Urbanization and Environment
Prof. Jenia Mukherjee
Department of Humanities and Social Sciences
Indian Institute of Technology, Kharagpur

Module – 02
Incorporating the "Environment" in Urban Planning
Lecture - 09
From "Sanitary" to "Sustainable" Cities

So, hello everyone, so with lecture 9, we are still continuing module 2, which is Incorporating the "Environment" in Urban Planning Development and Management. So, in this particular lecture, I am going to focus on the transition From "Sanitary" to "Sustainable" Cities in West.

So how, you know, sustainable cities were conceived and perceived, and against which particular Historical and Political Economic conjectures. So, these are going to be the you know, going to be the theme of discussion for this particular lecture.

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So, the concepts that are covering and the route map that this particular presentation will follow is number one, first, we would be focusing on the incorporation of "sustainability" in Urban Development. So, by this I mean that, you know, when Europe so as West and especially Europe it entered into the post materialist society. So, by this I mean that during the post second world war period, you know, there was this post

materialism where the urge was to thrive in better environments. So, that also laid to a major sub urbanization, major sub urbanizing a processes in the West and also the emergence of edge cities. But these processes of urbanization, sub urbanization also had severe or tremendous socio ecological implications. So, these socio ecological implications actually facilitated the design and innovation of so called quote unquote smart and eco friendly cities in order to address the question or the larger issue of sustainability. But how smart or how sustainable you know, these cities were?

So, this is something which we really need to critically interrogate, but before we you know, engage ourselves in this critical exploration first it will be important for us to go through some of the characteristics of you know, this smart and so called "sustainable" urban discourses and designs, which include High density cities, Compact cities, U eco-cities and Zero carbon eco-cities. So, in this presentation I would be familiarizing you with some of these very significant and much discussed upon urban designs and discourses.

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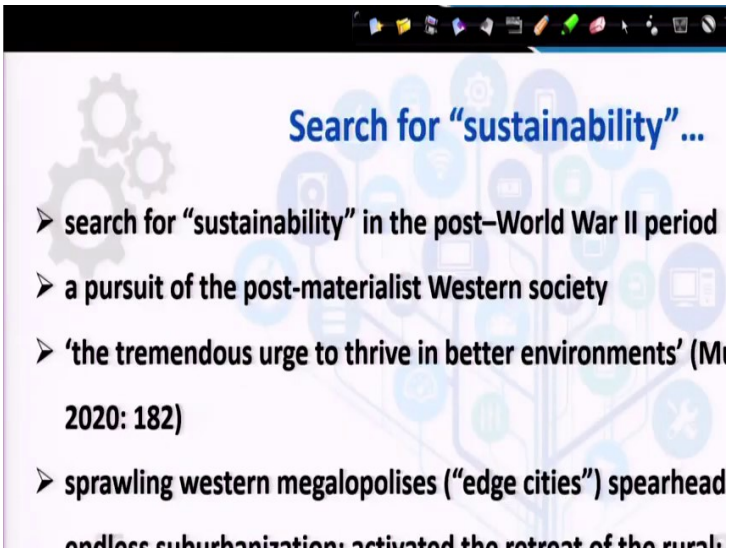

So, yes as I mentioned that you know, the post Second World War period, I mean, it is an era where this search for sustainability you know it began. And, which can be located or which can be placed within a pursuit of the post-materialist Western society. So, there was a tremendous urge to thrive in better environments which led to sprawling western megalopolises, that is the emergence of "edge cities," which spearheaded endless

urbanization and activated the retreat of the rural. But, it is also dotted with severe socio ecological implications.

So like, when suburbanization process also occurred, so there was a kind of you know, a loss of the functional integrity of the urban core. So, we will see, so what was the outcome of you know, this retreat of the rural?

