REPRODUCING TEXTILES for the JAMES J. HILL HOUSE

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For many people, a house empty of furnishing is difficult to visualize as a home. This can be true for homebuyers today; it is even truer for visitors to a historic house. Visitors crossing the threshold into an empty historic house first notice the architecture in general, and then observe details such as beautiful hand-carved moldings and stained glass windows. After admiring the craftsmanship, however, most visitors want something more. Furnishings help flesh out the picture to provide a more intimate reflection of how families lived within houses and made them homes.

In a grand home, eye-catching textiles such as upholstery, rugs, and drapery are among the furnishings employed to make an impression. The three-story, red stone James J. Hill House at 240 Summit Avenue in St. Paul was no exception. Built in 1891 at the peak of Hill’s career, the imposing, Romanesque-style house represented his financial success as a railroad executive and provided an impressive space for public events as well as a comfortable dwelling for his family—wife Mary and their nine children. Hill lived in the 32-room house until his death in 1916, at age 77. Mary Hill lived in the house until her own death in 1921. In accordance with their mother’s wishes, the Hill daughters purchased the property from the estate and donated the home to the Archdiocese of St. Paul and Minneapolis, which owned the house until 1978, when the Minnesota Historical Society (MNHS) acquired it to operate as a historic house museum. By then, few of the furnishings and textiles from the Hill years remained in the house.¹

Since the turn of the twenty-first century, MNHS has undertaken important textile restoration projects on the first floor to enhance the visitor experience at the Hill House. The library—along with the breakfast room, one of the two rooms on the first floor designed as personal space for the family—was the first beneficiary, in 2001. Period roller blinds were installed, lace curtains reproduced, and original window seat cushions conserved. Thanks to a generous donation by George and Joan Fischer, new, historically accurate drapes and portieres—curtains that hang in open doorways—were constructed by a Minnesota company out of a reproduction silk brocatelle fabric woven in France on period looms. The sumptuous textiles in the library serve to maintain privacy and create an inner sanctum.

In contrast, the imposing Renaissance Revival main hall (measuring 100 by 15 feet with 13-foot ceilings) and adjoining dining room were intended for public display. The rooms dominate the look and feel of the entire first floor.² Use of carved mahogany furnishings, crystal chandeliers, and matching portieres and drapes in both rooms created a unified look. The space could be reconfigured to fit the needs of events large or small by simply opening or closing portieres. The patterns and colors of the textiles added a layer of lavish beauty to the main hall and dining room, as well as serving the practical function of blocking sunlight to protect furnishings.

During the Hill family’s residency, the portieres and drapes in the main hall and dining room were, by their sheer size and number, a dominant feature visible from anywhere on the first floor. After their removal, an important feature of the overall composition on this floor was lacking. Creating reproduction portieres for the main hall and drapes for the dining room, however, was a daunting endeavor. Nothing of the original portieres remained. Again George and Joan Fischer stepped forward, making the project financially possible.

ANN FRISINA, MNHS’s textile conservator, holds a master’s degree in museum studies from the Fashion Institute of Technology. In her career she has worked on a broad range of textiles, from large Renaissance tapestries to small pre-Columbian archaeological fragments. Moving to Minnesota 17 years ago to work at MNHS gave her the opportunity to focus on the comprehensive textile preservation needs of a single institution.

Note: the names of George and Joan Fischer were incorrect in the print edition of this article. They have been corrected on this PDF.

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TOP: Hill House dining room, 1922. BOTTOM LEFT: Hill House hall, 1890, with view of closed portiere at left. BOTTOM RIGHT: Charlotte Hill Slade, one of James and Mary's daughters, in the library, 1905.
Researching the textile

Some research was required to get a better understanding of the type of textile the Hills would have chosen, and then to make an informed decision on a suitable design. Fortunately, MNHS’s large James J. Hill archival collection provided necessary documentation: period photos and Hill’s business correspondence and personal papers. In addition, an 1890s Arts and Crafts textile pattern book provided the missing information needed to connect archival evidence with a historically accurate reproduction.

The James J. Hill archive includes a series of 36 photographs of the Hill House interior taken in 1922, when the house passed out of Hill family ownership, that visually document how the entire house was decorated. The importance of these 36 images, donated in 1985 by Gertrude B. Ffolliet, a granddaughter of James and Mary Hill, cannot be overstated. Having photographs that give an idea of what the textiles looked like, how they were fabricated, and their role in the household is the next best evidence when the actual textile no longer exists. Written descriptions that match the textiles in the photographs can be found in the archival bills, vouchers, and correspondence dating to the house’s inception.

