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Research Article

An analytical study of the architecture and Imran environmentally sensitive areas (The case of the Springs of hot water oases)

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Abstract

The Springs of hot water plays an important role as a means to treat or entertainment , but through this research we will care fot the Springs of hot water as aource of development and construction , also to add new development sites , and also to achieve the basic needs of the community in energy and economic resources such as agriculture and tourism. The advantage of these areas that they were previously used to meet the humanitarian requirements, so you must study how to reconcile the areas of the Springs of hot water and all the developed and protected lands surrounding it and care for the environment , also to achieve a balanced relationship between achieving benefit from the Springs of the hot water and the preservation and development of the surrounding land . This forces us architects and planners build the areas surrounding the eye of hot water on the basis of sound science , which will have the greatest impact on the environmental values and cultural on the Springs district . Must distribute land use surrounding the eye on the basis of careful study conscious minute and full understanding of its impact , and how to invest and employ them to serve Architecture and Urbanism and the environment in a manner well-being due to the development of their region . And raise the level of environmental area . Thus this search is interested in studying the areas that contains the Springs of hot water in Egypt and to get introduced to her and her potentials in Architecture and Urbanism

The search then examines the function of the hot water Springs in the protection and support of Architecture and Urbanism Through identifying the different influences in order to discover them , and the effect of the omission of all aspects of environmental and economical development through the availability of data on the economic wealth of this groundwater , and its impact on urban planning . To tie it all the objectives of the implementation of the development and planning of these areas, according to the possibilities available natural , hoping to re-examine it where you can open new horizons for Energy and Economic Resources , such as tourism projects through specialized tourist resorts and physiotherapy . And dissemination of medical tourism , which can not be referred to only as being forgotten or neglected too in Egypt as a whole, especially when compared to other cities that does not exceed the potential sources of hot water for each of them about the possibilities available in Egypt.

Finally, research deals with the study of how to exploit energy resources and economic , through the study of areas of hot water in oases of Western Sahara, and re- planning it , and their projects through to be placed influences the following in mind, of Boundaries (which are factors that limit or hinder the development of these areas though in some parts of them) , and Restraints (They are factors that support the expansion or development , even in some parts of these areas) , and the study of the positive results from discovered and exploited as a source of energy or water after treatment . And that will help in trying to develop policies concerned with studying the environmental and economical impact of these areas in the context of the state's plan to increase the flat arable land development and the protection of Architecture and Urbanism in the future and the end of programs to preserve the environment.

Keywords: *Springs hot water, sustainable development, eco-tourism, the Egyptian oases.*

1-Springs hot water

Ground water was used in ancient times in different places of the world in the shower and treatment of certain diseases , especially the skin ones because they contain metals and chemical compounds that are important, and password is in the heatness of the Hot Eye that lies in the volcanic activity and the word Volcano ,Volcano is the origin of Vulcan , who was the God of fire when the Romans in the roman times and the God metallurgical industries . And sometimes happens that trap mass of the great rock that the state semi- liquidity , not far from the surface of the ground, which often take a very long time in order to cool and when it passes by the water underground is heated and the resulting formation of the Springs and fountains, hot water and steam , and They flow in huge quantities to an extent that the water may rush out at a height of over 17 meters, and in the fountains, hot water does not lose heat as fast as it is gaining them , water is still heated continuously just by touching a block of

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volcanic hot water, water is heated gradually until it eventually reaches boiling point within immemorial under the surface and the water boils usually at a temperature of 100 degree celsius , leading to the presence of as much of the steam enough to push the water by force.

The medical uses of hot groundwater became more prevalent now and where investment has helped the Advancement of Science in providing the means to use a variety of the hottest and the components of groundwater , and has become a source of heating in the generation of electricity and the provision of water required for agriculture.

1-1 The Function of the Springs of the hot water in the protection and support of Architecture and Urbanism.

1-1-1 The Springs of hot water as a source of clean energy sources to generate electricity from the heat of the earth - (Geothermal electricity).

The natural environment is a wonderful resource for clean energy from renewable kind , and now is the application of science and technology to develop new energy sources and types of energy conversion from image to another. There is a tremendous amount of heat underground graduated in the form of volcanoes , and this energy can be collected to extract hot water and steam from the depths of thousands of meters under the ground and then use the steam turbine in the management of electrical so then we have used as a source of energy under the ground to save electricity .

Has announced that the International Organization for Geothermal IGA (The IGA International Organization for Geothermal has aanounced) in its report that the production of energy from geothermal sources amounted to 10,700 MW in total 24 countries in the world in 2010 , produces about 67.250 GWh of electricity. [Geothermal Energy Association, May 2010, p.6-4 .] This means increase in the production of geothermal energy in the power grid by 20 % since 2005 . It is planned by the International Organization for heat to increase the production of which 18,500 MW until 2015 , will be held where several stations are currently in the planning stage , and of which I think there are places in the past of their futility in that area . [Geothermal Energy Association., May 2010, p.7].

