

# JULIA MORGAN: Architecture for Sustainability







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WRITTEN BY Sandhya Sood

Morgan's passport photo for her trip to Paris

I first heard about fellow University of California at Berkeley alumna Julia Morgan, the first female graduate of the civil engineering program, when I graduated with a Masters in Architecture at the College of Environmental Design (CED) in 1999, 105 years after Morgan graduated from the same institution in 1894. Word was that she had designed several beautiful buildings in California. That was a rather limited description, I discovered through my research and as Project Partner of Julia Morgan 2012 - a state wide collaboration to celebrate her amazing life and work.



Girton Hall, UC Berkeley, built for Senior Women's activities in 1911, is listed on the California and National Register of Historic Places. This Morgan designed structure was relocated from its original site in 1946 and later adapted to its use as a day care facility.

## Julia Morgan (1872-1957)

### Education

Morgan's contribution is significant not only to the architectural heritage of California and of America, with many local, state and national landmarks attributed to her work, but is also a benchmark for the profession of architecture that reluctantly opened its doors to women in the early 20th century. Standing barely five feet and weighing only 100 pounds, she had an unflinching resolve to succeed. She was the first woman to be admitted in 1898 (after several failed attempts) to the sought after architecture certification program at the Ecole Beaux Des Arts in Paris. As one of the few women architects in America to establish a private architecture practice in 1904, she carried it through over four decades with more than 700 buildings to her credit, translating 'on average' to one building every six weeks!

### Practice

A formidable measure indeed, more so due to the diversity of project types that she undertook- academic, commercial, health care, residential and religious including funerary, humanitarian and one for the United States Government. She was an architect for the common man's simple home, an advocate for women's movements designing exclusive clubs and YWCAs' and a catalyst for ostentatious estates. At William Randolph Hearst's estate at San Simeon (1919 to 1947), now a historical state monument and park, she diverted spring water to fill the sumptuous swimming pools. Morgan was a versatile and talented architect who embraced every project that came her way.

Considered progressive for her time as a woman architect, she employed an interdisciplinary approach to her practice largely attributed to her knowledge of civil engineering, lighting design, landscape and interior design. A proficient practitioner, she collaborated with contractors, masons, carpenters and clients through long letters, telegrams and site visits, often travelling on weekends to ensure the utmost quality of construction and professional service. Above all, she brought compassion to every commission, providing simple touches and thoughtful details that made each one special. An astute problem-solver, she reused fixtures and old materials for house alterations, keeping a tight rein on budgets. Leading from an atelier in the heart of San Francisco, her office produced hand-



(L) Morgan drawn sketch for Livermore house, San Francisco, 1917. Courtesy: Environmental Design Archives, UC Berkeley (R) Cottage in North Berkeley with rustic qualities of the First Bay Tradition and Simple Home principles, 1915.



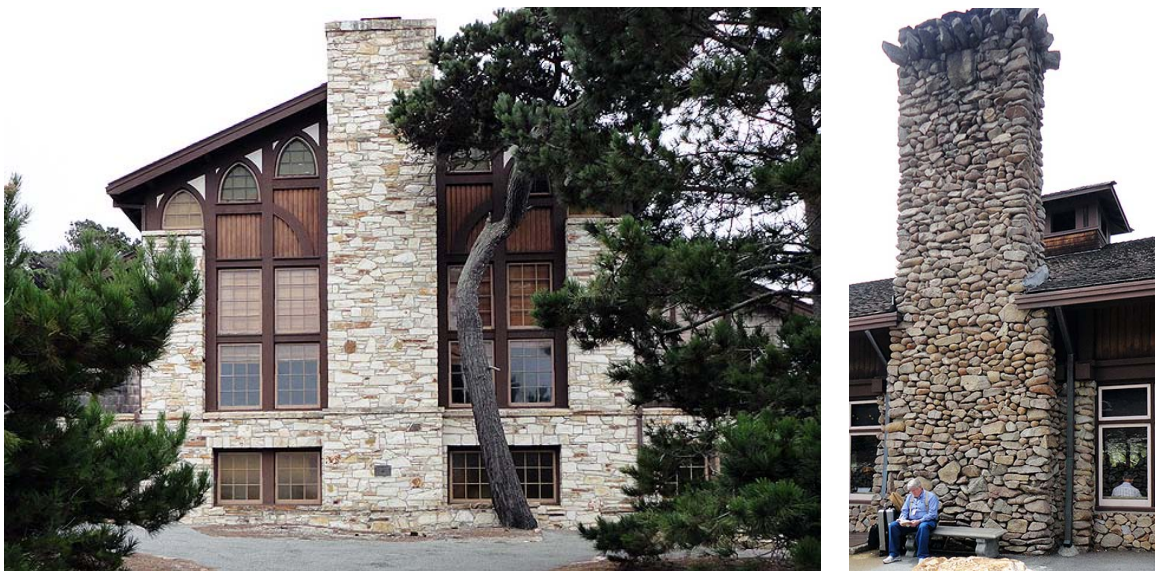
drafted drawings that were accompanied by specifications outlining methods for testing materials as early as 1907. Colored sketches exploring a variety of design options considered client needs and satisfaction, earning her many referrals and a successful business for almost half a century.

