

**Evolution of Human Settlements- AR6004**  
**Unit 2**  
**Historical Periods and Growth of Human Settlements**  
**Lecture 5**

**Industrial Age Settlements**

As industrial revolution took place, a relationship developed between the city and the industries or the factories. So, from the rural settlements being supported by agriculture, it heralded into a factory town and a city, this happened basically because of the invention of steel engines, the steel railroads extended its rails from the raw product to the factory and to the cities of consumers all over the land. So, as transportation facilities improved, people could commute long distances, as well as goods could be transported from one place to another, which enabled people to live away from the city as well as close to the city as possible. Every amenity of urban life was sacrificed to the requirements of industrial production. Railroads and ships joined with the factories and the waterfront became the industrial core of the city. So, at this point of time, when agriculture and farming was left behind and industrial life was taking the front, people actually sacrificed everything right from basic human requirements and conveniences to live the industrial life or the life in the city which offered jobs, more regular jobs than farming did, more supportive than agriculture as agriculture was dependent on the natural elements like rain, irrigation and things like that vs the Industry was churning out products, the steam engine ensured that there was constant movement of these products as well as the railways and the railroads ensured that the products were travelling from one part of the world to another part of the world. So, the impact of industrial revolution was first felt in England and the new industrial economy, it brought greater exploitation of the poor with the increase of the new slums. So, as and when the industries increased, they need more people to work in these industries and the best people to do so, were the farmers who did not have a regular source of income, they were trapped and brought into the cities and as thousands and thousands of people migrated from villages to towns, it led to a lot of problems like; sanitation issues, drainage issues, water issues, etc. So, what could be called mechanical slums, row upon row of crowded workers' houses, in the shadow of the factory were added to the traditional slums. this degraded the environment of the factory town, hung like a cloud over the urban life for nearly a century and a half, after the

industrial revolution. The impact of the industrial revolution is felt till date as a matter of fact because it changed the skylines, a lot of these factories were built along the periphery of towns to enable faster transportation of goods and from the periphery of towns, the railroads were connected to the next town and people cluttered around the factory and these slums were the worst hit because of no sanitation, no water and overcrowding. Among the deplorable slums of the 19th Century, factory town in England, the 2 storey row house predominated stretching in long rows with very small backyards and narrow streets. The living environment was dreary and monotonous. So, when it became so unhygienic, the next thing it led to was diseases. So crowding along the European continent, however, was even more severe as indicated in the outline of a tenement block in Vienna. A tenement block is nothing but a series of apartments that we see today, but within one tenement, instead of one family living, there would be four to five families living, sharing the same quarters and even sharing the facilities like restrooms. Built to a height of four to five floors, the block typically contained a double row of dwellings, the interior row facing a narrow interior court on both sides. So, when it was built to that height, it was abutting another building, there was a lack of ventilation and light as well. These were the typical kind of living conditions that you see in the images here. Epidemics were leading, so many people crowded in one room and in a country like England where the weather was very cold, they needed to have fire places and things like that, it was very unhygienic, the streets were overcrowded and the factories were the main spine of the development. So, it completely affected the living conditions, especially of the poor people. At the same time, this was the first time, urbanization occurred, where people thronged towards the city for a better kind of living. Till date, in history man has never moved toward the city till the industrial revolution began and since then, man has always moved from villages towards cities in search of a better life and better livelihood. So, this completely changed the human settlement pattern. So, the later half of the 18th Century, particularly in America now, there was a commerce assumed primacy. In the sense, agriculture was completely removed and only commerce in terms of industries were ruling the cities. The buildings of the bourgeoisie i.e. the middle class expanded to their owner's prosperity. So you have new typologies that emerged; banks, office buildings, warehouses to store the goods the industries churned out, hotels because people would travel on business, so in order to accommodate them, hotels were constructed and small factories to

