

Aesthetic values in the use of ceramic tiles in the facades of buildings

القيم الجمالية في استخدام البلاطات الخزفية في واجهات المباني

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Research summary:

The current research, under the title (Aesthetic values in the use of ceramic tiles in building facades), is divided into three chapters. While the importance of the research study is embodied by studying the efficiency of the aesthetic values of ceramic tiles, as well as documenting and enriching the knowledge aspect of aesthetic requirements and emphasizing the importance of producing ceramic tiles with guiding efficiency. While the research study aims to reveal the efficiency of aesthetic values in the use of ceramic tiles in the facades of buildings, as for the limits of the research, it was determined through the objective aspect of studying the efficiency of aesthetic values in the use of ceramic tiles in the facades of buildings, while the search limits included the spatial limit of the facades. Buildings through illustrations and the time limit for the time period 2013-2022 AD, as well as defining many scientific terms, while the second chapter included the first topic, which dealt with a number of topics, the most important of which is the aesthetic values of ceramic tiles. As well as the importance of showing the aesthetic values of ceramic tiles in contemporary architecture. As for the second topic, its main title was the technique of using ceramic tiles on the facades of buildings. The third chapter was devoted to defining the topic of research procedures represented by the research methodology based on the descriptive analytical approach. As for the research community, it relied on the method Intentional selectivity, while the fourth chapter included extracting the results of the research, and as the researcher addressed within the fourth chapter recommendations, future proposals, as well as the proposed design, and finally, the research study included a

list of Arabic and foreign sources in addition to the annexes and the study summary in English.

ملخص البحث:

يتوزع البحث الحالي الموسم تحت عنوان (القيم الجمالية في استخدام البلاطات الخزفية في واجهات المباني) على ثلاثة فصول ولأهمية هذا الموضوع اراد الباحث صياغة مشكلة البحث بالتساؤل الاتي: ما مدى كفاءة القيم الجمالية في استخدام البلاطات الخزفية في واجهات المباني؟ بينما تتجسد أهمية الدراسة البحثية من خلال دراسة كفاءة القيم الجمالية للبلاطات الخزفية وفضلاً عن التوثيق وإغناء الجانب المعرفي للمتطلبات الجمالية والتأكيد على أهمية انتاج بلاطات خزفية ذات الكفاءة التوجيهية، في حين تهدف الدراسة البحثية في الكشف عن مدى كفاءة القيم الجمالية في استخدام البلاطات الخزفية في واجهات المباني، أما بالنسبة لحدود البحث فقد حُددت من خلال الناحية الموضوعية بدراسة كفاءة القيم الجمالية في استخدام البلاطات الخزفية في واجهات المباني، في حين تضمن حدود البحث بالحد المكاني لواجهات المباني من خلال المصورات والحد الزمني للفترة الزمنية ٢٠١٣-٢٠٢٢م، فضلاً عن تعريف العديد من المصطلحات العلمية، بينما تضمن الفصل الثاني/المبحث الأول الذي تناول مجموعه من المواضيع اهمها القيم الجمالية للبلاطات الخزفية وكذلك أهمية إظهار القيم الجمالية للبلاط الخزفي في العمارة المعاصرة اما المبحث الثاني فكان عنوانه الرئيسي هو التقنية في استخدام البلاطات الخزفية على واجهات المباني أما الفصل الثالث فقد تخصص في تحديد موضوع إجراءات البحث والمتمثلة بمنهجية البحث المعتمدة على المنهج الوصفي التحليلي أما مجتمع البحث فقد أعتمد على الأسلوب الانتقائي القصدي بينما تضمن الفصل الرابع الى استخلاص نتائج البحث وكما تناولت الباحثة ضمن الفصل الرابع التوصيات المقترحات المستقبلية وكذلك التصميم المقترح واخيراً تضمنت الدراسة البحثية قائمة المصادر العربية والاجنبية اضافةً الى الملاحق وملخص الدراسة باللغة الإنكليزية.

