IRVING GILL AND THE REDISCOVERY OF CONCRETE IN CALIFORNIA
THE MARIE AND CHAUNCEY CLARKE HOUSE, 1919-22

by

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ABSTRACT

The thesis focuses on a large residence by architect Irving Gill: the house for Marie and Chauncey Dwight Clarke in Santa Fe Springs, California (1919-22). The Clarke House was only discovered as a Gill building in 1981; and although praised by a prominent California historian as a project comparable in the strength of its design to Gill's masterpiece Dodge House (1914-16), there has been virtually nothing published on the project. The thesis attempts to collect the known information about the Clarke House; it documents the house through a series of new photographs, and provides a first set of drawings for the project. The Clarke House is set within the context of Gill's oeuvre in order to lay the groundwork for a wider critical interpretation. The thesis seeks a methodological approach which would avoid seeing Gill's work as either a purely regionalist phenomenon, or an example of Gill's proto-(European) modernism. Rather, the thesis adopts a method which could be called an "iconology of materials." A focus on the material context does not imply any obvious mechanistic relation between the properties of reinforced concrete and Gill's architectural forms – indeed, it will be shown that there is no obvious correlation. While Gill has become synonymous with the pioneering of concrete building technology in California, his interest in the material was always tempered by an intensely pragmatic social philosophy, predicated on economy. In proposing a cultural analysis of concrete in Gill's work, the thesis attempts to account for Gill's passion for reinforced concrete and his ambivalence to its structural potential. It analyzes how Gill exploited concrete's plasticity, monolithic quality, color, and surface effects. Comparisons of the Clarke House to several other major residences also built in Los Angeles c. 1920, show that he was not alone in the metaphoric rediscovery of concrete in California. Yet, the thesis argues that Gill's particular mastery of the material, as evidenced in the Clarke House, depended on his distillation of poignant symbolic images in the work.
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I. INTRODUCTION: THE CLARKES AT KRANKHAVEN
Introduction

In 1919, Marie Rankin Clarke and Chauncey Dwight Clarke commissioned architect Irving Gill to design a country house for them in Santa Fe Springs, California. The house was designed by late 1919, and construction was completed in 1922. The 8,000 square-foot house was built at the entrance to the Clarkes' property, sixty-two acres of citrus groves. (Fig. 1.2) The design of the Clarke House was classic Gill: plain surfaces, cubic massing, lively elevations, an interior court, and a sensitive integration of house with garden and surrounding landscape. But even for Gill, the Clarke House design was remarkably ambitious. Gill experimented on several new building systems, a to-be-patented system of construction, and the use of various new materials. Perhaps most notably, the Clarke House was built almost entirely of solid concrete: walls, floor, columns and details were all of concrete and lightly tinted green, "simple, plain and substantial as a boulder." The interior rooms opened onto a large two-story interior court which was as theatrical as the exterior was bold.

By 1919, Gill was well past the height of his success. He had just dissolved his partnership with his nephew, Louis Gill; his contracting company had proved to be a financial disaster, and he had few commissions as an architect. He had formed what was to be a brief partnership with another architect, Pearson. Shortly after
the completion of the Clarke House, in 1921, Gill folded his office, and sought work in Los Angeles as a draftsman. Ironically the year 1919 marked the construction of Gill’s now highly acclaimed Horatio West Court in Santa Monica, only three years after the completion of his now acknowledged masterpiece, the Dodge House in West Hollywood (1914-16). The Clarke House proved to be Gill’s last commission for a major residence, his last word on the large concrete house, and the only one of Gill’s large residences in his purist idiom that survives in its near-original condition. Historian David Gebhard claims that the Clarke House rivals in the strength of its design Gill’s Scripps House in La Jolla (1915-16) and the renowned Dodge house (1914-16) in Hollywood, the former now extensively remodeled, and the latter demolished. Indeed, the Clarke House, in developing formal ideas present in the Dodge House, anticipates many tenants of European modern architecture of the 1920’s. Potentially of even greater interest is its role in the context of the experimental use of concrete in early California modern architecture.

For these reasons, it is remarkable that architectural historians were unaware of the Clarke commission until 1981. Although the house was purchased by the City of Santa Fe Springs and extensively restored in 1989, there is little published material available on the house. The drawings have never been published, nor to best of my knowledge, has the Clarke House been written about in detail by an architectural historian. With its recent discovery, this thesis attempts to document the known material about the Clarke House, placing it in the context of Gill’s oeuvre, in order to be able to critically assess its broader historical significance.
The Clarkes at Santa Fe Springs

The Clarkes had arrived in California from the Midwest in 1904. (Fig. 1.3)

Chauncey Clarke was from Peoria, Illinois where his family had made a fortune in the distilleries; Marie Rankin Clarke was born in Afton, Iowa. Her father was a mining engineer and her family established in Phoenix, Arizona, where the Clarke's met. Mr. Clarke had moved West to Phoenix, Arizona, after completing his education in Peoria Illinois, and (like Gill himself and so many others) had come West because of a respiratory problem. The Clarkes moved to Southern California, first to Altaneda in 1904, then to Ocean View Avenue, Los Angeles, in 1911, where they bought some lots adjoining their home on which oil wells were later developed. In 1914, they purchased the Crosbie Ranch of sixty-two acres of citrus land at Santa Fe Springs. By this time, the community was mostly agricultural. It had been founded in 1873 by J.E. Fulton, as the Fulton Sulfur Springs and Health Resort. It was renamed Santa Fe Springs in 1886 when the Santa Fe Railway purchased the land in conjunction with the building of its San Diego line.

It is not known why Marie Clarke hired Irving Gill to design the house. It was probably through social circles she had came to know of Gill; he had in his earlier days received most of his commissions through social gatherings. Perhaps she had seen a Gill building which had prompted her to seek him out. An early postcard, of a Gill project located "at the foot of Mount Wilson," was found with Marie Clarke's papers. This project was Bella Vista Terrace (1910), a project for 12 cottages for F.B. Lewis which was built in Sierra Madre at the foot of Mount Wilson in the San Gabriel mountains. (Fig. 1.4) By 1919, the Clarkes were living three miles up the
river valley in Rivera (now the city of Pico Rivera); the new house Gill was to design in Santa Fe Springs would be their country retreat. The Clarkes' biography recalls that they had built "...a fireproof house in the Hopi Indian tradition; and with its gardens, orange trees and bridle paths it became one of the show places of southern California." The Clarkes called their house Krankhaven, although it is not known why. The letters between the Clarkes show they had often used pseudonyms. Perhaps the Krank, German root word for illness, was a reference to a place of recovery for Chauncey Clarke's failing health.

**Krankhaven**

The building was a large sprawling ranch house set at the entrance to the citrus groves. To the Southwest of the house was a dense grove of eucalyptus trees which towered over 80 feet high (visible in period photographs of the house). The sweeping garden and the driveway to the East, and the winding bridal paths give way to more formal gardens to the West and North. The Puente hills lay in the distance, roughly four miles to the Northwest of Santa Fe Springs. At 8,000 square-feet, the house was certainly at the scale of a large villa, yet there is an informality about the massing, which is neither imposing nor self-constituting in the tradition of the European country villa. Despite its apparent irregularity the house was actually very formally planned. A central porte-cochere on the East marks the entrance to a centralized double-height open patio. On the ground floor, the living spaces are grouped around the patio. The central axis extends through the court to the garden. The second floor overlooked the patio and was for the Clarke's private quarters which included a library and sewing room. Their bedrooms had access to
balconies which overlooked the patio as well as turned to the outside permitting a view of the Puente hills. The Clarkes had no children; a live-in guest, Mr. Walton, had his quarters on the ground-floor. Attached to this configuration was a second block, for the services. Gill typically paid close attention to the design of the kitchen space, and in the Clarke House the kitchen had its own court and access to the outside. The overall design can be said to be a series of massings which allow access to the outside, either by a patio, balcony, or the transparency of a window. The central axis of the patio extends directly through the dining room to the garden, while the cross axis would have offered a view of the hills beyond.

In contrast to the formal patio and the prevailing central axis, the elevations are lively and asymmetric. Windows are placed irregularly and puncture the smooth unadorned surfaces seemingly at random. Being in open country, it took advantage of the sprawling land. Gill had also designed the luxurious garden that surrounded the house. As mentioned, the central axis extended through the dining room doors, and in line to a California sycamore tree. (Fig. 1.7) It continues through the garden, over a square pool, and terminates at the corner of a garden hedge. A transparency though the center of the house was a typical Gill device: upon entering the house, one was drawn towards the light, and his houses typically offered vistas through the house to the garden and surrounding landscape.

A small sketch in Gill's hand survives of the garden and landscaping plan. Gill had worked frequently with San Diego horticulturist Kate Sessions, famous for the planting of Balboa Park, "who specialized in the cultivating of drought resistant
plants, both native and from other countries especially South Africa and Australia." For the Clarke gardens, Gill in the manner of such California horticulturists, combined Mediterranean elements of dry gardens, small pools of water and lush planting, with Oriental precedents (e.g. bamboo), and other transplanted species (e.g., fig trees). Yet typical for Gill, the gardens were quite formally laid out. The entrance was planned with a small garden around a circular fountain. (Fig. 1.16) Twin persimmon trees flanking the porte-cochere entry, symbolically announced the citrus groves. A shuffleboard court and a lawn bowling green was planned to the North of the house. Gill had giant bamboo planted to shelter the large lawn from any winds from the West. At the rear, a formal garden was planned around a square pool, placed at a diagonal to the house, which mediated between the axis of the house and the even rows of citrus groves extending to the West.

Citrus was undoubtedly part of the romance of the ranch house. This land would been transformed from the barren and treeless landscape found by the early Franciscans. They had brought seed and cuttings from Spain. and were the first to plant oranges, figs, dates, limes and pomegranates in California. American ranchers in Southern California planted citrus groves in ordered rows, extending as far as the eye could see, which had a dramatic impact on the landscape. The Clarke citrus groves of Santa Fe Springs was a part of the general agricultural belt extending along the valley of the San Gabriel river from El Monte to Downey.
In Southern California, the citrus-lands were a dream of the garden of Eden realized. Carey McWilliams noted, "In a sprawling and unkempt land there was something about the precise formality with which the groves were laid out that gladdened the heart almost as much as the refreshing, lustrous green of the trees." In this landscape which was semiarid, "described in early chronicles as wretched land, barren and bereft,... the appearance of the orange and lemon groves in such a land was as pleasing to the eye as the sight of an oasis in the desert." The marvel was not only that oranges, lemons, persimmons, dates, pepper, and oils, issued forth, but that they did so quickly. Charles Fletcher Lumis had pointed out that the orange tree was the living symbol of richness, luxury, and elegance:

With its black-green shade, its evergreen foliage, and its romantic fragrance, it is the millionaire of all the trees in America, the 'Golden apple' of the fabled Gardens of Hesperides. The aristocrat of the orchards, it has, by a natural affinity, drawn to it the rich and the well-born, creating a unique type of rural-urban aristocracy.

The Clarkes were just such pioneer-aristocrats; and Gill's concrete house was to evoke their life of leisure, wealth, and the good-life. After leaving Santa Fe Springs, the Clarkes reestablished their home raising Deglet Noor dates in the Coachella Valley, at what was called the Point Happy Date Gardens.

Because of its prodigious southern climate, Southern California had often been compared to exotic lands with comparable landscapes and climate. The Southland, as it was known, was given the literary accolade of "Our Italy," and was also referred to as a rediscovered Persia: Chauncey Clarke was later to raise purebred
Arabian horses in the Coachella valley. (Fig. 1.8) A Los Angeles Times article of 1925 wrote:

The owner of this bit of transplanted Arabia, Chauncey D. Clarke is a very enthusiastic booster for the dates and the horses of the old world desert lands.... [The desert climate and conditions, he believes, offer the finest training-ground for making the horses both sure-footed and strong in shoulders and joints. In other words, he believes that conditions in the Coachella Valley are so similar to those in Arabia, where the Arab horses have been raised to perfection, as to afford ideal environment for the raising of this notable breed of the equine kingdom.]