support the large ones. New towns were being formed during this period, which were conceived completely as commercial enterprises. They were not conceived for human settlements but merely as a continuation of a factory town and the neutral grid was the most effective means to divide land up into parcels for sale. The city became a checkerboard on which players speculated to shifting land values. So, that was the beginning of the real estate market as such, where people wanted prime chunks of the city. A city was bought over rural farmland was completely converted into a city, chunks of it were sold to different stakeholders like factory holders, the upper middle class or the people who were working in banks as the vice presidents, directors and such other positions. So, until then when we were talking about middle ages and the medieval settlements, where religion played a very important role along with politics. Now, the market was the only important factor which determined the pattern of modern growth. So, it was no longer religion, politics and other cultural appetitives but solely the market would be allowed to determine the pattern of urban growth. So, cities which emerged as a result of this; New York, Philadelphia and Boston around the 1920s exemplify a typical type of the commercial city of this era with their bustling, mixed-use waterfront districts. Waterfront is a very important word over here because, besides the railroads being developed, it was not sufficient, the ships were still the primary movers and shakers in the industry of transportation. So having developed waterfront cities with a strong roadway and railroad background, was the best solution. Millions of rural dwellers no longer needed on farms flocked to the cities, where new factories churning out products and these products were supported by the new markets which were made accessible by the steam ships, railroads and urban economies were being completely woven into the national and international economies as well. Technological innovations poured forth, many with profound impacts. So railroad tracks, obviously important you can stress enough about it, because along with transportation it brought about travel of people and with travel of people, people can travel of knowledge, literature was moving back and forth, people were learning from other cities, seeing how France developed, how other parts of Europe developed and with steam ships, America, Europe were brought closer which never happened before. It was inconceivable for someone to travel to America and return within their lifetime but now with steam ships it was reality and along with people, even goods were getting transported. So, horsecars in the 1830s and then you had cable cars in the 1870s, the electric

trolleys in the 1880s. In the 1880s, the first central power plants began providing electrical power to the urban areas. This was another, very important crucial event in the timeline of industrial revolution because as power or electricity reached everyone, the kind of life people led, the pattern of living also changed. The rapid communication provided by the telegraph and the telephone allowed formally concentrated urban activities to disperse across the wider field. So, as communication developed, that was the beginning of something called the urban sprawl. The industrial city still focussed on the city centre, which contained both the central business district which is basically large office buildings, banks and things like that and substantial number of factories and warehouse structures. So, as the factories were churning out products, the warehouse would store them and as and when required, they would either be sent by the steam ships or the railroads. Both trolleys and railroad systems converged on the center of the city, which boasted the premier entertainment and shopping establishments and as commerce developed, when people started earning money, the opportunities to spend it also opened. So, shopping and entertainment industries opened up and as people travelled from one place to another, there was a lot of cultural interchange and heritage value interchanged as well. The working class lived in crowded districts close to the city, very close to their place of employment. Early American factories were located outside of major cities along rivers, rivers were very important because they provided water power for the machinery. After the steam power became widely available, factories could be located within the city in proximity to the port facilities. It was better if it were close to a port because time is money and when transportation can be directly made via the port, it was an ideal situation. Rail Lines and urban labor force, so the largest manufacturing zones emerged within the major north-eastern and Midwestern cities such as Pittsburgh, Detroit and Cleveland. So, as and when technological innovations were taking place, each city took charge of one industry or one typology of industry and people flocked towards that city. So, at the end by the late 19th Century, factory decentralization had already begun as manufacturers sought larger parcels of land away from the congestion of the city. So, what ideally happened was, yes they created a problem, all the industries created a problem, people were living in slums, the cities were getting overcrowded but they needed more space to expand the factory. What better than starting a new city? So, they moved away from the core of the city and they began to build new cities along the periphery. Gary Indiana, for example; was

