

## MITOCW | 1. Introduction to Theory of City Form

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**JULIAN**

This class has been taught continuously since 19-- the earliest record I have of it is 1956, when Kevin Lynch

**BEINART:**

probably taught it for the first time. Now this is the 34th year in which I'm teaching the class. I overlapped with Lynch for two years, and this is the last time I'm teaching this class.

So I'm going to go through a lot of small things, details, plus some general idea about. In 1956, Kevin Lynch called this class The Visual Form of the City. Between '56 and '76, he changed the title to Theory of City Form. I have kept the title the same as it was originally, well, the 1976 title.

I think the "theory," it gives the impression that we have significant theories, as in post-Darwinian science. We don't. Our basis, our theological basis is somewhat vague. We are somewhere between a science and an art. In the Media Lab, they now have a group called City Science. I want to know what City Science is. We certainly know what City Art is.

If numerical consequence is the basis of City Science, we will deal with that in the appropriate manner. We will also deal with very difficult things, such as the human experience of built form, which is not a scientific phenomenon at all. In fact, for those of you interested to have a background in philosophy, there's a new book called *Cosmos and Mind*, by Thomas Nagel, who's a professor at New York University, who argues that Darwinian science has lead us in the wrong direction, that Darwinian science, we can't explain concepts such as consciousness or mind, that we need a new teleological approach to science which would embrace these now difficult to achieve responses.

I'm not a philosopher nor a historian. This is not a class in history, although we will use a lot of information from the past as examples to give us a better idea of the present, not that you shouldn't know history. If you're going to take this class, I would recommend a couple of books.

There is no superb urban history. If there were, Harvard or MIT would teach it. It is bizarre that these two great universities don't teach urban history. It's difficult to explain. Partly, it's explained by the traditions of history and architecture. Architecture, you cannot study in the arts without knowing history. It's difficult to achieve a degree in music without knowing who Mozart was, but it's very difficult to achieve a good degree in architecture without knowing who Palladio was.

But you can achieve a degree in science without knowing who Copernicus was. It's difficult to avoid Copernicus, but you may be able to. There's no teaching here at MIT in-- there's no required teaching, in achieving an engineering or science degree, in the history of science. There's no architecture program that I know anywhere in the world that doesn't have a requirement that you study the history of architecture, some poorly taught, of course.

I assume many of you are architects by background. Has anybody done urban history? Has anybody in this class taken a formal subject in urban history? OK, if you have, answer the following question. What theory would you assume for the genesis of cities? Why do cities exist?

**AUDIENCE:**

We studied Chinese urban history.

**JULIAN** Oh, no, no. You haven't answered my question. You've told me what you've studied. All right, we'll return to this question. Because we'll talk about the conflicting theories about the genesis of cities. When did cities first occur, time-wise?

**AUDIENCE:** As in the poor city?

**JULIAN** I asked you, give me a time, a date.

**BEINART:**

**AUDIENCE:** About 5,000 ago, AD.

**JULIAN** Yeah, I would now claim Jericho to be the oldest city, probably about 10,000 BC. But if you say it's [? South Alleyouk ?] or someplace else, paleontology is very vague. Most of our understanding of cities comes from archaeology. There's no theory which explains the origin of language. There are multiple theories.

Cities occur very late in the humanoid evolution. The first tool is dated at 2.6 million years ago in the Olduvai Gorge in Kenya, found by Louis Leakey. So if cities date from 10,000 years BC, we have an anomalous period of time from four million years before Christ to 10,000 BC. During that period of time, a great deal of paleontology has been-- one of the transformations of the humanoid to the human erectus deals with nutrition.

Until you have a tool which can make food possible other than vegetables, you'll have the capacity to take in nutritional substances into the body, which theoretically include the creation of a larger brain. So the brain size of Australopithecus, which is about four million years old, a post-ape animal, has a brain of about 400 cubic centimeters. You have brains of about 1,200 to 1,400 cubic centimeters, depending how big you are and how smart you are. I don't think smartness has any connection to size of brain.

