas and questions, and by posing problems; they gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.	7
use a variety of technological and informational resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.	8

Principles and Standards for School Mathematics, National Council of Teachers of Mathematics

Students will...	Standard
solve problems that arise in mathematics and in other contexts.	Problem Solving
apply and adapt a variety of appropriate strategies to solve problems.	Problem Solving

National Science Education Standards, National Research Council

Students will develop an understanding of...	Standard
structure of the earth system.	D
abilities of technological design.	E
science and technology.	E
populations, resources and environments.	F
science and technology in society.	F

Curriculum Standards for Social Studies, National Council for the Social Studies

Students will...	Standard
analyze and explain the ways groups, societies, and cultures address human needs and concerns.	1
compare ways in which people from different cultures think about and deal with their physical environment and social conditions.	1
identify and use key concepts such as chronology, causality, change, conflict, and complexity to explain, analyze, and show connections among patterns of historical change and continuity.	2
describe how people create places that reflect cultural values and ideals as they build neighborhoods, parks, shopping centers, and the like.	3
create, interpret, use, and distinguish various representations of the earth such as maps, globes, and photographs.	3
propose, compare, and evaluate alternative policies for the use of land and other resources in communities, regions, nations, and the world.	3
work independently and cooperatively to accomplish goals.	4
explain and illustrate how values and beliefs influence different economic decisions.	7
show through specific examples how science and technology have changed people's perceptions of the social and natural world, such as in their relationship to the land, animal life, family life, and economic needs, wants, and security.	8
recognize and interpret how the "common good" can be strengthened through various forms of citizen action.	10

Standards for Technological Literacy, International Technology Education Association

Students will...	Standard
understand technology and society, including the effects of technology on the environment and its influence on history.	5, 7
understand design, including the attributes of design, engineering design, as well as the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.	8, 9, 10
understand the designed world, including transportation, manufacturing, and construction technologies.	18, 19, 20

National Standards for Arts Education, Visual Arts Category, Consortium of National Arts Education Association

Students will...	Standard
understand and apply media, techniques, and processes.	1
use knowledge of structures and functions.	2
choose and evaluate a range of subject matter, symbols, and ideas.	3
reflect upon and assess the characteristics and merits of their work and the work of others.	5

Lessons Matrix

Use the following Lessons Matrix to prepare students for their visit to the National Building Museum and to build upon what they have learned during the *City by Design* program.

Lesson	Purpose	Standards of Learning	Duration	Materials Needed
Under- standing Land use pp. 26–33	Introduce students to the idea of a land use plan and the different land use categories.	<u>Mathematics</u> Algebra <u>Social Studies</u> 3, 4 <u>Visual Arts</u> 1, 3	2 class periods, 45–60 minutes each	<ul style="list-style-type: none"> ▪ copies of land use category handouts ▪ paper ▪ pencils ▪ crayons or markers ▪ computers and access to internet (optional) ▪ newspapers or magazines with images of buildings
My Perfect City pp. 35–38	Identify the needs and wants fulfilled by city buildings.	<u>Mathematics</u> Algebra <u>Social Studies</u> 3, 4 <u>Visual Arts</u> 1, 3	1–2 class periods, 45–60 minutes each	<ul style="list-style-type: none"> ▪ copies of student worksheet ▪ paper ▪ pencils ▪ crayons or markers
Mixing it Up: Zoning Today pp. 40–42	Identify the benefits of mixed land use.	<u>Mathematics</u> Algebra <u>Social Studies</u> 3, 4 <u>Visual Arts</u> 1, 3	1 class periods, 45–60 minutes	<ul style="list-style-type: none"> ▪ paper ▪ pencils ▪ rulers ▪ crayons or markers
Where You Live: Take a Closer Look pg. 43	Connect city planning to larger society using these projects or homework assignments.	<u>Mathematics</u> Algebra <u>Social Studies</u> 3, 4 <u>Visual Arts</u> 1, 3	Teacher's Choice	<ul style="list-style-type: none"> ▪ Teacher determines
Fun Field Trips: Exploring Your Communi- ty pg. 44	Use the community as a source for city planning exploration and encourage students and families to explore their neighborhood together	<u>Language Arts</u> 4 <u>Mathematics</u> Algebra <u>Social Studies</u> 4 <u>Visual Arts</u> 1, 3	Teacher's Choice	<ul style="list-style-type: none"> ▪ Teacher/family determines

1

CITY & URBAN PLANNING ESSENTIALS

The following information is designed to introduce you (the educator) to the basics of city and urban planning. For additional information about city and urban planning, refer to the listings of books and websites found in the Resource section. For definitions of any unfamiliar terms used in this section, please refer to the vocabulary list in the resource section.

What is City Planning? Teacher Reading

Which Buildings and Places Go Where? Teacher Reading

City and Suburb: An Overview of Urbanization in the United States Teacher Reading

What is City Planning?

What if new buildings were built anywhere? What if there weren't enough parks and open space to break up the spaces between buildings? What if roads just crisscrossed each other any which way? That city might be a mess!

Although it's not something we think about every day, the location of buildings, parks, roads, and public transit are planned. Planning is a process of decision-making, allowing cities and communities to meet the needs of all people in the most efficient way. Planning focuses on the design of the physical or built environment, which in turn affects the programs and services that are or can be provided.

What is a Land Use Plan?

A land use plan is a tool (it could be a visual map or a written document) that explains how land will be used in a community, where different uses (e.g., open space, commercial, residential) are located, and the kinds of buildings and spaces that serve those uses. A land use plan sets goals for the area to allow for future change and growth in a community.

In order to create a plan, buildings have been assigned different land use categories according to their function. There are five different land use categories that are commonly used in city planning and will be used during these lessons:

- residential
- commercial
- institutional
- industrial
- open/public space

On a land use map each category is represented with a different color. For a list of buildings commonly associated with each land use category see page 14. For a sample land use map of a portion of Washington, D.C. see page 16. Some buildings or areas do not belong in just one land use category. Buildings may have apartments on the top floors and stores on the ground floor. This type of building would be called a mixed-use development, and it would be assigned to a mixed-use category that would allow both commercial and residential uses on the land. Mixed-use areas allow buildings that serve multiple uses to exist in the same area. Mixed-use neighborhoods allow people to live closer to the services they need and want. On land use maps, mixed-use areas are designated by using striped colors to represent multiple land use categories.

When designing a community, people need to consider how much land should be used for buildings and how much should be reserved for open space and parkland. Communities also need to consider how the environment will affect the layout of the city: for example, the placement of a water-treatment plant near a water source or a landfill placed at a distance from runoff sites.

State and federal laws also affect community planning locally and nationally. Communities use various tools to organize buildings and land. While a land use plan lays out growth for towns, zoning laws specify where buildings can be located. Zoning laws are regulations that manage development. Zoning laws regulate the distance between buildings of various types, for example, they can restrict the construction of residential buildings adjacent to industrial development. Planning Commissions and City Council members can allow for exceptions to these laws.

Who Does the Planning?

There are many people and organizations that influence the city planning process. They include city planners, city or town councils, developers, business owners, organizations, and residents. Their work results in laws and land use plans. City planners play a key role in the planning process and act as coordinators or negotiators, helping to synthesize the needs, wants, and ideas of the many stakeholders. Planners help identify the problems in the city, set goals, and determine possible solutions. Planners are responsible for integrating the various parts of the land use plan, and for helping others see the impact of these decisions. There are many different types of planners including city planners, urban planners, and regional planners.

Planners: Analyze the land and its uses; provide guidance about those uses and their adherence to local, state, and federal policy. Facilitate the public planning process. Planners involved may include city planners, who help develop a plan for the whole city, urban planners, who may concentrate on a particular part of the inner city, and even regional planners, who help develop plans for a larger region that includes multiple cities.

Citizens: Elect local officials and participate in neighborhood groups and advisory commissions as part of the planning process.

Developers/Property Owners: Propose and provide resources for new development. Participate in the public planning process.

Local Government (City/Town/County Councils and Planning Commissions): Influence the way communities look and function by passing and applying laws that dictate land use. Represent the needs of the citizens during the planning process.

Which Buildings and Places Go Where?

There are various ways in which to categorize land and buildings, and each community uses slightly different definitions and names for each category. The categories and buildings below represent general definitions of land use categories and how they are used.

Residential—Yellow

Places where people live

- Single family home
- Apartment building
- Condominium
- Townhouse
- Retirement home
- Duplex
- Mobile home

Commercial—Red

Places where people buy and sell things

- Grocery store
- Clothing store
- Bank
- Gas station
- Shopping mall
- Pharmacy
- Office building (business transactions occur in office buildings)
- Sports arena
- Movie theater
- Restaurant

Institutional—Blue **Places where people get help, learn, or receive government services**

- Hospital
- School
- Library
- Place of worship (e.g., mosque, church, synagogue)
- Police station
- Fire station
- City Hall
- Community center
- Museum and zoo
- Courthouse
- Military base
- Government building

Industrial—Purple **Transportation centers and places where things are made, disposed of, or processed**

- Landfill
- Trash transfer station
- Recycling center
- Water-treatment plant
- Power plant
- Factory
- Transportation facilities (e.g., airport, train station)

Public Space and Parks—Green

Places where people play, exercise, or enjoy nature

Open space can be included in other land use categories or be a separate category. Open space is important because in areas where many people live and work, public plazas or small parks allow people to enjoy the outdoors and nature. Open space also breaks up the expanses of asphalt or concrete, thereby reducing the urban heat island effect.

- Park
- Playground
- Town square
- Plaza
- Hiking and/or biking trail
- Recreation center
- Basketball or tennis court
- Monuments

Mixed-Use— Combination of Colors

Places that serve more than one function

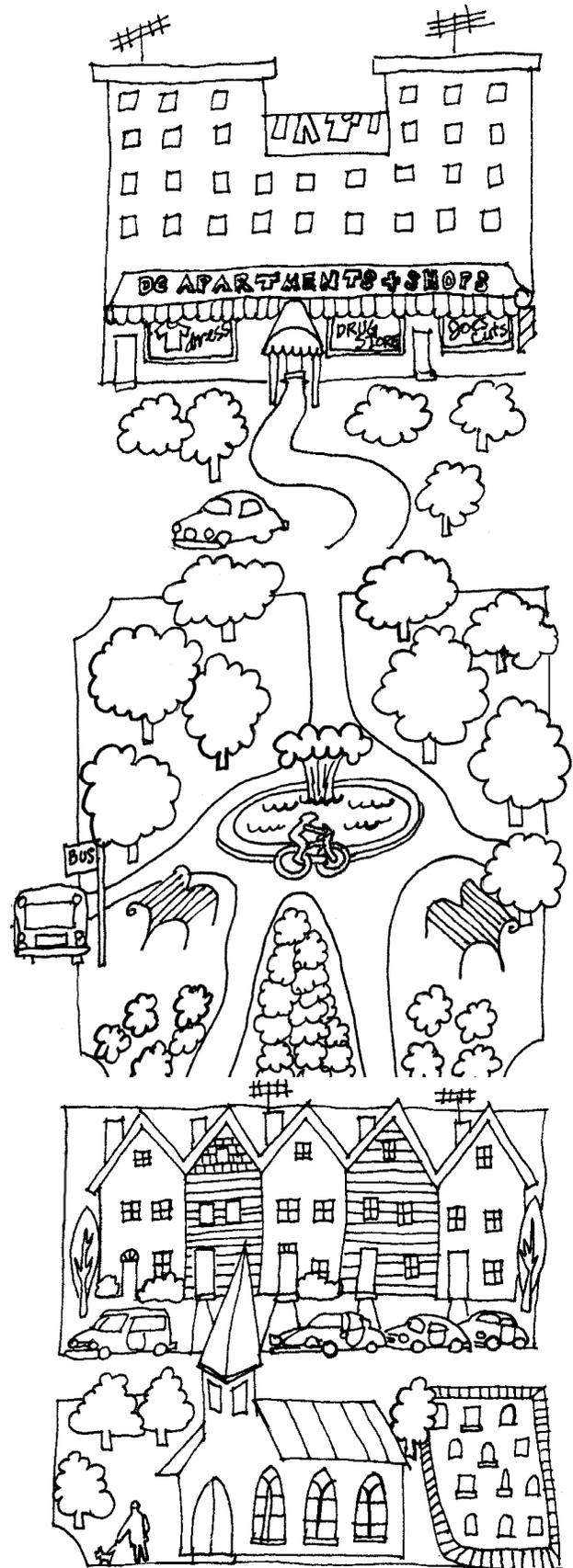
Not all places can be assigned to just one land use category. Those buildings or areas of a community that serve more than one function are called mixed-use developments. Mixing buildings of different purposes together allows people to live closer to the things they need and want. Also, mixed-use developments encourage people to use forms of transportation other than the car, thereby reducing traffic and parking problems, and improving people's health.

