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ASSESSING THE EFFECT OF ELECTROMAGNETIC RADIATIONS ON HUMAN BEINGS IN THE BUILT ENVIRONMENT

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ABSTRACT

Our earth is a living body that has energy veins flowing all over, just like the human body where blood flows from and to the heart. These natural earth energies are as old as the earth existence and interact with everything on its surface. They were believed to have either a healing effect in "Power Spots" or a stressful effect in "Geopathic Stress Zones" that can change the normal functioning of human beings and damage their health. Thousands of years ago, these energies' effects were considered during designing the built environment. This no longer takes place although recent research discovered that the urban ambiance is badly affected by electromagnetic radiation from different sources. Moreover, one of the main objectives of urban design is bringing to the user a sense of wellbeing and emotional satisfaction. The paper argues that respecting the natural earth energies during the design process will affect the wellbeing of the users. Consequently, the paper undergoes an exploratory process through a survey in Al-Sultan Hassan mosque using observations and a structured questionnaire to investigate this relationship. The survey confirmed that following the earth energy grids in the design affects the visitors positively and enhances their abilities and wellbeing.

KEYWORDS: Electronic Radiation, Geographic Stress, Wellbeing, Built Environment

1. SCOPE OF WORK

The focus of the study is to illustrate the different natural sources of electromagnetic radiation and to assess the effect caused as a result of following these sources in the design process of the built environment on human behaviour and wellbeing, and not to measure the surrounding energies themselves although they can be measured using special devices that will be mentioned later in the paper.

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2. AIM OF THE RESEARCH

To assess the effects of taking the different natural sources of electromagnetic radiation and earth's energies in consideration while designing spaces whether these spaces are urban spaces surrounded by a group of buildings (outdoor built environment) or open spaces that are inside the building (as the Sahn of Al-Sultan Hassan mosque).

3. INTRODUCTION

Our earth is a living body that has energy veins flowing all over, just like the human body where blood flows through veins from and to the heart. These energy veins are created due to the existence of both electric fields and magnetic fields; electric fields are created from the solar winds ejected to the earth by the sun, while magnetic fields exist due to the composition of most of the earth from molten iron resulting in a powerful north-south magnetic field [1]. As a result of the rotation of the earth around the sun for millions of years, these electromagnetic waves of earth's energy have established a natural net of energy lines and water bodies across the surface of the earth. These natural electromagnetic fields actually exist everywhere around us but they are invisible to humans [2]. Therefor we are subjected to electromagnetic fields since the very first existence of the universe, and these fields have the ability to affect us in different ways where they can cause either a healing effect in "Power spots" or a stressful effect in "Geopathic stress zones". Humans are affected by these surrounding energies due to the electric nature of the human body, where everything our body does is through electric signals sent from the brain to all body parts. Consequently, this creates an electromagnetic energy field named "Aura" that surrounds each human body and that interacts with the surrounding environment as well [3]. The fact that the earth's atmosphere represents an integrated part of its body has to be taken into consideration, as we actually build inside the earth's body and not just on its surface as it may appear. Therefore, the built environment has to be integrated with the subtle energy anatomy of the earth [4]. This draws back the attention to the fact that energy is one of the main environmental components that is not taken into consideration as it should be. It shapes our lives and affects us directly and indirectly in various ways.

Consequently, it is important to understand these natural energies, their effect on us, and how to take them in consideration during the design of the built environment to achieve better results and create better spaces. This knowledge was perceived by our ancestors, the ancient Egyptians, Greeks, and Romans, where they integrated the earth's energies in architecture and urban planning processes, but this knowledge faded gradually through years and became confined to some communities including the Chinese, Indians, Arab countries, and few others. Several tools can be used to measure these surrounding energies including; pendulum devices measuring the effects of the different frequencies and wavelengths emitted from the several objects on the device users, kirlian camera for photographing the human aura (the auric field) where the analysis of the aura can give information about the wellbeing of the human whether physical, mental, or spiritual wellbeing, also infrared imaging equipment can be used to specify the changes that happen to a person due to being subjected to electromagnetic waves from the surrounding environment [5-6].

The paper focuses on explaining the different natural sources of electromagnetic radiation and their effect on humans through previous studies and statistics. It will also shed the light on different examples that took these energies in consideration during the design process. In this perspective, the case study will take place in Al-Sultan Hassan mosque that was built in the Mamluk era and which is believed to have been built following the earth energy grid lines. An assessment of the effect of this fact on the users of the mosque will be tested through structured questionnaire and observations assessing the effect on the users' behavior and wellbeing.

4. METHODOLOGY

This paper represents an exploratory study that attempts to further understand the surrounding natural energy fields and sources of electromagnetic radiation and their effect on the human behaviour and wellbeing. This exploratory process takes place through the assessment of a case study in Al- Sultan Hassan mosque that, based on Dr. Ibrahim Karim's book "Back to a future for mankind", is a good example of the survival of this knowledge in recent history where the layout of the building changes

direction according to the earth energy grid and pattern in this area. The case study focuses on assessing the effect of following the earth energy grid lines and natural sources of electromagnetic radiation on the users of the mosque's inner space (Sahn). This assessment will take place using various techniques including structured questionnaire, interviews and observations with people present inside the mosque. This survey was structured based on collected questions from different sources used to assess the human behaviour and wellbeing occurring as a result of taking into consideration the different natural sources of electromagnetic radiation and earth energies in the design process of the built environment. Figure 1 shows the research methodology.

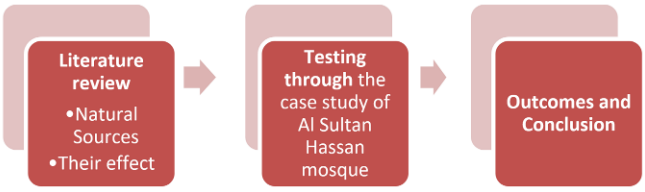

Fig. 1. Research methodology.

