

# The impact of the philosophy and ideology of contemporary interior design flexibility

Dr. Hala Salah Hamed

Lecturer in interior design and furniture department - Faculty of Applied Arts - 6th

October University

[halaharb76@yahoo.com](mailto:halaharb76@yahoo.com)

## Introduction:

The concept of flexibility appeared in many architectural movements across different ages, to emphasize its importance and reflects the positive evolution.

Flexibility is one of the most important concepts in contemporary interior design requires to keep pace with the requirements of the current era of accelerating developments have dramatically inconsistent design today with tomorrow's requirements without change or modify or reset, So it has to be taken of future needs and requirements subject to study for the opportunity to expand or change in various internal spaces and does not lead to distortion of interfaces or contrary to building regulations.

Flexibility is one of the most important recommendations of the thought of sustainable development and that would call for a premises and enterprises featuring sustainability with good performance that keeps the data environment.

**Keywords: The Concept of Flexibility – Sustainability - Spontaneous Flexibility - Adaptive flexibility.**

## الملخص:

يعد مفهوم المرونة مفهوما قديما تم تناوله في العديد من الحضارات المختلفة وكذلك في الكثير من الحركات المعمارية في العصر الحديث واصبح يمثل انعكاسا للتطور والايجابية لمواكبة متطلبات العصر الحديث ، كما يعد مطلبا اساسيا يجب مراعاته عند وضع التصميم المعماري والذي يتكامل بشكل مباشر مع التصميم الداخلي ويؤثر فيه ، فقد لا يتوافق التصميم مع متطلبات الغد دون تغيير او تعديل او اعادة حيث تعد المرونة من أهم العناصر المؤثرة على استمرارية التصميم حيث تجعله قابلاً لملائمة الاحتياجات المستقبلية المتجددة.

تعتبر المرونة من اهم توصيات البيئة المستدامة التي تؤكد علي ضرورة انشاء مباني ذات صفة البقاء والاداء معا للحد من اهدار المعطيات البيئية، كما تعد المرونة أحد أهم خصائص التفكير الإبداعي ، حتى نحصل على أفضل استخدام ممكن مهما تغيرت حيزات الفراغ الداخلي وبشكل جديد مبتكر .

ومن هنا جاءت اهمية دراسة فكر وفلسفة المرونة لاثبات اهميتها في مجال التصميم الداخلي كأحد النقاط الهامة المؤثرة لمواجهة التطورات المستقبلية ولوضع اسس تحقق كافة المتطلبات الوظيفية والجمالية من خلال امكانية التغيير ، والتحوير والاضافة والحذف وغيرها وذلك باستخدام كافة الوسائل المتاحة سواء كانت وسائل تقليدية او تكنولوجية او افتراضية ، مما يعمل علي تكيف الواقع الداخلي مع متطلبات الانسان المتغيرة والتي جاءت نتيجة للتطور التكنولوجي المتسارع او التغييرات الاجتماعية المختلفة ، كما اكدت الدراسة علي ضرورة احداث التكامل بين المصمم المعماري والمصمم الداخلي عند وضع الخطة التصميمية والتي تضمن وضع تصميمات مرنة تقابل اي متطلبات مستقبلية داخل المنشأ.

تناول البحث اهم تعريفات المرونة – دراسة فكر المرونة قديما ووصولاً لفكر المرونة المعاصر - مصادر المرونة – المرونة في التصميم – المرونة في التصميم الداخلي وكيفية تحقيقها – مفهوم المرونة في تصميم الاثاث – دراسة الاثاث

المتعدد الأغراض – دراسة تحليلية لبعض قطع الأثاث للوقوف على أهم الأسس والمعايير التي يجب تطبيقها عند تناولنا لفكر المرونة في التصميم الداخلي .

تم وضع النتائج بناء على الدراسة وجاءت لتؤكد أن مفهوم المرونة من أهم المفاهيم التي تؤثر بصورة إيجابية في مجال التصميم الداخلي والأثاث لما لها من قدرة على احتواء التغييرات المتسارعة في الوسائل التكنولوجية والمتطلبات الاجتماعية على السواء ، كما أكدت على ضرورة عمل دراسات مشتركة بين المصمم المعماري والمصمم الداخلي للعمل على توفير كافة المتطلبات داخل الحيز الفراغي مستقبلاً .

وبعد تحليل النتائج أوصي البحث بعدة توصيات وهي العمل على دراسة مفهوم المرونة وتطبيقه في مجال التصميم الداخلي والأثاث ، وضع أسس ومعايير لمفهوم المرونة لتطبيقه عند تناوله في التصميم الداخلي ، ضرورة أحداث التكامل بين التصميم المعماري والتصميم الداخلي لتوفير المتطلبات الوظيفية والاجتماعية والجمالية لدى الأفراد داخل المنشأ مستقبلاً .