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1-Research problem:

The use of ceramic tiles in the facades of buildings is one of the most important pillars of aesthetic values and depends on the creativity of the interior designer and the use of the design idea with concrete reality, depending mainly on the selection of treatments for aesthetic values and according to studied design and engineering systems and by investing in design and pluralistic treatments for the purpose of achieving cohesive unity among all The internal determinants of ceramic tiles, so the objective study of the use of aesthetic values is important in the design of building facades, and for the importance of this topic, the researcher wanted to formulate the research problem by asking the following: **What is the efficiency of aesthetic values in using ceramic tiles in building facades?**

2-Importance of the research: The importance of the research study is embodied by focusing on studying the efficiency of the aesthetic values of ceramic tiles, as well as documenting and enriching the knowledge aspect of aesthetic requirements and emphasizing the importance of producing ceramic tiles with guiding efficiency.

٣-The aim of the research: The research aims to reveal the efficiency of aesthetic values in the use of ceramic tiles in the facades of buildings.

٤-Research limits: The current research is determined by the following:

١. Objective limit: the efficiency of aesthetic values in the use of ceramic tiles in the facades of buildings
٢. Spatial boundary: The facades of buildings through the photographers have been recently implemented.

Time limit: for the time period that is highlighted 2013 / 2022 AD.

٥-Define terms:

Al-Qayyim (language): one of the values whose verb “evaluates” and its past evaluated the idiomatic meaning of the value over the linguistic meaning ⁽¹⁾.

Al-Qayyim (terminally): the value of a thing in the language is its value, and the value of the goods is its price ⁽²⁾.

Aesthetic (language): Aesthetic study: concerned with the value and elements that give the work an artistic beauty ⁽³⁾.

Aesthetics (**idiom**): concerned with the value and elements that give the work an artistic beauty. Philosophy and Sufism are a trend aimed at regulating behavior according to the requirements of beauty, regardless of moral considerations, and its famous motto: Art is for art ⁽⁴⁾.

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Procedural definition (building facades): Building facades are the most important part from a design and formative point of view, as the building design methods are determined by its front facades, and many of the external facades of buildings determine the nature and location of the building and are governed by many concepts and scientific topics.

Procedural definition (ceramic tiles): They have square, rectangular, or diamond geometric shapes used in covering architectural facades or inside buildings to cover walls and floors.

Procedural definition (porcelain): It includes inorganic or mineral materials that are formed by high heat. It is very flexible in its natural position, usually the color of porcelain is white and can be mixed with colored materials such as (clay, feldspar, sand, iron oxide, alumina and quartz). And the production of ceramics, and at the present time, ceramics has become one of the types of plasticarts.

1 – Aesthetic values of the ceramic tiles used on the facades: Aesthetic values are one of the most important aspects that are taken into consideration when designing ceramic tiles on the facades of buildings, as they play a major role over a long period of time that extended from ancient civilizations to the present time thanks to the diversity and development in the structure. The aesthetic in the use of ceramic tiles and the development in the political, social and economic conditions in the manufacture and production of ceramic tiles, which played a major role in showing the aesthetic aspect.“It made it characteristics and methods that distinguished it from other industries, so it affected the facades of buildings and determined the design performance, which is characterized by simplicity and coherence, and through it the identification of cultural and historical values that reflected the function of the building, and since

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the exterior and design play a vital role in the effective contribution through which to make the aesthetic aspect In the immediate environment” (1)Therefore, ceramics played an important role by providing some solutions to the problems in the facades of buildings, as it gives an aesthetic reflection that matches the data and requirements of the surrounding environment.” Thanks to the use of common techniques in ceramics, such as local paint, he was able to set up facades of buildings and produce architectural ceramics that reflect important economic and social aspects. Therefore, the shape of architecture changes by diversity and change in the shape of ceramic tiles for building facadesAesthetic values can affect the consumer’s opinion of the design product by being affected by the material, the effects of color, the environment, quality, durability, simplicity and strength at the same time for the design and orientation of the building and the climate represented by wind, lighting, sun and technology, studying the architectural style characteristics of ceramic tiles and preserving them in various ways, means and methods using scientific concepts and methods Artistic and preservation of designs for ceramic tiles in different hot or cold regions” (2).