In2010 the United States became a pioneer in the exploitation of geothermal energy to produce electricity as an output of 3086 megawatts produced by the 77 station . [Khan, M. Ali (2007] and the largest gathering in the world for the production of electricity from geothermal field is located in the heat of the ground in an area called The Geysers, California . [Bertani, Ruggero (2009)].
And keep track of the Philippines the United States as the second country in the world take advantage of geothermal energy , which produces 1,904 megawatts of electricity , and the proportion of electricity production in the Philippines, about 18 % of its electricity production . [Geothermal Energy Association., May 2010, p.7].

And Japan has about 17 stations for this type of electricity generation biggest of which is the station Hachobarua of thermal energy under the ground , and the capacity of the station110 thousand k watts This is an enough amount of electricity to supply 37 thousand homes (an average requirement of a typical home about 3 kW .) And one of the features of the thermal underground power station when compared to gasoline and other fossil fuels , it generates the same amount of electricity and emitting 5% of the carbon dioxide emitted from the gas station and this makes the impact on air pollution is very slight . [http://pangea.stanford.edu].

The exploitation of geothermal projects are built in areas with high geothermal heat near the Earth's surface at the edges of tectonic plates . But the development of building stations that exploit geothermal heat generating part of the electrical energy plus using hot water , and stations exploit geothermal heat cycle for the second time (used in the second round means a boiling point lower than the boiling point of water) in addition to improving drilling technology and extraction of hot water will help the spread of these plants in other regions . [Bertani, Ruggero (2009)]

Figure 1 demonstrates one of the power stations used in generating electric power using the geothermal energy in Kravla station in northeast Iceland

The efficiency stations and the exploitation of geothermal energy are a few , they are between 10% and 23% , due to the low water temperature filed compared warmly of steam boilers. According to the laws of mechanics , the thermal low temperature of the water extracted determines the efficiency of exploitation in the generation of electricity (Carnot cycle) . Tempreature of waste water can not be exploited , Unless ithis water is used in heating and direct warming . But the efficiency of the station does not affect the operating costs , as is the case for coal-fired plants or oil , but they affect the use of the project . In order to produce energy from the project 's largest untapped energy in the operation of pumps , the production of electric power at a high level requires fields

where ground water with high heat , also needs to be specific technical courses . Because geothermal power plants do not need to fossil materials or wind power or solar power , the scope and scale can be achieved to produce 96 % of electricity in the country has been achieved already . and the global average was about 73 % in 2005. [Lund, John W. (2003)]

1-1-2 Types of power plants

- Station is a powerful dry steam power stations operating steam dry of the simplest and oldest types . They used steam extracted directly amounting to a temperature of about 150 degrees Celsius to drive the Turbines

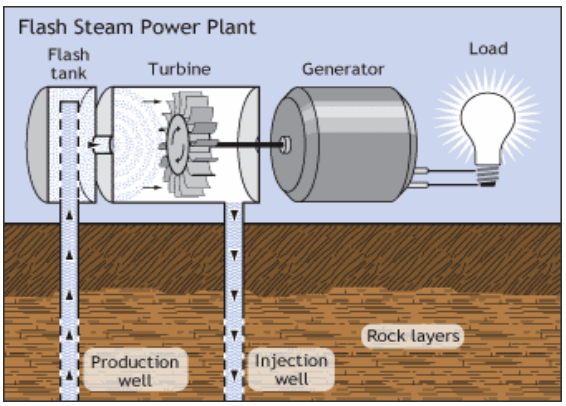

Figure 2 Flash Steam Power Plant

- Powerful Steam Station The extreme heated steam station is for producing extreme heated steamand we must drill at great depths. And directs pressurized water to high heat extracted tanks less pressure expands the hot water suddenly turns to steam in order to operate turbine . This technique needs water with a temperature of 180 degrees Celsius or more . And the kind of stations are the most prevalent today. [US DOE EERE Hydrothermal Power Systems]