The romance of the oil industry in the Los Angeles area also played a significant role in the lives of the Clarkes at Kranhaven. In 1923, oil was discovered on the Clarke estate. Ever since 1907, it was generally known there was oil in Santa Fe Springs, but with the initial rudimentary wells, no one could have anticipated what was to come.

The first well came in January 26, 1923, and during the net four days produced 3,886 barrels. After flowing for a few days the well was closed down and deepened to the Meyer zone. When it was brought in again, February 15, 1923, according to the official report for the first twenty-four hours, the deepened well produced 5,634 barrels of 35 gravity oil.

The Santa Fe Springs strikes of 1921 was the most fabulously rich oil strike made in Southern California boom of the 1920's. By 1923, the fields were producing 332,000 barrels a day. The oil strike changed the industry; storage facilities had to be redesigned and newly built to accommodate the vast quantities. Between 1923 and 1932-4, the oil development produced millions of dollars from the Clarkes' sixty-two acres. However because of all the activity, noise and smells of oil production, the Clarkes were forced to abandon the house as a country retreat.
Outdoor Living

The benevolent Southern climate made the patio the very focus of California living. The central patio in the Clarke House, with a light screen overhead, was used as an outdoor room, a place to entertain guests and grow tropical plants. The patio-court not only gave protection from the sun and winds, but the flexible arrangement of rooms around it encouraged an informal manner of indoor-outdoor living. The floors were of concrete, colored and polished, and lain over with oriental carpets and furniture. As early as 1907, the internal court had became an important element for Gill, and he used them in many of his house designs. A contemporary article describes the interior court of his house for Thomas Hamilton, San Diego, 1908 complete with surrounding arcades:

\begin{quote}
This was the main living room of the house. Meals are sometimes served here and afternoon teas. Swinging couches and hammocks, some across a corner, some under the arcade, are often used for the rest at night as well as the afternoon siesta. A screen or more in front of the arches, sometimes converts a portion of the arcade into impromptu bedrooms when weekend guests are numerous. Potted plants are set all about, other plants are grown in the corners where the earth was left uncovered for them. Vines trail from the trusses. Rugs, chairs and tables with books, magazines and writing materials offer attractive comfort.\end{quote}

The court arrangement in the Clarke House was an adaptation of the Mexican hacienda, basically a patio surrounded on three sides with rooms, and on the fourth with a garden wall. Gill was inspired by such traditional adobe houses, especially as romanticized in Helen Hunt Jackson's popular book, Ramona (1884). In his own writing, Gill described the virtues of the plan of the Casa de Estudillo, Ramona's marriage house: (Fig. 1.9 & 1.10)
The Missions have taught us also the beauty and usefulness of the court. Romana's [sic] house, a landmark as familiar in the South as some of the Missions, was built around three sides of an open space, the other side being a high garden wall. This home plan gave privacy, protection and beauty. The court contains a pool and well in the center and an arbor for grapes along the garden wall; the archway that runs along the three sides formed by the house made the open-air living rooms. Here were arranged couches for sleeping, hammocks for the siesta, easy chairs and tables for dining. There was always a sheltered and a sunny side, always seclusion and an outlook into the garden. In California we have liberally borrowed this home plan, for it is hard to devise a better, cozier, more convenient or practical scheme for a home. In the seclusion of the outdoor living rooms and in their nearness to the garden, the arrangement is ideal.\textsuperscript{23}

In 1907, Gill designed a house with an open patio for Homer Laughlin Jr. in Los Angeles, which serves as a precedent for the Clarke House. (Fig. 1.11) The ground plan is arranged around an open u-shaped patio and is enclosed by a garden wall, like in the \textit{hacienda}. Open loggias mediate between the openness of the court and the shaded areas within the house. The upper floor is open to the court, with overlooking balconies as in the Clarke House. Gill's Henry Timken house (1911) also had a similar plan, with a walled garden and a second separate children's courtyard, (as in the Clarke House where a second courtyard is given to the kitchen and servants' rooms). (Fig. 1.12) Gill's "project for three patio houses" of 1927, takes this metaphor of outdoor living to its extreme, where sleeping, dining, cooking, living spaces became loggias opening directly onto a central court, essentially a single large space, subdivided only by a series of hanging curtains, and carpets. (Fig. 1.13) The patio was both suited to the climate as well as to a communal ideal of living. The impermanence and informal divisions, the flexibility of the architecture of textiles, recreate the flexible and informal natural living condition. The patio also exemplified the romantic appeal of "outdoor life in California" as described in Gill's Timken House:
The full light of day brightens it, the stars look in at night, the moon floods it with mystery. The windows of the upper rooms look down into its center, where a fountain splashes musically, and flowers exhale sweet fragrance. Creeping vines which will soon trace delicate patterns of green around the concrete pillars have been planted, and potted plants are placed here and there, and changed as they pass the time of blooming. Ferns grow on the shady side, sun-loving plants on the other sides.  

Set in the landscape, the patio of the Clarke House was axially extended through the garden. In the patio, tropical and semitropical plants were transplanted from all parts of the world with similar climates, to the care of Mrs. Clarke, who had an intense interest in landscape gardening.

The patio was however an urban typology, there being no need for a enclosed court in a country villa. Set in 62 acres of countryside, Gill’s provision of the Clarke country house with an urbane internalized patio was anomalous. This probably had something to do with the clients of the ranch house, as landowners of a citrus groves. Carey McWilliams noted that "There is no crop in the whole range of American agriculture the growing of which confers quite the same status that is accorded with the ownership of a citrus grove... in Southern California." The concrete court would have especially suited the Clarkes who were indeed part of the unique type of rural-urban aristocracy that the citrus belt had created.

**Romance and Eclecticism**

The Clarkes were widely traveled. When they commissioned the house, they had recently returned from a two year round-the-world trip. They had always shipped their automobile with them. Marie Clarke had first hand knowledge of India,
Russia, and the Orient. "Both Mr. and Mrs. Clarke were deeply interested in the various religions of the world; and it was on one of their trips to Asia that they spent a year in India studying the ancient religions." They had seen architecture form all over the world, and collected artworks, ceramic, metalwork, during their travels to Greece and Asia. Marie Clarke was an amateur ceramicist. Gill designed the living room wall with two deep arched recesses over the fireplace probably for the display of ceramic pots.

The patio-court included a special balcony from which outdoor screenings of silent films under the stars were shown. The screen was rolled down from the upstairs balcony, and the projector was situated on a specially designed balcony on the opposite side of the courtyard. Marie Rankin Clarke was an amateur motion picture photographer, had taken thousands of feet of film throughout the world. There was a high sense of theatricality about the court. The blankness of the entry facade would have resembled a theater, especially with the courtyard lit at night. Indeed, there was a strong connection between Los Angeles architecture in the 1920's and the fantastic movie-set romanticism and escapism. Directors had used existing Southern California architecture for sets, "but then in 1915, D.W. Griffith, inspired by the Tower of Jewels at the Panama Pacific International Exposition in San Francisco, recreated Babylon at the corner of Sunset and Hollywood boulevards for the spectacle Intolerance." By 1920 decaying stage sets recreated the exoticism of Baghdad and Cairo in huge back lot sets in Hollywood, which became a store house of images for architecture. Gill claimed to be unaffected. He explicitly objected to the sham of an architecture erected in the manner of temporary motion-picture sets.
The Clarke House, however, might be seen as a collection of images. For example, the stepped masses of the exterior, and the projecting scuppers which mimicked vegas projecting through the wall, can be identified with the pueblo architecture of the American Southwest. At the time of its construction, the Clarke House was considered a house "in the Hopi style." Since the Clarkes had moved from Arizona, this impetus for a Hopi style may have also come from the clients, but Gill too had spoken of the "adobe houses of the Arizona Indians formed of the earth into structures so like the surrounding ledges and buttes in shape that they can scarcely be told from them, triumphs of protective, harmonious building." His sources for traditional imagery extended also to the Spanish Missions; the Clarkes' porte-cochere visually recalls their arcades. Inside the house, there are a further set of associations. The small vestibule off of the court had a plastered domed interior which was a reference to the architecture of North Africa, forms which Gill had exploited in his other projects. The court itself held references even further back to Pompeii in Rome, and grouped together Greek Tuscan columns, windows that resembled Moorish or Venetian tri-fora screens, and a pre-Columbian floor pattern.

However, to see the house as an eclectic collection of imagery would be disappointing as an interpretation. The house was not as picturesque as its eclectic references might suggest. Being all in concrete, in a single color, it gave no overall impression, left unelaborated quite unlike the picturesqueness of the Hollywood motion picture palaces, such as Grauman's Chinese (1927) and Egyptian (1922) Theaters. The court of the Clarke House abstracted all of its chosen elements. (Fig. 1.14 & 1.15) The sculptural form and the overriding symmetry suggests the language of
symbolism, and not the overall effects of impressionism. The minimal setting created a space of theater. Indeed, the court was a three-sided stage-set, with three Italian miniature balconies confronting each other across the space. Facing this scene are three long balconies, two slightly raised wings, both flanking the specially designed balcony for projecting films. Low and horizontal proportions frame a proscenium arch over the entrance, dividing the court horizontally. Below, Tuscan columns occupy three sides of the ground floor. Above, the columns reappear exactly half-size, between miniaturized arches and balcony. All the elements are united in a strong symmetry, a single color, and a single material. These elements can be said to act as signs, akin to architectural symbols.

The Clarke House must be seen as more than a travelogue, where the various metaphors of the Southland were played out: the romance of oil, of citrus groves, of the escapism of the silent movies and travel. Such is bound to be an unsatisfying interpretation. Therefore, having introduced the romance of the Clarke House, this thesis poses the question: How may we interpret Gill's work, and critically assess its place in the history of modern architecture, while avoiding the preconceptions that would see them either as ersatz to European modernism (anticipatory yet undeveloped), or as a purely regionalist phenomenon, the product of concerns, typologies and conditions specific and relevant only to Southern California? In searching for an answer, the thesis will explore the problem of concrete in Gill's work, by applying a method that can be called the "iconology of materials." Irving Gill has become synonymous with concrete in California. A critical focus on the "material context" is not to suggest any obvious mechanistic relation between the
properties of concrete and Gill's architectural forms, (indeed it will be shown that there is no obvious correlation); rather the thesis proposes a cultural analysis of concrete in Gill's houses. Using this method, the thesis analyzes how Gill's pioneering "new concrete houses for the West" did (and did not) exploit concrete's structural potential, tectonic logic, and surface effects, and how Gill mastered concrete to invoke poignant symbolic images, and programmatic associations in his work.
1 The final completion date for the house is unclear. Gill's original blueprints used in the construction of the house are still extant; they are on file at the City of Santa Fe Springs. The drawings are dated December, 1919; with revisions dated February, 1920.


3 Of these, the Henry H. Timken house (1911) was demolished, as was the Walter Luther Dodge house (1914-16) on February 9, 1970. The Ellen Browning Scripps house in La Jolla (1915-16), which became the Museum of Contemporary Art, is presently undergoing an extensive remodeling by the architects Venturi, Scott, Brown and Associates.


5 A letter from Bruce Kamerling, Curator of collections at the San Diego Historical Society to Esther McCoy, dated January 22, 1982 notes the then recent discovery.