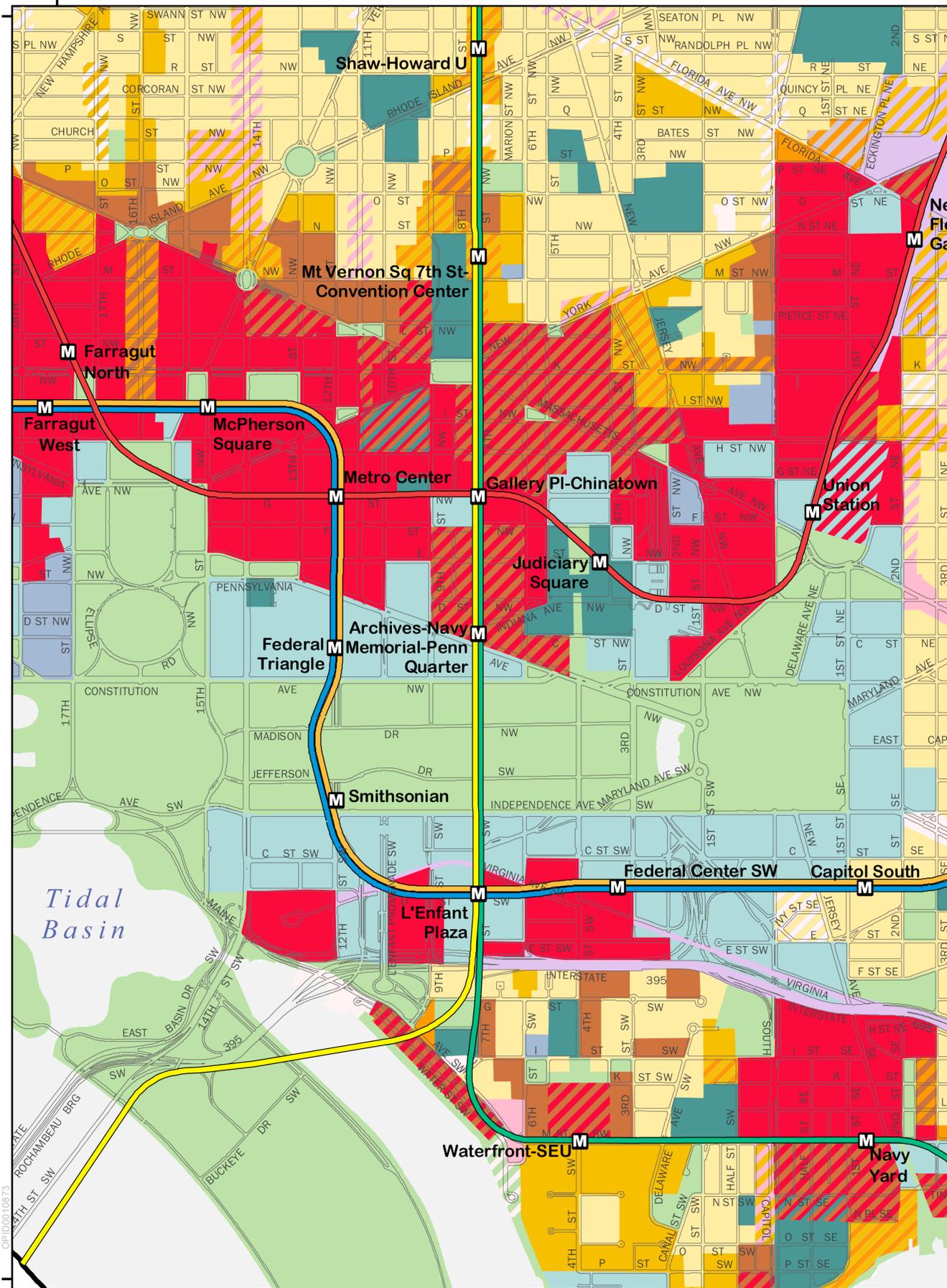
Some examples:

- Building with apartments on the upper floors and stores on the bottom floor
- Area of a city that allows both commercial and residential buildings
- Neighborhood that includes houses and apartments; commercial uses like a coffee shop, dry cleaners, and grocery store; institutional uses like a school; and open space like a park.

Local Examples:

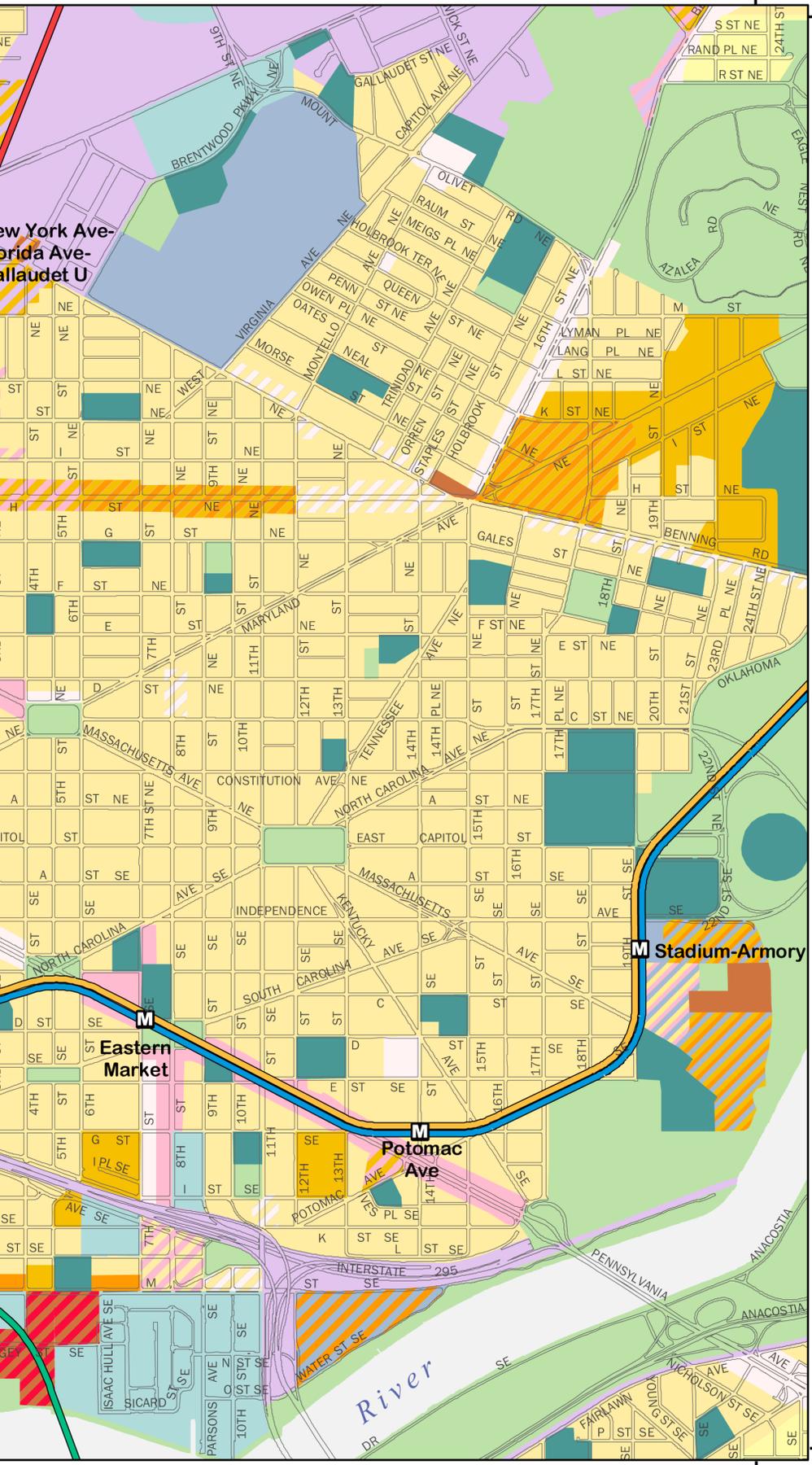
- **Pentagon Row**, adjacent to Pentagon City Mall in Arlington, VA, includes apartments and retail space mixed together
- **Kentlands** a neighborhood in Gaithersburg, MD, includes houses, townhouses, shops
- **Connecticut Avenue** in the Cleveland Park neighborhood of Washington, D.C. includes houses, apartments, restaurants, stores, and even a zoo
- **Old Town** in Alexandria, VA, includes stores, restaurants, townhouses, and parks



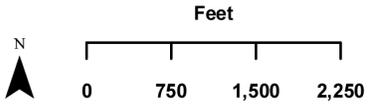
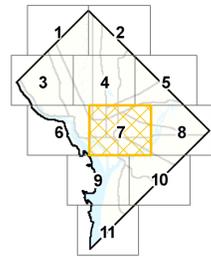


OPID0010873

Comprehensive Plan Future Land Use Map 7



- Low Density Residential
- Moderate Density Residential
- Medium Density Residential
- High Density Residential
- Low Density Commercial
- Moderate Density Commercial
- Medium Density Commercial
- High Density Commercial
- Production, Distribution, and Repair
- Federal
- Local Public Facilities
- Institutional
- Parks, Recreation, and Open Space
- Mixed Land Use
- WATER



*** Government of the District of Columbia
Adrian M. Fenty, Mayor

Office of Planning ~ June, 2007

This map was created for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate

City and Suburb: An Overview of Urbanization in the United States

Many factors have affected the development of cities in the United States, such as social, economic, and environmental concerns. Some of these are outlined below.

1700–1800

The early economy of the American colonies was based on farming, where individuals owned and controlled their own land. As trade and industry grew, so did cities, like Boston, Philadelphia, and New York. These early cities seemed crowded and dirty compared to the open spaces of the farm. So, even as the size and number of cities increased in America over the next two centuries, the notion of living on one's own land in the country remained a powerful ideal.

Travel in cities was limited by how far people could walk or use animal power to travel, so living close to work and stores saved time and effort. In early cities, homes, stores, and places of employment were clustered together for convenience. Early cities also relied on rivers and waterways for transportation and shipping of supplies between communities.