5. NATURAL SOURCES OF ELECTROMAGNETIC RADIATION

As mentioned before, electromagnetic fields are composed of both electric and magnetic fields that are invisible areas of energy called radiation. All living things, since the creation of the universe, have been, and are still being exposed to radiation. Electric fields have their strongest power when close to the source, and this power diminishes with increasing the distance from the source. While magnetic fields are produced when the device is switched on and current flows. This is the case with man-made sources of electromagnetic radiation, but with natural sources there is always a flow of this electric current and thus the existence of both electric and magnetic fields. Electric fields can be weakened by walls or other objects, whereas magnetic fields can penetrate living things, buildings, and most other objects [7].

One of the main characteristics of an Electromagnetic field is its frequency or interrelated wavelength. Different frequencies have a different effect and interaction with the body. Figure 2 illustrates the wave component of these electromagnetic fields,

where they are composed of vertical waves of electric field and horizontal waves of magnetic field. The human body has its own energy field, due to the fact that our brain does everything through electrical signals passing through the whole body. The wave components of the human energy field (aura) can interact and be in resonance with horizontal waves only [2]. The human energy field can be in a balanced relation with these waves, but, on the other hand, when the human energy fields resonates with vertical waves a negative effect and disturbance occurs to the balanced system of the human field. This is due to the fact that the human body has only horizontally moving waves. Consequently, any vertical wave that enters the body or interacts with it causes illness, disease and imbalance and energy disturbances. Another reason is that vertical waves carry electrical signals which cause confusion to the originally sent electrical signals by the brain through the body and may cause fake signals in the human body as we are bioelectrical systems as our hearts and brains are regulated through internal bioelectrical signals [8].

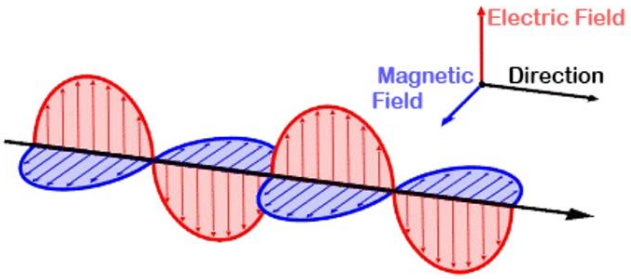

Fig. 2. The electromagnetic wave component.

Consequently, natural sources of electromagnetic radiation should represent one of the main determinants that urban designers and architects should take into consideration during the design of different spaces whether indoor or outdoor as a result to their effect on the human body. Nowadays, the knowledge and awareness about these earth energies is very limited although their influences remain the same. So, the paper will discuss these different sources and gridlines, their dimensions, allocation, and effect on human health and wellbeing.

5.1 Hartmann and Curry Gridlines

These two grids are the most known earth energies worldwide. They represent two different nets with different orientation of universal radiation that covers the whole earth's surface.

5.1.1 Hartmann gridlines

The Hartmann net consists of naturally occurring charged lines running North-South and East-West. It is named after Dr. Ernst Hartmann, a German doctor, that discovered it soon after the 2nd world war. This grid is alternately positively and negatively charged, therefore where the lines intersect it is possible to have double positive charges, double negative charges, or one positive and one negative charge, and it is those intersections that are perceived to be a source of potential problems. Figure 3 shows that the lines exist at a distance of 2 meters in the north-south direction, and 2.5 meters in the East-West direction, whereas between these lines a neutral zone exists. The grid appears as a structure of radiation that extends vertically also from the ground and represent invisible walls of radiation with 21 cm width each [9].

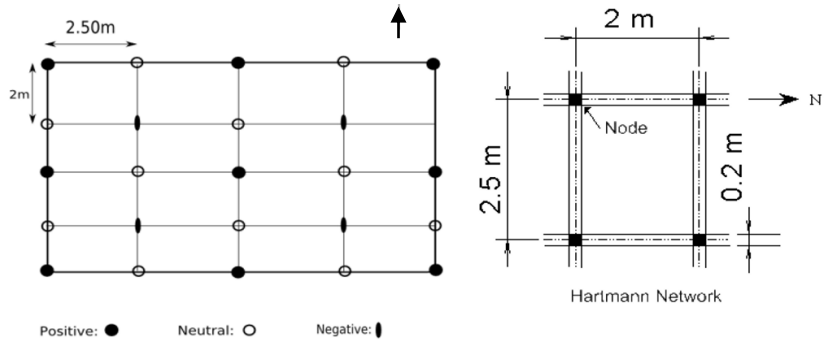

Fig. 3. The Hartmann Energy Gridlines.

The Hartmann net has been defined using the Chinese terms of Yin and Yang. The Yin (North-South lines) is a cold energy which acts slowly, corresponds to winter, and is related to cramps, humidity and all forms of rheumatism. The Yang (East-West lines) is a hot, dry rapidly acting energy. It is related to fire and is linked to inflammations. Generally, intersections of the Hartmann grid lines cause health problems mostly related to muscles and bones [9].

5.1.2 Curry guidelines

This net was named after Dr. Manfred Curry, the one who discovered it. It consists of energy lines that exist at distances ranging from 3-4 meters depending on the geological changes, construction work, and the existence of full moon. The curry net extends in straight lines, with thickness of 40 – 50cm, in the North East- South West and North West – South East directions, with 45 degrees rotation from the North direction as shown in Fig. 4. These lines have alternatively changing charge where any positively charged line is preceded and followed by negatively charged lines and vice versa [9].

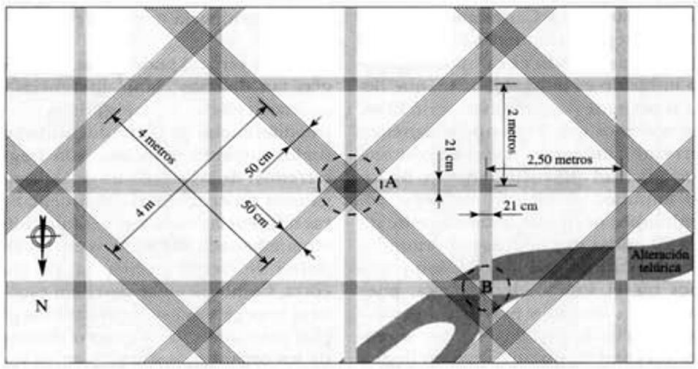

Fig. 4. The Hartmann and Curry gridlines.

