

MITOCW | 8. Transformations I: London

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JULIAN

To describe the spatial history of London in 45 minutes is impossible. London has to be seen in the light of a

BEINART:

number of issues. It's the greatest open city in history. I'm going to be interested in the spatial development of London from about 1750 onwards, the period which we have demarcated as being the advent of modernism. Sit down.

London was first occupied by the Romans in 43 AD. And they stayed in England until about 400 AD, a long period of time. London never built great walls. As I said in a previous class, the walls in Europe are widest on the east and get distinctly less. Paris rebuilt the walls a number of times, as late as the 19th century. But the British, separated from continental Europe, never invested a great deal in protecting the city.

The crossing of the River Thames was towards the northeast-- that is, towards what is now the city of London, the business and most protected original part of London. The period post [INAUDIBLE] can be characterized by the application of the British of a number of contested arenas of social life and economic life. Already in 1838, the Chartist movement agitated for the Democratic use of the vote.

The first labor unions were starting to be originated in the early 19th century. Charged labor was put out of business. The origins of public housing-- the state never built housing for people except if there had to be housed under poverty conditions. Most of the cities in pre-English Europe relied on religious powers and charity to house people. There was no notion that the public had any responsibility for housing the population.

So at least amongst the many innovations that this period endorses, one would include the major, major, major organization of the state towards environmental improvement, taking care of public sanitation, the origin of welfare, state health, building bylaws, the emergence of women's rights, the laws against racial discrimination, and the emergence of the first-- I would call the modern city-planning organization with London County Council, 1889 to 1965, the most dramatic state organization to organize the application of spatial and social principles.

The London County Council-- one of the problems about city planning is that you need an organization internal to the state or to the city to maintain the quality of work. Outside consultants are OK. Unlike architecture, with outside consultants, you can build a building. City planning is a continuous process of adjustment, management of public wealth and private wealth.

And one of the biggest problems of working in many parts of the world today, for me, is to adjust the level of work in relation to the level of the capacity of application. There's no point in using advanced levels of spatial control in a city which cannot maintain its application and adjustment. I'm just, at the moment, engaged with the city of Abu Dhabi, who wants some help making a new strategic plan.

They want to do it without outside consultants. They want to do it through their own internal labor force. The real question is whether they're going to be able to. But that's an ongoing discussion, which I'm having with them.

London had already established an enormous number of characteristics of a cultured and open city. Shakespeare bought a house in London in 1613. He paid for it through the profits he made on theater audiences in central London. John Locke, in 1685-- 1689, perhaps-- published a paper arguing for the separation of church and state. It was really towards the end of the 17th century.

London has maintained itself as an open city. 2.6 million of the current population of London are foreign-born. That's about 30% of the population of London today are foreign-born. I think that's roughly equivalent to Los Angeles. I'm not sure about Los Angeles, but forgive me. I'm just guessing. I should know, but I don't know a great deal.

I read from the *New York Times*, March the 4th, 2012, writing about London. Every month, some young bureaucrat in the Chinese State Administration of Foreign Exchange reaches out to a trader in London and buys or sells billions worth of US treasury bonds. London is the world's largest market for dollars.

So if you think about all the money that's being paid by the Chinese government, it's paid to London. London has remained the central economic site for a great deal of the international world. We thought, perhaps, by looking at some of the spatial attributes from the two major disasters, the fire of 1666 and the plague epidemic of 1666-- no modern city has ever been struck by two major disasters so close to one another.

The Fire of London was the greatest fire the world had ever seen. On the 1st of September, 1666, the wooden structures close to the river, to the docks, exactly the same as Chicago in the Chicago Fire 200 years later-- the mayor was apparently unimpressed when first called to the scene. He expostulated, pish, a woman might piss this out. He woke up the next day to find half the world around him destroyed.

The fire interested us less than the fact that five days after the flames had been controlled, a young professor of anatomy called Christopher Wren, not yet widely known as an architect, approached the king with a plan. The plan took no account whatever of the medieval street plan. He superimposed his grandiose vision of wide avenues radiating in straight lines from the Royal Exchange.

