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EDEN PROJECT — IDENTIFICATION OF THE REVITALISATION UNDERTAKING SUCCESS FACTORS

1. Introduction

A trace remains after each industrial activity, either in the form of outstanding infrastructure facilities, large surface area and landscape transformations, or in the worst (but very common) case, degradation and environmental pollution. At the present time due to changes in legislation imposing an obligation for the rehabilitation of the areas devastated and degraded by industrial activity resulting in the loss of their value to stakeholders, more and more attention is being paid to these issues. Moreover, in Poland as well as abroad there are many examples that prove the fact that investing in industrial structures can bring many economic, commercial social and environmental benefits. One of them is undoubtedly a huge garden called the Eden Project, located in the south-western part of Great Britain.

2. Location of the Eden Project

The Eden Project is located in a small town called Bodelva in the county of Cornwall. It is located about 5 km from the county's largest city — St. Austell and about 440 km from the capital of Great Britain, London. It is not a place to visit when visiting London or other larger cities, but a place you need to take a special trip to. A trip can be planned very easily thanks to the possibility of using multiple transport solutions, which are explained in detail on the project's website. Care was taken so that everyone can choose the right transport option in order for them and come to visit the magical gardens. Eden can be reached from the Newquay airport by special buses or an ecological bio-diesel taxi, as well as by train from the station in St. Austell and Newquay and then switching to the appropriate bus. Many hiking and biking trails also lead right to the gardens [5].

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3. The industrial history of Cornwall

The history related with industrial activities in Cornwall and Western Devon (in literature and many other sources described in relation to both counties) dates back more than four thousand years and is primarily concerned with fishing, agriculture and the extraction of non-ferrous metals (tin, copper, arsenic).

In the period from 1700 to 1914 mainly thanks to Thomas Newcomen's invention of the steam engine, an industrial revolution took place all over developed parts of the world. It contributed to the development of many industries, most notably mining and metallurgy. Many steam engines were created (James Watt), drainage pumps, and other inventions (for example the fuse made by William Bickford used in explosives). Therefore, in the late seventeenth and early nineteenth century, Cornwall was a very important center of innovation and technological development. Pioneering devices were exported to many countries, including: Hungary, France, Germany, Mexico and Australia. The largest mining extraction in Cornwall and West Devon was recorded between 1855 and 1856, when 209,305 tonnes of ore were extracted [4]. Along with the development of industry, great socio-cultural changes also took place. Many people looking for work and benefiting from the opportunities given by industry settled around the major industrial centres. However a crisis came after years of prosperity-,(the late nineteenth to the twentieth century). This was mainly due to lower prices of ore on the world markets. The mines were closed, and people emigrated.

The industrialisation taking place in the years 1700–1914 in the counties of Cornwall and Devon led to the irreversible transformation of the landscape. Obtaining raw materials contributed not only to changes in the terrain, but also the original natural landscape. Industrial development also led to enormous social and cultural changes.

In 2006, the mining landscape of Cornwall and West Devon was included in the UNESCO World Heritage List [5]. There are many other facilities within the country, which are important elements of industrial heritage.

The Eden Project is also located in the post-industrial areas. It was built in an over 160 year old former china clay open pit mine, which, in the past, was known as the China Clay Pit [5].

4. Origin and description of the Eden Project

The originator and creator of the entire project is a Dutch archaeologist called Tim Smit. He and his colleagues decided to design and locate an investment in the excavation in Bodelva. They already had experience. They rebuilt the Lost Gardens of Heligan in the South of Cornwall. However, the example of another new facility, which the gardens of Eden Project was to be, they wanted to show how great the relationship between the world of flora and fauna, and humans really is.

The construction of the Eden Project was started in December 1999, while the facility was fully opened in mid-March 2001. The complex covers an area of 15 acres (22 hectares purchased under the project) and is broadly divided into three parts [10]. It consists of biomes that are

a kind of greenhouse (resembling bubbles in their appearance) and the surrounding areas. The biomes design consists of two layers of a steel frame (like a silicates lattice, the other triangles) and a special material called ethyl-tert-fluoro-ethylene (ETFE), between which the air has been pumped. This is the kind of foil with very good light, self-cleaning, UV radiation transmission properties. The entire construction weighs 667 tonnes, and its advantage was an easy adaptation to the land on which it was made just like a soap bubble (Fig. 1) [7].