But I'm throwing in just one other thought here around the idea of the genesis. I'll go into this more carefully with you on Thursday. There's a British paleontologist-psychologist called Robin Dunbar who studied the increase in human brain size and argues that human brains increased more significantly in communities of 150 people than when people stayed on their own or didn't partake in rituals of 150 people.

This theory is called the gossip theory and argues that people and children need to be indoctrinated into the rules of this settlement, and it takes about 150 people to make sure that these rules are properly disseminated. How this was done, nobody knows. If you believe Chomsky's theory of language acquisition, you'll believe that human beings have an innate capacity for language, and at a certain point, almost like the strike of a piece of lightning, it was activated in the human brain.

There are many, many other theories. I'm not a linguist nor a philosopher, but I'm just trying to explain to you in a very primitive way how the advent of cities is late, how the advent of cities is difficult to explain. I will deal on Thursday with two contrasting theories, the theory of surplus, and the theory of cosmic knowledge.

Let me go through some of the practical things that you need to know. You're going to be overwhelmed with reading. You have to develop a mature understanding of what to read and what not to read. I'm giving you an exercise. The required reading is about 1,500 pages for the semester. That's about four books, four books for graduate student learning about cities, the form of cities, is not very much.

By the way, one of the reasons for the increase for the size of the reading list is the enormous expansion of material in this field. I have in front of me the 1956 references from Kevin Lynch. He totals 50 books, 51 books. My expanded reading list is 500 books.

Let me give you an example. in 1964-- that's eight years after Kevin Lynch started teaching this class-- the first book that dealt with third world cities, or developing country cities appeared. 1964, MIT published *Man's Struggle for Shelter in an Urbanizing World*, a book by Charlie Abrams, still one of the best books published. Can you imagine that the literature on what now constitutes the majority of the world was not available in English until 1964?

When I first started teaching this class, students wanted to do papers on cities where they came from, Nairobi. There's no urban geography on Nairobi. Now there's an urban geography on almost every city that exists in the world. When we did a studio in Chandigarh 19-- god only knows when-- in the 1980's, I think, you couldn't get a plan of Chandigarh. It was prohibited by the Indian government for security reasons. The only one that you could buy was through Russian sources via Houston for \$2,000.

So we did this study of Chandigarh, which we had to make our own base map. Today, that would be ridiculous. So if this class has a bit of a lag, it was built at a time when there were few books, and material on cities was scarce. I'm not here to teach for history or for posterity. I'm here to teach you as human beings in the best way I can. But I will talk, I will cover the material as best I can in about 40 to 45 minutes, then I will show illustrated material in almost all the classes for about 15 to 20 minutes. And then there will be a period of 10 minutes for general observation.

If we cannot, as in the case of case studies like Paris and London, finish with-- there may be no time for asking questions or deliberating on the subject. We may start the next class with me asking your questions about, what questions you have about what I presented, such as, why is Paris twice as dense as London? Why?

Both developed significantly from 1750 onwards. Why did London develop less densely than Paris? You should know these things.

**AUDIENCE:** The wall?

**JULIAN BEINART:** You're right in some ways. The wall, the last wall of the five Parisian walls was built as late as the 1820's. London, there's a rule you can, if you don't know European history, and you don't know European cities-- and some of you who come from the Orient may not-- the fortification of cities is more extreme as you go eastwards from England.

The wall of London was a pretty miserable wall, a little bit of it left in the gates, like Ludgate and so on, but basically, it wasn't very much. Vienna's walls were never penetrated except in 1683 by the Ottoman Empire. You don't need to know all of these details, but you have to understand the conceptual structure. Why would you build a city?

One of my favorite quotations is from Marx talking about the origin of cities. He says "the antagonism between town and country begins with the transition from barbarism to civilization, from tribe to state, from locality to nation, and runs through the whole history of civilization to the present day." The first antagonism he talks about is between town and country.