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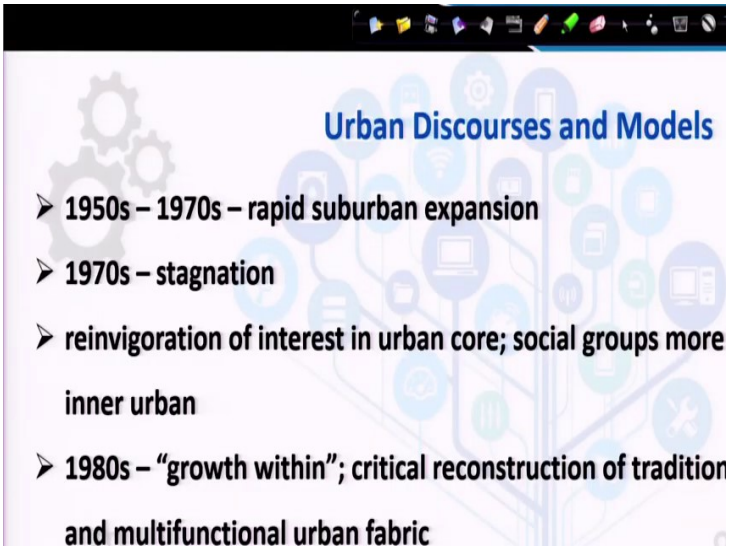

So, what happened is that between 1950s and 1970s rapid sub urban expansion actually happen at the expense of the functional integrity of the urban core. And like during this particular period of time that is in the immediate like post Second World War period the need was also to address you know the shortages in housing and other urban amenities.

So like suburbanization, to a great extent could accomplish or cater to some of these needs. But since 1970s, when this economic, immediate economic boom faded and like when this particular period of like, immediate post war destruction and disinvestment gradually you know, it started getting slowed down. Then several metropolitan regions or metropolitan areas also started facing stagnation.

So during this particular point of time, there was again a reinvigoration of interests. So, in urban court and we find several social groups, several urban groups becoming more attracted to the inner urban. And immediately you know, since 1980s the planners also started advocating for the cause of "growth within" alright.

So we find you know, urban planning processes to a great extent dedicated to critical reconstruction of traditional compact and multifunctional urban rubric; urban rubric or urban fabric. And in his article mainly focusing on the compact cities, Scheuer he argues that this you know, this reinvigoration of interest in urban core was a kind of, it can be considered as an ideal response to sustainability challenges.

So, what we find is that you know, all these plans or all these urban visions like ”high density” cities, ”compact” cities, “U eco-cities” and “zero carbon cities” these can be considered as outcomes or consequences, you know, consequences of this reinvigoration of interest in the inner urban growth within or in the urban core.

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So, but before we just move on to this specific urban designs and urban plans let me just touch up on very briefly that, you know, how like the relationship between sustainability and urban development got you know, established. So what were the discussions which were going on in terms of this relationship between sustainability on one hand, and urban development on the other.

So I think, to a great extent, this can be rooted within this, within the conceptualization and popularization of the concept of sustainable development. I mean, and the Bruntland report of 1992, that popularized this particular concept and from here, “sustainable cities”, this idea was derived.

And several global organizations and initiatives also we find several global or organization initiatives like urban environment forum UEF, ICLEI, LIFE, SCP and you know UN-Habitat, which started discussing or addressing urban environmental issues.

And, in the back to back conventions, of UN-Habitat in 2002 in Nairobi and in Johannesburg, the relationship between urban and environment, the different like I mean how to trade off? You know, between economic growth prosperity on one hand and environmental sustainability on the other in larger urban processes.

So these were the topic of discussions where you know, different think tanks, different organizations and you know, several groups and policy advocates; they came together and started brainstorming on, you know, this relationship between the urban and the environment.

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And like these are the four pillars of sustainable cities, I am laid out by the United Nations. And so these sustainable cities to a great extent, like intense the integration of these four pillars, Social development, Economic development, Environment management, Urban governance and their integration of these four pillars.

Then also like focusing on the economic and ecological course of urbanization, emphasizing you know, self-reliance of cities in terms of resource production and also resource absorption and waste generation and also you know, like, whole lot of

discussions were also there in terms of the development of compact energy efficient urban spaces.