6 Two photographs of the house during its construction in 1920, with a brief caption, were included in Bruce Kamerling's recent monograph, Irving J. Gill, Architect, (San Diego: San Diego Historical Society, 1993), p.108. David Gebhard and Robert Winter also mention the Clarke House in the 1992 edition of their architectural guide to Los Angeles, p. 310-11. The City of Santa Fe Springs, Department of Community Services, has also made available a small brochure on the Clarke Estate.

7 The Clarke Story, (Los Angeles: Claremont College, 1956), p. 3.


9 The Clarke Story, p.3.

10 Gill's construction drawings are entitled: Kranhaven: House for Chauncey D. Clarke, Downey, California.

11 The innumerable groves of Eucalyptus scattering Southern California had been transplanted from Australia by early ranchers as a potential source of wood for railroad ties, until it was realized to be too soft for that purpose, or to be used as building construction material.

12 Orienting the house on the site in order to frame views of mountain ranges was a common device in Gill's designs, e.g., the Russell Allen house, Bonita (1907) where the porch columns frame the best view of the Jamul mountains. See Kamerling, Irving Gill, pp. 52-3.


15 McWilliams, p.208.

16 McWilliams, p.207.

17 J. Win Wilson, Los Angeles Times, March 8, 1925.

18 In 1907, Marius Meyer, a local resident was drilling an artesian well to get water for his sheep when a gusher of boiling water shot up indicating the presence of oil beneath the land. cf. da Rold, p.10.

19 The Clarke Story, p.4.

20 McWilliams, p.136.

21 Cf. Clarke Estate brochure, City of Santa Fe Springs.


25 McWilliams, p. 207.

26 The Clarke Story, p.3.

27 An undated letter from Chauncey remarks on Marie Clarke's exceptional figurines.

28 Cf. The Clarke Story.


Fig. 1.3 Marie and Chauncey Clarke
Fig. 1.4 Postcard of Irving Gill's Bella Vista Terrace. Sierra Madre, California, found with Marie Clarke's papers.

Fig. 1.5 The Clarke's "Old Home" on Ocean View Drive. Los Angeles.
Fig. 1.7 West elevation with Sycamore tree. 1989.
Fig. 1.8 Chauncey Dwight Clarke (The Clarke Story)
Fig. 1.9 *Estudillo* home in Old Town, taken in 1890 after its abandonment and before its restoration, now known as Ramona's Marriage Place, restored by the San Diego Electric Railway Co. 1910.

Fig. 1.10 Rendering of patio. Ramona's Marriage Place.
Second Floor Plan.

First Floor Plan.

PLANS OF RESIDENCE OF HOMER LAUGHLIN, JR., ESQ., LOS ANGELES, CAL.
Irving J. Gill, Architect.

Fig. 1.11 ("Portfolio of Cement Architecture." Architectural Record, Oct., 1912)
Fig. 1.12  Ground floor plan and view of patio. Henry H. Timken Residence, San Diego, 1911. Irving Gill. (Kamerling, 1993)
Fig. 1.13 First floor plan and section, project for Three Patio Houses, 1927, Irving Gill. (California Design 1910)
Fig. 1.15 Patio, west elevation. Clarke House, under construction, 1921.

Fig. 1.14 Porte Cochere, Clarke House
Fig. 1.16 Entry. North elevation. Clarke house. Irving Gill. (Photo: Sean Scensor)
Fig. 1.17 View of North elevation. Clarke House. (Photo: Sean Scensor)
1. Portecochere with twin persimmon trees (carport)
2. Entry fountain
3. Front doors of the home that looks into the courtyard and fern room
4. Grove of giant bamboo
5. Freestanding pergola ruins that were once a place of repose. (The wisteria vines that once covered it are starting to grow back.)
6. Orange trees that were part of the original orchard
7. Town Center Hall and the City Library
8. View of Mrs. Clarke's balcony on the second floor
9. Shuffleboard court and the Clarke's handprints on a low wall
10. Bowling green
11. Deodora cedar tree
12. Cork oak tree
13. Decorative pool: a small version of the one added in the 1950's by James Siemon, Mrs. Clarke's heir
14. California sycamore tree, the oldest tree on the property can be seen in photographs of the house under construction
15. Fallen-over California live oak tree
16. Utility building
17. Grove of giant bamboo
18. Orange trees that were once part of the original grove

Fig. 1.18 Site plan. Clarke Estate.
Fig. 1.19 Ground floor plan, Clarke House. (Drawing: Lan Ying Ip)
Fig. 1.20 Second floor plan, Clarke House. (Drawing: Lan Ying Ip)
Fig. 1.21 Front elevation, Clarke House. (Drawing: Lan Ying Ip)
Fig. 1.22 South Elevation, Clarke House. (Drawing: Lan Ying)
Fig. 1.23 Section through the patio, Clarke House. (Drawing: Lan Ying)
Fig. 1.24 View of patio through fern room. Clarke House. (Photo: Sean Scensor)
Fig. 1.25 Looking through porte-cochere, Clarke House. (Photo: Sean Scensor)
Fig. 1.26 View of patio from library, Clarke House. (Photo: Sean Scensor)
Fig. 1.27 View of patio, looking East. Clarke House. (Photo: Sean Scensor)
Fig. 1.28 Corner detail of patio. Clarke House. (Photo: Sean Scensor)
Fig. 1.29 View of patio with Hibiscus vines, Clarke House. (Marvin Rand)
Fig. 1.30 View of North elevation, Clarke House. (Photo: Sean Scensor)
Fig. 1.31 Detail. North elevation. Clarke House. (Photo: Sean Scensor)
Fig. 1.32 North elevation. Clarke House. (Photo: Marvin Rand)
II. IRVING GILL AND THE SOCIAL PRAGMATISM OF CONCRETE

The Fireproof House

Fireproofing was undoubtedly the reason the Clarkes would have wanted or accepted a large concrete house. Gill's design for their house included a large vault on the ground floor adjacent to the dining room with 12-inch thick concrete walls and a heavy steel door. This was presumably a protective measure against fire more so than theft. By 1919, Gill had been experimenting with concrete buildings for twenty-five years, and was known as an architect of many concrete houses; he had written about the merits of concrete and concrete floors in a published article. Gill also had a personal interest in fireproof construction. The La Jolla philanthropist, Ellen Browning Scripps commissioned Gill to build her a fireproof house after unexplained fires in La Jolla had destroyed her house, (and damaged Gill's St. James Chapel). The Scripps concrete house (1915-16) was one of his most famous designs, and Ellen Browning Scripps had funded many of Gill's concrete buildings, including the Scripps Biological Station (1908-10) and his others in La Jolla.

In the first two decades of the century, the popular imagination in America primarily linked concrete with protection against calamity, especially in California, where the threat of earthquake was more relevant than for other parts of the United States. The highest damage of earthquakes was through the fires that followed. The question in housing thus was in terms of concrete's permanence over purely structural considerations. Earthquakes were not perceived as a great threat in
Santa Fe Springs; the last quake had struck in the late 1800's. However, the relative merits of reinforced concrete as a solid and fireproof building material and its advantages over other forms of construction were vividly demonstrated during the San Francisco earthquake and fire of April 1906. Gill's then partner William Hebbard had gone to San Francisco soon after the earthquake and fire to review the damage and to make a report to the California State Board of Architecture. In their office in San Diego, Gill would have heard personal reports of the merits of concrete as it withstood the calamities of earthquake and fire. There was also a great deal of press surrounding the new material, which fueled the already existing debates in the professional and trade journals. The newspapers also targeted an audience of wealthy property owners, emphasizing the promise of a fireproof house that prevented the loss of property, possessions and life. Indeed, there had been much interest as early as 1901 among architects regarding the possibilities of concrete construction in fireproof country houses for the wealthy.

Concrete and Hygiene

Even more important than the question of fireproofing as a motivation for the Clarke's deciding on a concrete house was that concrete was seen to be appropriate for Chauncey Clarke's fragile health. Early on, Gill had promoted concrete's sanitary virtues. Because concrete could form a continuous surface of a single material it excluded corners and gaps where dust could collect and in which vermin could infest. Inside the Clarke House, all the floors (even the wood floors of the upper level, and the wood stair) were finished off and "sealed" with a 1-1/2" layer of
magnesite-cement. Because the material was very fine and highly plastic, it could be easily formed to create coved (rounded) corners with the plaster of the walls, and bathtub enclosures which made cleaning easy. Like a modern hospital, all interior corners were coved, even where the plaster walls met the ceilings. In order to prevent the concrete floors from being cold, Gill included gas heaters inset in troughs under the floor slab, with registers made flush with the floor. These were included in every room, and accessed from doors to the outside. However, these apparently never worked from the outset, and the house was reportedly quite cold during the winter.

Gill was also an early advocate of closets, which eliminated the need for separate armoires. He ventilated closets to prevent mustiness and mildew, and raised them by one step so that dust would not be swept in along the floor. He provided the Clarke's private quarters with luxurious built-in cabinetry, each drawer and cabinet custom-designed for various single wardrobe articles. (Fig. 2.1) The dressing room included a safe for Marie Clarke's jewelry. Gill proposed an unconventional design (which was not built) for Chauncey Clarke: a bath and dressing room in a single room, with wardrobe cabinets, a toilet, wash basin, and a tub set into a magnesite enclosure. The room would have been lit with two skylights and ventilated through a transom to a plenum above the corridor.

At the time they commissioned their concrete house, the Clarkes were living in an Arts and Crafts style house up the river valley in Rivera similar to their previous house on Oceanside Street. For the design of their new country house, one expects
they might have envisioned it in a "Spanish" revival style current at the time.

"Gill's simple designs, no matter how well built, were not as visually impressive as the showy Spanish-style palaces being constructed throughout Southern California." The Clarkes' final home in the Coachella valley was a rambling California ranch-house. Compared to their other woodsy houses, the Clarke's spacious new concrete villa had six open terraces and a large patio which would have filled the house with light and air. Mr. Clarke's bedroom had access to two separate balconies, one sheltered looking in on the court (it is not clear whether Mr. Clarke ever used this as a sleeping porch), and the other opened to views to the mountains. Because of the internal patio and the second kitchen court, each room in the house was naturally cross ventilated. Each of the six bedrooms had a direct access to its own closet, bathroom and direct access to the outdoors (except for one). The large windows in the bedrooms were the signature Gill tripartite window: a transom with a single fixed panel in the middle, flanked by two operating casements for fresh air.

Gill saw domestic architecture as primarily the result of pragmatic and functional concerns. A convincing example was the size of openings in the Clarke House facade, which though irregular was not a mere exercise in composition. In fact, the size of the openings are determined from a simple formula which Gill used: each room had exactly 13% of window area to floor area. Gill wrote this relation for all the ground-floor rooms on his construction drawings, and the ratio is the same in both the "served" and "serving" spaces, from the formal rooms to the laundry, kitchen and servant's quarters18 Gill's attempt at the provision of such amenities
was not a perk of luxury for the owners, but a design principle which pervaded the whole house equally. Gill included ventilated skylights in every washroom, and in the garage. The kitchen was large and luxurious with yards of cabinetry and countertop space. In both the kitchen and the garage, the coved magnesite floors sloped toward a central drain so that the floor could be cleaned with a hose. In 1916, Gill wrote:

In California we have long been experimenting with the idea of producing a perfectly sanitary, labor-saving house, one where the maximum of comfort may be had with the minimum of drudgery. In the recent houses that I have built the walls are finished flush with the casings and the line where the wall joins the flooring is slightly rounded, so that it forms one continuous piece with no place for dust to enter or lodge, or crack for vermin of any kind to exist. There is no molding for pictures, plates or chairs, no baseboards, paneling or wainscoting to catch and hold the dust. The doors are single slabs of hand polished mahogany swung on invisible hinges or else made so that they slide in the wall. In some of the houses all windows and door frames are of steel. They never wear out, warp or burn, a point of importance in fireproof construction. The drain boards are sunk in magnesite which is made in one piece with the walls and all cornices rounded, so not a particle of grease or dirt can lodge, or dampness collect and become unwholesome. The bathtubs are boxed and covered with magnesite up to the porcelain.

