

The effect of interior design on the interior and exterior spaces of the residence

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تاريخ النشر: 2024/4/14

تاريخ التقييم: 2024/1/29

تاريخ الارسال: 2024/1/15

DOI: <https://doi.org/10.36602/famj.2024.17.1>

Abstract:

The research aims to create functional and aesthetically pleasing spaces to meet the needs of users, as well as to propose design solutions that can be applied to most current residential units. The research problem is the need for users of small or limited interior spaces to have special spaces that meet their functional and aesthetic desires. This can be achieved through functional design treatments that do not waste available space or obstruct the use of internal space. The approach taken in this study was inductive, which involved reviewing previous studies on design solutions and treatments. The research also used the descriptive analytical method to analyze the phenomenon through private data. The results of the study showed that studying all human and changing needs related to housing can lead to realistic and applicable design solutions, allowing access to the most suitable housing for its occupants. Additionally, the use of simple design treatments can solve complex housing design problems, although it may require reconsidering budgetary issues. Finally, flexible thinking about reusing available spaces in the interior space in different ways contributes to solving design problems in an innovative way that meets changing human needs.

Keywords: interior design; interior spaces; exterior spaces; design treatment; residence.

الملخص:

تأثير التصميم الداخلي على المساحات الداخلية والخارجية للمسكن

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يهدف البحث إلى إنشاء مساحات وظيفية وجمالية لتلبية احتياجات المستخدمين، فضلا عن اقتراح حلول التصميم التي يمكن تطبيقها على معظم الوحدات السكنية الحالية. تتمثل مشكلة البحث في حاجة مستخدمي المساحات الداخلية الصغيرة أو المحدودة إلى مساحات خاصة تلبي رغبتهم الوظيفية والجمالية. ويمكن تحقيق ذلك من خلال معالجات التصميم الوظيفية التي لا تهدر المساحة المتاحة أو تعيق استخدام المساحة الداخلية. كان المنهج المتبع في هذه الدراسة هو الاستقرائي، والذي تضمن مراجعة الدراسات السابقة حول حلول التصميم والمعالجات. كما استخدم البحث المنهج الوصفي التحليلي لتحليل الظاهرة من خلال البيانات الخاصة. وأظهرت نتائج الدراسة أن دراسة جميع الاحتياجات الإنسانية والمتغيرة المتعلقة بالسكن يمكن أن تؤدي إلى حلول تصميمية واقعية وقابلة للتطبيق، مما يتيح الوصول إلى المسكن الأنسب لشاغليه. بالإضافة إلى ذلك، فإن استخدام معالجات التصميم البسيطة يمكن أن يحل مشاكل تصميم المساكن المعقدة، على الرغم من أنها قد تتطلب إعادة النظر في قضايا الميزانية. وأخيرا، فإن التفكير المرن في إعادة استخدام المساحات المتوفرة في الفضاء الداخلي بطرق مختلفة يساهم في حل مشاكل التصميم بطريقة مبتكرة تلبي احتياجات الإنسان المتغيرة.

الكلمات المفتاحية: التصميم الداخلي، الفضاء الداخلي، الفضاء الخارجي، المعالجة التصميمية، السكن.

1. Introduction:

The study of architectural spaces, including the elements, foundations, and determinants they contain, is considered one of the most important architectural studies, especially modern ones. It is a study that simulates the human being in an attempt to form an understandable language between the human being and the environment or space in which he inhabits. Architectural space, with its physical composition, functional form, and aesthetic appearance, is the vessel in which humanity interacts to form civilization, which is considered the highest and finest creation of humanity.

Man, by his human nature, seeks solutions that meet his changing and renewed needs over time, especially about the place in which he lives. He strives to make it a suitable place to feel comfortable and always reassured. Current housing is characterized by limited spaces and lacks the possibility of applying flexibility in its designs, which may make its users feel that they are losing the desired privacy (Abu Zaarour, (2013). This is what calls them to search for solutions and treatments that may lead them - in most cases - to leave those housing and search for... Others meet their new requirements, but this may lead to them falling into bigger problems that disturb their comfort and make them lose the happiness they hope for, which increases their burdens and pressures that exceed their financial capabilities and may be unplanned at present (Ataa 2017). The current trends - in most countries The world urges the construction of limited-sized housing, to rationalize the spaces used for housing, adapting it to the current requirements and desires of its users, and having design flexibility represented in the ability to adapt in the future to their new living needs without wasting or creating an undesirable impact resulting from their inability to Taking advantage of the space available to them achieves comfort and efficiency of use from the functional aspect (Tablat, 2017). This is what calls on its users to think and search for simple, innovative solutions that contribute to

meeting their requirements within the limits of their capabilities, and to strive to break the stagnation associated with the traditional form and conventional distribution. In the units and their components by transforming the spatial configuration of the housing supports to achieve their functional needs (Al-Imam, 2020).

The focus in the use of housing spaces falls on certain areas in particular that are appropriate to the nature of the residents' living life, and there may be multiple tasks in them and not in others, which requires attention to designing them to have good functional performance in terms of providing a space that is appropriate to the use and compatible with the tasks designed for it (Al Musa, 2017).