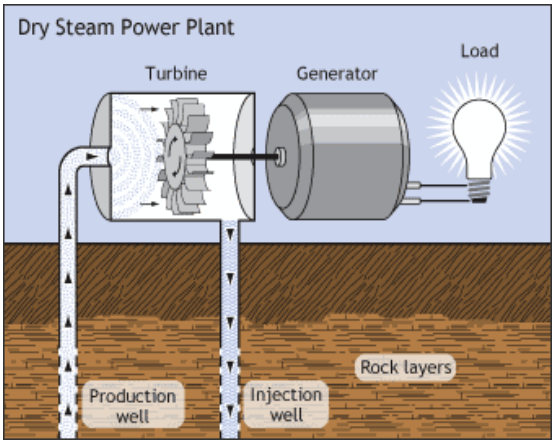

Figure 3 Dry Steam Power Plant

- Power stations with two electrical power plants are considered relevant sessions they are the latest technology in this field , and can use the waters could reach a temperature of 57 ° C only and the ground water passes the hot liquid on his last low boiling point lower than the boiling point of water. And works on the sudden dilation of the liquid and turns into a vapor , and directs the steam turbine fluid management . And that kind of stations is being built at the moment applied the Organic Rankine cycle and Kalina cycle , and have a thermal efficiency of about 10 % .Which can be used in Egypt in the areas of natural hot water springs that do not need to cost in the extract.

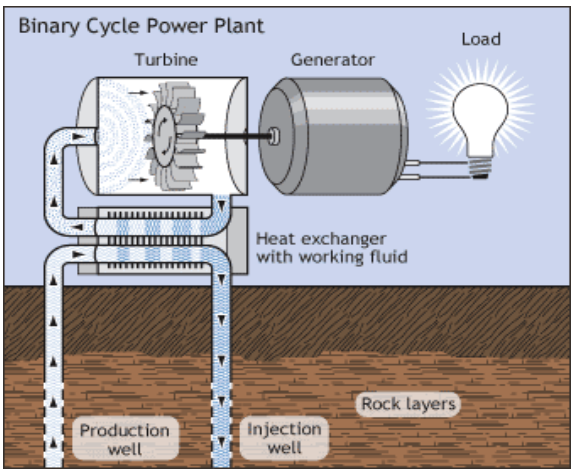

Figure 4 Binary cycle power Plant.

1-2 The Springs of hot water as a source of sustainable urban development.

There are multiple types of buildings that can be created through the Springs of the surrounding areas, hot water , which depends entirely on the adoption of its existence , for example

- Spa day : this type of resorts does not need any housing or housing , and these resorts tend to be small and grow fast.
- Spa hotels and resorts has grown this kind of resorts to provide services in hotels and resorts and the provision of convenience for hotel guests and the general visitors from abroad.
- Spa Special: these resorts serve clients whose only interested in spa services . Including weight loss programs and addiction treatment , health seminars and practice sessions focus. It is found in limited at the moment.
- Spa Club : Serve these resorts club members, they practice of physical exercises and sports such as:- spa at golf courses , or in health centers and sports) , and this type is still too limited.
- Medical Spa : These resorts provide medical care and oversees the care of patients closely to ensure their safety. And the auditors of the patients who receive treatment or to improve their health , and. Most of the elders prefer to go there.
- Spa fountain of mineral water : This type of spa fountain Natural mineral water or natural hot Springs.

These buildings, which can be implemented in Egypt implemented in many countries of the world, and examples of these countries.

1.2.1 Japan Asian model

Figure 5 Photos for the Springs with hot water Komatsu island of Honshu in Japan - the image field and ryokan hotels.

Japan is the land of hot Springs , there are more than 26,000 hot eye spread in all over the country , and more than 3,000 resorts reliable on it . And hot Springs is a part of Japanese life ,they enjoyed the shower and heavy steam since antiquity . Among the most famous resorts and regions, Kusatsu resort which is located on the island of Honshu in the north-western province of Gunma . Urban design is characterized by a broad place , full of hot mineral water and dubbed is called Iobatki or field water evaporated , and the word field comes from the line of regular rows of wooden tubs containing water mineral eye has escalated dense vapor . This water rushes from the ground and it's tempreature reached 56 degree celsius , the heat makes it impossible to shower in when (that is why) it is converted to water across the field to relieve the heat , the field is surrounded by open space suitable for a break and enjoy a good time . Many of these hotels are located near the ryokan it is the that field), these hotel contains hot tubs of various sizes for decades , . the hot Springs is also used to heat the greenhouses for the cultivation of different types of fruits aznd vegetables [www.jnto.go.jp, www.ryokan.jp-www.asahi-net.or.jp -www.infocreate.co. jp.]