On 13 September, Charles II, the king, issued a proclamation, assuring the city that, quote, "though every man must not be suffered to reap whatever--" oh, I don't want to read the quote. Essentially, Wren assumed that you could socialize land and change the form of a city by imposing a new spatial pattern on it. The king said no, in England, we respect the ownership of private property, even if it's of a small scale. And I will not endorse a plan which does not advocate the maintenance of the rights of my citizens to land.

There was another plan by John Evelyn, which I'll show you. Wren build an enormous amount of-- in the post-fire era, he built a number of churches. And many of them is still there. He, of course, built St. Paul's Cathedral. His clients didn't like it very much. In his latest, 1713, I think he was begging them to pay his income. So much for Wren.

The principle that London would not be subject to the powers of the state to change its spatial pattern has been central to the maintenance of the form of London. London doesn't have large avenues. It has one, perhaps. Oxford Street is the old Roman road from the east to the west. It has no north-south road except for Regent Street, which we'll discuss a bit later. It is the imposition of a particular situation.

The second epidemic of London was the plague. But before the plague, London's River Thames had an underclass of people who made a living out of the filth of this river. They were people called bone pickers, rag gatherers, pure finders, dredgemen, mudlarks, sewer hunters, dustmen, night soil men, bunters, toshers, shoremen. If they had all formed themselves into a union, this London underclass would have been the fifth-largest agglomeration of people in all of England.

The consequences of the river's water being as polluted as it was was only established through the genius of a man called John Snow. Before that, the outbreaks of cholera were generally assumed to be a condition of the air. The miasmatic theory of cholera was prevalent. London's Parliament had to shut down one summer because of the stench from the river.

But John Snow-- you must read *The Ghost Map*. Has anybody read the book *The Ghost Map*? Good for you. I'm really using London as an example of the transformation of a 19th-century city under extraordinary level of commitment and skill. Up till 1854, cholera was seen as a disease borne by the air.

There'd been many attempts to make the process of draining your body a little more elegant. A water-flushing device had been invented in the late 16th century, who installed a functioning version for his godmother, Queen Elizabeth. The device didn't take on until a watchmaker called Albert Cummings designed an improved version of Herrington's design. At the Great Exhibition of 1851, an estimated 827,000 visitors used them.

After that, the seated toilet became much more common in London. According to one estimate, the average London household used 160 gallons of water a day in 1850. Thanks to the runaway success of the water closet, they were using 244 gallons per day.

Snow transformed the world of cholera. You have to read the book to understand the Sherlock Holmes genius with which this man observed the situation, which resulted in his finding that cholera was carried by a bacillus borne by water. All of the improvement in the seated toilet seat simply meant that more and more feces were being poured into cesspools because there was no sewage system.

Imagine a city where there is no sewage system, where there are constant outbreaks of cholera, until one modest general practitioner in the West End comes up with the notion that it's waterborne. Such is the genius of British endeavor at this time. It took only seven years.

Yeah. The most advanced and elaborate sewage system in the entire world was largely operational by 1865. Joseph Bazalgette, the engineer, in six years had constructed nearly 82 miles of sewage using over 300 million bricks and nearly a million cubic yards of concrete. The main--

All the sewage flowed into the Thames, which either remained static or flowed, eventually, out to the sea. Bazalgette built two in the north and one in the south. This took all of the sewage and water, wastewater, and pumped or used elevation to export it to the sea. Around central London, he built two embankments, the Chelsea and the Victoria embankment on the north and the Albert embankment on the south.

This is one of the biggest industrial feats in human history. The extraordinary thing is that if you're in London and you walk on the embankment, you don't know anything about what it's doing. London advertises Big Ben because you can see it. The underground of cities is impalpable. This is an extraordinary example of the genius, Sir Joseph Paxton, who designed the Crystal Palace, the Gardener. He said, we in Britain solve problems by common sense and technology, not bombast. I wonder what the American-- what a city like Boston would build in six years, hardly a sewage system.

