

# Decorative screens as room dividers: their historical use, modern materials, advantages, and applications

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**Abstract.** *Decorative screens have a fascinating history as room dividers, dating back to ancient times. Today, they remain a popular choice for creating space divisions in various settings, including restaurants, hotels, offices, and homes. The present paper explores the advantages of using decorative screens as room dividers and highlights the functional benefits of the screens, such as their ability to create privacy without completely blocking off the entire space, and their ability to be moved and rearranged as needed. Additionally, decorative screens offer aesthetic benefits, such as adding a decorative element to a space and creating visual effects and texture.*

**Keywords:** decorative screens, room dividers, space design, interior separating

## 1 Introduction and historical review

Design is a continuous process of development and improvement of known trends and styles. Despite the fact that innovative and original solutions emerge every day, it is undeniable that a significant part of contemporary trends are heavily influenced and inspired by those of the recent or distant past. But can we judge this modern interpretation of something that has stood the test of time, given the fact that it is so perfectly and correctly designed that its application is still relevant today?

For example, decorative screens have been widely used in Asia since ancient times. The use of this type of partition screens has a long history in China and Japan, where they were present in the homes of wealthy aristocrats and merchants to separate more secluded corners in otherwise vast spaces. In the West, this type of partition wall became known during the Renaissance in large palaces or churches (Van Der Reyden, 1998).

The Japanese „Shoji" screen, made of wood and semi-transparent cloth or paper, remains very popular to this day. These screens have been used in traditional Japanese architecture for centuries to create private spaces and diffuse light. Today, Shoji screens are popular in modern homes and apartments because of their minimalist design and their ability to let light pass through while, creating a sense of privacy. And since paper and cloth are not the most durable materials over time, another Japanese method can be used to create intricate lattice screens using the "Kumiko" technique. It involves assembling thin strips of wood into a complex yet extremely detailed and symmetrical pattern, only, by assembly without any fasteners or nails (see Fig.1) (Christensen, 1992).

Today, decorative screens have established themselves as a popular choice for spatial divisions in hotels, restaurants, offices, and more. They are offered in various materials and sizes to fit any space.