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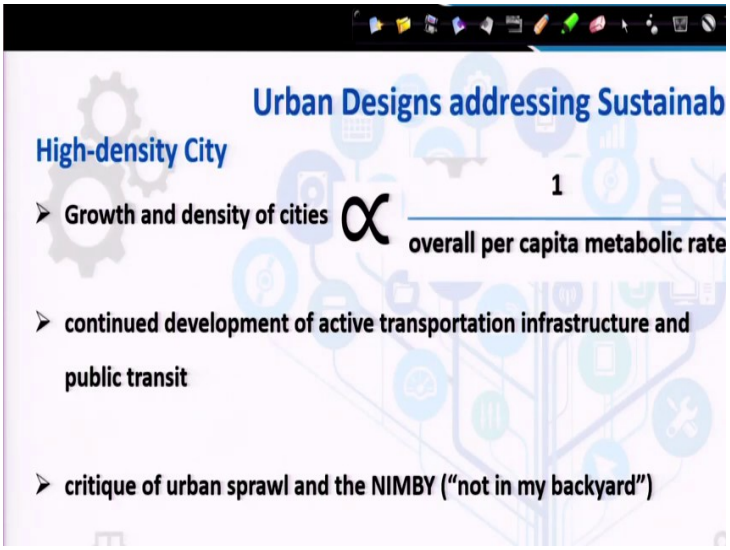

So, with this now let us finally, focus on the you know, the characteristics or the features of these various urban designs and urban models, which are so called, quote unquote like smart or sustainable models. So, this one a high density cities though lot of discussions started flooding the western scene, almost you know immediately after the Second World War relating to the development and design of high density urban core or cities. But, this particular book which came out in 2011, by Ed Glaeser, and this book is, "Triumph Of The City", here, Ed Glaeser, he like, he propagated, he propounded, and he like supported this model of high density city like anything and we can trace lot of human cry relating to like, the benefits and costs of designing high density cities. So the key idea of the Glaeserian paradigm was that, that, if cities you know, grow in size and density then of course so there is an inversely proportional relationship between growth and density of citie,s on one hand and the overall per capita metabolic rate of city. So, which means, the rate at which cities consume resources like water, energy etc. So, I mean if we put it in simple terms, so in plain language the idea is that bigger the cities, the more cost effective and greener they are. So, this is the key idea of high density cities.

And like Glaeser also talked about like, continued development of active transportation infrastructure and public transit, because these were very important in terms of you know

linking the various nodes of cities to you know, keep this density ratio very high. And of course, I mean needless to say that Glaeser critiqued urban sprawl and he also like he critiqued the I mean the NIMBY idea, so the NIMBY movement which was going on, so this NIMBY movement was not backward. So, where like several organizations mainly, some grassroots organizations also protested against large scale construction or large scale development projects for example multi storied buildings etc.

Because the argument was that, you know, they were unaffordable and they were, they I mean they also kind of facilitated or promoted social inequity. But Glaeser of course, he was anti NIMBY and he was also against you know, sub urbanization processes because according to him the suburbanization processes were not efficient and neither affordable at all.

And he had lot of like, I mean, see he had lot of hope on cities and like cities provided lot of optimism according to Glaeser. And for example, Ocejo he reviewed this particular book and Glaeser's key ideas where he says that, according to Glaeser not only are cities humanity's greatest invention. But, that our fate as a civilization, is intertwined with how we develop cities. So, a lot of, whole lot of hope, whole lot of optimism, whole lot of desires and aspirations surrounding the urban or more specifically urban core and you know, core cities.

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So, the Glaeserian paradigm also placed the misplaced fear of heights. So for example, you know, here we can also talk about the differences between the, between the, Jacobian and the Glaeserian paradigm.

So, between Jane Jacobs, who was I mean, she is the author of this masterpiece called the "Death and Life in American cities", so Jane Jacobs versus Edward Glaeser. So, while on one hand Jacobs you know, though she talked about mixed zoning you know, processes or mix zone zoning land use fostering strict life. But Jane Jacobs also you know, she wanted to protect the shorter and smaller and older buildings. Because to her you know, this building should be protected and like multi storied buildings you know, were unaffordable, so that was her idea. But Glaeser you know, attacked this particular idea saying that you know, if for example, in a particular space there is a building an old building which is 2 storied or at best 3 storied and in the same space if you have a multi storied building which is like 40 storied. So, I mean to a great extent, it shows that you know, that the affordability question is better met by this 40 storied building occupying or acquiring the same space. So his idea Glaeserian idea is that you know by restricting real estate you actually halt development and you also actually you know, make the prices of land higher.