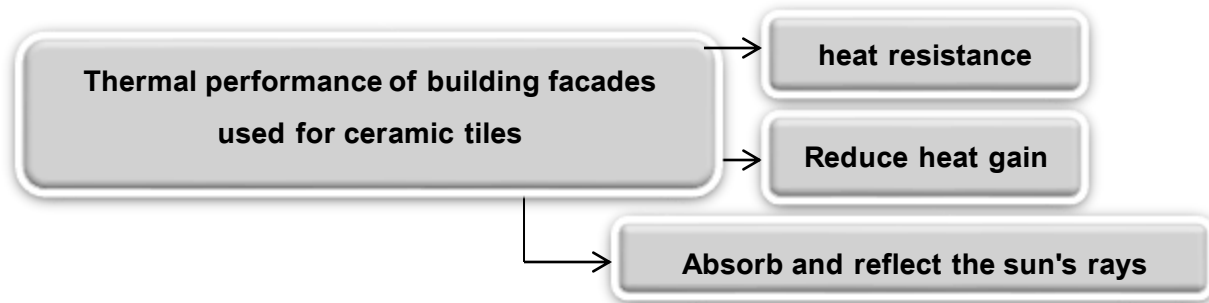
٢- **The importance of showing the aesthetic values of ceramic tiles in contemporary architecture**: Ceramic tiles are one of the most important options that designers used in the completion of their construction and construction works, due to the various features of tiles being made of materials that are not perishable or to changes in weather conditions compared to plastic materials and other wooden materials “Ceramic tiles were characterized by simplicity and as a moisture and pest repellent, thanks to the long life of the material compared to other raw materials and its strong hardness. All these factors led to making it the ideal choice for potters, designers and architects, not only for internal work, but used for external work (3)Ceramic tile manufacturers focus on designs that

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are characterized by simplicity, natural shades, restrained hardness, and the implementation of proportions, sizes, and dimensions of appropriate tiles. The plasticity that the artistic achievement carries with it, and that this work results from the perceptual ability of the recipient and the designer's ability to show the expressive and aesthetic dimensions ⁽⁴⁾.

٣- The plastic elements in the use of the aesthetic values of ceramic tiles for the facades of buildings:

A) Material: The importance of using raw materials and building materials to show the aesthetic values in ceramic tiles for the facades of buildings. The materials are varied and numerous, the most important of which are “wood, glass, plastic, fabrics, metal, plastics, cement bricks, marble and various paints, and since the old building materials were built with coffee or bricks (mud) With water and hay until it sticks, then it is placed in a wooden mold called malban, and by means of palm trunks, papyrus reeds, mud and plaster. The mud mortar is used to build the mud, and plaster is used to reach between the pieces of stones, and some small iron pieces are used As building materials in doors and windows’ ⁽⁵⁾ “The material is a design work through which the outer envelope of the building and its surroundings are formed, where different ceramic clays are used as a plastic medium, these clays merge with other materials and are directly connected with the ceiling, wall and floor of the ceramic tiles and these materials differ It is used according to the quality of the function of each architectural and engineering edifice, and these materials have various thermal, physical and environmental properties that are in perfect harmony with the elements and work to mitigate the climatic and thermal impact of the interior space and work to reduce heat gain and reflect sunlight” ⁽⁶⁾, and as shown in Scheme No. (1).



Scheme No. (2-1)

The effect of thermal performance of building facades (researcher planning)

B) Effects of color: The importance of the effect of color in showing and designing the aesthetic values of ceramic tiles on the facades of buildings is that it represents an effective model for facing challenges and solutions to some problems. The main source of quartz and kaolin, or the so-called (the felsic rocks due to the high temperature), ⁽⁷⁾. And that color represents a natural phenomenon that is formed according to special laws, and that light is the main source for the appearance of colors, as it was used in the production of ceramic objects, plant and animal shapes, and repetition in colors is one of the most important characteristics used in the production of ceramic shapes by finding creative and innovative solutions that are centered around humans and are based on To understand the needs and desires of the target audience, and that the aesthetic values of colors are a term concerned with exterior and interior design in general, and also concerned with (cognitive science, psychology, computer science, and finally organizational science) in an attempt to understand how people interpret colors and their significance and interact with them⁽⁸⁾. "One of the most widespread techniques in the color industry for ceramic tiles is the technique of covering the slab with a white opaque paint (produced through tin oxide and other colored oxides"⁽⁹⁾, and this is called the enamel technique and the resulting colors are (brown-manganese, green-copper, White - tin, red - iron) and these colors are widely used in the manufacture of ceramic tiles, ⁽¹⁰⁾. And where the art of ceramics works to link space and interior, work and place, and show the aesthetic value of the ceramic tile"⁽¹¹⁾. Therefore, the colors were multiplied in most designs of ceramic tiles for the facades of buildings. The use of colors such as turquoise blue, green, light brown, black, white and other colors From the first moment, the artist begins to develop the

