

# Take Inspiration from Traditional Crafts—The Transition of Traditional Blue Calico Patterns and Its Application in Modern Interior Design

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This article aims to explore the design pathway of building modern interior space with traditional elements by transforming and applying blue calico patterns. Theoretically, this practice is based on 'skin theory', which regards clothing as a secondary skin and the enclosure of walls as the third covering; thus, textiles and interior space could be related to each other. The research explores the theory by combining the traditional textile of blue calico with interior design through conducting a theoretical analysis, a case study and design practices. Inspired by the general interior design procedure and the craft-making process, a three-phase work-flow model is developed, which consists of the initial research of the craft, the transformation of the craft's patterns and the project design for applying the transformed patterns. The initial research phase serves as evidence for the later design decision making. The transformation phase, consisting of dimensional, spatial and materialistic methods, plays a central role in coordinating traditional patterns with modern aesthetic value. Through the project design phase, the transformed patterns could be used in various interior spaces.

**Keywords:** *Interior Design; Blue Calico; Traditional Crafts; Pattern Study*

## 1 Introduction

In the era of globalisation, the local identity of interior design has becoming a hot topic. In such explorations, the application of traditional symbols in interior space is repeatedly practiced in China, for example, the Chinese socialist style of the 1950s and the traditional revival style of the 1980s. The Chinese socialist style of the 1950s, which utilised national symbols as the form while preserving socialist style as the content, aimed to convey national pride (Yang, 2010). This style deviated from the Soviet style, which the authoritative government had supported before the Chinese socialist style. The traditional revival style of the 1980s emerged because of the national identity worries prompted by Western styles flooding into the country through the Open Door policy (Zhang, 2009). Unlike the previous explorations that had focused on a grandiose scale for national identity, the current practices are more prone to utilise specific and detailed cultural heritage elements to represent regional feeling. However, the explorations, to a large extent, are focused on collages of

traditional decorative symbols, whereas the transformation process and the underlying design logic are ignored. This essay takes the traditional blue calico as a case study, starting with an analysis of its crafts and then discussing the design procedure through exploring the transformation of its patterns and applications.

## 2 Theory

In the mid-19th century, Gottfried Semper proposed four elements of architecture—the hearth, the roof, the enclosure and the mound—that corresponded to the craft-based arts of ceramics, carpentry, weaving and masonry. Enclosure was considered to be connected with weaving and the theory of ‘wearing clothes’, and the intimacy between architecture and textiles is emphasised in his book, *Four Elements of Architecture*. Adolf Loos developed Semper’s viewpoints in the book *Decoration Laws*, pointing out that the historical origin of decoration was actually a spatial maintenance structure. Semper then traced the origin of architectural motivation as suspended textiles. In 1995, Kenneth Frampton, an architectural theorist, interpreted Semper’s enclosure theory in his book by distinguishing thick walls (known as *die mauer* in German) from lightweight walls (called *die wand* in German). While both wall types provide enclosure, the latter involves the German words for ‘garment’ (*gewand*) and ‘modification’ (*winden*).

Inspired by Semper’s theory, many researchers have tried to connect space with textile and clothing to explore design possibilities for interior space. Anni Albers (1957) developed the ‘skin theory’, which regarded clothing as a secondary skin and the enclosure of walls as the third covering. Lois Weinthal (2014), inspired by Albers, noted that interiors could be seen as a series of layers that wrap and enclose the body. In her studio class at UT Austin, she then explored interior skin by applying scalar changes and material translation to transform body layers into interior skins. Later on, many scholars developed skin theory with their understanding. Among them, Meg Jackson (2014) recognised the layers that surrounded us allowed for redefining what interior means. Matina Kousidi (2016) discussed the intersections and overlaps between architecture, dress and textile design.

