Whatever Happened to Urbanism?
An Introductory Course in the Principles of Sustainable Urban Design

How to Use This Module

This is an introductory e-learning module for a series of courses in urbanism and architecture known as the "European School of Urbanism and Architecture." The programme was designed for new students to the professional study of urbanism, and for professionals who wish to increase their level of understanding of important new topics in best practice. More information in this programme is available at www.esua.org.

If this is your first time learning about this subject, and you find this module interesting, you will have the option to take more modules on line in the future. But this on-line element is really only a part of the full course of study. This module is designed to be integrated with a hands-on learning programme that will allow you to learn in the most effective way known: "learning by doing". You will have the opportunity to participate in field studies of actual urban projects, working alongside leading practitioners, and using the latest tools and techniques.

This introductory module is specifically designed for those entering the programme for the first time, or those considering the programme who would like to try a course. The full project-based curriculum is now in the pilot phase, and is planned to be launched as a full-time programme after several years of development. You can learn more at www.esua.org.

Each e-learning module begins with a short reading, then gives you links to additional reading. The final examination includes a short multiple-choice section, and a written essay portion that you can enter through a form, or email to the course instructor as a text document.

Introduction

> *Modernism's alchemistic promise -- to transform quantity into quality through abstraction and repetition -- has been a failure, a hoax: magic that didn't work. Its ideas, aesthetics, strategies are finished. Together, all attempts to make a new beginning have only discredited the idea of a new beginning. A collective shame in the wake of this fiasco has left a massive crater in our understanding of modernity and modernization.*
>
> *- Rem Koolhaas, Whatever Happened to Urbanism (in S, M, L, XL)*

Undoubtedly, the Twentieth Century was an era of phenomenal growth and advancement in medicine, sanitation, transportation, electronics, construction, and many other fields. **For architects and urban planners, it was a time to implement an age-old dream of humane habitation for ordinary people** – safe, comfortable, dignified and attractive.

As the Twentieth Century has given way to the Twenty-First, that vision has been met with a series of humiliating and often disastrous failures. Projects intended to deliver decent habitation have become blighted, violence-prone "sink estates". Rapid growth has led to sprawling and chaotic development. Technological responses to one set of challenges have very often brought their own unintended consequences, and a new set of challenges. Efforts to specialise on one set of problems have seen a failure to anticipate the connections to another.

Especially now, we are seeing the limitations of resources -- notably the fossil fuels that provide the energy to create and power the modern settlement pattern. Climate change, and the structural failures within the economic system itself, have called into question the very foundations of modern urban technocratic economies. At times it seems a "perfect storm" of challenges has arrived: environmental, economic, and socio-political.

Clearly it is in cities that many of these contemporary challenges will play out. And it is for the makers and re-makers of cities that there is a special obligation now to understand what has happened to their structure over time, how it has changed – for better and for worse – and what must be done to learn from past mistakes, and meet the all the challenges ahead.

It is in the structure of cities, suburbs and towns – that is, in settlements – that we will determine whether we can live in a sustainable way, with less damage to sensitive ecosystems, with less wasteful patterns of consumption and more efficient use of resources. It is in settlements that we will learn – or fail to learn - to combine a high quality of life with a sustainable use of limited resources.

All of us must therefore begin to think of ourselves in a different way – not only as architects, or landscape architects, or developers, or government officials, but as people who are concerned at heart with the functionality, the durability, and the quality of urban structure. All of us are now "urbanists".

What is Urbanism?

People sometimes think that "urbanism" just refers to big cities. But the term can refer to small towns and other forms of settlement too. **"Urbanism" is really any collection of buildings, together with the public space around them, working in a system.** The public spaces include roads, sidewalks, plazas, parks and other places where the public is able to enter and move about. Under this definition, it's easy to see that the smallest hamlet can have its own kind of urbanism.

Another important thing about urbanism is that there is not just one kind of public space that surrounds private building interiors. Instead, **there can be many zones or layers of space, from more public to more private.** For example, in the fairly typical London neighborhood below, there is the street, the sidewalk, the sidewalk café areas, the interior

of restaurants and retail establishments, the private balconies that are viewable by the public, and the interior spaces that look out on the street and the other public areas.

Urbanism in a London neighbourhood

Notice the **web of connections** that exist between all these different places – both visual connections, and connections of movement. (There are also connections of sound and smell.) **Along with these connection, there are also disconnections** – barriers to movement, privacy screens, panes of glass and other "membranes" that allow some connections and not others (like vision but not sound). This system of connections and obstructions forms a pattern in space that shapes where you can go, what you can see and hear, and who you might interact with.

Notice that it is all a remarkably intricate and complex system, even in this relatively simple example.

Re-thinking the Link Between Architecture and Urbanism

Architects rightly think a lot about the interior function of buildings, and how they shape human activity and experience. When it comes to the outside, often the dominant goal is to shape the visual attributes of a building from a range of points of view, with a focus on the experience of the building as a sculptural form. But a building shapes the activities of people on its outside too – sometimes far more than we realise. So **an urbanist perspective asks: how does a building affect the shape of public space, and the activity within it?** How does a building join with other buildings to, in effect, create "urban rooms"? What characteristics will they have – what zones or layers, what connective relationships?

What can people do, or not do, in the urbanism around the building?

When looking at urbanism this way, many of the issues that seem very important from a strictly architectural point of view do not seem so significant – or at least, look very different. For example**, the question of style and artistic expression** is no longer seen in a vacuum, but now takes its place alongside more pragmatic considerations of **day-to-day functionality and experience.**

What is the sequence of movements and experiences of those outside the building? How comfortable do pedestrians feel around a given building? How coherent is the streetscape as a whole, with all its buildings taken together? Are there interesting details at a range of scales and positions as pedestrians move through the space? **Is there a well-ordered and well-connected structure of public and private space?**

Of course one must also consider the range of activities and uses of a building – and the way these connect to other nearby activities and uses. Are there activities that draw people into interactions, that support interest and walkability? (Researchers have noted that people in open-air Farmers' Markets, for example, interact with others 10 times more often than people in enclosed supermarkets.) Do they work together with other nearby uses, in other nearby buildings?

