

TITLE: Psychological and Physiological Rehabilitation Restoration

By Natural Environment.

A Thesis

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By

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Psychological and Physiological Rehabilitation Restoration by Natural Environment.

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MIAMI
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ABSTRACT:

The environment presents the nonprofit sky's gifts: sun, air, rain, view, even Terrain. It is an environment's instrument that could be a gift or a design problem, so the genuineness is how to use this element right to add great value to our life.

The contemporary life strategies made us spend 80-90% of our lives indoors. Spending indoor for a long time daily under an artificial condition, light, colors, air condition, and plants.

There are too many difficulties, stress, depression, fatigue, shortness of breathing, even headaches. The person does not know the reason, while he spends most of his time between home and work. So, life strategies are an effective method to improve or degrades our life. In addition to the wrong practices, which makes the individual be in conflict between rejection and acceptance.

we must work hard to open the indoors to a magnificent outdoor.

The Dead sea, in Jordan, is suspected as a perfect natural environment I selected it to be a proper cradle for the of the research in this paper focusing on" the Psychological And physiological rehabilitation restoration by the Natural Environment.

To provide a good treatment by existing an appropriate Spa building in the location is a great value to the medical sector.

And we can add that architecture is an element of the environment as a scale, shapes, and colors completes the welling and healing process.

There is a strong relationship between architecture and the environment. The added architecture's language chime with the region design.

So, the coordination between them is one of the important parts is to merge it with the environment in all its conditions and can be later considered part of it and considered one of the challenges the architect could face.

INTRODUCTION.

Humans are exposed to different physical and psychological effectiveness during their life circle.

Modern medical therapy does not limit one style of treatment, rather it applies a different type of treatment, such as the psychological medication on physiological illness.

Perhaps the public considers psychology with respect to mental health issues as mental health issues start with disappointments and stress of the surrounding environment even though that is not exactly right.

Modern medicine treats different diseases; however, the pre-treatment process is the important step to reduce the percentage of disease either physical or psychological and pre-treatment process transfers the person's actions from frustration, degrading situations, to an active person in society. but if the process treatment is wrong such as taking a un appropriate medications, may transfer him/ her to a mental health patient.

Modern medicine opened a new treatment style by using the natural environment, despite it is an ancient treatment applied in several of old societies.

Psychological studies demonstrate that pre-treatment processes are very successful in the improvement of most illnesses such as cancer, asthma, blood pressure, and many others. The natural pre-treatment processes will support healing more effectively and

result in the psychological well-being of a person.

This paper Inspired by the good conclusions for illness treatment by the natural environment. Seventy-three percent of individual medical benefits are computed by people with a range of health conditions, including long-term conditions, cardiovascular disease, and mental health issues, for example, depression and anxiety, there are many people who are suffering from these types of contemporary issues which we observe its increasing rapidly.

knowledge of any issue is built on an active study, the medical field and human resources is the most effective studies can be conducted regarding human health and comfortable life. Certainly, which It is doesn't mean the other specialties are less important.

This paper presents important questions that lead the reader to good information that is very important to illustrate the Dead sea environment as the cradle of healing and health treatment of physical and psychological issues.

- What is the reason to select this topic, "Psychological and Physiological Rehabilitation, Restoration by Natural Environment?"
- What is the reason to select the Dead sea environment to be the location to apply this study?
- Who is the beneficiary of the project?
- What is the Methodology of the study?
- What are the challenges that encountered the project?

Addition to the brief history of the Dead sea region.

Four case studies are Selected to prove the study claim, the case studies are as follows: Fire Mountain Residential Treatment Center Colorado. Dartmoor National Park, in the United Kingdom. Japanese use the term Shinrin-yoku or “forest bathing, ”Location: Japan, 24 forest.

These three cases encouraging us to use the treatment by the natural environment as life support healing and wellbeing life.

Numerous people experienced and suffered from psychological illness, all of which had different experiences from one person to another. The accumulated number of mental illnesses eventually drives people into a deep end of problems if it's not treated and consistently neglected. These phenomena can lead to serious mental health issues. Research studies found several cases of the spread of mental illnesses throughout society and impacted the way of life for individuals.