So, and he gave lot of examples from the different cities having you know, like the history of skyscrapers like New York, Chicago, Manhattan etc, and yes so he promoted tall buildings. Because to him, that tall buildings are greener the sprawl, and the foster social capital and creativity and you know, they are icons of better efficiency in urban core areas.

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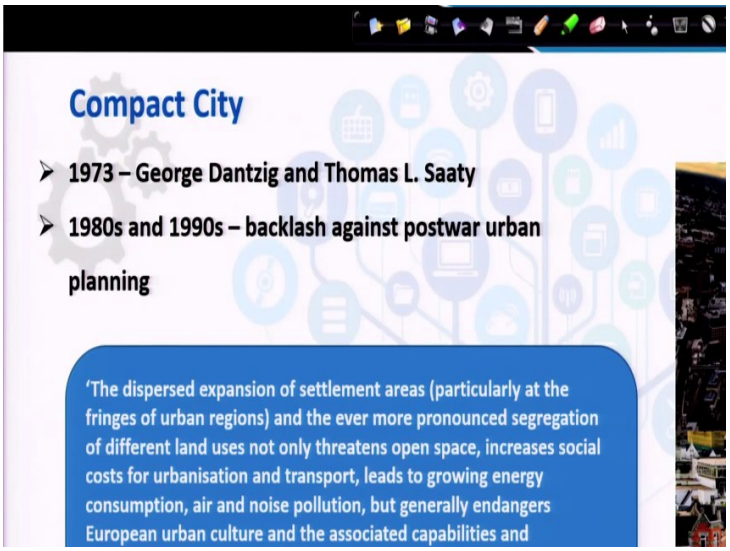

So compact city is something which is again another urban design or urban model, which actually owes back to this to George Dantzig and Thomas L. Saaty, who coined you know this particular terminology called 'compact cities' in long back like in 1973 and like in 1980s and 90s this compact city idea became very very popular. So, it was kind of a backlash against postwar urban planning. And there is a big quote from Apple, so Apple who has done lot of research, exhaustive research on compact cities and he also you know kind of he formulated the different characteristics of this compactness.

So Apple this is an important quote, this is the significant quote from Apple, which is also cited in Scheuer, again Scheuer focusing on compact cities. So, here the idea is that the dispersed expansion of settlement areas particularly at the fringes of urban regions and the ever more pronounced segregation of different land uses, not only threatens open space, increases social costs for urbanization transport leads to growing energy consumption air and noise pollution. But generally endangers European urban culture and the associated capabilities and achievements of social and cultural integration of tolerance and responsibility for the common good.

So you know so as the dispersed settlements are very much loaded with so many disadvantages. So, the idea was to kind of discourage disperse settlements, discourage you know, this dispersed expansion of the urban and in turn focus on the compactness you know of urban spaces.

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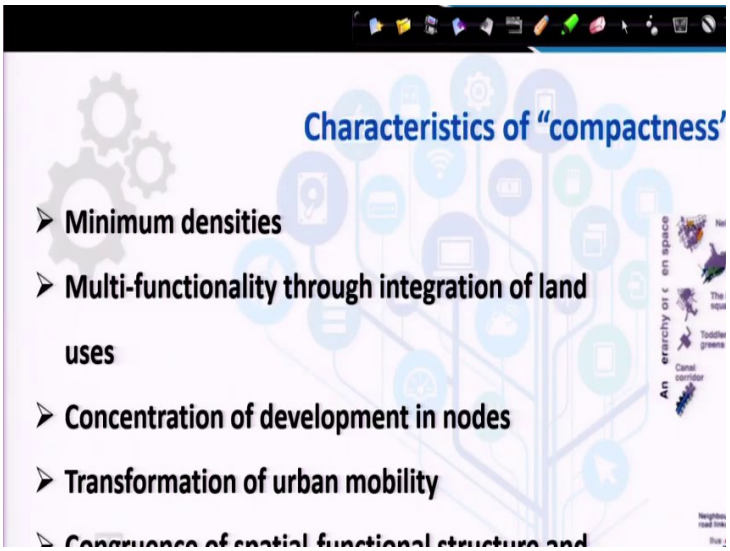