The importance of design solutions and treatments for housing spaces and knowing the extent of their contribution to meeting the needs of users becomes clear from the fact that they are applicable within the limits of the available space. Such as using the principle of dividing a single internal space into a group of sections, to practice different activities that serve all individuals in the same place, which also allows for achieving occupancy efficiency and equipping it within the limits of the family's financial capabilities (Al-Warfalli, 2020). Many studies have addressed design treatments with research, depending on the goal and problem. And to emphasize the importance of taking advantage of them as modern trends for solving design problems, including, but not limited to, Al-Naqiti's study (2016), which aimed to think and research how to meet the needs of family members in their homes through optimal exploitation of vertical spaces as a method of addressing space. The problem of the study was limited to answering the main research question, which is how to take advantage of the vertical and unused spaces in the dwelling for their design. And furnishing it well, and in her study, she reached results, the most important of which are: the possibility of benefiting from the heights along the walls in residential units, by employing them as design solutions that suit the capabilities of family members, the research sample and study (Al suwsi, 2015), which

aimed to identify how to benefit from applying the principle of flexibility. As one of the methods used by the interior designer, to demonstrate his ability to employ it to optimally exploit the space in the dwelling, and achieve efficient use, the problem of the study was to search for means and methods that help specialists in applying their ideas related to the designation to achieve the maximum benefit from the available space with high efficiency of use of the dwelling, and I mentioned the most important The results of her research: Using the principle of design flexibility is an important tool in the hands of specialists that contributes to their ability to employ it as a design treatment to increase the efficiency of use in the residential environment. The 2017 Hassan study aimed to meet the needs of housing beneficiaries by adapting designs to them. And reorganizing it in response to physical and cultural variables. As for the research problem, it addressed and clarified that the needs of users are constantly changing, and work must be done to meet them by adapting the dwelling to be compatible with their environmental system, and to maintain balance and stability. The most important results indicated that: flexibility in design contributes to modifying the physical form of the building by merging spaces, or dividing them, to achieve sustainability, flexibility, and adaptability. The study (Mohammed, Sarmeh, 2022) clarified measuring the ability of housing design to respond to emerging functions and needs, and the ability to adapt to sudden, new, and potential lifestyle changes, the main result of the study is to establish a relationship between the spatial design style of housing and the ability to adapt to sudden changes in lifestyle.

From the above, the problem of the current research becomes clear, which is to benefit from design treatments and solutions that can be applied in most residential units with limited space as means and tools for creating functional spaces in the internal space of the dwelling that meet the living needs and achieve privacy and comfort for its users.

1.1. Research problem

The research problem is the need of users of small interior spaces or limited space in the dwelling for some special spaces that meet their functional and aesthetic desires and needs, which can be provided using a set of functional design treatments that can be modified or changed without wasting the available space or hindering its use. Internal emptiness. The research questions were as follows:

- What is the possibility of benefiting from design treatments and solutions in creating functional spaces that serve users of the interior space?
- What is the possibility of repurposing some spaces in the interior space to ensure the benefit of the residents by meeting their functional and aesthetic needs?
- What is the possibility of finding innovative solutions from specialists for immutable spaces that meet the needs of space users?

1.2. Research Aims

- Taking advantage of the proposed design treatments and solutions to create functional spaces that serve the users of the interior space and meet their functional and aesthetic needs.
- Repurposing some spaces in the interior space, ensuring the benefit of the residents by meeting their functional and aesthetic needs.
- Proposing design treatments and solutions that apply to most of the current housing units for users who do not require design for special categories.

1.3. Research Importance

- Studying solutions and treatments for design problems that can be applied in most of the interior spaces of homes, which are characterized by their possibility of implementation, suitability to the available spaces, and not requiring a

foundation during the construction phase, and can be modified or dispensed with if desired.

- Meeting one of the most important living needs of housing users, which is privacy, a sense of belonging, and security, by allocating private spaces for individuals in their residential surroundings.
- Providing solutions and treatments with new and innovative visions for immutable spaces that benefit researchers and specialists in the field and meet the needs of users.

1.4. Search Limits

Objective boundaries: functional treatments for new spaces within the interior space of contemporary housing that can be applied in most residential spaces.

Time limits: The research completion period is 2023

Spatial boundaries: internal spaces of the dwelling (Livingroom, Bedroom, entrance, corridors).

1.5. Search Terms

Design treatments are the tools the designer uses to confront design problems to find logical and applicable solutions (Ataa, 2017)

Process definition: methods used by designers to transform problems into realistic solutions that suit human needs.

Functional spaces: organizational processes for non-current forms of plastic elements through approaches and considerations within the work (Al Musa (2017).

Procedural definition: Created spaces that mean an organizing process for a group of shapes and elements within the space.

Interior spaces: Interior space is the primary material in the designer's palette. It is an important element in interior design. As for the size of

space, it is not limited to movement but allows us to see things, hear sounds, feel the breeze of the air, the warmth of the sun, and smell the perfume of blooming flowers. Space has sensory and aesthetic properties. for those elements in its domain (10Ching, 1987, p.), and internal space is the tangible limit of seeing shapes, forms, places, and dimensions within standard relationships, so spaces begin to appear by containing or defining them by elements, and it consists of the relationship between shapes, including the boundaries and levels they contain, which themselves represent continuous surfaces (Al-Asadi 2017, Interior space and coping mechanisms9 . P) Interior space is defined procedurally as the space that is defined by ceilings, walls, floors, openings, and furniture, and is represented by the physical composition of the material from which these elements are composed, its quality, and its visible protective effect, such as color, texture, and shape, and determines the relationship of these elements to each other.

The interior space of a dwelling is specific and ordered, and part of the interior space is characterized by special determinants according to engineering or physical designs, which make it suitable for carrying out a group of activities related to the life and nature of the users of the place, and in a way that suits the requirements of the times (Salem 2021).

Operational definition: It is the interior space of the dwelling in which individuals live, and which meets their material and moral needs, to achieve complete happiness, by being free of design defects and appropriate to their living conditions.

External Spaces: (External space) is known in language as the specialty that works to integrate art and science in the management, planning, and design of external environments, both physically and culturally (349 John M, 2001,), and outer space is defined as the physical space that occupies a space between buildings and after a container that contains human activity. . It is formed according to intellectual and humanitarian concepts and trends, which represent the outcome of human interaction

with his natural and cultural environment (Al-Asadi, Design requirements in the open spaces environment of the city of Baghdad, 2005, 4 p.). Outer space is defined procedurally as everything the building is surrounded by either artificial features, represented by ceilings, walls, floors, openings, and furniture, or natural features, represented by trees, plants, rivers, seas, and mountains.