founded in 1906 on the southern shore of lake Michigan by the United States Steel company. So this was considered the first supplementary city that was built to support the main manufacturing towns and cities that had emerged. So, as there was an increase in crowd and disease in the central city, there was also a growing desire to escape to a healthy environment but of course, the poor workers did not have the luxury to do so. The other classes had always been able to retrieve to their homes on the countryside. They would have a summer home, a winter home and things like that. So beginning in the 1830s, the commuter railroads enabled the upper middle class as well, the people who worked in banks, who worked in the warehouse districts, people like that could also commute to city center from away the city. So this was again the beginning of suburbs, the creation of suburbs which were built completely for residential purposes. So, horsecart lines were built in many cities between this period to enable this movement between the 1830s and the 1880s which enabled the middle class to move out from central cities to more spacious suburban neighbourhoods. Finally, during the 1890s, electric trolleys, elevated rapid transit lines proliferated providing cheap urban transportation for the majority of the population. The central business district of the city underwent a radical transformation with the development of the skyscraper between the 1870 and 1900. These tall buildings were not technically feasible until the invention of the elevator and the steel-frame construction methods. So one of the main things that happened was, like the necessity is the mother of invention. The city was getting overcrowded, land was getting very crucial and expensive, so what is the best thing one can do? Instead of building horizontally, let us begin constructing vertically, it is easier thought than done. If you built vertically, where was the technology to support that vertical structure in terms of structural stability there was nothing. How does one go from the ground floor to the tenth floor without any vertical system like the elevator? Another thing is, pumping water and sewage coming down. All of these were problems that were faced and as these problems derived with solutions, the skyscrapers became a reality. So Skyscrapers reflect the dynamics of the real estate market, the tall building extracts the maximum economic value from a limited parcel of land. These office buildings housed growing numbers of white-collar employees i.e. the middle classes in banking, finance, management, and business services, they are all manifestations of a shift in the economy of small firms to one that of large corporations. So, as the skyscrapers emerged, even the way of doing business completely changed. From

smaller firms, the whole term of corporations began because they could host more number of employees and more number of people could work under the same roof. So, we will just discuss Manchester, how it emerged as an industrial town completely between 1760 and 1825. Manchester, England is widely known as an illustrative example of the industrial revolution. Manchester developed completely only because of the industrial revolution from the positive aspects of economic growth, the technological advances to the more negative qualities associated like overcrowding, social stratification. So how does a city become such an industrial powerhouse in such a relatively short span of time? So from a climate conducive to a cotton trade to existing canals and transportation mechanisms, Manchester was primed to become an efficient industrial city. In terms of location, it had a waterfront body, it had the cotton correct kind of soil for the cotton trade and the land surrounding Manchester was where maximum of the industry was there. Manchester was the best location for the cotton mill technology, once it caught up, the existing infrastructure could be brought on to Manchester. It had an upper class which quickly prospered and separated themselves from the newly developed and rapidly growing working class. The social stratification was epic, as was the overcrowding. So, the class system became even more prominent. The poor became more prominent and the rich were getting richer. If you take a look at the working conditions over here, you can see the clear indication of any industry is the quality of air, completely smoke filled but again, in a country like England where the weather is so moist and damp, the smoke becomes smog, which leads to a lot of diseases and epidemics. So, working conditions were terrible, inspiring scholars at that point of time, who were trying to critique the working conditions and brought about the class of the working people. This was one of the most felt written things by Friedrich Engels in 1844; "The town itself is peculiarly built, so that a person may live in it for years, and go in and out daily without coming into contact with a working people's quarter or even with workers, that is, so long as he confines himself to his business or to pleasure walks. This arises chiefly from the fact that by unconscious tacit agreement, as well as with outspoken conscious determination, the working people's quarters are sharply separated from the sections of the city reserved for the middle class." This was what the social stratification lead to. There was a part of the city a person needn't ever visit unless he lived over there and that was completely demarcated for the poor people. Then, there was an area for the middle class and then there was an area for the upper

class. A person in the upper class, needn't even be aware of what is happening in the other part of the city unless he decided that he had to go to that part of the city. His life between the factory, the warehouse and his own house, did not even let him encounter the houses of the middle class or the poor workers. If you look at the conclusion of what happened in the industrial age. Industrial growth in large centers induced the people to remain in cities rather than migrate to the more healthful environments of rural communities and the inevitable result was the creation of slums. So, the conclusion of the industrial revolution, as we were stepping into a new century, the only residual product that we left behind was a new urban plight that of slums.

### **Post Industrial Age Settlements**

Now we saw the end result of an industrial society was that of slums, post-industrial society, what shift happened we shall see. This was in a stage when society was developing from economic transitions from that which provides goods to that which provides services. Now, in the industrial age it was completely about the production of new goods, new kinds of production lines and things like that vs in a post-industrial society, the concentration was more on the service industry. So, the service sector were basically nurses, teachers, researchers, social workers, lawyers etc and they were basically a result of the industrial age. The industrial age led to a lot of new professions that came about and the post-industrial society basically supported those positions. The economic transformation associated with the post-industrial society subsequently transforms society as a whole. Information, services and advanced technology, these are more important in post-industrial societies rather than manufacturing tangible goods. Basically follows an industrial society as in now it is understood that urbanization has occurred. Now, the focus is on how do you support this particular new type of town that has emerged. So, this can be seen in places like Europe and the United States, which were more strongly affected by the industrial revolution, as the other places got the industrial revolution at a pretty much later time. United States was the first country to have more than fifty percent of its workers employed in service sector jobs. So, the places which face the industrial age/ industrial revolution primarily, face the post industrial age and settlements also, primarily. Now what are the basic characteristics of a post industrial town. This was popularized by the American sociologist, Daniel Bell and this was around the 1970s. In this book he describes