Time is a critical dimension in urbanism. Is there flexibility in the buildings, so that activities in the area can change over time? Is there a <u>range</u> of flexibility, so that some things that probably need to be more permanent (like civic buildings) can remain the same, while other things that need to change frequently (like open-air markets) can do so too? Can the buildings be repaired, and kept up by local people with readily available resources?

Of course there are functional criteria for the success of any urban space. Is it accessible? Is it near to where people live? Can they see and identify the activities that might draw them there? Can people walk to it? Is it served by public transport, or does it have the ability to accommodate cars?

But in addition, **we are recognizing the qualitative factors that make an urban space successful.** Do people want to be in that area? Are they drawn to its qualities, and do they have reasons to linger and to engage in additional activities?

These qualitative factors also contribute to the question of the sustainability of an urban space. If people do not want to be in an area because it has become dated and unfashionable, then it is not likely to be a sustainable urban space. If they are uncomfortable there, or they do not feel safe, or they find it ugly, then they will be less likely to use the space, or walk through it. If it is not pleasant and safe to walk or bike, they may instead opt to drive a car more often.

We are increasingly recognising that people will care for what they love – and this includes urban spaces and public buildings as much as anything else. People might love some exciting or original qualities created by designers. But they are more likely to love those qualities that human beings have always loved – especially natural qualities.

This instinctive love of nature, or "biophilia", is an important tool for urbanists to use to create places that endure and that are loved.

If we want to create sustainable and low-carbon environments, this is a crucial point to acknowledge. **People must <u>want</u> to live in a low-carbon** neighbourhood – to buy or rent homes there, to start businesses there, to conduct social activities there, to linger and shop there. When it comes to sustainability, efficient technology is certainly important – but so are the enduring qualities of well-loved urbanism.

The Question of Mixed Use

In the example from London shown earlier, notice that there is a remarkable mixture of residential, shops, restaurants and other uses. **This "mixed use" pattern has been found to be a very important quality of urbanism.** Just as the pattern of urban spaces forms a web of connections – a "network" – so does the pattern of uses. This is important because people need to be able to go back and forth from one business to another, and from their homes to their daily businesses. Studies have shown that this is a functional requirement, and also a requirement for good social interaction and lively urban activity.

We can see this need operating at the smaller scale of the neighbourhood street. **But it also operates at larger scales too** – at the scale of the neighbourhood, and at the scale of the city. If all of the places of work are isolated in a single district, then everyone will have to travel back and forth to that district. Both will suffer: during the day, the residential areas will be empty, and during the evening, the business area will be empty. More importantly, people will not be able to interact as much with each other in the course of their activities.

Studies in the carbon emissions of various urban patterns show that the parts of cities with more mixed use tend to have lower carbon emissions, other things being equal. There is good evidence that mixed use also supports other social and economic dimensions of sustainability too.

The Question of Diversity

As the urban scholar Jane Jacobs noted, **diversity is an important component of healthy ecosystems – and healthy cities too.** She was speaking of diversity in building types, diversity in populations, and diversity in activities. Why is this? It seems to be similar to the reason that mixed use is important – it brings people into greater contact and creates more opportunities for commerce and exchange.

In nature, ecosystems that have a limited number of species are more vulnerable to disease and collapse. Many farmers have learned this, and begun to mix their crops, so that if a disease or crop failure hits one of their crops, others might still fare better.

In cities, social and economic studies provide evidence that something similar seems to happen. If a neighbourhood has only one kind of building, and that building becomes unmarketable, then the whole neighbourhood will suffer disproportionately.

If a part of a city has only one level of income, there is likely to be less opportunity for residents to change their level of income, by meeting new people and finding new opportunities. If it has a single ethnic population, there may be more prejudice against outsiders, and against the ethnic population by outsiders as well. The result may be a lack of creative exchange and energy. If it has a single age group, that group will likely feel isolated and unstimulated by the energy of other age groups.

At the same time, often people do tend to seek out others who are similar to themselves – sometimes for very sensible reasons - and it is common to see "enclaves" of particular incomes, ethnic neighbourhoods, and elderly communities. The question is, whether urbanists will seek to balance this tendency with a counter-trend to create good mix at a relatively small neighbourhood scale. (The architeect Christopher Alexander has proposed a neighbourhood design pattern he calls a "mosaic of subcultures", that recognizes the desire of people to seek out others like themselves, but balances it with a mixing of boundary zones.)

In any case, **the evidence suggests that the most creative and successful cities maintain a relatively diverse mix of incomes, ethnicities and life stages.** This is an important goal for urban designers to keep as a key objective.

The Question of Density

Another important dimension of urbanism is its compactness, or density. **Studies show that higher-density parts of cities tend to have markedly lower rates of carbon emissions, where other things are equal.** Density seems to promote efficient interaction and connectivity. There seem to be other important benefits too, such as the ability of public transport to function successfully.

Some people have taken this insight and used it to recommend a "once size fits all" policy for high urban density. But it is important to remember that **diversity is also a critical aspect of density,** just as it is with social and economic factors. People may want and need to live in a more rural condition that has a lower density – if they work in agriculture, for example. Some parts of neighborhoods might properly be very high density, while other nearby areas can be quieter and lower-density.

The principle of choice comes into play here. **Choice is more than a core element of a consumer society. It is a need of human beings to determine for themselves the conditions that best fit their own lives, and their unique circumstance.** It is a critical dimension of life itself. People may have very good reasons to choose different densities, after carefully weighing all the tradeoffs and civic obligations.