Cities were always clearly demarcated between town and country. It took until renaissance for nature to be introduced in the walls, within the womb of the city. The Romans used to say, I think, [LATIN], they are lions. The world outside the walls was a world of treachery and difficulty and fantasy.

There are many ideas about cities which are complex as that idea, but the antagonism between country and city still lasts today. President Obama was elected because of the majority that he had in cities. The Democratic Party is an urban party, by and large, although this has changed significantly as the size of cities has changed, and as the demarcation of polling districts has changed. But we'll talk about this distinction between country and city, and in the third class, we'll deal with the organic model. But you could see somebody like Marx, who really tried to do everything, and was right about 50% and wrong about 50%, judgment about the significance of the advent of cities.

We know relatively little about these things, and I tend to prefer histories which deal with examples. So Morris's book *The History of Urban Form*, or Braudel's book on the Mediterranean, or on the structure of everyday life are better than-- although Lewis Mumford, *The Culture of Cities*, is still the standard. He's wrong on many things, but he's full of ideas. It's a Mumfordism to claim-- anyway, forget about Mumford. We'll talk about him sufficiently.

Let's see in these generalized notes. By the way, there are other reasons why Paris is more dense than London. There's not one simple reason. What kind of houses did Englishmen live in? As opposed to what kind of houses did, during the time of Haussmann, did the French live in? We'll go into some of those.

Look, I'm not a historian, and this is not a class in history. It's a class in deriving ideas from a number of sources and arguing them with you. I have no, other than a lot of time spent teaching and preparing for this class, and a lot of external experience practicing in cities all over the world, I have no golden formula for the truth. I don't claim to have that. I'm not sure that I believe anybody who says they do.

I'm not a theist, and I'll come across quite often as an agnostic, if not an atheist, with regard to truths of religion. Jerusalem has only been the capital of a city, of a country twice, once during the period of the 10th century, during the crusader occupation, and after 1948 with the advent of Israel. Jerusalem, which we will do in great detail in one case study, is subject to an enormous number of philosophical interpretations of history.

There is no single truth about Jerusalem that is outside the truth of geopolitics at the moment. This is true for much of-- so if I, to use the term "theory," which Kevin Lynch started-- I will use the term-- I would have not called this class Theory of City Form. We live in a predominantly scientific age, in which theory is theory in physics, and it's about as precise as it can be. Theory in the social sciences is much looser, in theory in city form is even looser than that.

So I would have called it, this class, really, more preoccupied with normative ideas, normative and functional ideas about the former cities, rather than theory. If I taught this class in Paris, I would be deriving theory from theory. This class follows the Chicago style, and I only will discuss a theory if I can attribute an example in association with it. So I will be making propositions and choosing an example to adumbrate that proposition. The example will come from architecture very much.

Amongst the social sciences or disciplines other than urbanism, if there is such a thing as the discipline of urbanism, much of my material will come from the built world. It's a bias, which I accept, and it's the only one that I know a little bit about. So for instance, if I want to talk about the problem of how you deal with the future expansion of a city, I will look at the plans of university buildings designed in competition from 1955 and 1960 to 1990, where an attempt to design for a system which could accept change is much easier to see. I'll also refer to a thesis done here on MIT, which looks at the way MIT has been able to expand using the same trajectory of expansion, formal expansion.

What else? As for the definition of a city, I'm going to use any definition that you wish to bring forward. Cities are, by and large, denser than non-cities. And that's about all you can say. The SMSA definition of a metropolitan area is useful for statistical purposes, but god alone knows what Mexico City, what are the boundaries of Mexico City? There's more investment outside of the city of Mexico City in the metropolitan area than there is in the city itself.