1800–1900

As a result of the Industrial Revolution, cities grew and changed in structure. People moved to cities from farms and from overseas to find jobs in the city factories. City populations increased. Factories filled the air with smoke. Residents and planners became concerned about issues such as air pollution, minimal sewage treatment, and the growing city population.

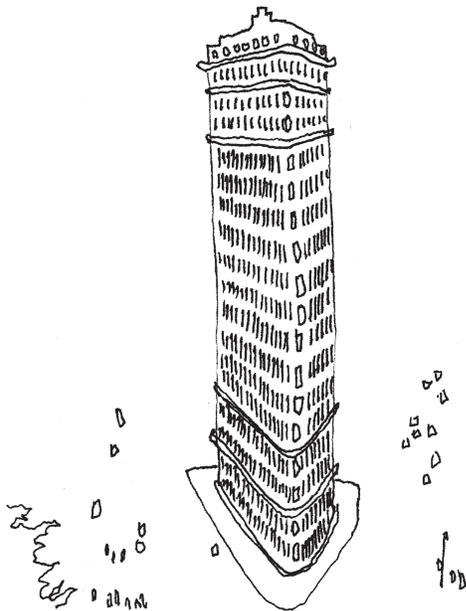
Poorer city residents lived in crowded apartment buildings called tenements. Apartments were usually about 300 square feet with three rooms, and typically housed about seven people. The earliest tenements lacked indoor plumbing and did not have much fresh air circulation. These crowded and unsanitary living conditions often created an unhealthy environment, resulting in high levels of illness among residents.

As a reaction to these concerns, planners looked for solutions by proposing new plans for cities and plans for the newly appearing suburbs, located outside of the city.

Linked to the city by train, these planned communities, allowed some residents to live in a country-like place, away from the city's pollution and disease, but still commute to the city to shop or work. The single-family house, cul-de-sac, and tree-lined curving roads were characteristics of these early suburbs.

Planners also sought to address the growing slums and lack of green space in cities like New York and Boston. Reformers called for park systems that would serve not just neighborhoods but entire cities, as places for all classes to use.

The late 1800's saw the birth of the skyscraper, a building type that has profoundly influenced urban development. With the continued growth of cities, the available land for new buildings was less and less available; the only alternative was to build up. Before the 1880s, buildings of more than a few stories had to be supported by thick brick or stone walls—the taller the building, the thicker the masonry base. In the 1880's two technological advances allowed for the development of the skyscraper: steel framework and safer elevators. Later improvements in steel frame construction meant exterior walls did not have to support the building, allowing architects to build taller buildings and to replace masonry walls with glass. Improvements in elevator safety and performance also allowed buildings to reach greater heights. Taller buildings meant less land being used and greater concentrations of people, thereby creating denser cities and conserving land.



1900–1920

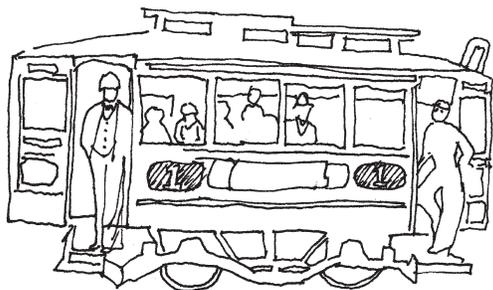
In the early 1900s efforts were made to improve conditions for the poor and reform local government. At the same time, the City Beautiful Movement became a powerful force in shaping cities. It used city beautification—civic art, architecture, parks and open spaces—to instill civic pride and improve the physical condition of cities. The World's Columbian Exposition in Chicago in 1893, the first economically successful US World's Fair, was seen as an opportunity to highlight the rebirth of Chicago just 22 years after a great fire destroyed the city. The design for the Columbian Exposition, by Frederick Law Olmsted and Daniel Burnham, became the inspiration for the City Beautiful Movement. It made Chicago seem like an ideal place with its classically inspired architecture, formal plan, and monumental buildings. The plan emphasized civic centers, tree-lined boulevards, and public spaces with plants and trees.

Concepts from the City Beautiful Movement were incorporated into the 1901 McMillan Plan for Washington, D.C., which redefined the National Mall as the nation's civic center of monumental architecture and public open space. Other cities followed suit with their own plans inspired by the City Beautiful Movement.

As the City Beautiful Movement reshaped urban centers, the “garden city” model of suburban development proposed a new way to combine features of both the city and the suburb. Developed by writer Ebenezer Howard in response to the pollution in London, England and shaped by ideas in his book *Garden Cities of Tomorrow* (1902), Howard’s ideal plan included a series of satellite cities, which were connected to each other and a central city by a train system. A green belt around the city would limit city expansion outward and provide areas for recreation. In Howard’s plan the cities would have a limit to the number of residents able to live and work there. He wanted to combine the best features of city and country life. Americans experimented with the Garden City model in the 1920’s and 1930’s.

Another suburban model was the streetcar suburb. With the development of the streetcar in the late 1800s, by the early 1900s streetcar suburbs were growing along streetcar lines leading out of the city. These new communities, developed on small lots and offering one, two, and three-family houses, attracted the middle class with their relatively low-cost housing and easy access to transportation.

Between 1900 and 1920, city planning was firmly established as an orderly way to shape the physical appearance of the city and to direct urban growth. In 1903, President Theodore Roosevelt appointed a Public Lands Commission to study and recommend regulations for orderly land development and management.



1920–1940

The Standard State Zoning Enabling Act (1922) and the Standard City Planning Enabling Act (1928), both prepared by the U.S. Department of Commerce, formed the basis for zoning laws across the country. These Acts enabled local communities to plan and zone uses within their jurisdiction. Zoning meant predictability—property owners would know what could be built on and, importantly, next to their land. Zoning also created value—land assigned for commercial uses, for example, was seen as more valuable than land assigned for agriculture. Separating uses was also seen as a way to improve people’s health and safety by keeping residential uses away from polluting industries like factories and landfills. Zoning by use would have a profound affect on planning in the 20th century.

By the 1920s, cars were fast becoming an accepted and desired part of American life. As car ownership grew, transit use declined. Driving in the city meant dealing with traffic jams and difficult parking. In the 1920s, planners began to address how cars had begun to affect everyday life. Radburn, New Jersey, for example, developed in 1920s, had separated pedestrian and automobile routes. The 1920’s also saw the first car-oriented shopping centers, which provided off-street parking. The Park & Shop, still in existence in Washington, D.C., was an early example, with parking provided in a lot in front of the strip of stores.

In the 1920s, the members of the Regional Planning Association of America (RPAA) began to see unchecked expansion of the suburbs or sprawl as a potential threat to the undeveloped natural environment. Members of the RPAA combined the idea of the garden city with the idea of conservation of land to create regional ecological planning. These ideas stemmed from developments in the field of ecology—the study of relationships within natural systems. Planners started to consider how humans could fit, in a balanced way, into these natural systems. Natural systems, like watersheds, often exist across a wide geography that includes multiple municipalities. Lewis Mumford, an historian and writer on science and architecture, promoted the idea of regional ecological planning as a way to balance nature and the built environment across broad areas such as New York State.

Beginning in the 1930s the Federal Government began to play a larger role in planning, mostly through the tool of environmental policies. For example, during the 1930s the Civilian Conservation Corps (CCC) was established with the dual purpose of providing work for the unemployed and converting unused or underused land into forested areas for recreation. The CCC constructed the roads, campgrounds, and trails for many of the local, state, and national parks in existence today.

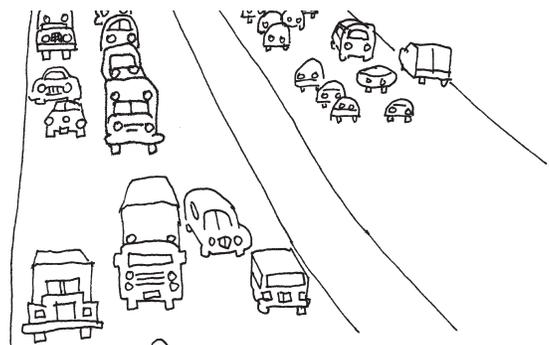
In 1934, during the Great Depression, the federal government passed the National Housing Act and created the Federal Housing Administration (FHA) to support housing development. The FHA insured long-term mortgages by private lenders, making it easier for citizens to borrow money for homes. FHA regulations also provided very low-risk financing to builders of large suburban subdivisions.

1940–1960

The 1940s saw more federal acts that continued to greatly affect planning, including the creation of new highways that would move traffic from the city center to the suburbs and the GI Bill, which underwrote mortgages for new homes to returning soldiers for, making the dream of owning your own home accessible to even more people.

A suburban housing boom followed World War II. A strong economy, the growing number of young families, and the desire—and economic ability—to own a home pulled the middle class away from the city. Developers met the demand for new housing with mass-produced large, single-family subdivisions on inexpensive farmland outside the city. New highways put these developments within an easy automobile commute of the city. Levittown, NY and Park Forest, IL, both built in 1947, are early examples of these new developments. By the end of the 1950s, America's suburban pattern of development—shopping malls and office parks serving single-family subdivisions—was firmly established.

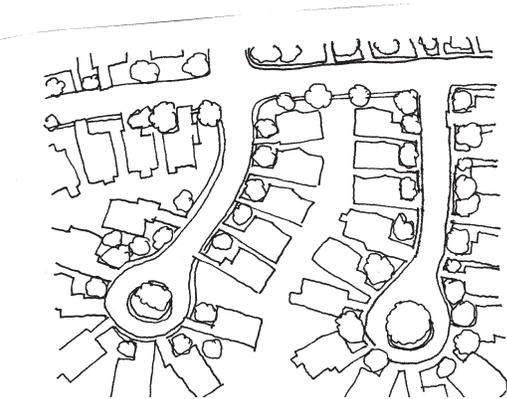
The 42,000 miles of new highways created under the Interstate Highway Act opened up vast amounts of land for development. Construction of highways through cities, together with urban renewal, also accelerated the demolition of urban neighborhoods.



With more people moving to the suburban neighborhoods, many city neighborhoods became run down. The Housing Act authorized the use of federal money to tear down blighted city neighborhoods in order to encourage redevelopment, a process known as urban renewal. Much of the public housing built to replace neighborhood housing was badly designed and poorly maintained, encouraging neglected buildings and crime.

1960- 1980

As the suburbs prospered, cities declined. The loss of businesses and the middle class tax base made it difficult for cities to provide services. Urban riots in the 1960s fed the perception that cities were dangerous places. Public transportation could not compete with cars to serve the far away suburbs. Most city streetcars were removed from service by the end of the 1960s, and ridership on the remaining forms of public transit declined.



The 1960s and 1970s saw the growth of sprawl—the unchecked development of rural areas on the edges of urban areas. Sprawl was characterized by the low density of development, long distances between work and home, and a reliance on cars for transportation. This type of plan often led to increased traffic, air pollution, and the loss of open space. Concerns about sprawl were voiced as early as the 1960s and 1970s.

In the 1960s a series of laws and acts were written to set aside and protect land as wilderness areas. The 1970s saw the birth of the modern environmental planning movement. During the 1970s the government became more involvement in environmental issues.

The first Earth Day brought attention to the poor state of the environment. Activists wanted the government to acknowledge that some problems were too big to be dealt with at the city, regional, or state level and needed to be addressed with national solutions.