Both the Hartmann and Curry energy gridlines include vertical wave (electric) in their wave component, which, as mentioned before, is harmful to the human energy field. Although, as believed by many experts, the harmful effects exist only at the points of intersection especially at the crossings of similarly charged lines, whether positive or negative. Positively charged intersections in the Curry gridlines lead to increased production of the living cell leading to increased risk of tumour development, while negatively charged intersections may cause skin inflammations [10].

On the other hand, other experts believe that these intersections can only cause harm to a person if located directly under his head during sleeping, causing insomnia, depression, or migraine headaches. While it is believed that negatively charged intersections in the Hartmann grid may cause headaches, nervous disturbances, and cramps. These harmful effects are increased if the intersection point consists of more than 3 lines in the case of intersections between both Hartmann and Curry gridlines [11].

5.2 Benker Cube System

This energy system is named after the Australian researcher Anton Banker. It consists of rows and columns of cubes with 10 meters side length and separated by invisible radioactive walls of 1 meter thickness. It is also referred to as the 10 meter system. Each cube is electrically charged with alternatively changing charges through the rows and columns as seen in Fig. 5. This system is similar to the Hartmann grid in its orientation as it extends in the North-South and East-West directions.

It is believed that a positively charged cube encourages and supports life processes, while negatively charged cubes have a calming and relaxing effect. If a person stays for a long time in the positively charged zones of Benker Cube system, his health could be affected through the cause of overstimulation, nervousness, inflammations, and general restlessness. Also when staying for long periods of time in the negatively charged zones, this may suck out the energy from the body and cause weakness in the body functioning and problems in the immune system defense mechanism resulting in the attraction of more illnesses [12].

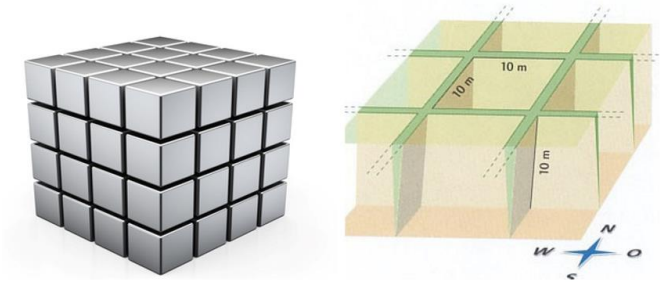

Fig. 5. A simplified representation of the Benker grid.

Moreover, Anton’s experiments showed a connection between Cancer and Multiple sclerosis patients and Benker Cube system. Also the existence of intersections between different energy patterns at one point increases the radiation strength and magnifies the harmful effect to the human body [13].

5.3 Underground Water Streams

Water streams exist under the earth’s surface as underground waterbodies in the form of streams, blind springs, or even rivers. They run between the rocks different layers and they vary in number and size from one place to another. It is believed that water veins

provide good health and good energy when exist in small doses, while, on the other hand, they can be very detrimental to all living organisms and can cause scoliosis and cancer to humans if there exists too much of them or if the human body was subjected to their radiation for a long period of time. Consequently, as shown in Fig. 6 intersection points magnify the effect of the water veins on the surface of the earth causing spinal problems, migraine, headaches, weakening of the body's energy, and can progress to depression, cancer, lung and kidney disorders, circulatory diseases, miscarriages or infertility [12].

Fig. 6. Water veins crossing.

The intersections take place if water veins meet underground creating a broader stream or even if they are separated vertically by multiple layers of rocks as they exist at varying depths. This causes their effect to be magnified as they still crisscross through their radiations. The points of intersection also can cause the acceleration of the disease progression [14]. Water veins crossing each other or intersecting with other energy gridlines are considered to create one of the most stressful zones. Underground water streams cause the strongest electromagnetic radiation when compared to the electromagnetic field created by other energy grid systems [15].

5.4 Ley Lines

Ley lines arise below the surface of the earth, existing between natural landforms that are big, or hollow such as caves, lakes, volcanoes, etc. Many spiritual structures are built over these lines to acquire their power and transfer their energy to the buildings [16]. Ley lines are naturally existing lines but they are partially manipulated by man, they exist along the sacred places and are actively charged in a way or another. They manifest in straight lines that link strong and powerful sacred

spots on earth, at least 5 spots with separating distance not less than 25 miles, and these sacred spots may contain large megaliths (for example menhirs or dolmens), or religious buildings as shown in Fig. 7 [9].

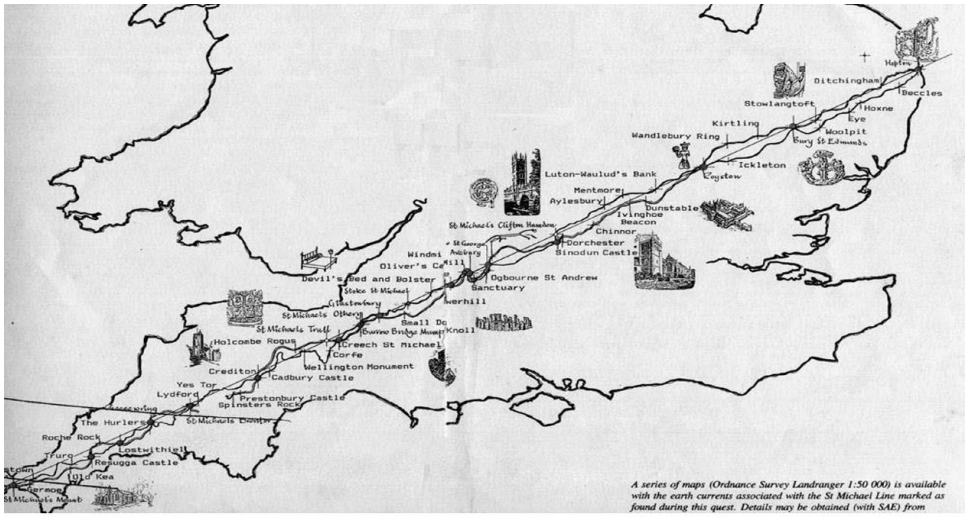

Fig. 7. Churches and monuments aligned on a ley line.

