Towards public spaces compatible with climatic changes in Egyptian societies.  
An applied study on open spaces in (Madinaty)

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Abstract- The inability to both exists or work together in the open city-based spaces where there are lots of homes and communities with climate changes is due to the lack of a clear way of doing things for this, as well as the increase in the costs of buildings and the increase in their maintenance expenses. The lack of interest in coordinating spaces led to the blurring of public, semi-public, and private properties, and affected the use of these areas. The lack of organization in the areas and the holy things that showed them led to the fact that every community of people in Egypt identified the needs, in terms of arranging studies for them and searching for means of communication that would address them. And follow-up between the city-based community and the connected or related scientific and research bodies. Not presenting of a clear way of doing things to improve the use of these open areas represents a waste of visually useful things as the growth of cities with more people in those cities, in addition to other negative dimensions. With planners and designer builders ignoring the design of spaces of all kinds and shapes, the problems of this important thing event increased, and people began to think about the importance of solutions to city-based spaces and surrounding conditions good for housing in Egypt.

The research aims to find a way of doing things that matches the open spaces in city-based communities and the creation and construction of their city-based spaces - especially, compatible with the Earth’s weather and to reach the goals and foundations that control the shape of city-based space in modern open city-based and apply this to the Madinaty housing model in the new communities in Egypt.

Keywords- public spaces, climatic changes, Egyptian societies.

I. INTRODUCTION AND METHODOLOGY

City-based spaces play a big part in the city-based fabric of any housing layout, and they always have direct and indirect effects on wasting very little while working or producing something of these big plans due to their constant association with where there are lots of homes use due to their great influence and effect on them. Defining the borders of individual space and the total of everything or everyone space of man is a natural and automatically needed thing. This applies to all parts of life inside and outside the home. Defining and defining the different city-based spaces within where there are lots of homes areas have many advantages, including giving a sense of self-worth, and exercising their freedom in their area, their gardens, their homes... without fear of storming their residents, which gives to encouraging them to chase after maintenance All kinds of spaces - squares or open squares. Or gardens that often reduce the level of dishonest actions that ruin your trust or destruction of public property. It is not easy to remove the idea of creating city-based spaces in the city, as each creation and construction is an addition that shows the nature and quality of people's movement within the city. To give quality features and special artistic values to the city and the city-based spaces where there are lots of homes areas, it is necessary to study the city-based spaces in the city and figure out the dimensions that affect their construction and place them in the appropriate focus needed, and there are some identifies of city-based space that is the ability to equally measure the main elements of the human scale through the study of the personality tics of man, his movements, and his amazing out of this world activity. This space consists of squares, and streets, related to people on foot walkways, helped grow spaces, open squares, and how the elements have different things working together as one unit. Because of this, the research paper aims to define and develop a way(s) of doing things for open spaces to change to fit climate changes, as it greatly affected the process of city-based creation and construction of objects in general and the creation and construction of objects of city-based spaces especially, and so this research paper tries to reach a set of general foundations. Goals of a city-based combination of different substances, objects, people, etc. elements of spaces in new cities and their computer program to an Egyptian example.

The research depends on the functional classification approach that was developed within the solid basic structure on which bigger things can be built, the analysis of the open space in the case study (Madinity), and the review and the process of figuring out the worth, amount, or quality of something of the thought behind the planning and creation and construction of city-based spaces in it, and then access to a set of standards and foundations that It can be generalized in almost the same city-based communities in Egypt.

Creation and construction of objects in City-based Spaces in Cities Space represents the time-related extension of things believed in the mind in geometry. It is carefully thought about as a symbol of different sizes, shapes, locations, distances, and directions. Life moves in permanent changes, and time and space are just relative states, and the elements of space creation and construction of objects in the city have general features that are divided into three main elements: represented in the related to space or existing in space aspects, the visual and beauty-related parts of the spaces, and the functional parts of the space. City-based creation and construction objects are
concerned with carefully studying tides' internal city-based and visible setup.