**الكلمات المفتاحية: مفهوم المرونة – الاستدامة – المرونة العفوية – المرونة التكيفية.**

### **Research problem:**

The problem of research is to prove the importance of the concept of flexibility because it has a great role to contain the rapid changes in technological means as well as social requirements. - Absence of the joint study between the designer and the interior designer when designing the design plan, which ensures the development of flexible designs that provide all future requirements within the origin

### **The importance of research:**

- Contribute to the knowledge of the idea of flexibility through different architectural movements. - To establish some rules and foundations for the thought of flexibility and can be achieved in the interior design to keep pace with future changes and social requirements

### **Research Objectives:**

Access to what is thought of flexibility in interior design to achieve the most important requirements and variables developed within the origin and keep pace with the current era

### **Research hypotheses: -**

There is a basis for the thought of flexibility across different architectural movements - The thought of flexibility in interior design affects the economic aspect of cost as a result of the changes that have been made Research

### **Methodology**

The research follows the descriptive-analytical approach. Includes a presentation and analysis of the information and concepts related to flexibility and its relation to the internal design, with an analysis of models of designs through which the general foundations of the idea of flexibility are developed..

### **Search terms:**

The Concept of Flexibility - Sustainability - Spontaneous Flexibility - Adaptive flexibility

**Theoretical Framework for Research:**

- Definitions of Flexibility
- Flexibility of Old and Modern Thought
- Sources of Flexibility
- Flexibility Patterns
- Flexibility in Design
- Flexibility in Functional Space (Interior Design)
- Achieving Flexibility in Interior Design
- Concept of Flexibility in Furniture Design (Multi-Purpose Furniture) (Use)

**Flexibility:**

The elasticity of language, in the dictionary, is "flexible and flexible: for it is in its hardness." On the one hand, there is a multiplicity of meanings of flexibility, meaning "the possibility of change, development or adaptation.(net / 12 )

**Flexibility Definitions: -**

The possibility of internal modifications of the vacuum to meet new needs, and this is done by modifying the conditions of the internal walls, either scrapped or in addition, and may extend the amendment to change the infrastructure of the internal vacuum as a whole. - The possibility of making the necessary change through the increase and lack of flat origin due to the increase and decrease in the size of the requirements in different stages. (net / 5)

**Think of flexibility in ancient and modern thought:**

The thought of flexibility in some civilizations, including the Islamic civilization and I have many architects through the various architectural movements such as le Corbusier , Mies van der rohe and Frank Lloyd Wright with different goals of each of them when dealing with the principle of flexibility.

**Flexibility in Islamic Architecture:**

The flexibility, adaptability and horizontal extension of Islamic architecture: Islamic architecture is the only one in this feature, adding various units of shapes and sizes to the building without damage in the form of the final building. This attribute reflects the membership of Islamic architecture and harmony. The patterns of the other buildings where the mosques are undergoing renovation and expansion in the various periods of the Islamic era (eg the Qortoba Mosque), which were characterized by a decentralized composition stemming from these two features, the mosque gained the possibility of spreading and spatial expansion without prejudice to The origins of architectural formation, value and another example (Mosque of the prophet).

- The flexibility has not had a negative impact on the architectural configuration and balance, which makes the Islamic architecture a system that accommodates change and addition and modification through the relationship of the part to the whole and through the adoption of repetition on the rhythmic controls suited to the level of the building and details.

- The temple of the Greeks was a block seen from the outside if added to any part will be distorted architecturally as well as other important columns in the Greek city. ( net / 6 )

### **Think of the flexibility of le Corbusier:**

Domino is considered one of the most important concepts created by le Corbusier which contributed to the development of structural theories in the field of reinforced concrete. It helped the emergence of the concept of free projection and the flexibility of the internal architectural vacuum formation in the horizontal projections of the building

The construction of the concrete system allowed the domino to remove the thick walls and the structural elements of the building and to rely on columns as structural elements, thus providing complete independence of the internal partitions and allowing free internal distribution of the building. Siegfried Geden describes this system: "We have been able to employ the concrete structure presented by the former in the work of architectural expression; he knew how to clarify the link between concrete construction and human needs and the urgent desires that come on the surfaces. It was an idea to create places lightly Unprecedented, as shown in the picture no. ( 1 ) .