Researchers have been interested in the effects of psychological problems which are reflected on the individual's behavior at work or in their social life and reduces the quality and quantity of production in their work, on other hand, it impacts the warmed relation with his/her family and friends.

What is the reason to select this topic, "Psychological and Physiological Rehabilitation, Restoration by Natural Environment?"

The study main issue of anchored on the modern lifestyle, several types of psychological issues such as depression, stress, and anxiety have increased in the modern era and impacted our society.

There are multiple factors that make the environment at work difficult such as the work type, the long working hours, work pressure, or the ambient characteristics (building layouts, noise, artificial light or air

conditioning instead of the fresh air, in addition to along with self-control on behavior during work, may increase stress.

Often Working environments impact social lives and reflects on the employee's families by keeping them exhausted, tense, tired, and often nervous.

Based on the evaluation of studies on differences and effects of the environment, it has brought attention to those who suffer from prolonged psychological issues that need to recover and heal.

The recovery philosophy is for the stressed people to self-restore and rehabilitates by disconnecting themselves from the usual environment as a health break to spend time in a good new environment.

It is necessary to find a restorative healing environment and provide a continuous active side for the individual's life that does not negatively impact other vital functions in social life.

Various studies proved the effects of natural environments compared to urban and built environments, this study could be now is one of the modern era medical treatments and furthermore, we can say it is under consideration, but it proved through many results on different types of illness.

Healing Gardens is the new version of the natural environment which is difficult to provide in some places for treatment such as big cities.

The biological clock is "an innate mechanism that controls the physiological activities of an organism that change on a daily, seasonal, yearly, or another regular cycle."

The human being is a part of nature, he is like the sun, moon, and air, these parts help him to survive and if the human is healthy, he will help the natural environment, it is the survival circle, nature they are both Integral life circle.

Discussing the classification of the type of jobs, but I am comparing the benefits of the exposure time to the natural light, and the inhalation of the fresh air instead of the cycle air through the air conditioner. The handymen whose jobs the outdoor or the landscaper healthier (despite its lower income) than indoor jobs.

The proven result of these studies has been reached, by applying an experiment on a randomly picked group divided into two groups, one for a walk through a wild and the other one to tend forests for 30 min. The positive effect seems clear on the participant group that exerts a physical effort in the tended forest condition and the other group has lower improvement in the participants' health, even though both groups were no differences between the treatment conditions, but as I mentioned previously the difference in the environmental conditions which reflected on the impact of natural environments were different on the human health restoration.

THEORETICAL CASE STUDIES.

Based on the previous health experience the paper presents four cases study.

Case study #1,
Fire Mountain Residential Treatment
Center, Colorado.
Colorado- healing environments early 20th
Used and regulated by the Colorado Human
services Department of Child Care



Figure 1.

This program is Licensing of Child Care. a Large facility on 40 acres, at the gates of the world-famous Rocky Mountain National Park” located in the beautiful Rocky Mountains.

It is offering recreation therapy, a complete program Treatment, that includes multi-types of psychological treatment therapy, education, life-skills, and fun for the Teens Residential, The program result is considered a turning point in these kids' lives, the program is a parent’s idea, and it's a family concern about their kids.

From their own problem while they were looking for a specialist to help them as parents. Aron and Chris respond to many of the parents looking for a way to solve their problem with their teens kids. They met on the same aims, there are many families struggling with their kids in general behavior and education problems, but the issue is how to start or the key for a correct start to solve it. So, the idea came from the premise of seeking a solution to these problems.



Figure 2.

The program uses modern psychological methods of rehabilitation innovations in treatment, along with traditional methods proven to be effective. It is four months of comprehensive treatment. It is a sophisticated

methodology of treatment that applies many of the activities to outdoor therapy, which uses the natural environment to empower children and teens.

So, we can recap the treatment therapy methodology in:
Physical exercise/ movement classes and education.

Teaching positive coping and life skills.
Team building and Group skills.
Music and Art therapy groups.
Animal assisted therapy and learning.
Preparing individual groups and family therapy sessions.
Traditional and experiential treatment modalities.
Horticulture and culinary classes.



Figure 3.