Is Foxborough, where the Patriots play football every Sunday during the winter, part of the metropolitan area of Boston? The city of Boston had nothing to do with the decision to locate it in Foxborough. As cities have expanded horizontally, so the issue of what the boundary of a city is becomes more complex and more interesting. There are more new prototypes of urbanism created by the expansion, or horizontal expansions, and more anger by architects who believe that cities should still be framed as if they were walled. Both of these arguments are pretty viable, and will be worth discussing them.

OK, I'm going on and on and on. Any questions about procedure? You're all very silent. Has anything I've said been wrong? That's amazing. You're much too gullible.

Look, I will, at times, say things which I feel more strongly than I feel about other things. That's my privilege, because I teach this class. If you taught the class, you would have that privilege. You are absolutely free to question everything I say.

Let me just say something, which I hope you'll remember. In one of the evaluations of this class, which is done every year, there was a question from the students as to why they didn't ask more questions. And one of the number of answers here, the professor knows too much. My response is, would you prefer to be taught by a professor who knows too little? That's a stupid response.

Please just don't feel because I have had 34 years of experience teaching this class, that you should understand it all without question. I feel free to diverge and choose opportunities to say things which come to me for the first time. That's the way I think. I would like you to think in the same way, even if you might get irritated by my presumption.

There is no single theory of city form that exists. There is no absolute theory. There are many theories, and there are preferred theories, as opposed to silly theories. There are many, many problems. Robin Dunbar's theory of 150 people has been taken up, and firms, corporate firms, have divided their manpower into groups of 150 people based on Dunbar's studies. We're not going to do something as silly as that.

Reading, there's two pieces by Kevin Lynch generated in this class through discussion. And I think they ask questions which are interesting, and answers which are interesting. The first three classes, starting on Thursday, deal-- well, let me generalize first. There are three major sections in this class.

Section one deals with the nature of city form theory and goes on till the fourth, goes on till the sixth class. The first six classes deal with examples and ideas about the form of cities. There are three analogical examples. The first one, which I'll deal with on Thursday, posits a metaphysical relationship between the form of the city and the cosmos that will deal with all of the material from paleontologists and philosophers, like Mircea Eliade, who will argue that the archaic cities had connections to celestial systems.

We want to ask why. What are the implications of survival, in terms of practical methods of dealing with survival in the form of the city, as opposed to metaphysical? Why is the temple of Marduk, the city god of Babylon, on top of the Tower of Babel? Estimates of the Tower of Babel are about 300 feet in brick and stone. You can't build much taller than that, although the pyramids of Giza are about 300 meters, I think.

Why place a temple on top of a tower? We will ask questions of this kind. We will ask why, this is one of the earlier-- and you can help us here-- one of the earliest cities of dynastic China has a pattern which resembles the star system of the dipper. Essentially, Lynch, Mumford, Adams, are amongst the major protagonists of the cosmic theory of archaic city form.

By this theory, it means we know where a city should be located. We have techniques for finding the place where it should be best built. It has a relationship with survival. It has three-tiered systems.

One of the things I will do, is I will give you a piece, a series of pieces of paper every class. So for instance, instead of me having to make a list of all of the reasons for why the cosmic, or what the cosmic form can do, I will hand it out to you on a sheet of paper. This is a gift. You would have 26 gifts at the end of the semester to add to your numerous amounts of paper.

I will often show a diagram which I can't show in slide form to help us manipulate the class. I will sometimes try to bring the class up to date by giving you a piece from the *New York Times* that day. The *New York Times* will come up in some of these.

One of the problems with teaching a class for 34 years is that you get bored. Most of you who graduate from MIT with advanced degrees teach. I don't know how you teach the calculus for 34 years without going around the bend. So what I try to do is to teach the class differently every time I teach it. So I will start off taking a piece from this morning's paper on Hurricane Sandy and what Mayor Bloomberg proposes to do, and tie it into the theory that we're examining that day. And I will give you that piece of paper, or those sheets of paper, sometimes three. Sometimes I'll give you a series of plans which will take five pages.