The federal government began to create national agencies to address and control environmental issues and create national standards to limit pollution.

Economics became a bigger factor in controlling or limiting environmental effects especially from private companies. The federal government began to offer financial incentives to encourage, rather than command, private companies to implement more environmentally friendly practices.

During the early 1970s a sharp increase in the price of oil prompted some people to question our dependence on cars and oil from other countries. Interest grew in improving public transportation, and the federal government began to fund these improvements. In 1964, federal money first became available to improve existing subway systems. A few cities, like Washington, D.C., had the density and potential for growth to support new subway systems. In the 1980s and 1990s, new light rail systems, descendants of the streetcar, began in cities like San Diego, Portland, and Dallas.

1980 – 2000

There was a resulting backlash from organizations against government regulations that they thought were too costly, inflexible, and burdensome to private industry.

Development of Smart Growth planning, which considers economics in combination with environmental and planning concerns, allowed for economic and population growth while protecting the environment.

During the 1980s and 1990s “smart growth” evolved as an approach to development that counters some of the effects of sprawl. Its goals include focusing growth in areas of existing infrastructure, creating transportation choices and walkable communities, mixing housing types and uses, and protecting open space. Some local and state governments began using land use policy, tax incentives, and updated planning and zoning tools to promote smart growth.

At the same time the number of Land Trusts was on the rise. A greater number of Land Trusts, non-profit organizations, were being formed to acquire land and conservation easements to help preserve land for natural areas, farmland or forestland.

2000 – Present

In the 21st century for the first time in history there are more people living in cities than in villages or rural areas. Urban areas are increasing in size and population. Urban ecological planning looks at the city as a part of an ecosystem and how humans can be a part of the natural ecosystem without negatively affecting it.

New Urbanism, also called traditional neighborhood design, is a design approach similar to the smart growth framework. It is derived from the form and function of traditional American towns. It emphasizes a network of interconnected, narrow streets, buildings set close to the street, walkable neighborhoods, mixed uses, green spaces and transit oriented development as a way to promote better air quality and healthier people.

Today, there is a growing movement for sustainable planning which is a holistic view of city and region. In this view leaders consider environmental, economic and social factors when planning settlements for people.

2 FOUNDATION LESSONS

Before visiting the Museum, these lessons may be used to introduce your students to city planning. These lessons are optional.

Understanding Land Use

Land Use Posters

I Spy Buildings and Places Student Worksheet

My Perfect City

My Perfect City Student Worksheet

Understanding Land Use

National Standards of Learning: English – 8; Social Studies – 3, 4, 10; Visual Arts – 1, 3, 5

Duration: Two class periods; 1.5 – 2 hours

Overview

As people observe their surroundings, they realize that the built environment is comprised of different buildings, varying amounts of open space, and roads. Upon closer examination, people begin to comprehend that there is a certain organization to these essential components of any city. It is important for young people to understand the ways buildings and open spaces are organized in a city because a city's plan profoundly affects the everyday lives of its citizens. By understanding the ways buildings and land are organized—and why—students can better understand the places where they live.



Objectives

Students will:

- Identify functions and places that people need and want in a city.
- Categorize buildings and places by use.
- Propose solutions for environmentally friendly and livable cities.

Materials

- Copies of land use category handouts
- Paper
- Pencils
- Crayons or markers
- Computers and access to internet (optional)
- Newspapers or magazines with images of various building types

Teacher Prep

- Collect newspapers and magazines showing images of various buildings.
- Copy land use category handouts (*Optional:* Enlarge the land use category handouts and use them as posters in your classroom).
- Review the basics of land use plans and categories by reading “What is City Planning?” on page 12 and “Which Buildings and Places Go Where?” on page 14 (*Optional:* These readings can also be used as handouts for older students).

Vocabulary

- | | |
|-----------------------|------------------------|
| ▪ Land use categories | ▪ Industrial |
| ▪ Residential | ▪ Public or open space |
| ▪ Commercial | ▪ Mixed-use |
| ▪ Institutional | ▪ Plan |

Lesson Plan

1. Discuss the People Involved in Planning a City

- Emphasize the various groups of people that influence it. Many people and organizations influence the community planning process. They include city planners, local government officials, developers, and citizens. Who else influences the planning of a city?

2. Introduce Land Use Plans

- Introduce the idea of a land use plan that incorporates the different land use categories, including mixed-use buildings and areas. Show students a land use map (an example can be found on page 16). Explain that a land use plan is a visual tool that helps people understand where different uses (e.g., open space, commercial, residential) are located and the kinds of buildings and spaces that serve those uses. State laws and the federal government also affect community planning locally and nationally.
- Define the five land use categories with your students and brainstorm the types of buildings found in each of them. Explain that each land use category is assigned a color to make mapping and organizing easier, and review the assigned colors with your students (see pages 28–32). Discuss mixed-use developments in a community and how they allow people to live closer to the things they need and want. Ask your students to name examples of mixed-use buildings or neighborhoods in their community (see pages 28–32).

3. Group Activity

- Divide your class into groups and assign each one a land use category. Each group is responsible for examining its land use category and collecting information about places found there, and what they look like. Newspapers, magazines, the Internet, and specific websites in the resources section of this booklet are good sources for pictures of different buildings. Designate a place in your classroom for students to display pictures, drawings, and written information about each land use category. TIP: Photocopy the line drawings on pages 28–32 to place on posters for display.

4. Discuss

- Discuss the different buildings found in each land use category. Ask your students:
 - Why is each one important?
 - Why is it preferable to have open space in addition to buildings?
 - What would a city be like without a recycling center, fire station, or open spaces to enjoy nature?
- Cities are like people, and, like a human body, a city needs all of its parts to function properly. Discuss how city planners organize buildings, land, and open space in the best way possible so that the residents have access to the places that they need and want. Ask the students to name places and buildings they live near and ones that are far away. If given a choice, would they move buildings around in their neighborhood to better meet their needs and wants? Why or why not?

Taking It Further

Have students map their school's neighborhood.

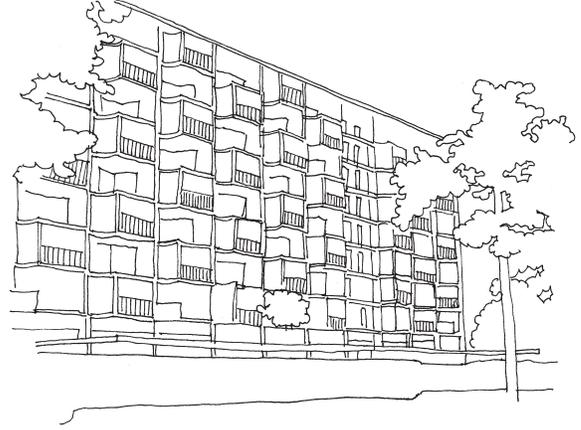
- Ask your students to edit their maps of the neighborhood to make it a more enjoyable, healthy, convenient place to live and work. Ask them to discuss and defend their changes.
- On your way to the Museum, have students use the attached *I Spy Buildings and Places* worksheet (page 34). Try to find as many buildings as possible. You may also use this sheet to find places in your school's neighborhood.

Residential - Yellow

Places where people live



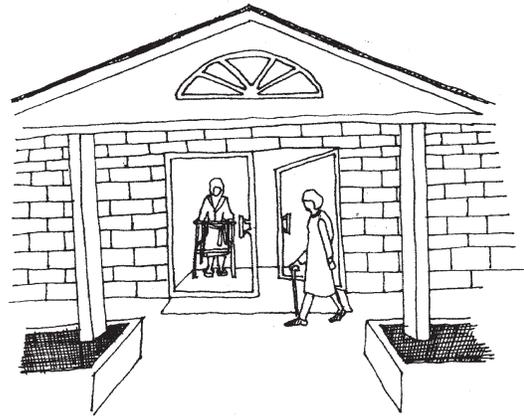
Single family home



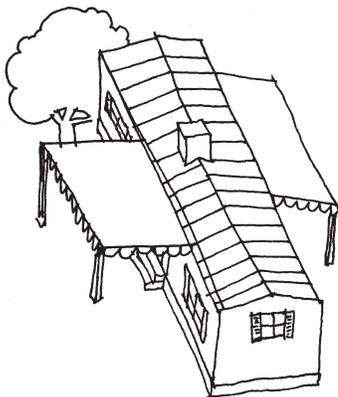
Apartment building



Townhouse



Retirement home



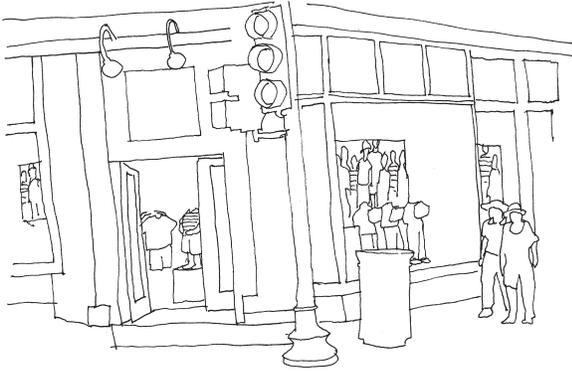
Mobile home



Duplex

Commercial - Red

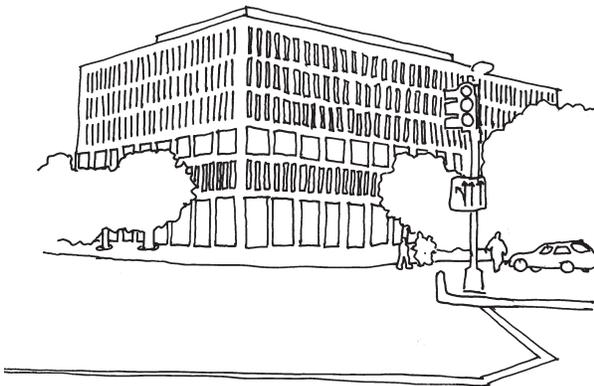
Places where people buy and sell things



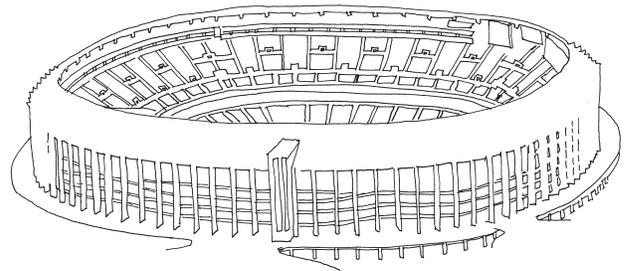
Clothing store



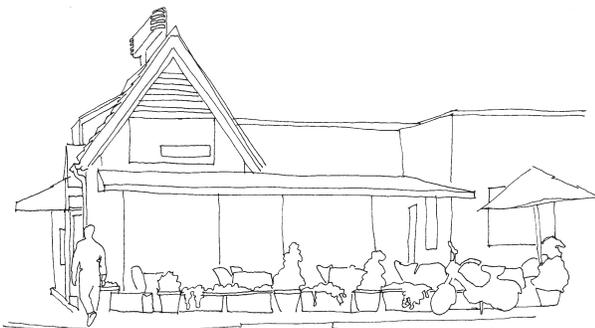
Bank



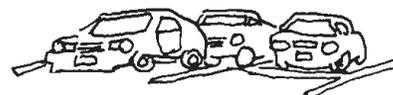
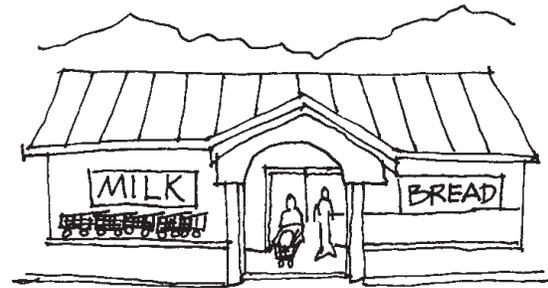
Office building