The internal composition of the city can be determined through the network of streets, the distribution of buildings in it, and their relationship to the existing urban spaces between them, whether they are regular or irregular - changing according to the topographical nature of the site, and we find that the buildings are in their colors. The materials used in the formation of corridors, alleys, gardens, and squares affect them. The city's main urban fabric is decorated with details, motifs, fountains, trees, lampposts, and brushes in the streets and stadiums..., etc. [1].

Fixed space: the environment can be conceived as a system of places and its fixed form conveys a sense of stillness and accomplishment.

The New Egyptian City Madinaty housing model to conclude the extent to which it meets the standards of conformity with the climatic changes proposed by the research, where the research relies on the functional classification approach that was developed within the framework of the comparative analytical scientific method, through the theoretical study, through which the study and careful analysis of "urban spaces" is carried out. A methodology is designed for open spaces with urban spaces. Then the applied study is discussed. The idea behind the planning and construction of city-based spaces in some new cities in Egypt is reviewed and figured out the worth, amount, or quality of, and then the something is truly what it claims to be and ability to be used for something of the applied results are serious and stubborn through apply what has been accomplished or gained with effort.

It is a set of general features, where each space has a separate use and personality and has a shape, size and dimensions, Material, color, and texture. When looking at the city within the solid basic structure on which bigger things can be built of the overall design, one must understand that it is a collection of spaces Spreading and flowing through the blocks of buildings, each void has its shape, size, and features, not just a collection of different building Properties and elements are built on the ground in a strict pattern or a random manner. And by studying the features of the city the spaces, placed in the appropriate and desired focus for them, show the having unique quality features and artistic values designed only for happening only within the city. Below is a presentation of the properties of space, which include shapes, functions, total spaces occupied by things, proportions, and parts.

- Space and its gradation:
  - The ultimate space is divided into two parts: static space and dynamic space.
  - Perfection Fixed space tends to be circular or square and accompanies space. that form of movement and change.
  - Dynamic space:
    - where the environment can be imagined as a system of "tracks", which suggests they tend to be linear and roadblocking. A single area or field can contain both static and dynamic space. - Sizes and measurements in the streets and their spaces Area measurement: The prevailing measurement is studied by studying the prevailing measurements in streets, spaces, and building sizes.

It can be measured in an urban area by comparing volumes, mass, area, and detail within other standard volumes and there are many measurements of the spaces, some of these spaces are defined by the scale of the human being and his movement, and some are defined by the machinery he uses, such as a car. In all cases, the measurement of the area must be determined based on the purpose for which it was established. As Japanese architect Yoshino Achaar puts it, "The comparison used in designing an outdoor space is appropriate when represents about 8-10 times that of an almost the same indoor area, and a person has a 75-degree field of view, but in a field of view at an angle of 45 degrees, he can see any level of detail" [2].

- Types of voids in the city are divided into two types:
  - Natural spaces are those that are serious and stubborn and shaped by natural elements (mountains - hills - coasts and beaches - valleys, and plains that he possesses experience with practical applications - forests ... etc.). Impressions about life, energy, activity, nature, and its secrets, and changing to fit [2].
  - Man-made spaces, which are defined by man-made elements, are divided into two spaces: an external space and an urban space. Four-dimensional through which we see what surrounds us with buildings, facilities, and landscapes, and its surface works with the rest of the surrounding elements buildings, and the shape of the earth. The urban space is the second type of urban space manufactured by human hands, in which there is privacy and sometimes calm and solitude. Fun, the sensations, and feelings resulting from the spaces where the feeling of the precise scale or the large scale or the narrow scale plays a gradual role in pedestrian streets, lanes, and alleys according to the human scale, the very narrow passages according to the intimate scale, the main voids, and the important buildings of grand scale. When designing any space for a specific function, we must define the basic features required, then do what we can to discover and work on them, and any void that evokes certain feelings and sensations that affect the same viewer and predispose emotional and psychological responses from them, such as feelings attention and tension, relaxation, fear, joy, contemplation, thinking, anticipation, fondness, and sensual passion, etc.). Hence, we consider the possibility that the space is a space that achieves the feeling required of it according to the function assigned to it is ideal space. It is flexible enough with multiple uses or changing climatic conditions. Therefore, when designing different spaces, it is each of them must requirements of use assigned to them. With their function and uses, and interconnected with each other, the feelings and sensations elicited by these voids are compatible with the size of the void. The void volumes have a strong psychological effect on human feeling and behavior, so when it is too large, it will generate thoughts of intimacy and a sense of lack of protection within the void, but if the space volume is small to some extent, a person will have an internal feeling of distress and discomfort. As for the space size with dimensions suitable for the person.
and compatible with the assigned function, the person will feel comfortable, relaxed, and beautiful by the size anywhere with the user-designed for it [3].

