Contemporary Reinterpretation and Design Practice of Decorative Elements in Cantonese-style Furniture with AIGC Assistance: A Case Study of the Passionflower Motif

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Abstract

Traditional decorative elements in Cantonese-style furniture are often reproduced merely as surface patterns in contemporary design, with limited morphological integration into furniture structural components. Taking the cross culturally influenced passionflower motif as a case, this study explores how its morphological and compositional features can be translated into forms for modern furniture components and examines how artificial intelligence-generated content (AIGC) supports early-stage concept design. Based on literature, antique furniture catalogues, and image resources, representative passionflower motif samples were collected and analyzed. Three morphological translation directions were summarized: central floral motif and bilateral extension, axial organization and vertical layering, and continuous curves and directional transitions. Guided by these directions, side table concepts were generated in ChatGPT and Midjourney using text prompts and reference images under consistent constraints. Eighteen candidate designs were produced. Three representative options were selected for expert evaluation, and the best-performing concept was further refined. The final design integrates the reinterpreted passionflower motif into the side table apron, combining a contemporary geometric structure with mixed materials including wood, stone, smoked glass, and subtle metallic accents. The findings suggest that reinterpreting traditional motifs requires preserving recognizable morphological features as well as respecting compositional relationships and adapting them to component proportions and spatial limits. While AIGC facilitates rapid visual exploration and multi-scheme comparison, designers still bear responsibility for cultural interpretation, formal coherence and structural feasibility. This practice-based case offers references for the contemporary reinterpretation of Cantonese-style furniture decorative elements.

Keywords

Cantonese-style furniture, Passionflower motif, Decorative elements, Morphological translation



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Introduction

Background and problem statement

Cantonese-style furniture represents an important regional tradition in Chinese furniture making. Its forms, construction, materials, and decorative techniques reflect Lingnan culture and the historical exchange between Chinese and Western art. Traditional motifs contribute to its distinctive visual identity and are closely associated with the forms of furniture components and carving techniques. As traditional furniture elements are increasingly incorporated into contemporary design, a key challenge is how to preserve their cultural and decorative characteristics while adapting them to modern requirements for structure, proportion, and aesthetics [1].

The passionflower motif provides a representative case for examining the decorative art of Cantonese-style furniture and its cross-cultural influences. It was selected for this study because of its distinctive morphology, historical context, and close relationship with furniture components. For example, a Qianlong-period zitan table carved with passionflower motifs employs high-relief and openwork carving on its apron, apron spandrels, and panels between the legs, demonstrating the close relationship between the motif, furniture components, and carving techniques. Decorative records from the Palace Museum describe the passionflower motif as exhibiting stylistic influences from Western art, while its floral and foliate forms share similarities with traditional Chinese peony motifs. Its cross-cultural characteristics and the complex compositional relationships among flowers, scrolling vines, and leaves make it a useful case for investigating the decorative language of Cantonese-style furniture and its contemporary reinterpretation.

The contemporary application of traditional motifs involves more than reproducing existing patterns on new product surfaces. In the passionflower motif, the central flower, scrolling vines, and leaves form distinct morphological elements whose arrangement and connections influence how the motif can be incorporated into components such as the apron. Retaining too many decorative details may make a component visually complex, whereas excessive simplification may weaken the motif's recognizability. Design reinterpretation therefore requires a balance between preserving distinctive morphological features, reorganizing compositional relationships, and achieving coherence with contemporary furniture components [2].

Artificial intelligence-generated content (AIGC) offers new possibilities for visual exploration in furniture concept design. Previous studies have examined generative tools in relation to design tasks, creative ideation, and text-to-image generation [3,4]. In the reinterpretation of traditional motifs for furniture design, a core research question emerges. It does not merely ask whether AIGC can generate furniture images of traditional styles. It explores how morphological insights inform the generation workflow. It further examines how candidate designs are compared and refined via human evaluation to satisfy specific motif attributes and component-level specifications.

Research gap

Previous studies have examined the creative transformation of traditional furniture motifs, the contemporary application of decorative elements, and AIGC-assisted furniture concept design. Related studies cover several directions. They address the contemporary reinterpretation of Lingnan regional decorative motifs in neo-Chinese furniture design [5]. They investigate AIGC-supported derivation and visual reinterpretation of traditional ornamental patterns for interiors and furniture [6]. They explore furniture morphological innovation inspired by cultural relic patterns and symbolic semantics [7]. They also examine AIGC-assisted aesthetic reinterpretation and sustainable innovation of Ming-style furniture [8]. Research has also explored AIGC-enabled

innovation pathways and perceptual evaluation in traditional furniture design [9]. These studies provide useful references for translating traditional decorative elements and incorporating generative tools into design practice.

Building on this work, the present study addresses two specific design questions: How can the compositional relationships among flowers, vines, and leaves in the passionflower motif be translated into design directions for contemporary furniture components? How can these directions guide AIGC-assisted concept generation and comparison? Rather than examining motif redesign or image generation in isolation, this study connects morphological analysis, component-level translation, and furniture concept development through a practice-based case.

Accordingly, this study examines the passionflower motif in Cantonese-style furniture and applies three morphological translation directions to side-table concept design. It does not aim to develop a new generative algorithm or establish the superior performance of AIGC. Instead, it documents the process from motif analysis to component-level design exploration and discusses the potential and limitations of AIGC in this process.

Research aims and contributions

This study aims to investigate how traditional decorative motifs can be translated into contemporary furniture components and to examine the role of AIGC in side-table concept design. It addresses two research questions.

Research question (RQ) 1: How can the morphological relationships of the passionflower motif in Cantonese-style furniture be translated into design directions for contemporary furniture components?

RQ2: How can these directions guide AIGC-assisted furniture concept exploration, and what design considerations emerge from comparing candidate designs?