By this manner of building there is no chance anywhere in the house for dust to accumulate. This minimizes the labor of keeping the house clean and gives the rooms a sweet, pure, simple and dignified appearance.

Gill's Pragmatism

Gill's technical innovations were never for their own sake, but were part of his larger social goal: housing, and the providing of modern amenities in an humane environment. Gill was one of the first architects in California to turn his attention to the problem of worker's housing in the planning of the industrial town in
Torrance (1912). Earlier, from 1899, in his experimental cottages in San Diego, Gill experimented with various design elements that would reduce and simplify the building process. (Fig. 2.2) On the back of a photograph of a pair of experimental cottages Gill wrote:

These are two small houses that Charles built for me last winter: I built them so as to work out some new ideas I had for a cheap, semi-fireproof cottage for working men's families: They have been a great success & I am building several others of the same construction.5

The ideal of buildings of cheap, simple, pure and dignified appearance was fully exemplified in Gill's workers' cottages for Mr. Lewis in Sierra Madre, 1910, (later called the Bella Vista Terrace, Fig. 2.3). In fact the project proved to be overly successful for the land planned by Gill as terraced common space was speculated, and the lower income tenants were priced out. The committee formulating the first San Diego building code challenged Gill's construction methods e.g. the use of single-pipe instead of double-pipe plumbing in order to save his clients money.6 Gill's simplification of the process, which eliminated many of the conventional building trades, also met with stiff opposition from unionized labor who revolted in 1912 while construction of worker's cottages in Torrance.7

In Gill's mind technical innovations were linked to his social reform philosophy. Gill defended concrete primarily on the grounds of exigency and economy: "I would use every argument I could muster to convince that person that I could build a better and cheaper house in concrete and hollow tile than I could in wood."8 Concrete construction potentially stood for all types, whether for mansions, cottages
or minimum cost worker's colonies. Within the house itself, Gill maintained the
same standard between the formal and informal parts of the house, maintaining the
same quality of materials and workmanship, and by proposing similar level of
details. Gill's social ethic was to provide basic domestic amenities, and by so doing
to provide a level of dignity to the house. Part of the dignity concrete offered was
economical, for it could be worked by unskilled labor versus masons, and built if not
by a landowner himself, at least with simple do-it-yourself processes. In America,
cement was seen not only as a pragmatic response to "the forces that shaped
American architecture, i.e. modern conditions, dangers, and exigencies; but concrete
was also well-suited to the ideal image of the American bungalow and garden, with
its threefold social dream of efficiency, self-sufficiency and democracy.

Gill's basic belief in the economy of means, labor, and material represented a basic
American pragmatism. He believed that man's reward was the labor of one's own
hands, and a job well done. His Protestant pragmatism and work ethic may have
been nurtured early by his Quaker upbringing in the largely Dutch community of
Syracuse, New York. The Quakers guaranteed the right of each person a simple,
solid, economical and maintenance-free house. Upon completion of the Christian
Science Church in Coronado, Gill wrote that his work "...was a labor founded upon
love, so that in entering its portals, it might be said, as was said by Jacob: This is
none other than the House of God, and this is the Gate of Heaven." He continued "It
has been truly said that labor is its own best reward and that when one looks upon
the work of his hands and sees it well done, he should be satisfied."9
Gill defended the elimination of cornices at the top of buildings, simply stating that they were a waste of labor and money which could be better spent elsewhere: "The money usually wasted in meaningless gables, swags, machine-made garlands, fretwork and "gingerbread" goes into labor-saving devices or into better grade of material." Gill professed that "Any deviation from simplicity results in a loss of dignity." His writings and many of his buildings display an almost painfully blunt moralism.

Gill heralded new materials and techniques which would emancipate workman from the tyrannies of wasted labor. This idea of reform extended to the emancipation of women. At the Bella Vista Terrace, Gill brought the kitchen to the front of the house, and paid great attention to its organization and design, so that the woman would not be removed from the family. He objected to the drudgery of women's housework because he thought that that time and effort was better put into child-rearing. Gill believed the woman's responsibilities in the nuclear family were the moral formation of children. R.M. Schindler once wrote that "Gill's theory was that the house was built for the woman, man was the guest." Frederich Gutheim wrote of Gill's orientation towards women, and his understanding of their importance in domestic architecture. He was very successful with his female clients. He spoke of the practical details of housework, of the experiences and obligations of a hostess, of the house as a place for individual creative expression and activities including gardening.
Social Principles

Gill paid great attention to the cost of construction even in the Clarkes' elaborate house. In fact, the design principles readily evident in the Clarke House, an 8,000 sq.ft mansion, had actually been worked out in his smaller projects for workers housing and experimental cottages. Even before the oil strikes, the Clarkes had made a triple fortune in liquor, gold, and citrus. They evidently had the money to spend on any design conceit of ornament or luxury. The remarkable thing about the house is its the relation of its huge size to its outward frankness, Protestant restraint, and modesty. The true luxury of the house was its extraordinary spaciousness.

Gill gave an informality to each facade; the rear elevation was similar to the sides and arguably the front. (Fig. 2.4) In a single material, Gill had eliminated the difference between the usual "great pretense of the front and the stark ugliness of the back,"

as well as the usual obvious dwindling in the quality of materials and workmanship from formal spaces to servant's quarters. The house was the exemplification of democracy. Speaking fondly of another of Gill's houses in Los Angeles, a journalist wrote that the rear elevation was the most interesting; only against its irregular forms and terraces was rendered the full beauty of the Southern California landscape: "It was then that one realizes the secret of Paolo Veronese's landscapes. It was not that Italy's sky was bluer than California's, but that it only seemed so because of Italian architecture." The charm of the Clarke House was in its outward informality, the extraordinary spaciousness of its interior,
the softness of its materials and surfaces, and their romantic coloring set against the landscape.

The Clarke House was daringly original not for any single new innovation, but for its principles which implied a reform-mindedness of the architect and client. The Clarkes embodied the true pioneer spirit; they had a commitment to the success of the American dream. They had worked the Midas fields, saw great possibilities in the land, and brought forth fabulous riches from it. They were progressive, and embodied the American values of self-sufficiency. It was primarily Marie Clarke that dealt with Gill, participating in the design. She was by all accounts an exceptional woman. She shared with her husband a deep interest in "education, comparative religion, travel, public affairs, and philanthropy," and believed in the "dignity of man over the domination of the state."¹⁶ Marie Clarke had a great interest in cultural and community life of the Southland and she was a contributor to many of its civic enterprises. Her most notable contributions was to the founding of the Hollywood Bowl, as a charter member of the Theater Arts Alliance. This enterprise was simultaneous with the construction of the Clarke House. In 1919 (the year she commissioned the Santa Fe Springs house), Marie Clarke and her friend, Christine Wetherhill Stevenson each contributed $21,000 towards the $47,500 purchase price of the land. The first performance in the Hollywood Bowl took place in 1922, soon after construction on the Clarke House was completed. (Fig. 2.5) Marie Clarke and Christine Stevenson also bought the 27 acres of land North of the Bowl, and founded the Pilgrimage Play Theater. (Fig. 2.6) A contemporary account describes its contribution.
Here in this original setting of the Pilgrimage Play, there has been built, not only a theater for sacred drama, but a great asset to this community, in that it will draw from all the nations of the world, all races, all creeds and all ages, those who will here receive an abiding impulse for better living, a stimulus for greater faith, a new sense of loyalty, and an increased honesty of purpose, the sum total of which must produce a better citizenry.  

Such a sense of community was important to the heterogeneous population of Los Angeles where almost all were transplanted from elsewhere.

After moving from Santa Fe Springs upon finding oil on the land, the Clarkes settled in the Coachella valley growing dates at the Point Happy estate. Chauncey Clarke died in late summer, 1926, and Marie remained there for the rest of her life and made it her permanent home. Contemporary accounts of the idyllic Point Happy Date Gardens describe it as a strong community built around the character and will of Marie Clarke, who was known as the chatelaine of Point Happy. The lands had a guest house, swimming pool, an archery course of professional rank, bridle paths, beautiful gardens of rare trees, shrubbery and flowers, and a worker's village composed of six Mexican families, a Japanese family, several American families, several in-servants, and a number of Mexican day laborers. The village was a model in the valley, equipped with every modern convenience and comfort for the permanent workers.  "Madame Happy, unlike many employers of labor, regards her helpers as friends who are entitled to the best of everything. She calls them her children."
The Clarke House, despite having the lawn bowling and the other amenities of a life of luxury and leisure in the English country villa, embodied a matter-of-factness which was as purely American as the pioneer's cottage or Henry Thoreau's log cabin. Concrete was the perfect material for the Clarke's social views. Gill rhetorically laid bare the material concrete, making it more frank and honest: "as substantial as a boulder." Since the late nineteenth century the domestic use of concrete had been associated with liberal reform. American concrete could represent both majesty and modesty of the life of these two Los Angeles rural-aristocratic pioneers. They made their money from speculating and venture. In the Clarke House, concrete was used for the formal as well as informal spaces, for Tuscan columns, patio floors, and for bathtubs and kitchen floors; no other single material could have evoked both modesty and majesty of their American country house so well.
William S. Hebbard was educated at Cornell, worked for Burnham and Root in Chicago, and came to Los Angeles in 1888, finally settling in San Diego. Hebbard and Gill were in partnership from 1896-1907.

Kamerling, Irving Gill, p.90.

The sash area and floor area in square feet is marked for each ground-floor room on Gill's original construction drawings for the Clarke House.


Kamerling, Irving Gill, p.51

Letter from architect Frederick Gutheim to Esther McCoy, December 12, 1958.

Irving Gill in Kamerling, Irving J. Gill, p. 56.

Letter from Irving Gill to the Directors of the First Church of Christ, Scientist, Coronado California, January 18, 1929.

Irving Gill, "New Architecture of the West," p. 147


Esther McCoy's notes, Esther McCoy Archives, Smithsonian Institution.

Letter from Gutheim to Esther McCoy, December 12, 1958. Interestingly enough, many of Gill's most successful commissions were for strong-willed and independent women. Gill's first use of his unconventional tilt-slab was on the house for Mrs. Mary H. Banning; and the La Jolla philanthropist, Ellen Browning Scripps was instrumental in Gill's obtaining his commissions for the La Jolla Women's club, and the Scripps Biological Station.


Clarke Story, p.13.


Clarke Story, p.6.

Cf. Rob Wagner on the Clarkes at Point Happy Date Ranch.
Fig. 2.1 Cabinetry in dressing room. Clarke House. Irving Gill. (Photo: Sean Scensor)
Fig. 2.2 Experimental cottages, San Diego, Irving Gill. (Kamerling, 1993)
Fig. 2.3 Bella Vista Terrace, Sierra Madre, 1910. Irving Gill. (Kamerling, 1993)
Fig. 2.4 Back elevation. Clarke House. (Photo: Sean Scensor)
A developing sense of community necessitated outdoor places for people to gather, such as the Hollywood Bowl, where the Easter sunrise was greeted in 1924 (Security Pacific Historical Photograph Collection, Los Angeles Public Library).

Fig. 2.5  (Starr)
Fig. 2.6 The Pilgrimage Theatre, Hollywood Hills.
(Clarke Story)
III. THE CONCRETE HOUSE
The 8,000 square foot, two-story Clarke House was built almost entirely of poured-in-place reinforced concrete. The foundations were laid as early as 1919. A set of construction drawings which still survives in the Irving Gill Archives at the University of California at Santa Barbara includes floor-plans dated December 1919, other drawings dated January and February of 1920, and a number of undated revisions. The formwork for the concrete was made from rough boards. The resulting finish was very rough and Gill had a cement skim coat applied to the concrete with a trowel to give it texture (without being completely smooth, Fig. 3.1).

