Course Title: The Built Environment: Design Solutions for Public Health

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Credits: 4

Prerequisites: EH807 Urban Environmental Health
or
Consent of instructor

Meeting dates: Wednesday 6:00 – 8:45
September 6 – December 20

Course goals:

This course will provide an overview of urban planning to public health students and introduce public health concepts to urban planners. At the conclusion of the course, students will be able to:

- Explain the rationale behind historical and current theories on the relationship between the built environment and public health
- Identify contemporary features of the built environment such as parks, public works projects, single family homes, apartment buildings, transportation systems and highways, etc., that reflect past efforts to influence health.
- Critique historic patterns of development and assess the health consequences of contemporary urban forms.
- Evaluate the evidence for the built environment–health link.
- Explain the role of the built environment in the context of other factors that influence health.
- Understand how the built environment might influence other efforts to protect and promote health.
- Utilize studies and methodologies developed by sociologists, anthropologists, urban planners and architects to evaluate the health impacts of the built environment.
- Propose built environment-based interventions, based on current evidence and the lessons learned from the past studies of the built environment, to promote public health.
- Develop and implement new programs and policies that utilize built environment and design to promote public health.

Course Rationale
This course provides students with an understanding of how the built environment impacts public health and the critical tools to evaluate specific design features. The modern urban planning and public health disciplines both had their beginnings over 100 years ago as reformers sought to address the problems associated with rapid urbanization, industrialization and immigration. Together, these reformers helped implement a wide variety of policies and programs including urban parks, water works and sewerage, zoning, and building codes. By the mid 20th century, however, advances in medicine, the emphasis on individual responsibility for disease and the professionalization of both disciplines resulted in a divergence of public health from planning. But at the end of the century, the persistence of risky health behaviors and the increase in obesity rates, particularly in the United States, prompted renewed attention to the link between built environment and health. The result has been a recent increase in connections between planning and public health. For example, the American Public Health Association now includes a Built Environment Institute at its annual meeting, and the American Planning Association holds training sessions on public health.

This course places students at the intersection of this newly growing field. At the end of this class, students will be able to “read” the built environment, i.e., to identify elements whose design roots are based on solving specific health issues. These solutions have dramatically impacted the built environment and underpin the ways in which buildings, neighborhoods and cities are built today. As our understanding of public health has evolved over the past century, and as the unintended public health consequences of previous design solutions have become recognized, attempts to address public health through design have also evolved rapidly, and in ways which affect us every day. This course gives students a framework for evaluating historic, current and future design programs and policies. This framework is based on past epidemiologic, anthropological and economic studies of the built environment. Throughout this course, key studies are presented and the quality of the evidence is discussed.

Course Overview

The first three class sessions provide a background on the history of public health and the built environment, stressing public policy decisions that have resulted in current patterns of development. While these development patterns are now seen to be at least partly problematic, they were implemented as reasoned responses to the environmental health problems of their time. Next, a series of classes present the ways in which the built environment–health connection has been hypothesized and studied, and how these studies result in design requirements. They highlight the varying methods used by different disciplines to study the built environment. The next six classes are devoted to specific issues and solutions. In each session, the evidence for the particular set of problems being addressed is assessed and the proposed solutions are evaluated in light of what is our current understanding of how the built environment affects health. Finally, at the last class session, students will briefly (10 minutes) present the findings of their final projects to the entire class.

The course will use a reader and a book:

The course is organized into four sections:

**Introductory and Historical Class Sessions**

**Session 1:** Introduction: Course overview and themes (Lopez and Howard)  
*Trends and forces: An overview of how and why cities grow and change*

**Session 2:** History of planning and public health to 1900 (Lopez)  
*Trends and forces: Economics, commerce, and trade*

**Session 3:** History of planning and public health since 1900 (Howard)  
*Trends and forces: Globalization and urbanism*

**Methods Sessions**

**Session 4:** Defining and measuring the built environment: The case of urban sprawl (Lopez)  
*Trends and forces: The role of technology (Howard)*