1.2.2 China Asian models

China is rich in tourism resources and the central government decided to subdue the city Hungching as it is the oldest natural springs hot regions in China for direct management ,the discovery of this country goes back dates back to more than a thousand years and even today the water is still available in theses Springs. And the city, contains of the only urban waterfalls in china, and it consists of 88 Springs and their center is the hot sea. And on the territory of the city with an area of 5854 square kilometers 99 volcanoes . China has built a new city with many hot Springs , in order to build Hot eye Resorts inside the city ,in order to improve their circumstances to become the largest tourist resort , has a better and more hot Springs in China and the world , which resulted the witness of reapid development in the sector of tourism in the city of Chongqing during recent years, and the number of visitors coming to it as quickly increase the income of the local tourism sector has been rapid and continuing well. 25 years ago was a city of Tengchong area of 12.7 square kilometers only . In 1998 began the process of reforming and building the city at a cost of more than 1.063 billion yuan , turning them into a big green city. Keeps the inheritance of historical and cultural deep local because(it is the source of money that people in Tengchong are proud of the capital that proud people in Tengchong , from concept to highlight the historical and cultural features of the city , has exceeded investment to achieve this goal two hundred million yuan, to be a tourist city and commercial . In 2012 the city received sixty-eight million visitors , and tourism income amounted to thirty-six billion four hundred million Chinese Yuan occupied 9.8 percent of GDP in Chongqing . In the period from today until the year 2015 will develop the tourism sector in the city and become an important economic sector and stability pays strongly local economic growth.In the

coming years will be implemented city six major projects to achieve the renaissance of the city again , and of them, slit passage of a major international city to Myanmar to India and Pakistan ; the construction of an airport , and the development of electricity sources in streams River Benlang ; building garden Tengchong Chinese health ; recording two areas of the people's economy ; and make the city a tourist site on the excellent level of the country.

Figure 6 pictures of areas of the eyes of hot water in China, where there are swimming pools in the hot spots, which pulls water from the hot spring water, in addition to the resort with the exploitation of the surrounding environment of trees and green spaces.

1-2-3 Iceland models

In one part of the south-west of Iceland there are more than a thousand appointed within one square mile , some short-term IE does not last more than several days , while others are located hundreds of years ago , in These Springs water temperature when it reaches the surface higher than the boiling point of water natural two degrees or three degrees , and I took advantage of periods of natural hot water to a large extent in Iceland , where it is used in homes , and in the thirties of this century, the transfer of Engineers hot water pipes to the capital of Iceland) Rakia Vick (Reykjavik, has been confined to this transfer in the first place to a small number of homes and institutions , but since 1945, this system has become year-old includes most of the built-up area , and the water comes out of the tap at a temperature ranging between 80 m and 88 m . Fountains the heat is also water sources that supply swimming pools, outdoor temperature , equivalent to about 30 m . another use for hot water , a heating greenhouses that are grown inside samples of mixed vegetables and flowers.

1.2.4 Saudi Arabia models

In Hadramout mineral water located mostly near the area of Ash , The temperature of 40 to 65 ° C , and its benefits and therapeutic for some of allergies and skin diseases and rheumatic pain and sores and diseases, diabetes , and tests showed the health of the usefulness of therapeutic , so there must be the development of building blocks and clinics especially for the treatment of eye next to the hot and modern services provide the means to have an economic effect on the country and people.

1-3 The Springs of hot water as a source of sustainable economic development

They exploit the economic development of hot water in economic activities such as tourism activity , whether therapeutic enviromental , and the activity of agriculture where it is heated greenhouses that are grown inside samples of mixed vegetables and flowers. Ehara a professor at the University of Saga in western Japan has ivented « cycle and Ehara » . A thermal energy converters sea suitable for commercial use on a large scale . Where the device generates energy as long as there was a difference in temperature at least 15 degrees Celsius between the water surface and depth . The device can also steam the sea water and or the hot Springs fast enough in order to get purified fresh water and is meant to provide both electricity and fresh water to places threatened by the drought , but the water also can be used for hydrogen used in fuel cells.

2 - Springs hot-water areas in Egypt

Egypt was famous for its water and mineral soil sulfur and the content of the sand and it is suitable for the treatment of many diseases , has spread in Egypt sulfur springs and mineral characterized by unique chemical installed . These are the Springs and the hot springs and wells in Egypt 's 1450 consciousness and springs and wells in Egypt , distributed among 3 main areas:-

- « West of the river Nile » and include a 5 oases inflows and outflows , sea and Siwa and Farafra , with some depressions in the Western Desert , such as the Qattara Depression.
- « area east of the River Nile » and include areas such as Cairo, Helwan, and west to the Gulf of Suez, Ain Sokhna . by the Sahara and East Timor.
- « area of the Sinai Peninsula » and includes the central part of which is a « Sidr whales » and the southwestern part where there is on the east bank of the Gulf of Suez Springs of Moses and Pharaoh bath and then the Gulf of Aqaba, and by several other Springs

Astudy Geo thermal Egyptian that the average temperature of the Springs , springs and wells hot in Egypt ranges between 32 and 92 degrees Celsius , temperatures Springs east Eastern Desert of 85 ° C and the Springs of the oases

outflows amounting to 49 ° C and the Springs of Bahariya reach 56 degrees Celsius , and the Springs water Dakhla Oasis 57 degrees Celsius and the Springs of Moses as 67 degrees Celsius and Ain Sukhna 64 ° C and water Springs Helwan 82 ° C water bath while Pharaoh stands at 92 degrees Celsius , the highest floor of the hottest water in Egypt . The geology indicates that the temperature increases the more we come toward the center of the earth.

