

SCENOGRAPHY OF THE LOST TORAH PLAY ON THE OPEN STAGE WITH RENEWABLE ENERGY

(A PLAY IN THREE CHAPTERS WRITTEN BY ALI AHMAD BAKATHIR)

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Abstract:

This study aims to create a scenographic design for a play entitled The Lost Torah by the writer Ali Ahmed Bakathir, where he formulated events that combine the past and the present and their characters, to find ourselves between the life of the world and the hereafter. , to find living side by side with the dead, truth and reality with fiction to wrap around the profound events that have a cruel impact on the whole world, which is the occupation of Palestine, the killing and displacement of its People , and the connection between it and Hitler's Holocaust for the Jews. He was able to gather within the events of the theatrical performance the most important events, which is the search for truth, justice and equality, whether for Jews, Christians or Muslims, and that was through a play that collected many threads and different people, This design of a special nature depends on creating movements for the display platforms and making them the main focus in the scenes sequentially, taking into account the viewing angles and changing scenes during the theatrical performance, and relying on the movement of the theatrical platforms not only as a scenographical element, but in the context of activating the exploitation of wasted energy or converting it from one type to another, And trying to make the design and the requirements of the elements for the theatrical performance compatible with the basic functions in terms of the interrelationship between the design elements and its spaces, as well as the characteristics of the display area and how it relates to the idea of the play, and an accurate control of the movement of the theatrical scene elements.

1. Introduction:

The design of the play aims to create design solutions for theatrical platforms, as one of the elements of scenography to play a major role in theatrical experimentation, and trying to understand the principles that lie behind these shapes to make them contain kinetic characteristics in order to create a sense of the theatrical environment and the exhibition spaces through the relations between the geometric shapes, which were brought up in it groups of objects and materials into the exhibition space, forcing the audience to re-examine the place in which the performativity action takes place, through which it is possible to study adaptation and convert fixed elements into moving design solutions (to transform the stage of the fixed "place" into a "space" or a moving connected entity capable of Change), in addition to trying to exploit renewable energy sources represented in the energy stored in the bodies that can be obtained and polarized again to achieve maximum benefit.

When moving, there will be an emission of thermal energy that can be re-polarized by a thermoelectric generator and converting it again into electrical energy to be used in the equipment for the theatrical show equipment's, in addition to the possibility of using transparent solar panels, which consists of transparent panels generating electric energy from solar energy and many other ways that enable us to generate electric energy and use it in the movement of elements.

The choice for the subject of the theatrical performance was among many attempts to find a theatrical show with specific requirements, and my choice fell on a theatrical show entitled (The Lost Torah) by the writer Ali Ahmed Bakathir. As an Arab writer, it requires him to be a pioneer for his nation, to enlighten it about the dangers before they happen, to prepare and try to survive.

2. The importance of the research (the problem):

A design that combines fictional and real scenes and is modern to fit with the movement of platforms and its relation to the movement of the audience and the exhibition area.

Choosing a suitable place for the implementation of this theatrical performance in terms of the nature of the scenographic elements used in the design and their relation to the environment surrounding the projection area, the way the platforms move and follow them, and their relation to the vertical elements of the events of the show.

3. Research objectives:

- A close-up experience that aims to engage the audience in the show, which combines fictional scenes, realistic scenes, emotion and movement, so that the display elements are transformed from static to moving elements and the display platform is transformed from a fixed platform to a moving platform, with the aim of pushing the audience to transform from mere spectators to artists Interacting and moving with the events, in addition to focusing on the cultural identity through the written text and choosing the exact location of the theatrical performance.

-Re-exploit and attract or collect wasted energy and convert it into electrical energy again through the movement of design elements from platforms to landscape elements to achieve optimal use of renewable energy sources.

4- Search terms:

Thermoelectric generator - BIPV cells - transparent solar panels- Transparent Luminescent Solar Concentrators”

5. Research method:

An analytical and experimental approach that depends on experimentation and observation.

6. Theoretical framework:

- Creating a dynamic design based on the movement of the platforms, a constant movement during the presentation in the counter-clockwise direction in parallel with the movement of the audience and the merging between them and the movement of the vertical elements.

-The use of renewable energy sources as one of the basic elements of the design.

7- Search procedures:

First - : A study of the place chosen to hold the show.

Second - a study of design in terms of:

A- The extent to which the design is related to the location specified for the theatrical performance.

B- Movement and renewable energy sources.

C- Study the design steps and their suitability for the topic of the theatrical presentation:

Third - the movement of elements: horizontal - vertical.

Fourth - the merging of all the previous elements and the final form of the project.

First: A study of the place chosen to hold the show:

The place chosen for the theatrical performance acts as a frame that collects its elements in a series of images gathered in a dynamic moving show, and in which the non-theatrically prepared space is transformed into a theatrical space to make a show related to the specific place in a way that facilitates the creative coding process, that may be related to the cultural community's heritage or value Fig 1. Artistic or ideological, and the composition of the exhibition environment is an essential element for the audience to interact with the exhibition space, its constancy and its culture, with the aim of creating an environment that forces the audience to re-examine the nature of the place, thus transforming the display area from a mere static space to a space capable of movement and change throughout the period of presentation. And respond to be shaped so that it appears alive.