Sports arena



Restaurant



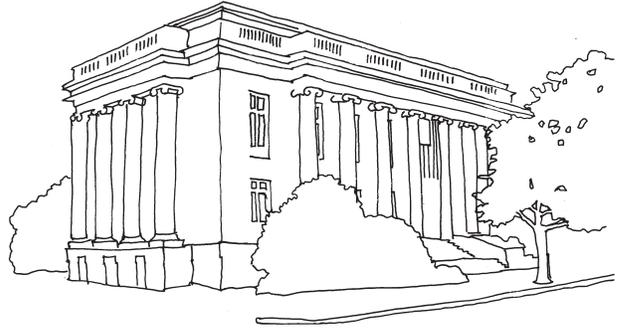
Grocery store

Institutional - Blue

Places where people get help, learn, or receive government services



Police station



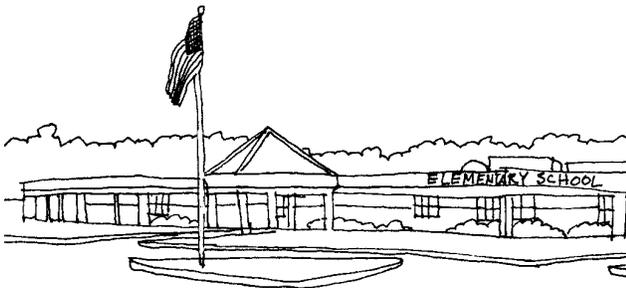
Library



Government building



Fire station



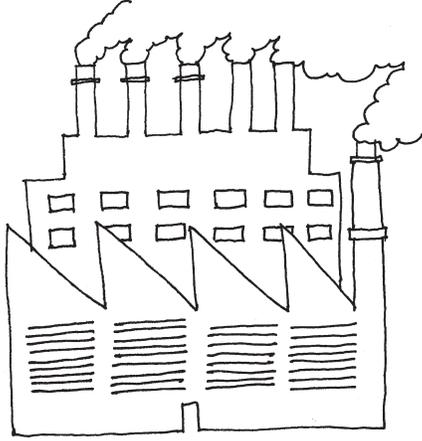
School



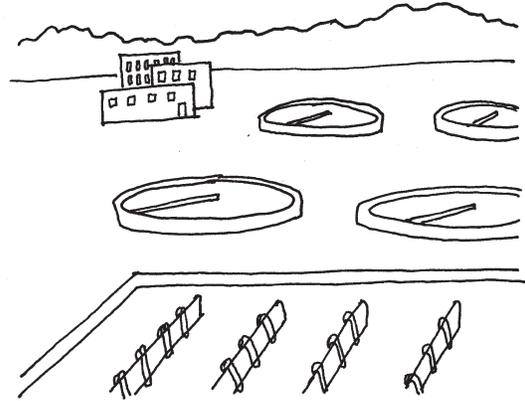
Museum

Industrial - Purple

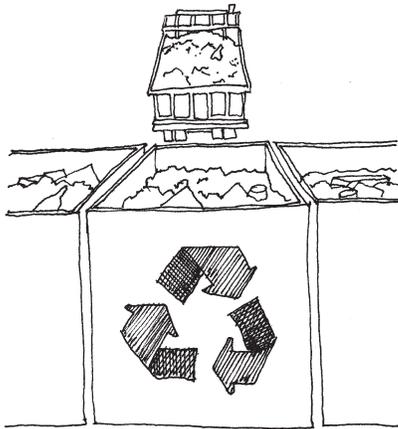
Transportation centers and places where things are made, discarded, or processed



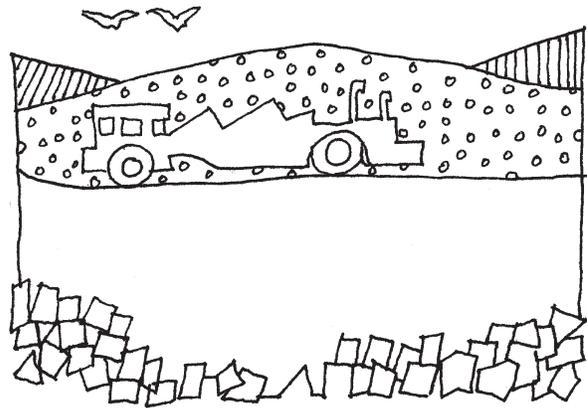
Factory



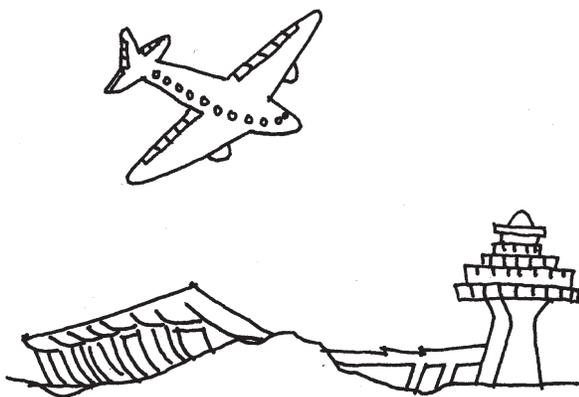
Water plant



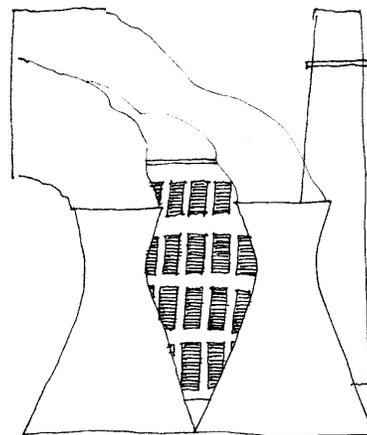
Recycling center



Landfill



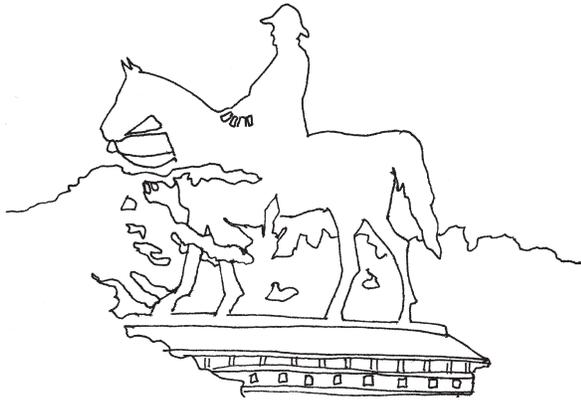
Airport



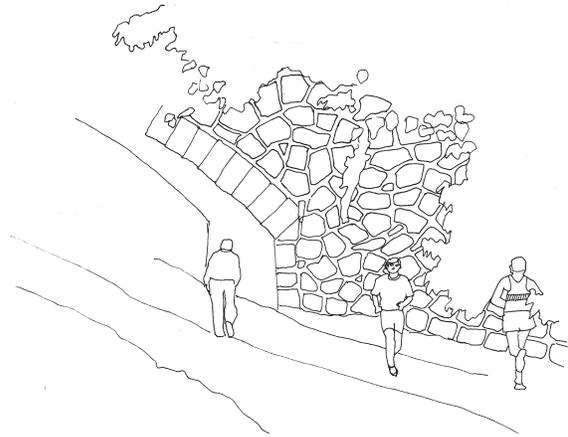
Power plant

Open/Public Space and Parks - Green

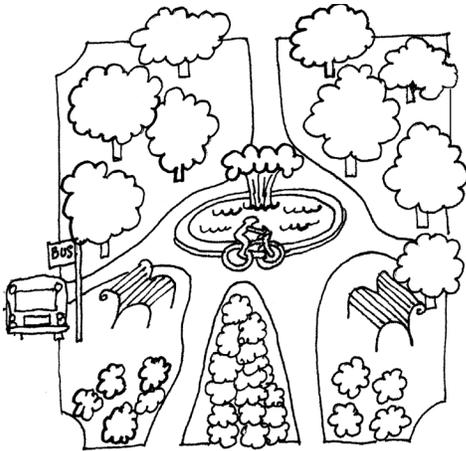
Places where people play, exercise, or enjoy nature