- Types and steps of void: Types of voids the nothingness in the city are divided into two types: natural voids and man-made voids as follows:
  - While man-made spaces in the city are usually divided into two types: public spaces, which represent life and movement in the street - public buildings - commercial spaces – and public parks, whether they are at the level of the city, or neighborhood, [4].
  - And private spaces: Where the search for calm, privacy, and solitude, where a person has a basic requirement is defining the boundaries of his personal space and collective space, and this applies to all aspects of life inside and outside the dwelling, and no doubt defining and defining the different urban spaces within residential areas has many benefits, including:
    - Giving residents a sense of self – Enabling residents to give individuality and exercise their freedom (in their area, garden, homes) without fear of public intrusion – and for each inhabitant to have an idea of who owns what (this helps encourages residents to supervise the maintenance of spaces – whether they are open areas or gardens and reduces Of course, from the level of vandalism to public property), and urban spaces are graded according to their uses into four levels:
    - Semi-private spaces: their use is limited to an individual or a specific family at most, and some household chores a practiced in them, such as internal courtyards, front and back gardens, and terraces [5].

Semi-private spaces:

- They are used by a group of people or a limited number of families, and they give a sense of neighborhood, such as the entrances to buildings and the spaces confined between a group of houses.
- The visual and beauty-related parts of the space consist of the elements of visual perception of the spaces and the extent of their visual honor/difference, through a set of basic elements represented in (the elements of visual perception, the visual image of the city, and the elements of site coordination) [6].
  - The effect of spaces on the visual (creation and construction/ group of objects) of the city: In terms of (the quality of being unlike anything else in the world) - control - increasing the symbolic and moral importance - telling apart the city's city-based character).
  - The effect of spaces on the elements of the city's visual image in terms of (having a unique quality) signs - paths - visual neighborhoods - borders - gathering areas - gates). (The study of beauty) and elements of site coordination and on the axes of (walking person/related to people on foot) and machine movement in the city. The functional parts of the space are affected as a result of the change in the type of uses and their hit/effect on the shape and design of the space - Change in the distribution of land uses in the city - The relations of the spaces and their relationship to the main activities in the city such as

the mosque, the social, and (related to computers and science) dimensions are represented in the set of relations between the population through the extent of interaction and connections between different (communities of people) (throughout history/many years to come). It appears in (more than two, but not a lot of) forms in a group of activities and spaces and a group of interactions between them [7].

The social dimensions are represented in:

- Semi-public spaces: these are public spaces for (more than two, but not a lot of) people, such as the nearby garden, parking lots, and open spaces confined between public and private spaces.
- Public spaces: they are used by all residents of the city - residents and visitors - and are among the distinguishing features of the city, such as streets with their degrees and shapes and public parks of all kinds [8].

II. HEALTHY OPEN PUBLIC SPACES:

And we can define Healthy open public spaces are important places in most cities, as they are carefully thought about/believed a solution to what is produced by fast (growth of cities with more people) that doesn't have health and safety parts/pieces, and they should be viewed in the big picture of important issues such as climate change: they are classified as spaces that add/give to reducing the increase in carbon gas, worldwide warming, stress levels, and improving Mental health and well-being and add/give to children's development.