To address these questions, representative passionflower motifs were analyzed to identify their floral forms, vines, leaves, and compositional relationships. Three translation directions were established: central floral motif and bilateral extension, axial organization and vertical layering, and continuous curves and directional transitions. These directions informed side-table concept generation using text prompts and reference images with ChatGPT and Midjourney. Under consistent design constraints, 18 candidate concepts were generated, three were selected for comparison, and one was further refined.

The study makes two contributions. First, it establishes a case-specific relationship between the morphological characteristics of the passionflower motif and design directions for contemporary furniture components. Second, it demonstrates how these directions can structure AIGC-assisted concept exploration and inform the comparison and refinement of alternative designs. The findings are limited to the selected motif and side-table case. They are not intended to establish universal design rules or demonstrate that AIGC outperforms other methods in design quality or efficiency.

Methods

Research framework

This study adopts a practice-oriented case study to investigate the morphological translation of traditional decorative motifs into contemporary furniture components and the role of AIGC in furniture concept design. Focusing on the passionflower motif in Cantonese-style furniture, the study examines how its distinctive forms and compositional relationships can inform contemporary furniture design.

As shown in Figure 1, the research comprises three interconnected stages. The first stage involves collecting and selecting passionflower motif samples from academic literature, furniture catalogues, collection records, and image resources. Samples are selected according to source reliability, morphological clarity, and compositional variation for subsequent analysis. The

second stage involves morphological analysis and design translation, focusing on basic elements, compositional organization, and line and spatial relationships. Through feature extraction, simplification, abstraction, and component-level application, the study explores how traditional motifs can be adapted to contemporary furniture components such as the apron. The third stage involves AIGC-assisted concept exploration and design refinement, in which the identified morphological features and translation directions inform image generation through text prompts, reference images, and predefined design constraints. Generated concepts are then compared, selected and manually refined to deliver finished design outcomes.

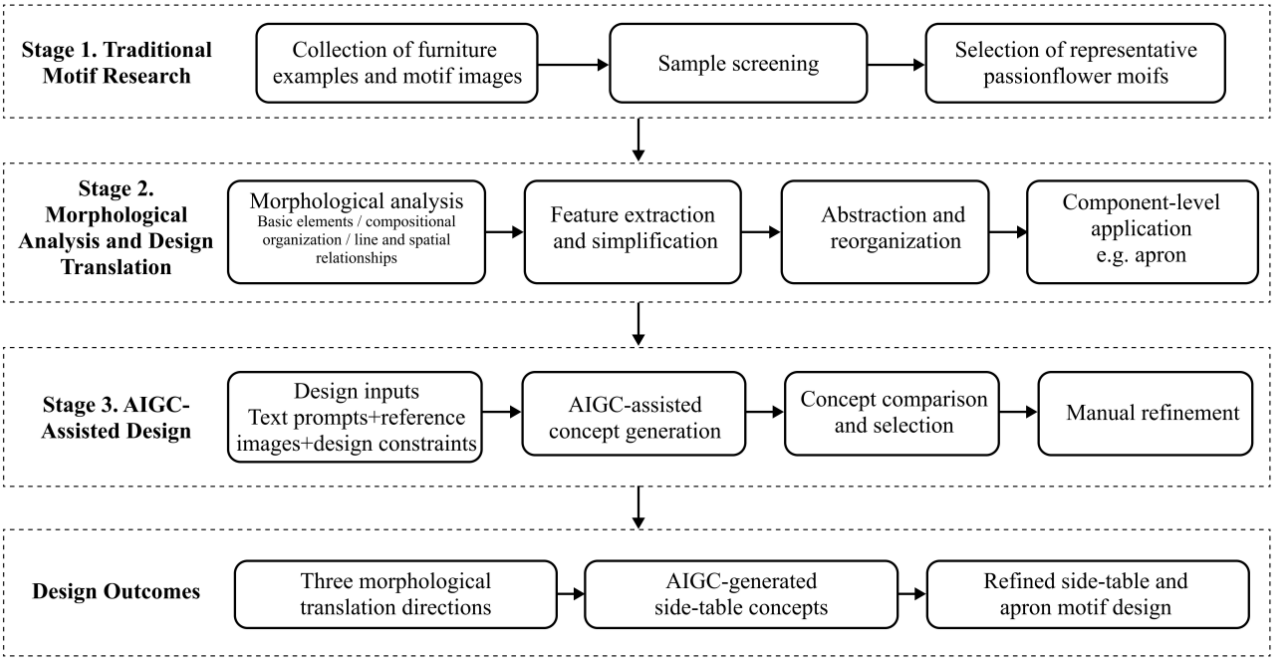


Figure 1. Research framework of the study.

Throughout this process, AIGC supports visual exploration, while the designer interprets the motif characteristics, determines the translation directions, and evaluates and refines the generated concepts.

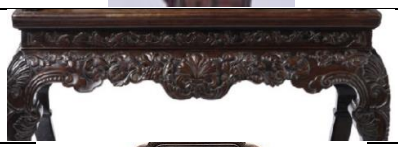
Selection of representative passionflower motifs

Candidate passionflower motifs were collected from academic publications, furniture catalogues, collection records, and digital image resources. Selection focused on three criteria: source reliability, morphological clarity, and design relevance. Priority was given to furniture with credible provenance or documented stylistic attribution, images that clearly presented flowers, leaves, and vines, and examples representing different compositional arrangements, decorative positions, and carving techniques.

The individual motif detail served as the unit of analysis, while its relationship to the original furniture was retained. Distinct motifs from different locations on the same furniture piece were recorded separately when their compositions differed substantially. Images showing the same decorative area from different angles were consolidated to avoid duplication. Repeated images, unclear morphological features, and insufficient source information were excluded from the core sample set. Cases with uncertain stylistic attribution were further verified or treated separately as comparative material.