The next issue again starts with a disaster. We want to examine the transformation of land in central London. We start with a story. Alexander, the nephew of Mr. Hugh Audley, died in the plague. Mr. Audley was a lawyer, a great leader. He amassed a great legendary wealth through dealings with a court of wards, the court which apportioned lands forfeited to the Crown when the owner couldn't pay the fees.

Among his property rights which he accumulated was the Manor of Ebury, which was swamps and farmsteads which ran from the Thames River as far north as the old Roman road to Bath, Oxford Street. So the West End of London was a swamp. It accrued into the hands of this family. Through a number of generations, it passed down to a woman called Mary Davis.

Mary Davis had needed money. She arranged a marriage to Lord Berkeley. These were rural establishments looking for land in the center of the city. Lord Berkeley-- Mary was only seven. And their marriage arrangement was made with the Berkeley's 10-year-old son. But there was no money. They couldn't raise an additional 3,000 pounds.

The next marriage deal was with Sir Thomas Grosvenor at the age of 21. Mary-- now 12-- was married in 1677. Mary developed mental illness, became a fanatic critic-- oh, Catholic, not a critic. Surely some mental slip from Catholic to critic. They're selecting a pope. I suppose that's on my mind.

Grosvenor died in 1700. Mary was swept off to Europe by a Roman Catholic priest called Father Fenwick. In Paris, Fenwick drugged her, married her to his elder brother, Edward Fenwick. In 1703, a court resolved *Fenwick versus Grosvenor*. The court favored the Grosvenor family. His son, Sir Richard, began to develop the states of Mayfair, Belgravia, Pimlico. Mary's land plus the Grosvenor's provincial estates produced the largest fortune in British hands, only second to the royal family.

You should really be able to answer this question. Why are there no railway stations on the west side of London? I've just told you the story. Crown, crown, crown-- you can look at your diagram. The Grosvenor' estates-- number five, and these are number two-- as a block of land impeded the development of any railroad on the west. London is encircled by railroads, four miles by 1-and-1/2-mile box.

There's a subway line which runs along this box. What's it called? Who knows London? Come on, you must know something about the greatest city in the world. You're studying urbanism, aren't you? It's like me talking about a classic case of pneumonia, and you don't know what the causes of pneumonia are.

The Circle Line. Paddington, Euston, St. Pancras, King's Cross, Farringdon Street-- I think that's the one-- all linked to the industrial heartland of England-- Victoria, Charing Cross, Waterloo. All link to South Africa, and India, and the United States. Some of these stations on here link to Europe.

There are no stations on this arc. Now you know why. The combination of land between the Crown and the Westminster-- Duke of Westminster is probably the highest ranking in the British aristocracy. The Grosvenors became the Duke of Westminster. OK. I made my point. It's a battle. It also advances the notion that the combination of rural land and urban land is required to produce great wealth-- at least, at this time, it was. Raymond Williams is correct in his book *The Country and the City* in making the point that it is a combination of the two that produced the shape of contemporary England.

The second land story deals with the fact that the center of London consisted, to the most part, of land occupied by aristocracy. Large portions of land-- the Bedfords, the Duke of Bedford, for instance, occupied large portions of land. What emerged as a result of economic growth was the emergence-- and Marx makes a classical reference to the emergence of the middle class of the bourgeoisie. It has major economic factors.

So valuable did the land become that it had to be transformed into sales to the middle class or the upper-middle class. So each of these states was subdivided systematically. Where was the first? These subdivided estates characteristically have a residential-- or residential in nature, have a central public, or semi-public, or private square in the center. And this animates the whole spatial pattern of central London, at least most of it to the west of Regent Street.

This is the only city in the world which has used residential construction to build its center. The city was always off to the east. This is land which was available just through the subdivision of property. Again, Rasmussen points out that these subdivisions generally were little towns in themselves. It was the manor house, which faced north. There's sometimes more than one manor house.