**Picture no. ( 1 ) villa Savoy - le Corbusier:**

Le Corbusier has benefited from the revolution in the world of technology and its great impact on the creative process of architectural design, especially in the flexible domino system, whose structure consists of a small section that easily holds several horizontal slabs as floors and ceilings connected to the pillars through the stairs, which is the only fixed element, In the free or open plan as in the picture No ( 2 ), as well as in the free interfaces and windows as shown in the picture No ( 3 ).



Picture no. ( 2 ) Illustrates the idea of a free or open project Villa Savoy



Picture no. (3) Illustrates the idea of a free Facades or open windows- Villa Savoy

### **The concept of flexibility with, Mies van der rohe (open space):-**

The architect , Mies van der rohe emphasized that the need to keep up with the buildings for the purposes that they perform must be subject to change and development according to the requirements. His main focus was on the flexibility of the interior spaces. He created a new vacuum inside the building. A comprehensive vacuum which enables all activities to be carried out within it and can be divided flexibly through light boxes which are not related to the structural system and according to the requirements inside the building.

Mies van der rohe helped to achieve flexibility in the use of structural construction and the use of glass facades inspired by the international style, which is the internal vacuum basis of the building, all of which led to the emergence of the smoothness in the interior and clarity and transparency in the outer shape Picture no. ( 4 ) .( Colqhoun, Alan/ p. 56 )



Picture no. ( 4 ) The German Pavilion - for the architect Mies van der Rohe - at an international exhibition in Barcelona 1929

### Thinking of flexibility of Frank Lloyd Wright:

Frank Lloyd Wright's turn to edit the floor plans and rules and geometric shapes, so that the plan runs smoothly, making integration and harmony. This is reflected in its projections where all vacuum completes as one unit, you may cancel your walls and partitions that separate the spaces that do not require privacy in use and combine into one space how much reflected in his design for the Kaufman House (House of waterfalls)-Pennsylvania – 1936 as in Picture no. ( 5 ).( Abdul Karim Hassan Khalil Mohsen/, p 6)



Picture no. (5) Illustrates the House of waterfalls -architect Frank Lloyd Wright

### The most important philosophical principles of Frank Lloyd Wright:

- Projected planning free horizontal (open) as seen in the pictures no.( 6 ) .
- Flexibility in design and building for the future extension and change of function at will .
- Building of nature and an agreed external appearance and internal composition and nature capacity with the purpose for which it was created at a certain time and a certain place.(net/ 4)



Illustrates the plan for free or open- house of waterfalls Picture no. ( 6 )

### Sources of flexibility

Derived from two origins :( philosophical source-economic source) flexibility

**philosophical source:-**is intellectual identity into its three philosophical tributaries

**Future philosophy:-**

Future philosophy calls to achieve movement like the nature of things in front of the prevailing serenity, as calls for harmonization between man and his environment and particularly the changes in this era has been speed.

**The libertarian philosophy:**

Libertarian philosophy calls for full human liberty to exercise within different spaces without harming others to achieve their wishes and have a role in changing redrafted according to requirements.( Ola Hashem/-p 60)

**Flexibility forms:**

The ability to respond to varying or changing needs and requirements from time to time by providing a variety of alternatives, and research has shown that two kinds of flexibility in thinking.

**Adaptive Flexibility**

-:is the ability of the designer to the destination change of mind which is seen to solve a specific problem, as it means the ability of the designer to convert old interpretations to other recent information create ways to new uses .

**Spontaneous Flexibility**

The ability of the designer that automatically gives a variety of responses do not belong to the class or the appearance of one.

**The most important types of flexibility:**

**Structural flexibility:**

Is the flexibility resulting from the use of a construction system allows the ensure flexible open space so that my free space service focus, is locating the prerecorded service items (kitchen, bathrooms, stairs) after studying the integral of the plan which they suggested the possibility of a change in venue but allows freedom of formation and other interior spaces

horizontally and vertically to a great extent, this kind of flexibility as a result of economic, but taken them is the lack of prospects for possible change by the installation into service, along with whole sale construction control in shaping space architect.

### **Open- end flexibility:**

flexibility specific fixed Within defined of others, where you can expand both horizontal or vertical level, free relocation services (kitchen, bathrooms) and requiring special equipment and without obstructions and taken on this kind of huge construction cost, flexibility and the ineffectiveness of the Method for long term health connections causing problems to the structure.

### **Flexibility in design:-**

It means the ability to change and continuous development and for appropriate changes and future requirements, as are most important elements upon which the survival and continuity of product schedule it is divided into:

#### **Flexibility for the designer:-**

It means Thinking of The flexibility during the design process

#### **Flexibility for the proposed design:**

It means the ability to stretch and change by addition or deletion with the changing needs and requirements and includes many diverse images to achieve flexibility for interior design and furniture.