Fig 1 Final shot of the theatrical presentation performed with the combination of it and the projection area using 3DMAX software

Second: a study of design in terms of:

A- The extent to which the design is related to the location specified for the theatrical performance:

The aim of choosing the pyramids ,fig2 area is to combine reality and imagination and to emphasize the aesthetic distance between the performers and the audience through seeing and visualizing the world in a different way, between the ancient Egyptian civilization represented in the architecture of the pyramids and what they carry From the fragrance of history, and between design based on modern shapes, in addition to the technological means used in order to emphasize the importance of cultural exchange (beyond the limits of traditional theater) by using theatrical spaces for innovative uses, And experimenting with theatrical performances in environments and places inside and outside theater spaces and seeking to challenge cultural expectations about the relations between the audience and the performers. The scenography elements used were based on achieving the dynamics of the scene and the exploitation of electrical and mechanical technology and the various architectural and dynamic components, by breaking the horizontal plane pattern using flexible rhythmic shapes and multi-dimensional patterns and exploiting the space as a dynamic element interacting with the scene environment, and the exploitation of real terrain and Architectural elements made from real materials such as archaeological sites or natural places, or real materials like metals and wood , a tool to remove the scene from the two-dimensional to the three-dimensional state and restore the relations between them by discovering a new art with foundations of materials, size, construction and Transforming reality by expressing the elements of matter such as line, color, space, volume, surface, and light .



The focus is on the psychological functional model of the place where the theatrical performance is presented while limiting the traditional elements (such as curtains and pictorial scenes) and the presentation of all the technological mechanisms to the public through the physical components of these environments, and the use of steel structural frameworks, pillars, suspended screens, searchlights, and Moving platforms, groups of signs, posters, logos, texts, moving, the wheel and gears - exploring the volumetric and

kinematic shapes of light as a dynamic material through redesigning or arranging space and exploiting new materials to explore the kinematic shape and its ability to form through modernist visions of interconnected materials and The structures in the architectural

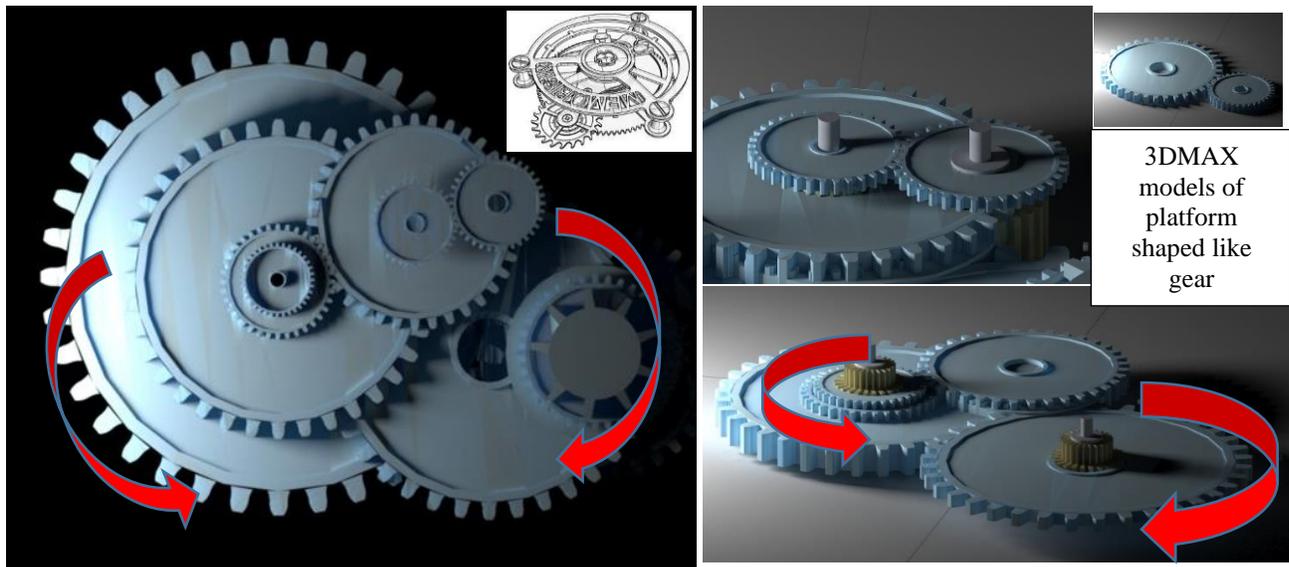
composition of the theatrical environment by transforming the static space into a (dynamic theater environment), in which the audience and the performers remain in constant movement through the changing role of the performer, which allowed the dynamic behavior of the theater space - to create a multidisciplinary environment - provided that it accompanies the multiple scenographical settings through Its focus on dynamic environments, that are able to join together to form a flexible, transformable space with the ability to exploit materials.

In an infinite patterns, being a flexible and adjustable space in its properties create a dramatic event that transcends visual scene design - Which integrates all technological media in the theatrical show and exploits the front projection and hologram techniques - create an attractive illusion by controlling the perspective of the moving image and projections on the pyramids in a way that transmits the interaction between the elements. The relations between the elements in the basic horizontal projection was at the beginning of the design, which was inspired by the shape of the gears and their relations to each other, and then preliminary conceptions of the design were developed in its various stages that were crystallized with the clarity of the variables in it, reaching the final form of the design.

