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Digital architecture and its impact on modeling of interior design ofspaces

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ABSTRACT

Discussed in this paper, effect of architecture after technological and, which helped to expand their creativity in designing a variety of forms of buildings by expanding formal options, characterized by flexibility, and discussed impact of digital technological revolution on architectural, and discuss relationship between architecture and technological composition.

computer software and design tools emerging change in architectural education, and influenced by the design spaces non-material and the increasing influence of technological possibilities, to be affected directly by technology communication and transfer of information and digital capabilities is effect on generator and elements for architectural projects and re-arrangement of urban and architectural functional aspects, research and theoretical features of architectural, in studies on shape and composition of architectural digital technology design, components, materials and elements of construction and implementation of buildings.

KEYWORDS

Digital architecture - digital system - non-physical spaces - interactive surfaces - Parametric design

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1. INTRODUCTION:

Digital form, widely distributed in various fields, it's no longer shadow of digital architecture, such as traditional structure, but it becomes a living body through a dynamic building, but there is a clear of knowledge at academic, especially in our community, so purpose of study is to identify indicators formal characteristics of digital architecture, have been subject to technological revolution and information completely depends on change of information sources and means of communication advanced technology helps to expand design innovation in various architectural forms in their flexible features.

Discusses the relationship between architecture and technological revolution, analyses the new influence of current direction of future architectural form, including computer software and design tools, the impact of visual media, impact of space design Materials and technology are increasingly, and impact of general humanitarian activities, which will affect the emergence and disappearance of architectural elements, architectural projects and rearrangement of architectural design at the same time, and future architectural form for perspective of function, examples Due to interference of direct digital technology on design ideas, and design methods, design elements, materials, construction elements, architectural implementation, interior design and so on.

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1.1. Research problem*:*

How to affect the form of architectural product, key components and interior design for digital revolution applications, both in terms of design tools themselves, or in terms of digital implementation tools.

1.2. Objective*:*

The purpose of this study is to clarify and analyze digital architecture (in digital forms), study virtual reality and its impact on architecture and interior design, to help change features Future architectural forms, through use digital architecture, know their needs and realize the mostimportant principles of this type of architecture.

1.3. Importance*:*

Recruitment of design with computers in architecture and interior design.

2. Digital architecture revolution:

Digital Forms and Digital Revolution Think and philosophy is now known in digital forms, and the thought of digital forms can be inserted within concept ,respond to requirements of this age in all its orientation and excursions, and digital architecture is based to computer for purpose of organizing format and events of transitions, whether in case of static or animated shapes that can be used through use of a virtual reality is approaching natural reality to be able to test forpurpose of developing and evaluating modifications.

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2.2. Figure in digital architecture:

Digital formats can be considered in their design on use computer as a basis for designing, and these forms are spread in various engineering and technical fields. It reflects the experiments and expresses a new generation of theories in sculpture, architecture and interior design, and this is also a role in architecture and interior design and causes of this new approach can be clarified at global level through following points:

1. Continuous development of computer programs.
2. Emergence of a new growing system of information networks.
3. Advanced technological contribution to development of new technologies and industrysystems.
4. Emergence of new materials such as Platinum was one of reasons for a convenient climate with digital forms, which helped confirm this new approach.
5. Digital culture and accepts users and their response and understand them in spread ofthis method at all technical and age levels as well as industrial proliferation.
6. A new generation of architects and interior designers interacts with this new thought.

2.3. Non material space (Cyber spaces), in architectural and interior design of space:

New tools involved in digital techniques should be studied in field of architectural design, such as form of modern design studio, changing design method itself, and how effect of design and output and avoid design errors, and provide years of experience gained to discover these errors before execution, new terms in architecture such as virtual reality, and impact of these techniques on architectural design.

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2.4. Fourth dimension effect (time) on space and virtual reality design:

Fixed element in user interaction and vacuum, through virtual environment move in a period of time, interior designers can choose a space through virtual reality, can also design a nonexistent space, movement it can enhance the virtual hologram of reality, increase the perception of depth and size of vacuum, it's concerned with fourth dimension, explaining environmental data around us and space we live in, designers have possibility to change process of architectural and interior design, which provides computer-aided design virtual reality is a 3D environment that simulates reality and imagination at same time, holograms require designers to consider and interact with third dimension.

2.5. The formal characteristics of digital architecture:

In digital environment, development of design ideas is provided by means of dynamic process, and relationship between technical operations can also be explored by computer, development of new software and graphics, ability to provide a choice of digital and model design materials, explores more direct appearances to make designer's decision can also be seen in digital environment, shape can be changed, importance of adopting computer assistant design in creating virtual spaces by integrating natural organic forms and unclear engineers similar to chemical and biological interdependence to generate free forms that represent future forms, Figure (No. 1).