I, as writer of this paper and from my personal experience, see that teens like to feel free in all of their life decisions, and they think that it's all right decisions, they like to live independently but it's not right to be independent in this period of their age. The Fire Mountain Residential Center implemented their wishes, and prepared the exact environment this category needs, they practiced physical, psychological, systematic and Methodological treatment. The focus of this case study is how the natural environment is the perfect tool for practicing the right treatment.

Case study#2

Dartmoor National Park. in the United Kingdom.

Location: United Kingdom

Area: 368.3 mi²

Established: 1951



Figure 4.

Moorlands and deep rivers valleys, wild, open, with rich history and rare wildlife.

How do natural spaces configure the benefit in health in the UK? By improving the public access to the Royal Horticultural society's, the Accessible Natural Green Space Standard (ANGSt) considers the terms of management by increasing the proportion values of gardens, natural spaces, design and maintenance the activity range at the natural environment.

In addition to the Conservation Volunteers (TCV) The green Gym program, the environment improvement program where the volunteer's or people participate the activities range regarding the Sustainability system.



Figure 5.

The greenspaces and gardens became psychotherapy and a health requirement, Same as a project performed for this aim like 'Dose of nature' in Portland, So the 'Nature health Service' try to deliver this type of treatment to all the population of the country everywhere.

The Green fabric is considered of The Architecture 2030 vision for the next few years, so as evidence of using the green spaces methodology as an additive in the medical field Case study in Europe:

Dartmoor National Park.

Dartmoor is described as the largest open space in Southern England, their landscape is modified by hundreds of years of human vitality activities.



Figure 6.

The Site is very rich in the natural geology of materials sources like metamorphic sedimentary and igneous minerals(tin), iron, copper, and other ores, and it still includes many industries materials.

Dartmoor is home to a high percent of the British population of many environmental creatures that are threatened. There have been 12 species of mosses in dartmoor, each of which indicate different conditions. Valleys in dartmoor are unique. The ponies help dartmoor stand out and have an important part in the landscape and its culture. There is

an immense diversity of archaeological sites and landscapes which explains the way of life in the region. The park has become an inspiration for authors, artists, and many more.

Practicing in green space produces expanded advantages for physical and physiological situations when contrasted with an indoor exercise center condition. A few elements impact the positive connections among prosperity and time in nature. The grander a space is the more articulated the prosperity impacts may be. 90% of members felt that the mix of activity and being outside in nature was a main determinant in conveying medical advantages, and 94% announced emotional wellness benefits. Medical advantages are accounted for by people experiencing a range of health conditions, including long-term conditions, cardiovascular disease and psychological health issues, for example, depression, anxiety, stress-disorders, and dementia. Seventy three percent of individuals in the U.K. distinguish that nature is essential to both individual and national prosperity. essential to both individual and national prosperity.

Case study #3

Japanese use the term Shinrin-yoku, or "forest bathing"

Location: Japan, 24 forest



Figure 7.



Figure 9.

So, based on the rules of the special needs design even through the designer designed accessible spaces not just for the special need or the disabled, they designed it for everyone.

This green space designed for therapy programs, it is a sunny space, open, and full of colors which is reflecting on the psychology of the patient or visitors.



Figure 10.

This type of gardens heightened Sensory stimulation in this area, there are some patients with harsh disability, who enjoy and work carefully with selected plants and craft.

The garden abundance of several types of plants, different in height, and the display on the walls and the ground or around fountains. In addition, the horticulture presents a very significant role at the therapy program.



Figure 11.

Elizabeth & Nona Evans Restorative Garden a unique example of botanical Garden's it is an integral part of the mission to restore the healing and well-being, in addition blend education, social responsibility, cultural and environmental stewardship helping people of all ages,



Figure 12.

Elizabeth & Nona Evans Restorative Garden got the target through the result on the patients and visitors,

- Stress is reduced for patients, families, and staff.
- Great advantage is for exercise.
- Spaces for privacy, with a sense of surroundings.
- Support for social interaction Engagement to the nature.
- Reduced the patient's pain.
- Requiring less medication.
- Reduced complications and Healing times.

HISTORY.

•What is the reason to select the Dead sea environment to be the location to apply this study?

I would rather present an images for more clarification about the Dead sea location as a part of this world and zoom in by the follow-up information through this paper.