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appropriate color design, influenced by the spaces, the external architectural spaces that he uses in distributing elements of the wall, and then how to find aesthetic and technical solutions, taking into account the consumer's influence on colors from different angles of vision. Aesthetic values constitute one of the most important pillars of the cultural values system of any civilization. " Al-Husseini* believes that the method of showing aesthetic values is based on the process of distributing colors and lines in a coordinated manner within a certain degree of regularity and delicate balance in order to express ideas aesthetically and functionally, (12). as shown in Figure (1).

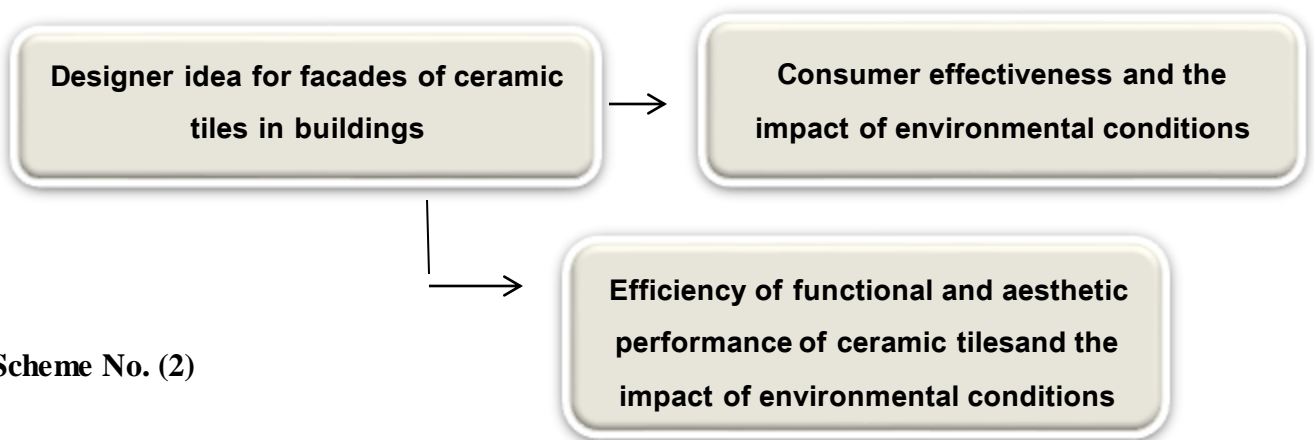


Figure No. (1) Employing ceramic tiles to show the colors of the facades of buildings/ Kairouan Mosque - Iran

C) **The impact of the environment:** the environment has an impact on the design of the external facades, which are formed according to a group of community systems such as original, historical and cultural values, which belong to all societies and are subject to a large number of environmental, political and economic influences and descend on a great deal of consumer awareness of the surroundings of his environment "and since we design forms ..and its innovation depends on the designer's idea and workmanship, as it is an attribute of the style in the formation of ceramic tiles, through which the designer and the potter are interested in showing their aesthetic, expressive and symbolic value (just as he is interested in showing their functional performance and performance efficiency to the same extent)" (13). "The process of reformulating the concepts of the general ideas of society about its nature and its subjective surroundings according to the

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efficiency of the functional achievement, its aesthetic value and its mutual harmonious relationship with the external and internal environment as it is a source of inspiration and influence for all designs used in ceramic tiles, and since the unit of aesthetic interaction is a set of general and secondary patterns that we can Dealing with it in an integrated manner, and it represents one of the means that enables us to read the functional and aesthetic components of the formation of ceramic tiles and express them according to the study of the forces required for the set of relationships that enable the formulation of the formation.⁽¹⁴⁾ and as shown in Scheme No. (2).