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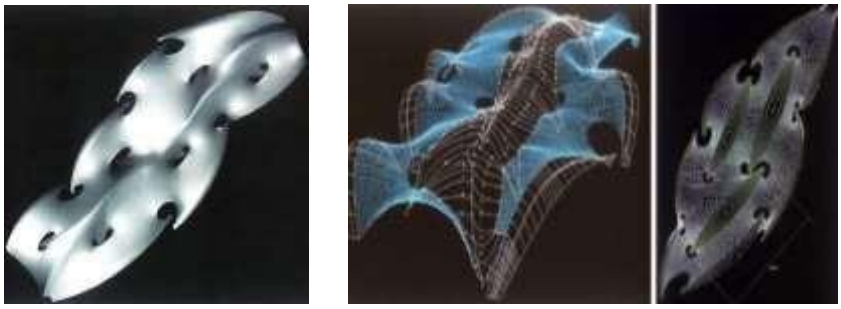

Fig. 1- picture; explains the adoption of tectonic architectural elements, generator line, and network points to generate physical forms

2.6. The inspiration of digital form can be divided into three types:

- Inspired forms of digital components (physical) as shapes of devices and digital toolsthemselves.
- Form of collision generated by digital software, especially 3D software, such as 3D Maxstudio and its software.
- Form inspiration from another vital field, such as nature.

2.7. The inspiration of digital form can be divided into three types:

Concept of virtual technology is a technical field, which makes user's sense of reality, it can be called computer application ability Three-dimensional environment synthesis In fact, it allows users to access interactively, enabling users to share and interact with virtual design, expandand experience the shape of lighting systems and furniture, you can feedback on every detail of architectural structural design and external blocks, and interior design space, keep all comments in mind before starting execution.

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Fig. 2- picture; A virtual house, in the overlap between real and virtual reality, users can live in their own house

2.8. A virtual house:

Virtual home in Figure (No. 3) Peter Eisenman's architectural design is an overlap between real and virtual reality, where users can live in the interior design of house through complex equipment was competing n 1997.

Fig. 3- picture; A virtual house

2.6. The impact of digital revolution on architectural product:

Comparison between format and components of architectural product before and after followed by digital revolution and how to affect form of architectural product and its main components of digital applications both from same design tools or development of digital performtools through two parts:

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- Architectural blocs in era of digital revolution are characteristics of construction group are liquidity and rigid structure.
- Design process is free from standardization with disabilities that

2.9. Digital Revolution and its effect on interior space:

Impact of digital revolution on interior space, analysis of functional requirements and study of some global experience, between digital revolution and development of computer design, and reflects requirements of interior space, through following:

1. Interior space in era of digital revolution needs flexibility and adaptive.
2. Standard units will disappear from interior spaces, and will be replaced by what study suggested named as "digital genes".

3. Internet of Things (TOI):

Today's building interior space users want to learn more about their buildings, and hope that interior space can open doors and windows with mobile applications, security automation systems as well Know how much energy is consumed by buildings through smart phones, because it's important for devices to connect to Internet, that buildings today pay more attention to quality, performance and innovation, some methods of using (TOI) devices can use:

- Observation.
- Energy saving.
- Security check.
- Automation.
- Remote control.

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3.1.Virtual Reality in Architecture:

Virtual reality is a type of computer simulation to generate three-dimensional images or environment, people can use electronic devices, such as helmets, screens or gloves and sensors.

Fig. 4- picture; digital conversion of Microsoft and RIBA is used in architectural design of Arthur project, computer aided design, programming and simulation to create virtual forms

3.2.Arthur Project:

Arthur's project is an example of reality display system in urban planning specific application table in visual display as a tool to promote architectural design and Interior design includes perspective of the design, output model.

3.3.Use non-material spaces (Cyber Spaces) in interior design:

Cyber spaces and their impact on interior design, through this context the possibility of forming non-physical virtual spaces by using latest digital technologies, to use non-physical spaces in interior design:

1. Using Visual 3D Spaces.
2. Switch from glass windows to crystal windows (LCD). For this assumption, propose two elements:

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- First: "Cyber Spaces".
- Second: Digital architecture with digital elements.

- **"Cyber Spaces":**

Digital technology has brought us non-physical and architectural that are used to concrete spaces "Physical Spaces" Start to design the blank space with visual representation “Cyber spaces” and has become aware that these spaces are convicts by rules and new emerging laws of design of physical spaces, will be displayed for non-physical spaces is default Museum project "Guggenheim Virtual Museum", ‘Hani Rashid and Lizzie coater’ designed first digital museum, displaying digital images at ‘Guggenheim Museum’ so that they can Exhibitions from all over the world hope to visit‘ Guggenheim Museum’ in Bilbao through virtual interactive tourism, The digital museum can be accessed through Internet connection, and real-time interactive components of exhibits in non-material space to move visitors, such as rules of architectural space design transcend the laws of physics and form a unique architecture unfamiliar to architects before.