The "Gill System"

In the Clarke House, Gill employed a concrete system which he had previously used with some success in his Horatio West court apartments in Santa Monica (1919). This construction was a poured in-place and reinforced double concrete wall, which sandwiched a waterproof membrane mounted on wooden latticed frame. On the ocean-side site in Santa Monica, the goal of Gill's method was to provide a barrier in order to prevent moisture from passing through the wall. Gill had also used the double-wall system three years earlier for the famous Dodge house (1914-16). For this house, Gill had also invented a technique to cast in place steel window and door frames and thin steel mullions into the concrete wall. He filed a patent for what he called a "means of reinforcing concrete walls" in the Fall of 1913, granted on October 31, 1916. (Fig. 3.2 & 3.3, Appendix A) Tied to the steel reinforcing mesh, and then cast in place, the steel frames were made integral with the wall. In the patent, Gill
argued that the window frame would serve an additional function: it would become a means for reinforcing openings and would prevent any structural deformation, thus dispensing with additional steel reinforcing in the lintel.¹

By 1919 when Gill was designing the Clarke House, he had simplified this system, and applied for a new patent. The construction drawings for Clarke House are marked "Gill System," and indicate that a new second patent application had been made by Gill together with his then-partner, Pearson. Whereas the earlier system, "Means for reinforcing walls," involved cast-in-place steel door and window frames onto which wood casement windows were then mounted, the new "Gill System" used in the Clarke House eliminated the steel entirely, thereby reducing the cost. Steeply canted wooden sills drained water away from the interior. The wood door and window frames were cut into the wood lattice, and cast flush with the edge of the concrete surfaces so that the structural frame was entirely invisible.² Without exterior moldings, Gill achieved his desired results: reducing the number of building elements, reducing labor and material cost, and simplifying the building process. The aesthetic result was a smooth and blank wall, punctured by sharply cut and abstract window and door openings.

In a letter to Richard Neutra dated January 13, 1929, Gill explained both the procedure and the principles behind his "Gill System" of construction, used in the Clarke House: (Appendix B)

The walls were first formed by building on the ground a latticed frame of 1"x2" O.P. [Oregon Pine] with 2-ply asphalt roofing between.... Wire was nailed on one side on the ground and the whole wall was turned over and the wire nailed on the other side. This light frame was easily lifted by two or
three men and was very strong (frame). The window and door frames were cut in and fastened to the frame. This light frame was set up on the concrete raft... and the concrete poured into reusable forms which were 24" wide and the full height of wall making two 3" concrete walls for a 6" wall or two 4" for an 8" wall.

1/2" rods were put in every 12" x 12" to give more strength and to stop cracking. On interior walls the membrane was omitted. Corners were constructed as follows [see drawing, Appendix B and Fig. 3.4]: This inner and outer corner frame was put in first in full height of walls so that the outer concrete form could slide up and be kept in place.

The object of this construction was to provide a water proof membrane and to stop any cracks from running through the walls and to do away with exterior painting. It also stopped condensation of moisture on the inside walls. I put up a number of houses using this construction and found it did not cost over 20% more than frame construction for the walls alone or about $160. for an $8,000 house. The walls only for an $8,000 house would cost about $800 or 10% of the total cost of the house.

The window and door frames were made thus: (2" strip of waterproof paper and 1/2" x 1/2" wood strip painted with asphalt. 4" hardware cloth doubled over to stop wire from slipping. Note if this hardware cloth is carefully put on and nailed to angle every 3" it does not show crack between wood and cement). With this construction detail I'm able to do away with casings or rounded corners and unsightly cracks.\(^3\)

The letter included drawings of several details he had developed for a "Gill System" of reinforced concrete construction. (Fig. 3.4) In his publication for the series Wie Baut Amerika 1930, Richard Neutra discussed the workings of American building practices: the large American firm and the design of large commercial buildings. In this publication, Neutra included a summary of Gill's construction system, and redrew Gill's detail (Fig. 3.5) as exemplary of American constructive techniques. (He also included his own snapshots of several of Gill's buildings).

While the walls for the Clarke House were monolithic concrete, the upper floor and the roofs were wood framed. The ends of the wood joists were set on ledges in the
parapets walls, and the roof assembly was topped off with thin concrete slabs. Gill provided the roof slabs with a slight pitch to drain any rainwater out through projecting scuppers which punctuated the elevations. These indicate the real level of the roof concealed behind the parapet walls, some of which Gill made up to two feet high. The concrete slabs, highly porous, leaked extensively. Yet, the sloping roof gave a slight pitch to the ceilings in the interior rooms. The effect is still quite perceptible in the projection balcony which slopes down to less than 6 feet 10 inches (6"-10") at the back wall. The same phenomena of sloping ceilings was apparent in the Dodge House, where the angled plane of the ceiling was described to have "lent a kind of softness to the volume of the room."

Irving Gill was both the architect and the building contractor for the Clarkes. This allowed him two advantages: firstly, he circumvented the problems of the third party contractor, and dealt directly with the client, primarily Marie Clarke. Mrs. Clarke was a very strong willed woman. By all accounts she knew what she wanted, and became an active collaborator with Gill in the design. Secondly, as builder, Gill was more free to experiment. He introduced unconventional techniques (e.g., the double-wall construction, and the "Gill System"), and alternative materials. Gill's favorite new material was magnesite-cement, which he used for kitchen counters and bathtub enclosures as early as 1900, and most successfully for his colored smooth cement floors. Gill also introduced a new heating system in the Clarke House which put individual gas heaters in each room with flush floor registers, as well as a new system of internalized plumbing cast into the concrete wall.
Many of these experiments and details in the Clarke House failed. Despite his evident concern for earthquake-proofing, Gill left the roof's structural diaphragm effectively untied to the concrete walls, a solution which would not have withstood an earthquake. The galvanized iron pipes oxidized badly and had to be replaced with retrofitted plumbing. The heating system never worked from the very beginning. Gill worked independently and learned from his own experiments and mistakes, not from other architects. At a time before many hardware pieces were available commercially, he sought the details which would have the fewest number of parts, reducing costs and simplifying the design. According to Louis Gill, his uncle was impatient with all the pieces of a house: "He was always trying to do something better. A window had 24 parts, and he designed one with four; then he found out the cost was the same... He was never satisfied." Gill's empiricism was a significant part of his architectural philosophy: that the logic of material could only be revealed to those who built themselves and worked building material through their own hands. Louis Gill recalls that his uncle was rarely to be found at his drafting table, but almost always in the workshop or in the yard working with details, and samples. In this sense he embodied classic American do-it-yourself principles and the true pioneer spirit in architecture. Gill was working with untried systems and materials for which there were no fully accepted standards. The idea of the thousands of concrete "patents" and scores of building "systems" was naturally associated with concrete since it was less a "craft" in the traditional sense, but "...the result of a coming together of certain ideas, experiences and applications." Gill had bought land in order to build cottages less for speculation than for direct experiment.
Probably due to his lack of business acumen, he invested in systems which proved to be failures in large-scale applications.

Irving Gill had played a role in the early use of concrete in America, and is still known as a pioneer of concrete technologies. Although his first buildings of unbroken smooth surfaces, pure form and simplified details were designed using concrete by 1907-8, he had experimented with concrete building elements as early as 1894. Gill's work in California was not removed from the wider debates on the concrete house in America (1900-1916) which unfolded in contemporary professional and trade journals and "shelter" magazines, on the properties of the new material, its potential and appropriateness for residential construction, and the merits of the various experimental construction systems (monolithic, concrete block, and precast unit). Gill's technical innovations had included a moisture-proofed concrete double wall, his patented "reinforced" steel window, and the use of the Julius Kahn system of steel reinforcing in the Scripps Biological Station, La Jolla, 1908-10, Fig. 3.6. Most notable of these was Gill's signature technique, the Aiken system of concrete "tilt-up" construction.

The Aiken tilt-slab System

The Aiken System was developed by Colonel Robert Aiken, US Army Engineers Corps from Illinois, in the construction of barracks in the Philippines during the Spanish-American War. The system was used commercially in the US by around 1910. The invention, Aiken noted, "relates to buildings of reinforced concrete and its
general object is to provide for producing such structures quickly at low cost." It was most appropriate not as much for houses as for "barracks, storehouses and other buildings of moderate height, and it has been used with great success in erecting buildings having walls eighty feet long and fourteen feet high." Solid walls were built on a platform at half the height of the finished wall. When cured the slab was tilted down and into place by jacks rotating in unison, powered by a single donkey engine. The "tilt-slab" eliminated lumber for formwork, prevented the concrete mixture from separating, and the wall surfaces could be more easily finished without vertical scaffolding. The building was "assembled" of essentially prefabricated units on site; this technique was one step shy of later factory prefabrication. Gill may have been introduced to the Aiken system by his former partner, W.S. Hebbard who had used the system as early as 1910. Gill bought the regional rights to the Aiken's patent and formed his own contracting company, The Concrete Building and Investment Company, to put it into fabrication. He first used the system in the Mary Banning House in Los Angeles (1913-14), and subsequently in the La Jolla Women's Club (1913), where he employed the Aiken system in the outer walls together with traditional wood frame construction in the central core. (Fig. 3.7)

The tilt-slab system, however, had already become obscure when Gill first used it in the Banning house. From its inception it had many practical disadvantages, the most significant being a lack of design flexibility: it was appropriate only for long walls with fewest number of corners. Also, the slab wall settled unevenly in the moist earth causing subsequent cracking of the concrete. Gill was aware of the
previous failures of the system when he had bought the rights, but he pursued to improve upon them. First, Gill installed the machinery on the concrete raft itself, to prevent uneven settling of the wall. Secondly, he lightened the wall's overall weight by using hollow tiles together with the concrete, as in the Mary Banning house. The patented steel window system was to be used in conjunction with the tilt slab, to ensure the walls' strength. Another economical disadvantage of the tilt-slab had been that the large and complex machinery was tied up on-site for long periods, was expensive to assemble, and to store while it was idle. It was only later after Gill had abandoned it, that tilt systems were cast directly on the floor requiring only a derrick to lift the wall panels into position.

Despite his adaptations to the Aiken system, Gill still had a great deal of trouble in its application, and in convincing clients to take the risk of using it against more conventional methods. Even for his project for barracks for migrant worker for the Riverside Portland Cement company (1913), Gill intention "to use the tilt-slab construction method, creating a continuous outside wall and a central garden," was thwarted, and finally constructed of wood. The Aiken system was itself intuitively a-tectonic. It did not follow the organic metaphor of unit masonry construction which mimicked Nature's building structures in stages up from the ground. An article on the Banning House describes the amazement of the client's neighbors at the ironies of a "house that was built on a table." There was a measure of theatricality of "tilting down" a complete facade with windows and doors, which subverted the apparent massiveness of the concrete house. (Fig. 3.8) This use of
concrete eradicated any reading of a concrete structural frame and provided instead an abstracted wall plane, with seamless but sutured corners.