The housing was generally occupied by one family per unit, as opposed to the boulevard house of Paris, where every floor was a separate housing entity-- which, again, is one of the many reasons why London is about one-third of the density of Paris. The second has to do with the transportation system, which we'll talk about in a minute.

Why do you think the rest of the world never followed the British pattern of subdividing land in a systematic way for housing? Stupid. Why didn't the British impose a system residential spatial organization as interesting and as articulate as the British did for London? I don't know how to answer the question. Ideas don't seem to spread all that well, good ideas. And of course, there are many problems with the fact that you're subdividing land only for another class of people who can pay the economic rent through the leasehold system of the subdivided estates.

The extraordinary notion of using a building-- there are 151 residential squares in western London, 77 between 1800 and 1850, but starting in 1631 with one which is famous for other reasons. Its name is Covent Garden. Why is it called Covent Garden? How do you know nothing about London. You need, really, to spend some time in London learning about how this great city got to be put together.

Henry VIII didn't like Catholicism. So he closed the convents. The convent which became Covent Garden was handed over to the Bedford family, who employed the great British architect. Who was the greatest British architect in the 17th century?

AUDIENCE: [INAUDIBLE]

JULIAN Hmm? Inigo Jones. Do you know the name Inigo Jones? You should know them if you've studied the history of architecture. Mind you, the history of architecture is so badly taught that I'm not surprised that nobody knows the name of Inigo Jones. Inigo Jones is an interesting man in his own right.

Historians have often thought that the term Inigo came from the fact that he was Welsh. It turns out that recent history has found that he actually traveled to India. And he was probably a homosexual taken to India by one of the aristocracy. And the drawings of him done in India, which make his life a little more complex, and perhaps a little more interesting.

Anyway, he built a church, St. Martin's in the Field, as the main component of the square. The rest of the square was empty. There was some residential accommodation in arcades, which Jones designed. But the center became a market, became the famous market and developed into Covent Garden, which the great opera house of Covent Garden-- I don't know if there's any connection between an opera house and an agricultural market, but the British seem to do these strange things. Perhaps the market produced a number of people who sang and became an opera company-- so history's adjacency, perhaps, produces.

What more can I say other than to look with you at some of these subdivisions? I've given you, in the handout on the first page-- if I remember correctly-- the landholdings. Are they numbered? Number five is the Grosvenor land. And number two is the Crown.

On the diagram above that, it's got a lot of stuff on it. It's rather complicated. But essentially, starting in 1631, Covent Garden, you see a slow growth of subdivisions of these big estates. And with the-- Sir John Summerson was called the great period in London building, from about 1730 to 1800--and-so, the Georgian period.

It's interesting that these buildings, these new residential armatures to the squares, were built according to strict rules. One of the reasons for the care for maintenance of these subdivided estates is not only because the land was expensive but because one of the changes that the British land policy adopted, switching from freehold to leasehold. Royal land could never be sold. Freehold land was given by the king to a client who had served the king or queen admirably.

No resolution of that was possible until Parliament, realizing the economic advantages of this land and the emergence of an economic class of private buyers, decided to pass a revision which is called leasehold, which meant that you were allowed, as a royal aristocrat, to subdivide your land over long and lease it to somebody for a long period of time-- I mean, 90 years, 100 years. Summerson, I think, argues that in order to maintain the quality of the property, attention had to be paid to the design of the buildings and the quality of the maintenance. I'm not sure about that. So it's a bit foggy as to whether the leasehold system doesn't automatically imply a good maintenance of property.

The diagram below, you can see number two, which is where Buckingham Palace is now-- two stretching all the way to the river, two stretching up to Regent's Park, which we'll talk about in a minute, and number five stretching roughly from the river, very close to number two, all the way up to Oxford Street, which is-- well, I don't know if it's exactly Oxford Street, but in the proximity of Oxford Street. These diagrams show the subdivision of two of the estates. The Matrix of Comparative Orders argument is from an MIT thesis which argues that West London suggests an intermediate order. A textural order, such as Rome, Parma, Delhi, Paris, and so on the left, and the intermediate order of West London, and monumental orders, and the intermediate order of another kind in Bath and so on. You can read this and work it out yourself.