2. Theoretical framework

The theoretical study for the research included a group of elements resulting from reviewing previous studies and extensive reading on the subject, which in turn paved the way for an inventory of the most important information related to the study, which was represented in the following:

2.1. Design treatments

It aims primarily to achieve functional benefit that meets human needs, which in their entirety constitute priorities that provide him with the comfort necessary to live happily and contently in the space that he owns and that is compatible with his material and psychological capabilities, through reusing the internal space and employing it innovatively and unconventionally that seeks to achieve two elements of benefit. And comfort, as housing is one of the needs that a person cannot do without, and it is difficult to change it on an ongoing basis, due to its high cost, and it is linked to the issue of psychological and moral stability (Abu Zaarour, 2013)

Achieve these treatments and solutions in the interior space, whether functional or aesthetic, requires methods and techniques aimed at innovation and creativity in general and depends greatly on the ability and skill of specialists in selecting and shaping them in a way that is compatible with the available space and meets the needs for their use, in addition to It is applied in interior spaces with limited space in a particularly functional manner, to avoid the lack of feeling of interior comfort for the space residents in a functional manner (Maggie, (2015)

2.2. Types of treatments that can be applied in the interior space of the dwelling

2.2.1. multi-functional furniture:

The total area of the majority of residential units at present is limited, as the furniture occupies a large area of it, which may cause a major problem for its users, which is the lack of sufficient space for all the necessary furniture, which is considered one of the increasing human needs over time, in addition to the need to feel comfortable. With a space that achieves freedom of movement, which can be affected by the contents of the space, including furniture, and to achieve the main goal of its acquisition, which is linked to achieving human well-being and improving the appearance of the place, which contributes to thinking about creativity and innovation in its designs. To contribute to the organization of space and efficient use. And reducing human effort while performing various jobs (Chen, 2016)

Multi-functional furniture is space-saving, can serve more than one function, and has several shapes that suit different residential spaces - in general, and living areas - in particular - because it has more functional characteristics than others (2017 (Gentill,

It is considered a revolution in furniture design, because it is one of the most used pieces at present, and its designs are considered smart solutions for small spaces, making them look more aesthetic, and helping to apply a sustainable approach to use, serving all types of functions at the same time (2014) (Farjami,

It is considered one of the design solutions and treatments that can be used to achieve optimal exploitation of available spaces in general and small spaces in particular - as it supports the principle of multiple uses of the furniture units themselves by transforming them from one form to another, in addition to contributing to the multi-functionality of the space in which they are placed. Because of their ability to achieve

flexibility and adapt to the needs of users, invest in their number and material cost, and harmony with the shape of the space to improve the style of living by making full use of the available capabilities, these types of simple furniture can balance spaces in terms of beauty and efficiency (Husein, 2020).

2.2.2. Repurposing spaces: This means multi-functional design

The space or element must have more than one use, perform a group of functions with different and diverse ideas and materials, or create spaces that suit the lifestyle of the users. Creating a multifunctional space can be simple or complex, depending on the need, and depending on the types of spaces being attempted. To merge it (Sabine, 2021)

Repurposing spaces aims to use the available spaces with a different vision to perform functions that are important to the users of the space, such as sitting, resting, or using a designated space for children to play without wasting space, or hindering movement and furnishing, as family members - in most cases - lack experience in distributing and switching between... functions of those spaces, which contributes to their feelings of anxiety and discomfort because they believe that the dwelling they inhabit is unable to meet their needs (Virginia, 2020).

One of the methods of repurposing is dividing areas into parts, meaning: deducting a space or defining it (the part of the whole) with a group of elements such as: (colors) or (furniture, for example, as a workspace in the living room of a family members. This can be achieved by placing a colored carpet with a different design From the rest of the design style of the room, and coordinating a group of the design complements around it in the workspace can give it its boundaries, or by using the method of merging functions in the same space, such as: taking advantage of the design of the kitchen in the form of an island and using its extension to become a dining table, as this merging of functions can lead to Applying the principle of efficiency, effectiveness, and investment in the use of space (Mohammed Sameh, 2022).

2.2.3. Forming the walls

From the point of view of designers, walls are considered one of the best spaces that can be exploited and benefited from in furnishing or beautifying internal spaces, as they are distinguished - in the majority of designs - by their straightness, and their wide and extended areas in a way that allows one to think about how to occupy them, equip them, and shape them, including Takes full advantage of its existence (Designs, 2019)

Walls, with their simple shapes and designs, usually support the subject of their use in multiple uses for the users of the dwelling as a form of benefit by creating prominent design units fixed to them with dimensions commensurate with the function designed for them, so that they can be used for sitting or sleeping, for example, and not just being a means of beautification in the interior spaces for carrying paintings and hangings. The mural only, in addition to being characterized by vertical heights and horizontal extensions, serves the ease of developing innovative design proposals, and makes the most of them, as it is an essential part and has a clear and significant impact on the design of spaces (Hassan, 2017).

2.2.4. Use of colors (paints and coatings)

Color is an important part of daily life, and people often use colors to represent moods or feelings as a distinctive characteristic, as they have a significant and clear impact on people's feelings, as color can be used - for example - to treat psychological problems based on its effect on humans (2022 Jueying (Andrew, 2014) Given the universal psychological properties that colors have on their users, they produce an emotional response, especially when they are used correctly to produce new visions that can be a positive or negative expression on their users (Andrew, 2014).

This is one of the matters that is relied upon greatly in the interior design of a space, as the colors represented in wall paints or furnishings

contribute to their use as a definition method to provide a new space with a different color from the rest of the surrounding space, which suggests to the viewer that this space is visually separated as if it were an independent part from the rest. Interior void space to achieve privacy (Sevinc and Kelechi, 2017).

2.2.5. Design supplements

They are compositions and formations used to beautify and coordinate architectural spaces. They are considered one of the most widely used means and methods in interior design of all kinds, whether simple or decorative. Their design usually relies on achieving and emphasizing the aesthetic aspect more than the functional aspect and is characterized by the diversity of its materials and colors. And methods of implementing them. In forming them, the interior designer relies on inspiration and quotations from different styles and civilizations, or on experience in creating their shapes, materials, and methods of implementation. It may cause a significant change in the general appearance of the place and is often represented by wooden structures, wall paintings, accessories, plants, etc. (Salem, 2021).