**Session 5:** Health studies of the built environment (Howard)  
*Trends and forces: Demographics (Lopez)*

**Session 6:** Sociological and anthropological evaluations (Howard)  
*Trends and forces: Political and social change*

**Session 7:** Planning, design and architectural studies (Lopez)  
*Trends and forces: Summation – the role of the built environment in the context of evolving cities*

**Session 8:** Sustainability and measures of environmental impacts (Howard)

**Issues, programs and solutions:**

**Session 9:** Zoning and government regulation of land use (Lopez)  
**Session 10:** Alternatives to automobile-dependent design (Howard)  
**Session 11:** Public health promotions (Lopez)  
**Session 12:** Urban renewal, revitalization and housing the poor (Lopez)  
**Session 13:** China, Latin America and the new urban frontier (Howard)  
**Session 14:** Creating and preserving open space (Lopez)

**Presentations of class projects**

**Session 15:** Final Paper Presentations

**Teaching method**

The course will consist of lectures and class discussions. Students are encouraged to draw on their own experiences—the neighborhoods they grew up in, the houses they live in now, how they access school and employment—and contribute these examples to class discussions. Our
goal is to encourage students not to take the contemporary built environment as immutable or purposeless, but instead be able to identify elements that reflect past concerns for health and assess current programs and policies in light of new understanding of the built environment – health connection.

**Course Requirements**

The written coursework will consist of one case study and a final paper.

**Case Study Analysis:** Boston Redevelopment Authority South End Urban Renewal Project. The South End Renewal Project was a 20-year effort to transform the neighborhood from a poor working class community of substandard rooming houses and tenements into condos and market rate apartments. Using tax credits, loan subsidies and grants along with public works investments, the plan is responsible for how the community surrounding BUSPH looks today. This project represented a dramatic new change in how neighborhoods were to be revitalized. In previous projects, the process had been to bulldoze everything (such as in Boston’s old West End) and replace buildings with either high rises surrounded by parks (Boston’s Charles River Park) or by suburban style apartments (Roxbury’s Washington Park). The South End plan was informed by many of the concepts and concerns raised by the analyses discussed in this course. The goal of the case study is to provide an opportunity for students to apply what they have learned to this local historical project. Students will read the plan summary and answer the following questions:

- How did the South End built environment (circa 1950) reflect urban thinking of the mid-19th century (when it was originally developed)?
- What elements of mid 20th century urban thinking were incorporated into the renewal plan?
- Knowing what we know now, what are some of the drawbacks of the plan?
- What are some of the other trends that have affected the outcome of plan?
- Going forward, how might the South End change in the next two decades?

Case Study Analysis length: 8 – 10 pages. Due: Class Session 9.

**Final Paper:** The paper will be on a topic proposed by the student and approved by the course instructors. Topics can be any relevant public policy, theory or specific case example related to the built environment and public health. Papers should describe the policy, theory or case; identify how it represents an attempt to manipulate the built environment; connect it to other types of interventions or activities; critique it from the standpoint of health and suggest possible modifications that might strengthen it. Final paper length should be 20 pages, not including references. Representative paper titles include:

- Celebration, Florida: A health, equity and sustainability critique.
- Smart growth and affordable housing: Do growth controls hurt the poor?
- Mass transit vs. subsidies for automobile ownership: How to increase transportation options for the urban poor.
Important paper deadlines are:

- Class 8: Paper topics due
- Class 11: Literature review due
- Class 15: Paper due; 10 minute presentation

**Grading**

- Case Study Analysis: 30% (8 – 10 page paper)
- Final Paper: 70% (20 page paper)

1. **Introduction: Course Overview and Themes (Lopez and Howard)**

In this session, we cover the role of the built environment in health. We begin with a review of health, which is more than the absence of disease, and explore the concepts of association and causation, and the proximate and underlying factors affecting health. This overview stresses that the built environment is just one factor among many affecting health. It lays a foundation for assessing and understanding the various strands of evidence linking the built environment to health. We describe the issues to be covered during the course and place these issues into the context of other forces affecting cities. We explain the differences and relationship between the health of cities, a complex of economic and social activity, and the health of individuals living in cities, whose health status reflects the influences of these activities on individual outcomes.

