

IMPORTANCE OF RECLAMATION OF POSTINDUSTRIAL AREAS NEAR CITIES, CHALLENGES TO OVERCOME AND HOW IT CHANGES CITY INTO SMART CITIES

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Introduction

To provide better life style and wellbeing to human is not only the task but also for surrounding organism, an eco-efficient city administration design. Relating my dissertation topic climate resilient city –evolution of an urban ecological system focused on eco efficient city administration.

Upper Silesian region which is shared between Poland and Czech Republic where the majority of area is shared by Poland. This area are famous for its underground coal mines , since centuries mines are operating these places(1)(2). Many towns are dependent on these mines. Upper Silesia area is the key area which is a central part of Europe where it is easy to move to all the parts of Europe.

Czech Republic when the mines are planned to open authorities relocate the people, Poland where most of the underground mines are operated near to the city where the people are not located. These mines play a crucial role in the urban ecology balance in these areas

For the mining operation many towns, and other areas are demolished, Czech city Karvina is an example(3). By relocating people and the problem in the balance of ecology by destruction of natural habitats of several animals and organisms let them migrate to other places.

Once a mine had started it should have an closing date, in the operating time of the mines people of these places have many benefits to work in these mines, there by lesser unemployment and increase the wellbeing of life style. Once if its closed the community depending on these mines are affected ,unemployment, urban shrinkage ,migration of people to other cities for in search of job, reduce the attractiveness of the city, less interest on new development and establishment in these places. Discussing about the main challenges to accomplish these strategies

Research review

The biggest city in upper Silesia Katowice, 82000 of jobs rely on coal production are found on these Katowice wider metro political area (4). This is also a reason mining is consider as the back bone of the economy. Once the coal mines are closed these 82000 people works on these become jobless. This is where the reclamation plays the role cities like Radzionkow,Sosnowiec are totally depend on coal mines once it had closed the cities majority of people become jobless. Urban shrinkage was one of the issue, the city was depended totally on the mine suddenly once its closed a huge area is abandoned this resulting those places to result in no attraction (5)(6). People decided to go to other cities because there are no development in these area less chances to find new work. Czech Republic a small area in Upper Silesia is shared with Poland geographically similar. With large resource of coal. The coal mines in Czech Republic are formed by relocating people from those places. So once the reclamation process is done the strategies used after the reclamation in Poland may

not be suitable for the Czech region. Ema heap Ostrava, Landek park Ostrava, Dino park Dubrowa and Karvina lypiny golf court. one among the successful post reclamation strategies in Upper Silesian region of Czech Republic.



fig 1 Czech reclaimed area



fig 2 Polish reclaimed area

Data on reclamation

Reclamation is done a botanical park is built on the Radzionkow area does change the fate of people by having job opportunities in these area and thereby making area attractive. Many local firms and other companies are already open there branches in these area there by locals can have jobs here and the value of the place is also increased.

In Katowice an old closed mine area is reclaimed and Katowice cultural zone is built over there thus it changed a abandoned area into an attractive area.(7). The black city of Katowice turns into green attracting many companies who want to expand there franchises in Europe

Sosnowiec a city in the Upper Silesia once the mine had closed the area is reclaimed and turned into an urban forest where an anthropogenic man made forest and self-grown plants are grown over there. This urban forest changed the presence of an abandoned area into something attractive to the city not only that a place for the organisms and animals which was once moved from these places when the mine had started have a safe place to return. Not only that but also new species can evolve in these places. .This is an example of balancing an urban ecology.

Ruda Slaska by photo stabilization method the contaminated zinc heap is covered by clay and new soil layer is laid grass are grown on there. Crags and sharp rocks are removed. A cheap infrastructure, walking path, view point, open air gym, cycling path, BBQ area with wooden table area and benches Visited by dozens of people every day weekend hundreds of people(8). Ruda Slaska mine area is in very close to the urban area it covered a large area. The area reclaimed does make a good space for the people in these urban area to spend a quality time. Utilization of the space very usefully there by increasing the wellbeing of the people living near by. This is a good example of an eco-efficient city administration with the resources available make the maximum use and made it into success.

Zabrze underground coal tunnel turns into a boating and walking tourist area. The Guido coal mine tunnel which is used to move freshly cut coals from the mines. The mining tunnel is 200 years old. The 1100 meter canal, part of the Queen Luiza mine tunnel, is the longest route of its type in Poland and one of the longest in Europe. The adventure takes place 40 meters under the Silesian city and it is the latest attraction in a process that has seen Zabrze repurpose its former coal mining infrastructure for tourism. 2.5 hour tour journey which is on foot and journey finishes with a 30 minute boat ride is the latest attraction in a process that has seen (9).Zabrze repurpose its former coal mining infrastructure for tourism. There is a chapel and pub in the thus tunnel. This is an example for reclaiming an old underground mine that not only makes the city attractive but also it cause a tourist flow and there by getting an economic benefit.