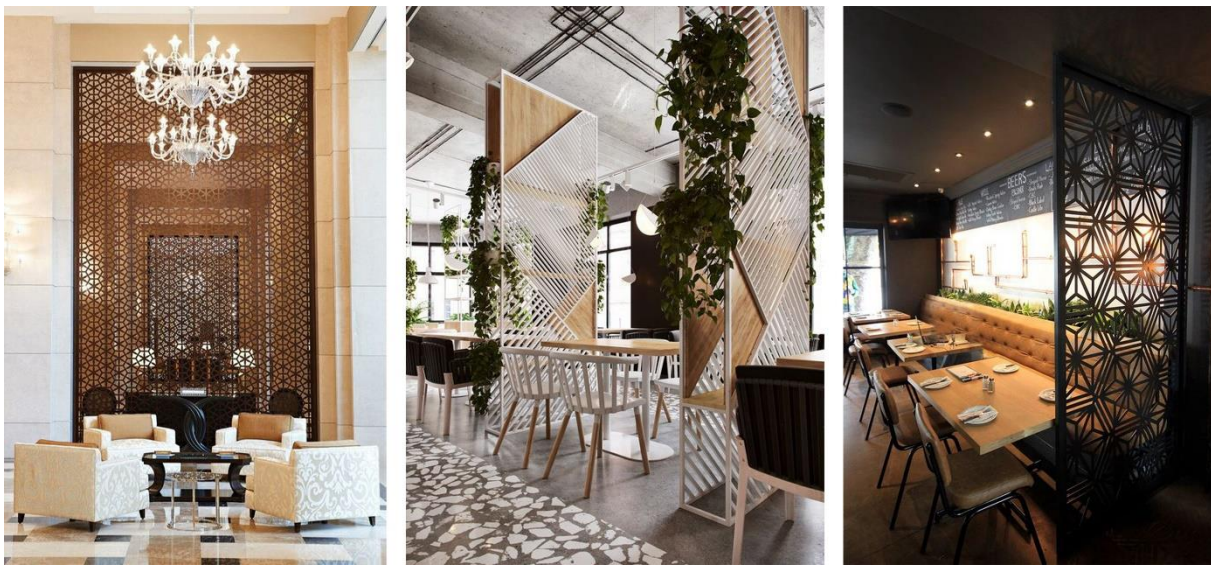


**Fig. 1.** The "Kumiko" technique, still used today to make decorative partitions

## 2 Application in contemporary design

When designing a space, in addition to being beautiful and stylish, it is essential for it to comply with a number of norms related to the human factor. It is important for the design to correspond to its functional application and contribute to the improvement of the environment. In this line of thought, the use of decorative walls provides a solution to a multitude of problems of varying natures (Hertzberg, Ritter, Shamiyeh, 2018, Dobрева, & Bankova, 2019, Bankova, Tsoneva, 2022).

One such problem, for example, is the separation of individual corners in restaurants and cafes. While guests desire to experience the atmosphere of the urban social environment, they also crave privacy in the company they are in. The addition of decorative screens provides a sense of seclusion, allowing people to have personal conversations, without feeling like they are in a closed and tight space (see Fig.2).



**Fig. 2.** Separating different zones in hotels and restaurants

Interior partitions can be utilized to create separate eating areas or add visual effects to the space, especially when combined with appropriate lighting. In hotel room layouts, a latticed wall can be used to separate the sleeping area from the living area, providing guests with a greater sense of privacy and comfort. (Dobрева 2020)

Decorative screens are particularly suitable for use in Spa centers, beauty salons, and cosmetic studios (see Fig.3), where different areas for relaxation or procedures can be isolated, allowing each visitor to relax and enjoy their time alone.

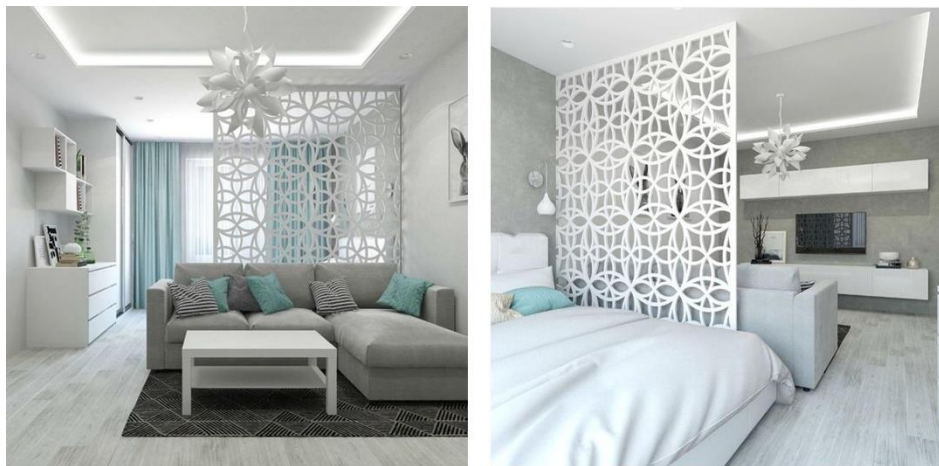


**Fig. 3.** Using decorative walls in Spa centers and beauty salons

Undoubtedly, the office environment is another example of the need for large spaces to be shared among many people. (Smith-Jackson, Klein, 2009) While traditional cramped and suffocating work cu-

bicycles were once commonplace in big corporations, modern workplace design aims to limit or completely eliminate this type of workplace segregation due to the high risks of stress and depression associated with it (Brennan, Chugh, Kline, 2002). Much more often, semi-transparent decorative walls are chosen, which, besides being visually stunning and modern, they also create a sense of volume and harmony within the given space, and allow for ample natural light, which is of paramount importance for an ergonomically maintained office (Becker, Gield, Gaylin, Sayer, 1983).

When we talk about interior design solutions, we cannot help but mention the most popular object of interior design, namely “The home”. And here the partition screens have a very large application. For example, in recent years, studios have become more functional and aesthetically pleasing. You can easily combine a living room with a kitchen and a bedroom in one common room, adding a thin decorative partition between the dining area and the rest of the areas. In this way, the living space is not intersected by a monolithic wall, which would make it even narrower and darker. On the contrary, light passes through the gaps, creating a sense of volume and openness, while the partition visually separates the two rooms, preserving their functional application (see Fig.4) (Beyrouthy, Burke, McCollum, McMullan, Parkes, 2008).