Each sample record included a motif identifier, a detail image, the source furniture, the decorative location, and the associated technique. Images retained the overall motif composition and relevant component boundaries, allowing both internal morphological relationships and original decorative placement to be examined. Table 1 summarizes the representative samples used to identify features relevant to furniture-component design.

Table 1. Representative passionflower motif samples from Cantonese-style furniture.

Motif ID	Motif detail image	Source furniture	Decorative location and technique
S01		Qing-dynasty zitan tall stand with a recessed waist and floor stretcher, carved with passionflower motifs	Shallow-relief passionflower motifs on the recessed waist and arched apron
S02		Qianlong-period (Qing dynasty) zitan flat-top table carved with passionflower motifs	Front apron and apron spandrels; high-relief carving with a recessed ground
S03		Qianlong-period (Qing dynasty) zitan flat-top table carved with passionflower motifs	Panel between the legs; openwork carving
S04		Qianlong-period (Qing dynasty) zitan incense stand inlaid with boxwood	Apron panel; relief-carved passionflower motifs
S05		Qianlong-period (Qing dynasty) zitan incense stand inlaid with boxwood	Apron spandrels; openwork passionflower motifs
S06		Qianlong-period imperial zitan armchair with a recessed waist and floor stretcher, carved with passionflower motifs	Apron rails and legs; relief-carved passionflower motifs
S07		Zitan throne carved with passionflower and longevity motifs	Central backrest panel; carved ornamentation
S08		Qing-dynasty hongmu six-piece cabinet with relief-carved passionflower motifs	Cabinet door panels; relief carving

Morphological analysis and design reinterpretation

Morphological analysis and design translation were treated as interconnected stages. The analysis identified the motif's constituent elements, organizational relationships, and connections with the original furniture components. These findings informed the selective extraction, simplification, and reorganization of traditional decorative forms to meet contemporary design requirements. Rather than directly reproducing the original motifs, the study examined how their recognizable features and compositional relationships could inform the design of contemporary furniture components.

The analysis covered three dimensions: basic morphological elements, compositional organization, and line and spatial relationships. The first examined the contours, proportions, and combinations of flowers, petals, leaves, and vines. The second considered symmetry, arrangement, repetition, continuity, and visual hierarchy. The third focused on vine curvature, directional changes, connections between lines, and the relationship between solid forms and open spaces. These dimensions provided a basis for identifying characteristic forms and their potential relevance to furniture-component design, as summarized in Table 2.

Table 2. Analytical dimensions for morphological analysis of passionflower motifs.

Analytical dimension	Observation content	Analytical focus	Relevance to design reinterpretation
Basic morphological elements	The contours, proportions, and combinations of flowers, petals, leaves, and vines	Identification of distinctive forms and the relationships between primary and secondary elements	Selecting characteristic forms for retention and extraction
Compositional organizations	Symmetry, element arrangement, repetition, continuity, and visual hierarchy	Understanding how individual elements are organized into an overall motif	Exploring the arrangement of motifs within furniture components
Line and spatial relationships	Vine curvature, line direction, transitions, connections, and solid-void relationships	Identifying characteristic curves, connecting points, and spatial patterns	Exploring the integration of motif contours and spatial relationships into furniture component forms

By comparing the organization of floral forms, the arrangement of elements, and the connections between curves across the samples, three representative morphological translation directions were identified. These directions are: (1) a central floral motif with bilateral extension; (2) axial organization with vertical layering; and (3) continuous curves with directional transitions. These directions emphasize, respectively, the relationship between a central motif and its lateral elements, the axial arrangement and layering of floral and foliate units, and the connections between continuous curves and component contours. They represent design-oriented categories derived from the selected samples rather than an exhaustive classification of all passionflower motifs.

Design translation proceeded through four steps: feature extraction, simplification, abstraction, and component-level application. Feature extraction retained recognizable contours of flowers, leaves, and vines while identifying their principal connections. Simplification reduced secondary decorative details, clarified outlines, and improved curve transitions while preserving key morphological features. Abstraction further reorganized the original composition by adjusting the proportions, directions, and connections of individual forms. Component-level application then considered the translated forms in relation to component contours, proportions, and spatial constraints.

The translation process was guided by three considerations: Whether key features of the traditional

motif were retained, whether the translated lines and compositional relationships remained clear, and whether the forms were compatible with the contours and proportions of the target components. Comparisons among the original motifs, extracted outlines, simplified and abstracted forms, and component-level applications informed subsequent design adjustments. These considerations guided the morphological translation process and were not intended as a formal evaluation instrument for the furniture concepts.

AIGC-assisted design process

AIGC was used as an auxiliary tool for side-table concept generation and visual exploration. Building on the preceding sample analysis and morphological translation, the process incorporated the characteristic forms of the passionflower motif, the functional requirements of a side table, and overall design constraints. This approach explored how traditional decorative elements could contribute to furniture forms and local components rather than being applied solely as surface decoration. In this sense, AIGC was positioned as a medium for translating morphological insights into visual proposals, while the designer retained control over the interpretation of the motif, the definition of design directions, and the evaluation of generated outcomes.

Design inputs combined text prompts with reference images. The prompts specified the side table's basic function, overall style, morphological direction, component relationships, motif application, and material and color preferences. Reference images provided visual guidance on the passionflower motif and its characteristic forms, helping explore possible relationships between the motif and furniture components.

The generation conditions comprised general constraints and direction-specific requirements. General constraints defined the furniture type, basic function, overall style, structural relationships, and material expression. Direction-specific requirements corresponded to the three morphological translation directions, enabling alternative arrangements to be explored under a consistent design brief. Table 3 summarizes these conditions.