Fig. 5- picture; The Guggenheim Museum in Spain, designed by Frank Jerry,allows interactive access via the Internet

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With fast development of digital technology, architecture will integrate technology and appear this type of integration to combination of architectural and default design, particularly with regard to digital technology potential and digital tools that allow use of traditional and technologies, and architectural ‘Frank Jerry’ one of pioneers, and is first to seek to combine architectural and digital analog design, an example of ‘Guggenheim Museum’ in Bilbao**.**

- **" Digital architecture with digital elements ":**

First example: is the permanent flower exhibition of a Dutch Pavilion project in Florida, building can be described as an Automated building "Instrumental Building" if body of establishment machine and term is called this type of artificial intelligence, in which all digital devices have been integrated into exhibition wall, inside building was provided with sensors that sensed arrival of visitors with a programmed reaction so that an educational cultural dialogue between visitor and facility would arise within a 30-minute visit as it was fully dependent on the positive interaction between the facility and the visitor "Interactivity".

Fig. 6- picture; Permanent Dutch Pavilion in Florida

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Second example: Cultural Center Aliyev Project in Baku, Azerbaijan Design by 'Zaha Hadid "Digital architecture removes potential constraints when create on complex forms through computer algorithms, also promotes results in design, and create non-standard forms, design for Cultural Center Award winner: 2014 design from Design Museum of London

Fig. 7- picture; Zaha Hadid Design Award winner 2014 from London Design Museum of Cultural Center Aliyev Project in, Azerbaijan

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1.1.Experimental Super House (Hyper House):

Surface of external building has a transformation to achieve environmental, technological and climatic objectives, where internal walls can transformation to changing climatic conditions on pre-programmed foundations called smart facades.

Fig. 8- picture; Hyper House Florida

Intelligent Façade made of liquid labeled glass (Active-matrix Liquid Crystal Displays) can be employed for multiple uses and is known as this Employment (Skin) and at this house connects with computers on networks and interior walls are controlled by computers to control colors and design, also uses control and response of external and interior environment to adjust temperature according to user's interior space, flexibility and adaptability of ultra-thin system in dynamic simulation structure of shape control algorithm and balance model, is realize flexible compression ability of structure, and build model based on Intelligent design .

3.4.The formal unity of digital form:

Formal unity of digital forms includes balance, harmony, dominance and vitality, can be considered aspects of design principles, in terms of architectural form, each of these aspects has been defined as shown in Table 1.

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3.5.Figure characteristics in digital architecture:

Research includes form analysis of digital architecture.

Table 1 - Most important aspects of the formal unit.

The concept of unity	Substances affecting the
Balance	• The symmetry formation: the symmetry (axis-radical-circular-decorated). • An informal balance or an implicit balance.: Includes non-full symmetry (axis - radical -circular - decorated), equal and lack.
Harmony	• Proportionality: Includes the proportional basis and the patterns of the accusation systems(accountability) - geometrical proportional proportionality. • The rhythm: The values of regular rhythm include an example (complete repetition - regular confusion or vulnerability - regular continuity) and non-regular rhythm values are an example (variable repetition - gradient and irregular punishment - regular continuity).
Dominati on	• Simple geometric shapes with self-unity (cube, cylinder, pyramid- ...). • The regular basis (organizational axis - the surface of regulation - the organization). • Contradiction.
Dynamic	• The nature of the visual movement: Includes both dynamic values for elements and relationship, an example (forms of elements - the mental interdependence of elements - eyemovement in configuration) and parallel natural dynamism. • The properties of spatial relations include the relations between elements – The relationship between elements, visual range, such as contact – Edge to edge contact – Contact angles,edges and sides, as well as covering kidneys – Partially covered and intersected armor piercing projectiles – Intersection of CSS – Intersections.

3.6.1 Study of 2003 Wan-Ping Gao:

Digital forms, where (GAO) formal characteristics by analyzing of architectural projects.

- **First project:**

Identification of architectural forms in this project can be observed on basis of shapes, frames and symbols, shapes do not reflect stable final forms, but from a combination of phases,research shows that usually produce new, Figure 9.