*Trends and forces: How and why cities grow and change (Lopez and Howard)*

The last 45 minutes of each of the first seven class sessions will be focused on trends that affect cities and the health of urban residents. These trends and forces do not occur in isolation. On the contrary they interact in synergistic and antagonistic ways. Some of the questions we will ask include: Why do people move to cities? What are the social, economic and technological forces compelling the movement and the persistence of cities? At the same time, what forces are pulling people and economic activity out of cities to the suburbs and beyond? How have changing views of public health and theories of disease causation played a role in these movements? Are cities inherently healthy or unhealthy?

**Objectives:** At the end of this session students should be able to:

- Discuss the basic problems and advantages of cities
- Articulate and describe the historical and current trends of urbanization in the US and in the world
- Assess their own assumptions about cities and urban public health.

**Readings**

2. History of planning and public health to 1900 (Lopez)

Focusing on the United States, this class section outlines the joint beginnings of the urban planning and public health professions as reformers sought to reduce the impacts of urbanization and industrialization. The results of the rapid growth of cities were large slums with substandard and dangerous housing, high levels of infectious diseases including tuberculosis, and overburdened roads and infrastructure. Public health advocates and social reformers found a connection between living in tenements and neighborhoods near large factors and communicable diseases such as tuberculosis and chronic diseases such as depression and disabilities. To counter these problems, a number of initiatives were developed including the sanitarian movement, the development of water treatment and sewerage, and the separation of land uses to protect workers from industrial air pollution. The culminations of the 19th century reform movement include the great urban park systems (New York City’s Central Park, Boston’s Emerald Necklace, etc.), new water supplies, and other important contributions to health and welfare. Another lasting legacy is that cities continue to be seen to be unhealthy and dangerous places, leaving the United States with a deep bias toward suburban living.

Trends and Forces: Economics (Lopez)

Cities are fundamentally economic creations. They began as trading, political, religious and administrative centers made possible by the development of agriculture. They quickly became centers of trade and cultural exchanges and were a marker of the development of civilization. An archetype persisting until the beginning of the industrial revolution, they were characterized by high rates of disease, high population densities and mercantile based economies. The industrial revolution and changes in economic production brought new needs for labor, heavy immigration, continued problems with infectious disease and noxious chemical pollution into cities. People who could moved to the emerging suburban periphery. Finally, the past hundred years have seen a peak and decline in manufacturing, the growth and plateauing of middle classes, persistent poverty and consumer and information based economies that have created and destroyed urban areas.

Objectives: At the end of this session students should be able to:

- Describe the health and environmental characteristics of 19th century cities;
- Connect these 19th century city characteristics to 21st century attitudes toward cities and urban residents, and explain how these attitudes continue to drive current social, health and environmental policies;
- Identify contemporary built environment features in the Boston area and elsewhere which date back to attempts by planners and health officials to address 19th century concerns;
- Articulate the health concerns being addressed by these development features, and evaluate the success of those attempts;
- Understand the connections between urban planning and public health and use this understanding to critique policies and programs in both disciplines;
- Assess the impact of economic trends and changes on urban areas and residents.

**Readings**


**3. History of planning and public health since 1900 (Howard)**

US attitudes to the urban environment in the early twentieth century were informed by the sanitarian view of the city as physically (and morally) filthy; the automobile was therefore seen as an opportunity to move the population out of the overcrowded cities and into a clean and healthy natural environment. This idea reached its logical limit in Le Corbusier’s Radiant City ideal—but his impressionistic plans made little or no attempt to solve the congestion of a car-centered city, nor even to describe where these millions of cars would be stored. The results are everywhere, from suburban shopping malls to the Cathedral housing development near BUSPH. The flight from the cities was given an added boost after World War II, as the US war economy retooled to build cars and suburbs, and was fueled by the construction of the interstate highway system, often bulldozed through poor minority communities. In addition to the traditional anti-urban view, racial tensions and racist attitudes contributed to a rapid flight of the (mostly white) middle class from the urban areas and into the new suburbia. In this class we review the recent development of US urban form and the process of suburbanization