For instance, when we talk about the Grand Paris competition, I will give you excerpts from the competition. So I'll give you a paper. You can throw it away. You can use it during the class. It's an adjunct. You can give me gifts in return. Don't take that seriously.

The second of the analogical propositions we look at will be the machine model. These three models were derived in this class with Kevin Lynch a number of years ago, and I've adapted them for this and modernized them. The machine model deals with everything from the first grid city to the laws of the Indies to contemporary attempts at machine interpretation.

The fourth class looks with the tradition of regarding the city as a function of nature and looks to organic analogies. We will look at a number of theorists of this kind, Patrick Geddes, Ebenezer Howard, and so on. But I will be skeptical about this. I'm skeptical about biomorphism, and I will say I'm skeptical. I will go through very briefly with you the history from 1933 of the greatest planning effort in this country, the Tennessee Valley Authority.

I will show you how in 1933, I will tell you about Roosevelt's theoretical understanding of nature. I will talk to you about the Southern urbanists' reaction to that, viewing nature in a completely different way. I will talk to you about Henry Ford's proposition to build Muscle Shoals as an industrial-agricultural city instead of the new. Henry Ford proposed to the United States Congress to buy the first dam for \$1 million, and the Senator Norris, great man, turned it down.

Instead, we'll go on to new images of nature, and we'll talk about the establishment of the controversy about the small fish in one of the dams. We'll go on to the fact that the 28 dams are now, the 28 dams that are built no longer provide sufficient hydroelectric energy, and 60% of the industry supported by electricity comes from coal. The worst coal disaster, the worst environmental disaster in history took place in the Tennessee Valley Authority.

You see what I'm trying to do? I'm trying to say nature is not a fixed commodity. In one project, there are annual protests against the-- where did the Manhattan Project-- where was the Manhattan Project? It was in the Tennessee Valley Authority. There are anti-nuclear protests every year.

Nature is a difficult subject. Forget about nature. You're a human being. You have an animal. You have a brain many, many times the size of any other living creature. Your decisions are not bad ones. At least that's my point of view. I'm a humanist. Forgive me. I'm not a naturalist. We'll debate that proposition.

I then will spend two classes looking at theoretical propositions, one largely from the social sciences, economics, political science, history, and so on. And then I will look at four attempts to create reasonable theory, Lynch, Martin, Alexander, [? Brockin ?] and [? Helia ?] as examples. We will stop there with the introduction. That is a large introduction to the class.

I will start Section 2 with the first early cities of capitalism. Nothing that preceded in human history, as far as urbanization is concerned, is as important as what happened from 1750 onwards. I will try to convince you not to ignore urban history-- it's not taught anyway-- but to really concentrate on the period from 1750 onwards.

The greatest event in human history is the Industrial Revolution. Why it took place in England, why it took place in the first place, we will look at a number of theories which explain that, including a recent theoretical exploration by a man from California called Clark. His book *A Farewell to Alms* is an interesting biogenetic attempt to explain the change in human behavior in the 19th century in England.

In 1850, London was the largest city in the world. It was the first city in the world since Rome to have achieved 1 million population, more or less. We don't measure these things very accurately. At the same time, the first rules were introduced into boxing. Why? Medieval boxing was dealt with cruelty to animals. I would treat you to the story about the burning of a cat in front of royalty in the population in Paris in the 18th century.

Boxing in a medieval sporting event was-- didn't separate big giants from small men. Women didn't box. Cockfighting, Hemingway says that bullfighting is the last vestige of sport. What he's saying is that the transformation from free-ranging animal-human interaction in medieval sport changed dramatically with industrialization. 1855, the Marquis of Queensbury rules in boxing limited the length of boxing around to two minutes, I think, or five minutes, whatever it is. That's when Manchester United was formed.