Results

Morphological characteristics of representative passionflower motifs

Passionflower motifs in Cantonese-style furniture exhibit diverse morphological arrangements. Their characteristics are reflected not only in the contours of flowers, leaves, and vines but also in the compositional relationships, curve connections, and spatial organization among these elements. Comparative analysis of the selected samples identified three representative morphological directions: central floral motif and bilateral extension, axial organization and vertical layering, and continuous curves and directional transitions.

The first direction is characterized by a central floral motif flanked by vines, scrolls, and leaves, forming a horizontally extended composition. As shown in Figure 2, the central flower and lateral branches connect to create an integrated decorative form, in which the flower serves as the visual anchor and the lateral elements extend outward in a balanced, roughly symmetrical manner. The extracted outlines clarify the boundaries and connections of the principal elements, while the annotated image highlights the central motif, lateral extensions, and dominant visual flow. This composition depends not only on the central flower's contour but also on the trajectories of the vines and the arrangement and connections of the floral and foliate elements. The visual balance of this direction relies on the coordination between the central emphasis and the lateral spread, so that the motif reads as a unified whole rather than as a flower with attached ornament. This characteristic makes the direction particularly relevant to horizontally oriented components such as aprons and apron spandrels, where the motif must span a limited height while maintaining compositional continuity.

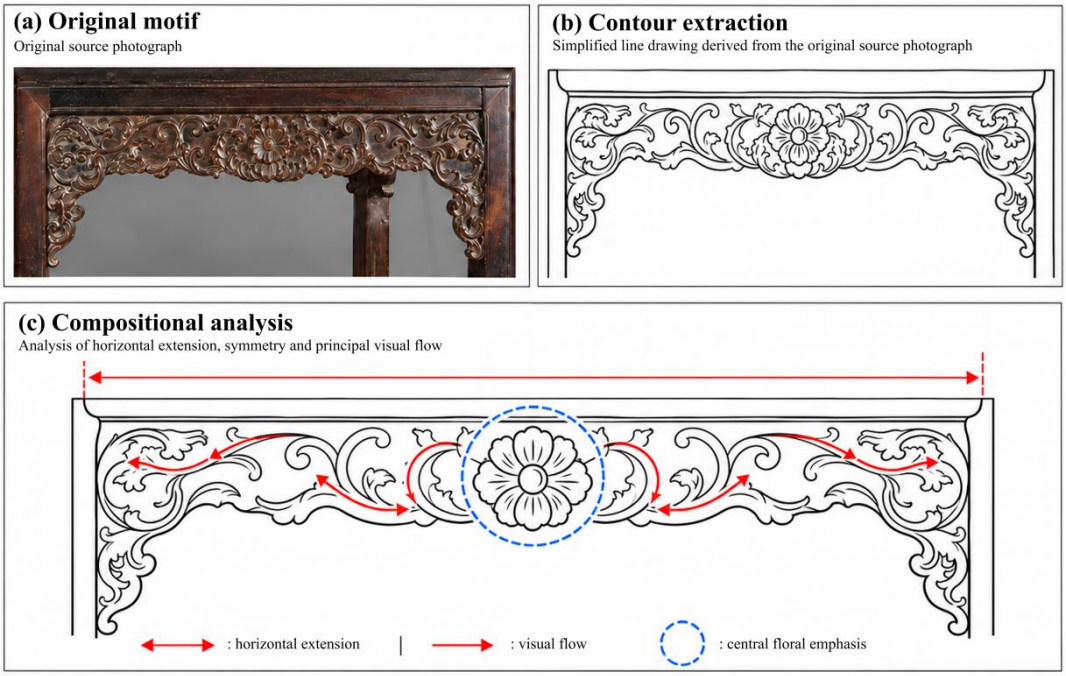


Figure 2. Central floral motif and bilateral extension. (a) Original motif; (b) Contour extraction; (c) Compositional analysis.

The second direction emphasizes the axial arrangement of floral and foliate elements and the relationships between decorative layers. As shown in Figure 3, flowers, branches, and leaves are organized around a central axis, creating visual correspondence through their arrangement and spatial positioning. The extracted outlines reveal the principal decorative units and their spatial boundaries, while the annotations clarify the axial organization, arrangement of elements, and overall visual hierarchy. In openwork motifs, solid decorative forms and surrounding voids jointly define the composition. Both the decorative contours and the intervening spaces must therefore be considered when analyzing their morphological characteristics.