*Trends and Forces: Globalization (Howard)*

In once sense the impact of globalization on cities is not new and cities from Rome to Detroit have grown and declined as their ability to command global resources and markets changed. But new technologies and abilities to quickly move capital and means of production across borders and oceans have accelerated the impacts of globalization. Some urban areas, such as London, Mumbai and Shanghai, have gained from globalization. Others, such as St. Louis and Birmingham, England have lost economic power and population. We discuss the impact of globalization on the health of cities and people and trends such as the movement of manufacturing to low wage countries (what does this imply for environmental health and workplace safety?), the development of global markets of consumer goods and the consolidation and centralization of financial and capital markets.
Objectives: At the end of this session students will be able to:

- Place the suburbanization of the United States into its historical context of planning theory, the rise of the automobile, economic development, and racial and social attitudes;
- Use contemporary urban environmental characteristics to illustrate past efforts to improve social outcomes;
- Explain the impact of major schools of architectural theory on US urban development;
- Describe the impact of public policies on the health of marginalized populations;
- Critique past efforts to incorporate health into planning and development;
- Discuss the mixed impact of globalization on various population subgroups;
- Describe the pathways between globalization, income inequality and health.

Readings


METHODS

4. **Defining and measuring the built environment: The case of urban sprawl. (Lopez)**

A recurring issue in exploring the relationship between the built environment and health is the problem of definition and measurement. While most people have a mental image of many facets of the built environment, varying and imprecise definitions can have important impacts on proposed causal paths and outcomes. This class explores the varying ways one feature of contemporary urban environments has been defined and measured, urban sprawl. Sprawl is often defined as a pattern of urban development that includes low density, decentralization and automobile dependence. But sometimes these features are in conflict. For example, employment centralized in downtowns is often considered to be the opposite of sprawl. At the same time, mixed use development, allowing commercial and office space in and near residential areas is also seen as anti-sprawl. But this mixed use development can pull jobs out of the downtown core, resulting in a weaker center city. Not every sprawl measure addresses this contradiction. The inconsistencies of these definitions can be seen when they are applied to US metropolitan areas. While most measures agree that New York City has little sprawl and Atlanta is highly sprawled, some metropolitan areas, particularly dense but decentralized cities, perform quite
differently on various measures. Some metropolitan areas end up having sprawl values very different from what most people would consider them to be. For example, almost every measure of sprawl shows Los Angeles to be less sprawled than Boston, despite Boston’s strong central core and Los Angeles’s lack of a well developed center. This class explores the impact of definition and measurement.

*Trends and Forces: Technology (Howard)*

Technology has always affected cities. At the beginning of the 20th century, some observers thought that the telephone was going to render cities obsolete as face to face communication unnecessary. Even the internet has had a mixed impact on urbanization, allowing people to work anywhere but also allowing jobs to cluster in Indian cities and manufacturers to change product lines in an instant in China. Certain US cities such as Austin and San Jose have grown because of the internet; others have seen their economic decline hastened. The concept of technology needs to be broadly understood and it includes improvements in transportation (cars, planes and trains) as well as mass communication and the internet. These changes can directly and indirectly affect health in complex ways: for example, telecommuting might improve health by allowing medical experts to consult with each other across large distances, or it might worsen health, increasing screen time decreasing physical activity.

At the end of this session, students will be able to:

- Understand the differences between description and measurement;
- Analyze the effects of measurement error on health research outcomes in built environment research;
- Critique measures of sprawl for consistency and accuracy;
- Apply the lessons of sprawl measurement to other issues in built environment health;
- Describe and explain the urbanization to smaller family size to health pathway.
- Project current technological trends and use these projections to identify potential future health issues;
- Describe the impact of technological trends on the growth and health of urban areas.