So we look at sport as an analogy to culture in relation to-- we'll deal with Marx. Not Marx, Marx, yes. We'll always deal with Marx. You can't avoid him. We'll deal with Engels' period in Manchester and his book *The Condition of the Working Class in England*. We'll deal with a number of things when we do the case study of London.

We'll deal with a number of economic and social transformation, which I consider fundamental to any consideration of a modern city. The first is the invention of the mortgage system. None of you know anything about the mortgage system. Nobody knows very much. Do you realize that one of the great causes for the American depression was that you couldn't engage in a domestic mortgage to borrow money for buying a house? That was invented as part of the feudal system in Manchester and Birmingham in the 1830's onwards.

I'll talk about the conquest of cholera in London, in the building and the-- London in 1850 with a million people with the most filthy city in world history. There were a number of people who made livings just scavenging the dirt in London, in the Thames, digging out bodies, old waste. Cholera was considered to be a disease through the air.

A wonderful doctor, there's this great book which I refer to in reading. *The Ghost Map* is the book which goes into detail about how this man discovered that cholera was a waterborne disease, which led to the greatest public building works in the history of London, the redistribution of water from the North and the South into bypasses which takes the polluted water horizontally away from the center of London.

We'll do the same with Paris. Here I will deal with another fundamental innovation, and that's deficit spending. You cannot do major works in a city without borrowing money. The great conflict amongst the prefects of the Seine until Haussmann about building as much as the purse would allow, which was very little. Haussmann benefited from the great work of Saint-Simon and other economists which showed that if you borrowed money, you could pay it back at enormous benefit. Haussmann borrowed enough money in the years between 1850 and 1870 to rebuild Paris. That loan, those loans were only repaid in 1928.

Deficit spending has become-- if you're interested, we can talk about deficit spending, national deficit spending. The great trauma, economically, in United States politics is an extension of deficit spending. Most of the Democrats believe that a large deficit isn't a fundamental flaw in the economic system. Republicans, by and large, have the opposite position. They believe that a national economy is much like developing a mortgage. You can't have too large a mortgage, as opposed to how much economic growth you have.

We will touch on this economic distinction, and I'll refer you to reading a book by the Nobel Prize winner Joseph Stiglitz, who talks about the fundamental problem of disparity, large disparities of income as measured by the Gini coefficient, and economic growth. But this starts in Paris in the years, in the 20-year period from 1850 to 1870.



Now, architects look at Haussmann and say, he built avenues. If you don't like avenues, you say he's a horrible man. If you like avenues, then you think he was a saint. He did lots of other things than build avenues. He built the avenues according to an economic relationship with the banks, which allowed him to borrow enormous amounts of money.

So we'll move on from the case studies of Paris and London, which are classic-- I should hurry up-- to looking at one of the conventional 19th century responses to the first cities of capitalism, and that's Barcelona. We'll look at the genius of Ildefons Cerda's plan for Barcelona, the largest housing plan in Europe, a number of issues.

I presume some of you have been to Barcelona and know the Ensanche. Almost every theorist from Barcelona, including my friend Morales, who died last year, claims there's something significant in the Ensanche. I want to know what you think. Has anybody-- who's been to Barcelona? You all better go before the class.

There are number of intriguing things about the competition which set one against a modern proposition for modular growth, as opposed to the neoclassical proposition of the man who he defeated. We'll look at it Ildefons Cerda in a way which very few people tend to look at him, and that's part of a neo-Marxian notion of what urbanism should be. We'll look at a man from Paris who came to this country with the new Icarian system.

Anyway, we'll look at Vienna, again, as the reuse of infrastructure. Vienna is interesting for a number of ways, not only the building of the Ringstrasse, but for the 1683 attempt by the Ottoman Empire to take Vienna. Vienna was within one morning of being taken over by the Ottomans. The Ottomans succeeded in defeating Christianity in 1453 by using a German cannon which had to be schlepped across Europe to Istanbul by 30 oxen. They had to build bridges on the way over there to cross a waterway. When they brought it to Istanbul, it destroyed the Christian double wall and moat by sending rocks 1,300 meters away.