The tests proved to contain groundwater emanating from the hot springs and the Springs and monuments in Egypt, many of the metallic elements , including calcium , magnesium, sodium, potassium, silicon and various salts dissolved . The proportion of dissolved salts in which between 1,000 and 35 thousand ppm . And Pharaoh's Bath is the first between the springs and wells and springs Egyptian contain elements of calcium, sodium , potassium, silicon and dissolved salts while Ain Sokhna is the first in magnesium While the wells and springs and fountains Dakhla Oasis is at least in calcium , magnesium , sodium, dissolved salts , while the Springs of Bahariya Oasis is at least in Silicon the Springs are the least of the Eastern Desert in potassium.

In this research study will take care of parts of « West of the river Nile » and includes a 5 oases inflows and outflows , sea and Siwa and Farafra , with some depressions in the Western Desert , such as the Qattara Depression

2.1 Case Study Springs hot water in West Nile.

2.1.1 Oases of Dakhla , New Valley : It contains some of the most important purposes of medical tourism

- Wells mut and is located just three kilometers from the capital city of Mut , a group involved with the flow of self- wells , stems from a depth of 1224 meters. Featuring hot wells for its water , which has a temperature of 43 Celsius. , And contains many mineral elements therapeutically useful.

2.1.2 oases emerging New Valley : It comprises some of the most important purposes of medical tourism:-

- Wells Boulaq : a self- flowing deep wells , stems from a depth of 1,000 meters , and temperature 28 ° C , and its waters contain several elements of metal with a therapeutic benefit , and spread near the soft sand dunes that can be used for the treatment of silt in the sand.
- Set wells Nasser : Located just 18 kilometers south of Kharga, which is three wells of different depths. This pool is used to treat a number of diseases.

2.1.3 Bahariya between humility and the importance of its services there.

Where there are oases of marine about 400 eye for mineral water and sulfur warm and cold and proven research conducted by the national centers for research and scientific centers of foreign therapeutic value , which leads her to become one of the most important resorts therapeutic in the world to distinguish them dry weather mild and bright sunshine throughout the year . And Bahariya well-known among tourists central, western and northern Europe who come to the hospital , and are oases House treatment center hospitalization However, the presence of sites and natural treatment which , as frequented by people on a daily basis throughout the year , and even go to some water (Springs) , including abroad , some of which specializes in the treatment of specific diseases , especially in the Springs of a well Halfa with warm water that has a temperature of 45 C , and the Springs of Kassa (30-40 ° C). And containing oases on several areas of tourism.

2.1.4 Farafra : Located deep well with a flow of self- six kilometers to the west of the city of Farafra , and its water temperature of 24 ° C throughout the year.

2.1.5 Siwa : The site occupies the foreground of the best places for medical tourism in Egypt and includes places.

- Dakrour Mountain : The treatment elders specialize in burying the body with sand (burial treatment) for different time periods
- Siwa : - spread in the oasis of Siwa Springs mineral water which is used for physiotherapy from several diseases and the most famous of these Springs, and most important of all wells Chegar amounting temperature its water 67 C and contains elements of metal and sulfur and similar mineral eye area Carlo Vivary famous Czech frequented by tourists from various a resort around the world for physiotherapy.

The research examines the current status of water wells to one of the hot areas near Alltel west of Cairo , an area Bahariya.

3 - The current status of the hot water wells marine oasis

3.1 Administrative Mode

Bahariya Oasis was administratively belonging to the Frontier Corps may not have access or check only after obtaining a permit from the Frontier Corps , the statement was not limited to humans only, but any movables to Bahariya , even if it is to move them to or from another oasis . And continued to do what it is until the creation of a reconstruction of the deserts in 1959 , where it began demanding the abolition of administrative subordination of the Frontier Corps for all desert areas , until the available possibilities of reconstruction and will be for the reconstruction of its usefulness , was done in the early sixties , became Bahariya subsidiary of Matrouh Governorate , bringing the arrival of workers Oasis Maritime administration to the city of Marsa Matrouh extremely difficult , as it is to go first to Cairo and on to Alexandria , including the city of Marsa Matrouh . After it became clear that the administration is clear in terms of the impossibility of the continuation of this situation moved dependency Bahariya Oasis Giza governorate . Bahariya Oasis and became part of Greater Cairo , despite its distance from Cairo more than 350 kilometers.