#### **The importance of flexible thinking in economic term:**

means the full lifetime of origin through modified and redesigned to match career and humanitarian and technological changes to stay able to satisfy user needs, it is essential to reduce the cost of origin and enable as many Take advantage of it by making all its spaces and elegant multifunctional, and thus reduce the area and make it accessible in its furnishing and maintenance.( Prince Abdullah& Advisory Studies/-p 144 )

### **Flexibility in functional vacuum (Interior design)**

Flexibility achieved through several methods basically depends on the possibility to make some adjustments to the architectural space that satisfies new needs and requirements the most important of these methods:-

- **Long term adaptability:** - is the ability to adapt and housing renovation and adopt modern technology when available, addition, deletion or modification of the inner walls of the void without distorting the overall shape or stop basic functions :-

- 1- . Study room dimensions and area or space commensurate with the desired functions.
- 2- Incorporate some spaces with each other, which is integrated functionally together .
- 3- Examine the interiors of space and equipped with Windows and doors, electricity and any other equipment meet the needs of users and reduce the waste likely done by taking into account the following aspects .
- 4- Relying on free restructuring to achieve multiple functions to use items easy removal and installation (sliding doors or partitions light loads on the structure), or make use of the



furniture units as separators between the spaces or change the distribution within the space or use a multi-furniture Purposes.( Sarri, Arto/, pp. 239-242)

- **Extension or expansion:** the ability of space to change and increase the size to meet the new requirements and needs (increased number of individuals – new emergency posts) as a result of social and technological variables is done in two ways:-

1. - **add – on:** an actual increase in internal vacuum filled surfaces such as architectural openings such as balconies and terraces as living bodies are closed, or it may be a stretch horizontally like gardens on the ground floor or vertically in recent roles, but this type of extension Deemed impractical for limitations on hand only a few opportunities areas established as extension in the balconies which affects buildings.

the implicit increase: vacuum can occur without an actual increase in the sense of better utilization of space, which allows the perfect performance of the desired functions of the internal vacuum like multipurpose furniture units.( Ali Rifaat/ p 430)

2. **interactivity:** the easiest types of flexibility and are applied within all different activities and facilities mean exchanging places perform activities such as switching the living room where the dining room and vice versa and that kind of flexibility depends on factors of space and time.

### **Achieving flexibility in interior design:**

Interior design plays a fundamental role in creating internal voids to achieve flexibility, which allows adjustments to the internal spaces adapted to the diversity of activities used, and to keep up with the changes and future requirements, when control spreads Interior must be characterized by functional and aesthetic aspects and are compatible with the activities carried out, and what the designer's understanding and awareness of space and the size of the internal vacuum sensory perception and the interior designer can control the internal spaces through the following:-

1- **Fine line:** use the fine line within the vertical or horizontal levels or both helps to determine the activity in space.

2- **Material and texture:** using raw materials of different texture than in vacuum participate in determining the space such as anticipating different from the rest of the ground floor.

3- **Light and color:** the color relates closely to human life as they affect him profoundly, color the first time we hear our call and phenomenon while looking at any of the elements that we use in our daily lives, or those that are located in the area are sensual, so we find that an important color proportions For the Interior Designer is an essential element of the internal vacuum controls and handles every designer with color as his own style so that makes him a tool that express his point of view and how aware of this property and moral potential in inner vacuum control, you can divide the Interior either In horizontal or vertical floor plans House plans for the blanks to determine its activity on surroundings .( axel ritter/ P 74)

**The concept of flexibility in furniture design:**

-Defined as the ability of the designer to set him free from deficiencies in design thinking when solving problems, so check requirements and requirements for individuals. (Hutshinson, J& Karsnitz.J.R// p 43)

**The most important criteria that must be considered when designing a Flex-flexible:****Furniture additions and deletions:**

Adding some parts furnishing products when needed for another job so as to obtain a form for a new product, it also means the ability to dispense some parts and functionally not need altering in the shape of the product as well as in his sensual inspirations.

**Flexibility of the jaw and the installation and reassembly, transport from place to place:**

One of the most important criteria that must be taken into account where the jaw and installation possibility of multifunctionality and the ability of the product to meet the new requirements.

To reach the flexibility in the jaw and installation operations must observe the following:

- 1- To be by flexible grouping links jaw and installation without causing any damage to the basic product configuration, so by meets another purpose either change jobs or move from place to place or purpose its mobile (temporary).
- 2- Furniture parts must be designed to withstand any pressure may have the lowest possible weight for easy transport.
- 3-Taking into account the standard elements in the design.