The Aiken system "was one of a number of competing precast concrete construction developed during the first decade of the 20th century." Several other precast unit systems were widely published in national journals, including those developed by Samuel P. Carroll in Chicago, Grosvenor Attebury in New York, and John E. Conzelman in St. Louis. The most popular and successful of these, was developed by Ernest Ransome from 1905-1909, which was a system of prefabricated parts erected on site and made integral with poured-in-place floors, roof slab, patented in 1909 as the Ransome System of Unit Composition. "Compared with Ransome's Unity System the Aiken system was, technologically speaking, a dinosaur." What this context makes clear is that Gill's work was not overly successful at pioneering new building technology. The national debates centered around competing methods and systems of construction for the concrete house in America. Their goal was the producing of an economical prototype: a step toward pre-fabrication. Gill however, was not interested in prefabrication for its own sake; in fact he did not seem to anticipate the full implications of industrialization, for he sought to incorporate labor intensive craft practices and details with industrial processes. Gill's greater significance lies in his developing an aesthetic for concrete in Southern California, and his will to create a building type rather than a prototype for the new material.
The Aesthetics of Concrete

Gill liked the solidity and density of concrete. Like the wider American fascination with concrete, he focused far less than the Europeans on the rational development of concrete's structural potential, and more on concrete's massive nature and on the problem of its surface quality. Articles in national journals of 1911-12 focused upon the exterior appearance of the structure not the expression of its constructive nature. How to color concrete, pattern its surface, or construct pitched roofs was the official concern of the architectural profession not the development of concrete's structural advantages. Part of the American fascination of a concrete house for both professionals and the public was its monolithic nature and the idea that a house could be built of a single, continuous material. In its purest form a reinforced concrete house would have walls, floors, foundations, and trim all of poured concrete. In April 1907, Frank Lloyd Wright had published a project, in the Ladies Home Journal, for "a Fireproof House for $5,000" with reinforced concrete walls, floors, and roof slab. This desire for a house of a continuous material was epitomized by Edison's project for a $1,000 concrete house, which was literally poured in one monolithic piece.

Gill's tendency toward the monolithic did not originate, as might be expected, with the inherent properties of concrete itself, but with his dissatisfaction with the "hooked together" nature of the balloon frame system. The principle of the "monolithic," was an a priori aesthetic principle; it did not derive from scientific investigation of concrete. In the Gill Archives, there are drawings for several projects with the same form first designed in wood, then in concrete, (e.g., the
Homer Laughlin House, and the water tower for the Scripps Biological Station). While he actually used various composite systems of hollow-tile, cement, and wood-frame, Gill's buildings after 1908 almost invariably *looked* like monolithic concrete. Gill's love for smooth flat surfaces spawned his early experiments with "thin-wall" wood construction. (Fig. 3.9) He made walls solid by using 1 x 4 wood studs placed on end, eliminating the spaces between the joists which could act as fire flues in conventional frame construction. "The result was a 3" thick interior wall which was the structural equal to a 5-1/2" conventional stud wall." The reasoning was in part an economy of material, means and labor, as well as fireproofing. The "flush finish," to make the plaster and all woodwork (door, doorframe, baseboards) in one flush plane, was part of the same aim: to make a single continuous material, with a continuous surface. An absence of any legible tectonic frame characterized Gill's concrete aesthetic; the visual logic of his houses was always monolithic.

**The monolithic and the tectonic**

While the walls for the Clarke House were monolithic concrete, the upper floor and the roofs were wood framed. Despite this hybridized construction, the Clarke House, as many of Gill's buildings had the appearance of being monolithic concrete when they strictly were not. In the Clarke House, reinforced concrete was widely used, for all the walls, floors at grade, the columns, moldings, and cement used for the finishes. The square tri-fora windows looking onto the court were also integrally cast in concrete, with a slightly finer aggregate which explains the difference in color from the rest of the wall. The balconies were originally to have been miniature
concrete flower boxes. (The drawings were revised to include an elaborate Mexican wrought iron railing. Wooden balconies on the court were built, and sometime in the building's history painted a persimmon red).

Gill's use of concrete in the Clarke House was primarily to evoke its monolithic nature, i.e. its mass and thickness. Gill always thickened the wall specifically at points of entry. (Fig. 3.10) One of the reasons concrete was largely used in houses for the wealthy was because of its spanning capacity, allowing for the requisite large spaces of a villa. Gill, however, was not totally committed to pushing concrete's capacity for realizing large spans. In the La Jolla Women's club, while the arcades are in concrete, the large meeting hall was constructed in lighter wood-frame, and the clear space spanned with wood trusses. In the Clarke House there is a measured use of the material's other capacities: plasticity, tensility, cantilever. For instance, in the elevations, Gill sets off large horizontal banks of windows against the massive and blank surfaces. Gill usually preserved the massiveness of the corners despite concrete's spanning capacities. This makes all the more curious the corner window built for Marie Clarke's bedroom. (Fig. 3.11) The construction drawings indicate that she had Gill revise the design to include space for a little desk and a corner window. The original plan for her bedroom shows no windows in the West side. Although hardly structural bravado, the corner window is significant, for it is one of the rare instances in Gill's work where he de-stabilizes the corner and allows for a transparent corner and a projecting roof plane.
Another use of the abilities of reinforced concrete was the clear span. The long span of the garage starkly contrasted the soft rhythm of the arches in the porte-cochere. Of the two, Gill seems to prefer a modulated and irregular elevation to the boldness of a square rectangular span. Gill's porte-cochere for the Clarkes was quite beautiful, the various heights of the respective arches indicate their function. The larger arch was at the scale of the automobile, the smaller doorway and rectangular window at the pedestrian scale; but more importantly the arches suggest the soft fluidity of the house. Gill's arches are more accurately roundhead openings. The arches serve to mark entry and passage and also lend fluidity to the otherwise blocky and awkward boxes. Gill wrote that the arch "is one of our most imposing, most picturesque and graceful architectural features. Its power of creating beauty is unquestionable, but like any other great force, wrongly used, is equally destructive." Less steel was required for a syncopated arched wall, than with the concrete frame. Esther McCoy further notes: "In Gill's arched opening, the forces are more evenly distributed and the opening could safely be larger than in a rectangular one." Gill justified the arch by the simplicity of its construction, the reduction in the amount of reinforcing, the reduction in the number of pieces (vs. post and lintel), and an economy of means and labor. The softness achieved by the arches extends to the columns in the patio. Its walls are blank and smooth, suggesting the massiveness of concrete. Gill, however, elevates these walls, disengages them from ground level by a perimeter arrangement of squat Tuscan columns. The tectonic logic is dissolved. He permits an even flow of space on the ground floor, as well as underneath the open projection balcony that hovers above the entry.

2 The set of construction drawings include one page of large-scale drawings by Gill which detail the typical wood frames and their connection to the concrete wall and the wood lattice sandwiched within the concrete wall.

3 Letter from Irving Gill to Richard Neutra, January 13, 1929.

4 Telephone interview with John Lumis, project architect for the Clarke House restoration, 1989.


6 Telephone interview with John Lumis, restoration architect for the Clarke House.

7 Ibid.


9 Esther McCoy interview with Louis Gill, Esther McCoy papers.

10 As early as 1907, Gill had used Julius Kahn Method of reinforcing his concrete buildings. The new reinforcing bar was developed by Julius Kahn (1872-1942) civil engineer, manufacturer, and inventor, brother of the Albert Kahn, famous pioneer of reinforced concrete and architect of industrial buildings for Ford in Detroit, Michigan. Julius Kahn sought to remedy the deficiencies of reinforcing systems then in use. The Kahn system used a rather complex bar, the Kahn Trussed Bar, a main bar and diagonal shear members which gave buildings an extra resistance against shear forces. It is not known how Gill was exposed to this system; (perhaps from the two buildings in San Francisco which used the method and had not collapsed during the 1906 earthquake). Gill used the Kahn system first in the Scripps Biological Station (1908-1910), the Homer Laughlin house (1907), and in the Christian Science Church (1909). The Kahn system required elaborate custom prefabrication to special shapes in the factory. With the advent of advanced welding techniques, it was to be later replaced by the simple ribbed steel bar.


12 Ibid.


15  Hatheway and Chase, Concrete in California, p.27.

16  Hatheway and Chase, Concrete in California, p.27.


18  Randy Chris Scott, "The Concrete House in America," Diss. University of Texas at Austin, pp.49.


20  Letter from Louis Gill to Esther McCoy, August 17, 1958.


22  Esther McCoy papers, Smithsonian Institution.
Fig. 3.4 Page from letter from Gill to Richard Neutra.
Fig. 3.5 Building detail plan of Irving Gill’s double wall concrete construction for Horatio West Court. 1919. also used in the Clarke House. (Neutra)
Fig. 3.6 Scripps Biological Station, La Jolla, Irving Gill.
Fig. 3.7 Scripps Biological Station, under construction. La Jolla. 1908-10. Hebbard & Gill. (Kamerling, 1993)
Fig. 3.8 Mary Banning House, under construction. (Concrete in California)
Cross-section drawing showing Gill's technique of thin-wall construction.

Fig. 3.9 (Kamerling, 1993)
Fig. 3.10 Detail, entry, Clarke House. (Photo: Sean Scensor)
Fig. 3.11 Corner window in Marie Clarke's bedroom. West elevation. Clarke house, Irving Gill. (Photo: Sean Scensor)
IV. MATERIAL ANALOGIES IN THE SOUTHLAND

Concrete in California

Although various experiments in concrete building technology were taking place in the United States during the first two decades of the century, Gill and his California contemporaries shared a unique passion for the material. The phenomenon that was concrete in California was the result of economic, climatic, and cultural factors. There were few resources for the lumber and steel industries in Southern California. The price of lumber had doubled between 1880 and 1905 caused by the timber famine in California. Steel was largely irrelevant in California, there being almost no need for buildings over six stories, which deprived steel's advantages for quickly erecting the light frame structure being exploited for the commercial architecture of the Chicago school. The costs of building in concrete stemmed from the lower cost of non-unionized labor. Concrete labor was not an established trade, and could undercut more expensive traditional trades of terra-cotta workers, bricklayers, and stone masons.

Such economic factors gave additional impetus to the propagation of concrete by the California Portland Cement Manufacturers, and the general public acceptance of concrete as a domestic building material. Ernest L. Ransome had been the key figure to pioneer reinforced concrete technologies in California during the late 1880's. His several large campus structures in San Francisco and Palo Alto showcased his adaptations of Francois Hennebique's techniques. Of Ransome's
innovations, most notably the 1884 invention of the twisted reinforcing rod, made reinforced concrete a "practical" system for the better-paid American labor.\(^3\)

The disincentives of using concrete were the complexity and novelty of its construction methods, and early opposition from the lobby of terra-cotta and other building material manufactures. The recognition of reinforced concrete buildings in the press began in 1901 with articles in *Scientific American Supplement* and *American Architect and Building News*.\(^4\) It had up until then been used for engineering purposes; its superiority for use in factories and bridges was generally acknowledged by 1905. From 1901, the debate over reinforced concrete unfolded in such national journals as *Cement Age* (est. 1904), *Concrete* (est. 1904); *Concrete Engineering* (1907) combined as *Concrete-Cement Age* in 1912. By 1907-8, after the San Francisco earthquake, the material was recognized as structurally valid and an excellent material for fireproofing. The issues then were the standardization of materials and specifications, the incorporation of the material into the building codes, and the question of the aesthetic expression of the new material. In the latter, Harrison Albright, John Galen Howard and Julia Morgan (UC Berkeley, 1903), Charles F. Whittlesey and Bernard Maybeck all played early roles in finding an aesthetic expression for concrete in California.

In Southern California, an architecture of smooth surfaces, solid walls against deep and shaded recesses seemed ideally suited to the strong light, clear skies, dry climate and the colorful landscape. Kevin Starr remarks that the passion for wood on the part of Berkeley's Bernard Maybeck and Pasadena's Greene brothers held a special meaning because of the scarcity of the resource: "In once treeless but now
tree-planted Southern California, wood, like garden displays of water amidst semi-aridity, possessed an especially symbolic value as an image of scarcity transcended." However, concrete symbolically pointed to something even more scarce in California: permanence. Reinforced concrete had an aura of being forever. The resilience against decay or destructive natural forces was exploited by its early promoters. With the immanence of earthquake and fire, life in California had a measure of precariousness to it, and the permanence of concrete would not have been missed on its uprooted and transient population. Finally, the formlessness of concrete, i.e. that it was perceived as having a virtually unlimited plastic potential for form creation, captured the imagination of architects. The use of advanced building practices in California was not, as for many of their European contemporaries, a bid to break with historicism. There was no such urgency in what was perceived as a raw and a-historical landscape. Neither did they presume any mechanistic view of concrete; the new techniques, applications and programs did not determine the form of modern architecture. Gill and his California contemporaries were involved in a wider exploration of aesthetic potentials for concrete, from its cultural and metaphoric associations.