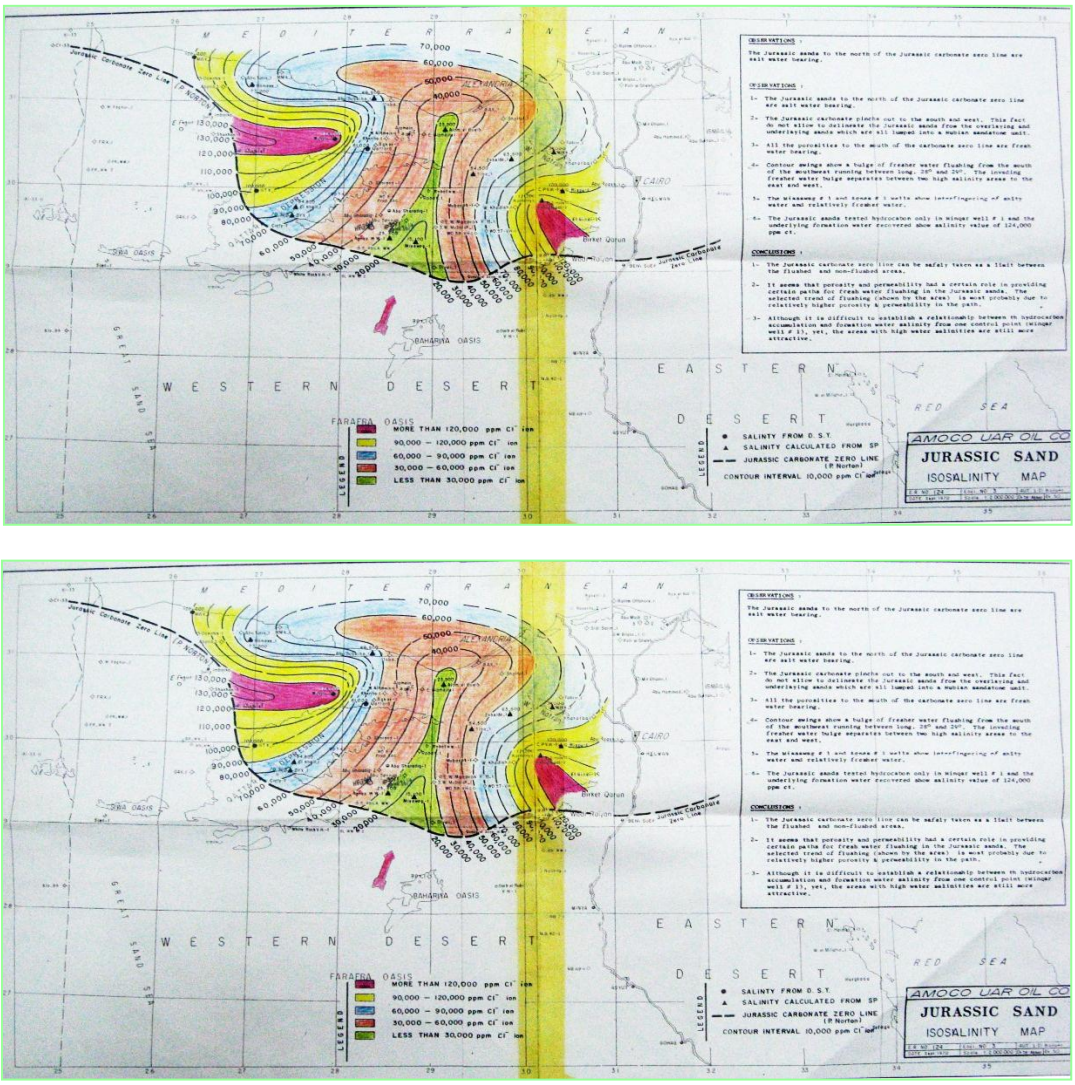

Figure 7 The map Bashmawi for water Alsinomanin oldest. Maps and Bashmawi for water sands Aljorasek noted here that the Bahariya Oasis is located partly in the area of saline described maps'

3-2 Environmental situation

Characterized Western Sahara tank fresh water underground massive lying underneath and moving waters, generally from the southwest to the northeast , with the exception of the northern part where the transformation of geological formations and in particular faults without continuing along the fresh water underneath it , according to the maps contour level Albisomitri prepared by Dr. Ezzat and amended Idris . noted that Dr. Ezzat prepared to settle upon a comprehensive search Bashmawi , for the Northern District , which prevented the geological structures of fresh water from the continued extension of it, and then became contain high water salinity.

In the current decade , a group of oil companies to drill wells, underground water to raise the necessary water to carry out drilling oil wells , to exploit the oil fields located on both sides of Cairo Bahariya Oasis , so dig through the layers of formation of ocher , and the average depths of wells required drilled from 1,000 feet to 1,200 feet , has been penetrating layers formation ocher until the advent of layers formation Daba , was stopped drilling on the basis that the composition of flava , which consists mainly of limestone , is not available where the potential of groundwater runs the only high water salinity and thickness of the composition ocher in some wells have been drilled to the depth of the newly introduced 1025 and the underground water with a salinity of about 10,000 ppm , and it turns out the implementation of this group of wells has never been settled by previous studies for each of Ezzat and Bashmawi and Idris.