Fig. 1. Eden Project. Source: www.sir-robert-mcalpine.com

As already mentioned, the object is composed of three parts: The Outdoor Biome — with an area of 12 ha (Fig. 2), The Humid Tropics Biome — HTB — with an area of 1.2 ha (Fig. 3), The Warm Temperature Biome — WTB — with an area of 0.6 ha (Fig. 4). Each biome is characterised by different vegetation from native species in the area of Cornwall teas and succulents resistant to climatic conditions, through plants from tropical countries, among others, rainforests, ending with species from the Mediterranean countries, such as vines and

Fig. 2. The Outdoor Biome. Source: www.edenproject.com

Fig. 3. The Humid Tropics Biome. Source: www.edenproject.com

Fig. 4. The Warm Temperature Biome. Source: www.edenproject.com

olive trees. In addition to the interesting vegetation each biome and The Core education centre, which is also located in the Eden Project, is characterised by a mutual feature, namely the presence of numerous shows and exhibits, thanks to which you can learn many interesting things about the functioning of ecosystems, climate changes, as well as the relationship between humans and plants.

5. Financing of the project — forms and sources

During the planning and designing of the Eden Project investment, Cornwall was one of the poorest region in the country. The region was characterised by a highly dispersed and small population and a poor infrastructure. The location of such a great project in such a poorly functioning and populated region of England was a huge challenge. One of the primary problem for the organisers in finding the money was in fact the poor economic status of Cornwall.

The first money collected to build this spectacular facility came from the local government funds — the Restormel Borough Council (GBP 25 000). This was only a "drop in the bucket" of the financial needs, although the most significant, as it opened the path to further ways of financing.

Further measures were allocated by a government organisation the Millennium Commission, which transferred and distributed the funds within the framework of financial support for small and large projects. The idea behind this organisation was to provide funding for the implementation of regional projects in preparation for the celebration of the millennium. The Eden Project was awarded a considerable sum, which was the main source of funding. The next financial support was received in the form of grants and donations coming from the European Union, the national authorities and local, private investors.

The cost of the project was about GBP 75 million. The total amount of money needed for the project was collected in early 1999. In total, by 2006, all the received funds amounted to GBP 133 million (Table 1). The funds were primarily intended to cover the costs associated with the construction of the building and the infrastructure [10].

TABLE 1
Project funders and the amounts provided by them (years 1998–2006) [based on 10]

Name of the entity	Amount of money in GBP [million]
Millenium Commission	56
European union (public sector)	25
The United Kingdom (public sector)	21
Loans	19
Own funds	12
Total:	133

From the beginning the Eden Project operated as a non-profit institution. It is a limited liability company named the Eden Trust. Consequently, the operation policy of the facility was not geared for profit. The main goal was to generate such amount of funds that would allow current needs and expenses to be covered.

Presently, most of the revenue comes from tourists and event's participants. In the 2007/2008 accounting year, the project generated an income of GBP 22.3 million and spent GBP 20.07 million [2], while, in 2008/2009 it generated a revenue of GBP 22.0 million, and spent GBP 20.9 million [3].

6. Functioning formula

In addition to exploring the beautiful gardens, the Eden Project has many more attractions to offer. Its formula is based on the operation of many programs and social and cultural events.

The most important social programs include Growing for Life, Great Grass, People and Garden [5]. The first two are addressed to prisoners and the unemployed. The programs are about carrying out training courses in many fields such as gardening, catering and nutrition, and many others among them. The aim is to help them acquire new skills, experience and prepare them to work. Another one, however, is designed for people with disabilities and will be a type of therapy for them. Participants are given lessons in how to farm vegetables and fruit, and then sell them.