B- The movement of its components and renewable energy sources:

The idea depends on the movement of the platforms , in what is similar to the movement of gears with each other, how can we make the formation building based on the use of superimposed platforms in a kinetic sequence that rotates using electric energy from the first movement, the movement continues after that depending on the kinetic energy of the gears, which rotates regularly to move the rest of the elements Scenography (Figure 3), and kinetic energy is transformed into electrical energy that is used in recycling and movement again, but during this there may be an automatic loss in the rate of energy during continuous movement and to compensate for the lost energy during movement, the wasted energy can be reused and polarized or collected. And converting it into electrical energy again through the movement of design elements starting from platforms and up to the theoretical elements (we may use the law of conservation of charge, which is a law formulated from the law of conservation of energy, which is an arithmetic relationship between the amount of charge inside a medium and the amount of that charge flow in and out of the medium, The law states that the amount of electric charge in an isolated electrical circuit is a constant amount,

Which means that electricity does not perish or be created from scratch, but transforms from one form to another. When moving, thermal energy will be emitted, which can be re-polarized by a thermoelectric generator and converted back into electrical energy to be used in the equipment for the stage show. Constant rotation rate (similar to the way a watch works).



(Figure 3) Models designed using 3DMAX software for gear-like appearance of the approved platform, on the left is an approximate horizontal projection of the initial shape of the platforms for the theatrical performance, and on the right are some separate parts to illustrate the idea of sequential and superimposed movement.

This is not the only way to preserve the wasted energy and reuse it again, we can use BIPV integrated solar cells, which are photoelectric generators used to replace building materials, and BIPV cells are characterized by their ability to be transparent, which can be varied according to desire, so that these can be The units provide shade or be semi-transparent, in addition to that, the dome at the beginning of the show allows the use of clean solar panels, which work to polarize solar rays and convert them into electric energy as transparent solar panels, and the researchers have written an article on transparent solar cells, titled “Light Harvesting: Near-Infrared Harvesting Transparent Luminescent Solar Concentrators,” was the cover story for the July issue of *Advanced Optical Materials*. The article was written by Yimou GAO, Jarrett A. Meek, Benjamin J. Levin, and Richard R.

In one of the papers on conventional PV systems published in 2017 in *Science China Press* was published by Elsevier B.V and Science China Press. The research talks about the large part of the wasted solar energy in the form of heat, which is usually less than

30% efficient for generating electrical energy. But dispersed heat can be recovered for various applications, by using waste heat recovery PV (WHR CPVT) hybrid systems and they can save usable electricity and heat by combining thermal and condenser PV (CPV) Systems, which greatly improves the overall energy conversion efficiency Solar. These transparent solar panels look like regular glass as they provide an unobstructed view. (These panels use a sun-transparent optical concentrator, the condenser consists of a thin layer of organic molecules that absorb the near infrared and ultraviolet wavelengths of sunlight, and push it into the cells. Solar photovoltaic at the edges of the window's surface to convert it into electricity. These organic molecules are made to absorb invisible wavelengths of light, such as ultraviolet and near infrared rays). There have been previous attempts for a similar technique, but the results that were produced were not transparent enough or were too colorful, and the transparency allows these solar panels to have a variety of uses. (The current version of transparent solar cells is one percent effective, But there is a lot of research in this area aiming to increase that to more than five percent.) The color incandescent solar capacitors can have an efficiency of up to seven percent, while the efficiency of opaque solar cells can reach 15 percent or more. (A solar concentrator can be applied transparent luminous, to a window to generate solar energy while allowing a view through the window, as the researchers reported in the Journal of Advanced Optical), it is called transparent photovoltaic cells, which combine visible transparency and convert solar energy into electrical energy (TPVs).

C- Study the design steps and their suitability for the topic of the theatrical presentation:

C 1. Subject of the presentation:

The choice of the subject of the theatrical performance was among several attempts to create a theatrical performance with specific requirements. My choice fell on a theatrical show entitled (The Lost Torah) by the writer Ali Ahmad Bakathir, as the ideas and beliefs of man in the modern era made (Bakathir) realize that his message as an Arab writer required him to be a pioneer for his nation, seeing the dangers before it occurred, to prepare and try to survive, and the lost Torah play was the last play published for many in his life on the tragedy of Palestine, which was issued in 1969 one month after his death, and the play consists of three chapters each chapter contains three Scenes, including what is realistic and what is imaginary, so in each of the three chapters we find an imaginary scene in which men from history appear, and other scenes in which people appear from reality.