They were discovered by Alfred Watkins, an archaeologist, in 1921 when he was observing a map containing some of the most important holy buildings and monuments, and found that straight lines connect between those important sacred places. He wrote a book named “Old straight track” where he assumed the existence of a network of these straight lines connecting the spaces with the most powerful energy. In 1960 the concept of ley lines started to change with the increase of organizations and groups searching in this field and tracking those lines, they started perceiving those lines as energy lines connecting the most powerful energy centres of the earth creating a network of powerful lines and could actually calculate this energy using special measurements [17]. Figure 8 shows one of these powerful intersections at Glastonbury Tor hill in England that is topped by the roofless St Michael's Tower, a Grade I listed building.

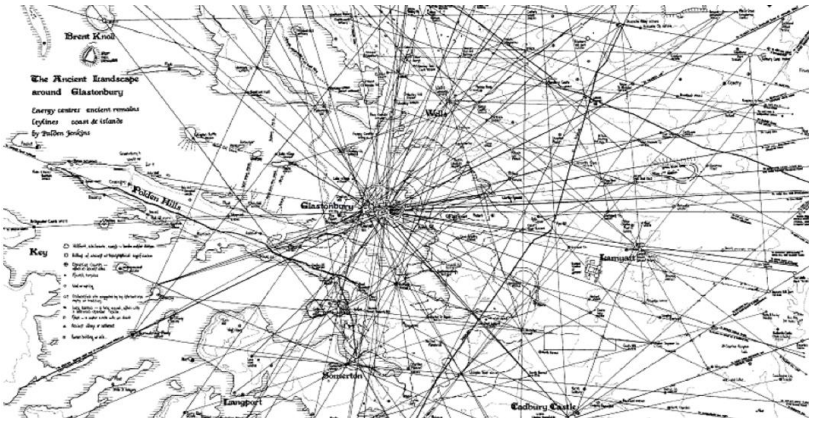

Fig. 8. Glastonbury Tor exists in the intersection point of many Ley lines.

Many old civilizations recognized these lines and the energies they possess and built holy buildings and monuments along these lines. They believed that the points where 3 lines intersect are very powerful energy spots where they place churches on these intersections. In ancient times, they used to mark the spots using Menhirs and Dolmens, and used these sacred spots as healing and energetic spaces. These lines can be found in Africa, Asia, America, India, England, and other parts of the world. Although, on the other hand, it was found that being exposed to these powerful energies for a long period of time can be harmful due to the power of the energy passing through them [18].

6. THE EFFECT OF NATURAL SOURCES OF ELECTROMAGNETIC RADIATION ON HUMAN HEALTH

Along the study of the mentioned natural energy patters, a relationship was found with human health on the physical and psychological levels. Moreover, they have a great effect on the humans' behavior. As a result, many studies took place in this field to better discover these effects. They revealed the existence of either two effects; a healing effect in "Power Spots", or a stressful and harmful effect at "Geopathic Stress Zones".

6.1 Power Spots

Power spots are defined or referred to as some locations and powerful places on earth that are overflowed and saturated with spiritual energy. These are the locations of natural energy where the energy lines of the earth intersect forming a geometric grid known as the Earth Planetary Energetic Grid System as shown in Fig. 9 [19].

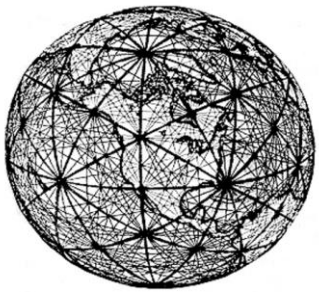

Fig. 9. Earth planetary energetic grid system.

In these spots, the powerful flow of natural integrative energy flowing between earth, sky, and the whole universe is easily perceived. Since prehistoric times, millions of people in the world were mysteriously attracted to these places. These sacred spots have the power and ability to heal the body, enlighten the mind, develop psychic abilities, increase creativity, and heal the soul through increasing the awareness of one's true purpose in life. Ancient civilizations all over the world were aware of this planetary grid and its powerful energy. That's why they built ancient structures in these energetic places such as temples, mosques, shrines, megalithic sites, and churches [19]. The earth energy waves can be simply invoked by placing a conductor such as a large stone, a Menhir or a dolmen for example, is placed onto the energy grid. A corresponding resonance will be detected within the stone and can be adjusted by changing the shape, density, and location of the stone. The resonated energy levels can be amplified if the stone is placed on the intersection of two or more energy gridlines or underground water streams. Megalithic stones follow these principles where the stones are placed over the nodes of Hartmann and Curry earth energy grids such as Le Menec stones that are part of the Carnac Alignments located in Southern Brittany, France. These stones are precisely located and oriented to correspond with the nodes of Hartmann and Curry grids as shown in Fig. 10.

Fig. 10. A cross-sectional view of the alignment of Le Menec stones with earth energy gridlines.

Another example of these megalithic sites is Le Menhir de Champ-Dolent that represents one of the biggest Menhirs in Brittany with height over 10 meters above the earth's surface. This structure is perfectly placed over the nodes of Hartmann and Curry grids in addition to three underground water streams as shown in Fig. 11. These sacred sites and locations of Menhirs and Dolmens are specified by architects using dowsing to find their optimal positions [1].

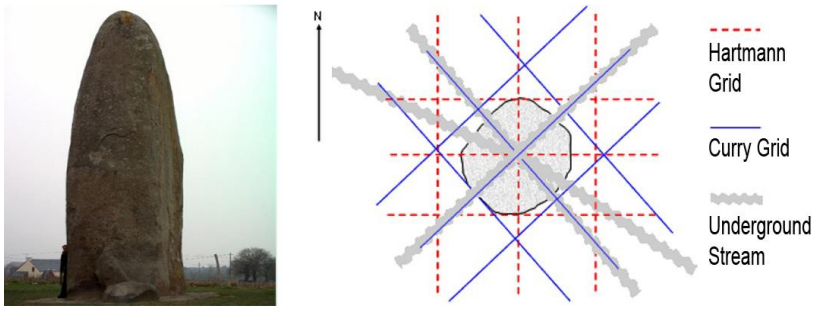

Fig. 11. A cross-sectional view of Le Menhir de Champ-Dolent showing the crossing points of the earth energy currents and underwater streams.