Also, they are spaces that add/give to reducing stress levels and improving mental health and well-being.

III. CASE STUDY (MADINATY - NEW CAIRO - GREATER CAIRO AREA):

Madinaty is located as an extension of New Cairo, on the 33rd-kilometer Cairo-Suez Road, before Cairo, the entrance to El-Shorouk City is 2 km away, as it is 11 minutes from Heliopolis and 21 minutes from Downtown Cairo, located on the second ring road, which is now being built, is carefully thought about/believed Madinaty. And one of the best projects in Cairo, which was /together designed by three of the largest companies American companies (made to do one thing very well) in designing new cities, SWA, HHCP, SASAKI International, where the current and future needs of residents and visitors were taken into account when Design and planning, it is seen as the different areas of villas And buildings that include a group of wide green spaces, golf courses, and hotels in addition to the daily services that provide the needs of housing and recreational areas.

-The community in Madinaty is carefully thought about/believed a community capable of applying standards because of its interest in the development and the social level of its residents.

-The Madinaty project was chosen because it is one of Egypt's latest giants where there are lots of home projects.
-The Madinaty project is different from other projects in that it aims to create a community. Fig 1 The general plan of my city.

Figure 1. The general plan of my city  
Source: http://www.madinaty.com/Ar/Project.aspx  

3-1 Study Case Selection Judging requirements:
- One of the neighborhoods of the Madinaty project was chosen specifically, the fourth neighborhood as it has been operating for a period, which helped the process of watching/supervising the pros and cons of the project. Fig 2 The general plan of the fourth group of villas in Madinaty

Figure 2. The general plan of the fourth group of villas in Madinaty  
Source: http://WWW.madinaty.com/Ar/Project.aspx  

IV. CONDITIONS THAT MUST BE MET IN OPEN, HEALTHY PUBLIC SPACES:
- High quality, easy to get to, use, or understand, culturally appropriate, and well connected to streets and facilities.
- It is developed with the participation of community parties.
- Provide different opportunities for physical activity, access to a set of natural conditions, and provide a children's play area.
- Respecting and providing for many kinds of people or things range of cultures, and ages, and related to how much money and power people have abilities.
- Preserving and improving cultural history.
- Availability of construction opportunities while respecting the advantages of nature, which helps increase deep connection to the place.
- Create safe and healthy places to communicate with others and well-being and mental relaxation.

A set of judging requirements was proposed on reference backgrounds, and a list of questions containing these judging requirements was prepared [11].

V. PROPOSED (SUCCESS PLAN OF REACHING GOALS) IN OPEN, HEALTHY PUBLIC SPACES THAT FACE CLIMATE CHANGE:

5-1 Location, Streets, and Transportation:
Transportation and healthy easy-to-get-to-, easy-to-get-to-use, or understand streets play an important role in protecting from harm, encouraging non-motorization, transportation, and physical activity, and reducing traffic injuries with improved, better quality, and safer streets.

5-1-1 street design: [12].
Adding another lane for cyclists and walking people leads to heal social more social, able to last, cities that affect the behavior of people who lawfully live in a country, state, etc., and make the street more attractive to walking people Fig 3.

Figure 3. Adding another lane for cyclists  

Setting new standards for the use of sidewalks
Preventing cars from passing through some streets and providing more spaces for walking people and cyclists, which turns the city green and reduces carbon emissions. (Rueda, 2019)

5-2 Water use (wasting very little while working or producing something):
- Reducing water use:
  using sprinkler crop-watering with water to irrigate crops on-site and using recycled water from rain and sewage for all crop-watering with water purposes.
- Develop controls and follow-up to avoid wasting water in other countries.
- Rainwater management: A rainwater drainage network must be available on all roads and drainage points in the middle of the gardens. It is drained with the water network at the
lowest point, and it is recycled at the treatment plant and used for crop-watering with water purposes Fig 4.