2.3. Human needs for new spaces, especially free space

Humans naturally seek comfort within the residential environment in which they live, which can be achieved through many and varied means, but the most important of them is the principle of privacy because it is psychologically linked to a sense of security and belonging to a place, especially if it is at the level of individuals in large habitats, as a result of different desires and interests. Every family member aspires to achieve in their own space, and this requires them to think about how to create that space within the limits of what is available, and in a way that does not disturb the rest of the family members, as each of them has the right to obtain comfort and safety in his or her living space (2015 SHEFA,)

To achieve the principle of privacy, some people seek to exploit the available spaces if this is possible for some spaces that are not designed for living. Simple design remedies serve as temporary solutions. To meet that need, including but not limited to preparing surfaces, ambiance, or anything else for personal use, except that these spaces are not valid except for what they were included for (Maggie, 2015)

In the case of living in residential apartments with limited space, this calls on the residents to search for the space available to them and to structure it in a way that allows them to create the required space, by turning to specialists and using their experience and skills in applying the correct and implementable treatment within the limits of the available data to ensure continuity. Flexibility, functional and aesthetic suitability (Hussain, 2020)

2.4. The interior design of the space

The study of the interior spaces of homes, including the elements, foundations, and determinants they contain, is considered one of the most important studies that specialists and experts in the field are interested in, in their attempt to form an understandable language between users and the place in which they live. The design problems in those spaces are considered among the most important human needs that must be addressed to solve them. Using innovative methods and means, every internal space has its nature and characteristics (Abu Al-Azm, 2022).

In seeking to apply the best treatments and ideas to solve the design problems of interior spaces, it is preferable to focus on adopting the innovative aspect based on putting forward proposals that can be implemented, to achieve integration in meeting aesthetic and functional requirements, and for the design to be more organized in relationships in a way that serves the users of the dwelling, and without resorting to methods that tend to exaggeration, or austerity in implementation, and from here the importance of the role of the interior designer becomes

clear, as he is primarily concerned with employing these methods and treatments, and using them as components and elements in interior spaces (Al-Naqiti, 2016).

2.5. Basics of interior design success

There are basics for the success of interior design that must be worked on and considered before taking any step to design any particular space. We often find some defects in the design of interior spaces in our social environment due to a lack of knowledge of these basics, which may lead to failure of the design aesthetically or functionally, and the family may bear the cost (effort , article) to attempt to make any modifications. We briefly mention the basics of interior design in general

1. Determining the function: It is assumed that the type of function of the space is determined, eating, sitting, rest, reading, sleeping, reception, and then designing all the interior elements in the space (floors, walls, color scheme, furniture, lighting) to serve this function. The living room requires an atmosphere that serves the basic function, which is sitting, so it is assumed In the design, it provides books with comfortable specifications and provides all the services that may be needed, such as tables and chairs for readers, according to the nature of the family's living.

2. Determine the type of design: It is supposed to determine the type or lines of the desired design (classic, modern, Islamic) and determine the desired atmosphere - active, calm, cool (warm) according to the nature and location of the space. When the design and model are determined, it creates a clear framework based on which the furniture is selected so that the design elements are in the shape is harmonious and harmonious, expressing the desired design spirit

3. Determining the budget: It is supposed to set a plan and specific limits for the budget and it is distributed according to priorities. For example, during the construction stages, it is supposed to select materials that are

balanced in price according to the budget with good practical specifications, and not to choose a high-priced item, which would cause a defect in the provision of other items or perhaps lead to a shortage and delay in the completion period. Implementation.

Clarity of vision in the basic functions of the spaces helps in designing the house architecturally, and it is one of the most important foundations for the success of the design. Architectural space design standards:

- Arranging a special place inside the space for the meeting, where some pieces of furniture can be moved temporarily to provide this special gathering space.
- The size and location of the space must be appropriate, as searching for distant meeting places consumes time and discourages their use.
- These spaces should be open and readily available to employees.
- Planning group spaces must go beyond simply providing isolated pockets of space for the cooperative group, as the types of spaces provided and the spatial relationships between them must be used to create a broader sense of connection between work groups, departments, departments, and even specializations within the institution.
- Group spaces should be close to the workspaces of the people who will use them.
- Group spaces should be placed in the middle of the corridor along vital roads and not at their ends, as the spaces at the end of the corridors are more suitable for use in independent work than in group work.

2.6. The designer as a shaper of architectural space:

Space is one of the basic components of architecture and the vessel that accommodates events, and through it, individuals carry out their activities, celebrations, and rituals and express their opinions, beliefs, and way of life. Historical tracing shows us the importance and vitality of the role of architectural space in previous civilizations and the extent

of its influence on the formation of their societies, their sense of belonging to the place, and their collective freedom of expression.

Man lives within a group of external and internal spaces that vary in size and shape, and have a different impact on the viewer. Some of them are natural and random, and some are artificial and planned. Each of these spaces has its morphological pleasure. As a person moves from one space to another, he enjoys one of them and is fascinated by the other, or feels familiarity and belonging to a third, or has fun and excitement in a fourth... and so on.

For the architect to provide people with these internal and external spaces with effects appropriate to their uses; It deals with nature, the existing environment, the structural material appropriate to the time and place, and the activity that will be practiced in this space. Here, he deals with unlimited natural spaces, cutting from the internal and external spaces with effects limited to the visitor and the user, so the endless environmental spaces are transformed into urban or rural spaces with a human scale, a tangible form, and an expressive energy that moves the eye, the soul, and the feelings.

Since human life changes constantly over time, and this in turn affects most buildings that accommodate human activity and which are closely linked to the size of the space they occupy, any change that occurs in the size and type of activity affects the spaces required by this activity.