Therefore, the following two points can be concluded: first, the building’s enclosure system, with more freedom for further design, is an essential and relatively independent aspect of architecture; second, textile and clothing design has long inspired architectural and interior design. These two points could theoretically prove that a connection between blue calico and interior space can be established. Because blue calico used to play an important role in Chinese people’s daily lives, it has been widely used as clothes, hoods, tablecloths, window curtains, door curtains, cushions, quilt coverings, wall coverings and other interior decorations. As a kind of flexible textile covering, blue calico has been used as everything from body covering to interior furnishing and space covering. Through covering things, blue calico has connected with different forms of skins. At this point, blue calico is related to the concept of interior layers. Additionally, scholars’ exploration discussed above generally tries to draw inspiration from fashion to interior skin, ignoring the traditional textiles which contain cultural context might bring more possibilities. Evidently, blue calico is not a common textile layer; it is unique because of its typical white-and-blue colour and its symbolic patterns, which make it easily recognisable. Thus, the transformation of blue calico and its application can provide new inspiration for regional interior design facing globalisation.

As the article will discuss the methods of designing regional interiors, it is necessary to investigate the theory of regionalism. Architecture has discussed regionalism for many years. To the West, regionalism has different connotations in different times. Before modern times, regionalism was differentiated mainly due to physical factors, such as climate, geography and natural resources. After that, regionalism played a role to represent national identity, as European countries became nationalistic. After the Second World War, some architects began to explore modernist architecture with local cultural characteristics. In the 1980s, critical regionalism won wide recognition. Alexander Tzonis and Liane Lefaivre first conceived the critical regionalism concept, and then Kenneth Frampton's efforts led to its wide-spread acceptance, particularly in China, because it tries to search for a balance between the universal civilisation and the local culture (Lu, 2009). Critical regionalism emphasises the tectonic and the underlying logic. At this point, critical regionalism leads to a more rigorous and rational way of dealing with regional culture, while still producing a modern design. Comparably, postmodernism, which considers history a resource to unearth a motif for decoration, designs through collaging different cultural fragments. Thus, sometimes, postmodernism is a shallow way of doing design. Therefore, as for the redesign of blue calico, the tectonic way of doing design would be the basic principle, as the design process would be evidence-based, and its advancement would be rigorous.

### **3 Design Process**

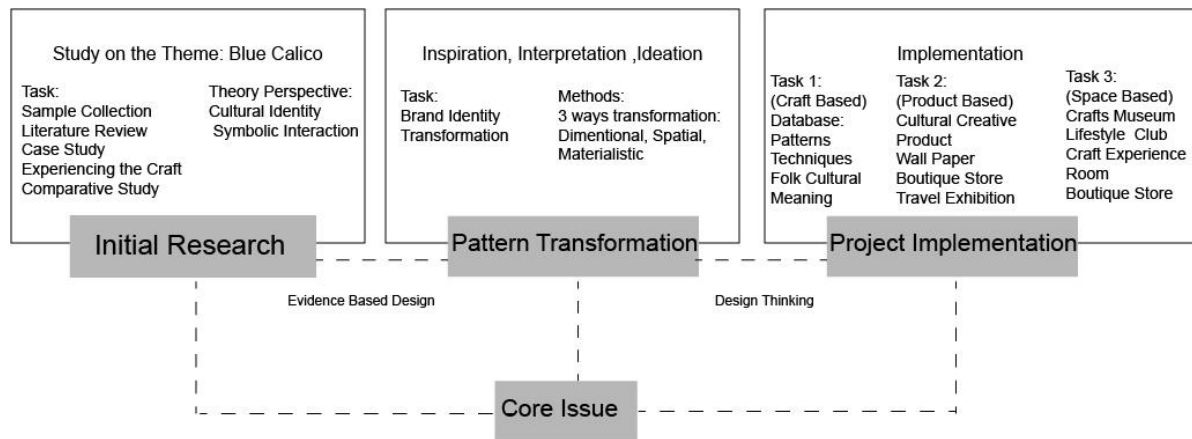
This section introduces a three-phase work-flow model. The model is a design process that showcases the interior design method of applying traditional blue calico elements in modern interior spaces. The design method requires rigorous research and rational pattern transformation for further decision making. The primary question is how to research and transform the traditional patterns of blue calico for its application in modern interior space. Obviously, the answer depends on a work-flow model specifically suitable for the research, transformation and application of the blue calico elements. The article referenced general interior design procedure and the craft-making process of blue calico for inspiration.