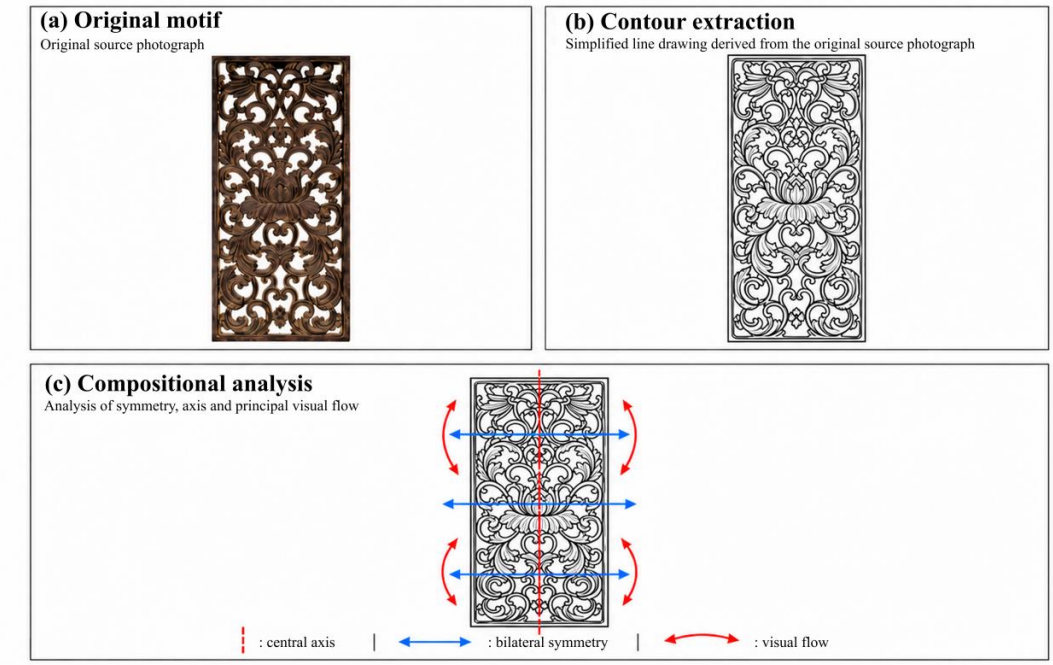


Figure 3. Axial organization and vertical layering. (a) Original motif; (b) Contour extraction; (c) Compositional analysis.

The third direction emphasizes the continuity of vine curves and their transitions in relation to local component boundaries. As shown in Figure 4, the vines form continuous linear trajectories through bends, loops, and changes in direction. The extracted outlines identify the principal curves and their connections, while the annotations highlight dominant curve directions, key transition points, and relationships with component contours. Compared with the other two directions, this type places greater emphasis on curve continuity, transition rhythm, and the connections between individual line segments.

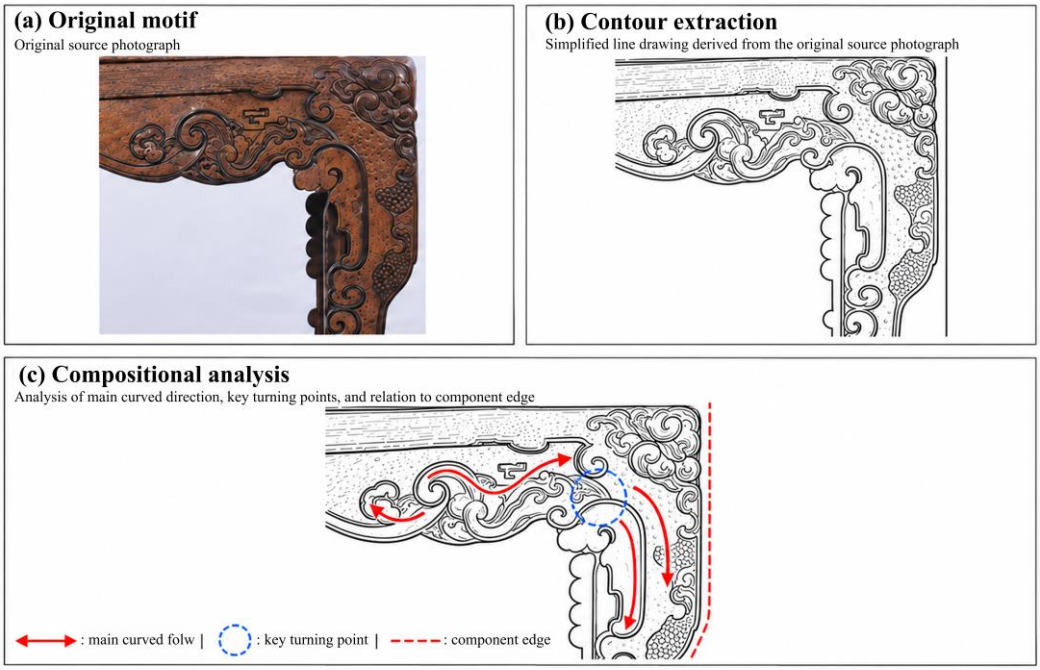


Figure 4. Continuous curves and directional transitions. (a) Original motif; (b) Contour extraction; (c) Compositional analysis.

Overall, the selected samples reveal three representative morphological characteristics in compositional organization, spatial layering, and linear variation. These characteristics provide distinct starting points for translating traditional decorative forms into contemporary furniture components.

Morphological translation into furniture components

Building on the morphological analysis, the design process explored how the compositional relationships and linear characteristics of passionflower motifs could inform the forms of contemporary furniture components. Rather than directly reproducing the original patterns, the process selectively extracted recognizable morphological units, simplified and abstracted their details and arrangements, and explored their integration into local component forms. As illustrated in Figure 5, each of the three morphological directions followed four steps: feature extraction, simplification, abstraction, and component-level application.

The four steps were treated as interconnected rather than strictly sequential. Feature extraction identified the principal morphological units and their connections, establishing what should be preserved as the recognizable core of the motif. Simplification then reduced secondary details and clarified outlines, while abstraction adjusted proportions, directions, and spatial relationships to meet the requirements of contemporary furniture forms. Component-level application finally examined how the translated forms could be accommodated within the contours, proportions, and structural boundaries of specific components. Throughout this process, the three morphological

directions served as parallel translation paths, allowing the same motif to be interpreted in different compositional terms and compared at the component level.