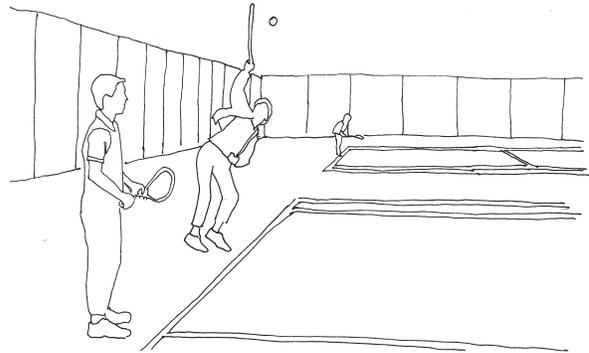
Monuments



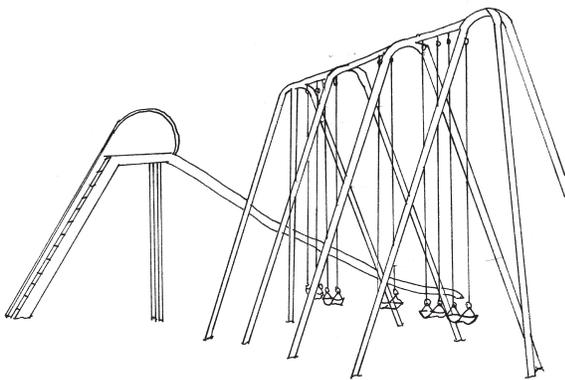
Hiking and biking trail



Plaza



Tennis court

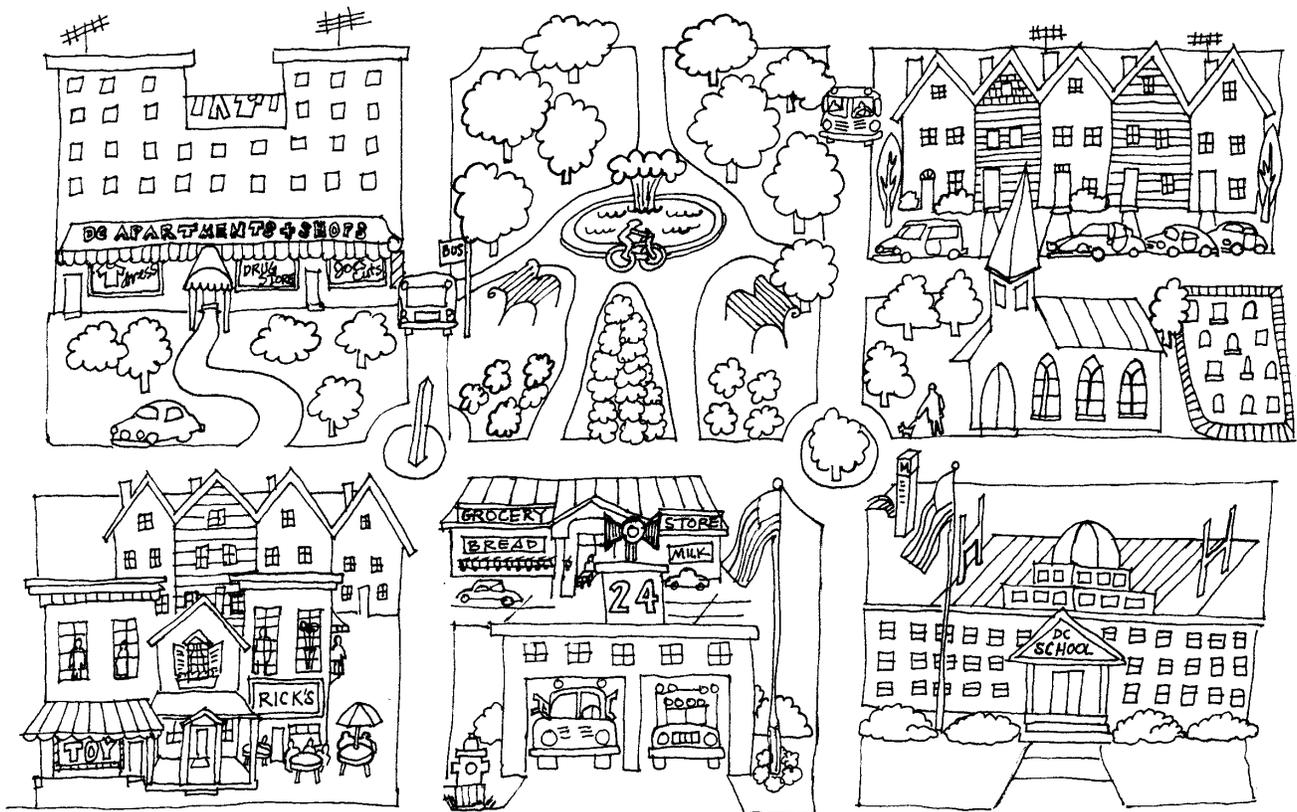


Playground

Mixed-Use - Combination of colors

Places that serve more than one function

- A building with apartments on the upper floors and stores on the bottom floor.
- An area of a city that allows both commercial and residential buildings.
- A neighborhood that includes residences such as houses, apartments, and townhouses; commercial uses like a coffee shop, dry cleaners, and a grocery store; institutional uses like a school; and open space like a park.



Name: _____

Student Worksheet

I Spy Buildings and Places

As you travel to or from the National Building Museum, look around and see which buildings and places you can find. As you spot one of these buildings or places, circle it.

COMMERCIAL BUILDINGS



Grocery store



Pharmacy



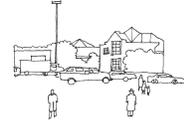
Clothing store



Bank



Office building



Shopping mall

RESIDENTIAL BUILDINGS



Single family house



Apartment



Townhouse



Duplex



Retirement home



Mobile home

INSTITUTIONAL BUILDINGS



School



Fire station



Place of worship



Museum

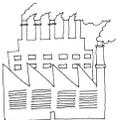


Police station

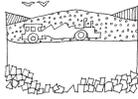


Library

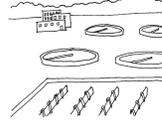
INDUSTRIAL BUILDINGS/SPACES



Factory



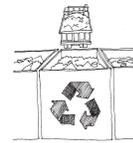
Landfill



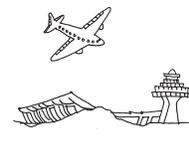
Water Treatment



Power Plant



Recycling Center

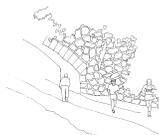


Airport

OPEN & PUBLIC SPACE/PARK RECREATION



Monument



Park



Playground



National Mall



Bike trail



Town square

My Perfect City

National Standards of Learning: Science – F; Social Studies – 1, 2, 4, 7, 10; Tech Lit– 18, 19, 20; Visual Arts – 3

Duration: One to two class periods; one to two hours

Overview

What makes a good city? What are all the parts of a city? How do city leaders decide what to put in a city? In today's fast-paced world we don't often take the time to slow down and think about what would make the places we live better places. In this lesson students slow down and evaluate their own city, thinking about how it serves their needs. Students are then challenged to come up with a proposal for an ideal city.



Objectives

Students will:

- Identify functions and places that people need and want in a city;
- Identify issues facing modern cities, such as pollution, traffic, transportation, waste disposal, and urban sprawl; and
- Propose solutions for environmentally-friendly and livable cities.

Materials

- Student worksheet
- Paper
- Pencils
- Coloring pencils/ markers/ crayons

Teacher Prep

- Copy student worksheets, one for each group of four. You may also choose to use blank sheets of paper instead.

Vocabulary

- City services
- Infrastructure
- Ideal
- City planner
- City

Lesson Plan

1. City Services & Infrastructure: Thinking About Necessities

- Explain to students that today they're going to come up with some ideas for the perfect city. But before they do that they need to define the word "city." Ask the students to think about how a city is different from a town or village. Which is bigger in area? In population? A town or village may have the same amount of space but it has fewer people living in that space than in a city. What are some buildings that might be found in a city but not in a town or village? Sports arena, large apartment buildings, colleges or universities, hospital, main subway terminal, train station, etc.
- Ask the students to think about what things in their city they use everyday? What do they need to survive? How does the city provide some of these services? What is absolutely necessary to make a city livable? Many of these things are part of the infrastructure and services that the city government provides or asks private companies to provide. In a town or villages these services are provided through the county government. Explain some of the basic services that cities typically provide: sanitation, water and drinkable water, schools, public transportation, gas, electricity, cable television and phone service (see table at end of lesson plan).

2. Your City: Good or Bad?

- Now using the information just discussed, ask students to think about what's good or not so good about the city they live in. Ask students to think about their city (or nearest city). What are some of the positive things about living in it? What are some of the negative things about living in it? Divide students into small groups and have them list the positive and negative aspects of their city on the student worksheet (or on a blank sheet of paper). Then combine their answers to create a class master list.

3. What Would Make a Great City?

- Looking at the list of things students don't like about their city, ask students what could be done to improve the city. What would make their city a great, amazing or perfect city? Have students draw a picture, write a story, or create a poster promoting and showing how they changed the city into a perfect city.

4. Presentations and Discussion

- Have students present their perfect city to the rest of the class. As a group discuss some of the common themes among the students' ideas of what a perfect city might be. Conclude with explaining that city planners need to think about creating ideal or perfect cities that include what citizens need and what they want. City planners need to consider how each building will be used and how to make the whole city as efficient and effective as possible.

Infrastructure and Services Comparison	
Services	Infrastructure
Garbage collection (Solid-waste removal)	Landfill, Recycling plant/center
Telephone/Internet/Cable TV	Phone lines, Telephone company
Clean water	Water treatment plant, Water system, Pipes to access water
Electricity	Power plant, Power lines, Transformer stations
Transportation	Highways, Roads, Bridges, Airports, Bus, Rail, Subway tunnels
Waste-water removal	Sewage system, Sewage treatment plant
Education	Schools, Colleges, Training centers
Health care	Hospitals, Doctor's offices

3 REINFORCEMENT LESSONS

After visiting the National Building Museum, use these optional reinforcement lessons to strengthen the students' understanding of city planning and build on the students' museum experience.

Mixing it Up: Zoning Today

Where You Live: Take a Closer Look

Family Field Trips: Exploring Your Community

Mixing It Up

National Standards of Learning: Math – Problem Solving; Social Studies – 1, 2, 3; Tech Lit – 18, 19, 20; Visual Arts – 3

Duration: One class period, 45 – 60 minutes

Overview

Zoning is a legally binding tool used by local governments to implement their planning goals and shape their community's physical appearance. For much of the 20th century, zoning practice emphasized the separation of land by use (e.g., commercial, residential). This idea of separating space grew out of concern in the early 20th century about conditions in industrial cities in which smokestack pollution and overcrowded housing caused disease.

Zoning by use kept industry and commercial uses away from housing and emphasized light, air, and open space in residential areas. In the suburbs, "zoning by use" meant apartment buildings and single family houses could not be in the same neighborhood. This relatively low-density development meant that the best way to get around the suburbs was by car. While separating uses allowed people to have larger homes and yards, it also helped to create the condition known as sprawl— traffic jams, air pollution, the loss of open space, and long distances between homes, stores, parks, and work.

In response to this sprawl, urban planners and local governments are beginning to embrace more traditional approaches to community planning that mix rather than separate uses. During this activity students will explore how different types of land uses may be mixed together, thus improving our everyday life.



Objectives

Students will:

- Identify the functions of various parts of a school;
- Categorize places by use; and
- List various solutions for organizing a school or neighborhood.

Materials

- Paper or graph paper
- Pencils
- Rulers
- Markers or crayons

Teacher Prep

- *Optional*: Prepare a bird's-eye view plan of the school. Make copies for each child or group. (See example on page 42).

Vocabulary

- Mixed-use
- Residential
- Commercial
- Institutional
- Industrial

Lesson Plan

1. Explore and Zone the School.

- To help students understand the benefits of a mixed-use community, have them explore the many different uses that exist within their school building. Draw a bird's-eye view plan of the school (either provide this to your students or have them draw it themselves), and give one copy to each student or a group of students. Have the students color the school to represent the different activities that occur in the building (see page 14 for the colors assigned to each land use category). For example, they may color the classrooms blue for institutional because this part of the building helps people learn. They may color the cafeteria red to represent commercial because they can buy food there. And, they may color the playground green because it is a recreational space (see example of a bird's-eye view plan of a school building after lesson plan).