Scheme No. (2)

The impact of the environment on consumer activities and the competencies of functional and aesthetic values / (the researcher's planning)

‡-**Environmental guidance for ceramic tiles in building facades**: It is one of the most important aspects necessary when using ceramic tiles to show the aesthetic values in design on the facades of architectural buildings. Ceramics, construction methods, construction, execution, proportions, sizes and dimensions of the tiles used in the walls.⁽¹⁵⁾ And since the aesthetic value of the ceramic tiles can be shown by applying the special impact value in the context of expression and installation of the external facades.⁽¹⁶⁾ and within a tight formation with the idea of showing the aesthetic values of the building and the outer space of the facades, so the designer and the potter work within two directions and two methods in forming the units of the tiles Ceramics, namely, renewal and thinking by giving an aesthetic dimension to the shapes with appropriate directions with the architectural form of the design and affecting the shades of the facades, which change according to the

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change in the temperature of the sun and the change in the viewing angle at the recipient. ⁽¹⁷⁾ keeping pace with the current style and simulating the functional dimension of buildings with local and international designs And by reducing the thermal loads on the external facades of the building and obtaining an appropriate environmental orientation. ⁽¹⁸⁾

as happened in the environmental orientation of the Alexandria Corniche - Egypt, which formed the point of the design process in accordance with the principle of interaction, balancing and design flexibility through the use of ceramic tiles with an appropriate environmental orientation and derived from the Egyptian heritage, customs and traditions, as shown in Figure No. (2).

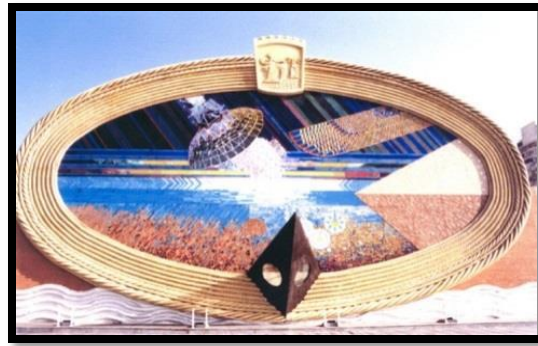


Figure No. (2) Alexandria Corniche / Mostafa Kamel /2001

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1-Technology in the use of ceramic tiles on the facades of buildings:

Technology is a set of scientific, cognitive and applied processes and skills that produce any design, artistic or industrial work, and work with technology begins from the first steps in the selection of materials until the last design process, where the technical or design work becomes integrated in a variety Scientific and engineering techniques and methods, and when using ceramic tiles to show the aesthetic value of building facades, is the appropriate method used by designers and potters in the production of design and ceramic works and to meet the needs and requirements of society, ⁽¹⁹⁾. “The importance of using technology is in the possibility of benefiting from the reflection of shadows in the external design of the facades of buildings, and thermal insulation in the best way by using the raw material of ceramics (as a suitable natural and environmental material that has the global plastic ability and that the aesthetic values of ceramic tiles are based on the design interaction of the product and its aesthetic transitions in the design of the facades of outdoor spaces.” As shown in Figure No. (2).



Figure No. (2) Facade of a building made of ceramic tiles with an engineering technique

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٢- The use of ceramic tiles to show the shape and content of the design work:

A) **Aesthetic values:** “It specializes in revealing the relationships between the proportions and the architectural and engineering style that are distinguished by different cultures, whether they are diverse or disparate. And social according to diversity, differentiation, strength, simplicity and unity at the same time⁽²⁰⁾.

B) **Functional values:** “which are related to the nature of the origin, whether it was a residential building or religious buildings, educational, commercial and recreational signs, which are of course related to the relationships of spaces with each other in terms of the importance and consistency of facades and integration in aesthetic values in the use of ceramic tiles⁽²¹⁾. **Therefore, the researcher believes that the importance of this research study is to return to the study of the aesthetic values that reveal to us the crystallization and development in the use of ceramic tiles on the facades of buildings and their great role in establishing the process of interior design for ceramic art, in addition to the use of the intellectual and scientific concepts that entered the core of the product Ceramic tiles and the consequent use of important elements and influence in realizing each stage of the design process to show the aesthetic values of building facades without relying on the theoretical principle and false philosophizing, so it was necessary to know the validity of the results and the essence of the design thought of ceramic tiles.**

Indicators of the theoretical framework:

- 1) Ceramic tiles have an important role by providing some solutions to the problems in the facades of buildings, as it gives an aesthetic reflection that matches the data and requirements of the surrounding environment
- 2) The ceramic tiles have various advantages as being made of materials that are not perishable or to changes in weather conditions in comparison with plastic materials and other wooden materials. Therefore, the design work for the production of ceramic tiles is based on the perceptual ability of the recipient and the designer's ability to show the expressive and aesthetic dimensions.
- 3) The design construction of the aesthetic values of the facades of buildings is nothing but the output of design forms that are linked to the action of relationships and elements and foundations of work in a way that gives sensory and aesthetic values to the shape of ceramic tiles.
- 4) The artistic or design work becomes integrated with the diversity of scientific and engineering techniques and methods, and when ceramic tiles are used to show the aesthetic value of building facades.

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- 5) The outer space can be a form and content that attracts the consumer thanks to the aesthetic transitions to form the interactive design scene that attracts attention so that it helps in directing the recipient towards the source
- 6) The environment has an impact on the design of external facades, which are shaped according to a group of community systems, such as the original, historical and cultural values that pertain to all societies.
- 7) The aesthetic interaction unit is a set of general and secondary patterns that we can deal with in an integrated manner, and it represents one of the means that enables us to read the functional and aesthetic components of the formation of ceramic tiles and express them according to the study of the forces required for the set of relationships that enable the formulation of formation.

First: Research Methodology The researcher has chosen the descriptive (analytical) method in analyzing the sample by relying on the indicators of the theoretical framework as a criterion in the analysis.

Second: the research community The research community included the study of samples of photographers of building facades that were selected from websites and in an intentional manner. It included (6) facades and the sample research community can be identified (Iraq 2022/Egypt 2021/United States 2018/Turkey 2015/France 2019/China 2022).

Third: the research tool, in analyzing his samples, the researcher relied on a set of tools, including indicators of the theoretical framework, the opinion of the researcher, and the experience of the supervisor of the research study (Assistant Professor Dr.: Ali Khaled Abbas) in adopting photographs to choose the designs of the research models.

Fourth: The research sample: The research sample was chosen by the intentional method because of showing the aesthetic values in the use of ceramic tiles in the facades of buildings.

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V. Description Sample No. (1)

Description: The facade of the house is covered with light brown ceramic tiles

Location: Iraq

Dimensions of the used slab: 60cm*40cm

The scene is an exterior house facade, in which the designer relied on the selection of ceramic tiles that adapt to weather factors due to the nature of the climate in Iraq. The designer was able to employ the aesthetic and functional aspect through the use of tiles that are characterized by durability, quality, strong appearance and cohesion, and that I use the light brown color due to adaptation to the situation. The weather and climatic conditions of Iraq, where the atmosphere is characterized by dust and dust, the use of these colors to wrap the facades and be able to periodic cleaning operations of the facades, as well as the designer was able to link the process between the environment and the quality of the tiles used on German facades, in addition to the quality of the tiles that help not to stick dirt and dust to them.



Sample No. (2)

Description: The facade of the house is covered with light yellow ceramic tiles with black tiles.

Location: Egypt

The dimensions of the slab used: 60 cm * 40 cm.

The design is a scene of the exterior facade of a house showing the design of light yellow ceramic tiles with tiles in black colors, through which the designer wanted to achieve the functional and aesthetic aspects in a way that simulates the environment and recall the ancient Egyptian Pharaonic heritage through its use of black tiles to preserve the heritage where I care about achieving quality durability, aesthetic structure, implementation, and using proportions to volumes with standard dimensions used on the facade of external walls and staircase floors, and that the designer has introduced technology as an intentional element, which is to show the aesthetic and utilitarian value and create a state of effects between the ceramic and the outer perimeter, and this is evidence of the ideal thought in achieving the use of form and content of ceramic tiles in This design.



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Sample No. (3)

Description: Exterior facade of an office in white ceramic tiles with light brown gradients on the floor.

Location: United States

The dimensions of the used slab: 30cm*30cm

The design is a scene of an office facade covered with ceramic tiles. In this work, the designer wanted to use ceramic tiles to show the aesthetic and functional structure and link the external environment with the facades of the walls through his use of modern modern colors for surfaces and external facades, thus achieving the integration between the unity of aesthetic interaction and the effect of technology and was able to show the ability The plastic and creating the aesthetic sense of the outer space and giving the functional value to the place, and the formation of an outer space with a shape and content that attracts the consumer thanks to the aesthetic transitions, to form in turn an interactive design scene that attracts attention that helps in directing and attracting the recipient.