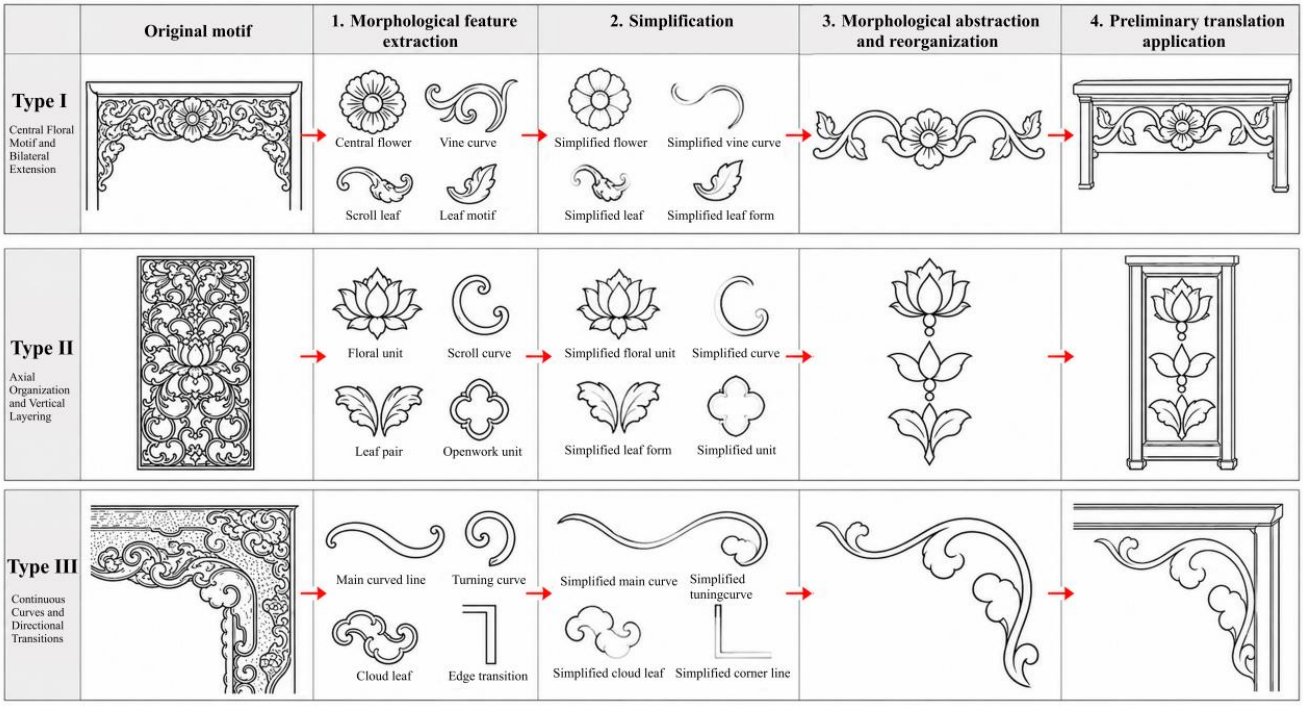


Figure 5. Morphological feature extraction and design translation of traditional furniture motifs.

For the central floral motif and bilateral extension direction, the translation retained the relationship between the central flower and the lateral vines. Feature extraction identified the main floral form, leaves, and connecting vine curves. Simplification reduced secondary petal details, leaf contours, and scrolls to clarify the principal outlines. Abstraction adjusted the proportions, extension, and connections between the central and lateral elements. Component-level application then explored their placement within horizontally extended areas, considering the proportions and visual coordination of the motif and component boundaries. This process preserved the original horizontal composition while reducing decorative complexity.

For the axial organization and vertical layering direction, the translation focused on the arrangement of floral and foliate elements and their hierarchical relationships. Feature extraction identified the principal flowers, leaf combinations, curve connections, and central axis. Simplification reduced repetitive and overlapping details to clarify the outlines and connections of individual elements. Abstraction adjusted their scale, spacing, and vertical transitions to establish a clearer hierarchy while maintaining compositional continuity. Component-level application explored the relationship between the translated forms, surrounding boundaries, and internal negative spaces within vertically organized components. The emphasis was on preserving the motif's axial order and layered structure rather than simply accumulating decorative elements.

For the continuous curves and directional transitions direction, the translation focused on preserving the continuity and directional changes of the vines. Feature extraction identified the main curves, key transition points, and connections with leaf elements. Simplification removed secondary loops and repetitive details to clarify the curve connections. Abstraction adjusted curvature, transition rhythm, and directional continuity to establish clearer contour relationships. Component-level application explored how these curves could interact with component boundaries and changes in

direction while remaining coherent with the overall structure.

Together, the three directions emphasize horizontal composition, vertical hierarchy, and continuous linear organization, respectively. Through selective extraction, simplification, abstraction, and adjustment to component proportions, the traditional passionflower motif was reinterpreted as a source of forms for contemporary furniture design.

AIGC-assisted concept generation and selection

A side table was selected as the design application to explore how passionflower motifs from Cantonese-style furniture could be incorporated into contemporary furniture components. The design adopted a contemporary new Chinese-style aesthetic, with a simple geometric structure as its foundation. The aim was to integrate recognizable motif characteristics into selected components without directly reproducing traditional furniture forms or elaborate carving. The relationships among the tabletop, legs, and apron were considered alongside material and color choices, primarily wood with restrained metallic accents.

Concept generation combined consistent design constraints with direction-specific requirements. The general constraints defined the side table's function, overall form, stylistic positioning, material expression, and structural relationships. The direction-specific requirements corresponded to the three morphological translation directions. Text prompts and reference images were used with ChatGPT and Midjourney to explore alternative concepts under a consistent design brief. The generation conditions for AIGC-assisted are summarized in Table 3.

Table 3. Generation conditions for AIGC-assisted side-table design.