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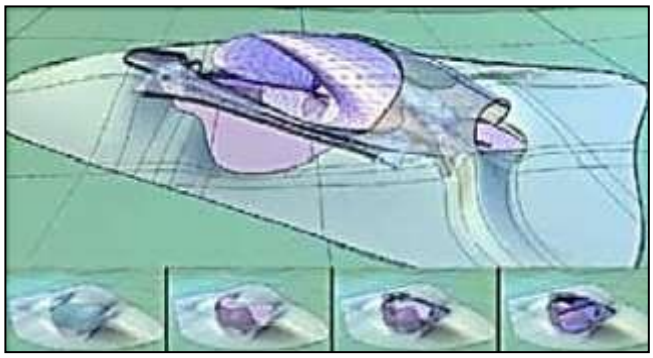
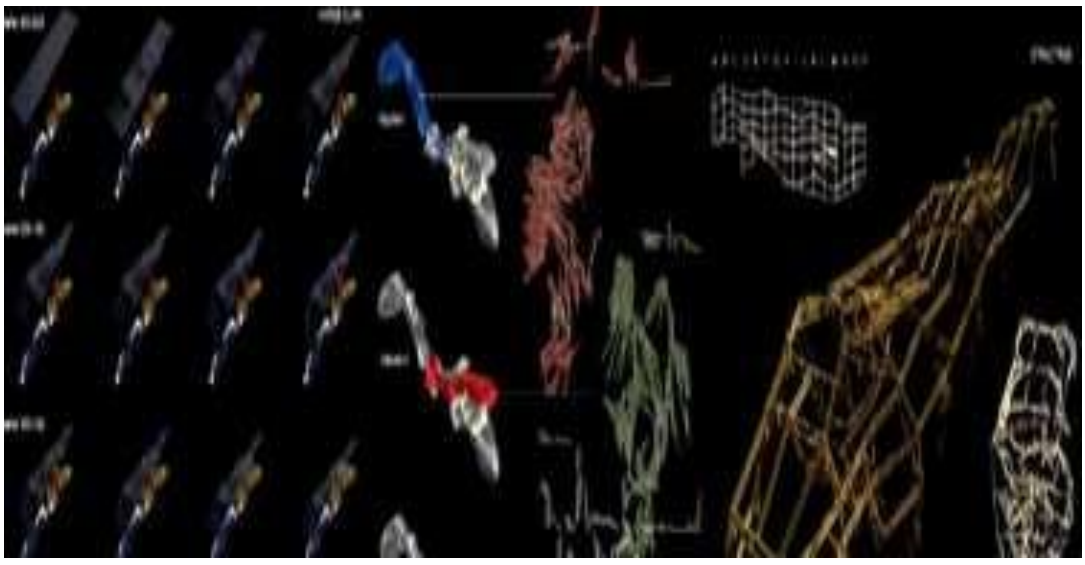


Fig. 9- picture; It illustrates the possibility of observingthe set of stages passed by configuration

- **Second project:**

In this case, the formal transformation of information on (strength, field, and effect) occurs through the emergence of structural frames on surfaces and shape size, where a clear briefing is observed on the elements that make up the shape as in Figure 10.



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- **Third project:**

Shape here is characterized by a whole closed structure in a sensitive and interactive, sothat it can find appropriate port or mechanism to penetrate closed structure. Figure11.

Fig. 11- picture; Displays How to move a bloated organic form, which creates a closedenvironment partially interacting with space

- **Fourth project:**

In this case, formal properties embodied in simulation of surfaces that they can analyze information (juveniles, motion, sound, and other phenomena) for neighboring environment and response to shape changes as a sensitive means, Figure 12.

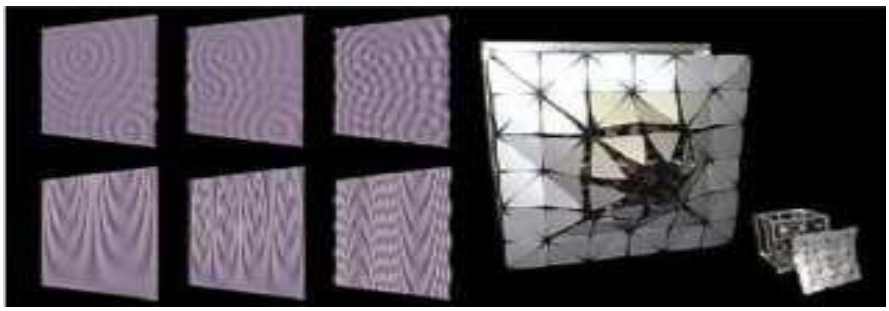

Fig. 12- picture; Displays Interactive surfaces (motion,audio and other phenomena) structural frame

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- **Fifth project:**

The format in this case is characterized by unrealistic forms (unreal form characteristic) by a group of sophisticated formal changes, and this situation also represents the possibility of manipulating and formalist to make forms for new forms, Figure 13.

- **Sixth project:**

The shape features by formal transformation simulates the movement of beaches by using two internally dedicated transformations to simulate that movement as perfection in Figure 14.