The 1922 photographs show that the same fabric was used in both the main hall portieres and the dining room drapes. One fully closed portiere reveals a large portion of the fabric’s design. The same species of flower spans the fabric in horizontal bands. Each horizontal band places the flower in one of three different positions, similar to botanical illustrations drawn for scientific study. Presumably, the same color was used in each band of flowers because their shade in the black-and-white image does not change markedly. Photo-editing software was used to enlarge a detail of one of the dining room images in order to establish the length and width of the repeated pattern in the textile. By comparing the measurements of the adjacent molding in the dining room to the adjacent textile in the image, conservators were able to extrapolate the overall textile design repeat to be approximately 29 inches high by 20 inches wide. The 1922 photos are not clear enough to reveal how many panels were joined to make a single portiere. The photos do show, however, that the portieres were not full enough to fall into folds when extended; they hung like flat sheets.

In addition to photographs, the James J. Hill archive contains bills, journals, letters, and even small samples of fabric that document the building and furnishing of 240 Summit Avenue. After studying the proposals of many interior design firms, James and Mary Hill hired the prestigious Boston firm Irving and Casson to furnish their new home. Even with professionals on board, the Hills were directly involved in making design decisions and selecting the home’s furnishings. An example of this level of
detail can be found in a letter from James Hill to a dealer who was scouting fabrics in Europe. Hill enclosed a fabric sample to indicate just what he wanted: “The darkest gold not to be any darker than the darkest gold in the sample enclosed and the other shades of gold to be lighter according to design.”5 The fabric scrap referred to by Hill, no bigger than a thumb, can be found in the Hill archives. He had saved it for later comparison.

Correspondence between the design team and the Hills about fabric suitability used generic terms to describe the textiles. For example, a short letter from Irving and Casson to Mary Hill used the term “woolen tapestries”:

We send to-day by express, samples of woolen tapestries for covering the large hall and library chairs. Mr. Hill wished us to select something for the chairs, and we have looked all throughout the market and cannot find anything that is entirely satisfactory. We send the best samples for the place that we have found and have marked the ones that we think would be best for your approval.6

“Woolen tapestry” was probably a standard industry term used in that era to identify complexly patterned weave structures that created colorful floral designs made of wool.

Vouchers (with bills attached) found in the Hill archives specifically described the fabric used for the dining room drapes and main hall portieres. The puzzling term “Armitage tapestry” was used to describe both the dining room drapes and the hall portieres, as seen in a voucher written on the letterhead of St. Paul dry goods wholesaler Finch, Van Slyck, Young and Company, dated October 31, 1891.7 Did Armitage refer to a town? A textile mill? A specific design? Or perhaps a person?

To answer this question, the MNHS conservator conferred with two textile historians—Deborah Kraak, Philadelphia curatorial consultant, and Philip Sykas of Manchester Metropolitan University in England. This yielded a quick answer: a man named George Faulkner Armitage (1849–1937). Armitage was an architect who also designed interiors, furnishings, and textiles. He was born into a Manchester textile family whose progenitor, John Armitage (1703–1762), was a handloom weaver. George Faulkner Armitage’s diverse creative skills focused on designing interior spaces as a unified whole. An 1883 newspaper article describing his work in a fine-art and industrial exhibit noted “the advantage of employing someone who combines a thorough knowledge of principles of decoration with the designing and construction of furniture, so that a house may be in perfect harmony throughout.” Particular note was made of the curtains.8

In the late nineteenth century, the Armitage family was part of a close-knit network of family and friends who made up the English Arts and Crafts movement. George Faulkner Armitage set up a successful design workshop that included his younger brother Joseph Frederick Armitage and his cousin (and future brother-in-law) John Rigby.9

Textile historians Deborah Kraak and Philip Sykas examine the reproduction fabric.
James and Mary Hill were directly involved in design decisions for their new house, as a detailed 1891 memo (left) from James to a New York fabric dealer illustrates. He also enclosed a thumb-sized fabric sample to indicate just what he wanted. The puzzling term “Armitage tapestry” (highlighted) on the vouchers below referred to English designer George Faulkner Armitage.
Of creels, warps, and wefts: a weaving primer

The long and exacting process of weaving requires much preparation. The first step is to make careful calculations based on how wide, dense, and long the fabric will be. The Hill House order for 160 yards was woven 42 inches wide, and each inch of fabric required 48 individual warps, or lengthwise yarns, also known as ends per inch (epi). Precise calculations determined how much yarn to dye for each of the chosen colors.