Figure 13.



Figure 14.

there are several reasons behind the decision for the selection of the Dead sea to be the location of the Psychological and Physiological SPA project

The historical and geological great changes in the area, a Great Groove or (the historic ruin crater) form the Jordan Valley area, expanded from Turk to the east of Africa.

The geological changes which happened (millions of years ago) on the earth's crust during the time led to the appearance of the Dead sea along the Aqaba Gulf in the south to the Tiberias lake in the north. Since the connection of the Dead Sea to the Jordan Valley, the warm weather improved the fertility of the Jordan Valley.

The three books of the main known religions: the Torah, the Bible and the Qur'an are mentioned to the story of Sodom is in, the city that is now in the Dead Sea,

the LORD rained upon Sodom and Gomorrah sulfurous fire from the LORD out of heaven.²⁵

וַיִּהְיֶה אֶת־הָעָרִים הָאֵל וְאֵת כְּלִי־הַכֶּכֶר וְאֵת כְּלִי־יִשְׁבִּי הָעָרִים וְצִמַח הָאֲדָמָה:

He annihilated those cities and the entire Plain, and all the inhabitants of the cities and the vegetation of the ground.²⁶

וַתִּבֶט אִשְׁתּוֹ מֵאַחֲרָיו וַתְּהִי נֹצֵיב מֶלֶח:

Lot's wife looked back, and she thereupon turned into a pillar of salt.....Torah.

"Therefore, the name of the city was called Zoar. The sun had risen on the earth when Lot came to Zoar. Then the LORD rained on Sodom and Gomorrah sulfur and fire from the LORD out of heaven. And he overthrew those cities, and all the valley, and all the inhabitants of the cities, and what grew on the ground."Bible.

"So, we saved him and his family, all, except an old woman (his wife) among those who remained behind. Then afterward We destroyed the others. We rained on them a rain of torment. How evil was the rain of those who had been

warned. Verily, in this is indeed a sign yet most of them are not believers. Verily! Your Lord, He is indeed the All-Mighty, the Most Merciful"..... Al-Qur'an AL Kareem 26:170-175

In the Jordan Valley where Prophet Lot ruled. Prophet Lot came with his uncle Ibrahim from the city of Babylon from Iraq. Ibrahim installed his nephew as governor of Sodom in the Jordan Valley and set out for Jerusalem. The city(Sodom) was drowning with sins , He tried to help them leave their sins and go back to the right path, they did not listen to him and they hurt him and his guests, he was patient with their great guilt which led them to God's anger.

Stories have pictured the city torment of the sky rained upon them sulfur and fire balls, of brimstone, then the sky rained over the area several days till the terrain of the region had been changed.

This part of the holy books focused on the part of the value of the area and how it is related to the religious facts at the old time. The salty water covered the whole area between the mountains, no one knows the area that had this tragic story will be one of the high-value treatments in the world, and the treatment products will export everywhere, and the region visiting from all the nationalities. In addition to the historical and geological great changes in the area, a Great Groove or (the historic ruin crater) from the Jordan Valley area, expanded from Turk to the east of Africa.

The Dead Sea supports personal wellbeing through its ecology. No matter what one's background or economic status, the Dead Sea is a destination for physiological and psychological health and wellbeing. So, selecting the Dead sea did not come as a random choice; the idea behind well-being supports a great environment for the rehabilitation and health restoration of psychological and physiological treatment.

There are a lot of treatment cases in the Dead Sea testifies for its medical treatments for rheumatic and arthritis that are treated by Balneotherapy and by Thalassotherapy.

There are several great features of the Dead Sea, the oxygen concentration in the air is the highest percentage in the world at 36% because the Dead Sea is the lowest point under sea level, it is one of the important features distinguishing the value of the Dead sea.



Figure 15.

In addition to the physio-and therapeutic application, hypertension, Stress, and Depression are also treated by Heliotherapy and by Climatotherapy, which has cured the body, soul, and mind.



Figure 16.

The dead sea has the sunniest sky in the area year-round, and the average temperature is from 20 to 23 Celsius and in winter from 32 to 39 Celsius in the summer and low humidity which is 35%. Perhaps the geographical circumstances the reason behind the warm

winter and the hot summer in addition to this percentage of humidity.