6.2 Geopathic Stress Zones

Geopathic stress represents the harmful earth vibrations that are emitted from the earth's surface and are strengthened by underground water veins, fault lines, certain mineral concentrations, and underground hollow structures. These vibrations become very harmful to living organisms and are considered the main reason for the accelerated increase in cancer and other serious illness that have doubled in the last two decades, see Fig. 12 [13]. Geopathic stress zones are studied through the Geopathology science that deals with pathologic (sickening and harmful) energies that are emitted from the earth's surface and affect the healthy functioning of our bodies' cell metabolism. These zones are mainly created by natural sources but can also increase in effect by interacting with man-made sources of electromagnetic radiation [20].

A relation was detected between Geopathic stress zones and several diseases. The studies showed that being exposed to these harmful energies may not represent the direct cause for the illness but these stressful zones work on weakening the immune system and affecting the natural functioning of some body organs. Geopathic stress can manifest in major symptoms such as sleeping disorders, chronic fatigue syndrome,

rheumatic pains, muscle cramps, depression, migraines and severe headaches, hormonal disorders, frequent miscarriage for pregnant women, difficulties in concentration, persistent illness inspite of taking proper treatment, and the frequent feeling of tiredness in the morning despite of sleeping well. Many studies took place confirming the harmful effects of Geopathic stress zones and the relation between spending time in these zones and persistent illnesses [21].

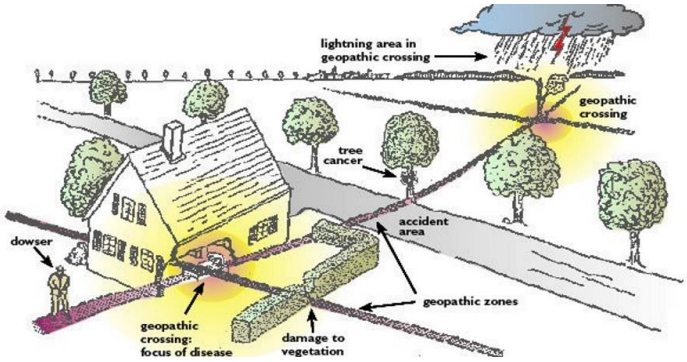

Fig. 12. Geopathic stress zones in earth energy grids intersections.

7. CASE STUDY: AL-SULTAN HASSAN MOSQUE, CAIRO

Al Sultan Hassan mosque was chosen to be the case study of this research aiming to assess the effect of the natural sources of electromagnetic radiation on the behaviour and wellbeing of the users of an indoor built environment that shares some criteria of outdoor environments, such as being exposed to the sky, as some studies confirm that it was built on a strong power spot following the earth energy gridlines throughout the whole plan down to the last detail which in return affects its visitors and promotes it to be one of the most relieving religious and touristic destinations in Cairo not only for its beauty but also for the exclusive impressive effect it has on its visitors [4]. The complex of Al Sultan Hassan was built between 1356 and 1363 during the Mamluk Islamic era in Egypt. It includes a congregational mosque, Islamic school, and a mausoleum. It consists of four iwans for the different 4 Islamic schools arranged around the sahn as shown in Fig. 13. Many people describe Al-Sultan Hassan mosque as one of the unique mosques in the Islamic world with such a unique and magnificent dome and some consider it as the best structure built in Islam [22].

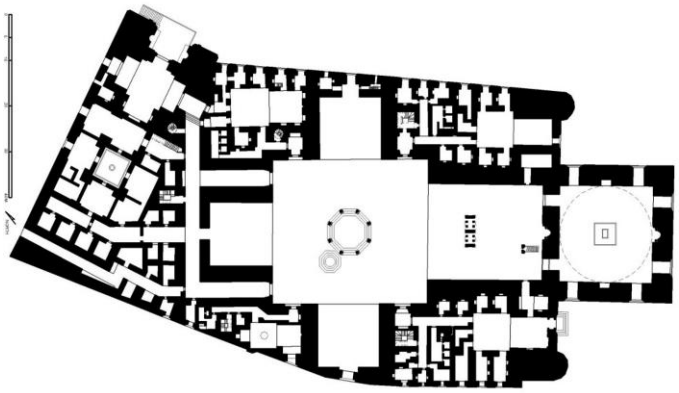

Fig. 13. Floor plan of Al-Sultan Hassan Mosque.

Energy measurements that took place on that mosque also confirmed that it is located on one of the strongest power spots in Cairo. After the analysis of the energy lines and measurements it was found that this power spot exists due to the location of the mosque where there is an intersection of two strong positive energy lines, in addition to the existence of a powerful energy zone at the water well that exists near the mosque [9]. Many people question the refraction in the axis of the mosque although it was built on an empty site as seen in Fig. 14.

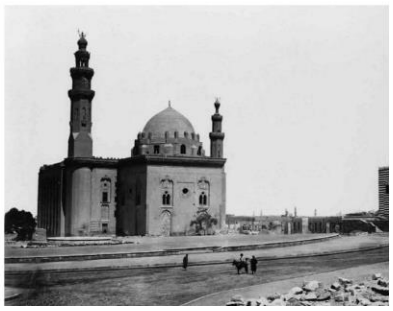

Fig. 14. Al-Sultan Hassan mosque in the late 19th century.

This drift in the axis of the mosque can be related to three reasons:

1. There is an energy line passing through the mosque axis and links it to Al-Nasser Mohamed Ibn Qalawon mosque, creating a link between both mosques' energies (Ley Line).
2. The water well that has very powerful energy lies on the tilted axis and it is very common to link sacred places (the mosque) with sacred water features.

3. The passage of another energy line tangent to the mosque's refracted wall at the entrance that links the mosque with another energy power spot which is "Al-Azbakeyah garden" that was built in 1872 and passing through Mohamed Ali street which forced the balancing energy to pass through this line. Although there is no proof on the existence of this line before the building of the mosque. Maybe this line appeared due to the refraction of the axis of the mosque and the linkage with Al-Azbakeyah garden.

But what is proved till now is that there are 2 energy lines passing through the mosque; one through its axis and the other one parallel to the refracted axis as seen in Fig. 15 [4].