The interior design process, regardless of the project's size, generally falls into five phases. Each phase is essential and builds on the previous step until the project is complete. The five phases are programming, schematic design, design development, documents and contract administration (Piotrowski, 2011). The typical interior design process emphasises the technical aspects concerning project manipulation. However, with the more widely accepted emphasis on evidence-based design strategy, increased attention has been paid to initial research and design transformation. Robinson and Parman (2010) defined the research-inspired design process as planning the research, information gathering, programming and design. The process aims to approach interior design as a knowledge-based activity instead of a project-based one. However, giving more consideration to either the research or the project leads to unbalanced interior design. Thus, if these two kinds of design processes combine, the process could be divided into three basic steps, as initial research, pattern transformation and project design.

However, the blue calico creation process is generally practised in multiple steps, which could inspire the work-flow model as well. Based on having practised the craft personally for a long time, the primary characteristic of blue calico creation is reflected in its pattern transformation process, which consists of three categories: the transformation of media, action and colour. In the media category, the pattern is transformed from kraft paper to white

cotton cloth. In the second category, the action changes from carving (kraft paper) to brushing (mixed powder) and dyeing (vegetable dyes). In the colour category, the white cotton cloth turns into a blue-and-white one. Inspired by the craft-making process, this article will explore transformation methods.

These three steps constitute a relatively complete working model, with each step involving different core tasks that form a progressive procedure. First, the initial research focuses on collecting information regarding blue calico and then analysing it to provide a foundation for the following transformation process. Second, the pattern transformation involves a visual analysis of the blue calico, its pattern transformation and its brand identity (to make the serial designs coherent with each other). Third, the project design is based on initial research and pattern transformation. During the process, the work gradually becomes connected to the core problem of how to explore the blue calico's application in modern spaces to represent regional identity. In order to solve the problem, various projects would be introduced to test the design. In these three steps, the preliminary phase of research is relatively abstract; the pattern transformation phase, which brings a variety of possibilities and uncertainties, is semi-abstract; and the project design phase moves towards developing a specific design to solve the problem discussed above.



The transformation of traditional craft and its application in modern design

Figure 1. The three phase work-flow model.

### 3.1 Task module 1: initial research

As shown in figure 2, through visiting the blue calico museum and learning from the craft masters, we concluded that making blue calico requires four key factors: pattern, media, procedure and tool (see table 1). First, patterns are studied for their potential to generate new forms. Thus, the main concerns are the pattern's cultural implications and its composition (module, grid, hierarchy, etc.; see figures 4, 5). This step's purpose is interpreting the existing blue calico pattern and analysing the logical relationship between the patterns.

Second, media supports the pattern, which progresses from kraft paper to cotton cloth. The pattern is first carved on the kraft paper using a knife. Then, by scraping the mixed powder, the pattern is attached to the cotton cloth through the engraving. Transforming the media creates a different effect on the pattern. Kraft paper makes the pattern appears explicit, whereas cotton, a relatively soft material, shows natural minor uncertainties, such as subtle crack lines within the pattern shapes, due to the drying process of the mixed powder.

Third, procedure is sequential. The next step always rely on the previous one. It starts from designing patterns to carving kraft paper, brushing tung oil on the kraft paper, drying the kraft paper, moisturizing cotton cloth, brushing the mixed powder through the kraft paper on cotton cloth, naturally drying the cotton cloth, dyeing the cotton cloth, hung up the dyed cloth for air drying, removing the mixed powder from the cotton cloth. The process of making blue calico has been streamlined for efficiency. Different craftsmen have improved and professionalised the craft. In most circumstances, the pattern design, carving process and dyeing process are separated, thus enhancing the quality of the blue calico. Generally, the carving and dyeing processes are the two key steps(see figures 3).

Fourth, a multiple of tools guarantee to accomplish the making process, such as knife for carving on kraft paper, pebbles for rubbing down deckle edges, sifter for separating out the powder impurities, scraper for removing the mixed powder, etc. In old times, craftsmen made tools by themselves.



Figure 2. Initial research through visiting the museum, learning from the craft masters

Table1. The Four Key Elements of Making Blue Calico.

Item	Content							
Pattern	Carved-out pattern				Blue and white pattern			
Media	Kraft paper				White Cotton			
Procedure	Carve a kraft paper template	Brush tung oil	Airing	Scrape dye-resistant paste on cloth	Airing	Dyeing	Airing	Remove dye-resistant paste
Tool	Carving knife	Oil brush	Clamp	Scraper	Pole	Dye vat	Pole	Scraper



Figure 3. Research the craft by practicing it.