The amount of change in activities is the difference between the current and future change, and it symbolizes the amount of difference occurring in a certain characteristic of the activity, such as the difference occurring in the number of working hours in a particular building. In some activities, the frequency of change is great, and some changes can be expected, including. They cannot be predicted, and this in turn affects the preventive solutions for the space in terms of initial design decisions, so there is a relationship between the types of changes that must be made

and the amount of modifications that will be implemented to accommodate these changes.

3. Methodology

The study followed the inductive approach to provide theoretical information for the research topic, including a group of previous studies that reviewed the topic of design solutions and treatments with a different vision. The research also followed the descriptive and analytical approach of describing the phenomenon and analyzing it through private data. By studying, proposing, and reviewing the proposed design solutions and treatments for the research problem, to reach the results.

Search Tool

It consisted of designing a scorecard to evaluate and judge the proposed solutions as design treatments for the research problem. It was presented to several arbitrators in the field of specialization to know their opinion and their response to the proposed solutions for the research sample, which are spaces in the living spaces of the dwelling. The form included a set of axes as follows:

- To what extent can we benefit from the proposed design treatments in meeting the human needs of housing?
- What is the extent of the ability to optimally exploit the areas allocated from the interior space to apply the proposed design treatments?
- What is the possibility of designing design treatments that are functionally compatible with the internal form of the space?
- What is the possibility of designing design treatments that are aesthetically compatible with the interior shape of the space?
- Did the proposed design treatments and solutions to the problem contribute to raising the efficiency of the functional use of spaces in the interior space of the dwelling?

Each axis includes a set of statements to fully describe and evaluate this axis.

4. Practical Framework

The practical experiment was limited to displaying pictures of spaces in the interior space of the dwelling before the treatment was applied to them. They were tested for the following justifications: Their availability in the majority of dwellings, such as: (walls and corners). And the possibility of employing it and benefiting from it without the presence of obstacles that prevent this, such as: (electrical installations, or windows and doors). It does not require changing, equipping, or establishing before finishing the space. Showing pictures of it after applying the proposed solution, and then describing and analyzing the proposed solution to clarify the idea. The focus was on proposing treatments that can be modified and removed, to emphasize achieving the principle of design flexibility, so that these spaces can be used in the future to meet other needs without affecting the basic shape of the overall space, and the possibility of applying the treatment in more than one style or concept, and then it was taken. The opinion of a group of specialists on the proposed solutions and treatments in the internal space, and knowledge of the extent to which they achieve the research goal.

Suggested treatments and solutions:

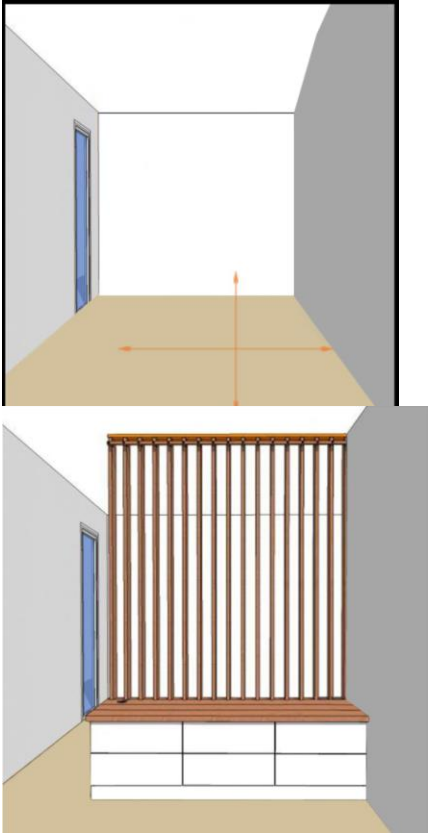


Figure (1): Before treatment.
treatment

Figure (2): After

Processing style: design complements and multi-functional furniture

Description and analysis:

Before treatment: Figure (1) shows two extension spaces located at the entrance opposite the exit door, connected to the living area. Such extensions are criticized for not achieving privacy for the dwelling users in terms of revealing what is inside the dwelling area.

After processing: Figure (2) shows the processing of the space in Figure (1) that was based on the use of The style complements the design and multi-functional furniture, by proposing the design of a modular furniture unit - storage that serves the entrance area horizontally, equipped with a partition of longitudinal wood strips, extending to the ceiling vertically at the top of the design.

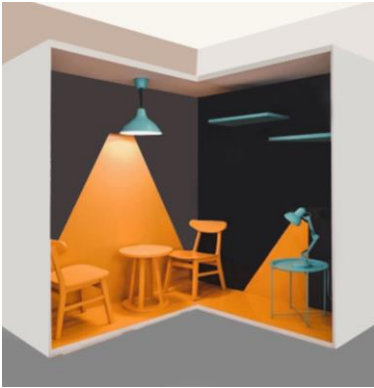
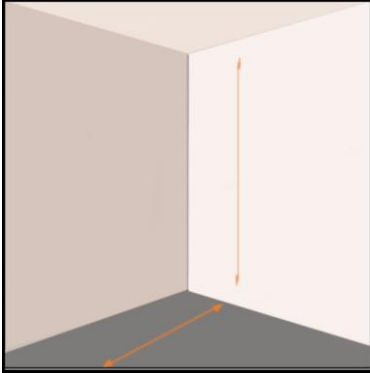


Figure (3) before treatment
treatment

Figure (4) after

Treatment method: colored paints and wall shaping

Description and analysis:

Before treatment: Figure (3) shows an unused corner in the living room. This is an area that is considered wasted if left unused, especially in the case of small and limited spaces.

After treatment: Figure (4) shows the treatment of the corner in Figure (3), which was based on the use of colored paints and the formation of the walls by proposing the design of a large-sized wood frame along the length and height of the corner of the room, prominently outward, as the treatment contributes to the possibility of benefiting from the use of the corner. As a special space for children to sit or play, the space created in the wooden frame was furnished with units of chairs, tables, and shelves, and to emphasize its separation from the rest of the band's space, different colors were adopted.