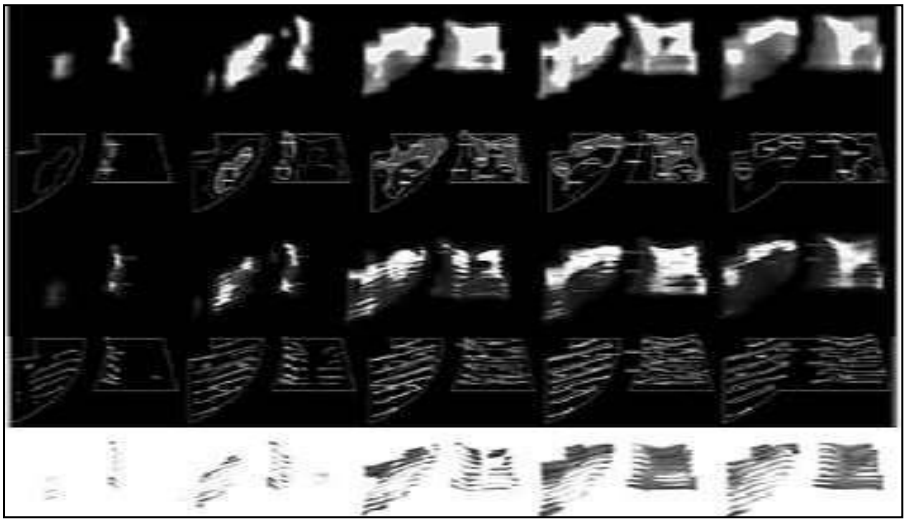

Fig. 14- picture; Configurable turning to simulate beachmovement highlights

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- **Project Seventh:**

This case sensitive wall an interactive surface, surrounding environment information asinputs, Figure 15.

Fig. 15- picture; It illustrates an interactive wall of IBM Watson in Atlanta, United States

- **Eighth project:**

In this case, there are a variety of interactive properties that enable them to express themselves as the project is trying to create a traffic model or Movement of particle flow and then find a way to discuss idea of fluid, Figure 16.

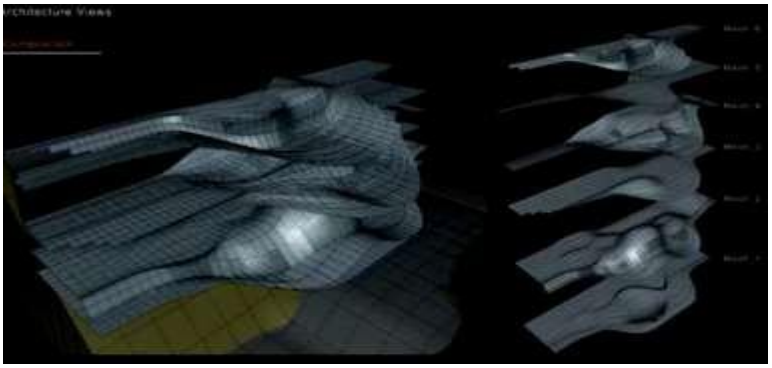

Fig. 16- picture; The interactive form shows himself through(creating a combined or partial flow model)

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Table 2 - The most important aspects related to digital forms.

The most important digital forms - Cao study
1. Expression stage for shape. 2. The position of the construction frames.
3. Closeness of shape. 4. Dynamic simulation type of surfaces.
5. Interactive shape. 6. Realistic shape.
7. Type of morphological transformation. 8. The surface is a sensitive wall.
9. The interactive characteristics of formal diversity enable it to express itself – The concept of liquid.

4.1. Digital technology indicators and their application in interior architecture:

The importance of using the genetic algorithm in generating and producing unexpected hybrid forms instead of its design, and exploring new amazing spaces by designers depending on the simulation of a virtual digital environment, and the adoption of the default digital code for digital architectural forms during a computer plugin with pre-stored models and manipulation By generating new forms, as well as the importance of adopting concept of body scheme as a source of generating forms (Digital by stripping vertebrate bodies intodesign elements) and stored in a genetic blade.

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1. Possibility of adopting a liquid crystal state strategy in generating digital form through the computer in design process based on software used in industry to simulate hurricanes.
2. Importance of digital technology in generating architectural forms through abstraction of nature represented by natural structures and installations, sea snails and crustaceans by adopting main components influencing architectural form of engineering, structural and architectural characteristics, by representing those natural forms with computational curves and then replacing them with new computational curves by changing mathematical relationships of formal determinants so that they can be re-installed in digital forms to produce usable architectural in multiple forms .
3. Effectiveness of adopting digital technology in creation and formation of architectural forms of building, biological installations and self-generated structures in nature using software to introduce a series of variables on self-generating models to derive formal structures by adopting genetic logarithm to produce efficient forms, natural forms stored in the virtual genetic code of all life forms represented by computer.

4.2.Basic and values for analysis and determining the characteristics of architectural forms:

The most important morphological indicators of digital architecture can be identified where it's clear that the single evolution cannot show or clarify distinctive characteristics of digital architecture while these characteristics are prominently manifested in single

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relationships and therefore it's possible to identify possible values of single relationships (morphological manifestations) and their secondary vocabulary in light of defined variables of it will therefore betested later in practical study to achieve a goal Search.

Table3 - The most important point of this study regarding digital formats.

The most important digital forms
1. A hybrid form of unexpected uses genetic algorithm.
2. The strategy of liquid crystal state.
3. Nature is stripped of natural structures and establishments, snails and maritime crustaceans
4. Building, biological facilities and self-generated structures.