The attempt to defeat Vienna after crossing all the way from Istanbul is very well-documented in a very good book. But the savior of Vienna for Christianity by the intervention of the King of Poland's cavalry is one of these extraordinary events in history which, had it not happened, Vienna would have been an Islamic city, and Europe's future would have been without Sigmund Freud, Beethoven, Mozart, et cetera, et cetera.

Now, that may be better for Europe. I'm not arguing that I know. But it's one of the cardinal-- it's in connection with the wall, because the Islamic engineers dug under the Earth and built a tunnel under the southern wall into the center. So walls didn't pay off, altogether.

After these case studies-- well, the last of the case studies will be Chicago. Chicago has no aristocracy, only a middle class and immigrant population, and is one of the few great 19th century cities. Which other cities were developed in the 19th century? Can you name me one?

**AUDIENCE:** San Francisco.

**JULIAN** Yeah, it's a bit dubious about what its origins are. But you are maybe right. Johannesburg is certainly one.

**BEINART:** Chicago is unusual in really only having been developed from 1830 onwards. Chicago is also unbelievably interesting in relation to the role of the private sector in the development of a city. The European examples really deal with governance.

The private sector in Chicago built an illegal underground subway system without the city knowing it. Now, if you have a city which has enough hubris to allow a private subway system to be built, it also deals with the Chicago World's Fair and the various episodes leading to it. We'll spend some time going through the Chicago World's Fair, and we'll contrast it with *The Devil in the White City*, the book which many of you probably know, and the incredible lack of public governance in a city which was being developed by the private sector.

Section 2 will end with two classes, one on utopianism, which I dislike as an idea. But we'll do the class anyway. You may enjoy it more than I do. But the interesting-- we'll realize the link between English and the Shakers. Do you realize that the woman who started the Shaker movement came from Manchester, and after having, I think, her fifth stillborn baby, she reviled against six, left to the United States, and came to start the Shaker utopian movement in this country. There's a relationship between the evils of capitalism, pre-hygiene and the utopian movement. Utopianism has many interesting followers.

And then we'll do a brief look at some 20th century organizations in England, the British Town Planning Movement after 1946, and the socialist city in Russia. Look, all of these are enormous topics, and I'm just going to select a couple of ideas and go with those ideas. This is an enormous attic of stuff. This class is over-fat and tries to do too much. It's the accumulation of 34 years of not being on a diet. So you have thoughts of the fragments of stuff.

The last half of the class deals with current theory and practice. The first section deals with the question, is there a relationship, or what is the relationship between the way a city is made and its form? The second group deal with, what is the relationship between social structure and spatial structure? And here we do case studies of Jerusalem, Johannesburg, the border between Mexico and the United States, and colonial Delhi in India.

That takes us to the third week of April, and it's spring already, I hope. And we can keep these windows open for the sun to come in. I deal with a number of propositions, formal propositions, number 20, four models-- sorry, number 19, four models. One deals with modern and postmodern urbanism, deals with the origin of modernism, and mainly the CIM discourse on urbanism and some reactions to it.

Number 20 deals with the proposition about the city as an opportunity for building in an open-ended fashion, questions of prophecy, questions of imagining the future, questions of finding formal structures which can accommodate change with the minimum cost are part of this. I will look at the previous research done at the Cambridge University Build Form and Land Use Studies Group, Leslie Martin for six weeks.

I will look at the opposite notion in the work, in the theories of Leon Krier and Aldo Rossi, two European theorists, which those of you will know from architecture, postulating that it is the past that should govern any preoccupation with the form of a city. Rossi has a theory of monumentality which we need to examine. Krier has some intelligent but really remarkably stupid notions about classicism, and the revival of classicism, and that cities were great during classical times. And this is the derivation from neoclassicism which we need to look at carefully.