3-3 Situation Tourism

The existence of the effects left by the ancient Egyptians , such as the Navy cemetery Banentino and others, referred to by the late Hassan Emeritus of the range of his works , and the effects of store Inventory Balbauwayta located by many mummies . In addition to the white desert areas including the charming landscapes . He was appointed Aalhoubjh archaeological finds specialists groundwater that its inception due to the same era , which was created Banentino cemetery . This effect is very important as the

second of two in Egypt on the whole of the Springs called Canats a word derived from the channel and collected channels.

3-4 Problems of the current status of the hot water wells marine oasis

- proximity of sites that take place by the research work for the production of oil and iron mines now under-utilized , such as iron mines and new mine sites are expected later exploited to such a warm and Grave.
- The existence of a railway line on the side of the road Cairo marine limit the spread of the tourist resorts on that side as it requires the need for construction of a tunnel or a bridge on a railway line to enter the resort safely.
- To avoid the passage of the last part of the route through Cairo Bahariya after leaving the sea of sand through the mine iron new , it must be an adjustment , but that this amendment may end up to follow the path of Mudug beauty that it passes in areas enjoying Brkod fresh groundwater reaches a temperature more than 40 e m as lying at a depth slightly larger than the same water to a higher temperature up to more than 70 e m , which can be invested in the winter resorts.





Figure 8 shows a picture of the well status quo is not one hot wells Alambah Oasis and the surrounding area and not to exploit them.

- But what 's wrong with the hot water area sites Bahariya they exploit traditional ways and random with the lack of means of service . And worst of all they are prone to wind, dust and falling paper trees , and lack of manifestations of serenity and purity are supposed to be the basis of the interest being offered to visitors , and the importance attached to people , and their certainty the usefulness of the healing them. Perhaps what he has done some of the people in some parts of Hot Eye of the establishment some private homes for those coming to it for the purpose of treatment and to identify special places for men and another for women is part of the business and economic interaction of some wonderful sons toward arrivals to the region.

But that does not absolve the local authority in the province, and the state in general attention to those sites , and the subject of scientific studies and the discovery of components and elements .. and also to the economic feasibility studies for investment as possible , including in ways that modern medical , processing facilities and tourist services appropriate in particular, and the need for such actions has become an urgent If we take into account the growing number next to it . Besides the healing images emanating from the hot spring water , is also used to irrigate a lot of plants and palm trees surrounding.

4 - Proposals for the development and function of the Springs of the hot water in the oases in the protection and support of Architecture and Urbanism.

4.1.1 Springs hot water from clean energy sources to generate electricity from the heat of the earth (Geothermal electricity

Is the electrical power plants with two sessions are the latest technology in this field , and can use the waters could reach a temperature of 57 ° C only . [Erkan, K.; Holdmann, G.; Benoit, W ;.Blackwell, D. (2008)] which fits temperature Dakhla Oasis Springs water temperature of 57 degrees Celsius . And that kind of stations is being built at the moment. [Geothermal Basics Overview .(2008)] applied the Organic Rankine cycle and Kalina cycle , and have a thermal efficiency of about 10 % . , Which can be used in Egypt in the areas of natural hot water springs that do not need to cost in the extract.] Holm, Alison (May 2010]

4.1.2 Springs of hot water sources sustainable environmental development previously.

Hot Eye Massadraltnumeih as a source of social, economic and urban development, they may still be exploited as Astalal bathrooms have been deployed in Musrsabaka because it is identical with, where varied Egyptian bathrooms . There are public baths , and private bathrooms . As for public bathrooms , they are two kinds : public baths normal mean for showers , baths remedial .. has linked its areas, which are available by the Springs hot., But the bathrooms regular they provide water Alsahan too., One bathrooms Atguetsraly hygiene only , but there are a religious message and functional ; then an economic and social terms of the importance of revenues and profitability to engage in commercial activities and the provision of labor and facility profitability , and where the benefits of health , and the customs and traditions of social and installations Urban Boutrzha , design and architecture

that surrounds it and the establishment of buildings to preserve the identity of the surrounding environment of Miani and building materials and Ntm Generation.