Condition dimension	General generation conditions	Direction-specific requirements
Design object	A contemporary new Chinese-style side table that combines practical storage functionality with visual appeal	All three design directions retain the basic functional attributes of a side table
Overall form	A modern geometric structure with clear component relationships and lightweight proportions	Adjust the organization of local components according to different morphological directions
Cultural elements	Passionflower motifs from Cantonese-style furniture serve as the source of design inspiration	Preserve recognizable floral forms, vine curves, and compositional relationships
Direction I	Central floral motif and bilateral extension	Translate the relationship between the central floral motif and bilateral scrolling vines into a horizontal apron motif
Direction II	Axial organization and vertical layering	Explore the arrangement of floral and leaf elements along the central axis and their integration with vertical components
Direction III	Continuous curves and transitional connections	Explore the morphological relationships among vine curves, apron contours, and transitions to the legs
Materials and colors	Primarily walnut-brown or reddish-brown wood, optionally combined with light-colored stone, smoked glass, and subtle metallic details	Control the variety and proportions of materials and decorative elements to avoid excessive ornamentation
Design constraints	Avoid direct replication of traditional furniture forms, mechanical application of motifs, overly dense carving, and unreasonable component connections	Ensure that motif simplification and local applications remain consistent with the overall form and structural relationships

Six candidate designs were generated for each morphological direction, producing 18 concepts in total (in Figure 6). The candidates varied in decorative layout, component organization, and curve expression. Some

exhibited excessive traditional ornamentation, insufficient contemporary character, weak motif recognizability, or unclear relationships between decorative elements and furniture components. The prompts and reference images were consequently adjusted to reinforce the geometric structure, preserve key passionflower characteristics, and improve the integration of motifs with component forms.



Figure 6. AIGC-generated candidate side-table designs across three morphological translation directions.

Three candidates A2, B4, and C3 were selected to undergo comparative analysis as representatives of the three different morphological directions, as presented in Figure 7. A2 emphasized a central floral motif with bilateral extension and a horizontally organized apron decoration. B4 focused on the vertical arrangement of floral and foliate elements, creating a more pronounced hierarchy. C3 emphasized the relationship between continuous curves and component transitions. These candidates represented distinct approaches to morphological translation and were selected for further comparison and design refinement.



Figure 7. Comparison of three candidate side-table designs.

To compare the three candidates, the study planned to invite five experts with backgrounds in furniture design, product design, or traditional furniture research. The proposed evaluation used a five-point scale across five dimensions: morphological translation alignment, recognizability of Cantonese-style furniture characteristics, contemporary design expression, structural and functional rationality, and overall visual harmony. A

score of 1 indicated poor performance, while 5 indicated strong performance. Each expert was to assess A2, B4, and C3 independently to reduce reliance on a single evaluator's judgment.

The planned analysis calculated the mean score for each dimension and the arithmetic mean across the five dimensions to compare the candidates. The evaluation was intended to consider their respective strengths and weaknesses in motif translation, cultural expression, contemporary styling, and structural and functional coordination, with the final selection informed by both the evaluation and the design objectives.

As reported in Table 4, A2 achieved the highest overall mean score (4.32), followed by C3 (4.04) and B4 (4.00). C3 scored highest in morphological translation alignment, reflecting its strength in expressing continuous curves and component transitions, but received lower scores for cultural recognizability and modern design expression. B4 performed relatively well in cultural recognizability but scored lower in structural and functional rationality, suggesting that its vertical decorative arrangement required further coordination with the overall frame. A2 offered a comparatively balanced relationship among recognizable traditional motif features, contemporary geometric structure, and overall visual harmony. It was therefore selected for further refinement.

Table 4. Expert evaluation results for three candidate side-table designs

Evaluation dimension	A2	B4	C3
Morphological translation alignment	4.40	4.20	4.60
Cultural recognizability of Cantonese-style furniture	4.40	4.20	3.80
Modern design expression	4.40	4.00	3.80
Structural and functional rationality	4.00	3.60	4.00
Overall visual harmony	4.40	4.00	4.00
Overall mean score	4.32	4.00	4.04

Final furniture design outcomes

The refined A2 side table adopts a contemporary geometric structure, with the tabletop, four corner legs, and apron forming a clear overall composition. A deep walnut-brown finish establishes the primary visual tone, while the visible wood grain retains the warmth of wooden furniture. Subtle metallic details introduce a contemporary accent. The passionflower motif is concentrated on the apron, establishing a clear visual hierarchy between the decoration and the geometric frame. The tabletop uses a light-colored stone surface, while a smoked-glass shelf introduces visual contrast beneath the wooden frame. The design explores how the decorative character of Cantonese-style hardwood furniture can be reinterpreted through a contemporary new Chinese-style form. The selected A2 concept is shown in Figure 8.



Figure 8. Final concept rendering of the A2 side table.

The refined apron motif draws on the floral forms, vine curves, and leaf contours of the traditional passionflower motif. The central flower retains its principal outline and petal layers, while the lateral vines extend horizontally through continuous curves. Secondary details are simplified to clarify the overall composition. The proposed carving combines localized relief with selective openwork, balancing solid decorative forms and negative space to emphasize the connections between the central flower and lateral vines while creating visual depth and openness.

The design was further refined to explore the integration of the passionflower motif with the apron and the overall furniture structure. Figure 9 presents this further-developed version in a contemporary interior setting, illustrating the relationship between the decorative components, geometric frame, and surrounding space. This presentation extends the design exploration from an isolated product concept to its visual integration within an interior environment.



Figure 9. Further-refined side-table design in an interior setting.

Discussion

Morphological translation of traditional motifs into furniture components

The contemporary reinterpretation of traditional furniture motifs involves not only extracting and simplifying decorative elements but also understanding their compositional relationships and connections with furniture components. In the passionflower motif, the central flower, scrolling vines, and leaves form an organized decorative composition in which each element assumes a distinct role. Its design value lies not only in the contours of individual elements but also in their proportions, connections, and overall arrangement. These relationships determine how the motif reads as a coherent whole and how it can be adapted to the scale and structure of a given component. Incorporating these relationships into the translation process allows traditional motifs to contribute to the shaping of furniture components rather than remain independent surface decorations.