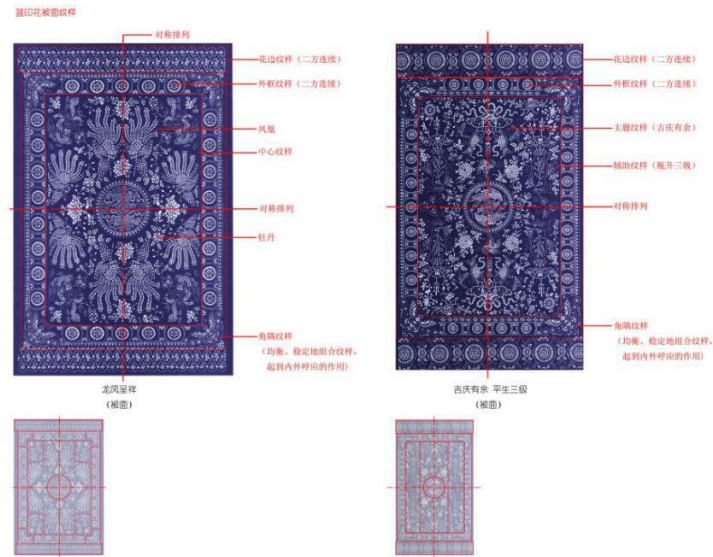


Figure 4. Pattern composition analysis of blue calico.

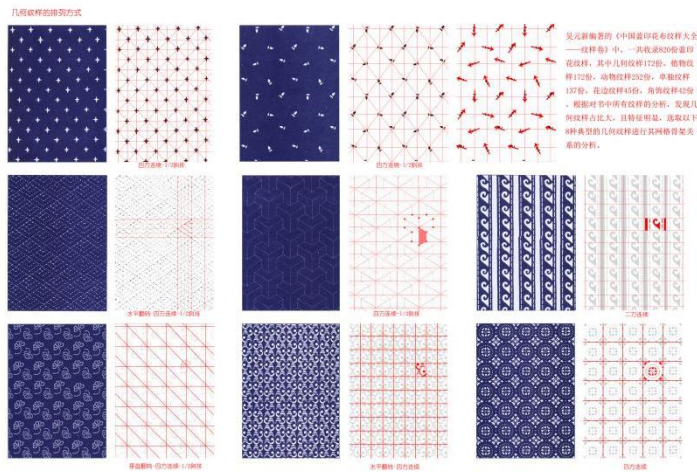


Figure 5. Grid analysis of blue calico.

Regarding the relationship of these four key factors, pattern is the most essential, and the other three are the approaches and tools to realise the pattern. Traditionally, the blue calico pattern design and its transformation is the most difficult step, and it also reflects the creative and aesthetic values as well. Folk artists specialise in designing and making pattern templates that could be reproduced through rubbing them several times. The artists typically design the template from their life experiences and from referencing their predecessors' works, which preserves the folk-custom meaning. By using blue calico in a living environment, people make the interior space symbolic. Thus, pattern plays a vital role in the whole process, with the media, craft and tools serving the pattern. The medium in blue calico is used to meet the need for pattern reproduction, which reduces costs. Tools are used for carving numerous disconnected hollows, which helps to constitute a complete form because of Gestalt psychology, and the craftsman must carve carefully, making certain the cut-out is in the correct size to hook the mortar made of water, soybean powder and lime powder; the craftsman must also avoid making the cut-outs too large, as it could easily make the mortar crack after drying and affect the final dyeing process.

During the research, the process is further studied to understand some specific details in the production process, and the process is visualised through graphic language (see figure 6).



The production experience and the in-depth analysis of the traditional blue printing process by means of literature analysis, observation and recording also builds the foundation for the subsequent designs of related projects. Through experience, it is clear that pattern and colour are the core aspects of blue calico. In terms of transformation and application in the context of modern design, emphasis should be placed on studying pattern and colour to achieve a balance between preservation and transformation.