### Environment

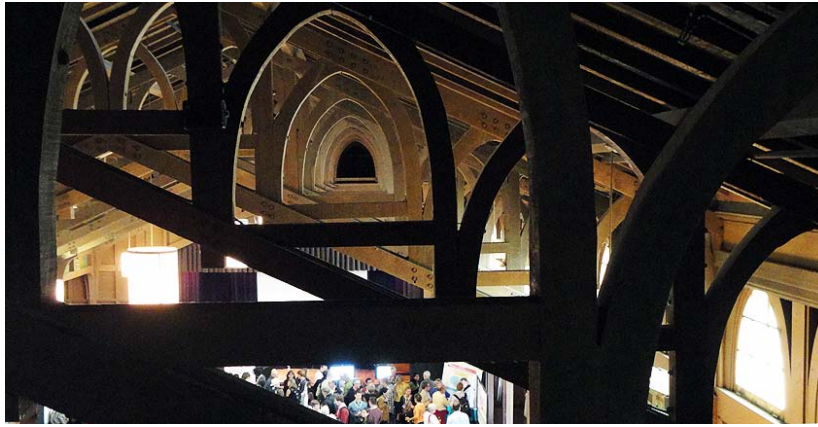
The built environment is an expression of our personal and collective needs and aspirations. It is created by humans, with not only local but global effect. A healthy built environment enhances comfort, productivity and enjoyment with human interventions that are appropriate to natural systems. Building in harmony with nature, Morgan's structures were oriented to take advantage of desirable views without intruding on the existing topography. Such an environmentally sustainable approach to architecture was not pervasive at the time nor considered a mainstream philosophy the way it is now. Our recent discourse on the impact of new buildings on the ecosystem is now pushing us to reconsider our carbon footprint, choice of building materials, products and methods of construction.

And yet, over a hundred years ago, Morgan, California's first female licensed architect was part of an activist group led by women that founded the Hillside Club in Berkeley to protect the natural environment of the North Berkeley hills. Charles Keeler and Bernard Maybeck joined as members and in 1904 Keeler presented his book "The Simple Home" at the clubhouse. It described an organic lifestyle with the home as an abode for the soul built with "unadorned" materials and the climate and microclimate as a guiding principle. The idea was inspired, in part, by the ideals of the burgeoning Arts and Crafts movement begun by John Ruskin and William Morris that had emerged as a reaction to the widespread industrialization of England in the late 19th century.

Morgan, who spent her formative years in the East Bay, attending high school in Oakland and later studying at the University of California, Berkeley, was at heart a nature lover. She was influenced by this ideology as she built in a language termed the "First Bay Tradition", as seen in her early homes at Berkeley and the Asilomar Conference Grounds at Pacific Grove (1913-1937), a National Historic Landmark. It is this vernacular building approach that contributed to San Francisco Bay Area's distinctive regional tradition and that later influenced the Bay Area Modernist style. Architecture in California in the early 20th century was broadly eclectic and somewhat idiosyncratic, with several influences emerging at the same time. Although client desire and site conditions became Morgan's primary determinants, she also explored the fusion of classical elements owing to her Beaux Arts training.