The important point is that density is not a uniform variable, but a tool that urbanists can use to increase interaction and vitality – or to create areas of relative quiet and retreat.
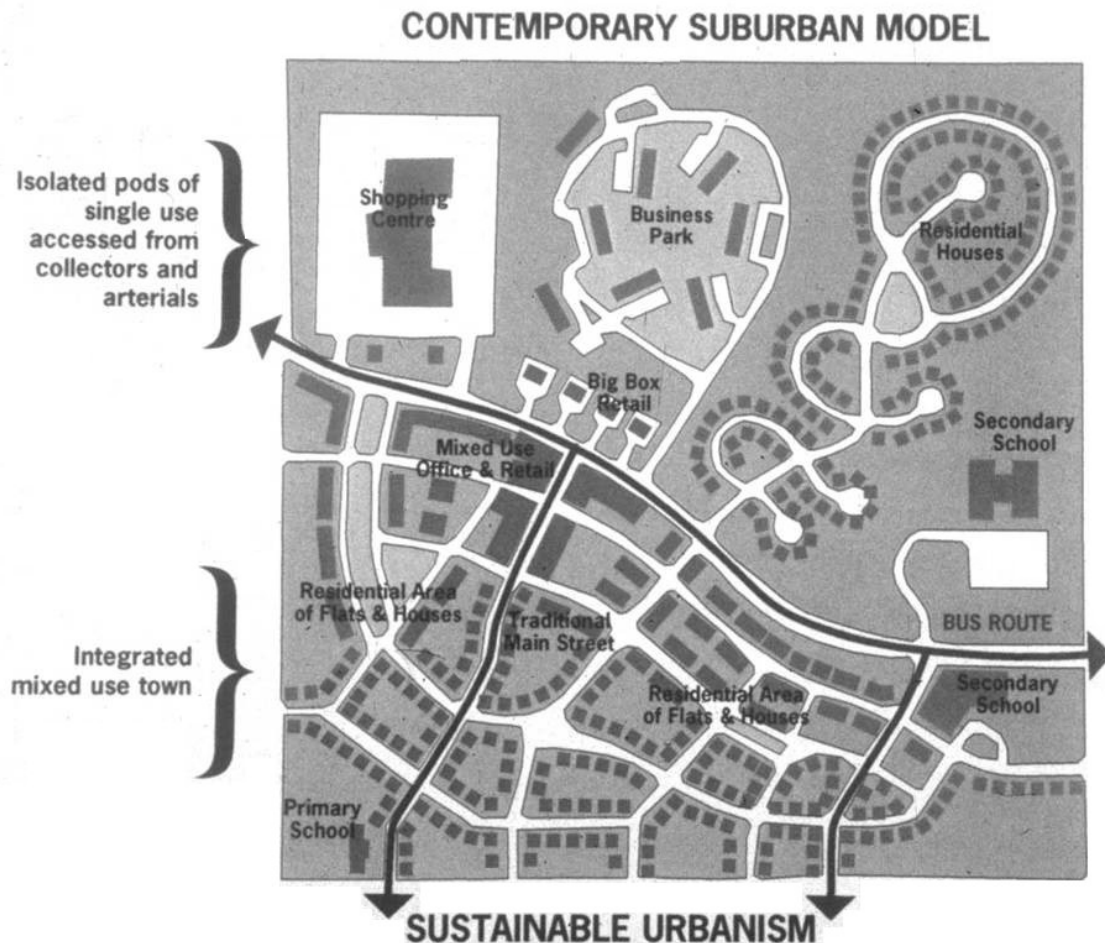

The Question of Connectivity

Another critical dimension of urbanism is its **degree of connectivity.** Even when there is mixed use, diversity and compactness, if the roads and paths are fragmented and not inter-connected, then the urbanism will not function well.

For example, a common road system in modern suburbs is a **tree-like "hierarchy"** of highways, arterials, collectors, and local streets that do not connect well. This forces cars and pedestrians into a single "choke point" and makes average trips much longer. An alternative model, which is more common in older cities, is a **street grid or network.** Although it may not have the large and relatively higher-speed roads of the modern suburb, it makes up for this liability by having many more paths that cars and pedestrians can take.

In the example below, **the neighbourhood on the top side of the main road has a street structure that is a hierarchical, "tree-like" system.** There are few inter-connections. Cul-de-sacs create dead ends, meaning that paths between any two points are, on average, much longer than the linear distance. Children are not likely to be able to walk safely from their homes to the school, and trips by bicycle would likely be long and dangerous. Transit would not function well because few people would be able to walk to a transit stop.

In the neighborhood on the lower side of the main road, the streets are **much more interconnected, and they form a rough grid pattern or network.** The path between any two points is, on average, only a little longer than the linear distance between them. That means that walking and biking are easier and safer.

The neighborhood on the top side of the main street also separates uses, features lower density, and probably does not accommodate much diversity. Research has demonstrated that it is **likely to produce significantly higher carbon per person, to reduce social interaction, to discourage walking and exercise, to contribute to sprawl and farmland consumption, and to carry other drawbacks.** In the parlance of the day, it is not a "sustainable" pattern of development.

CONTEMPORARY SUBURBAN MODEL

Isolated pods of single use accessed from collectors and arterials

Shopping Centre

Business Park

Residential Houses

Big Box Retail

Mixed Use Office & Retail

Secondary School

Integrated mixed use town

Residential Area of Flats & Houses

Traditional Main Street

Residential Area of Flats & Houses

BUS ROUTE

Secondary School

Primary School

SUSTAINABLE URBANISM

The Question of Sustainability

What is sustainable urbanism, then? The term has been used imprecisely, to say the least, but it is perhaps easier to begin with what is <u>not</u> sustainable urbanism. There is a growing perception that **many of the characteristic fragmented patterns of modern urban development over the last half-century are not sustainable** – that is, given the limited resources, environmental damage, social consequences, economic failures and other increasing problems, we simply cannot keep on building in the same way.