Blue calico is also a white-and-blue cloth that is produced in many provinces of China, where the method of making blue calico is to cover a piece of white cloth with a paper cut and then to spread a layer of mixed lime, bean powder and water over it and dip it in an indigo dye bath. After being dried in the shade, the layer of the mixture is scraped off, revealing a finished blueprint with two colours, either a white background with blue patterns or a blue background with white patterns. The pictures are usually flowers, human figures or legends. Thus, the subjects reflected on the blue calico make it secular, humane and dynamic.

### 3.2 Task module 2: pattern transformation

This phase is to perform a variety of possible attempts under the uncertainty brought by the design idea. The initial research stage is relatively abstract and theoretical, while the theme transformation stage is more visual, using visual language for design analysis and research. The morphology of the blue calico craft was deduced on the basis of previous research. Three transformations were noted: material transformation, dimensional transformation and spatial transformation (Ding, 2016). As dimensional transformation is basic for further exploration, the transformation of material and space inevitably involves the change of either dimension. The process of analysing these three transformations is also the process of exploring various morphological possibilities(see figure 7).

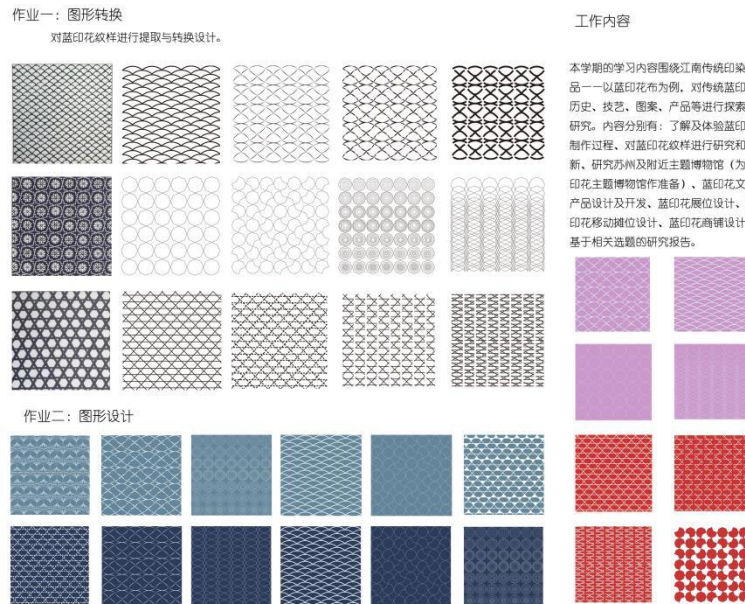


Figure 6. Morphs of patterns.

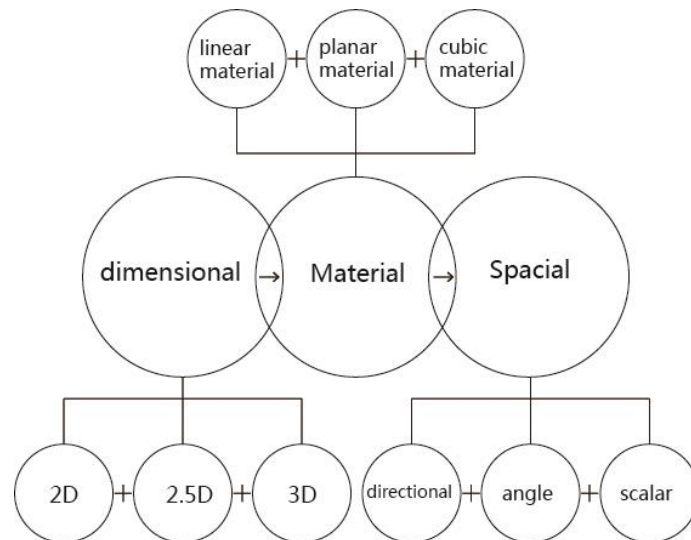


Figure 7. Diagram of "three transformations".

Task module 2 must conduct a morphological exploration and analysis on the basis of the initial research. The morphology collected from the preliminary investigation becomes the basis of the deduction, enabling the exploration of various morphological transformations. The main problems to be solved in the process of morphological inference include how to excavate the morphological source from the local context and perform a rational analysis and rigorous derivation. Furthermore, this task module can also expand the design ideas through the study of relevant cases, for example, through the study of architectural skin cases to master the basic rules of pattern composition, creating a reference for form design. Here, morphological design can be transformed and applied, and various factors, such as dimension, material and space, can be considered when making wall coverings or any installations that could be hung as an interior layer. Among these designs, wallpaper would be relatively simple and concise. Patterns explored during the process could be applied in interior space for further study.