THESIS CASE.

As a follow-up to the further promotion of the paper, the author also suggested that the thesis serves as a fifth case study with benefits and challenges that the audience should look at the details and learn from.

The location a mixed fabric it is between desert and green environment, but the green is a lower percentage, even though the location has an abundance of groundwater in addition to the creeks and hot springs.



Figure 17.

The project occupied one of the peaks of the east side of the Dead sea, it is a-600f (-200m)height of the Dead seashore.

The location is separated from the Dead seashore by a 120f (40m) highway.

It is far 45min from Amman “the capital of Jordan and it is related to Madaba Governate which “Madaba” is a tourist Governate and the Dead sea connected to several tourist locations such as Petra, Wadi Rum, and Ma’een hot springs.

The accessibility to the location from the south side of the peak by a ramped bridge loads on columns s from level -900 f (-300 m) to level -600f (-200m).



Figure 18.
Author drawing



Figure 19.

The topography of the site helped to control the Dead sea views from the three sides, which makes the SPA design easy contact with the view based on the building’s masses.

The Dead sea territory includes several of the Tourists Hotels and each hotel has a SPA as part of it, but it is not practiced SPA function as the main job of these resorts.

The suggested project is a SPA main function, but it allows visitors to come and enjoy the view of the Dead sea and entertain the restaurant food.

The Psychological and Physiological Rehabilitation Restoration by the Natural Environment.

Site Plan.



Figure 20.

•Who is the beneficiary of the project?

This project serves 18 years and over, but sometimes there is an exception of some cases that could respond by the Dead sea substances in the younger age of 18.

•What is the Methodology of the study?

As a building, sensitive job related to the medical field and engaged to the human hopes of wellbeing's life, so the effectiveness of the project methodology is very important to be strong evidence to prove the strength of the SPA project in the Dead sea.

The main methodology is the personal experience of the location, Water, and Clay, in addition to the tourist advertisements through the media which considered an economical source to the country through the Tourist sector.

•What are the challenges that encountered the project?

Despite all the facilities as a tourist area, the aggressive nature of the area is full of challenges.

Water Supply.....Challenge 1.

The SewageChallenge 2

Beach Access.....Challenge3.

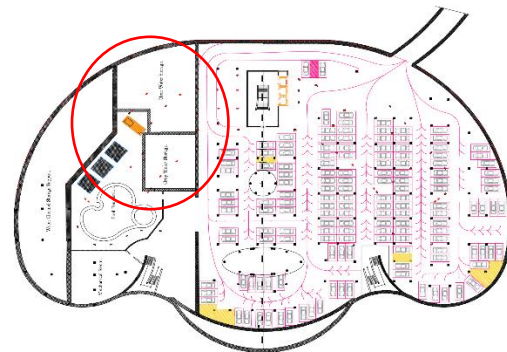
Reduce the water evaporation....Challenge 4.

Water supply challenges 1.

The water supply had discussed previously through the location features.

The site has an abundance of groundwater in addition to the creeks and hot springs close to the location easy to connect through water pipes supply.

The project provided by water storage in the basement as a part of the parking floor and water recycle to reuse the gray water for watering the plants.



Parking Floor, Basement level 1

Figure 21.

The SewageChallenge 2

despite the aggressive nature of the location in addition to the height on the peak which increases the sewage connection challenge, but the buildings of the project connected to the sewage line aligned the highway from Swaimah " the closest city to the Dead sea" to Al-Karak Governate and the location has a purification plant, so with this technology, it would reduce the size of water needs.

Beach Access.....Challenge3.

The SPA function is related to the beach of the Dead sea, so it is necessary the beach be accessible under any circumstances. So, it is accessible by the SPA transportation method, through a small tunnel prepared underneath the Dead sea highway to the beach. the beach at this spot considered a private area related to the SPA building.



Figure 22.

Reduce the water evaporation.... Challenge 4.

The site plan consists of four flat figures with a huge water channel in the center. Water is an aesthetic element added to the site, the hot weather in the Dead Sea poses a major challenge due to the high value of water evaporation.