Figure (5): Before treatment.
treatment

Processing method: Colored paints and wall shaping

Description and analysis:

Before treatment: Figure (5) shows an unused corner in the living room. This is an area that is considered wasted if left unused, especially in the case of small and limited spaces.



Figure (6): After

After treatment, Figure (6) shows the treatment of the corner in Figure (5), the idea of which was based on using the colored paint method and using the corner as a work area. The entire required area was identified in green color on the entire wall, and part of the floor and ceiling of the room were painted in the same color, to emphasize that the space is taken out as part of the work environment, and then furnished with simple furniture units along the wall (office table and shelf).



Figure (7): Before treatment.
After treatment

Figure (8):

Treatment method: repurposing space

Description and analysis:

Before treatment: Figure (7) shows a small area on the side of the corridor leading to the stairs that is not used. This is an area that is considered wasted if it is left unused, especially in the case of small and limited spaces.

After treatment: Figure (8) shows the treatment of the space in Figure (7) whose idea was adopted Using the method of repurposing the space by covering it with decorative wallpaper that is consistent in color with the rest of the space, to define the allotted space and making it appear separate from the rest of the surrounding space In it, furnish it with a seating chair, and decorate it with units of mirrors, lighting, and a shelf for books and magazines - to benefit from it as a reading and viewing space for the users of the dwelling. It was taken into account that these units should be simple in their design, so as not to impede movement, and to make it easy to change their locations or remove them in the event of a desire to do that.

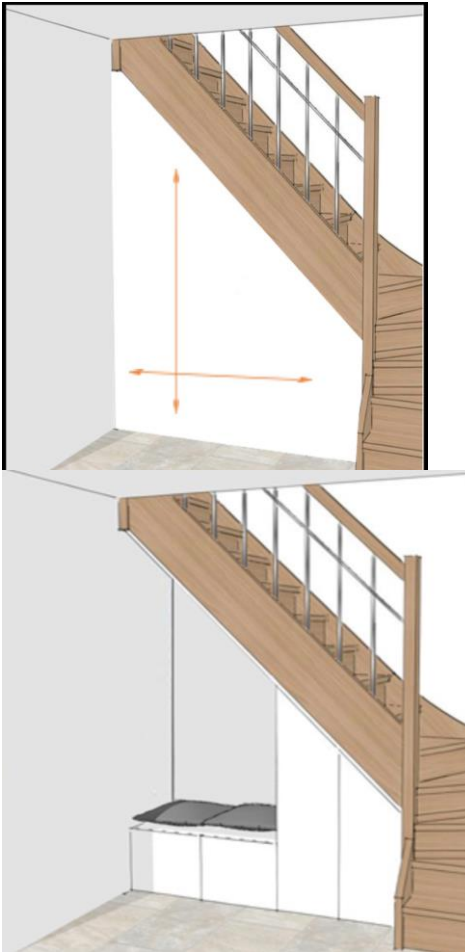


Figure (9): Before treatment.
After treatment

Figure (10):

Treatment method: repurposing space

Description and analysis

Before treatment: Figure (9) shows an unused space under the stairs, which is an area that is considered waste - if it is left unused, especially in the case of small and limited spaces.

After treatment: Figure (10) shows a treatment for the space shown in Figure (9), the idea of which was based on using the method of utilizing wasted space and converting it into a rest and storage area, where the inner part of it was furnished with a longitudinal closet to store supplies, and the outer part was equipped with a seating unit in the shape of A rectangular box topped with cushions for resting.

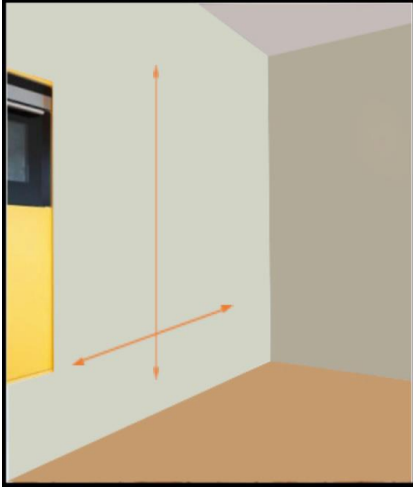


Figure (11): before treatment.
after treatment

Figure (12):

Processing method: wall shaping

Description and analysis:

Before treatment: Figure (11) shows a space on the walls of the interior space of a living room. Often such spaces are decorated with a mural or parchment.

After processing: Figure (12) shows a treatment for the area shown in Figure (11), which was adopted her idea was to use the design complementation method by proposing to design a large-sized wooden frame on the wall and converting it into a rest area. The goal of the design treatment was to come up with an innovative idea for the seating area without wasting space or obstructing movement. It was furnished with a set of side shelves and shelves, to be integrated elements as a rest area. It is painted in a distinctive color to emphasize the identification of the area.

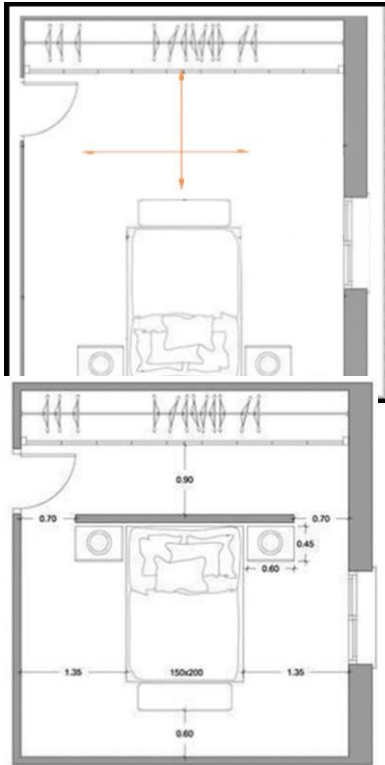


Figure (13): Before treatment.
 After treatment

Figure (14):

Processing method: design complements, repurposing

Description and analysis

Before treatment: Figure (13) shows a large, underutilized space in the bedroom that can be used and utilized in several ways.