What does a more sustainable neighborhood look like? It probably looks like the lower neighborhood in the example above. It will likely be organised with **many daily needs within walkable distance, offering transit, recreation and other needs. It will easily allow walking, biking and social interaction.** It will incorporate **facilities for clean stormwater, habitat corridors, perhaps district energy, community gardens and other ecological features.**

Here is an example from the book *Sustainable Urbanism*, by Doug Farr:

A Sustainable Neighborhood Unit (Building Blocks of a Sustainable Corridor)
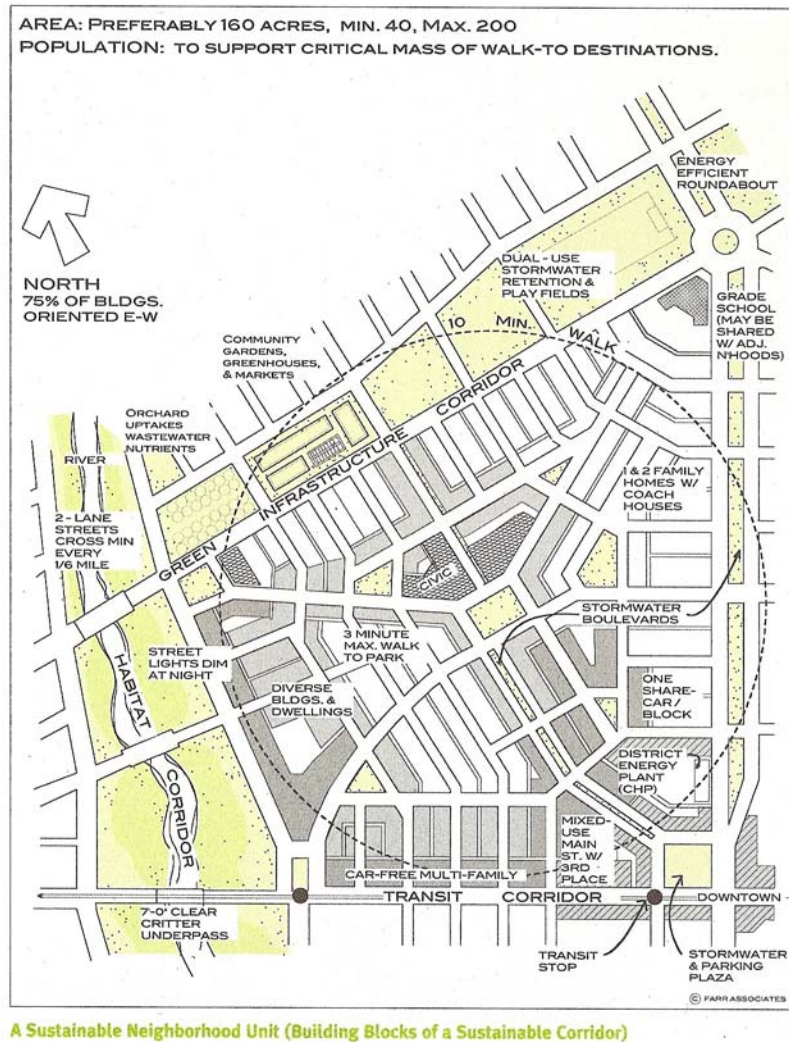
As this drawing illustrates, the sustainable urban neighbourhood is built around the fundamental unit of the **pedestrian shed** – a zone in which any point can be reached from any other point within about ten minutes.

Notice that the sustainable neighbourhood also includes the other characteristics we have already discussed – **network or grid street connections, mixed use, diversity of types, compactness, and ability to support a richly-layered streetscape**.

Sustainability, Resilience and "Self-Organisation"

An urban designer is partly responsible for creating a structure that may endure for decades or centuries. There will be many changes over that period, many of which cannot be predicted. Some of those changes will pose major challenges to the integrity

of the neighbourhood and its vitality. Therefore **it is vital to build a resilient structure that allows new growth and adaptation over time.**

This is particularly true for the economic activity, including retail and office uses. The urban designer cannot know which business or activity will occupy a given place over the span of decades, or even perhaps on opening day. So **it is important to "plan for the unplanned"**, to plan for general needs and requirements, to allow and encourage a vibrant mix of activities, and to allow specific things to grow and change.

Moreover, an urban neighbourhood is a complex social and economic system. It follows its own laws of organisation and growth over time. **It is important for the designer to understand and to facilitate the processes of its growth and "self-organisation",** by designing structures that will accommodate its growth, change and complexity.

The Complexity of Urbanism in History

Scholars of urban morphology are often amazed at the sophisticated order and functioning of historic urban structures. While they lacked modern comforts, they had other attributes that have proven remarkably complex and successful. They often had very clever ways of adapting to local climate and terrain. They often allowed people to interact and enjoy civic life together in a remarkably beautiful and successful way.

An "organic" traditional city – the town of Ronda, in Spain

There is a great deal of debate about the extent to which these qualities were intentionally "designed," or arose on their own through natural processes. What seems clear is that some of both seemed to occur. More importantly, **the design strategies also allowed growth and change over time,** by using flexible design elements that could be structured in a modular way, and by introducing overarching design structures that could be "filled in" and completed later by others.

As we look for lower-carbon forms of living today, many designers and scholars have argued that we can draw some very useful lessons from these places. Their elements seem remarkably well-adapted to one another. They seem remarkably beautiful and durable.   They are compact, and yet remarkably appealing and livable. They demonstrate mixed use, walkability, connectivity, diversity and other efficient forms of self-organisation.

So, Whatever DID Happen to Urbanism?