C 2. Idea of design:

A concept was drawn up for the design of the presentation (the design idea) and to ensure the originality of the idea to give it a distinct identity, then preliminary conceptions for the Design in its various stages were developed and crystallized with clarity of the variables in it, but there were some design problems and therefore it was necessary to try to solve them to form that idea. Which we aim to formulate, and the basic functions contained in the project (elements, spaces, relationships in addition to the characteristics of the project site and the extent of their relevance to the design idea) that appear from the interaction with the site characteristics and the connection of the vertical elements with the design background and the components of the perimeter and their connection with the civilization that has survived for thousands Years, while carefully investigating the most important steps for the success of the design, which are: Ease of moving from one scene to another - providing safety and accuracy of control - the dynamism of the formation, as it was necessary to have an idea that distinguishes the project based on the cultural, social or environmental background and defining Perceptions. Initial and similar perceptions, then crystallization

Of the idea in addition to preserving several elements which were **represented in:**

- 1- Organize design elements to define the visual field for each scene separately.
- 2- The balance between design vocabulary and its relationship to mental movement from the viewpoint of the audience.
- 3- Relationships of colors to materials and lighting colors used to show the emotional state of the viewer despite their diversity in this open space.
- 4- Dimensions, proportions and harmony between the elements used in the design, whether horizontal or vertical elements.

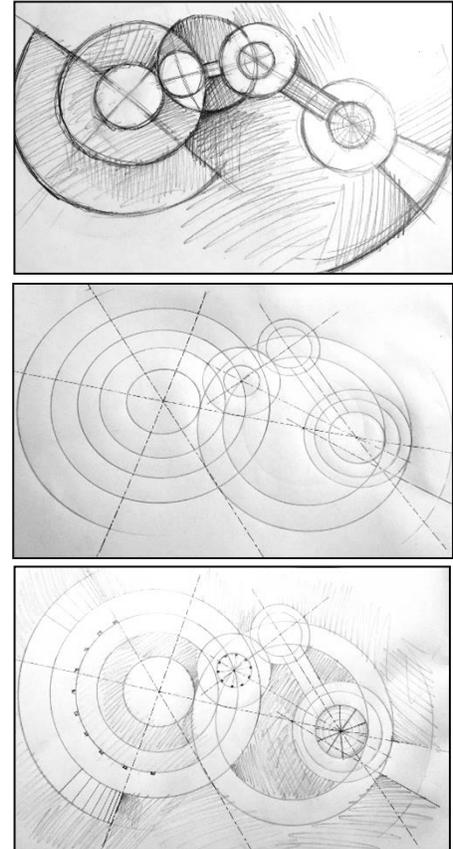


Fig 4 Steps to start
designing the plan

Third - Movement of Elements: Horizontal and Vertical:

One of the most important requirements in the design of the project was to achieve the functional aspect in terms of the General Authority for Design (the general form of the design) and the relations between the design elements and the differences between them, and achieving balance and compatibility between the movement of the vertical elements and the horizontal elements, but the differences in the angles of vision. In some areas of design and central in others, it was one of the most important elements that control these kinetic relations between design components, which makes us aware of how to receive our perceptions of the dimensions of the design and the sense of vision while paying attention to the nature of the material used in the implementation (reflective surfaces or not) as it should. Determine the value of light reflected by the surface and its effect on the range of movement between the components of the design and its relations to the viewing angles of each scene separately, in addition to the movement of the audience during the events of the theatrical performance.

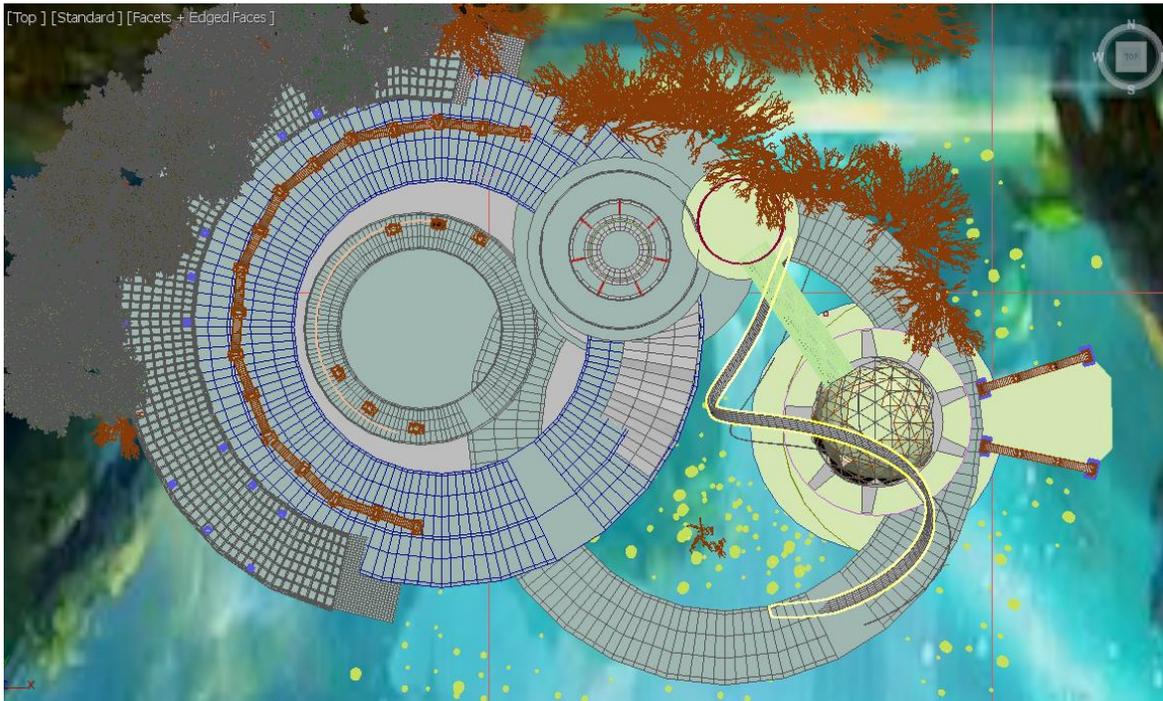


Fig 5 A plan for the design formed by 3DMAX program to illustrate the relationship of the platforms with each other in addition to their relationship to vertical elements