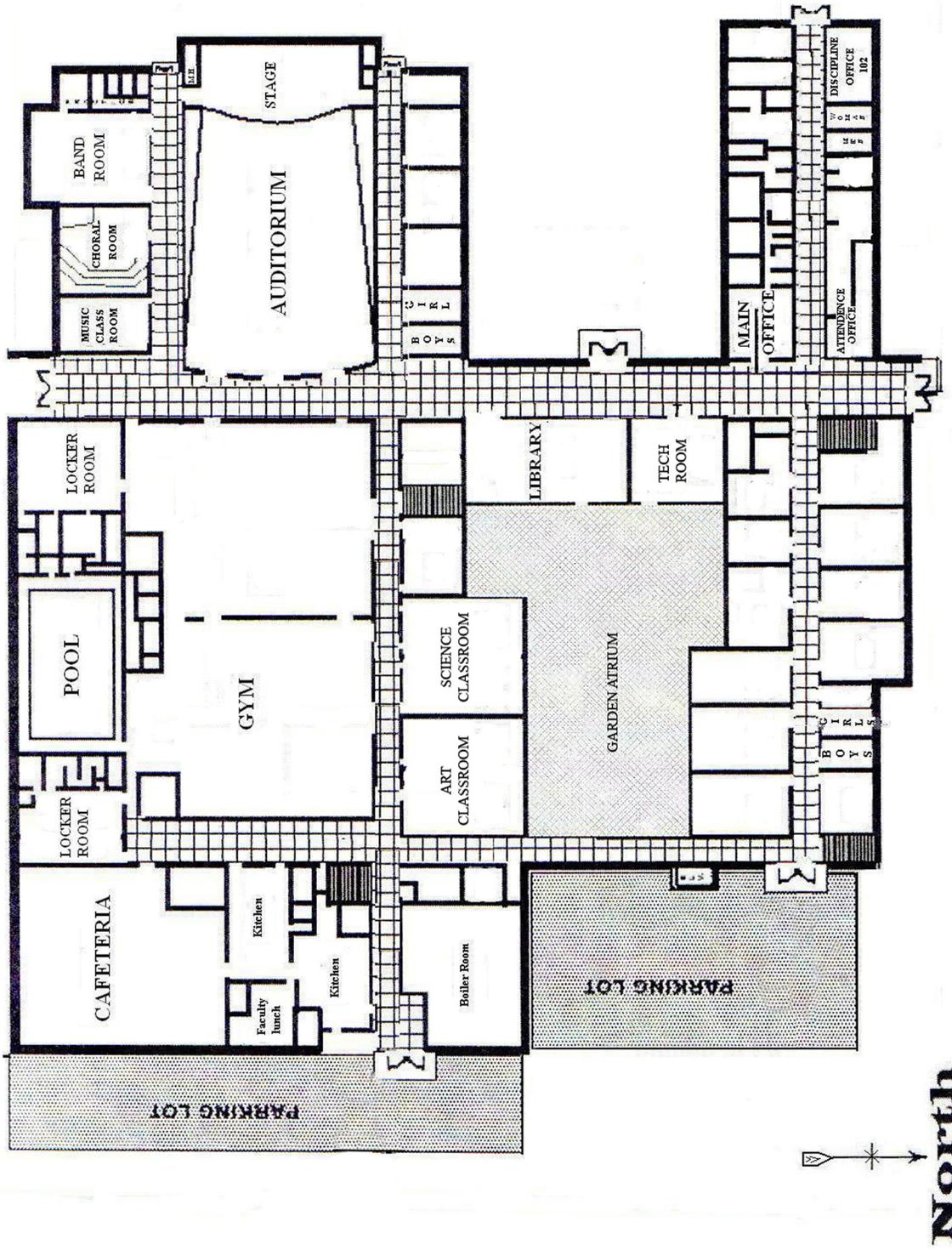
2. Discuss Student Plans and Functions of the School.

- After investigating their own school, discuss with students the many different functions of the building. Ask them if only children use the building or if adults use it, too? Do citizens use the school for neighborhood meetings? Do people vote there during elections? Do scout troops meet there in the afternoons? Is there an after-school program in one part of the school? Explain to the students that schools are really mixed-use buildings.
- Compare and discuss the various plans that the students created and the different uses that occur in the school. How do all the services within the building benefit the students and surrounding community? What would it be like if they had to learn in one building, eat lunch in another, and travel to a third to have recess? What would their day be like if they had to travel a long distance to play on the playground or eat lunch?

3. Discuss the Mixed-Use Planning at school and in your neighborhood.

- Like their school building, neighborhoods can also have many spaces with different uses mixed together. With your students, discuss the pros and cons of mixing different land uses together either in one building or in neighboring buildings. Discuss the types of buildings near the school and chart these on the board. Make a list of the ways in which they travel to the grocery store, pharmacy, playground, park, library, hospital, and school. And, document how long it takes to get to each. What conclusions can they draw from this information about traveling time and traffic? Would it be better if these places were closer to where they lived? Why? What other mixed-use buildings or neighborhoods can students think of?
- Summarize why a mixed-use community can be a better community. Explain to the students that in addition to making getting around more convenient, there are other benefits to having different buildings close together. Discuss how, by having buildings close together, the community is more environmentally friendly since people do not need to drive as much to get what they need. These neighborhoods also encourage a sense of community because people are all using the same buildings in a smaller area; it's easier to get to know your neighbors. See page 15 for ideas about local mixed-use developments, or see if you can discover one on your own.

Sample Bird's-Eye View Plan of School Building



Where You Live: Take a Closer Look

Treasuring Trees

Trees provide benefits that many communities value such as shade and beauty. Walk around your community and conduct an inventory of the trees by recording the number and type of trees (use a botany/tree book). Based on the number of tree stumps you see, how many trees are missing? Contact your local government to find out where trees are needed in your community and if you would be allowed to plant some. Then ask a local nursery if it will donate trees to plant in the neighborhood or do a fundraiser in your school to collect money for them. As a class, plant them. Remember, it's also important to care for the trees. Make sure there is a system in place for maintaining the trees.

Resources: Casey Tree Endowment, www.caseytrees.org, neighborhood associations, and local departments of public works

Locating Power, Water, and Waste

How is it possible that when we turn on the faucet, clean water comes out; that the lights turn on with a flip of a switch; and that streets are not full of trash? Local taxes help pay for a community's infrastructure—the services that help our cities work such as trash pick-up, power, recycling, and water. Try to imagine what happens beneath the streets to help your community operate. Walk around the block and locate manhole covers and meter boxes. How are they labeled? Water, sewer, telephone, other? Record how many you find in a given block. Are paper, plastic, and glass recycled at your school? Where do these things go? Visit a recycling plant and/or landfill to better understand how trash is discarded and recycled material is reused.

Resource: Local departments of public works

Rebuild or Preserve?

What should be done with an old building? This is an issue faced daily by city planners, developers, and architects, as well as people interested in preservation. Identify a deteriorated old building in your community and find out about any plans for its future. Discuss with your class the advantages and disadvantages of tearing down and replacing the building versus renovating the existing one for another purpose. What factors will influence the decision: budget, the citizen's voice, taxes, safety, etc? Who should make the decision? What actions could the students take to influence the decision?

Resources: National Trust for Historic Preservation, www.nthp.org, and state and local preservation offices and organizations

Making Meaningful Monuments

Monuments and memorials allow people to recognize, celebrate, and remember significant moments from the past and celebrate their community. Some memorials depict important figures and events in American history, while others celebrate ideals and values. Monuments are everywhere—on streets, plazas, parks, and gardens. Show the class images of monuments from around the United States. Have students try to explain what and how each one commemorates a significant event, person, or thing. Assign different events in history to students. Ask each group to design a monument representing that event. Or, create a monument for your community or school. What or who would it commemorate? Where would you place it? Why?

Resource: Save Outdoor Sculpture!, www.heritagepreservation.org. National Park Service, www.nps.gov/nacc

Fun Field Trips:

Exploring Your Community

Parents/ guardians, your children are learning about community planning at school and at the National Building Museum. Encourage them to explore their community and have them teach you about city planning.

1

Ask your child about the building s/he built at the National Building Museum. Have him/her explain what happens in the building and why it looks the way it does.

2

When you and your child travel around your neighborhood, look around. What other ways could you travel down the same street? Could Metro or a bus take you where you need to go? Are there sidewalks for people to walk on? Is there a place to bike? Is driving enjoyable or is there too much traffic?

3

Walk around your neighborhood. What do the buildings look like? Are they tall or short, big or small, old or new? How many buildings are there, and what are their purposes? Are there parks or places to enjoy nature?

4

Take a construction inventory of your community. What types of buildings, bridges, and/or parks are being built? What was there before the construction began? Were there other buildings or an empty lot? Are the new places good for your community?

5

Construct, build, and create at one of the Museum's annual day-long family festivals like the *Big Build*. Visit the Museum's Web site, www.nbm.org, for information.

Visit the National Building Museum,

Where families can discover the world we build for ourselves!



401 F Street NW Washington, DC 20001 202.272.2448
Red Line Metro, Judiciary Square
www.NBM.org

Programs for Schools, Families, Scouts, Outreach Programs,
Discovery Carts, Exhibitions, Birthday Parties, Festivals, and
Summer Camp.

4

RESOURCES

Information in this section comprises the following:

Building Survey Student Worksheet

Architecture and City Planning Vocabulary

Books

Web sites

Local Agencies and Organizations

Name: _____ Building Name: _____

Student Worksheet

Building Survey

By looking closely at a building you can learn a lot. Choose a building and investigate what's around it and what's on it! When you've completed the survey, draw a picture, write a poem, or create a story about your building.

LANDUSE CATEGORY

What landuse category does your buiding belong to? Circle one.

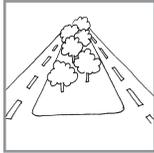
- Residential Commercial Institutional Industrial Open/Public Space and Parks Mixed Use

LOCATION

My building is located on a:



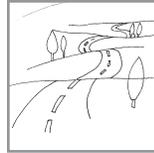
Tree-lined street



Boulevard



Busy highway



Curvy road

Other? Draw it!

What types of buildings are near your building?

- Places of worship Businesses Factories Schools Other? Write it! _____
- Office buildings Hospitals Homes Stores None

TRANSPORTATION

What types of transportation can be used to access your building? Circle them.

- Parking lot Bus stop Metro stop Bike path Sidewalk

LANDSCAPING

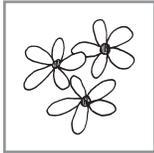
The plants that are found near my building include: (circle all that apply)



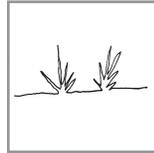
Trees



Bushes



Flowers



Grass

Other? Draw it.

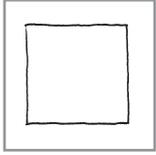
Student Worksheet cont'd

Building Survey

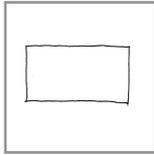
ARCHITECTURE

Look at the front of your building

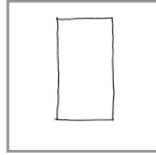
My building is shaped like a:



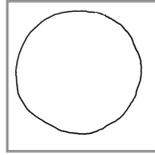
Square



Long rectangle



Tall rectangle



Circle

Other? Draw it.

My building is _____ stories tall.



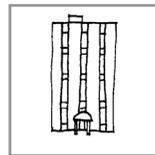
One story



Two stories



Three stories

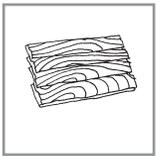


Four stories

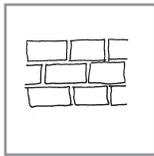


More? How many? _____

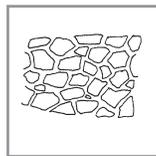
My building is made out of: (circle all that apply)



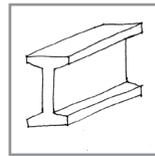
Wood



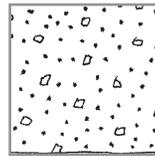
Brick



Stone



Metal

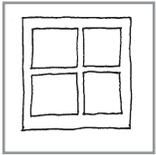


Concrete

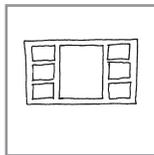


Glass

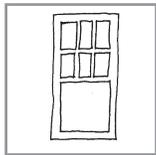
The shape of my building's windows are:



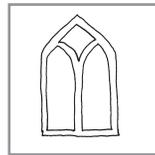
Square



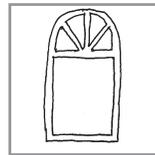
Long



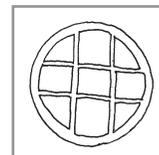
Tall



Pointed



Arched

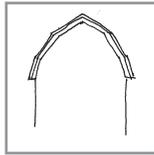


Round

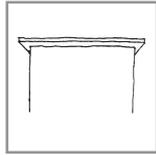
The shape of my building's roof is:



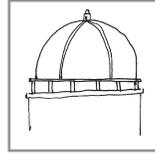
Pitched



Vaulted



Flat



Dome

Other? Draw it.