The challenge is how to reduce evaporation. The designer suggested several ways to help reduce evaporation, such as adding special substances to the water this substance an evaporation reducer, shading water exposed to the sun and

Palm trees help shade channels.

It also prevents evaporation through the underground network of cooling pipes for the water channels. It is worth noting that electricity is supplied through solar panels located in the rear area of the site. and where the Dead sea territory is abundant in solar energy, which must be utilized the power in the cooling pipes.

THE SUSPECTED PROJECT.

The main concept.

Dead sea waves.....Curve line.....Meditation look "eyes" in a circular motion.



Figure 23.
Author drawing.

THESIS MECHANISM.

The Psychological and Physiological Rehabilitation Restoration by Natural Environment SPA building is in the Dead sea in Jordan.

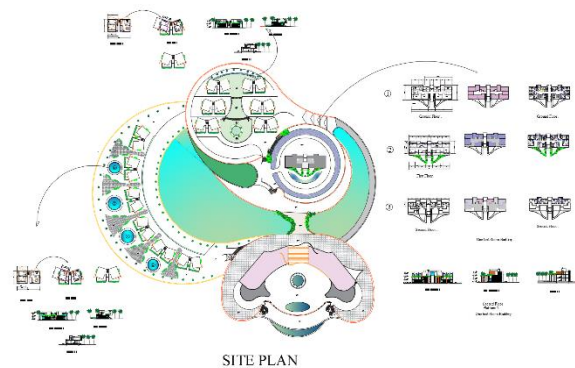


Figure 24.

It is a component of four platform, the first platform.



Figure 25.
Basement level 1.

The main building consists of the parking “Basement level 1”, water storage, Gray water purification plant and mechanical room.

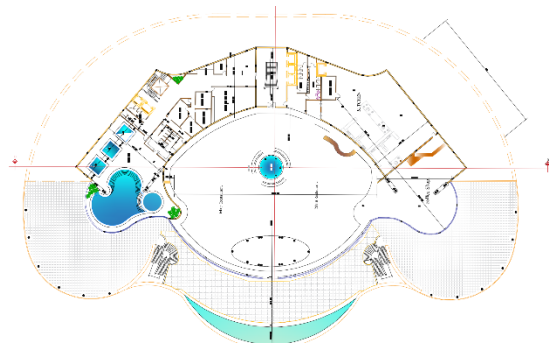


Figure 27
Basement level 2.

The Basement level 2 consists of two sides, one presents the treatment department, “Indoor pool, locker’s room, Shower rooms, rest rooms, patient rooms, and Therapy rooms.

The other side is for the service “kitchen” Elevators, the two buildings holding the main restaurant.

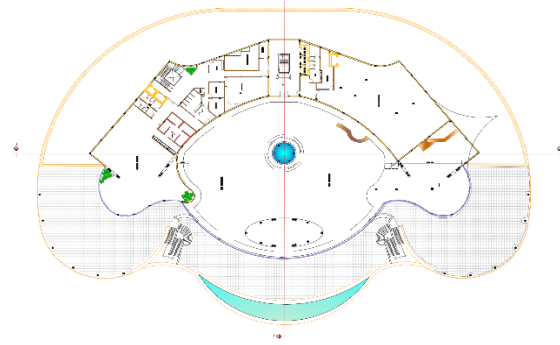


Figure 27
Basement level 3.

The Basement level 3, treatment department presents a Therapy space, Sauna, Locker rooms, Shower rooms, Fine art room, and Library.

The other side of the building includes the Staff accommodation, Staff kitchen, restrooms, the two sides floors of basement level 3 are holding the continuous of the main restaurant altitude.

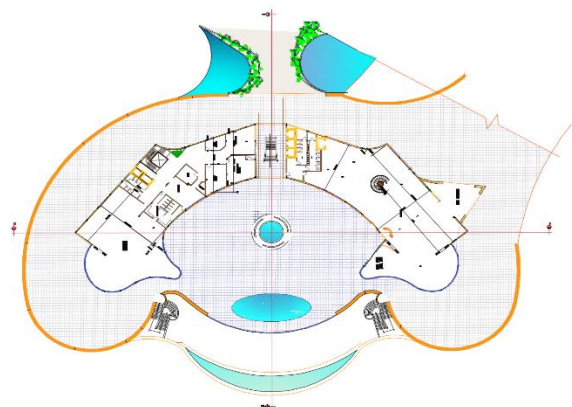


Figure 27
Ground Floor.