What are the characteristics and defects of the design and their effect on the relations of the elements with the spaces between them and the sizes of the elements? Each design has its own laws in terms of attractiveness and the value of attention, and the composition elements were required to give different degrees of feeling the dynamic movement of the static elements and achieve harmony between them and between the elements Moving, and making the visual system in design based on movement and balance between the elements to achieve function, vision and expression to come out of the design in an integrated form, in addition to achieving the suitability of the nature of the design and the material with the surrounding environment and achieves a balance between the closed movement of the elements that make up the theatrical performance and the number of elements Used in the design and harmony between all these elements.

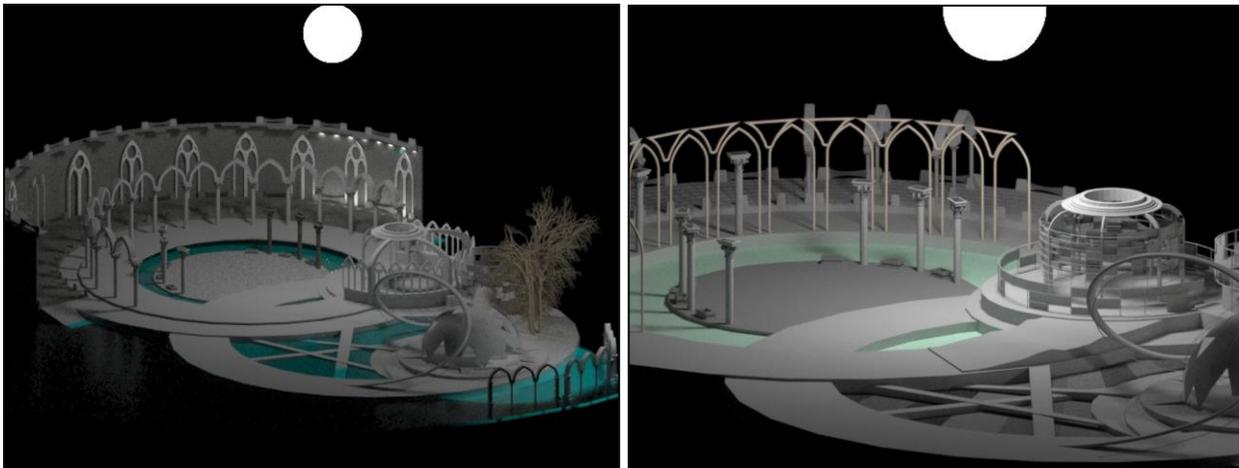


Fig 6. A set of initial visualizations of the design after building it with 3DMAX software to show the relationship of vertical elements with horizontal.

The beginning is from the public entering the corridor that expresses the entrance to the city of Jerusalem. This corridor is followed by the dome, which is made up of a structure that holds transparent solar panels, which converts solar energy into electrical energy that moves the platform under the dome in a circular motion that moves The outer part (the structure) of the next cylinder, through which the audience passes through to the next area, and while crossing the corridor, the audience sees on the inside body of the cylinder scenes of killing and torture of the scene, and while the external structure rotates, it also rotates the next area, which is the horizontal round platform Which carries a vertical cylinder that rotates, and this cylinder carries screens on which the next scene is shown, and based on the previous rotation movement, the next round platform moves, which contains a vertical

cylinder that has an internal structure that is used in his hologram work for another part of the show and the integration between the performers and the audience The audience of the performance goes out to the outer corridor, which leads to a small lake that crosses a valley



in Hell (depending on the events of the play), then the audience moves with the movement of the actors to reach The next stage, which consists of three fixed parts, one of which is the part for the audience, which is the external part, while the next movable part is the part for the performers area, which expresses a scene in one of the monasteries of the city of Jerusalem, and the circular part in the middle represents the scene of the hotel.

When choosing the horizontal elements in the design, as we previously talked about, it was inspired by the relation between the gear circles and their overlap with each other, and by the centers of the circles and their intersection, we made relations linking the platforms with the vertical elements in the design.

When thinking about building the vertical elements and linking them with the horizontal elements, it was necessary to keep the features of the theatrical performance itself, which contain two types of scenes, realistic scenes and imaginary scenes, in addition to the most important features that affect the identity of the theatrical performance and its integration with the features of modernity of the present time.

The first area: **fig 7** is a corridor carrying columns as an entrance to the city of Jerusalem, through which the audience enters the theater area.



We have symbolized the city of Jerusalem by the dome [fig 8](#) at the entrance. The dome is empty from the inside. The audience enters it to watch some of the theatrical events and the merging of these events with the images projected on this dome and the performers of the events.