4.3.derogation from ratios, types and functionality:

Architectural form is in the era of industrial revolution, such as the decline of additional rules, patterns and functions, the current form of operating software interface is the only reflection of our development, we have experienced Windows driver is the only reaction in our minds of parallel thinking, windows operating system is similar to the relative and fuzzy, the design stage is directly affected by the use of tools, design and impact In the way of thinking and the exit tool of product design, in the era of digital revolution, the use of computer has become a substitute for plastic, in the hand of architecture, it can easily meditate and prepare execution map Whether it's clear form, vehicle or complex.

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4.4.Freedom from measurement standardization:

While the architectural solution was an inevitable necessity from results of the industrial revolution, with Standardization and mass Production leading to achievement of easier and speed production for economic reasons such as:

- Cover the growing demand for products.
- Reduce product costs.
- Products easy to maintain provide the possibility of replacing damaged mechanical parts.

In digital architecture and interior design modeling of spaces, we can claim that the reaction to economic motivations and mass Production doesn't necessary to be standardization at expense of plurality and diversity in the composition and architectural solution. A practical example is the Guggenheim museum building (discussed above) Bilbao, Spain, and titanium exterior cladding of museum facades, each part was detailed and manufactured according to its location on facade.

The project adopts the technology that enables the cladding plate manufacturing machine to be executed by the project drawing the digital file if the cutting plate printing machine is in computer hardware. Future developments will occur in this digital control or in the execution of machines or robots for remote control without compromising fast execution.

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4.5.Parametric design:

Parametric design is a process based on arithmetic thinking that can express standards and rules, along, select, encode and clarify the relationship between design and design response, and between design target and design response.

Parametric design is a model using relationship between items to process design, and Parametric term of mathematics (parametric formula) and refers to use of parameters or variables that can be edited to process or change the result of equation or system, this term is used today in a signal to computational design systems, there are two modern systems in the work of architects 'Anthony Gaudi' used analog models to explore design area.

Fig. 17- picture; The conceptual model of parametric design ontology is described

4.6.Concept of "parametric structure":

Interior design sometimes takes a lot of time to build and repair themselves, digital technology Its impact on interior design modeling of deviations, unusual elements appear due to development of parametric design and modeling, interacts with external aspects and influences the shape and frequency of entire configuration an example, 'Galaxy SOHO' architecture, and generates the organic form through parametric control.

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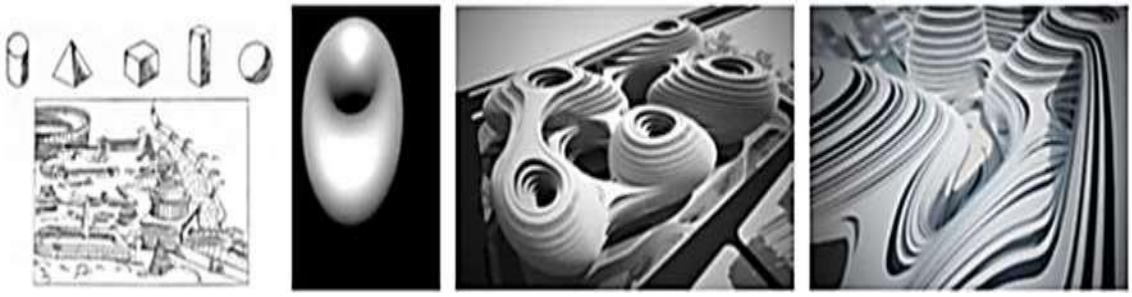

Fig. 18- picture; Galaxy Soho building by Zaha Hadid shows the contrast between parametricand modernity

4.7.Causes of developing this pattern:

Parametric design is different from the traditional design method, it is known, in other design process, the designer cannot communicate with the idea or the raw materials or products Design, but it allows it from the beginning of the modeling phase, designers can operate, analyze and test ideas such as the completion of continuity and performance in these models, while parametric design Otherwise, most of the design requirements are the image parameters integrated in the concept drafting stage and the designer's sense of innovation, which will greatly affect the final exit of the design process.

1. Parametric design of Shenzhen Bauan International Airport, China:

Fig. 19- picture; International Airport Shenzhen Bauan, China Hall

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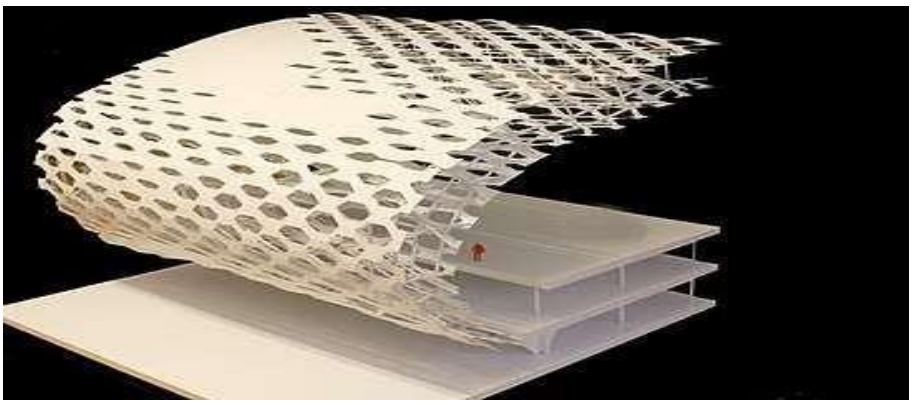