An Ethic of Craft

Irving Gill’s passion for concrete was not determined by the technical determinates of the material. Concrete construction and techniques was always founded in his ethic of craft. An ethic of simplicity and honest use of rustic materials was explored by Gill and Frank Mead in their design for a cottage for Wheeler J. Bailey (1907) on the cliffs of La Jolla. Gill used California redwood in pieces large enough to display
the wood's natural grain, which he considered sacrilegious to stain or paint. The two-story interior of the Bailey house, whose centerpiece was a piano painted a flat Chinese red, was decorated with the client's collection of Indian artifacts, pots and rugs. (Fig. 4.1) Gill and Mead also designed furniture for the house: simple wooden chairs with cowhide seats. A chest of drawers "decorated with cutout chevrons and Indian stair-step designs" included rawhide pulls. Gill designed his own hand-hammered hardware e.g., barn-door hinges and simple metal rings as drawer handles. The craft was crude, primitive, and rustic. It used the simplest of wood joinery: the dovetail, the mortise and tenon. Again, Gill's craft for furniture as well as for buildings involved the reduction of the number of parts, a sincerity in the use of materials, and an overall simplification of the building process.

The work of Gill and Mead was part of the burgeoning of the California Arts and Crafts movement, c. 1906-1914. The Craftsman (1901-1916) published by the furniture designer and manufacturer Gustav Stickley, (who was called the "American William Morris") published several articles on Gill's work. Gill was also from Syracuse where the magazine was published. Stickley promoted the California architecture of the Greene brothers in Pasadena, but notwithstanding the image of an alpine woodsy cottage, Stickley also favored a monolithic aesthetic for Californian building materials: "The Californian country-house should be a one-story building, and to be still further consistent, tile and clay, or cement, which has replaced clay should be used as materials." Stickley noted the importance of concrete for residential architecture. Left unfinished, it gave the impression of a primitive building substance, and the neutral tone of concrete harmonized well with the light
and color of its surroundings. The arts and crafts interest was not in concrete per se, but in the monolithic aesthetic that concrete (as well as stuccoed wood frame or a number of hybrid constructions) provided.

The Spanish Missions and the naïveté of construction

The fascination with the monolithic aesthetic had two earlier sources. The literary romanticism of Helen Hunt Jackson in Ramona (1884), among other texts had exploited secular adobe architecture and the romantic image of the Spanish missions. Literary figures such as Charles Fletcher Lummins and George Wharton James, (who had been co-editor of the Craftsman), propagated the authenticity of these romantic images in their competing anthropological travel accounts of the Southland. Though rivals, they both vied that California could only be authentically rooted to its past if it sought a new architecture based on its true Hispanic origins. This literary popularization of the missions extended to architecture, which could provide tangible form to these origins; Spanish missions came to be widely exploited into a regional style known as Mission Revival, c.1890-1915. Gill's architecture, which looked to the Spanish missions (Fig. 4.3), was very favorably mentioned by James in his California Romantic and Beautiful (1914). James praised the virtues of Gill's work as an authentic adaptation of California traditional architecture:

Early impressed by the wonderful adaptability of the architecture of the Missions to the climate and scenic environment of California he sought, not as so many architects have done, to imitate or follow after in their work, but to absorb from the original sources of their inspiration.10
Missions were exemplary types because the "style has grown up spontaneously, exuberantly, naturally upon our soil." They were not trained nor experienced; they were not architects. They built adhering to a vague memory of Spanish churches, and the divine as revealed in Nature's forms which was the source of their inspiration. As James wrote: "No one can criticize a straight line, a circle, a sphere, an oval, all other 'natural' forms. They are natural, but also divine, and therefore perfect." The missions were constructed with the crudeness of unskilled local labor; their simplicity was spontaneous. Gill's romanticism was not among the literary attempts to turn the images into a regional style. He considered such abuses of the Mission styles to be a sham. However, Gill wrote romantically of the beauty of the missions:

California is influenced, and rightly so, by the Spanish Missions as well as by the rich coloring and the form of the low hills and wide valleys. The Missions are a part of its history that should be preserved and in their long, low lines, graceful arcades, tile roofs, bells towers, arched doorways, and walled gardens we find a most expressive medium of retaining tradition, history and romance.

To Gill, however, the primary beauty of the Spanish Missions was their "meaning and definite purpose - that of supporting the roof or the second story and thus forming a retreat or quiet walk for the monks." He was thus inspired by their authenticity of construction which originated from simple considerations of use. Concrete and stucco were the materials in Southern California that had the most overt and romantic associations with the adobe of the Franciscan Missions. What was important was to build in their spontaneous and 'naive' way. This led to a conflation of concrete for adobe. The material analogy of concrete for whitewashed
mud-brick was the central tenant of the Mission Revival in California. However, mud-brick adobe was a unit construction process less akin to a process of pouring concrete wall than a brick wall. Not only could concrete be mistaken for adobe but a wood frame system covered with stucco could pass for solid monolithic concrete. This series of material imprecisions was part of a larger confusion in the American public's perception over just how houses were constructed. The terms concrete, cement and even plaster were used interchangeably by writers and professionals; and local designers commonly used the term cement plaster when referring to stucco. The imprecision of terms reflected the heterogeneous systems used in the region's conventional construction methods: hollow-tile, wood frame, plaster, stucco. The so-called "concrete house" was constructed from a number of hybrid systems which most often took on the formal appearance of monolithic concrete. The conflation of concrete and handmade adobe during the first decades of the century constituted a nostalgic yearning for the pre-industrial era.

The promotion of Gill's concrete houses in Gustav Stickley's Craftsman magazine belies several apparent contradictions. Gill's handcrafting of concrete, a material he found "more wonderful than clay," and his attention to surface, finish and color were at apparent odds with the precast construction systems he employed. Gill's works reconciled arts and crafts ideals of dignity, simplicity, and reform, with industrial materials and processes of prefabrication. While he worked to improve labor-saving techniques he also sought to integrate them with labor-intensive building practices. Gill designed furniture with leather pulls and hand-beaten iron hardware and at the same time experimented with central vacuum systems. Gill saw no contradiction.
He was less interested in the sentimental appeal of the Missions than in their constructional simplicity and their economy of means, labor and materials. After all, Gill had direct empirical knowledge of the Missions' construction. In 1900, Hebbard and Gill had worked on the stabilization of the Mission San Diego de Alcalá. (Fig. 4.5) The commission was sponsored by the Landmarks Club of California, an organization founded in 1895 by Charles Lummis to preserve several of the deteriorating Southland Missions. Hebbard and Gill's work involved strengthening the walls by removing pieces of adobe along the bottom and the sides and filling in the weak portions of the walls with new material and plaster. They also protected the gable by covering it with cement. Gill's first cottage for himself in 1904 had a curvilinear roof comb that was a tribute to the Missions. He also explored the plastic qualities of concrete in his St. James chapel in La Jolla (1907-8). (Fig. 4.6) With its low sweeping curves he sought to achieve the "fluid uniformity" of Mission adobe walls. Yet, testifying to his uncle's admiration for the Missions, Louis Gill wrote, "He was much impressed, not with their sentimental appeal or the heaviness of the construction, but with their straightforward simplicity, the economy in the use of materials and their frank declaration that buildings should be made for use." Gill's reference can be better seen to be an embodied symbol of the pragmatism and morality of the missions, which was more subtle than any direct historical quotation.

The Panama-California Exposition (1915) in Balboa Park, San Diego, was the turning point for Gill. He had been initially proposed as consulting architect to the project but in a "turn of political intrigue," had been pushed out by the organizers.
Betram Goodhue was instead chosen, who promoted the romantic Spanish colonial styles, especially the Churrigueresque. The exposition turned the tide of popular taste in architecture away from the austere simplicity of the Mission Revival, and the craftsman rustic ideals. "Ironically, 1916 [the year following the fair] also marked the bankruptcy of Stickley's Craftsman empire and the beginning of the end for Gill." Under these circumstances, he moved from San Diego to Los Angeles in 1912. He left his San Diego office to his nephew Louis Gill, in order to work on the industrial town of Torrance, with the Olmsted brothers, landscape architects from Massachusetts.

R.M. Schindler in New Mexico

It was in 1915 that the recent émigré to America, Rudolph M. Schindler, met Irving Gill for the first time, while traveling by train to New Mexico, Arizona, and California. He was disappointed with most of what he saw, until he came upon the adobe architecture of the upper Rio Grande Valley. He recorded these enthusiastically through a series of notes, photographs and drawings. He wrote that the Indian pueblos and the traditional casas were the first buildings he'd seen in America "...which have a real feeling for the ground which carries them." R.M. Schindler and Neutra saw Hispanic/Native American pueblo tradition of the Southwest as this country's equivalent of the folk traditions of Europe and the Mediterranean. Similar to the Missions, the Pueblo architecture of New Mexico had similar romantic associations and methods of construction. Both were built of mud brick adobe, and were distinguished by an overall simplicity and starkness of
form. Yet while the Spanish Missions were coming from a lineage from Europe through the Franciscan friars, the Hopi pueblos were potential exemplars of an ancient indigenous American architecture. The Hopi Indians represented a primitive and unknown origin to America, whose history had been largely forgotten. Ruins of the pueblos which scattered the semiarid region of New Mexico suggested for America origins outside those of Europe. The pueblo was essentially a village formation of terraced buildings amassed together. (Fig. 4.10) The Hopi method of building was equally revered for its primitive yet authentic nature: "These people were portrayed as industrious farmers and skilled craftsmen. fervently religious and lovers of peace and tranquillity."21 By the late nineteenth century, the pueblos were being discovered, and "venerated as the original American architecture."22 Most California architects trying to evoke the spirit of adobe shied from the primitiveness of its technique, and preferred to mimic its appearance through the use of concrete.

In 1915, Schindler designed a project for a country home in adobe for T. P. Martin House at Taos, New Mexico. (Fig. 4.7 - 4.9) With its low forms hugging the earth, the house took on the plastic character of adobe pueblos. Such primitive gestures were coupled with a more formal planning arrangement characteristic of the Spanish patio houses. In fact, the typical New Mexico house was a hybrid configuration of Spanish plan and an overall adobe-like mass. The one- or two-story plan configured around an open patio evidently better suited modern living conditions than did the stepped configurations of the pueblo. Schindler literally built the Taos house in adobe brick, explicitly evoking the primitiveness of the Hopi tradition, and layering the patio type with an indigenous method of construction.
While Gill looked primarily to the Spanish missions and Schindler to the pueblos of the Hopi Indians of the Southwest, they both shared a search for an indigenous and authentic building and craft. The Clarke House was similar to the hybridization embodied in the Taos house. It too was planned around an open patio and cloister. Like the Mexican house, it had a second court for the kitchen and servants. Gill's concrete monolithic walls, though not in adobe brick, evoked the sense of adobe's rootedness in the landscape, its stark surfaces against the landscaped gardens and the strong sunlight.