(L) Merrill Hall and (R) Social Hall at Asilomar, Pacific Grove set in the natural landscape use flagstone and quarried stone with local wood, 1915. Photo: Alan D'Souza



(L) Wood trusses punctuating clerestory lighting at Merrill Hall, Asilomar are exposed rather than concealed, resulting in better indoor air quality. Photo: Alan D'Souza. (R) Open redwood trusses in living room of a North Berkeley cottage, 1915.

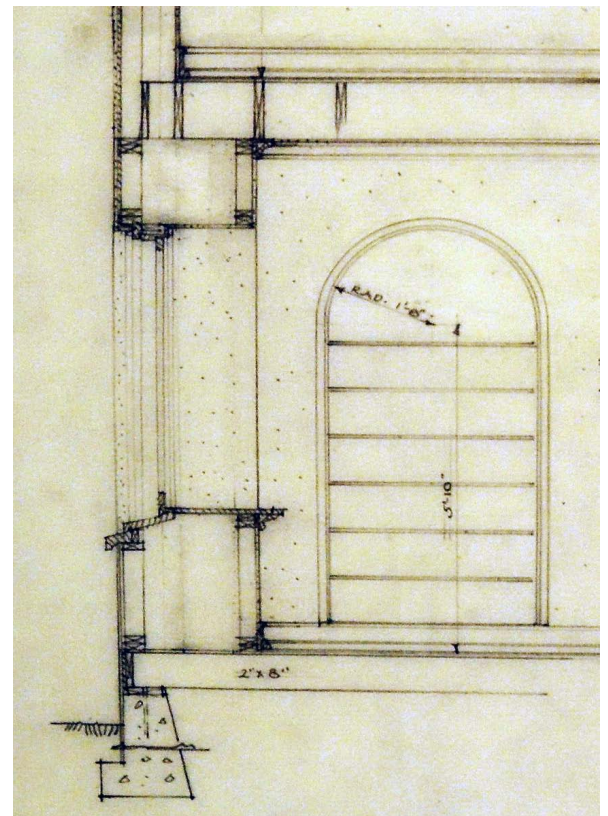
### Materials

Supervising large scale reinforced concrete at the Greek Theatre, UC Berkeley, while working for John Galen Howard in 1902, gave her abundant experience in using poured in place concrete for her own projects such as the Mills College, Oakland (1905) and Hearst Gymnasium for Women, UC Berkeley (1925-1926), both on the National Register of Historic Places as well as the Berkeley City Club (1929), a California Historic Landmark. Her palette of low embodied energy materials acquired locally included quarried stone juxtaposed with rustic redwood planks; brick and thick stucco, cedar shingles and even canvas used to shade sun porches. It is the elegance with which she assembled these handful of materials that expresses their integrity, creatively integrating form with function. In the minimalist interior of St. John's Presbyterian Church (1908-1910), a City of Berkeley Landmark (now Julia Morgan Center) the bare wood beams and posts define a human scaled yet spiritually uplifting space.

### Adaptive strategies for the sun:

(R) Drawing, part Section for house in Palo Alto, 1921. Courtesy: Environmental Design Archives, UC Berkeley.

Double wood stud wall with cavity for southwest exposure works as a thermal barrier. It has kept rooms cool in the summer without any air conditioning for the last 90 years. Recessed windows cut off high summer sun, permitting late afternoon light in winter.







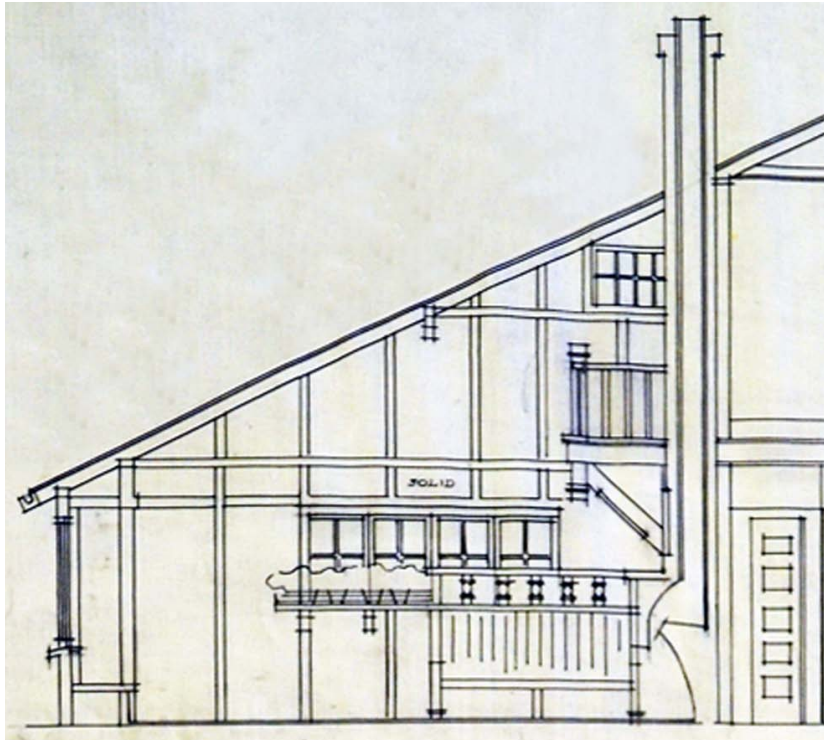
Morgan's hallmark stairway windows illuminate the art and craft interior of plaster with redwood trim. Wide sliding doors extend the living room in this quintessential Morgan home in Berkeley, 1907. Photo: Jeff Anderson