*Readings*

- Urban Sprawl and Public Health. Chapter 1. What is Sprawl? What Does it have to Do with Health?

5. **Health studies of the built environment (Howard)**
There are several ways that the built environment—health connection have been explored. Generally, many early efforts were case studies, more recently these have been supplement by ecologic studies, cross sectional studies and small area surveys. Each of these methodologies has strengths and weaknesses. For example, large national annual surveys allow for the identification of small (but significant at a population level) changes in risk, but they are problematic because they are cross sectional—they do not allow for controlling for past exposures or movement to new areas. For a number of reasons, it is unlikely that there will ever be a great deal of literature based on blinded interventions. But collectively, health studies have begun to influence public policy. This class examines several of the most important built environment health studies. We will be looking at how and why these studies control for other influences on health such as age, education, income, sex and tobacco use, and class discussion will be used to illuminate how other factors influence health.

*Trends and Forces: Demography* (Lopez)

Movement of cities has often been associated with increased educational opportunities (particularly for women), smaller family sizes and changes in workforce participation. All of these trends impact health. One of the most problematic issues has been the persistence of the impact of race and income on health outcomes. Another important demographic and economic factor is the continued clustering of creativity and innovation in urban areas and the people who participate in these processes. Finally we explore changes in preference for urban and non-urban lifestyles and how these influence urban change.

At the end of this session, students will be able to:

- Identify the main studies that have driven the built environment health literature;
- Critique the studies using an epidemiologic and statistical framework;
- Assess the quality of the evidence linking the built environment and health;
- Propose future research that might address the gaps in understanding.

**Readings**

- Urban Sprawl and Public Health. Chapter 5. Physical Activity, Sprawl, and Health
6. **Sociological and anthropological evaluations (Howard)**

Urban planning and architecture have leaned heavily on contributions from sociologists and anthropologists to understand how the built environment affects health. While some of this research uses environmental health methodologies, it has primarily (but not exclusively) utilized ecologic methods, case studies or ethnographic studies. This research has been of varying rigor and while it is central to understanding the impact of the built environment on health, some of these studies use concepts that are not familiar to public health or planning professionals. This session provides an introduction to urban sociology and anthropology. It explores how the findings of these researchers have been incorporated into our understanding of how the built environment affects health.

*Trends and Forces: Politics and social change (Howard)*

Cities have always had important political dimensions. From the development of empires in ancient times to revolutions in more recent eras, the political power of urban areas and residents has shaped cities. In the US, the rise of political machines was essential for mitigating the impacts of immigration and industrialization. The joining of urban ethnics as part of the mid-20th century Democratic coalition saw the implementation of social, health and environmental programs, laws and policies. The splintering of this coalition has seen a decline in these protections. Anther factor affecting the health of cities has been the movement of people away from inner-cities to suburbs and the South. This has resulted in a shift in political power away from inner cities and a further decline in the ability to access public monies for infrastructure and programs. Many developing countries have had great amount of centralization of population, economic development and political power into their capital city while other centers have declined. We will discuss how political power and centralization can alter urban form.

At the end of session, students will be able to:

- Critique urban anthropology and sociology using public health epidemiology methodologies;
- Understand how these disciplines have affected architecture and planning theory;
- Identify gaps in the literature and propose new studies to explore these gaps;
- Integrate sociological/anthropological studies with epidemiological/public health methods.
- Describe the relationship between urban growth and political power and identify key health and environmental achievements of mid-20th century urban voter coalitions.
- Identify how the loss of political capital has affected health and environmental infrastructure.

**Readings:**


7. Planning, design and architectural studies. (Lopez)

The interaction of health and the environment has been studied by urban planners, designers and architects. They share a belief with public health advocates that humanity can be improved through programs and education as well as built environment improvements. While some of the tools of economics, epidemiology and sociology have been adopted and used by planners and architects, the case study has been the primary mechanism used by planners and architects to study the built environment.