**Fig. 4.** Using decorative wall to separate living room and bedroom

Working from home has become increasingly relevant in recent times, and for many people, this is a wonderful opportunity to save time and money, so they choose the option to move their office to their home. Not everyone, however, has the luxury of an extra room for this purpose, and in such cases, a partition or lattice wall can be used to create a working corner or separate working area within the existing space. Whether it is in the kitchen, bedroom or living room, with proper organization, the appropriate work environment can be created. The spatial separation, through a partition or lattice wall, will contribute to privacy during work, without disturbing the integrity of the main room and taking up unnecessary space (Cederquist, 2018).

### 3 Materials and manufacturing

When it comes to design, decorative room dividers are available in various styles, from minimalist and modern to richly decorated and traditional. Some popular styles include Japanese Shoji screens, Moroccan-inspired lattice screens, and metal screens inspired by Art Deco.

#### 3.1 Materials

The choice of ornamentation and material from which to make the grid is extremely diverse and allows architects and designers to apply them to almost all modern styles, either complementing the surrounding environment or being the main accent in a room.



As for construction, decorative partitions for rooms can be made from a wide range of materials based on wood, metal, PVC, and all their varieties. Each material has its unique advantages and disadvantages. For example, some materials are incredibly durable and long-lasting but can be cumbersome, while others are lightweight and moveable, but may not withstand the test of time when used in an outdoor environment. It is also important to note that the production of interior screens can be tailored entirely to be made from eco-friendly or recycled materials.

A popular material for decorative screens is bamboo. It is a sustainable material that is both robust and lightweight, making it an excellent choice for dividers that need to be easily moved or folded. Additionally, bamboo screens can be stained or painted to match any decor. A more affordable alternative to this material is raw MDF, which is widely used in the production of various furniture items.

While in ancient Japan, making these artworks took years of learning the craft and hundreds of hours to create a decorative wall, today, thanks to software and machines, we can achieve this effect within a few hours. After obtaining a suitable 3D model or vector file of the desired ornamentation, the machine's settings need to be adjusted to have coordinates along which it will mill, as well as information about the sheet material's type and thickness. There are various software programs that can be used, some of which are entirely free. This is another important factor that affects the final product's price and makes it more affordable.

The most popular and fast method used to create these decorative elements is by laser cutting or milling sheet material.

### **3.2 Laser cutting**

Laser cutting decorative panels is a popular technique used in interior and exterior design to create intricate patterns and designs in materials such as wood, metal, acrylic, and more. It is a precise and efficient process that uses a high-powered laser beam to cut through materials with extreme accuracy.

It can create intricate patterns and designs that would be difficult or impossible to achieve with traditional cutting tools. Laser cutting can be applied to a wide range of materials, each of which reacts differently to the laser beam, resulting in unique effects and finishes.

Laser-cutting technology has advanced significantly in recent years, allowing for faster cutting speeds, improved precision, and the ability to cut thicker materials. One of the advantages of laser cutting decorative panels is the ease with which intricate and complex designs can be created. The laser beam can cut out even the tiniest details with precision, resulting in a highly detailed finished product.

Laser-cutting decorative panels can also be cost-effective for small production runs. The process is automated and requires minimal setup time, making it a fast and efficient option for creating custom designs. Overall, laser cutting decorative panels is a fascinating and versatile technique that offers a range of benefits for designers and manufacturers alike. Whether you're creating intricate wall art or architectural elements, laser cutting can help you achieve a precise and customized finished product. (Senthilkumar, 2014)

### **3.3 CNC milling**

The process of milling involves the use of a computer-controlled machine that moves a cutting tool across the surface of the material to create the desired design. The machine can be programmed to create complex shapes and patterns with a high degree of precision and accuracy.

CNC milling machines can be used on a variety of materials, including wood, metal, plastics, and composites. Different materials require different cutting tools and techniques, but the end result is a highly detailed and precise decorative panel.

These routers can also be used to create three-dimensional designs, adding depth and texture to decorative panels. This can be particularly effective when using materials such as wood, where the natural grain and texture of the material can be incorporated into the design.

The main difference between laser cutting and milling is that laser cutting is a non-contact process that requires no physical contact between the cutting tool and the material being cut, while milling requires physical contact between the cutting tool and the material. This means that laser cutting is ideal for delicate or intricate designs that would be difficult or impossible to cut with a milling machine.