Once the appropriate amounts of yarn are calculated and dyed, the colors are then wound onto individual cones and secured to what is called a creel. The creel lets the weaver grab multiple yarns from independent spools and wind them onto a warping wheel. This step creates exact lengths, which are threaded onto the loom as the warp. The warp is then wound onto a warping beam, which is located on the back of the loom. Once the warp is on the beam, it is time to thread the loom. For the Hill House project, it took 10 hours to thread all 2,044 warp threads through the loom.

Next, the weft—the crosswise filling passed from left to right—is wound on quills (similar to bobbins on sewing machines) to fill the shuttles with the yarn. Again, calculations determine how much of each color is needed. The loom used for the Hill House fabric can send a shuttle back and forth mechanically, but each time the pattern requires a color change the weaver must do it by hand. So, while this loom is partially mechanized, it still requires monitoring.

During the weaving process, the weaver is standing. Weaving 160 yards of fabric for the Hill House drapes and portieres took more than 180 human-hours, which included the time the weaver spent watching the process, changing colors, and solving problems (such as a broken warp yarn) so that the loom could resume weaving.
Goodey’s first step was to send the design and detailed information compiled by Sykas to a drafting textile designer, who created a digital drawing and pattern for her loom. Once the design was completed, colors and yarn were chosen to fit the period and décor of the Hill residence. Woolen yarns were dip-dyed to a range of colors, and Goodey wove a small sample to demonstrate what the colors would look like. This step is important because the appearance of a yarn’s color depends on the weave structure and the color of the yarn it intersects with.

Once this preliminary process was complete, cards used during weaving to direct the fabric’s pattern were cut for Goodey’s loom. Now it was time for a sample run of the pattern. The sample reveals any mistakes in the card-cuts or the threading pattern that must be resolved prior to weaving the actual yardage. Fortunately, the sample wove beautifully and Goodey could finally thread the loom in preparation to weave 160 yards of the Armitage tapestry fabric. Over the next two and a half months, Goodey wove the fabric, washed it, wound it onto tubes, and shipped it to MNHS.

With the fabric finally in hand, the MNHS team took detailed measurements of the Hill House windows and doorways. If the portieres were fabricated to today’s standards, the fabric width for each door would be twice as wide as the opening, leaving a great amount of ease for the fabric to drape into folds. The historical photos, however, show virtually no ease in the portieres; they were almost flat when drawn closed. Skilled craftspeople were needed to fabricate the drapes and portieres so that they fit the architectural space. The MNHS team chose Drapes Etc. in the Minneapolis suburb of Golden Valley. This firm had fabricated and installed the red-and-gold brocatelle drapes in the Hill House library, and they understood the importance of getting the details right, creating the most historically accurate drapery possible.

The entire process of accurately reproducing the tapestries for the main hall and dining room took more than five years to complete. The new drapes and portieres were installed in fall 2016. Much discussion, research, and work went into every decision. This process was essential to
create historically accurate reproductions of the drapes and portieres that were based on primary sources. Finding the identity of the original designer was crucial. Now, when visitors walk into the main hall and dining room of the Hill House, they can more easily imagine how the Hills used this space, not only to raise their family but also to entertain and impress their many guests.

Notes

3. Real Estate and Summit Avenue Residence folders, James J. Hill Papers, Minnesota Historical Society (hereafter, Hill Papers); Sound and Visual Collection, Minnesota Historical Society.
4. The valuable 8 by 10–inch negatives had been fabricated with a volatile nitrate film that could ignite. To protect against the risk of a fire—or, even worse, an explosion—the images were transferred to glass plates for long-term preservation and the originals were destroyed. Although some detail was probably lost in the transition, safety considerations were more important.
10. Arthur H. Lee showroom swatch book attributed to George Faulkner Armitage, c. 1897, in the Turnbull and Stockdale archive, Isle of Man, privately owned, used by kind permission of Paul Turnbull, Turnbull Prints Ltd.
12. Lee showroom swatch book reproduced by kind permission of Paul Turnbull, Turnbull Prints Ltd.

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