All of these things seem sensible, perhaps even self-evident. And yet, the dominant urban form of the last half-century has been in marked contrast to these characteristics. How did this happen? And how can we fix it?
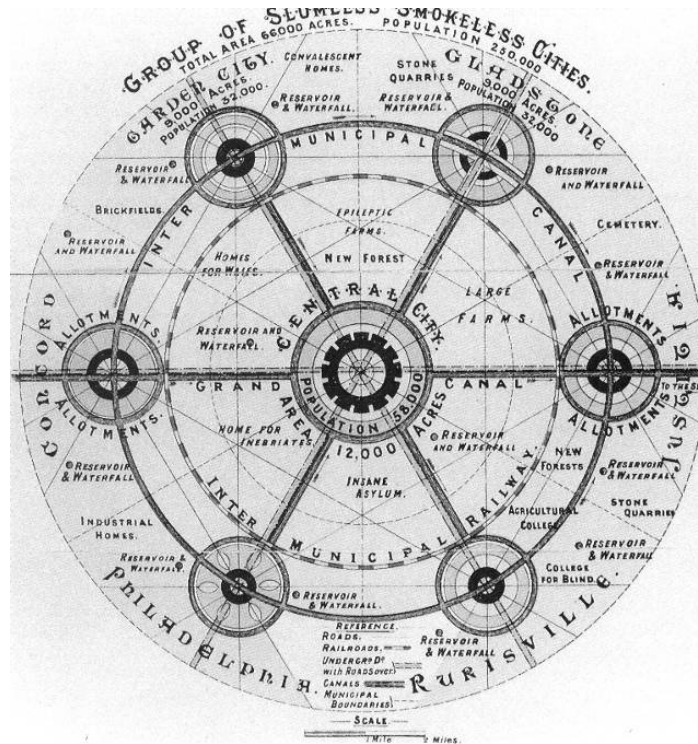
Garden Cities and Beyond

The early stages of industrial development brought rapid growth in the population of cities. In the Nineteenth Century in particular, cities like Manchester, London and Paris grew explosively, bringing overcrowding, poor sanitation, disease, crime and civil unrest.   Many reformers called for alternative settlement patterns. One prominent school advocated new settlements in the countryside, planned along ideal concepts of social justice, order and tranquility.
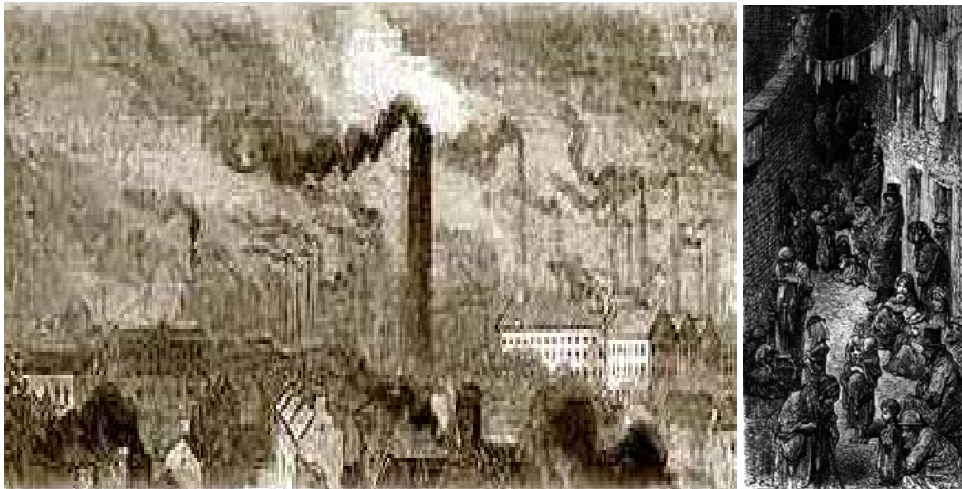
The problems of 19th Century industrial cities were real enough.

Toward the end of the Nineteenth Century, the **Garden Cities** movement in England was led by visionary planners such as Ebenezer Howard, Raymond Unwin and Barry Parker. **The goal of Garden Cities was to create humane, attractive, efficiently organised new towns in the coutryside, separated from the problems of the city. The notion of separation was key.** Where cities like London mixed uses such as work and home, the Garden Cities would segregate them, so as to keep the noise, smoke and danger of the workplace away from the home.

Ebenezer Howard's conceptual diagram of garden cities.

There was also an important moral component in Garden City planning. It was felt that cities were morally dangerous places, especially for women and children. The new Garden Cities and Garden Suburbs would place women in safe, isolated suburban environments. Howard's drawings showed segregated locations for homeless children, alcoholics, the insane and others. **Segregation was a fundamental concept.** It was planning with a place for everything and everything in its place.

To be sure, the Garden Cities and Garden Suburbs were remarkably attractive, durable and successful places. Communities like Letchworth Garden City, Welwyn Garden City, and Hampstead Garden Suburb, remain desirable and successful places even today. **But they did usher in an era of segregated uses and low-density suburban-style patterns.** Homes were created on a model of a small country house, complete with its own yard – the model of the modern suburb to this day.

The Modernist Dream Fulfilled – Almost

In the years of the early Twentieth Century, the machine age had begun to change civilisation in profound ways. **The automobile in particular seemed to challenge the very foundations of modern cities.** Perhaps we hardly needed cities any more, when we could drive far away to wonderful "towers in a park", where we would be above the noise, dust and smells of the modern city?

Pioneering architects like **Le Corbusier** in France, and **Walter Gropius** in Germany, developed detailed plans for settlements based upon this model. **Automobiles (and perhaps even aircraft) would play the primary role of connecting people to places, and pedestrians would become marginalised.** The mixed-use street would be replaced by the broad highway, and buildings would be pulled away from this dangerous and foul-smelling corridor. Massive, towering buildings would sit far back from the road, dedicated to efficiency and specialized for single uses.

This was the model of the city as machine: a system of efficient and standardized parts, in which the parts are all separated, simplified, smoothly functional and economic. It was a vision of humanity finally delivered into a rational and prosperous era, powered by machines and fuelled by cheap energy.