### 3.3 Task module 3: project design

According to previous research, the design will focus on exploring the application of the craft and its patterns in modern daily lives. As the traditional craft was consistent with the daily lives of the past, it would conflict with what people need today, either functionally or aesthetically. Thus, the challenge is how to transform the craft and its patterns for a modern context. Considering the research question, several different kinds of projects were introduced for testing the possibilities of using the craft and its patterns for the new circumstances. The projects include cultural creative products, a blue calico souvenir shop, a travel exhibition booth, a mobile stall, a craft experience centre and a blue calico museum. For a cultural creative product design that could be used in interior spaces to construct a certain atmosphere, the main focus was on applying the transformed patterns on a new media(see figures 8-10). This process relates to considering material selection, scalar changes and the pattern of context configurations. To continue testing the possible blue calico transformations and their application, pattern research was considered the first priority because it relates to visual branding. Regarding interior spaces, we first choose a modern space to test the potentiality, and then to choose a traditional Jiangnan residential house, which shows consistency with the blue calico, because it was once widely used in the Jiangnan area. The application of blue calico elements in such a context would be normal, and it showcases nostalgia and recaptures old memories(see figures 11,12).





Figure 8. Project design - the application of blue calico patterns on fashion, accessories and interior cushions.



Figure 9. Project design --the application of blue calico patterns on tiles.



Figure 10. Project design -- re-designed patterns and their dyeing effect.

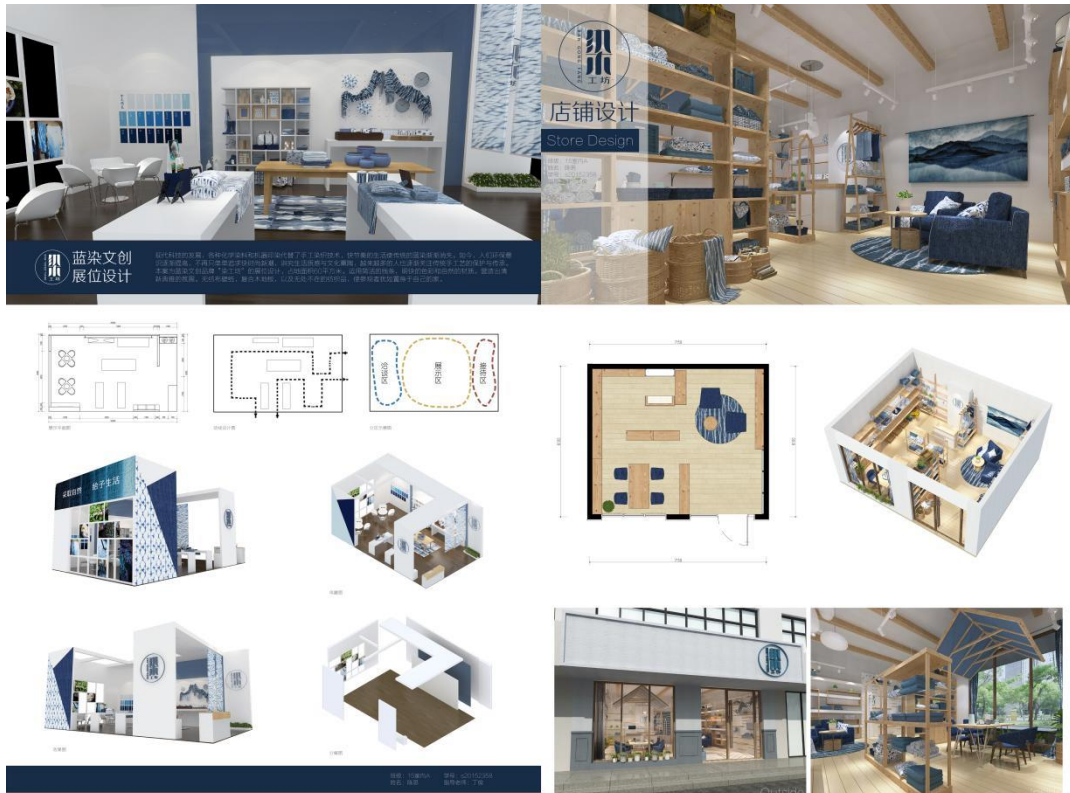
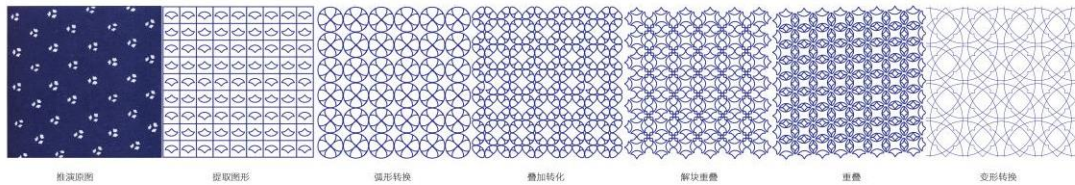