The treatment department at the ground floor presents the activities of the floor. the activities are Gym room, Shower room, restroom, Elevators, offices, Medical team rest area, and the Reception.

The reception is in contact with the Arena on the top of the hold Restaurant.

The other side of the basement level 3 floors includes the Staff accommodation, Staff kitchen, restrooms, and elevators. The floors on both sides of the basement building level 3, aligned with the main restaurant's continuous altitude.

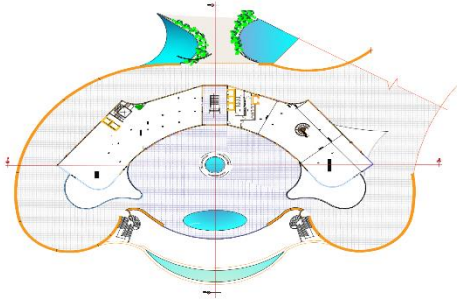
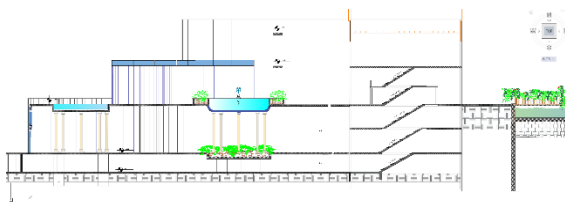


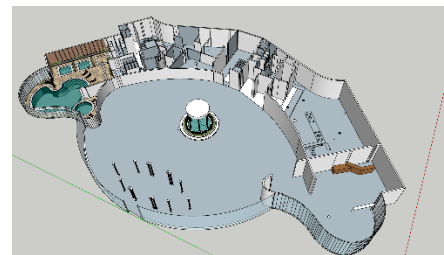
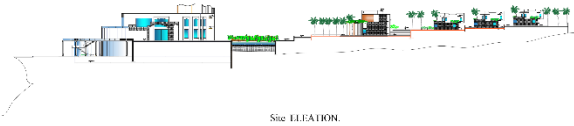
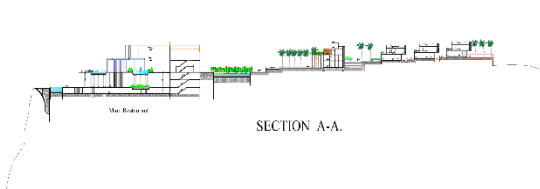
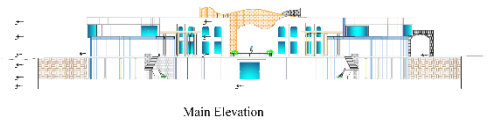
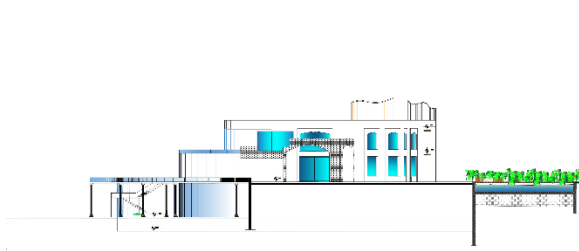
Figure 28.

The first-floor treatment department presents the multifunction floor depends on the treatment department's needs, but it still has the restroom and Elevators. The other side of the first floor has a Restaurant, restroom, and elevator.

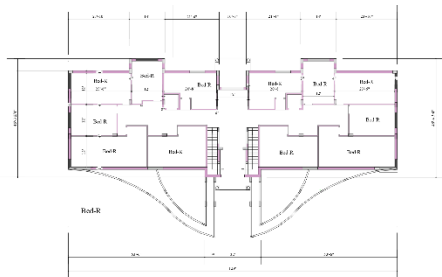
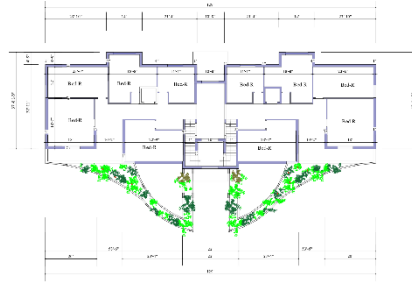
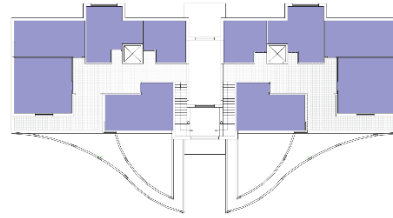
Main Building Section.