Trends and forces: Summation – the role of the built environment in the context of evolving cities (Lopez)

The trends and forces outlined in the past weeks do not take place in isolation. They directly impact the economic life and health of cities and sometimes result in improvements in public health and at other times negatively affect the health of cities and their residents. In this complex of effects we attempt to measure and assess the impacts of the built environment. While the field has seen its share of utopian visionaries, it is important to remember that the built environment is only one factor affecting health. Built environment interventions can only be implemented in the context of other urban trends and their effectiveness will rely on understanding and accommodating these other issues.

At the end of this session, students will be able to:

- Describe the role of case studies in urban planning and architecture research;
- Critique the impact of theory on the built environment and identify how 20th century design ideas have affected health;
- Evaluate the impacts of planning and architectural policies on special populations;
- Identify barriers to improving the built environment.
- Assess the range of potential impacts that built environment interventions can reasonably be expected to have;
- Predict some of the trends (within reason) that may affect cities over the immediate future.

Readings

8. **Sustainability critiques of the built environment (Howard)**

Sustainability refers to the degree to which a program, policy, or society can continue to exist over a long time period without significant negative impacts on individuals, societies or ecosystems. Sustainability is closely related to equity, particularly generational equity, the idea that lifestyles today should not negatively impact future generations. Critiques in this class include several perspectives. Economic sustainability: Will a project or program be affordable now and in the future? Environmental sustainability: What is the effect of a policy or program on the environment and on natural resources? Temporal sustainability: what are the effects today, and in the future? In this session, we discuss metrics by which sustainability might be measured and by which specific programs may be evaluated. This class will use the framework developed by Agyeman and others to evaluate and promote sustainability. We will apply this framework to the proposed IKEA development in Somerville MA.

**Objectives:** At the end of this session students will be able to:

- Describe the connections between urban and suburban development and air and water pollution, and the primary public health problems with this pollution
- Analyze different development regimes for their impact on land, energy, agriculture, biodiversity, and other resources;
- Propose alternatives to existing developments to improve their sustainability;
- Describe metrics by which we might measure the effects of a development project on sustainability.

**Readings**


**ISSUES AND SOLUTIONS**

9. **Zoning and government regulation of land use (Lopez)**

New York City’s tenement laws marked the beginning of the effort to link the built environment to improvement of health. In the case *Euclid v. Ambler* (1926) the US Supreme Court upheld the right of cities to use zoning because of government’s role to protect health, and health continues to be legal underpinning of zoning and land use regulation. Classic zoning codes separate housing from retail, office and industrial uses, promote large single family residences and no longer reflect current knowledge and realities about the health impacts of the built environment. Developed to solve 19th century problems, classic zoning is now seen to be responsible for many of the negative health impacts of the 21st century built environment. To create better, healthier,
and more aesthetic communities, planners and architects have promoted a set of new policies and design principles that allow for a mixture of land uses, more flexible siting of buildings and higher densities. Known as Smart Growth and New Urbanism, these policies are increasingly being adopted by communities across the country. This class will include examples of New Urbanist developments along with a critique of how effective they have been in promoting health, equity and sustainability. Fundamental issues that will be addressed here are the problems of cost and time. It is very expensive to modify existing built environments and new projects on urban peripheries may create as much sprawl as they reduce. Capital projects can have decades long planning times and conditions may change between initiation and implementation (see Boston’s Big Dig). These issues must be addressed in order to change the overall impact of the built environment.

Objectives: At the end of this session, students will be able to:

- Identify how zoning and building codes were designed to protect health, but how they may also contribute to health problems;
- Describe and critique some of the key attributes of New Urbanism and Smart Growth;
- Understand how architects and planners have responded to the perceived problems with traditional zoning. Assess the potential of newer proposals for application in different communities;
- Critique proposals to modify the built environment from a capital and temporal perspective;
- Assess New Urbanist and smart growth developments using traditional zoning/development frameworks of analysis.

Readings


Case Study Analysis due. There will be a 15 minute discussion of the Case Study Analysis.