Residential squares generally had gardens in the center space. In first, gardens were private gardens. You inserted in the center of the residential space a garden, which was gated. This was a strange idea, to insert in the public domain a private-only use. The British never had large gardens of their own. So in some sense, it was a formal substitution of a private garden into a communal private garden, a very interesting idea. Although, as time passed, this idea passed, and the central squares became public.

The later ones, the 18th and 19th century ones were public, generally. It's an extraordinarily formal device. So when we look at four examples of the residential squares, you'll see the subtle ways in which all of them try to play around with certain ideas-- the use of the road, the use of monument, the garden, the position of the manor house, and so on. The Mews of London were the servant quarters of these great estates.

Do you know the word mews, M-E-W-S? They're some of the most expensive real estate in London today. They were the servant quarters. It's only the wealthy who can afford to live in previous servant quarters. It's another rule which you might remember. If land becomes valuable enough, small space, which is allocated appropriately to the workers, working class, becomes wealthy enough to become the sole propriety of a wealthy family.

When we talk about Paris on Thursday, you'll see the use of the public square in Paris, the Place Royale, for instance, at the beginning of the 17th century. Now-- then, later, renamed the Place des Vosges-- was really the antecedent of the Covent Garden plan. The Covent Garden plan had an empty center, which was then occupied by a market. The Place Royale was the house-- the residential environment surrounding the Place Royale was for the French aristocracy and the royal court.

The French never followed the residential subdivision of the British pattern. And many people, including Rasmussen-- London, the unique city-- have commented on the fact that London has always been a series of small endeavors, short vistas. There's no Main Street in London. There's no main avenue in London. There's no great avenue connecting major parts of the city, as was the principle of subdivision or spatial organization in Paris.

In the early part of the 19th century, the Prince Regent and a very slick architect developer called John Nash hatched a plan. The Crown owned Regent's Park to the north. And there was some notion that you might be able to connect the Crown land with the crown land on the south. It took the making of a new street to enable to do that.

Here, you have a beginning of the sensibility of Paris. Louis Napoleon, who became the French King and the patron of Baron Haussmann from 1848 to 1870, was in London at the time. He also spent time in Boston. Apparently, he made a drawing of the future of London in one of the restaurants in Boston.

Regent Street has two major qualities about it. Number one, it was able to be the only spatial feature which was able to be made in London despite the edict that London property should remain in the hands of whoever owned it unless bought. You needed four qualities to build a new street.

You needed an individual who had the energy to push the scheme through, a good route, an act of Parliament, and about a million pounds. The Prince Regent and Nash had the authority and the money to do this. The merchants of this street is a phenomenon in itself. We will examine that a bit later in the class, referring to the writings of David Friedman on this subject.

It was contrary to the principle of land division in England. And it was possible, through the genius of Nash and his anomalous energy-- and there's an interesting aspect to this street. If you look between Oxford Street and Portland Place, there is something called All Souls' Church. Do you see it? When you go to London, go and look at All Souls' Church. It's a piece of architecture which indicates a fundamental principle of urbanism.

You cannot buy the property over here or over here. In order to make a street run straight through, and you have to create a bypass. You design a circus in front of the church, a circus being a spherical space, an open space, in front of the church to carry the flow of the road through like this.

Do you understand the principle? It's not a cosmic idea, but it's an idea. There aren't many cosmic ideas in urbanism. They're not in England. They are small ideas. London is, according to somebody whom I quote-- I don't remember his name or her name-- London is a city of small realities.

There's another significant feature of Regent Street. Between 1840 and 1916, a man called Charles Booth worked in London. He wrote a book called *Life and Labour of the People of London*. It's 12 volumes, published between 1891 and 1900. What did Booth do?

He produced something for the first time, which if you know something about urbanism, would recognize immediately. He made a map of poverty. He made the first map showing income on a plane. What-- Oxford Street.