Figure 4. Rainwater management
(Source: The (person who works to find information) Behaves.).

5-3 Social:
- Availability of open spaces:
  - Places for people that improve social contact,
  - this way increasing social sticking together and social including in something.
  - they provide opportunities for lifelong education and learning.
  - Create opportunities for community participation in related to surrounding conditions or the health of the Earth care.
  - Well-designed spaces can improve a sense of place and be a source of community pride, helping to reduce crime and the fear of crime.
  - Engage in highly social activities.
  - They also provide opportunities for physical activity, which helps increase in a good way active and healthy ways of living.

5-4 Air quality:
- First: protection of public health.
- Secondary: Protecting public welfare, including protection against reduced visibility. A set of rules has been established, including how existing all around you quiet and relaxing air quality is watched supervised, figured out the worth, amount, or quality, and managed.
- Air pollution: Air pollution adds/gives to climate change, of mog, and climate change increases the production of air that causes bad body reactions.

5-5 Public Health
- Even though there is the existence of improvements in medical technology allowing humans to recover from many sicknesses and medical conditions, being connected to green surrounding conditions still offers great benefits for mental health and mental well-being.

5-6 Physical activity
- Studies of physically active middle and older adults show that there are significant benefits when physical activities are combined with green space surrounding conditions.
- This pairing lower stress levels and the risk of depression.

- In addition to increasing the frequency of participation in the exercise. The degree of exercise strength does not affect the degree of use of the green space. Casual group walks in green surrounding conditions, nature walks.
- They increase positive and reduce stress levels as well as the risk of depression.
- Research points to that when outdoor spaces are attractive and easy to get to, use, or understand, people are more likely to start/work at physical activity, which has clear possible health benefits.

5-7 Green areas:
- Access to green spaces is a human need that reduces stress, improves physical, mental, and mental health, and improves the importance of visual access to nature.
- The need to create more spaces and practices for individual use in planning green and open spaces, such as: expanding running tracks and other activities that help increase health and fitness.
- Allowing people to enjoy public spaces and parks that do what is called Social Distancing Circles.
- Climate change causes many threats to the health and well-being of all humans. Climate change affects the food we eat, the air we breathe, the water we drink, and the places that shelter us. Climate change can also affect people's health and well-being by changing the frequency or strength of extreme weather events and the spread of certain pests and sicknesses.
- Climate change affects people's health in two main ways:
  - By changing the seriousness or frequency of health problems that people already face.
  - By creating new or unexpected health problems in people's places where they have not been before.
- A person's weakness to climate change effects depends on three key factors:
  - Exposure. People will meet climate dangers differently.
  - Sensitivity. Some people are more sensitive than others to climate dangers due to factors like age and conditions. For example, children and adults with breathing diseases are especially sensitive to air and wildfire smoke. Adaptive capacity. People can adjust to, take advantage of, or respond to climate change hazards. A person's ability to adapt may depend upon their income, age, living situation, access to health care, and many other factors. Fig 5
Communication and community participation: one of the most important reasons for success

Madinaty's project is about paying attention to customers’ opinions, so customer opinions were taken. For those who abstained from purchasing in the first stages, and all their needs were met design of new units, including neighboring ones.

- Through these influences, healthy open public spaces were developed [15].

VI. HEALTHY PUBLIC OPEN SPACES (SUCCESS PLAN OF REACHING GOALS):

- Provide healthy open public spaces in the city that meet the needs of people who lawfully live in a country, state, etc. for fun/relaxation, slow walking, sports jogging, and unobstructed slopes, to form a slow-walking fitness trail system, to improve the comfort, how easy something is to get to, use, or understand and reactions or responses to something helpful returned information of walking space, to help increase, show in a good way national fitness knowing about something, to attract health sports, Through the creation of the beginning of the existence of city-based activity centers, parks, and other activity spaces by providing places for daily activities such as communication, recreation, and exercise to create open public activity spaces to improve the quality of city-based life and form a safe, friendly and comfortable living surrounding conditions; Create multi-functional neighborhoods with pleasant walking standards, strengthen communication between different classes, and create a full of life city[16].