10. Alternatives to automobile-dependent design (Howard)

Virtually all development in the United States since World War II has been heavily automobile dependent, and thus both highly resource intensive and, we argue, antagonistic to public health goals. An important consideration is that not everyone can drive. The elderly, people with disabilities and the young may not be able to drive, others may not be able to afford a car. Most alternatives to car-oriented development center on relatively dense urban areas in which transportation can be more efficient, and often, human powered. In this class we will discuss specific design solutions intended to improve public health, environmental impacts, and energy use. These include communities built to favor the pedestrian and bicyclist, as well as transit-
oriented development. Some specific local design features (traffic calming devices; pedestrian and bike amenities) will be discussed. What are the specific goals of these interventions? How do they hope to realize these goals? How effective are various design elements in promoting physical activity? The passage by Congress of the Intermodal Surface Transportation Efficiency Act of 1991, and its subsequent reenactments, created new funding and political channels by which these types of development might be realized; we will give an overview and discuss some examples.

**Objectives:** At the end of this session students should be able to:

- Describe the essential components, economic and environmental advantages, and public health impacts of walkable and bikeable communities;
- Assess the health impacts of transit-oriented developments;
- Describe the impact of ISTEA (and other funding sources) on urban and suburban development. Propose new projects fundable under ISTEA which might promote health;
- Propose specific health-promoting design changes to local communities.

**Readings:**


**11. Public health promotions (Lopez)**

Given the increasing evidence linking the built environment and health, the public health community has begun to develop programs to address the health impacts of suburban living. Many of these interventions have been more focused on individuals or groups than on the root causes in the environment. In addition, the programs are so new that they are yet to be evaluated. However, it is clear that working to mitigate the impacts of the built environment is an important policy response. This class includes presentations on the Boston’s STEPS program and efforts to promote a return to walking to school. (National surveys indicate that in 1970, approximately 70% of children walked to school, by 2001 only 30% of children walked). These are public policy solutions to the problems posed by the built environment and we will look at efforts to determine their effectiveness. We will also examine the barriers to using the built environment to promote health. These include high capital and maintenance costs, long lead times for planning and implementation, community resistance, inertia, and other factors.

**Paper Literature Review Due**

**Objectives:** At the end of this session students should be able to:
- Describe the current types of interventions used to increase physical activity.
- Critique these interventions from the standpoint of feasibility and barriers to change;
- Place these interventions into the context of public health practice;
- Propose alternative programs to more specifically address the built environment’s impact on physical activity.

Readings


12. **Urban renewal, revitalization and housing the poor (Lopez)**

Urban renewal had a tremendous impact on US cities, destroying hundreds of neighborhoods and displacing millions of people. These negative effects, along with a shift in government priorities, have resulted in new programs designed to revitalize inner cities. These projects include large sports and cultural facilities, loans to upper income households to purchase housing, and rebuilding of older public housing projects and downtown business districts. But do these programs have a more benign impact on the poor? To a certain extent these newer programs mimic older policies that sought to replace poor people with middle class or upper income households. But they also include steps to improve the economic status of existing residents as well. All of them have potentially large health and environmental impacts. We will discuss its relevance to contemporary issues such as New Orleans.

**Objectives:** At the end of this session students should be able to:

- Describe the impact of urban renewal on the urban poor and racial minorities;
- Analyze contemporary urban policies from a health perspective;
- Describe the past and current “tools” planners have used to change neighborhoods;
- Interpret proposals to rebuild New Orleans in light of past experiences to revitalize neighborhoods.

Readings

13. **China, Latin America and the new urban frontier (Howard)**

The developing world has a wide diversity of urban types and no subset of areas can capture the range of built environments that our increasingly urbanized planet has produced. Three examples are covered in this class because they represent government-initiated plans to change the built environment.