Booth's map indicates that there are more poor people living on this side of Regent Street than on this side. So what do you use new roads for? This is what Engels observed in Manchester. Roads can serve the purpose of subdividing property. Land on this side is much less valuable than on that side. This is where, by the way, Snow did his experiments on cholera.

So we learned a number of these very little micro attributes of urbanism, small-scale things. Major revenues on one side, a major lack of revenue on another side. Regent Street is carefully modulated as Moses's highways were in relation to land values. You can't build a public road straight through expensive property. Roads can be deviated. Sometimes they create spatial avenues of the great charm by virtue of them twisting around. But the basic motivation is not aesthetic, it's economic.

The other great-- have we got time? OK. In the required reading for this class, there was a piece which I wrote about the instruments of application in the 19th century. I won't have time to go through them. The first is the invention of the [INAUDIBLE] payment amortized building loan. The second is the transformation of the building union and building guilds into a permanent building society for the lending of money.

The third is the transformation of a pre-industrial guild of builders into a 19th-century organization started by Thomas Cubitt at the age of 27. He employed a permanent, year-long labor force as opposed to day-long laborers provided by guild workers. He also could assume economic risks and forecast the value of property.

He established what is called the contracting gross. In times of such enormous, fluctuating economy, it's difficult for a large investor to predict the cost of what he would have to pay at the end of the project. Cubitt revolutionized this by inventing the contracting gross by saying to the queen, it doesn't matter what happens. It's going to take 12 years to finish this project, you have to pay \$300 million pounds at the end of 12 years.

This is before-- I mean, this is in a time of economics-- well, economics is a modern science. It only dates, probably, from about 1900. So we have Ricardo, and Marx, and people like that, Malthus, who weren't much help in-- but Cubitt understood that the profits he could make by maintaining a labor force-- again, we have Marx's notion of surplus value. By having 1,000 workers, you reap a share of the income. And therefore, you become very wealthy-- according to Marx, anyway. And when you are very wealthy, you can take economic risks because you know what you can produce at what cost.

I've mentioned the transformation from freehold to leasehold. The last of these policy implications is the introduction or invention of deficit spending, which I'll elaborate on more when we talk about Paris. Paris was the first to assume that the right of the state to private land was great, was large, significant only to be exceptionally reversed by private owners. Haussmann's property development schemes were schemes based on the notion of deficit spending, that the state could engage in large amounts of capital deficit on the grounds that it was improving the economic condition of the site. And the site would, over time, pay back. The fact that Haussmann's borrowings only was paid back in 1928, some 75 years after Haussmann spent the money, is something we'll debate in next Thursday's class.

Let's look very quickly at the idea of the railroad. London was the first to introduce a train system into the compact center of a city as urbanism. 1863, the first subway ran from on the north eastwards, from Paddington Station past all of those stations, to the last one on the bend, Farringdon Street. These were [INAUDIBLE] conditions. It was only a small indentation in the Earth. And the train ran without any ventilation, except from the sky.

It was enormously successful. There were millions-- it ran from 1873 to 1890 regularly at 10-minute intervals. And I think it carried something like a million or 10 million people regularly. In 1890, the deep, old tunnel was reintroduced largely by an American financier, Mr. Sprague. And that set the pattern for the building of a complete subway system, almost complete in 1900.

I saw an estimate of what it would cost for a contemporary city to build this, the London Underground system. And there's not enough money, not enough capital in the world to pay for it. Of course, that's an exaggeration. There is enough capital. But it's beyond the reach of any living city.

The British were very clever in investing in the sewage system and in the public transportation system. They coupled the inner circumstances, with various colored lines, with the suburban system, which connected to the outside, as yet relatively unbuilt villages and towns. There's a lot of details to be discussed around the building of the subway systems. There was enormous costs involved in getting some of these stations.

For instance, one writer suggested that he took-- yeah. The London and Birmingham railway, from the Midlands to Lord Southampton's Euston station-- the railroad failed to persuade the bid for the estate to allow it any further. It took an army of 20,000 men to construct and was probably the largest public work ever to be undertaken in the whole history of man with the possible exception of the Great Wall of China. Digging this underground tunnel in order that Euston could get to Marylebone high road and be part of the central combination-- 11 million passengers in the first year, and so on.