VII. LIST OF QUESTIONS INDICATORS:

- The research was based on the social descriptive approach by making lists of questions for the residents of Madinaty to find out the extent to which the following indicators apply to nothingness:
  - Location, Streets, and Transportation
  - Healthy Places, locations, and surrounding conditions
  - Water use (wasting very little while working or producing something)
  - Air quality
  - Comfort
  - Human Culture
  - Social
  - Service
  - Fitness
  - Outdoor (related to surrounding conditions or the health of the Earth) Quality
  - People with disabilities
  - Children

- The community of the study sample was decided to be a group of the residents of Madinaty, as well as the visitors to it, and lists of questions were distributed, amounting to 350 samples, until the saturation stage was reached, and almost the same repeated answers were reached at this number.
Survey Questions:

<table>
<thead>
<tr>
<th>Highly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Highly disagree</th>
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<tbody>
<tr>
<td>Location, Street, and transportation</td>
<td></td>
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<tr>
<td>Awareness of Surrounding Density and Diverse Uses</td>
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<td>Awareness of Bicycle Facilities</td>
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<td>Awareness of Reduced Parking Footprint</td>
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<td>Awareness of Access to Quality Transit</td>
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<td>Awareness of Electric Vehicles</td>
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<tr>
<td>The street includes a sidewalk and cycling</td>
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<td>The street encourages the use of public transportation</td>
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<td>The street achieves the criterion of comfort</td>
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<td>Sufficient parking space is available</td>
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<tr>
<td>Awareness of afforestation and street shading</td>
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<tr>
<td>Awareness of limiting the spread of pollutants in the streets and transportation</td>
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Healthy Sites, Environment

- Awareness of Air Quality Precaution
- Awareness of Open Space
- Awareness of Light Pollution Reduction
- Awareness of Site Assessment
- Awareness of household waste treatment
- Awareness of green areas per capita
- Prioritize healthy green spaces
- Building stronger collaborative governance of healthy public spaces
- Enhance carbon storage

Environmental resource management

- Awareness of natural performance according to the environmental systems
- Garbage collection and waste disposal method

Water Efficiency

- Water environment: waterlogging control design
- Awareness of Rainwater Management
- Awareness of no mixing of rain and wastewater
- Awareness of Reducing Water Use
- Awareness of Optimize Process Water Use
- Awareness of Water Metering
- Awareness of using recycled water from rainwater and sewage in irrigation work

Air

- Air quality – Outdoor air quality
- Smoke-Free Environment
- Afforest: adapting landscape greening measures to reduce open space air pollution
- Monitoring outdoor air quality

People with disabilities

- Disability: Reasonable planning of the open space acoustic environment functional zoning
- Light: Avoid light pollution
- Light: Smart lighting system management
- Heat: Weakening the heat island effect
- Lighting design and control of glare and daylight
- Heat: Extreme weather warning

Outdoor Environmental Quality

- Thermal comfort awareness
- Awareness of quality of open spaces
- The quality of the open spaces
- Awareness of relative humidity
- Awareness of dynamic regulation of the thermal environment
- Participate in the design of open public spaces
- Increase opportunities to play, walk freely, and participate in nature

Fitness

- Fitness space: reasonable and complete facilities (physical exercise space, physical and mental fitness improvement, and comfortable furniture)
- Provides a suitable and safe fitness space for the elderly
- Providing open sports areas

Comfort

- Designing healthy public spaces to accommodate the diversity of people with physical, knowledge, sensory, and mental disabilities
- Path furniture or signage is appropriate for people with disabilities
- Widen the sidewalks adequately
- Expanding public spaces accessible to the widest range of users
- The presence of design guidelines, such as improving lighting, seating, and visual signs in streets and open spaces

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The questionnaire data was unloaded, the necessary analyses were made, and the results were extracted. The results were as follows:

VIII. THE QUESTIONNAIRE RESULTS

- By analyzing the questionnaire and extracting the results, the following is revealed:
- It was agreed to achieve most of the indicators, namely:
  - Air quality
  - Human Culture
  - Social
  - Service
  - Fitness
  - Children

Some indicators need improvement, which scored less than 80%
- as the agreement reached 73% in the indicator Location, Street, and Transportation.