So, these are the various characteristics, I talked about Apple, and Apple you know he lays out various characteristics of compactness for compact cities. So, the first characteristic being like minimum density, and here it is little contradictory, we would look into it in our next presentation, when we discuss you know some of the criticisms of this various urban environmental models. But you know, so minimum density basically to kind of ensure the viable, you know, user friendly public transit and also a neighborhood a retail and other services within walking distance. So, that is the idea. The second characteristic is multi functionality through integration of land uses. So, you know it provides like lot of I mean, it ensures pedestrian activities. So, in streets, so pedestrian activities which means that you know, so through this a sense of publicness you know, can be fostered, could be foster. So, the idea is that in order to foster the a sense of publicness and in order to kind of ensure a social cohesion more and more pedestrian activities are encouraged. Then concentration of development in nodes, so which has a so like cities having both like this monocentric and polycentric features. And each node striking a balance of housing employment you know, and other facilities to kind of like ensure more shared or sharing activities pursued locally. Transformation of urban mobility, so of course like non motorized mobility is encouraged to a great extent and replacement of through replacement of vehicular traffic. And I think this number 4 it has like lot of overlaps with number 1 which is like a minimum density. So, keeping everything within walking distance followed by like the 5th characteristic of compact

series or compactness congruence of spatial functional structure and public transit system.

So yes, public transit system again being very important and this particular feature again you can see, like, it is oriented towards future development, around like already existing transport system. But also, like, a better plan for serving the otherwise underserved areas, so that is met through the congruence of spatial functional structure and public transit system. And finally station areas, so like nodes you know nodes and like station areas as catalysts for development,, so railway nodes and this railway stations. For example, the railway stations also taking care of like taking care of I mean internal nodes, ensuring self containment and also a plan for interlinking the inter nodal system which is just outside the internal nodes. So, both I mean taking care of both the internal nodes and also interlinking the different the different nodes you know together. So, these are the features of compactness or compact cities.

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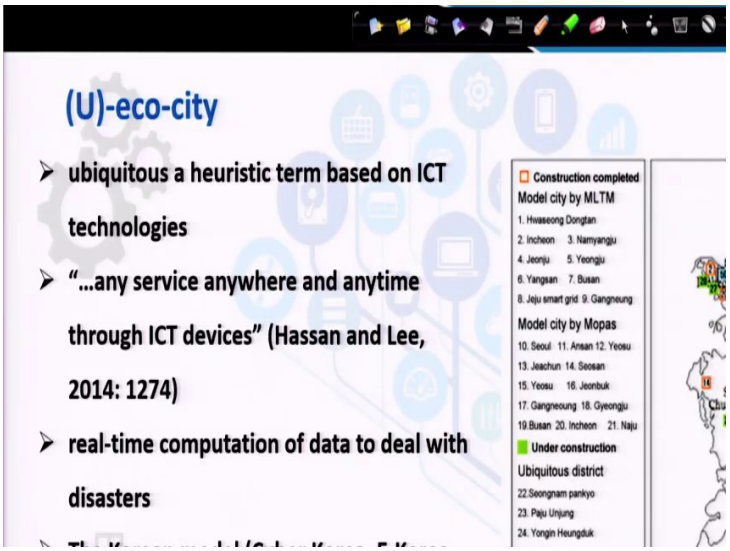

So with this we move on to the more like you know, more how do I say more technologically enabled or ICT enabled ubiquitous Eco-city. So, it seems like ubiquitous is a kind of a heuristic term, based on ICT information communication technology, the and the idea is that any service anywhere and anytime through ICT devices.

So, you can actually, you can actually, access any service anywhere, anytime. So, that is the key slogan that is the key propaganda for ubiquitous ICT anytime, anywhere and any service through ICT, through technology.

So real time computation of data to deal with disasters yes which it is very, I mean, it is, it has, a very robust and sophisticated like, sophisticated ICT embedded in it. So, an artificial intelligence playing a huge role, so real time computation of data I mean is again one key feature for this ubiquitous ICT used for various purposes and also to deal with hazards or natural disasters.