Le Corbusier's unrealised Voisin plan for the demolition
and reconstruction of a major part of Paris

Le Corbusier, speaking in his landmark 1923 book *Towards a New Architecture*, sounded almost rhapsodic about the benefits of this new technological approach to city-making:

A great epoch has begun.
*There exists a new spirit.*
Industry, overwhelming us like a flood which rolls on toward its destined ends, has
furnished us with new tools adapted to this new epoch, animated by the new spirit.

Machinery contains in itself the factor of economy, which makes for selection.
The house is a machine for living in.

…the most noble quarters of our cities are inevitably the manufacturing ones where the basis of grandeur and style – namely, geometry – results from the problem itself... an admirable order reigns in the interior of markets and workshops, has dictated the structure of machines and governs their movements…

Note that a key element of this vision was the concept of an isolated and standardized part: house as machine, city as machine. This was in accord with the mechanical science of the time, which sought greater efficiencies through standardisation and economies of scale. **By contrast, the science of the Twenty-first Century has focused more on biological structures, which are more unique, more customised, and more inter-dependent in their operation.** Even machines and machine-systems are more complex than was once appreciated. We see their complexity in the failures of modern mechanical systems, and the "unintended consequences" of their operation in an age of climate change and peak oil.
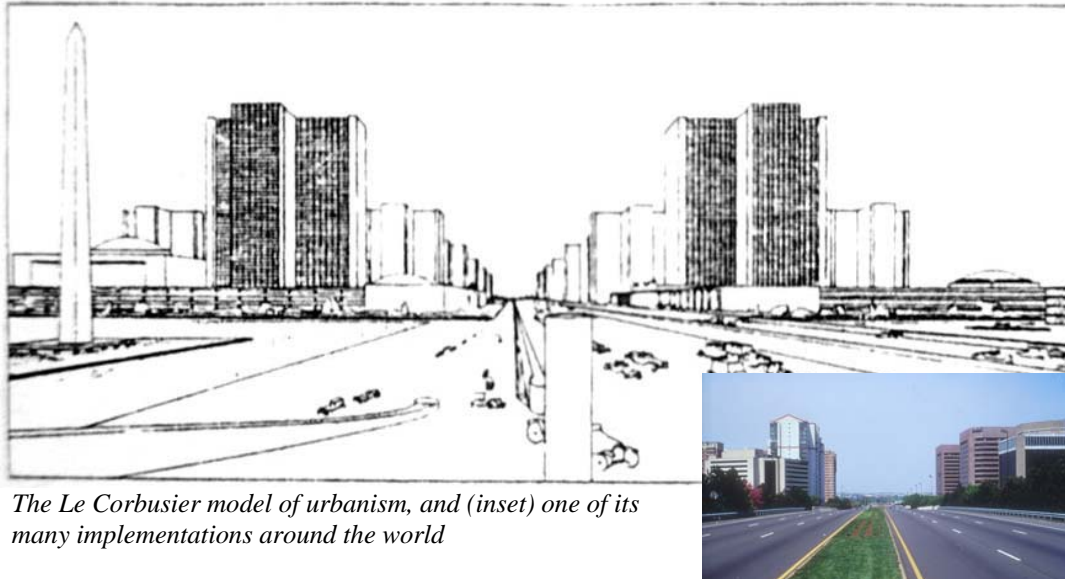
The Le Corbusier model of urbanism, and (inset) one of its many implementations around the world

The Dream Implemented

It is important to understand that the vision of the early modernists was a humane vision that sought to turn an existing industrial era toward human ends. But it did so by accepting the industrial realities of that age, and developing an architecture based upon that aesthetic and technological system. **Walter Gropius,** another modernist pioneer, spoke eloquently about that aim in his 1943 book *Scope of Total Architecture*:

MACHINE AND SCIENCE IN SERVICE OF HUMAN LIFE...[There is] a portrait of the early pioneers of the modern movement as men of rigid, mechanistic conceptions, addicted to the glorification of the machine and quite indifferent to intimate human values. Being one of these monsters myself, I wonder how we managed to survive on such meager fare. The truth is that the problem of how to

*humanize the machine was in the foreground of our early discussions and that a new
way of living was the focus of our thoughts… To devise new means to serve human
ends, the Bauhaus, for instance, made an intense attempt to live what it preached
and to find the balance in the struggle for utilitarian, esthetic and psychological
demands.*

This vision originated in Europe, with pioneers like Gropius, Le Corbusier, Mies Van der
Rohe and others -- though **it freely borrowed from the industrial advances of the
United States. In turn, it was in the United States that some of the most dramatic
stages of implementation occurred.**

**One of the most important was in 1939, when the American industrial designer
Norman Bel Geddes designed a highly influential diorama for the General Motors
pavilion of the World's Fair in New York.** Called "Futurama," it laid out the futuristic
vision of Le Corbusier, Gropius and other modernist pioneers in stunning detail. It
showed a hypothetical world of 1960, in which Americans would travel in comfort and
speed in private automobiles, moving along efficient highways.   Sleek tall buildings
were set far back from the roads.
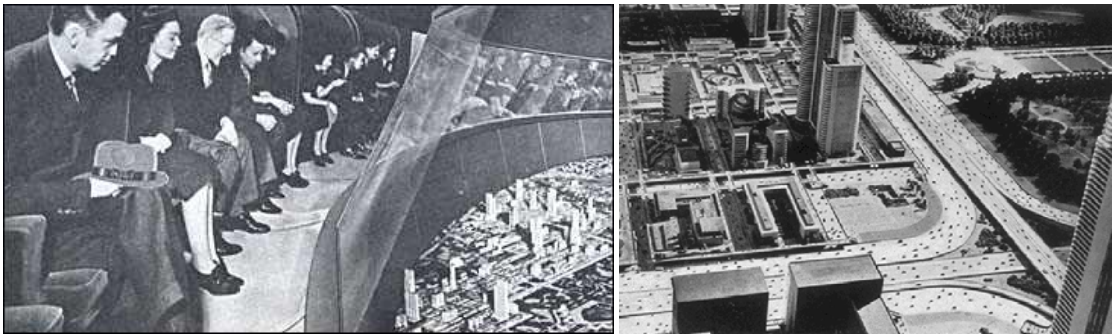
3The Bel Geddes diorama at the World's Fair, based upon the Le Corbusier model