After treatment, Figure (14) shows a treatment for the space shown in Figure (13), the idea of which was based on using the design complementation method by proposing the design of a gypsum board panel extending to the large-sized band ceiling, to deduct part of the bedroom space, and the goal of the treatment is - achieving privacy. In

the room, to isolate the sleeping area from the dressing area, and to achieve treatment, it was necessary to rearrange the basic furniture units such as the bed and the bedside storage unit.

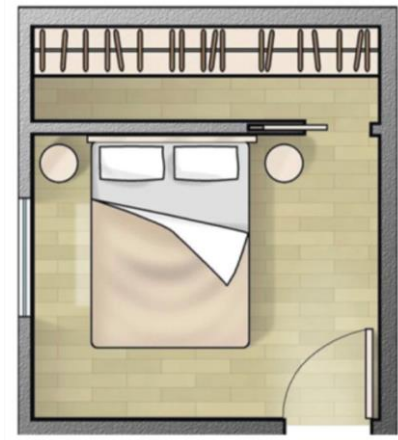
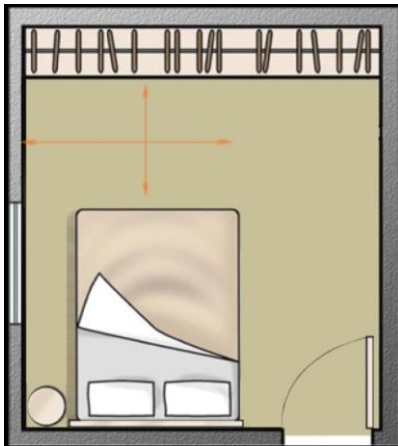


Figure (15): Before reconciliation.
After treatment.

Figure (16):

Processing method: design complements, repurposing

Description and analysis:

Before treatment: Figure (15) shows a large area in the bedroom that can be used well and used in several ways.

After treatment: Figure (16) shows treatment for the space shown in Figure (15), the idea of which was based on using the design complementation method by proposing the design of a gypsum board panel extending to the large-sized band ceiling, to deduct part of the bedroom space. The goal of the treatment is - to achieve Privacy in the room, to isolate the sleeping area from the dressing area, and to achieve treatment it was necessary to rearrange the basic furniture units such as the bed and the bedside storage unit.

A comment on the treatment in Figures 14 and 16 shows the possibility of proposing the same idea in the treatment with a different method of implementation, which calls for the necessity of reconsidering the distribution of furniture in the available space, to carve out other functional spaces that serve the users and meet their needs within the limits of what is available using design treatments that It fits with the form and function of the space without being affected by the new change.

5. Conclusion

Architectural space is considered one of the most important images and successes of architectural or human creativity. It includes the designer's creativity and the practical expression of his ability to create beautiful and multiple images for a group of intellectual and creative imaginations, and even the practical embodiment of the spirit of the architectural idea through manipulating the elements and components of this space. It is the master of precise standards, and it includes a beautiful image, and comfortable function, and it includes the delicate feeling through the mutual reflection between the design and the surrounding environment, such as the movement of the sun, achieving ventilation, etc., and it includes achieving coexistence through the distribution of functional and aesthetic elements of the architectural components, such

as sleeping and resting places, and it includes living services and activity places. And entertainment, which all interact and integrate in a beautiful and coordinated way. Interior design, with its foundations, shapes, and components, is considered an identity for the people who made it. Interior design may be an identity for the designer if the owner or user does not interfere with it, and it may be an identity for the user if the designer implements the desires of that user without his touch for that dwelling, but the best type of design does not represent an identity for the positive interaction shared between the designer and the user.

From the above, the following results are clear to us:

- Studying all the human and changing needs related to housing contributes to reaching realistic and radically applicable design solutions and results. This allows access to the most suitable housing for its occupants.
- The possibility of benefiting from simple design treatments in solving complex housing design problems may require reconsidering many budget-related matters.
- Flexible thinking in reusing available spaces in the interior space in various ways contributes to solving design problems in an innovative manner that meets changing human needs.
- The design treatments and solutions proposed in the research, such as (using multi-functional furniture, or paints, repurposing spaces, and using design components) contribute to meeting most of the functional and psychological requirements that serve the users of the interior space of the residence.
- The possibility of applying the proposed solutions and design treatments that were discussed in the study and current research in most residential environments with limited space does not require special standards for some sensitive categories.
- Emphasizing the principle of privacy and design flexibility. Because of its importance to housing users, through benefiting from the solutions and proposed design treatments.

The research recommendations are:

- Urging researchers and specialists in the field of interior design to direct their studies to search for solutions and treatments that contribute to meeting human functional and aesthetic needs.
- Interest from interior design specialists to focus on studying all treatments and design solutions related to the problems of interior spaces that meet psychological needs. Because of its great impact on the sense of security and stability.
- The importance of the interior design of a home meeting the needs of its users leads to a sense of satisfaction that will prompt them to carry out activities inside their homes efficiently and effectively.
- Focus on finding simple and uncomplicated design solutions and treatments that suit the capabilities of those wishing to implement them within their homes.
- Seeking to correct users' concepts related to change within residential units, by explaining and clarifying the possibility of benefiting from specialists in applying design treatments that do not take a long time to implement, or consume a large budget that would burden the homeowners if they wish to implement them.

6. References:

- Abu Al-Azm. Mujahid Abdul Jalil. (2022 AD). al'athath altatawuriu al'athath alkhatabiu almodmaj fi alhawayit althaabitati" Evolutionary furniture Wooden furniture built into fixed walls". Journal of the Higher Institute for Specific Studies. The Higher Institute for Specific Studies. Volume 2, (No. 1).
- Abu Zaarour. Rand Hamdallah (2013 AD). athir altasmim aldaakhiliu fi 'iinjah muhtawaa alfada'at almiemariat aldaakhiliat walkharijiat almanabani alsakanat almunfasilat alfalal fi nabulus namudhajan. "The effect of interior design on the success of the content of the internal and external

architectural spaces", separate residential buildings, villas in Nablus, as a model. Master's thesis. An- Najah National University, Nablus, Palestine.