### Sustainability

What is truly remarkable, however, is the sense of well-being felt in her warm and calming enclosures that are earthy and magnificent at the same time. Climate responsive design uses the sun's energy to keep the building comfortable and naturally ventilated. Rooms with shaded windows, clerestory and skylights are still bursting with daylight. Openings are located at varying heights to capture the changing quality of natural light; from diffused in the morning to golden at sunset. Morgan was also adept at designing for flexibility by placing elements such as movable partitions to permit multiple uses within an allocated space. Courtyards, breezeways and verandas connect indoors to the outdoors, gracefully allowing the building to breathe. Morgan's robust and durable buildings have seen several changes in use, adapting to contemporary culture and lifestyles over the decades.



(L) Remodelled kitchen in North Berkeley cottage with original 1915 dutch door brings in morning freshness. (R) Stairwell windows oriented northeast bring in cool, diffused light from a higher angle in this Palo Alto house, 1921.



Passive cooling by convection:

Above: Drawing, part Section. Below, living room with landing above.

As the fireplace heats the living room in the evening, this redwood panelled home stays warm through the night.

Small operable windows at the second floor landing near the roof funnel out trapped warm air that rises by convection, thereby cooling this spartan Berkeley home, 1910.





(L) Courtyards filter in light at the Hearst Gymnasium, UC Berkeley by Julia Morgan and Bernard Maybeck, 1925.  
(R) Brick paved pedestrian access is shared between twin residences with side entrances in Berkeley, 1907.

## Conclusion

Even though we now have established measures rating the “greenness” of new buildings, the passive solar design and “healthy” strategies such as those found in Morgan’s buildings established their own standard over a century ago. These sustainable design interventions are simple, affordable and have no ongoing cost since they are integral to the building design. More relevant today than ever, they facilitate resource conservation and longer building life cycles, thereby contributing positively to diminishing the pressures of climate change. A ground-breaking study was released earlier this year by Preservation Green Lab, a project of the National Trust for Historic Preservation. It objectively quantifies the environmental benefits of reusing existing buildings over demolition or even new “green” construction.

Morgan’s over 700 buildings (though some have been demolished) tread lightly on this earth, graciously accommodating changes of the 21st century, sustaining their preservation.

And that, I believe, is beautiful architecture.

## Resources and References:

1. Sarah Holmes Boutelle “Julia Morgan Architect”, Abbeville Press Publishers, 1995
2. Morgan Collection, Environmental Design Archives, University of California, Berkeley

*Unless otherwise indicated all colored photographs are by Sandhya Sood. Design by Katja Schulz. Cover page photos of Dining Hall at Asilomar Conference Grounds, Pacific Grove by Alan D’Souza*

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This is a special publication commissioned by Landmarks California's Julia Morgan 2012 celebration and is the first publication by a practicing architect that evaluates Julia Morgan's sustainable designs and their relevance today.

A pilot project of Landmarks California ([www.landmarkscalifornia.org](http://www.landmarkscalifornia.org)), a collaboration of many preservation organizations that promote historic preservation of places of diverse histories and cultures state wide, Julia Morgan 2012 Festival celebrates the remarkable legacy of Julia Morgan.



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