Bel Geddes' vision became a kind of blueprint for American post-war development.
The Eisenhower administration built a massive Interstate highway system, and created
incentives for new single-family subdivisions far from city centres. Banks created "red-
line" policies that limited mortgage financing of many inner-city homes.   Cities and
towns increasingly adopted segregated-use zoning, which prohibited mixed use and
forced buildings to set back far from the street.

A neighbourhood of Dallas, Texas, built on the Bel Geddes blueprint

One important departure from the vision of Le Corbusier and others was in the pattern of residential development. A high percentage of homes were detached and single-family, on relatively large lots, fronting single-use residential neighborhoods – most often with cul-de-sac street patterns. But in other respects, the template of modern sprawl faithfully followed the machine-based and car-based vision of the early modernists.

"Tree-like" sprawling suburbs in the USA

As one unintended consequence of this development system, inner cities became social and economic "sinks," trapping only the most vulnerable populations – minorities, the poor, the elderly. Urban populations, and their tax base, plummeted, setting off a spiral of inner-city decline. Inner-ring suburbs too began to decline, as development leapfrogged into ever newer greenfield rings.

Appalled at the inner-city decline, many reformers advocated redevelopment following the modern model. Glittering new "projects" rose up on inner-city sites, following the Corbusian model of "towers in the park". **But something also went seriously wrong with these places:** the parklands became deserted and dangerous, the units became tower prisons, and in cities across the US and Europe, the projects became "sink estates" – trapping the most vulnerable populations, and leaving no means to

transition to more successful socio-economic conditions. Many of those projects became outright failures, and scores of towers were torn down, to be replaced by more traditional neighborhood designs.

But in the USA and other countries, the suburban model became an explosive success, fueled by abundant and cheap energy.

The Dream Reconsidered

Of course, that cheap energy was derived from fossil fuels, and their supply was hardly unlimited.   The economies of scale and standardisation that worked to produce modestly priced housing for many young families no longer functioned as well as fuel prices rose. Moreover, **those neighbourhoods did not hold up well over time.** The wave of mortgage defaults and foreclosures of 2008 hit the far-out subdivisions hardest – where homeowners had relied on cheap fuel to drive long distances to work. Those cheaper homes appeared to be a bargain, luring homebuyers who would "drive until they qualified" -- only to realize much later that fuel prices and commuting time made the deal less than attractive.

There were many other drawbacks too. **The sprawling land use pattern consumed large areas of farmland and sensitive natural areas. The extra miles driven per person – up to three times higher than city locations – contributed greatly to carbon dioxide emissions, and other forms of pollution. The sprawling living pattern fragmented social interaction and created measurable levels of stress. The growth of these subdivisions followed the same "throwaway" pattern of other parts of the consumer economy:** quickly and cheaply built, quickly declining, left to be replaced with a new, more distant ring. Clearly this was not a sustainable development pattern.

Can Urbanism Be Recovered?

Modern reformers have sought to reverse the pattern of sprawl with a new wave of zoning and regulatory reforms, and incentives for compact, in-town development. Many countries have added tolling and other "pricing signals" to road projects, and placed new restrictions on "out of town" development, including retail.

There are indeed positive examples to show that the pattern of sprawl can be reversed, at least partially, if there is a consensus of both voters and buyers. In Denmark, stringent new anti-sprawl laws have been enacted, and combined with policies to revive the inner city and restore its urban vitality. In England, new laws have restricted "out of town shopping" and created incentives for infill and "brownfield" projects (on former industrial sites). Even in the United States, cities like Portland, San Francisco, Boston and even Los Angeles have adopted urban-friendly policies, and built new streetcar and light rail lines.

Portland, Oregon: a successful example of inner-city urban regeneration

But there remain significant economic, social and political challenges. Within the culture of design, debates rage over the degree to which urbanism can really be regenerated under modern conditions. Post-modern sceptics such as Rem Koolhaas believe the economic and technological conditions dictate a new reality, and a new, inherently weaker kind of urbanism. They argue that we cannot return to the kind of "organic urbanism" that existed prior to the industrial era. By contrast, "New Urbanists" such as Andres Duany believe that urbanism can be designed, so long as the technical and economic parameters are made part of the design problem.

Other theorists have argued that it is technology itself that is evolving, and moving past the current terms of debate. The old assumptions about economies of scale, standardisation and segregation are yielding to a world of computerised adaptation and customisation, biological replication and differentiation, and integrated ecological systems. Along with these terms are coming new tools and new ways of thinking about the world and its design problems.

Thinkers such as Jane Jacobs and Christopher Alexander have made important connections between modern 21st Century science and urban design. Other theorists and practitioners have developed practical tools for application, including **Bill Hillier** and his Space Syntax, **Jan Gehl** and his principles of urban space, the New Urbanists and their charrettes and collaborative design processes, and many others.

All of them make the essential link to modern science, and to the basis of a modern understanding of ecology and sustainability. To be sure, technological efficiency is an important part of the equation; but there is an equal or greater emphasis on deeper cultural and economic sustainability, in the adaptability and the resiliency of the environment. There is also a recognition of the power of art as a core dimension of human culture; but also a recognition of the dangers when art becomes too abstracted from real urban problems, and too "magical" in its thinking – as if we could solve our

problems if our metaphors were strong enough.   **For art alone cannot save the city. We need art and science together.**

This is a period of lively debate and fertile development of ideas. Surely the challenges demand such a period of strong development. In the modules to come, we will explore these ideas, their modern context and their applications, and their background in the history of architecture and urbanism.