Another difference between laser cutting and milling is that laser cutting is typically faster and more precise than milling. Laser-cutting machines can cut at high speeds with extreme accuracy, while milling machines require more time and effort to achieve the same level of precision (Frank, Wysk, Joshi, 2004).

#### 4 Advantages and disadvantages

Depending on the design of the decorative dividers, they can provide an excellent solution for privacy and sound control in a variety of settings. For example, a screen or panel divider can help create a more personal space in a larger room, while also absorbing sound and reducing noise pollution. This is especially useful in offices or open-plan homes, where multiple people need to use the same space.

One of the advantages of using decorative screens as room dividers is the flexibility and versatility they offer in the design of a space. Unlike traditional walls, screens can be moved, folded, and rearranged as needed, allowing for easy changes to the layout of the space.

Screens can also be used to create a sense of privacy without completely blocking off the space. They allow light to pass through and maintain the visual volume of the room. In addition to their functional advantages, decorative screens also have aesthetic benefits. They can be used to add a decorative element to the space and can be designed in various styles to match existing décor (see Fig.5).



**Fig. 5.** Room divider, used as decorative element, part of the interior design

Decorative screens, which can be made from sustainable materials such as bamboo or recycled metal, offer an eco-friendly alternative to traditional walls requiring significant amounts of building materials and energy to construct.

However, there are some potential disadvantages to using decorative screens as room dividers. One is that they may not provide the same level of sound insulation as traditional walls, which can be a problem in certain circumstances.

Additionally, screens may not be as effective at blocking light as solid walls, which can be a disadvantage in places where privacy or darkness is desirable.

Another disadvantage is that they cannot match the strength of traditional walls and are not suitable for hanging shelves, bookcases, or artwork, and if not securely fastened, they can pose a safety risk.

Despite these limitations, decorative screens remain a popular and versatile solution for dividing space in both residential and urban environments. They offer a range of benefits, including greater flexibility, versatility, and eco-friendliness, making them an attractive option for many different spaces (Santos, 2019).

## 5 Discussion

For many years, fields such as ergonomics have been dedicated to studying the proper design of spaces in which humans live, work, and develop, with the ultimate goal of creating a more favorable environment. Accordingly, designers continue to refine ideas from the past, which can still be valuable today. Research on the subject of the present paper demonstrates that decorative barriers and screens have existed since ancient times, although they were once primarily a feature of wealthy homes' decoration. Nowadays, advancements in manufacturing have made such decorative elements accessible, and they can now be employed in both small and large spaces, including luxurious salons (Szabó, Balogh, Dovramadjiev, Draghici, Gajšek, Iulić, Reiner Mrugalska, Zunjic, 2021).

A detailed study can be conducted as a continuation of the current paper, to examine the ornamentation and structure of decorative grilles to identify which motifs are best suited to particular spaces. It may also consider whether factors such as grille density, sharpness, or rounding of edges, are important for eliciting particular feelings among people and how they blend into the overall interior design.

## 6 Conclusions

In conclusion, decorative room dividers have a rich and extensive history as space separators and remain a popular choice for functional zoning.

One of their primary advantages is their flexibility - unlike permanent walls, dividers can be effortlessly moved or removed entirely if required. This makes them an excellent option for temporary or transitional spaces, such as trade show booths or office cubicles.

Whether utilized for functional purposes or simply as a decorative element in the interior, room dividers offer a universal and practical solution for every style, taste, and design.

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### Online image sources

Fig.1 [https://poorlovesk.com/product\\_details/29282210.html](https://poorlovesk.com/product_details/29282210.html) , <https://materialdistrict.com/material/kumiko/> , <https://nagomijapan.com.au/products/kumiko/>

Fig. 2 <https://www.ronenbekerman.com/showcase/emphasis/> , <https://thearchitectsdiary.com/100-jali-design-ideas/> , <https://www.pinterest.com/ideas/restaurant-design/905875810078/>

Fig.3 <https://www.pinterest.com/pin/563018695419327/> , <https://www.pinterest.com/pin/351912463642896/>

Fig. 4 <https://engineeringdiscoveries.com/beautiful-wall-partition-design-ideas-for-your-home/>

Fig. 5 <https://twitter.com/moderninteriorc/status/844781862098677760>