To leave us time to look at this, I'm going to shorten the last part of this investigation. Let's simply say one or two things. From the provision of housing for the poorer part of the population to the state accepting some role, a major role in its care, it was a variety of moves, largely through charity and philanthropy. There was the Octavia Hill system. There was philanthropy for 5%. Everybody assumed that philanthropy had to provide a profit.

There was the Octavia Hill system. There were arguments that the poor needed resuscitation through avoiding alcohol, through temperance associations, through teaching the Octavia Hill system to teaching them how to behave properly, how to save money, how to be proficient with their time-- in fact, how to be modern citizens. The British aristocracy assumed that it could do for Engels's Manchester just through its own generosity, plus a 5% fee for Americans who invested in some of these philanthropic organizations.

In 1889, the London County Council was established. The London County Council became the first state or city organization for the planning and maintenance of the built city. It was remarkable. It employed the highest level of professional skill that it could find, people who were great architects like James Stirling, others worked for the London County Council before branching off on their own. The standard of public housing has not been challenged.

In 1965, the London County Council was abolished by Margaret Thatcher and became the Greater London Council with a different position. But the great years of the London County Council, a very left-wing organization-- one of the architects who worked-- I remember flying from the Far East with this gentleman, who was a well-known architect in London, who told me of his first week working in London County Council, of being taken to a pub on the Friday afternoon and asked whether he was a socialist or not. And he had to pass the test by answering a bunch of questions.

Are there any questions about this incredibly brief survey one of the world's great cities? I apologize for doing it in the only way I can think of doing it, and that's to pick on some characteristics. There are some very good books and London. *Landlords to London* is a good book. There are a number of others for those of you who want to examine the thing in greater detail.

But let's discuss. We're talking about 1824, 1830. Engels is writing a book in Manchester. We're talking about the Enclosure Acts, all of the penalties imposed on the emergent working class. Slowly, the emergent working class gains a foothold in the British democracy and sets off 100 years. And the 100 years produces all of these things-- the first railway train, underground, the first building bylaws, rescuing and transforming a city from a completely different environment, in some respects, from the conditions that Engels expressed in the condition of the working class.

There was no central state. Well, there were many things that the Soviet revolution offered which the British government didn't offer. But a completely remarkable Renaissance-- and that with, as I repeat, only the killing of 11 or 13 citizens over 125 years, 123 years, from Peterloo to Bloody Sunday in Northern Ireland. I think it's a remarkable-- it's a remarkable story for those interested in the effects that good action and technology can take on urban form.

Here's the Roman crossing on the east towards what became the city of London. Here, the minimal fortifications. The monastery's located on the outside ring, close to the walls in case there's some crisis. The monastery can send its people to maintain the wall. Next.

The Fire, the devastation of the eastern part of the city. [INAUDIBLE] plan on the top, the diagonalization and the centralisation of the Royal Exchange. Evelyn's scheme or [INAUDIBLE] scheme, neither of which gained much mileage. Next.

Five and two combined, virtually, the west of London. This is Mary Davis, whom I spoke about. I don't know who took this picture of her. Next. This is the pattern of estate subdivisions. And see the big gap on the left? It is the Crown Regent's Park. And the north is the crown.

A figure ground pattern of the west of London, indicating the black squares aerating this fabric. And the condition of Regent's Park is drawing the line from Regent's Park on the north Regent Street, finding its way down to the crown property on the west. Next.

OK. Here are four examples. This is the original square, 1631. The [INAUDIBLE] and the elevation of Inigo Jones and the proposed arcades and surrounding of the square. The square has a large empty center like the Place Royale. And it's indicated in the first of these four, up on the left.

St. James Square on the right, you see the enclosed garden. The entrances are carefully selected. There's a monument to end the vista from two of the streets. The Bedford square on the top right, 1773, where you get the manor house in the center of the elevation. Here, the street system is not so carefully considered in relation to the design of the square.