six ways in which a society changes which are associated with post-industrial societies. So, there is a shift-away from producing goods to creating services. So, now we have produced goods like clothing, shoes and things like that. But now, people have got money, they want to spend it on things. So, you end up having fitness shops, coaching centers, fast food joints and shops that sell the clothing and shoes like malls. Direct manufacturing of goods became less and the sellers of these products became more. Blue collar, manual labor or jobs, that is what became important. These were replaced by professional jobs and technical jobs like computer analyst and accountants and things like that as there was a transition in the industry as well. Transition to a focus on theoretical knowledge over practical know-how. Theoretical knowledge was already there because of inventions and things like that. But now, with the emergence of the post-industrial society, when everything in terms of invention was happening and happened. Now there is a freedom for people to come up with inventive solutions maybe because of the problems that were caused during the industrial age. For example, there was knowledge created by doctors, which led to new effective models of patient care and medicines and things like that. Increased focus on the implications of new technologies when and how should they be used, when and how to control them. Creation of new scientific disciplines; like cybernetics, information technology, this was used to assess the impact of new technologies. A critical need for higher educational institutions like universities, to create graduates who can develop and control the next wave of technological advances. So, all these were characteristics of a post-industrial city and all of these happened only because the pattern of the cities could change or develop as well from an industrial age town. Nothing fundamentally has changed in terms of the layout of a city, it was just that the lingering problems from the past become developmental issues during this current period. So, when you see the problems that had emerged during the industrial revolution, all became the burden on the post-industrial city to solve them. So, what happened was? The society was now struggling with issues of resource scarcity, overpopulation, environmental degradation, all of which were basically remnants from its industrial revolution and industrial age. This was actually increased or felt more by corporate liberalism which meant that they were continuing economic growth through the creation and satisfaction of false needs. So basically, they were creating a false environment within the society, they were not concentrating on the real issues of the urban place vs the concentration on



making money and that was given as false needs. People were expected to have a house, people were expected to live in the suburbs, have a job, drive a car and things like that. But these were just adding to the problems of what an industrial town was facing. Urban development in the context of post-industrial cities was also a point of contention. In the sense, there were leaders who were increasingly becoming environmentally aware of what was happening. So let us not degrade the environment any further because it already happened in the industrial revolution. We were talking of pollution and things like that where water bodies were getting polluted, air was getting polluted, as well as cities were getting polluted in terms of overcrowding and lack of sanitation. So, as a result of that, an urban sprawl happened where cities were growing exponentially but without any direction. Expanding the periphery so that it can lower the density. Physically all office parks, malls, strip malls, condos, corporate campuses and gated communities, they were all singled out as the main issue. Urban sprawl has caused a lot of issues as well, it has made it environmentally and socially regressive of the former environmental degradation results from encroachment became an issue because people even though they moved away from the city, wanted all the benefits of the city and kept coming closer and closer. The wider spread of population meant that there was a lot energy consumed in order, because people had to travel in terms of city, it can be cars or public transportation, more power was being consumed which again meant, greater pollution. So, as the town was developing and there was a shift completely from an agrarian to a completely industrial town, the suburbs were developing, an urban sprawl was happening, a kind of agrarian era led on to an industrial one. This is likely to continue to serve the function of an urban industrial arrangement which we have pretty much grown accustomed to. So various factors we had to concentrate on was; capital, labour and land, there was spatial arrangements because of this and another urban planning which was required in the post industrial city was sustainable development because it needed to take care of social, economic, environmental processes, permitting communities to foresee and deal with both present day and future needs and such that finding a middle ground, so that the contemporary needs are not met at the expense of future generations. So, realization happened with respect to, let us not degrade our environment, we need to save it as well as at the same time, they wanted all the comforts of what the industrial revolution had brought about.