Fig. 20- picture; the structure ofadvanced interface

Fig. 21- picture; Waiting hall of Italianarchitecture Massimeliano Foxes

Fig. 22- picture; interior design of theluggage hall

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2. Main Features of Parameters:

- He deals with figures such as grasshopper and Maya by means of programs that have been assigned to work on them, and he understands systems with complex structures that were previously difficult to understand.
- It has the property of modifying the design parts even after doing them automatically.
- Designers can study the relationship between the basic aspects of actual construction, manufacturing technology and structural design.
- The design can be dynamic, where it can be an indoor or external design.
- It was considered a sustainable design where an integrated design and each element is responsible for the success of all this through the principle of reuse and recycling.
- It is characterized by easy disassembly, installation, switching, and probability of force, it is streamlined and spattered by lines such as tissue.
- It is characterized that each raw material can be used in its configuration; it depends on the repetition unit.
- Help designers better develop architecture by choosing colors, shapes and symbols of every variety and easily.

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Fig. 23- picture; Parametric design in interior design and furniture units, using wood texture.

3. Simulation of parametric design:

Fig. 24- picture; Wooden for walls using parametric design

4. Jeddah Sports Center:

Interface design of stadium originates from regional cultural mode, which refers to Arab details of mosque. It combines cultural and scientific methods to design this unique sports city.

Fig. 25- picture; Jeddah Sports Center by Parametric Design,Yazdani Studio Design

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Building structure can be established by parametric design, and to carry out primary solar analysis, and use this analysis in different regions to take advantage of the maximum solar radiation on roof of building and converted it to an electric power of the building.

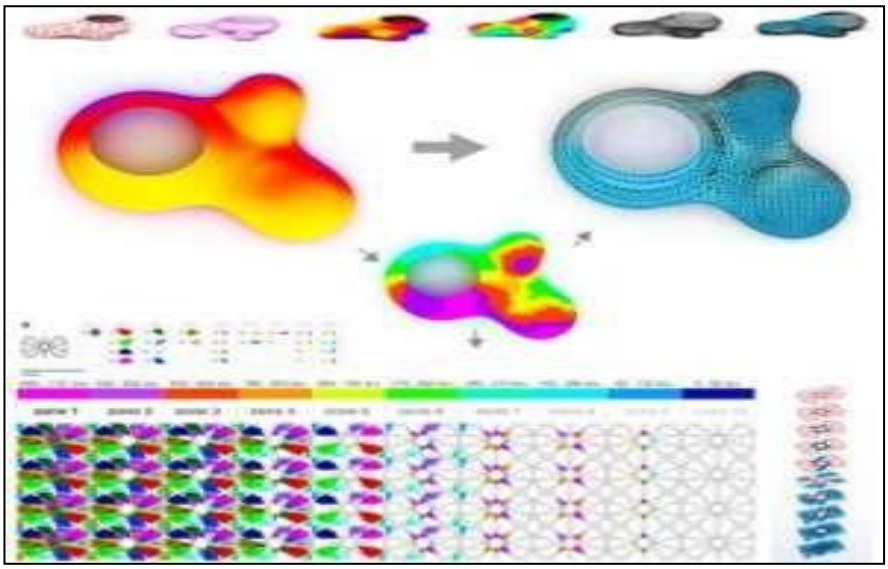
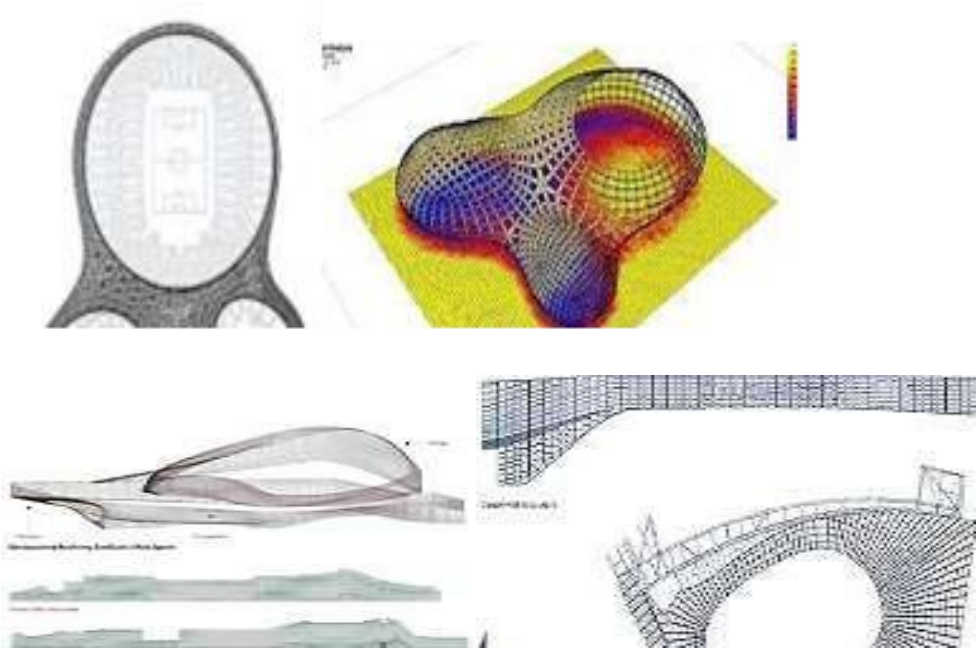