The second area: After that, the audience enters a movable cylindrical corridor consisting of two parts, [fig 9](#) the outer network that rotates around itself and is connected to the dome, while the inner part is a transparent cylinder to lead us to the next stage

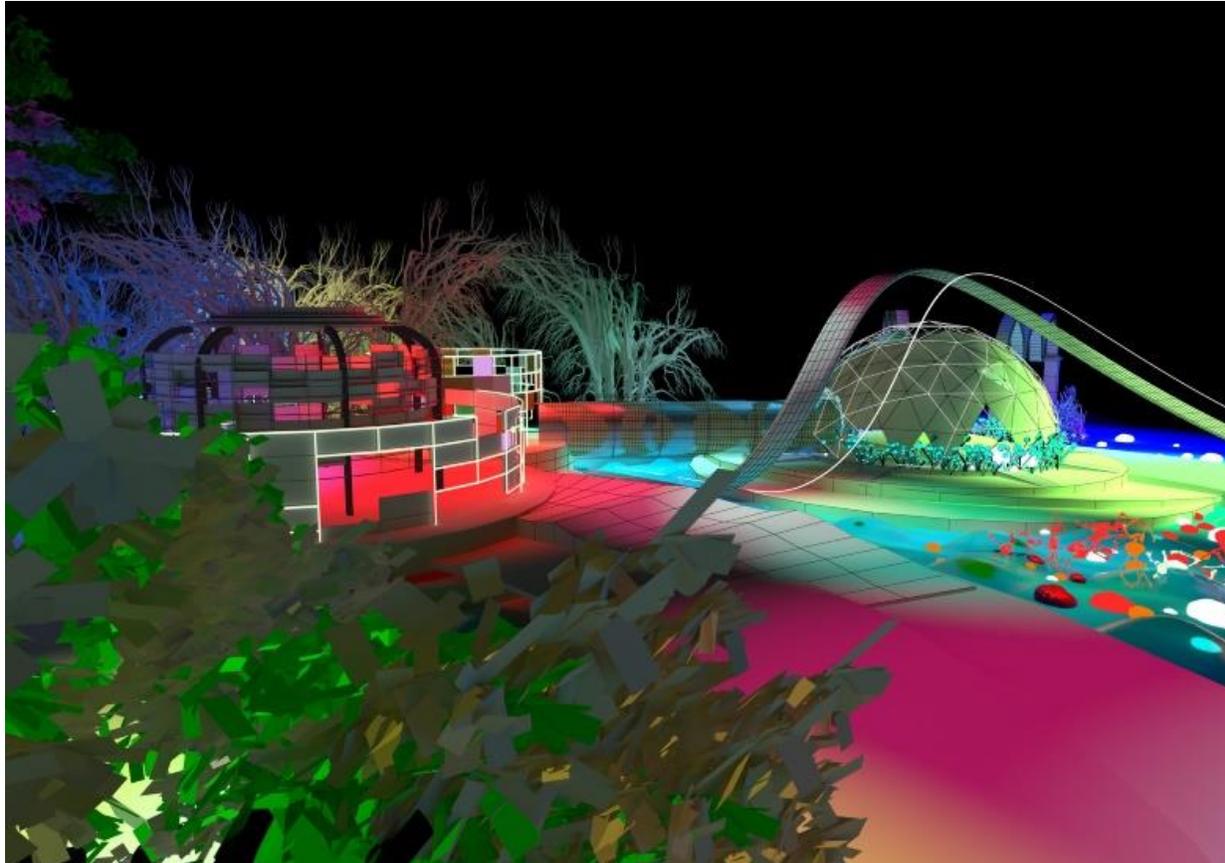




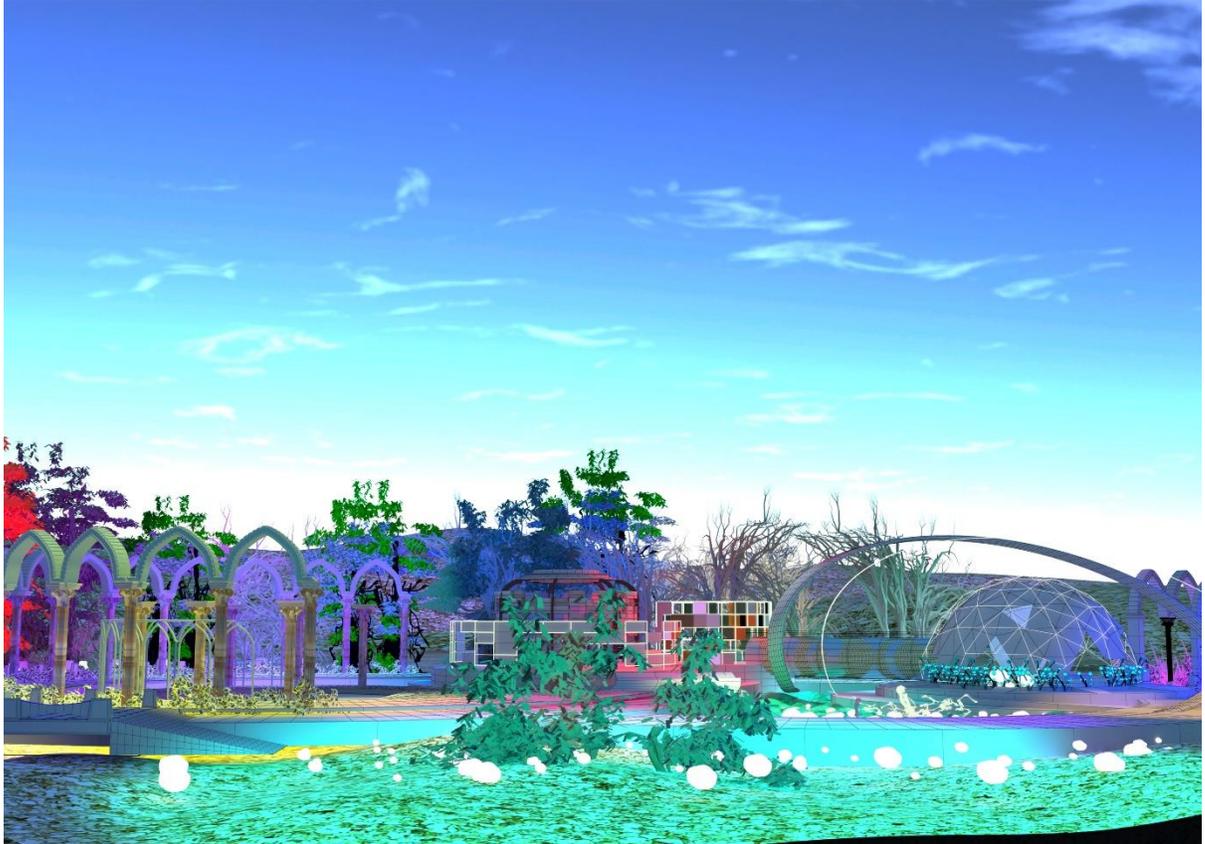
The next stage [fig 10](#) contains a cylindrical structure that holds many screens to display another part of the theatrical events and merge them with the performers, this cylinder rotates in the vertical position around the audience one



cycle, the image on the background is changed and the images inside the cylinder are transformed into squares. Each square turns into a small display screen with scenes of murder, torture and displacement.



Then the audience enters the next area, [fig 11](#) which is another cylindrical part in which the presentation is made by hologram for some fictional events, the area in the middle creates vibrant environments by means of the three-dimensional projection Mapping Projection so that we can integrate and coexist with it sensually to enter us while watching the show within the events With the aim of experimenting with influencing the relation between technical and digital innovations and their reliance on dramatic events that change the design language, It is a change that is achieved on two levels.



an intellectual level related to the concept of design itself and a material level related to the ability to install in terms of formation, manufacture and assembly based on creating coexistence and integration with virtual environments and transforming them into environments that enable us to create the five senses by using suggestive systems and Artificial sensory in order to form on technological foundations and rules, Which makes the viewers of the theatrical show interact with these technical variables to present a scenography that aims to create a visual shock from the new, unfamiliar forms that are



based on a hypothesis and not on the basis of a material existing in reality and create a new world as an alternative to it to become the reality.

Fig 12 the audience leaves the previous area to see the lake outside, which expresses the scene of hell (a fictional scene).