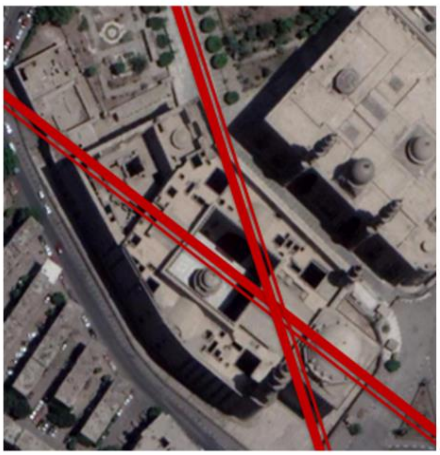

Fig. 15. Energy lines passing through and tangent to Al Sultan Hassan mosque.

Moreover, the energy of the mosque is affected by its form as follows;

1. The refraction in the axis of the mosque created rotation in the form which as a result produced balancing energy to the mosque (One of the Biogeometry design principles) see Fig. 16.

Fig. 16. The refracting effect of the axis of the mosque creating a rotation effect.

2. The interference between the building masses that appears in different parts of the mosque where voids interfere with the form of the mosque such as in the iwans, and other parts creating a link between the sky and building mass generates balancing energy in the mosque, see Fig. 17.

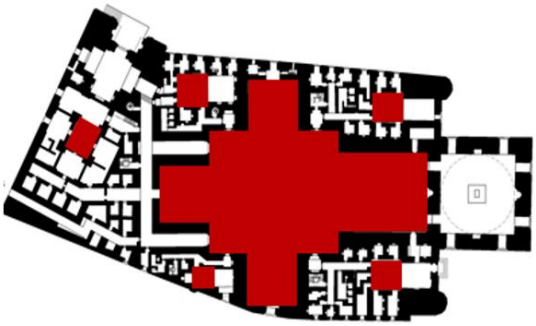

Fig. 17. The penetration of voids through the mass of the mosque.

3. The existence of four iwans in the four sides created a linkage with the centre of the mosque where a water feature was built adding its balancing energy to that of the centre (pointing to the centre creates a balancing energy) [9], see Fig. 18.

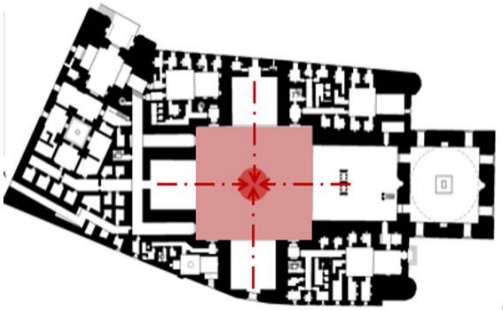

Fig. 18. Pointing to the center of the mosque generates balancing energy.

Consequently, this paper undergoes a case study at Al-Sultan Hassan mosque assessing the effect of following the natural energy grids in the design process on the behaviour and wellbeing of the different space users. A questionnaire was done based on the different criteria collected from multiple sources to assess the effect of the mosque's existence over a power spot and whether it really affected the users or not [13-22]. This questionnaire focused on the 2 sectors of assessment; Human behaviour, and Human wellbeing. Human behaviour was assessed through observations, and through questioning the different activities that people perform inside the Sahn, how long they stay there, and if they prefer sitting in a specific spot inside the inner space of the mosque. The Wellbeing was assessed using questions related to users' complains, how they feel in the atmosphere inside the mosque, their ability to concentrate and memorize, their creativity level inside, whether they suffer from headaches inside, and whether their illnesses (if exist) feel better or worse after spending some time inside.

A random sample of 25 people from those who were inside the mosque was taken in a regular day where no event was taking place there. The sample target group started from age 16 years old till 60 years old as younger than this age may provide in accurate date and older people may be already attached to the place which would by default give them a feeling of satisfaction and relief being there. The questionnaire was answered by visitors with different ages and gender and sitting all over the mosque not in a specific zone.

Based on the collected data from the questionnaire and through observations, the mosque represents an important destination for most of the sample although the fact that it does not lie in their residential zone or even in their city as around 85% of the sample do not live near the mosque (assuming that the mosque would cover a distance of radius 1 kilometer) and some of them also live outside Cairo. The questionnaire also shows that more than 50% of the collected sample consists of females although the sample was taken on a Friday morning where mostly men go to mosques for Al-Gumaa prayer. Also, a wide range of ages was found where whole families visit the mosque and gather there, see Fig. 19.

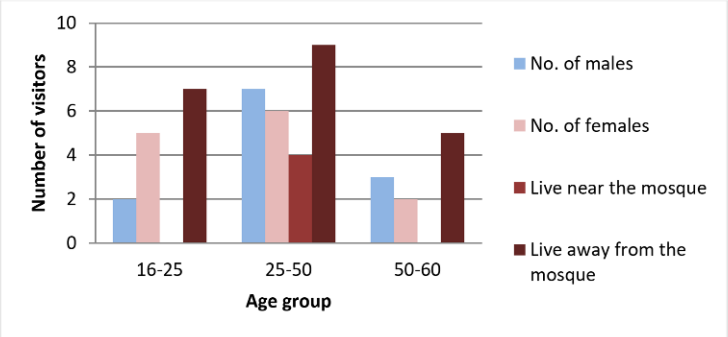

Fig. 19. A chart showing the relation between visitors' age, gender, and residence location.

Figure 20 shows that people visit the mosque on a regular basis, where 56% visit the mosque every week, 24% every month, 8% twice a month, and 12% visit it twice a year, putting into consideration that these percentages are prone to change if a larger sample was taken. This shows the bond that exists between most of the sample and the mosque, and further questions were used to identify the reason behind this bond.

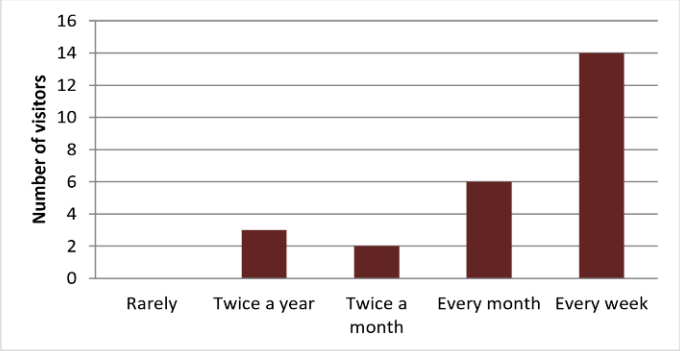

Fig. 20. A chart showing how frequent people visit the mosque.