The three morphological translation directions identified in this study focus on central forms with bilateral extensions, the axial organization and vertical layering of floral and foliate elements, and the connections between continuous curves and local contours. These directions do not constitute an exhaustive classification of passionflower motifs. Instead, they represent design-oriented categories derived from the selected samples to identify morphological relationships with potential for component-level application. The four steps - feature extraction, simplification, abstraction, and component-level application - translate morphological observations into design operations by relating recognizable motif features to component contours, proportions, and spatial constraints. Compared with direct pattern reproduction, this approach emphasizes the selective retention and reorganization of morphological relationships, offering a practice-based reference for integrating traditional

decorative elements into contemporary furniture.

The role of AIGC in furniture concept generation

In this study, text prompts communicated design requirements, while reference images provided visual guidance on characteristic motif forms. By combining general furniture design constraints with the three morphological translation directions, the preceding motif analysis informed the generation of side-table concepts. The resulting alternatives explored different expressions of horizontal composition, vertical organization, and continuous curves in furniture forms, enabling comparison of motif placement, component relationships, and overall appearance against a defined design brief.

However, a greater variety of generated outputs does not necessarily lead to better design quality. Generated images may fail to preserve key motif characteristics or exhibit excessive ornamentation, unclear component relationships, or deviations from the intended design direction. In furniture design, visual completeness does not guarantee the feasibility of component connections, structural arrangements, or material combinations. AIGC therefore serves primarily as an aid for visual exploration and design comparison, while designers remain responsible for evaluating and refining cultural features, formal coherence, and structural requirements. This perspective is consistent with previous research examining generative design tools throughout the design process and the opportunities and limitations of text-to-image AI in concept generation [10].

From a broader theoretical perspective, the relationship between artificial intelligence and creativity also depends on how creative processes and outcomes are understood and evaluated, rather than on generation alone [11].

Balancing cultural recognizability and contemporary design

The contemporary application of traditional decorative elements requires a balance between cultural recognizability and contemporary formal expression. In the passionflower motif, the contours of flowers, leaves, and vines are important, but their compositional organization and connections also contribute to the motif's overall identity. Retaining too much detail may increase the visual complexity of a furniture component, whereas excessive simplification may weaken the motif's recognizability. Morphological translation therefore involves more than reducing ornamentation, it requires adjusting proportions, arrangements, and relationships with component boundaries while preserving key features.

In the final side-table concept, the passionflower motif was concentrated on the apron, while a simple geometric structure organized the overall form. The relationship between the central flower and its lateral vines was retained, and adjustments to detail density and curve connections helped establish a clearer visual relationship between the motif and the component. The combination of a wooden body, a light-colored stone tabletop, a smoked-glass shelf, and restrained metallic details further explored the relationship between the visual qualities of traditional wooden furniture and contemporary material expression. These relationships remain conceptual design proposals. Their practical performance depends on component proportions, material specifications, connection methods, and overall design coordination; the renderings alone cannot establish manufacturing feasibility.

Limitations and future research directions

This study has three main limitations concerning the scope of the motif analysis, the documentation of the generation process, and the validation of the design outcomes.

First, the morphological analysis focused on selected passionflower samples. The three translation directions have not yet been examined across other traditional motifs or a wider range of furniture types. Because motifs

differ in composition, decorative layering, and curve characteristics, their potential applications to furniture components may also vary with design requirements. Future research could expand the sample set and compare how different motifs are extracted, simplified, abstracted, and applied to components to clarify the applicability of these design directions.

Second, this study combined text prompts with reference images for AIGC-assisted design, but model versions, generation parameters, and the inputs and outputs of individual iterations were not systematically documented. This limits the traceability and reproducibility of the process. Future studies should systematically record prompts, reference images, available model information, parameter settings, and generated outputs. Comparative investigations could then examine how different input strategies and iteration methods affect motif retention and the formal qualities of furniture components.

Finally, the outcomes primarily comprise concept renderings and detailed motif designs. No physical prototype was produced to verify component connections, carving feasibility, material combinations, or performance in actual use. The scope of design evaluation also warrants further development. Future research could combine structured expert evaluation, physical prototyping, and user testing. Such an integrated approach would allow cultural recognizability, formal coherence, structural feasibility, and practical usability to be examined together. It would thereby provide a stronger basis for assessing the application potential of traditional motif translation in contemporary furniture design.

Conclusion

This study investigates the morphological translation of passionflower motifs in Cantonese-style furniture into contemporary furniture components. Through the analysis of representative motifs, three morphological translation directions are identified: central floral motif and bilateral extension, axial organization and vertical layering, and continuous curves and directional transitions. The findings suggest that contemporary applications of traditional motifs require not only the extraction of recognizable visual features but also consideration of their compositional relationships and connections with furniture components. This approach allows traditional decoration to contribute to furniture form rather than remain solely a surface pattern.

In the design practice, text prompts and reference images were used with ChatGPT and Midjourney to explore side-table concepts, followed by the refinement of a selected design. The final concept integrates the passionflower motif into the apron and combines it with a contemporary geometric structure and a range of materials, exploring how traditional decorative characteristics can be coordinated with contemporary furniture design. AIGC supported the visualization and comparison of alternative morphological interpretations, while the preservation of cultural characteristics, formal coherence, and structural feasibility continued to require designer judgment and refinement.

By connecting traditional motif analysis, component-level translation, and AIGC-assisted concept generation, this study presents a practice-based example of reinterpreting decorative elements in Cantonese-style furniture. This investigation is limited to the passionflower motif and a single side-table design case. Accordingly, the applicability of the proposed design directions and their practical feasibility require further examination. Future work could extend the analysis in three ways: comparisons involving additional motifs and furniture types, structured expert evaluation, and physical prototyping.

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Conflicts of Interest

The author declares no conflict of interest.

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