![Comfort](image1)

![Outdoor Environmental Quality](image2)

![People with disabilities](image3)

![Fitness](image4)

![Total](image5)
These indicators can be improved through the following:

<table>
<thead>
<tr>
<th>No</th>
<th>Standards</th>
<th>Points that need improvement</th>
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</table>
| 1  | Location, Street, and transportation | - awareness of Reduced Parking Footprint.  
- “Reduced Parking Footprint” aims to reduce the total area of paved surfaces and allow rainwater and snowmelt to travel more naturally across the (wide view of a nature scene/wide area of beautiful land) to surface waters as well as filter down naturally to (underground water that supplies wells) (huge areas of underground water). Reducing the parking footprint reduces the amount of strong (against attack) surfaces in (related to areas of land that drain into a river), (Related to areas of land that drain into a river) with 10 to 20% strong (against attack) cover are more likely to have insulted/poor quality water quality in rivers, streams, and (underground water that supplies wells). Reduced parking footprint is a valuable tool when used along with other measures to protect drinking water and provide cost savings in the long run.  
- Knowledge of providing advanced and (able to last/help the planet) (basic equipment needed for a business or society to operate).  
- Awareness of Electric Vehicles Awareness that electric vehicles lead toward a cleaner transportation future |
| Healthy Sites, Environment | - enhance carbon storage  
- Raise awareness of the expansion of carbon capture, storage, and use of technology |
| Water Efficiency | - awareness of Reducing Water Use  
- The need to pay attention to the management of groundwater resources  
- Integrated management of water resources with the aim of sustainable development  
- Water rationalization at home  
- Water rationalization in irrigation |
| Air | **** |
| Comfort | **** |
| Human culture | **** |
| Social | **** |
| Service | **** |
| Fitness | **** |
| Outdoor Environmental Quality | - awareness of the dynamic regulation of the thermal environment |
| People with disabilities | - patio furniture or signage is appropriate for people with disabilities.  
- Patio furniture or signs can be dangerous if not planned properly  
- Using technologies for accessibility applications for people with disabilities  
- Use the application of universal design approaches and appropriate technologies to improve accessibility |

- Questionnaire findings:
  Some indicators need improvement, which scored less than 80%  
- as the agreement reached 73% in the indicator Location, Street and Transportation It reached 76% in the index, Healthy Sites, Environment, 71% in the index, Water Efficiency and 71% in the index Comfort, 68% in the index Outdoor Environmental Quality and 67% in the index People with disabilities.  
- The models of open spaces in Madinaty are successful, as they achieved in most of the proposed criteria a percentage higher than 80%, and in some criteria, they achieved less than 80% and can be improved as mentioned in the research and serve as a guiding model for the new urban communities in Egypt.  
The research recommends applying the proposed strategy to the open areas in the new cities in Egypt.  
- Proposed strategy in open, healthy public spaces that face climate change

IX. CONCLUSION

- Urban spaces play a major role in the urban fabric of any housing scheme.  
- Healthy open public spaces are important places in most cities, as they are considered a solution to what is produced by rapid urbanization that lacks health and safety components, and they should be viewed in the context of important issues such as climate change: they are classified as spaces that contribute to reducing the increase in carbon gas, global warming, stress levels, and improving Mental health and well-being and contribute to children's development.  
- Conditions that must be met in open, healthy public spaces:
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