Based on the collected data in Fig. 21, a huge percentage of the sample visits the mosque to mediate where 60% of the sample mentioned that. Moreover, some of them also mentioned encouraging their friends and family to join them to meditate inside Al-Sultan Hassan mosque. In addition to that, around 76% come to pray, 32% come to read, 36% go with their friends where they talk, draw, or even take a nap. Other activities were added by the visitors who mentioned that a quite number of people come to draw and others also mentioned writing poetry, indicating an increased level of creativity inside the mosque.

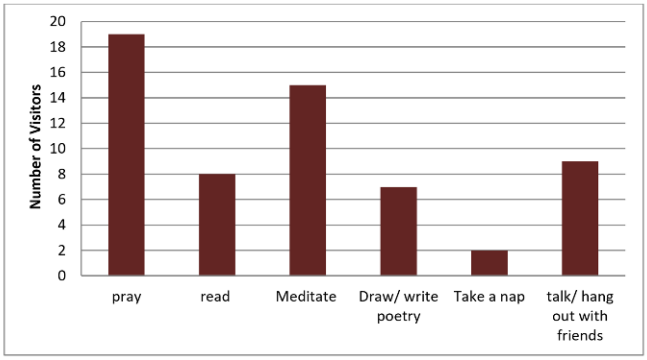

Fig. 21. The different activities performed inside the mosque.

The whole sample confirms feeling satisfied and experiences a unique feeling of intimacy and relaxation, see Fig. 22. Moreover, the entire gathered sample stated that they feel much better after spending sometime inside the mosque where they answered using "*Yes, very much."* when they were asked about the way they feel there after staying inside for a while. They mentioned the sense of high levels of positive energy and the happiness this brings to them, and they added that after a while they start losing any negative energy. Most of the sample also added that when they leave it feels as if they recharged their energy and have more passion to proceed with their lives. Shows that around 68% spend more than one hour inside which clarifies that they feel satisfaction and relief in the mosque, see Fig. 23.

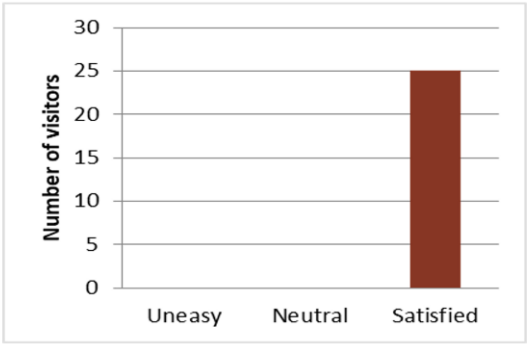

Fig. 22. A chart showing the satisfaction level of the mosque visitors.

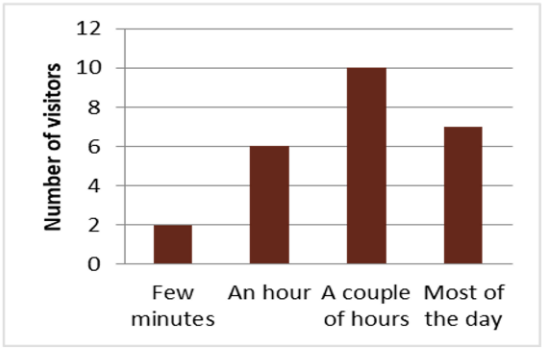

Fig. 23. A chart showing the estimated time visitors spend inside the mosque.

In addition, 76% of the limited sample stated that they have a favourite spot inside the mosque, while 24% did not stay in a specific spot each visit. Those favourite spots were allocated in the 4 iwans all around the sahn, indicating that the whole place is

filled with positive and balancing energy not just a specific spot. 88% of the sample confirmed that the way they feel inside Al-Sultan Hassan mosque is uniqueand that they do not feel the same way in any other place. Some also added that they can feel the same way in Al-Hakem B-Amr Allah mosque. On the other hand, 12% said that they feel better at Al-Refai mosque, which can be investigated in further research.

The entire sample denied having any health complains after staying inside the sahn for a while. On the contrary they mentioned that a feeling of relief, satisfaction, and energy is felt there, where they forget everything outside as if they were in another world. 88% experiences a better ability to concentrate and memorize data, as some of them mentioned being able to memorize a lot of things when they are inside the mosque, in addition to experiencing a better ability to relax and think in an organized way which indeed increases their concentration ability. The remaining 12% denied having any difficulties in concentration or memorizing while staying inside, see Fig. 24.

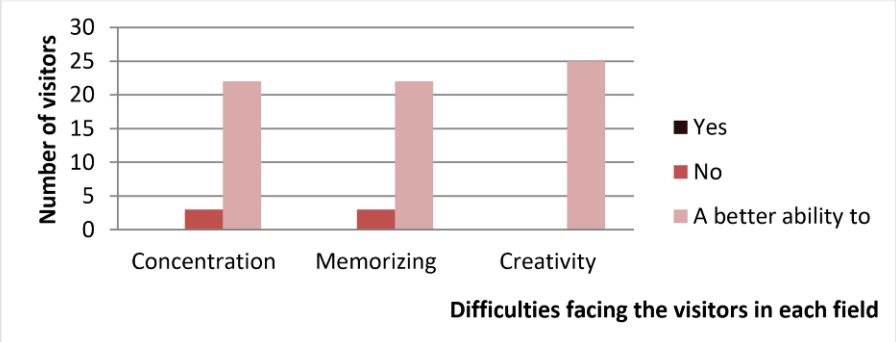

Fig. 24. A chart indicating that most of the collected sample has a better ability to concentrate memorize, and enjoy creativity inside the mosque.

On the physical level, people rarely suffer from headaches or any illness inside the mosque where only 4% of the sample suffered from headaches which may be related to any other external reason. On the other hand, around 40% stated that if they suffered from any headache and enter the mosque, this headache is actually cured due to the good balancing energy revolving in the whole place. Moreover only 2 from the random sample suffered from chronic illnesses and they mentioned that it does not feel any worse after spending some time inside the mosque. This eliminates the probability of the existence of any geopathic stress in the place, on the contrary this clarifies the

existence of a very strong power spot that has the ability to cure people, enhance their abilities, and create a better environment for the users.