> *"People used to say that just as the 20th century had been the century of physics, the 21st century would be the century of biology... We would gradually move into a world whose prevailing paradigm was one of complexity, and whose techniques sought the co-adapted harmony of hundreds or thousands of variables. This would, inevitably, involve new technique, new vision, new models of thought, and new models of action. I believe that such a transformation is starting to occur... To be well, we must set our sights on such a future."*
>
> -   *Christopher Alexander, The Nature of Order*

Following are reading assignments to conclude this module. When you have completed them, we encourage you to discuss them with your colleagues, or email to your instructor with any questions. Then take the exam, including the written portion.

Jane Jacobs: Excerpt from last chapter of "The Death and Life of Great American Cities":
http://www.katarxis3.com/Jacobs.htm

Christopher Alexander paper: "A City is Not a Tree":
http://www.patternlanguage.com/archives/alexander1.htm

Andres Duany, interview:
http://www.katarxis3.com/Duany.htm

Bill Hillier, "The Golden Age of Cities":
http://www.tectics.com/hillier06--goldenagecities-urbdesign%201.pdf

Questions

Instructions: Download and open the document titled "Exam Questions" that is also included with this document on the ESUA website. Fill in your name, and answer the questions. Then type in your essay question responses. Email the completed and saved document, saved under your last name, to your course instructor. (See the website for details.)

1. Urbanism is important because

    A. It is in cities that many modern challenges to humanity will play out.
    B. The pattern of urban activities affects emissions and pollution.
    C. The pattern of urban form affects land use and protection of ecosystems.
    D. All of the above.

2. Urbanism is described here as

    A. The space between buildings
    B. The connected system of public and private spaces
    C. Big cities
    D. The public realm

3. A factor that is not critical to the success of urbanism is

    A. The level of detail at pedestrian scales
    B. The style of buildings
    C. The shape and position of buildings, and how they shape public space
    D. The aesthetic character of buildings

4. The aesthetic quality of urbanism matters most because

    A. It reflects the vision of leading contemporary artists
    B. It stimulates shopping and economic activity
    C. It raises property values
    D. It promotes quality of life and sustainability

5. Mixed use is important because

    A. It promotes interaction between different people during the day
    B. It provides visual interest
    C. It provides social equality
    D. It increases economic performance

6. Diversity was noted to be important because

A. It creates a fairer and more just city
B. It promotes urban creativity and success
C. It creates visual interest
D. All of the above

7. Diversity should include variations in

A. Income
B. Ethnicity
C. Age
D. All of the above

8. Density is important because

A. It tends to be associated with lower carbon emissions
B. It can be used to create urban interaction and vitality
C. It supports connectivity and public transport
D. All of the above

9. Higher density should be applied

A. Uniformly
B. Only in large cities
C. In a range of situations, depending on context
D. In a range of situations, but always as high as possible

10. The difference between a hierarchy and a network is

A. A hierarchy is more complex
B. A hierarchy is more ordered
C. A network branches out like a tree
D. A hierarchy branches out like a tree

11. The fundamental element of the sustainable neighbourhood is the

A. Pedestrian shed
B. Transit stop
C. Wildlife corridor
D. District energy plant

12. Design for change and resilience is important because

A. A neighbourhood will grow and change in unpredictable ways
B. A neighbourhood's growth must be controlled
C. The urban designer needs to know which businesses or activities will likely occur
D. A neighbourhood can always be rebuilt when it becomes unfashionable

13. Urbanism in history has been found to be

    A. Surprisingly primitive
    B. Surprisingly sophisticated and complex
    C. Surprisingly rigid and formal
    D. Surprisingly chaotic

14. According to the author, which of the following statements is true?

    A. The world is completely different today, and there are few important lessons to learn from history.
    B. The design strategies of historical urbanism often allowed growth and change.
    C. We must copy the successes of historical urbanism.
    D. The most important thing about urban design is the excitement of a new artistic vision.

15. Garden cities were

    A. A humane response to real problems in industrial cities.
    B. Based on segregation of people and functions.
    C. A model for modern low-density suburbs.
    D. All of the above.

16. Early modernists like Le Corbusier advocated city planning based upon

    A. Isolated and standardised components
    B. Differentiated components
    C. Organic complexity
    D. Regional differences

17. The early modernists were motivated primarily by

    A. The need to make profits
    B. The need to serve humane goals
    C. The need to make cities more efficient
    D. The need to create work for architects

18. The blueprint for post-war development in America was largely inspired by

    A. Le Corbusier's vision of "towers in the park" in France
    B. The suburban model of the Garden Cities in England
    C. Bel Geddes' Futurama exhibit at the New York World's Fair
    D. All of the above

19. Which of these was NOT a major problem with the suburban development model?

A. It consumed valuable farmland and sensitive ecological areas
B. It created social inequality
C. It increased emissions from automobile travel
D. It drew people out of declining city cores

20. Which of these statements best reflects the author's point?

A. We cannot go back to the kind of organic urbanism that once existed
B. We must understand the technical and legal conditions of urban development in order to change its characteristics
C. Technology is evolving, and we must re-examine the old assumptions about urban development
D. This is a time of lively debate and fertile development of ideas

Essay questions

1. Do you think it is possible to recover a high quality of urbanism in the modern world? To what extent? If not, why not? If so, what do you believe are the key elements needed?
2. What kind of problem is a city, according to Jacobs?
3. Why does it matter whether a city is not a "tree" according to Alexander?
4. What does Duany mean by "replacing the system" instead of destroying it? Why does he use the analogy of a virus?
5. What does Hillier say are the key areas we still don't understand about the self-organising nature of cities?