Fig. 26- picture; Use continuous surface modelby parametric design



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Parametric design has its characteristics and morphological features formed by the complexity and dynamism of component curved lines, which resulted from the continuous and connected formations of its various components and elements, computer visualizations and techniques determine characteristics of this design direction where parametric is built on filling space with organic forms.

5.1.Parametric architecture and interior design:

Designers can use modern digital programs, such as Maya grace hopper rhino, which include many special architectural designs and interior spaces, depending on the use Prototype is interested in finding a suitable interior design field, details of furniture and internal processor, to produce highly complex design suitable and energy, get a dynamic design and sustainable design.

1. **Interior design materials in parametric architecture:**

Main materials of furniture and interior design are wood and natural stone, they are easy to handle and environmentally friendly, in addition colors and natural pattern of wood and Stone are diverse and do not require additional treatments parametric design is diverse contact texture refers to properties of material surface.

2. **Parametric design, color variety and materials:**

Choice of color and ore is most important by designers. Strengthening importance of design concept and raw materials are factors that affect the success of design success through parametric design, designer's integral can be improved overlap of raw materials and colors is consistent.

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3. **Parametric design achieves functional and aesthetic values:**

Aesthetic values are a reflection of the evolution that is taking place in society, and important changes have occurred due to technological development, these aesthetic values are also reflected in architects and designers and different aesthetic styles are produced in order to promotethese evolving aesthetic values.

4. **Parametric effect on interior design in morphological terms:**
   - From static to motion.
   - From stalemate to consensus.
5. **Parametric design in furniture:**

Formation and development of block in the interior space, whether in the horizontal or vertical horizontal determinants, therefore, in planning of adjacent space and within the scope of vision and movement mobility plays an important role in transfer of internal space to external space as time goes on, unit of interaction becomes an extended space, and difference between vertical and horizontal determinants does not disappear.

6. **The impact of parametric design on functional design:**
   - It has the characteristics of innovation.
   - Interior space has flexible planning, organization and integration work.
   - Depending on open space and horizontal projection, a projection to look more connectedand integrated.
   - Furniture elements and updated units appeared as:
   - Slide furniture, Figure 30.
   - Continuous furniture infinite shape.
   - Genetic and hybrid furniture.
   - Built-in furniture.
   - Modular flexible furniture.
   - Standard furniture units.

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- Multi-use furniture units.
- Transformer's furniture units, Figure 31.

7. Software used in parametric design:

- (Rhino) Rhinoceros.
- Digital Project (CATIA).
- Revit.
- Dynamo.
- 3D Max.
- Inventor.
- Maya.

Fig. 30- picture; Parametric design in furniture design (slide furniture)
furniture)

Fig. 30- picture; Modular transformer's furniture

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6. MATERIALS AND METHODS:

- Standard curriculum to understand basics of digital forms in design, rules and trendsassociated with it.
- Analytical curriculum by clarifying models that apply algorithms in architecture andinterior design.

7. RESULTS AND DISCUSSION:

- Interior design is affected by modern technological development and information revolution.
- Most important positives using of using modern design technology in the fourth- dimension is to achieve three-dimensional.
- Intelligence extends to internal design components and various components.
- Digital form has free geometric form.
- Use the term virtual reality to describe the computer-generated environment, whichincludes the user's response in real time.
- Digitally created structures may not involve the use of actual materials such as brick, glass, steel and wood.
- Dependence on "Sets of stored numbers in form of electromagnetic" used to create representation and simulations that are compatible with physical performance.

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- Digital architecture does not represent only ideal interior space, but also creates a place, human interaction that does not resemble physical architectural spaces.

CONCULSION:

- We recommend interior designer not to be separated from modern science, systems and technologies.
- Narrow digital gap between information technology and developed countries, and expand application of technology.
- We recommend scientific colleges to develop curricula containing advanced modern technology and link them to specialty (interior design, architecture).
- Structural properties of building materials and the form of owners have a significant impact on structural guidance and investment of progress and technical efficiency in formation and visual embodiment of spaces and formal formation of urban.

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