And like this ubiquitous use, ubiquitous eco-cities in it is quite popular in countries like, Korea right, and like in during the 1997. After the 1997 Asian financial crisis, Korea started adopting national strategies to design and develop these U eco-cities.

And in 2008 finally you know, this idea or this I mean this ubiquitous eco city project was launched and now like Korea has almost 64 projects designed on the basis of you know, this on these parameters.

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So, the idea again or the key features are like, it is eco friendly of course, eco friendly energy saving and less GHG emissions. So, there are different like devices, through which this there is lot of control is exerted on GHG emission.

So, for example, devices like automatic water-air pollution monitor system, smart grid for electricity and water distribution for energy conservation and recycled water supply smart cards to rationalize citizen's energy consumption. So, very interestingly Seoul also use this eco mileage card. So, if you use these cards you also get some discounts in utility bills etc.

Sustainable transportation and you know green cards. So, there is a tie up also there are tie ups between the ministry of environment in Korea and private companies like, Samsung or Hyundai where they also provide discounts for buying eco-friendly equipment and hybrid cars.

Green transport that is again ICT embedded bicycles and green communication. So, you know, we are now aware of this green communication out of compulsion, because now you know, as gross meetings and you know, meeting people physically is not being possible due to the pandemic. We are now, we have now like, radically and very fast we have moved on to this, like green communication as a compulsory option, so coping as a compulsory option.

But in ubiquitous eco cities you know, this green communication is already an inherent component you know for this so far as this particular design is concerned. So, green communication through tele video based conference technologies like, Skype, Face Time etc.

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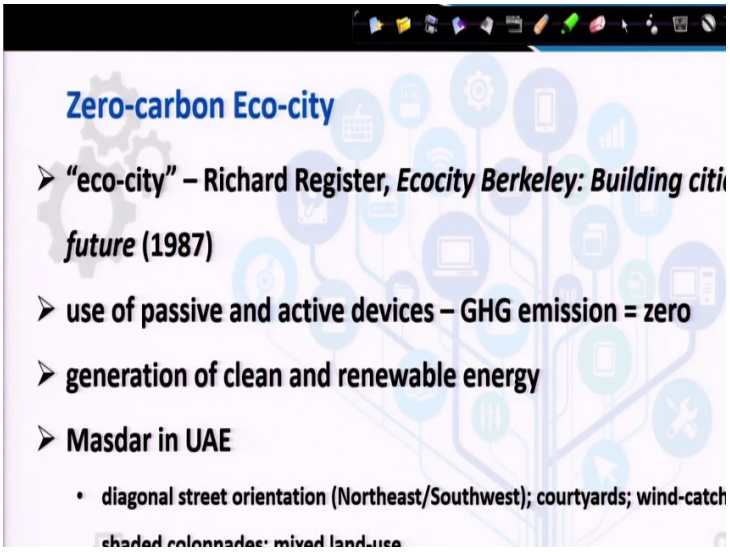

And this is the final model which I have selected out of several other model. So, these four, I thought you know, you should know about these four models, because they are being debated upon they are being discussed upon like anything. And in the next presentation, I am also going to discuss you know, some of the limitations and some of the challenges in implementing you know these urban designs.

So zero carbon eco-city this for example, this particular concept of "eco city" it was first, it was first, popularized in this particular book called 'Eco-city Berkeley'. So, this was a book on Berkeley building cities for a healthy future. So, and this book was written by Richard register which came out in 1987 and it talks about you know, so how, why, zero carbon and how zero carbon. So, it talks about the use of both active and passive devices which would you know, enable you know, zero emissions so zero GHG emission. So, the there will be almost I mean no GHG emission, so that is the whole idea, that is the key idea.

And as the emission so the as the emission rate would be zero, so as this is zero carbon eco city. So, of course, it would lead to the generation of clean and renewable energy. So now, this idea of zero carbon eco-city we can see the proliferation or dissemination of this idea in some posh cities.