China has undergone a tremendous physical change in the last 15 years. With over 1 billion people, any major policy shift can have global impacts on energy and the environment as well as direct affects on the health of a significant portion of humanity. In the context of policies to encourage industrial growth and economic change, China’s government is actively encouraging the use of automobiles through investment and policy change. China’s proposed new highway system rivals the US interstate system in scope. In many large cities, bikes are being banned and expressways built to accommodate cars. From a predominately rural, agrarian economy China is morphing into a more urbanized environment focusing on manufacturing. There have been profound impacts on the local and global environment and significant changes to public health. For the first time, there is a growing epidemic of obesity as diets change and physical activity patterns are modified. The increasing reliance on automobiles is impacting global environments and energy prices. This session looks at the overall environmental impacts of Chinese development and the health impacts on the poor, children and the elderly.

Brazil has seen two significant efforts to incorporate theories of planning and urban design into the development of new urban areas. Brasilia was built incorporating modernist architectural theories and was a response to congestion in Rio de Janeiro and São Paulo. The goal was to resist the perceived problems of older cities. But despite the formal arrangement of buildings and avenues, the more typical, less constrained pattern of Brazilian urbanization has reasserted itself. This demonstrates the limits of planning and how efforts that exclude certain populations (the poor and the near poor), can result in unplanned outcomes. This class session will examine how modernism interacted with other urban factors and how the result has affected the health and lives of its residents.

Curitiba represents an alternative vision of transportation and the environment. Their system of busways and urban form has spread to the US and now informs an important programmatic initiative US transportation policy (see the Silver Line near the BUSPH). We will look at how these alternative transportation policies can affect health and the environment and what are some of their limitations on implementation in other communities.

**Objectives:** At the end of this session, students should be able to:
- Compare and contrast conditions in contemporary developing cities with conditions in rapidly growing cities in the 19th century;
- Identify some of the programs that are addressing the environmental health conditions in cities in the developing world;
- Critique these new patterns of development from the perspective of lessons learned from US development;
- Identify examples from developing countries that might be transferable to Western cities.

Readings:


14. Creating and preserving open space (Lopez)

Contemporary urban growth patterns simultaneously threaten undeveloped areas and farmland at urban peripheries and older built up areas in more central neighborhoods. The result can be a loss of vital habitats and a growth in abandoned properties and vacant land. Both of these can have health and environmental implications. A number of public policies have been developed to address these issues. In inner cities, these include the redevelopment and reclamation of older, abandoned industrial properties (brownfields), the reuse of vacant land for urban agriculture, redevelopment of deteriorated playgrounds and parks. In suburban locations, programs have been developed to buy and preserve open space, allowing the transfer of development rights to protect land and increase densities in select areas, and the establishment of urban service and growth boundaries. A central concern about urban growth boundaries has been whether they are inequitable because they increase housing costs. We will examine this argument, including the evidence from case studies on Portland Oregon and San Jose California.

Objectives: At the end of this class, students should be able to:

- Explain the connections between peripheral development and inner city abandonment;
- Discuss the evidence linking sprawl and racial segregation;
- Identify programs that address sprawl and abandonment;
- Critique urban containment programs with emphasis on impacts on the poor, non-White and at risk populations;
- Evaluate sprawl containment policies in terms of their impact on environment and resource use.

Readings
15. Final paper presentations

In this class section, students will present the results of their individual papers (10 minutes each) and we will discuss them as a group.

**Final papers will be due during this session.**

**Objectives:** The goal of the class project is to provide students with experience in applying theory learned in previous classes to built and proposed projects in urban design, urban planning, or transportation planning, with an eye to the affects of the project on public health. With the lessons and techniques learned in this class, how might these projects affect health? Are they sustainable? Do they represent an attempt to remediate the impacts of the built environment or do they represent a repeat of past mistakes?

**Readings:** None.

**A NOTE ON PLAGIARISM**

Plagiarism, including the copying of any work in whole or in part without citation, is an extremely serious offense and will not be tolerated. It violates the trust between students and faculty, renders ineffective the pedagogical activities of the class and deprives students of the learning experience derived from course requirements. Violation of plagiarism guidelines will be treated severely and reported to the school for further action.