A wide range of cultural and artistic events are hosted in the area of Eden Project. These are primarily the Eden Session music festivals held in the amphitheatre next to the biomes (Fig. 5). Besides, in The Core building organises cameral painting and sculpture exhibitions and concerts, which attract art and culture lovers in The Arts Cafe.

Fig. 5. Eden Session. Source: www.edenproject.com

Moreover, in view of the local community, especially families with children, seasonal attractions such as outdoor events, games, Halloweden balls (on the occasion of Halloween) and winter entertainments on the ice are organised.

The environmental programmes are a very important aspect in the Eden Project's activities. One of them is an exhibition entitled the Sexy Green Car Show (Fig. 6). The exhibition presents the latest models of cars produced with the help of innovative technology and the use of organic materials and alternative power fuels. This programme, as well as two subsequent ones: the Climate Revolution, the Waste Neutral inform about reducing harmful factors emissions into the environment, mainly through the use of „clean energy", and recycling.

7. Ecology at the Eden Project

The ecological ideas are a very important aspect of the project. In addition to the environmental programmes, many activities are undertaken in the project area in order to make

Fig. 6. Sexy Green Car Show. Source: www.edenproject.com

it function in accordance with sustainable development principles. It is important to reduce water and energy consumption. That's why photovoltaic panels have been installed on the roof of The Core building. Energy saving light bulbs are used for lighting. The control and monitoring, heating and electrical systems correspond to a special system. The water was needed, among others, for the irrigation of crops, is obtained from rainwater and drainage systems. The sanitary installations are equipped with self cut-off valves.

8. Eden Project — success factors of undertaking

The largest confirmation of the success of the project is the number of tourists. During the creation of the facility, the number of potential visitors was estimated at 645 thousand people per year in the business plan [6]. As was shown in Table 2, the Eden Project was visited by double the expected population, in fact.

TABLE 2
The number of tourists who visited the Eden Project in 2003-2009 [based on 1, 2, 3, 6]

Period [years]	**2003/2004**	**2004/2005**	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**
Number of tourists [million]	1.4	1.25	1.18	1.16	1.16	1.06

The analysis of the Eden Project, allowed to specify several important factors that have contributed to its success. They are as follows [10–12]:

— The project leader — had the task of chairing the entire project. Thanks to Tim Smit's vision, determination and consistency, the project was completed.
— Support of the local authorities — the authorities from the very beginning were interested in the realization of the project. They aided financially primarily. They encouraged

other investors to cofinancing Eden. The positive relationships between the local, regional, national, and the originators of the project is also very important.

— The 'public-private partnership'— a mixture of public grants and private loans in financing the project played a very significant role.

— Innovation- which is reflected as the founding methodology, the partners involved, architecture, the business models, the combination of multiple functions and the management of the finished project.

9. Summary

The revitalization of an unused, post china clay exploitation excavation consisting of the creation of botanical gardens in it — the Eden Project — was carried out not in unfavourable conditions. The creation of the project was threatened by the prevailing economic situation of the region's, poor infrastructure, a location which was far from major cities however and above all, were financial problems.

Despite the problems mentioned the project came into being and achieved a huge success. The best evidence of this success is the number of ca. one million tourist annually and revenues of over GBP 20 million pounds per year.

The project's characteristic features also include: operational programmes, as well as the linking of many important aspects of economic, social and environmental impacts into one. Thanks to a rich program of events among others, the Eden Project is constantly attracting huge crowds of visitors providing them with education, entertainment and an unforgettable experience.

The analysis of the venture showed that the factors that have contributed to the success of the Eden Project are innovation, the project leader, support from the local authorities, mixture of public-private founds ('public-private partnership'), as well as interesting use programmes. It is thanks to these programmes (although not only these) that the Eden Project constantly attracts huge crowds of visitors providing them with entertainment and an unforgettable experience. In addition, eco-friendly policy and the connection and interaction of culture, economy and science is also deemed as success factors. The case of the Eden Project can serve as a good example to follow, and the factors that determined its success can be considered as universal and should be taken into account in other revitalization activities.

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