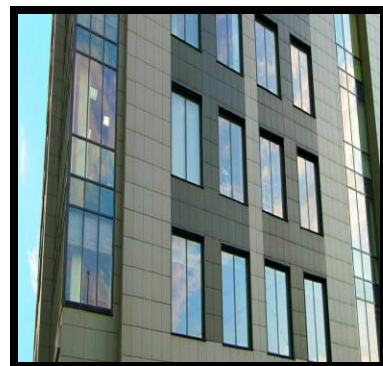
Sample No. (4)

Description: The exterior facade of a company of black ceramic tiles, which is porcelain without a luster (matte porcelain).

Location: France.

Slab dimensions: 30cm * 30cm.

The scene is an external facade of a company that shows in this sample the high ability of the designer to control the use of glazed external walls with ceramic tiles to produce design shapes that are related to relationships, elements and foundations of the work in a way that gives sensory and aesthetic values and plasticity ability using black ceramic tiles They appear as vivid gradients in the wall mass with color effects located between the walls.



Research results and discussion:

1- The idea of the interior designer showed the ability to study the aesthetic values of ceramic tiles by referring to finding solutions to problems in the facades of buildings. The third sample and through the harmony in the elements of the design scene.

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2- The success of choosing ceramic tiles was based on being made of materials that are not perishable or to changes in weather conditions compared to plastic materials and other wooden materials, which were achieved within the first and second models. And the ability of the designer to show dimensions and clean expressive and functional aspects.

3- Diversity emerged in the manifestation of aesthetic values through the role of the interior designer in studying the environmental trends of the design building.

4- The achieved results of the design building were based on the designer's ability to show the aesthetic values achieved within the third and fourth models and to highlight the value of the place achieved within the first, second and fourth models and by determining the quality and sizes of the ceramic tiles used.

The most prominent recommendations: In light of the research results, the researcher recommends the following:

1- The researcher recommends the necessity of employing visual effects in order to inspire the heritage vocabulary loaded with semantics (functional, symbolic, utilitarian) through its reconfiguration and design.

2- The researcher recommends the necessity of adopting design treatments to break the boredom and in a way that expresses the type of purpose for which the ceramic tiles are used so that it is linked with the outer space environment.

Future Suggestions: To complement the intended benefit of the current research study, and for the sake of investing its results and conclusions and recommendations, the researcher suggests future studies:

1- The effect of using modern materials and technologies in the interior design of the exterior facades.

2- The function of semantics of functional values in determining the determinants of outer space.

3- The futuristic design thought for the design of modern exterior facades.

The proposed design: In light of the objective adopted by the research studies and the resulting theoretical framework of indicators, the objective analysis and the results of the conclusions, the proposed design emerged to clarify the role of aesthetic values in the use of ceramic tiles in building facades, which are as follows:

١- The positive study of the researcher emerged. The positive study of the researcher emerged within the proposed design by showing the aesthetic value of the design of ceramic tiles, due to its physical presence and the values, connotations and symbolic qualities it bears to represent, in turn, the requirements of the design configurations as well as the selection of the structural configuration, which indicates the important idea related to the design work. Expressing the

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ability of the design formation in construction with the splendor of the design imagination, and this is based on the study of the interior designer to the mechanism of the aesthetic value and between the formal forces on the design dimensions of the external facades. (Look at the first perspective shot).



The first perspective shot: showing the walls and floors of the ceramic tiles of the external facade

٢- The researcher's study within the proposed design to the factors related to the consumer's taste for interior design by choosing the viewing angles to represent one of the basic requirements for showing the aesthetic values in addition to studying the successive scenes within the external spaces as well as studying the functional values according to the structure of the design configuration and in proportion to the directionality of the line of vision angle. See the second perspective shot.