And here, Belgrave Square, now an attempt to break the mold of the Georgian square by putting the manor houses outside the main elevation, in the four corners, opening the square. This is not a gated square. This is now a public square, although treed, secondary manor houses in the center of the facade. Next.

Grosvenor Square on the right, the manor house with the gabled facade in the center of the facade. Next. OK. We could have many more illustrations of these squares, the whole idea of being able to link the crown property in Regent's Park systematically through to Green Park in Buckingham Palace. The number of intersecting roads and the degree of the difficulty of purchasing what was cheap land and property on either sides of the road. Next.

This is looking up, northwards, to All Souls' Church. What you see is that spin-wheel of an arcade to turn you to the northwest. Next. Booth's map-- here is Regent Street in the quadrant leading to Piccadilly Circus. Look at the black and gray areas to the right of Regent Street, and the almost totally dark red environment on the left. It's another one of Booths mapping. That's of pubs.

British [INAUDIBLE] gin until they stopped drinking gin and started drinking tea are regarded as-- cited in one of the demographies of London. It's a startling map. It's one of the first attempts to connect social status with built form. Next.

A 4-by-1-and-1/2 square, Sir Joseph Paxton, after the Crystal Palace, proposed an elevated walking route around the 4-by-1-and-1/2-mile center of the city. You can see this, all the railway lines from the north, from Paddington to King's Cross, serving the north, industry to north, and the three stations on the south-- Waterloo, Victoria, and Charing Cross, essentially serving. And the British-- the subway system in the center, moving outwards and then connecting to a suburban railroad system, a remarkable application of public transportation technology as early as-- prior to the 20th century. Next.

Building the metropolitan line on the left, the upper one, crossing the River Thames with the train on the left, the embankment of the sewage system and the new sewer lines on the right. Next. Marylebone and Euston Street being the facades of these great railway termini. Now, the railway termini were ambiguous in themselves. They were urban manifestations with pronounced facades, and hotels, and enormous formal energy expended in order that you should penetrate this railway station-- which, after all, is just a technological feat, just a train and a railway line, and some toilets, and ticket booths.

It doesn't require [LAUGHS] this apparatus in the front unless you're conscious of the city. I like a city which pays attention to places of public significance, even if it there's only a toilet behind.

AUDIENCE: [LAUGHS]

**JULIAN
BEINART:** I wish our airports had some way of galvanizing their presence in the city. They are little technological nightmares. Next.

Charing Cross and St Pancras Station being built. Next. Behind this neoclassical Victorian facade lies the technological enterprise. This is Birmingham on the right, which was the largest single span at the time in the world, St Pancras on the left. Next. Attempts to indulge in this internal space of the railway station with the same grandeur that the external facade on the street has. Next.

Victoria Station in England, something of a market, Munich being a taking over of the center of the station as a market. Next. Victoria Station in Mumbai, designed with the same atmospheric aesthetic impulse to pronounce itself as a major monument in the city. And then inside, the social consequences of poverty displaying itself. These two images, this and the technological center, are interesting in themselves. Next.

Here is another attribute of the charity world. This is a working-- a poor man's labor workstation where people don't have work and are just left to be fed and looked after, what the equivalent would be today of a homeless shelter. On the right is a new charity-inspired labor station. Now, instead of the rough, random allocation of people in space, everybody is now subdivided into booths. And God is Holy and God is Right in the beams. The technology and theology are mixed together. If you can make a beautiful place, God must be able to be celebrated in it. It's making of poverty a religious artifact. Next.

And the greatest manifestation of the technology-- the technology in the Crystal Palace is without any pertinence in the front. There is no attempt to make an entrance. This is just a space for thousands of people to come and see what the British are doing in India. There are trees inside. Next.

Modernism, modern inventions are portrayed. One wants to compare this to 1893 in Chicago. This was 1851. 50 years later, the same attempt was attempted in Chicago. And we'll compare the two. Next. That's the story of London, as briefly as I can explain it.