We need to take a careful look at the way in which we derive notions from history. The next class deals with memory. Memory and history are two different things in urbanism. I will try to explain it through the attempt, to which all of us have, for maintaining continuity. We'll deal with the work, the writing of Maurice Halbwachs, the book *Collective Memory*, and other examples of the conflict between history and memory. Pierre Nora is writing about the French, about the loss of living memory through history, that history displaces living memory, and so on. But the fact that we now have more stuff in cities than ever before, and are building less and less and reusing more and more material argues for look at memory.

The last few classes deal with the difference, the contemporary difference between the public and private domain, the relationship between the external, the [NON-ENGLISH] and the [NON-ENGLISH], the suburbs and the center city in the United States. The last few classes will take a brief look at splintering urbanism, the effective modern virtual communication systems on the form, of the predicted form of cities, take a brief look at the effective issues of climate change and sustainability.

On the last day of class, I will deal with a major issue of the Gini coefficient and poverty. In my view, one issue which urbanism is doing less about than any other, and is theoretically seemingly incapable of doing that, that is reducing the level of poverty in the non-European, non-American world. That's an animal, a nasty animal which we bypass, as we do any serious attempt at universal climate change theory. It's what I think the nasty future holds for us, and we'll end with that rather dismal proposition.

On the other hand, I'll at the same time be talking about the wonderful successes that we've achieved over 10,000 years, well, a little more than 10,000 years, but 10,000 of human history, just to be able to teach this class with all of this stuff. Whether it's a good class or a bad class is only due to the fact that we've accumulated enough experience. We've had enough human minds thinking about urbanism for this period of time. It's a major, major achievement.

Marx is right. Without cities, there'd be no civilization. And without civilization, we wouldn't be sitting here today. But the two gaps, one of which, of course, Marx and Engels made a living off was picking up on the notion of the inability to deal with the unnatural distinction between wealth and poverty, and what that means in the latest attempts by groups such as Slum Dwellers International.

I don't know if any of you saw the exhibition at the United Nations last year or the year before produced by the Cooper Hewitt museum on third world cities. OK, so you don't know. What else? Is that enough for one semester? We're going to go quickly, and I am not going to be able to explain second order, third order issues.

This is an open-ended system. It's got infinite dimensions. We're going to look at the core dimensions. And if they lead us outward, great. Maybe you'll have a universal theory of urbanism by the end of this class. I haven't got one. Any questions? You're all very silent.

If you find a piece of reading in this class schedule, you will find the reference in the thicker bibliography I've given you, if it's up to date. And I hope it is. I check it every year and try to keep it up to date. If you have any trouble with a book or a reference, just send me an email. I like the email system, because it allows me to do things in my own time. But if you need to talk, let's talk. That's an open invitation. We are all very busy people.

So for instance, when I mentioned Halbwachs and his book, *The Collective Memory*, it's not-- I will quote a bit from it in the class. But I purposely didn't put it as required reading, because you'd have to read the whole book. There's a part of me which had an upbringing that I had to read whole books. You couldn't read a piece of Shakespeare. We were beaten over our heads. We've got five minutes. We were beaten over our heads if we came in and read only a piece of Henry V, famous speech.

I am understanding of the amount of energy and time it takes to read. So I've tried to give the required readings as parts of books. There's not one whole book that I've referred to. In the case of Halbwachs, it's very difficult to extract a chapter. There's a wonderful chapter on memory in music, which fascinates me. I mean, whenever I hear somebody conducting Mahler's Ninth Symphony without a score, I'm amazed at how it is humanly possible to understand such complex music and direct it for two hours, an hour and 40 minutes, perhaps.

He tries to explain that individual memory is impossible, that the social memory is what creates individual memory. He was a collectivist sociologist and wrote some brilliant things about memory. But there's a case, if you read the book, it'll be worth reading. Maybe I'll excite you about the book. OK, I'll see you next Thursday, if you continue. If you don't, good luck with the rest of your life.