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For example, this map you know, it this map exactly it shows the location of this zero carbon eco-cities. But one very unique example is for example, Masdar in UAE. So,

Masdar you know, it is like the normal, the general temperature, average temperature like it is very hot you know, it is hot and dry where the average temperatures remains like 40 degree centigrade. So what happens here is that you know the passive devices are used and also there is lot of reliance on the traditional urban designs, again which to a great extent fosters compactness. So, the traditional compact urban design fostered by the, you know, by Arab or Arabic countries. So, like diagonal street orientation courtyards, wind catchers, window blinds, shaded colonnades, mixed land use etc.

And then like, active devices like for example, renewable energy based tools like PV power plant, concentrated solar power, wind turbines, geothermal technologies, internal transportation based on electric light rapid transit or personal rapid transit. So, these are, all these remain, all these remain an integral part of the city of Masdar, where Masdar absolutely depends on the so called renewable energy, you know based technologies or tools. And again, lot of emphasis is given on waste management, because this is the zero carbon eco-city.

So these are the models which I wanted to discuss and this models like with lot of hope and optimism being envisioned within the changing political economic context or historical context. And in our next presentation we will see that how far you know, these cities could actually kind of address the sustainability issue in the real sense of the term.

So, how smart were they or how I mean how smart they are or how sustainable they are, we can only address this question by critically and in detail looking into you know, some of the other like implications of the implementation of these models in you know, in some urban spaces.

And also it is important for us to know you, know to know, or to unravel insights that have come down to us, by you know people who have kind of criticized you know ,these urban models or discourses in terms of different questions social questions like equity, justice etc. And I think like all of us know by now that how equity, justice these are all very fundamental questions related to urban environmental sustainability.

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So, yes, these are some of the important references.

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I would very much encourage you to go through this particular reference by Hassan and Lee because it is a comprehensive coverage of some of these models.

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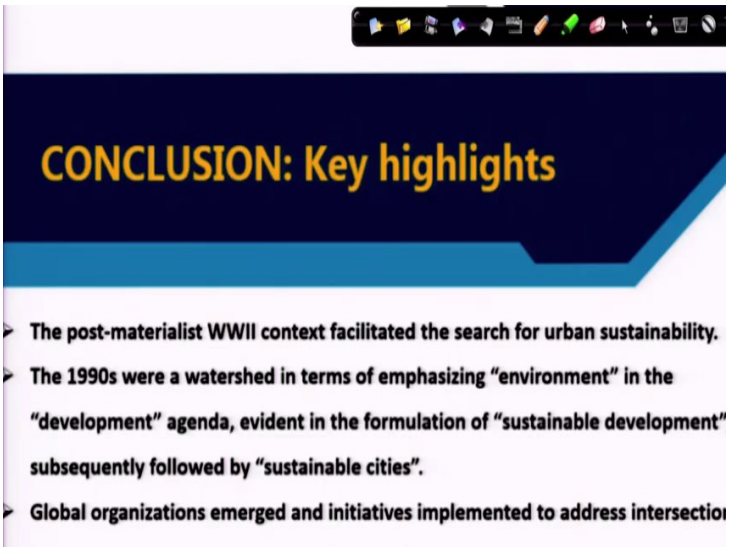

So, I think the concluding points or the key highlights, I mean can be this, that the post materialist WW2, that is, world war two context facilitated the search for urban sustainability. And we have seen that how, like the socio ecological implications of suburbanization processes also facilitated you know, the design and innovation of so called smart and sustainable cities on the basis of nurturing. You know, inner density of urban core compactness, like eco friendly design zero carbon ideas etc.

So 1990s also is an important watershed period, when like, which provoked the world to think about the relationship between sustainability and urban development. Because sustainable cities concept was derived from the concept of sustainable development which was popularized by the Bruntland report of 1992.

Several global organization emerged which started addressing urban environmental questions and then this eco friendly urban discourse and models like high density cities, compact cities, U eco-cities, zero carbon cities, focused on the inner urban compact and multifunctional urban fabric, with the aim of reducing GHG emission.

So, this is the, I mean these were the grant plans, but then we will see in our next presentation you know, how the materialization of these plans in some urban spaces. Actually also led to the emergence of some problems and challenges, because these problems and challenges are also inherent components of this otherwise very sophisticated technology enabled urban, you know environmental models and discourses.

Thank you.