- Al Musa. Amal Muhammad Saud. (2017 AD). siaghat mustahdathat lilmufradat alshaebiat alnajdiat fi almamlakat alarabiat alsaaudiat lilhifaz ealaa almawruth alshaebi. "Innovative formulations of the Najd folk term in the Kingdom of Saudi Arabia to preserve the popular heritage". Journal of Research in Specific Arts and Sciences, Alexandria University. Volume 4. (No. 2)
- Alsuwsi. raghdad mahir. (2015 AD). tathir almurunat altasmimat ealaa kafa'at aistikhdam almaskan fi qitae ghaza .risalat majistir .aljamieat al'iislamia .ghaza. filastin.
- Andrew J. Elliot¹ and Markus A. Maier(2014) color Psychology: Effects of Perceiving Color on Psychological Functioning in Humans The Annual Review of Psychology is online at <http://psych.annualreviews.org>
- Ata. Amer Dawood (2017 AD) almuealajat altasmimiat alwazayifiat fi alfada'at aldaakhiliat aleamati.". Functional design treatments in public interior spaces". Academic Journal, University of Baghdad.. (Issue 84).
- Chen, D. (2016). Fika Living: A sharing multifunctional furniture for single-person households. M. Thesis, Linnaeus University, Faculty of Arts and Humanities, Department of Design
- Designs (2019) 3, 3; doi:10.3390/designs3010003 www.mdpi.com/journal/designsGiuliana Scuderi Designing Flexibility and Adaptability: The Answer to Integrated Residential Building Retrofit. Department of Civil Engineering, HZ University of Applied Sciences, Edisonweg 4, 4382 NW Vlissingen, The Netherlands; scud0001@hz.nl
- Farjami, E. (2014). The Role of Contemporary Innovations on Flexible Residential Furniture with Smart and Green Materials. M. thesis, Eastern Mediterranean University (EMU)-Dogu Akdeniz Universitesi (DAU)

- Gentill, E. (2017). Exploring Wellbeing in Small and Unconventional Dwellings: Understanding living in small and unconventional dwellings through a multi-dimensional perspective of space. M. thesis, Linneaus University, Växjö, Sweden).
<http://www.divaportal.se/smash/get/diva2:1135969/FULLTEXT01.pdf>
- Hassan Estaji(2017). A Review of Flexibility and Adaptability in Housing DesignInternational Journal of Contemporary Architecture "The New ARCH" Vol. 4,
- Husein Ali Husein(2020) Multifunctional Furniture as a Smart Solution for Small Spaces for the Case of Zaniary Towers Apartments in Erbil City, Iraq. International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies Volume 12 Issue 1
- Imam. Aladdin Kazem Mansour (2020 AD) alfikr aliabtikarii watamthilatuh fi tasmim alfada' aldaakhilii ." Innovative thought and its representations in interior space design". Academic Journal. University of Baghdad. Volume 2020. (Issue 95)
- Jueying Lyu(2022) Analysis of the Effect of Different Types of Colors on Human Behavior and Emotion Proceedings of the 2022 3rd International Conference on Mental Health, Education and Human Development (MHEHD 2022) Advances in Social Science, Education and Humanities Research, volume 670
- Maggie Zhao Fall (2015) SUSTAINABLE MULTIFUNCTIONAL FURNITURE FOR HOUSEHOLD USE. A THESIS Presented to the University Honors Program California State University, Long Beach
- Mohammed Sameh Monna(2022) Responsiveness and Adaptability of Housing Spatial Design to New Emerging Functions: The Case of COVID-19 Pandemic. International Journal of Sustainable Development and Planning Vol. 17,

No. 7, November, 2022, pp. 2173-2181 Journal homepage: <http://iieta.org/journals/ijstdp>

- Naqiti, Noha Bint Saeed Asaad (2016 AD): hulul tasmimiat litawzif almustawaa alraasii fi alfaraghat aldaakhiliat bialmaskan" Design solutions to employ the vertical level in the interior spaces of the dwelling". International Design Journal. Scientific Society of Designers. Volume 6. (Issue 2)
- Sabine De Paris(2021) The use of an analytic hierarchy process to evaluate the flexibility and adaptability in architecture. October 2021International Journal of Architectural Research Archnet-IJAR ahead-of-print DOI:10.1108/ARCH-05-2021-0148. University of Porto
- Salem. Jamila Suleiman Johar (2021 AD) altafikir al'iibdaei fi muealajat hayz aleimarat aldaakhiliati.." Creative thinking in addressing the space of interior architecture". Journal of Specific Education Research. Mansoura University. (Issue 63).
- Sameh. Muhammad Mahmoud Salem (2016 AD). ahmiyt dawr almusamim aldaakhilii min khilal muealajat altasmimiat watatwirihi lilmuntaj altatbiqii fidaem w zayadat altanafusiat fi. " The importance of the role of the interior designer through design treatments and his development of the applied product in supporting and increasing competitiveness" in: The Fourth International Conference. International Design Journal.
- Sevinc Kurt1 and Kelechi Kingsley Osueke (2017) The Effects of Color on the Moods of College Students SAGE Open January-March 2014: 1–12 © The Author(s) 2014 DOI: 10.1177/2158244014525423 sgo.sagepub.com
- Virginia De Jorge(2020) Huertas Rethinking Collective Housing: A Case Study of Spatial Flexibility and Adaptability in Arturo Soria (Madrid, 1975) Virginia De Jorge Huertas Dipartimento di Culture del Progetto, University Iuav di Venezia, 30135 Venezia, Italy; virginiadjh@gmail.com or vdejorgehuertas@iuav.