**-interchangeability:**

check the flexibility of switching the possibility to change the corrupted elements of furnishing products by life so we can exploit the rest of the product by its functions, where product life depends on the ease of replacing defective parts without damaging the product functions Platform with the ability to reuse by the provisional Assembly methods in the jaw and installation.

**Multipurpose furniture:**

Furniture is one of the most important elements that help the Interior Designer in the design flexibility of the internal spaces, bringing the integrated design Flex is integrated which seems sober during the stages of its development and does not lose its poise as rigid unit and designed to develop rigid no Accept change.

Because this is multiple-use furniture is the result of effective and innovative solutions in the field of Interior design problem of small space available for living in the shadow of population growth and the financial crisis facing the world and directs States to widen the horizontal. It is the acquisition of furniture can be converted from one format to another or from job to mimic modern style Or what it's called (Modern or Ultra-Modern), to achieve several important Objectives::

- Add the aesthetic values of the place -
- Solving the problem of small spaces

- Exploit so well.(net/ 10 )

We'll make an analytical study of some multipurpose furniture models to develop several bases and criteria to be applied when addressing flexible interior design:-

**The first model:**



Picture no (7) shown living area furniture unit turns into a bed

Picture no ( 7 ) illustrates the multipurpose unit include living area seating amenable to switch to sleeping area and note taking designer activity mismatch.

**The second model**



Picture no (8) Shown Furniture unit work on converting the area from the living area to the sleeping area

Picture no (8) illustrates the multipurpose unit also include living area suitable for switching to a sleeping area and note taking designer activity mismatch.

**(Note): In the first and second forms they represent one way includes multi-purpose furniture units for basic purposes lead for other minor.**

**The third model:**

**Picture no (9) shown sleeping bed used as storage units**

Picture no (9) shown multipurpose bed unit can be used double storage, rack for reading and note all activities can be used simultaneously without opposing the other activity.

**The fourth model:**

**Picture no ( 10 ) shown Central table stretches to fit for other purposes**

An intermediate table unit stretches to increase working surface so that it can be used to sit around the same table, as they allow achieving more functional purpose at the same time  
Picture no (10 )

**(Note): third and fourth models represent one way includes multi-purpose furniture units to achieve more functional purpose at the same time.**

**An analysis of previous work devises certain principles and standards that must be observed, as follows:-**

**First:** there are two fundamental trends in the classification of multipurpose furniture:-

- Multipurpose furniture units for basic purposes lead for other minor this trend depends on the separation of activities and deny access to multiple items at the same time.
- Multipurpose furniture units to achieve more functional purpose at the same time.

**Second:** ergonomics and psychological requirements:

- Taking into account the capacity of the level of the muscle and mental services and the mobility of.
- Taking into account the psychology of the user during use of any part of the product.

- Observance of security and safety in the installed parts and moving parts
- Observance of standards of human body in every movement of his movements when used.

### **Third: functional requirements**

- Possibility of the fact the basic functions of the adaptability between part and whole.
- Possibility to achieve high positions through the use of other.
- Which few high product, where the inner emptiness of space.

### **Fourth: Engineering and technological requirements**

- Ease of jaw and installation that all of the product.
- Take into account fluctuations of weather factors on transfer and storage.
- Raw material for the operating methods and finishing and the life span and to treat individuals with product parts.

### **Fifth: Aesthetic requirements**

- Ensuring the functions of general appearance has not resulted in the user environment and customs and traditions
- The appearance in relation to the moving parts and liabilities parts
- Consider choosing the dimensions of the product and its parts to achieve ratios beauty objects.
- The adaptability between the multipurpose functionality in terms of aesthetic appearance

### **Results:**

1- The concept of flexibility one of the most important concepts that influence positively in the field of Interior design because of its ability to accommodate the rapid changes in technology and social requirements.

2- Integrate between architectural designer and interior designer to plan a flexible design provides all future requirements within the building.

### **Results analysis**

Affects the concept of flexibility directly on the field of Interior design where he works to bridge shortfalls in social requirements of individuals and the provides all functional and aesthetic considerations, and to ensure that the design plan must be a partnership between the design architect and interior designer to work on providing all Future requirements.

**After discussing the results we recommend the following:**

### **Recommendations:-**

- 1- Study the concept of flexibility to apply it in the field of Interior design and furniture.
- 2- Setting bases and criteria for the concept of flexibility for application in modern interior design.
- 3- Complementarity between architectural design and interior design to provide social and functional requirements in future.

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