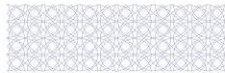
Figure 11. Project design -- the application of blue calico patterns in souvenir shop.

形态分析、转化、三维转变



蓝印花工艺体验馆——安徽会馆旧建筑改造

空间表皮应用——序厅



设计说明

序厅是给人第一印象的空间，为了使参观者深切体验传统蓝印花布工艺及其现代化转化，序厅在保留了大体建筑特色的同时在空间中穿插了表皮设计，使得蓝印花体验馆既有风貌又不失现代化。



Figure 12. Project design -- the application of blue calico patterns in a museum.

## 4 Conclusions

The three-phases work-flow model, consisting of initial research, pattern transformation and project implementation, aiming to apply the traditional craft in modern interior spaces. Among these three phases, the initial research works as the foundation for decision making and the project design's evidence-based practice. The pattern transformation builds a connection between traditional patterns and the modern context, enabling the pattern to be used across a wide spectrum of people's daily lives. The project design makes the previous two phases a reality and tests the potentialities of redesigning blue calico.

With the transformation, blue calico's core characteristics are still retained, while discarding its out-of-date elements. Thus, the transformation process results in the sustainable development of the craft, striking a balance between the craft's authenticity and its flexibility towards modern life.

The research's constraint is that it lacks appropriate consideration of the craftsman's knowledge and their contribution to the decision making of the project.

## 5 References

- Albers, A. (1957). The Pliable Plane: Textiles in Architecture. *Perspecta: The Yale Architectural Journal*, 4, 36–41.
- Ding, J.(2016). Experimental course on interior design project - pattern exploration starting from "folding" technique. *Decoration*,(9):84-86.
- Frampton, K., & Cava, J. (1995). *Studies in tectonic culture: the poetics of construction in nineteenth and twentieth century architecture* (pp. 276-85). Cambridge, MA: Mit Press.
- Kousidi, M. (2016) (2016). Personal Architecture: A Didactic Cross Between Spatial & Fashion Design Practices. *International Journal of Interior Architecture and Spatial Design*, Volume IV,117.
- Lois, W.(2014). Interior Skins. *International Journal of Interior Architecture and Spatial Design*, Volume II ,65-70.
- Lu, Y. Y. (2009). *Multi - perspective of architecture theory*(pp71-72). Beijing: China Building Industry Press.
- Meg, J., & Michael G.(2014).The Human Factor: Materializing Relationships between Body and Architecture. Presented at *the 30th National Conference on the Beginning Design Student*. Chicago, IL: Adams Press, 269-270.
- Piotrowski, C. M. (2011). *Becoming an interior designer: a guide to careers in design*. Hoboken, NJ: John Wiley & Sons.
- Robinson, L. B., & Parman, A. T. (2010). *Inspired Design: A Step-by-step Guide for Interior Designers*. New York: Fairchild Books.
- Semper, G., & Mallgrave, H. F. (1989). *The four elements of architecture and other writings*. Cambridge, UK: Cambridge University Press.
- Weinthal, L. (2011). *Toward a new interior: An anthology of interior design theory*. Princeton Architectural Press.
- Yang, D. J. (2010). *History of modern interior design in China*. Beijing: China Water Power Press.
- Zhang, Q. P. (2009). *Interpretation of the development of interior design in China in the 20th century*. *Hundred Schools in Arts*, 25(1):109-115.

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