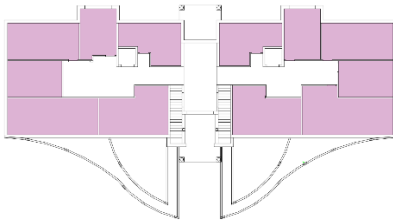
Main Building Elevation.



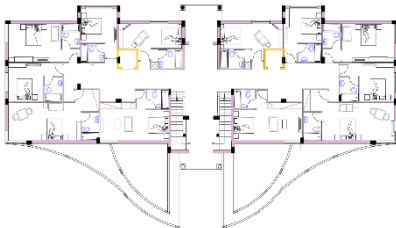
The platform 2,
 This platform connected to platforms 3 and 4
 by a bridge, lay on the water channels
 between the platforms.
 The second floor on the platform 2
 component of a t three floors of one-
 bedroom



Ground Floor .



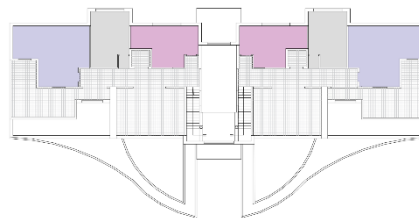
First Floor Furniture .

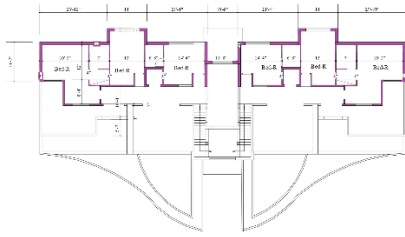


Ground Floor Furniture .

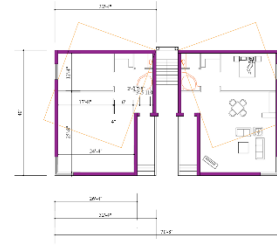
First floor,

Second floor,

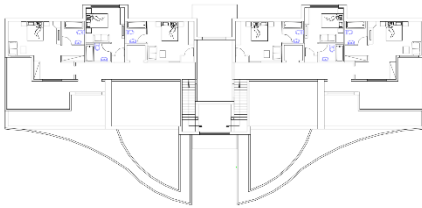




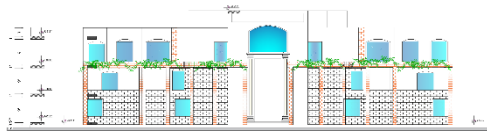
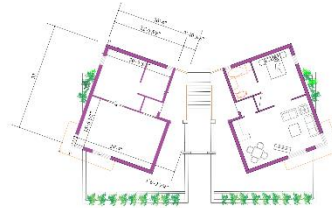
Second Floor .



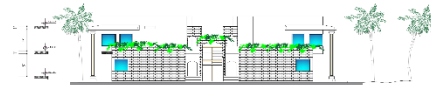
Ground Floor .



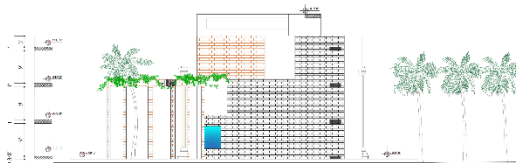
second Floor Furniture .



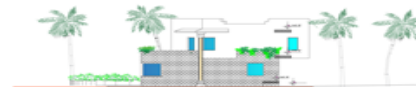
Front Elevation .



Front Elevation .



Side elevation



Side Elevation

Platform3,4.
Platforms consist of the same design of building.

In conclusion as stated in the study above the benefits of having natural environmental rehabilitation such as the dead sea, not only does it help the human body physically but also psychologically, over time the dead sea has been proven to help those factors in humans and maybe in the future studies can show the effects on animals.

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