Is there a sign on your building? What does it say? _____

Architecture and City Planning Vocabulary

Area

A distinct part or section of a city set aside for a specific function.

Built Environment

Human-made surroundings, such as buildings, structures, parks, streets, bridges, etc.

City

A large community made up of smaller communities or neighborhoods, often characterized by more densely placed developments.

City/County/Town Council

The local governing body of a city, county, or town elected by its local residents.

City Map

A comprehensive representation of a city showing streets, important buildings, and other urban features compatible with the scale of the map.

City Planner

A person who deals with the regulation of land use and the physical arrangement of city structures; can work for the local, county, regional, state, or federal government as well as for a private group.

Citizen

A legal resident of a community; suggests certain responsibilities to that community.

Civic Building

A building maintained and run by the local government—city hall, courthouse, etc.

Developer

An individual or group of people who initiate and implement the construction of buildings and structures or convert land to a new use.

Development

The design and construction of buildings on a parcel of land.

Infrastructure

Human-made structures that are used and paid for by a community and help it to function, such as utilities, roads, and sewers.

Land Use Category

Land designated by its use (e.g., commercial, residential, open space).

Land Use Map

A map depicting the zones or areas for different uses within a city.

Land Use Plan

Map that describes where different land uses will be located.

Map Legend

A collection of symbols used as keys to the information presented in a map; usually located at the bottom of a map.

Mixed-Use

Areas or buildings that are designated for more than one use, such as residential and commercial.

Neighborhood

People living in physical proximity who often share bonds of friendship and common interests.

Planning Commissioner

A city official who approves the plans for a city's development.

Public Works

Facilities that are run by the local government and serve the community—water, electricity, road construction, sewer, and waste management; infrastructure.

Resident

A home's occupant; one who lives in a particular place or neighborhood.

Rural Area

An area of very little development, often characterized by agricultural uses or undeveloped land.

Sustainable Community

A community that is able to maintain its economy and population without doing irreparable harm to the environment while at the same time meeting the needs of the people living in the community.

Suburban Area

A developed area outside the denser urban center characterized by a separation of uses and a dependence on highways and cars for transportation.

Town

A defined area of buildings that serves as a center for business and living; smaller and less dense than a city.

Transportation

The method and vehicle used to move from one location to another.

Urban Area

An area of dense or closely placed development, often associated with a street plan made up of blocks, and mixed uses; a city.

Zone

A legal definition that restricts building types and size, enterprises, or uses (i.e., residential, commercial, institutional, industrial, parks, and recreation) within a specified area of a community.

Zoning Restrictions

Legally-binding parameters for conduct or use such as how large or high to build a building or how a building or space may be used by the community or owner.

Books

General

Arendt, Randall. *Rural by Design: Maintaining Small Town Character*. Chicago: American Planning Association Planners Press, 1994.

Provides an overview of designs and policies that prevent the loss of small town character while accommodating growth.

Duany, Andrés, Elizabeth Plater-Zyberk, and Jeff Speck. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press, 2001.

Offers solutions for dealing with ineffective suburban sprawl and automobile-based development patterns currently used in the United States.

Jacobs, Jane. *The Death and Life of Great American Cities*. New York: The Modern Library, 1993.

When this book was first published in 1961, the New York Times described it as the “most influential single work in the history of town planning.” This analysis of urban decay is intended for an adult audience for pleasure or reference.

Katz, Peter. *The New Urbanism: Toward an Architecture of Community*. New York: McGraw-Hill, Inc., 1994.

Offers in-depth overview of New Urbanism—an international movement to reform the design of the built environment and to raise the quality of life of its citizens. It involves re-ordering the built environment into traditional forms of cities, towns, villages, and neighborhoods.

Kunstler, James Howard. *The Geography of Nowhere: Rise and Decline of America's Man-Made Landscape*. New York: Simon & Schuster, 1993.

A candid examination of the consequences following the wave of suburban sprawl in the United States.

Race, Bruce. *Youth Planning Charrettes: A Guide for Planners, Teachers, and Youth Advocates*. Chicago and Washington, D.C.: American Planning Association Planners Press, 1998.

Provides instruction for using the inter-active planning charrette/workshop process in K-12 classrooms to help students analyze issues in their community.

Sucher, David. *City Comforts: How to Build an Urban Village, Revised Edition*. Seattle: City Comforts Press, 2003.

Addresses the living comforts people seek but sometimes cannot find in an urban setting, and illustrates through examples how these conveniences can be woven into urban environments.

Lesson/Activity

Beasley, Punky, Dean W. Graves, Ginny Graves, and Karen Dell Schaubert. *Walk Around the Block*. Prairie Village, KS: Center for Understanding the Built Environment, 1992. (Available for purchase from the Center for Understanding the Built Environment, www.cubekc.org)

Award-winning self-discovery program that encourages students and teachers to explore their built environment. Includes map-making activities.

Graves, Dean W. and Ginny Graves. *Box City*. Prairie Village, KS: Center for Understanding the Built Environment, 1992. (Available for purchase from the Center for Understanding the Built Environment, www.cubekc.org)

Award-winning curriculum that teaches how communities are planned, what makes a quality community, and how students and teachers can improve their communities.

Copeland, Rolaine, Marcy Abhau, and Greta Greenberger, eds. *Architecture in Education*. Philadelphia, PA: Foundation for Architecture, 1986. (also available online <http://www.aiabookstore.com/architecture-books/books-childrens-books/architecture-in-education.html>)

Encourages an experiential learning process for examining the built environment through hands-on activities.

Davis, Meredith, Peter Hawley, Bernard McMullan, and Gertrude Splika. *Design as a Catalyst for Learning*. Alexandria, VA: Association for Supervision and Curriculum Development, 1997.

Incorporates environmental and urban planning examples with the national standards for geography, civics, science, and other subjects. Includes an extensive bibliography and resource list.

National 4-H Council. *Going Places, Making Choices: Transportation and the Environment*. Chevy Chase, MD: National 4-H Council, 1999. (Available for purchase from National 4-H Council, www.4-hmall.org).

Transportation curriculum for grades 9-12. May be adapted for younger audiences. Helps students examine their transportation choices and the impact of these choices on the environment.

their own solutions.

Weber, Joseph A. *Architecture Everywhere: Investigating the Built Environment of Your Community*. Tucson, AZ: Zephyr Press, 2001.

Provides projects and activities that help students explore their surrounding built environment.

For Students

Ahrens, Robin Isabel and Ilja Bereznickas (illustrator). *My Building*. New York: Winslow Press, 1998.

Engaging story about the daily routines in a metropolitan high-rise.

Barrett, Judi and Ron. *Old MacDonald Had an Apartment House*. New York: Atheneum, 1998.

Fun and simple account of Old Mac-Donald's adventures in a big city.

Barton, Byron. *Building a House*. New York: William Morrow & Co., 1990.

Provides step-by-step process of building a house with pictures and words.

Bullard, Lisa. *My Neighborhood: Places and Faces*. Minneapolis: Picture Window Books, 2003.

A little girl shows a new neighbor around their neighborhood, introducing various buildings and people in their community.

Burton, Virginia Lee. *The Little House*. Boston: Houghton Mifflin, 1943.

Award-winning book about a house as its rural surroundings change over time.

Macaulay, David. *Underground*. Boston: Houghton Mifflin, 1976.

Text and drawings review the many things underneath a city's surface such as sewers and power systems.

Sweeney, Joan. *Me on the Map*. New York: Crown Publishers, Inc, 1996.

A little girl finds her place on various maps of her house, city, state, and country.

Treays, Rebecca. *My Town*. London: Usborne, 1998.

Characters Ted and Josie introduce common issues encountered by most towns.

Web Sites

General:

Smart Growth Network

www.smartgrowth.org

A comprehensive overview of the smart growth movement for adults; includes current city-planning and land use issues.

Congress for the New Urbanism

www.cnu.org

Highlights current New Urbanist projects across the United States and provides related news updates.

National Geographic Society: The New Suburb

www.nationalgeographic.com/features/00/earthpulse/sprawl/index_flash.html

Fun interactive that explores a virtual New Urbanist neighborhood.

American Planning Association

www.planning.org

Explains and offers solutions for conserving farmland and limiting development on existing farmland.

Center for Understanding the Built Environment

www.cubekc.org

Educational organization that encourages educators and community organizations to work together to effect change in the built and natural environments. Offers award-winning curricula.

United Nations: Cities of Today, Cities of Tomorrow

www.un.org/cyberschoolbus/habitat/index.asp

A six-unit curriculum about cities around the world for grades 5-11, activities can be adapted for younger grades. Includes teacher activities, resource catalog, book list, and curriculum ties.

Commission for Architecture and the Built Environment

www.cabe.org.uk/teachingresources

A United Kingdom organization that encourages the government to build safe, sustainable, beautiful and efficient communities. Numerous free curricula about the built environment.

Local Agencies:

To obtain a district, county, or city land use map that highlights different land use/zoning categories for your area, contact one of the agencies listed below.

Arlington County

Department of Public Works

Map Name: Generalized Land Use Plan
Map Download Map: gis.arlingtonva.us/Maps/Standard_Maps/Planning_Maps/GLUP.pdf

Phone: 703-228-3000

City of Alexandria

Department of Planning and Zoning

Map name: City of Alexandria Zoning Map
Download Map: alexandriava.gov/uploadedFiles/gis/info/Zoning.pdf

Phone: 703-746-3822

District of Columbia

Office of Planning

Map Name: Existing Land-use Map

Download Map: <http://planning.dc.gov/planning/cwp/view,a,1355,q,627182,planningnav,%7C32339%7C.asp>

Phone: 202-442-7600

Fairfax County

Department of GIS and Mapping Services

Map name: Zoning Maps

Interactive Map: <http://www.fairfaxcounty.gov/gisapps/pdfViewer/default.htm>

CD of Zoning Maps \$25 fee

Phone: 703-324-2712

Montgomery County

Department of Technology Services and Geographic Information Systems Services

Map Name: Land Use and Land Cover Map

Download Map: www.montgomerycountymd.gov/content/gis/default.asp

Phone: 301-495-4625

Prince George's County

Planning Department

Map Name: Zoning Map

Interactive Map: www.PGAtlas.com (click on 'Mapping' tab)

Other School Programs at the National Building Museum:

- *Be a Green Builder*
- *Fuller's Fantastic Geodesic Dome*
- *Patterns: Here, There, and Everywhere*
- *My House, My Home*
- *Washington: Symbol and City*
- *Green by Design*
- *Drawing on History Tour*

Other Youth Programs at the National Building Museum:

- *Birthday Parties*
- *Family Programs*
- *Festivals*
- *Outreach Programs*
- *Scout Days*
- *Summer Camp*

For more information on these programs visit our website www.nbm.org.

Visit <http://go.nbm.org/educators> for free lesson plans and information about the Museum's curricula kits.

Teaching resources are available in the Museum Shop. Visit <http://go.nbm.org/shop>.

The National Building Museum tells the stories of architecture, engineering, and design. The Museum offers something for everyone, from children to design buffs to building professionals. The engaging exhibitions and all-ages programming showcase the world people design and build.



Museum Hours

Mon – Sat 10:00am – 5:00 pm, Sun 11:00 am – 5:00 pm

Location

401 F Street NW, between 4th and 5th Streets
Red Line Metro, Judiciary Square