The second perspective shot: It shows the impact of the aesthetic values of colors on the consumer in the designs of exterior facades

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- ^١ <https://www.chababe>. Quote date 4/19/2022
- 2- Intermediate Dictionary
- 3- Al-Ma'ani Al-Jami' Lexicon - Al-Jami' Arabic-Arabic
- 4- Arabic - Arabic dictionary
- ^١ <https://mgtuts.com/autocad/you-asked-why-is-aesthetics-important-in-architecture.html> Quote date ٢٣/١/٢٠٢٢
- 2- Allam Muhammad Allam: "The Science of Ceramics", part 2
- ^٣ <https://ar.architectecureprof.cim> Quote date ٦/١٢/٢٠٢١
- ٤ Faraj Abbou, The Science of the Elements of Art, Volume 2, Delfin Publishing House, Milan - Italy, 1982, and reprinted in 2017, p. 687.
- ^٥ <https://www.facebook.com/EngineeringMagazinee/posts/1775623702595020> /Quote date ١٩/٤/٢٠٢٢
- ^٦ Joy Boworth ; Ceramics With Mixed Media , 1st Published A&C Black Publishers, Great Britain, 2006. p10
- 7- Rawan Salah: Defining ceramic tiles and their colors. The Egyptian Journal of Specialized Studies. Issue 3. Volume 2, pp. 1-3, year 2022/February/128- Abd al-Rahman Badawi, "A New Introduction to Philosophy", see: Samir Karam, Dar Al-Tali`ah, Beirut, 2nd Edition, 1979, p. 188.
- ^٨ Broussaud G. Les CARREAUX de faïenec peint sanas 1 ' Afrique du nord Paris 1930 and reprint. ٢٠١٣.
- ^٩ Giordano C Yurkievch S. Dictionnaire espagnol-français Hachette Parias Grijalbo Barcelona. 1980 and reprint 2011.
- * **Enamel** is a substance made of silica metal, the main component of glass, and it is a substance in the form of a powder that has other metal oxides added to it to give it different colors. Copper and silver with enamel, whether in jewelry pieces or utensils, we follow together the process of coating copper plates to make plates. Enamel is a glass-like substance used to form a smooth, polished and shiny surface over metals. They may take different colors to decorate many utensils, including mugs, plates, and metal dishes. For more see:
- <https://ar-ar.facebook.com/DrSamyMahros/photos/panting->. Quote date ٦/١/٢٠٢٢
- ^{١١} R. L. Hobson: A Guide to the Islamic Pottery of the Near East (British Museum) P3. Footnote 2.
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- 15- Salwa Youssef Abdel Bari: The Role of Ceramic Tiles and Shades in Thermal and Aesthetic Treatments of Facades and Interior Spaces, Faculty of Applied Arts, Helwan University. Ph.D. thesis, 2001, p. 321.
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- ^{٢٠} Ching Francis, DK "Interior Design" Van Nostrand Reinhold, Now York. 1987, P120
- 21- Ching Francis, DK "Interior Design" P120-121.

Aesthetic values in the use of ceramic tiles in the facades of buildings

Annex No. (1)

middle technical university

College of Applied Arts

Postgraduate/Masters studies

Department of Interior Design Techniques

M/ Determining the paragraphs of the analysis axes form

Assistant Professor Dr.: (__) Esteemed

good greeting ..

In view of what we promise you from the scientific experience in the field of specialization, we kindly request you to express your good comments about the validity of the paragraphs of the analysis axes form for the tagged research

Aesthetic values in the use of ceramic tiles in building facades

with respect ..

signature/

scientific title/

Specialization/

delivery date/

date received

researcher

Hoda Abdel Razzaq

Annex No. (3)

1 expert group

2 a.m.d.:

3 A.M.D.:

External Experts Group for Tool Stability:

1 a.d.:

2 a.m.d.:

Aesthetic values in the use of ceramic tiles in the facades of buildings

Annex No. (1) Sample analysis form					
both	Somewhat	I agree	paragraphs	headlines	T
	*		Aesthetic structure in the use of ceramic tiles	Aesthetic values in the design of ceramic tiles	١
		*	The design performance is characterized by simplicity and coherence		
	*		Execution, proportions, sizes and dimensions of the tiles	Environmental guidance in building facades	٢
	*		Mastering design overlap for design configurations		
	*		materials		
		*	Aesthetic value effect		
*			Fine ability	Technique of using ceramic tiles on building facades	٣
		*	aesthetic values	form and content	٤
	*		Functional values		