- **Religious message**

Linked to the Islamic faith -based hygiene and purification. And show through Islamic jurisprudence . Organized labor within them, and so subject to the supervision of cross- bowing directly calculated to ensure the continuation of its work according to the rules and values of Islam . Was calculated by ordering such custodians sweep and wash the bathroom and cleaned with water pure . And because the demand for them . Make some princes and philanthropists , motivated by the mainland and the desire to draw closer to God the good work , Aoagafunha some religious institutions , cultural and charity.] Osman Mohamed Abdel Sattar (1988)]

- **Social message**

Occupation Health as well as the purity , the health message to the bathroom , too, begins where it ends the role of the injury , which reminded us that is responsible for ensuring the good health conditions inside the bathrooms through continuous monitoring.

• The status of the bathroom in the habits and traditions of society., Where he was for the bathroom, a strong presence in the habits and traditions of Egyptian society . For example, a search for marriage fiancee . Before the wedding . The forty days after birth , this is where the meetings between the women is the exchange of news and talk them alone in the same way as men . Was entering the patient to the bathroom to mark Bchweih . It is what is happening now in clubs and hotels in the saunas and steam. .] Holm, Alison (May 2010]

- **Economic message**

Bathrooms are considered civilian facilities constructed to serve the public , has a lot created for economic reasons is the inability of all the people to include their homes have private bathrooms , and in the desire of wealthy invest their money in the creation of what it brings profit and Veer , and that the intensity of demand 0.16 . Addition to being place for commercial activities , it has formed a place to provide a variety of services and integrated , otherwise would have been possible to ensure the continuation of its activity , while providing jobs where provided bathroom job opportunities are many and varied , ranging from service and trade so that they were sold by some hot drinks and some supplies , such as soap and perfume boxes and towels lease people . functions such as erythema (charge) , and the guard or awqaf , and the barber , and masseur , and Stoker) lighting the fire) , and finally Scavenger . every bath , then, it provides work for seven members.

- **Urban message**

And its facilities Boutrzha Urban design and construction and the establishment of the surrounding buildings to preserve the identity of the surrounding environment Miani and building materials and Ntm Generation . Formed public baths where one point of the city, but the neighborhood . In terms of location , often built next to the bathrooms or near mosques . And keenness in the design of the bathrooms on the purity of the water , which necessitated the design and Ahoadh channels so as to ensure that.

Figure 9 shows the models of the types of buildings in the oasis, which must exploit the architectural styles and building materials and construction systems of their own to preserve their heritage and identity.

4- 3 Springs of hot water as a source of sustainable economic development currently.

1 – Agriculture

They take advantage of economic development activity in the hot water , where agriculture is heated greenhouses that are grown inside samples of mixed vegetables and flowers. And intensify Springs hot steam to get fresh water and is meant to provide both electricity and fresh water to places threatened by the drought , but the water also can be used for hydrogen used in fuel cells.

By studying the development of the study area is evident that the activity of land reclamation . Although it may spread to the oasis , and there are some attempts to reclaim land agriculturally Ali groundwater, which began Bchger project boundary trees such as Gazoarenh and irrigated with movable carts Fontas but the prosperity of any of these projects have not yet been achieved. And weaken the prospects for prosperity as each drilling for oil or water supply to work the oil fields and natural gas confirmed that settled upon the opinion of Dr. Bashmawi that all aquifers lying beneath this region waters of high salinity is impossible to drink or use in traditional agriculture at an acceptable cost.

2 - Medical Tourism

This means that the presence of high groundwater salinity lying in the depths Ihvz Ali exploited in the treatment of natural health resorts and recreational tourism . To illustrate the feasibility of investment in this area , we find the village of small Italian called Abano Abano which had a population of indigenous about five thousand people could invest groundwater lying beneath it to create (130) tourist hotel at a high level is considered one of the finest resorts physiotherapy and tourism.

Figure 10 illustrates the hotels and resorts in the village of Abano Italian

Recommendations

Positive results and the economic return for the application of this solution:-

1 - economic returns allows the exploitation of hot water some opportunities , such as technology transfer , and providing new paths of development can benefit from the region's resources and human potential , and it is likely to be technologies and current approaches , especially in agriculture, water and adequate to meet projected demands , and as a result of the increasing drift in current urban expansion and the rapid haphazard likely to create large masses of the population to be below the poverty line . transfiguration and spatial and temporal patterns of change in temperature, rainfall and solar radiation and wind will work on the exacerbation of desertification areas adjacent to the Delta . Shall be for such areas of great economic interest in the development.

2 - yield Urban There are several options for development in order to reduce the negative effects on the urbanization of exploitation to areas of hot water through the need for an integrated vision of the natural resources of water , energy and food rather than strategies separated and put in place mechanisms and policies investigative . Attention to the integrated management of water and the calculation of yield economic unit of water consumed and the intensification of studies for the desalination of salt water and turbid water and the use of modern technologies , low-cost . with the need to encourage scientific research to develop new crop bear the high salinity levels for the treatment of the problem of global food .

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