To sum up the results of this case study, regarding our two sectors of assessment; Human behavior and Wellbeing, we can find that in assessing the behavior, people perform different activities other than the major activity of Al-Sultan Hassan mosque which is to pray. They spend much more time than the regular time spent by visitors inside mosques doing other activities such as meditating, hanging out with their friends, reading, drawing and writing poetry, and even taking a nap as shown in Fig. 25.

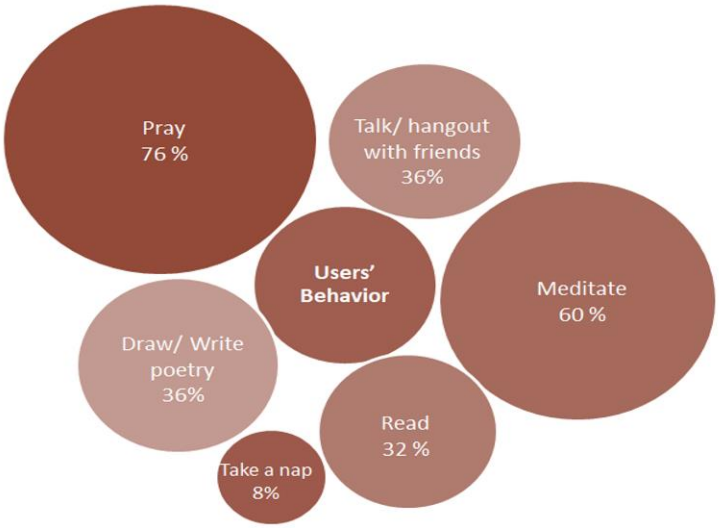

Fig. 25. The activities performed by the visitors of Al-Sultan Hassan mosque.

Reagarding the wellbeing, it was assessed relevant to its three main pillars; Physical wellbeing, mental wellbeing, and spiritual wellbeing using different questions as shown in Fig. 26.

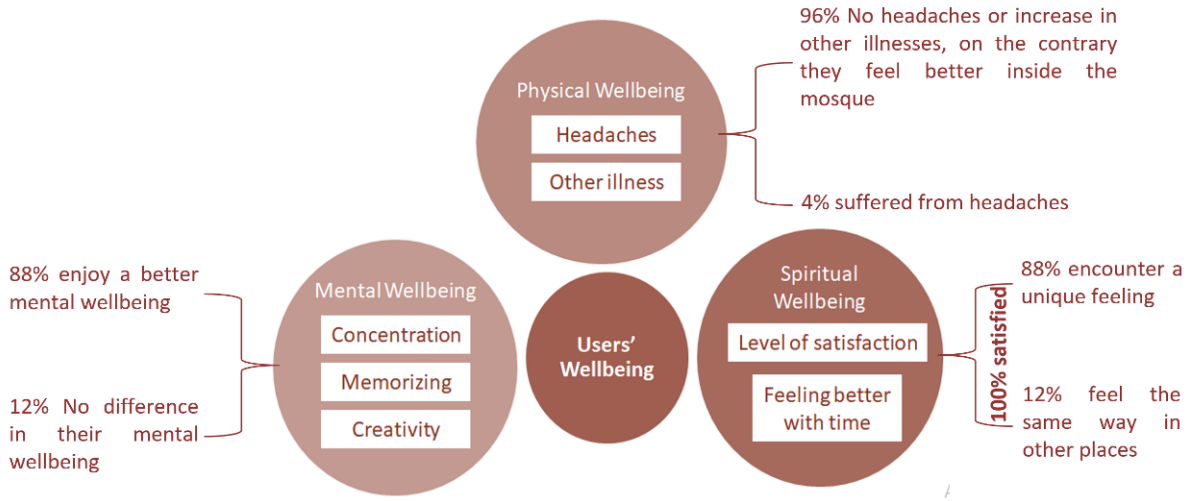

Fig. 26. A diagram showing assessing the wellbeing relative to its 3 main pillars.

8. CONCLUSION

Being designed based on the earth energy gridlines makes Al-Sultan Hassan mosque one of the most attractive power spots as mentioned in Dr. Ibrahim Karim's book "Back To A Future For Mankind". The effect of this power spot is sensed by the whole sample which drives them to create a linkage bond with this mosque and to visit it on a regular basis. This is caused by the power spot on which the mosque is allocated and that spreads positive and balancing energy all over the place not in a specific area as mentioned above. Moreover, the water feature in the middle works on harmonizing the whole place where the 4 iwans are gathered around it as if they are pointing to the center creating also another quality of balancing energy.

The research clearly justifies the existence of this knowledge in our history but it was lost and ignored throughout the years and with the advancement of technology where people no longer paid attention to nature or to bonding with it.

Finally, more extensive research in this field and a larger sample may reveal deeper outcomes. Upcoming articles may target exploring a link between the future of creating new buildings and urban spaces and allocating the different earth energy grids with the help of dowsers and specialized professionals to guarantee a better quality of the built environment.

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تقييم تأثير الإشعاع الكهرومغناطيسي على الانسان في البيئة المبنية

يناقش البحث أهمية اعتبار معايير الطاقة أثناء تصميم البيئة المبنية ومراعاة شبكات الطاقة الأرضية الأمر الذي سيؤثر بشكل كبيرعلى سلوك وصحة مستخدمي الفراغ. تم ذلك من خلال دراسة استكشافية لتقييم تأثير هذه المصادرعلى صحة الإنسان وسلوكه في مسجد السلطان حسن باستخدام الملاحظات واستبيان ممنهج تم اختيار أسئلته من دراسات سابقة استخدمت للتحقيق والبحث في هذه العلاقة بين المصادر الطبيعية للإشعاع الكهرومغناطيسي وصحة الإنسان. أكد الاستبيان أن مراعاة شبكات الطاقة الأرضية في عملية التصميم ، كما هو الحال في مسجد السلطان حسن ، يؤثر على مستخدمى الفراغ بطريقة إيجابية ويخلق فراغ متوازن يقوم على تعزيز قدراتهم وصحتهم بشكل كبير.