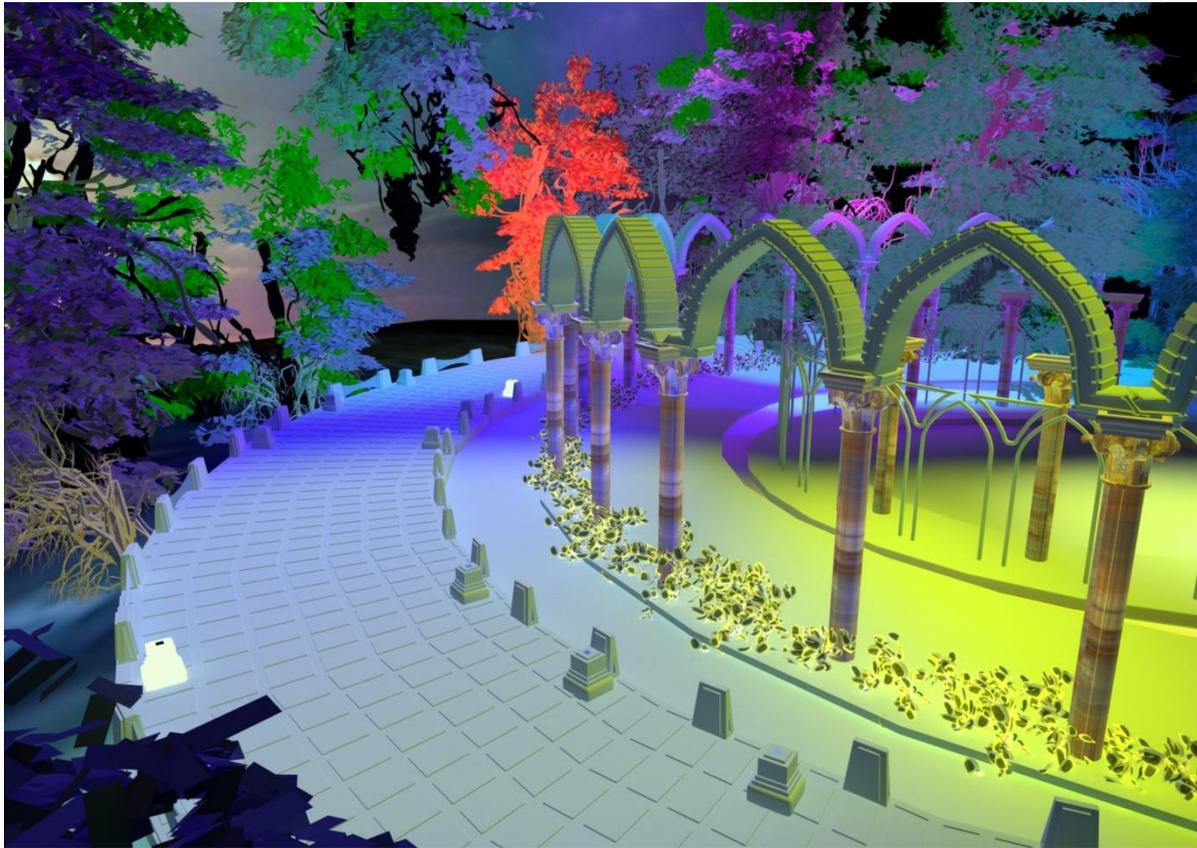


Fig 13 (Creating an environment of projections is what gives us an adequate sense of movement for all surfaces and lines in order to create an influential role in the events of the theatrical performance)



As for the other corridor [fig 14](#), it takes a circular shape to connect the audience to the next realistic scene. In the middle there is a circle that expresses a hotel in Old Jerusalem and around it that expresses the rest of the events outside the hotel, inside the space by means of light, which is transmitted in a radiation image to present an element of design Reactivity so that it affects

what is around it and is affected by it to present a role in the design through refraction and showing transparency, which in turn affects the artistic work



by choosing a source of light that provides the required degrees of luminosity using illumination of wavelengths to present this design an aesthetic value according to the strength of light and the multiplicity of confiscations and angles [fig 15](#) . A fallout in a way that serves the composition and creates an imaginary atmosphere that transports the viewer to a world he does not know but feels that he lives in it, with the aim of creating a kind of dialogue between light, transparent and dark spaces to highlight the psychological dimensions that move the recipient between reality and imagination.



And the events of the theatrical show continue to an end [fig 16](#).

Conclusion:

The loss of the cultural identity of man in modern times amidst advanced technology is what prompted us to try to recover it through the symbolic and technological vision of theatrical performances of a heritage character from our Arab literary library, and this is what enables us to transform the scenography to be renewed and developed automatically by converting it into engineering solutions And developing non-traditional design solutions that contain experimental qualities with an emphasis on cultural identity, and the starting point in the design was based on change and the link between the time of this change and dynamism, which gives the details of the design the ability to move despite the lack of movement of some of the vertical elements that make up the design , There was a

movement in the design elements represented in the number of platforms used in order to achieve harmony between the elements and the changes that occur, whether they are mental or perceptual (static but seem moving - perceptual, complementing the mental image) by creating a closed integrated circuit of toning or regular repetition.

Results:

- The diversity of design visions for theatrical performances and their transformation from static elements to elements that can be modified and changed during the theatrical performance is what enables us to present new visions that lay the foundations of innovation and creativity, which depend not only on the actor and dialogue but on shaping the theatrical space with a new moving language.
- Modern technologies have achieved the aesthetic and imaginative visions of theatrical performances in our time, providing a dramatic function as well as shaping the elements of scenography on the basis of creating spaces, exploiting multiple platforms and diversity based on lighting and reconfiguring them according to the new theatrical language.
- The concept of scenography has been changed in our time from a mere literal translation to a vision and innovation so that the elements of the theatrical performance are effective in the theatrical experience with the aim of creating a new relationship between the performer, the actor and the viewer.

Recommendations:

- Our Arab heritage is filled with many literary works that have not been yet treated theatrically. Therefore, they must be revived, re-read, and thought about on a permanent basis to keep our Arab identity, through the ages, despite our different interests and orientations.
- Do more research and studies that deal with modern visions and experiences of scenographic design and the ability of these designs to be transformed and changed during theatrical performance in line with the different types of theatrical performances.
- Emphasis on the integration between science and arts together, and that each works in the service of the other. Most of the inventions in modern applied sciences were visions in the imagination of artists and turned into reality with the passage of time (that is, they were the source of applied scientific ideas to serve modern science in our time).

- Everything that goes on around us in the universe can be reused as one of the renewable energy sources. Even sound can be polarized and converted back into energy thus conserving depleted energy sources as well as preserving the environment.

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World Wide Web Sites:

1–http://www.newcities.gov.eg/know_cities/NewMansoura/default.aspx

2–<https://egy-map.com/project/%D9%85%D8%AF%D9%8A%D9%86%D8%A9-%D8%A7%D9%84%D9%85%D9%86%D8%B5%D9%88%D8%B1%D8%A9-%D8%A7%D9%84%D8%AC%D8%AF%D9%8A%D8%AF%D8%A9>

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