Poland agrees to close the last coal mine in 2049, by leaving so much areas to be reclaimed and by having these kind of strategies after reclamation will help the people and the organisms.

This where the Poland had new initiative in providing job in renewable energy sector could provide 186000 jobs in 2030.(4)

But there are many strategies which had done after reclamation in Czech regions

,Landek which is former coal mine where it is not considered as a total reclaimed area but a part of it is reclaimed. This Landek park museum was constructed 25 years ago on the oldest mine in Czech Republic called the Ansel mine. Today it shows the history of mine, sporting facilities and camping area. The camping is area is widely used by people in some season for some festival times like colors of Ostrava more than 1500 place for tents and 50 caravan spaces are provided. Bike park ,children sand lab, accommodation villas, small football court, family gym,mini zoo like many facilities are provided for visitors in these Landek park.A successful reclamation which not only made the place famous but also let visitors know about the history of mining, create an area in the urban area for recreation for families and economically beneficial too(10).

Ema heap Ostrava, is a hill formed from the mining waste in the suburbs of Ostrava,315 meter high it is the one of the highest points in this area offered a very good view on the city and the surroundings. This heap was created from the wastes from the nearby mines. A fire which was lit inside in ema heap in 1960 was still burning smokes are visible from some parts still. The surface of the hill is reclaimed there are trees, plants and birches are covered in these area now(11).

Many people are visiting these area daily its considered as the highest point so for enjoying the view of city it's a main spot of attraction in the city. As a result of this surrounding areas values are increased many houses are built near to the hill.10 year ago these place was really abandoned the recent house construction in the area shows the increase the value of the area. These shows these kind of reclamation can be successful. Not only increases the value but bringing back the value of these areas it also bring back nature and vegetation in this areas(12).

Durbrowa Dino Park in Orlowa largest dino park is constructed on this old underground mine. There are models and attractions are literally packed a main spot of families to spend there time. This is also a reclaimed land using a good strategy to improve the areas beauty and made it famous, every day many visitors including families and school children visit there. As there is an entry fee for the visit and there are snack bars inside really befitting economy (<https://www.dinopark.cz/cz/ostrava>)

Karvina old city was totally destroyed people were relocated ,Havirov city is formed this was a city for the mining workers then the city was gradually evolved. The church Peter of Alcantra is a n example of underground mine on the old city the church was the only existing structure. This church is an identity or proof which shows the importance of reclamation (13).



FIG 3 peter of alcantra

Karvina underground mines, these mines are currently active and mining is done from there. The old mines in the Karvina were reclaimed and turned into golf courts, urban forest ,meadows, changes water way for Olza river. The golf courts were used by professionals, individuals and other people .Karvina-Lipny golf court was constructed between two operating mines, it has been further extended into a 18 holes golf court(14). These post reclamation strategies changes a barren land into people friendly areas and the meadows, vegetation can attract organism return back to those places.

The Czech Republic have been planned to shut down all mines in 2033 or 2038 and there will be so much successful reclamation strategies (15).

Discussion

Before the mines are opening there should be a plan to reclamation but most of these mines are more than centuries old the EIA(Environmental Impact Assessment) criteria was different from now to that time as there was not a step to discuss peoples opinion(16).So many places people are against the post reclamation strategies or maybe they do not cooperate or there will be fails in the post reclamation strategies. Peoples mentality is very crucial in the post reclamation strategy in Karvina many places are reclaimed the river banks and the other meadow area but people do not want to build homes or do other investments in these areas. In Karvina relocated people they find there new homes and are very much adapted to the new living surroundings so they do not want to leave it and start from the beginning again. But in Poland these underground mines which are near to the urban areas most of the reclamation strategies are successful .Ruda slaska and Zabrze are the examples for this. But in Czech parts Landek park, Ema heap Ostrava, Karvina lipny golf court and Dino park are successful reclamation. There were certain protest on the urban forest people are happy to have area clean than having an urban forest The areas in Radzionkow and Sosnowiec are also successful reclamation but not economically benefitting but of course the botanical garden and urban forest do make the city much more attractive. Now the mentality of people on Urban Forest is changing people are becoming much more acceptable in these when knowing about the benefits.

The balanced ecology with organisms and human being can be balanced in these areas where everyone have their own abundant space while reclaiming these areas successfully we can achieve it

This is a study of how postindustrial mining areas can be successfully used after reclamation these strategies can be used in many regions across the world .Nevertheless the research needs further more analysis and study for finding out the percentage of success from these areas how many people are employed after these strategies the return back of the organisms in the urban forest and botanical gardens.

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