**Los Angeles, 1920**

Given the relatively recent discovery of the Clarke House as Gill's work, it would be instructive to test the house in the context of specific contemporary experimentation with the "idea of concrete" in California. In the period from c.1919-1921 Frank Lloyd Wright, his son Lloyd, and R.M. Schindler all worked at various stages on the art community for Aline Barnsdall at Olive Hill (1916-1921); R.M. Schindler and Clyde Chase on the King's Road Studio Court (1921-2); and Irving Gill on the Horatio West Court (1919) and Clarke House (1919-1922). Their experiments were interlinked despite the rank independence and the personal mythologies surrounding at least both Wright and Irving Gill: that they worked in a vacuum. It should not be surprising that there was cross-fertilization of ideas, given the close proximity of their major projects in Los Angeles.

By 1920, Los Angeles was not a city as such, but a conglomeration of towns; Hollywood (whose population in 1920 was 36,000), Pasadena, Santa Monica, and
smaller communities like Torrance, Sierra Madre, Santa Fe Springs and Rivera, were separated by open lands. During the decade, Los Angeles was to see a rapid period of expansion which peaked from 1920 until 1924. The development of automobile travel and all-weather highways, the tourist trade, the romance of the oil and motion picture industry were key factors in the great migration, in turn spawning the real estate boom of the twenties. Almost 1,300,000 people moved to Los Angeles County in the decade.

The period from 1919-22 was a difficult time for Irving Gill. He had just dissolved his partnership with his nephew Louis. Their last collaboration was the Catholic church in Coronado (1919-1920), for which Louis Gill finished the working drawings. (Fig. 4.11) Gill had few commissions at this time, and few projects under construction, aside from a duplex in Pasadena (1919-1921), and the Chandler apartments in Santa Monica (1921) which he worked on with his short time partner, Pearson. The Clarke House job would have been a welcome source of income, yet it was to be the last major project Gill worked on before closing his office in November 1922, after which he went looking for work as a draftsman.23

From 1919-21, Gill had been working with a builder named Clyde Chase. It was at R.M. Schindler's suggestion that Chase had come to Los Angeles to work for Gill, drafting, estimating, and contracting.24 Chase, originally from Kansas City, Missouri, was trained as an engineer, and worked with Gill as the contractor for the Horatio West Court. According to Kathryn Smith, the Chases had even rented a house with Gill, while the two worked together in September 1921.25 Since Gill's
largest project at the time was the Clarke House. Clyde Chase certainly worked on its construction, and the development of its novel construction methods with Gill. Subsequently in 1922, when the construction of the Clarke House was almost complete, Chase left Gill's office to start an independent office as an engineer and builder.

It was then that Schindler and Chase, and their wives Pauline and Marion, proposed to build a double studio-house. (Fig. 4.12 & 4.13) The site in West Hollywood was on North Kings Road between Santa Monica Boulevard and Melrose, a beautiful street lined with fine old live oak trees. (Aldous Huxley later lived on the street for a while, as did the actress, Jane Wyatt). A short distance away, on the opposite side of the same street was Gill's house for Walter Luther Dodge. Dodge had in fact sold the 100 x 200 foot property to the Schindlers for their studio in November 1921. Schindler and Chase began construction in April 1922. Schindler's design was a radical interpretation of the California patio house type. Schindler's final design was for an arrangement of studios in three L-shaped sections configured around three patios, resulting in seven outdoor zones. Schindler radicalized the theme of outdoor living spaces to the extent of almost obliterating the functional differentiation of rooms, the boundary between indoor and outdoor, and the difference between building, terrace and garden.

The concrete slab-tilt system devised by Schindler and Chase for the King's Road court was no doubt the result of Chase's experience with Gill, an adaptation of the latter's tilt-up system. (Fig. 4.14) The principle of construction was the same: units poured on a horizontal surface and then tilted into place. Schindler made significant
modifications in order to simplify the process, minimize the equipment required, and economize on labor (their own) and material. Instead of casting whole walls, Schindler's wall units were much smaller than Gill's, and they were cast directly on the floor, and then tilted up by means of a derrick with a block and tackle easily handled by two men. The wall slabs were also graduated in thickness towards the top to save material. A three-inch space between wall units was filled up with concrete, or left partially open for glazing.

In the King's road studio, Schindler refined his earlier literal references to primitive Hopi adobes in the Toas court house (1915). Instead of actual adobe, monolithic concrete is left exposed, a single material for thick outer walls. Schindler described that "the resulting wall has all the repose of the old type masonry wall, without its heavy confining qualities. It permits air and light to filter through the joints, wherever they are kept open." The exterior concrete wall becomes a shell for the plan's spatial continuity. The house was "a simple weave of structural materials which retain their natural color and texture throughout." Schindler had played an experimental use of canvas and wood off of concrete to evoke a rustic primitive way of living. He employed sliding canvas doors as informal screens which dissolved the inside and outside spaces. He reinterpreted the ground by making the floor slab level with the patio and by terracing the garden.

Schindler abstracted the picturesqeness of the native Indian dwellings and coupled these with his explorations of new technologies and materials. The repetition of elements suggests the efficiency of serial production and prefabrication even more
than Gill's systems. Yet Schindler harkened back to pre-industrial primitive building techniques in adobe, even using empirical yet advanced practices, such as the slip-form system in the Pueblo Ribera Court, (later called the "Indian village") in La Jolla (1923). In these projects, Schindler used solid reinforced concrete, and he left the material in its natural state. Despite the experimental and progressive unit systems used at King's Road and Pueblo Robera, Schindler often ignored functional and programmatic concerns, and unfortunately was never able to account technically for the vision of his buildings. He became frustrated with concrete, and in his later career, he reverted to light wood-frame construction. Schindler's work like Gill's was based on empirical research, on a return to first principles of architecture, and a self-imposed constructional naiveté. This meant a return to pre-industrial building techniques, but more importantly to use concrete as a means to make allusions to traditional and indigenous building practices.

Schindler's fluid and informal planning in the King's Road Court certainly contrasts with Gill's much more formal Clarke House. But they share in their reference to the Hopi adobes. When it was built the Clarke House was referred to as "a fireproof house in the Hopi style." The allusions to pueblo were in part due to the scuppers which Gill had punctuate the smooth walls, which mimicked the characteristic projecting wood vegas. The connection to the Hopi can be extended even to the exterior profile which, typical to the Pueblo, was a picturesque massing of cubic volumes. The exterior walls were marked by its irregularity of profile and window distributions, which was the antithesis to both the industrial construction processes Gill used, and to the symmetrical formality of Gill's patio plan. The concrete
elevations symbolize the economy and authenticity of adobe, but exploited advanced construction techniques. Like Schindler, Gill's stepped massing can be seen as a reinterpretation of the ground.  

_Casa Grandes_

R.M. Schindler arrived in Los Angeles in December 1920, from Frank Lloyd Wright's office in Wisconsin. During the absence of Wright, who was involved in the design and construction of the Imperial Hotel in Tokyo (1916-22), Schindler came to supervise the construction of the "Hollyhock" house for the oil heiress, Aline Barnsdall, the first of several buildings to be built at Olive Hill. Gill and Wright knew each other of course. From 1891-93, Gill had worked for Adler and Sullivan's office in Chicago where Wright was chief draftsman; both worked on the Transportation pavilion for the Colombian exposition. Bruce Kamerling notes that Frank Lloyd Wright's design for a cinema facade may have been for the same site on which Gill built the Pickwick Theater in San Diego in 1904-5. Gill and Wright were also connected through Wright's son John, and the sculptor Alfonso Ianelli. John Wright had worked in the office of Harrison Albright in the design the Golden West Hotel in San Diego (1913). The building was built in reinforced concrete, and Alfonso Ianelli was responsible for making the cast-concrete sculptures. In the following year, Ianelli executed the extensive sculptures in Wright's Midway Gardens in Chicago. Ianelli and Gill were also later to collaborate on the design of a tower project for Mission Beach. However, the most important link between Wright and Gill was their "common son" so-to-speak, Lloyd Wright. Lloyd had come
east to San Diego in the fall of 1911 (with his brother John) as a landscape architect with the Olmsteds. Lloyd joined Gill's staff of about seven draftsmen in the spring of 1912 to work on the planting for the industrial town in Torrance, and remained with Gill until 1915. Although Frank Lloyd Wright had visited his son in California in 1915 during the Panama-California Exposition, it is not known if he met Gill during that trip.

Gill's Clarke House and Frank Lloyd Wright's Barnsdall House were co-temporaneous. The design of the Clarke House was completed by December 1919, with construction beginning in 1920 and completed by 1922. Wright had designed the Barnsdall house and theater as early as 1916, the foundations were laid by January 1921, with construction completed (or rather abandoned) by October 1921. Spanning over five years, Gill must have surely known of the Barnsdall commission through Schindler and Lloyd Wright, who worked on the landscaping. Both houses were intended to capture the romance of California. For the Clarke House, it was the romance of the California citrus groves and the Clarkes' travel; for Aline Barnsdall, "because of her dual role as head of a proposed dramatic company and of her own family, [the] house needed to be theatrical and luxurious,”35 as both houses emphatically were.

Aline Barnsdall was the heiress to one of the greatest oil fortunes in America. She likely knew Marie Clarke, who was active in the civic life of Los Angeles, through social circles. Considering Aline Barnsdall's involvement with the theater in Los Angeles, she would certainly have known of Marie Clarke's involvement in 1919-20
with the Arts Alliance, then in the first stages of buying the land for what was to be Los Angeles' largest amphitheater: the Hollywood Bowl. This was during the design and construction of their respective mansions.

The sheer formality between the houses is striking. Both were configured around a large private u-shaped court, with the third side enclosed by a bridging element. (Fig. 4.16 - 4.18) The planning was highly formal and in both cases a central axis extends through the house beginning and ending with small pools of water at either end: one circular, the other square. Both courts formed a theatrical quadrangle, and were used as outdoor projection rooms for silent movies. In the Clarke House, a balcony with low horizontal proportions, bridges over the entry steps and forms a proscenium arch to the court. Gill's balconies in the courtyard were like theater boxes; Wright had provided a stage element above the loggia. Gill had a minor axis along the dining room cloister which allowed secondary access to the court; similarly at Hollyhock, "the performers could enter from concealed locations." While at Hollyhock, the stair to the roof terrace spills into the courtyard, and became a sculptural figure, Gill's curiously small spiral stair is tucked in the very corner of the court.

The court of each house was an outdoor room bounded by folding glass doors, planter boxes and transitional zones. Gill's rhythmic cloister corresponds to Wright's flanking colonnade and pergola. Both courts had a loggia at one end. (Fig. 4.20) In the Clarke House, with its folding glass doors pushed aside, the dining room would became a loggia to the garden. The open loggia would allow the free flow of space,
and the gardens to fully penetrate into the house. Folding plate glass doors could also open up the East wall of the court to the entry garden and pool. Despite the large open courts in both houses, enclosure is preserved by mostly solid walls around the court, emphasizing, despite their spaciousness, a pervading sense of privacy. On the exterior, both were monolithic and formal, with projecting porte-cocherees in the front. In the Clarke House, the front door was conservatively placed in the center of the porte-cochere, and marked by an arch, while at Hollyhock the entrance was via a colonnade to the building's side.

Although there is no definitive proof, it is probable that Wright originally intended the house to be build in reinforced concrete. The prohibitive cost and the ambitious design required the construction to be in fact a combination of wood frame, hollow tile, and stucco, with copings, lintels, sills, columns, and ornament cast in "art stone." However, the monolithic appearance prevails, which led to the widely held misinterpretation that the house was built of solid concrete. Wright's design was for the outer walls of the house to be stained to "a light gray-green, 'lighter than the cast stone' Lloyd Wright said 'for contrast.' The color was meant to suggest the subtle tint of olive leaves." A contemporary article described the color "as near an approach as possible to the silver green slopes" of the site. The walls were thus stained in September 1921.

The cement in the Clarke House patio, and possibly the cement-stucco over the whole exterior, was tinted with a light gray-green. In the Clarke House, the large pre-Columbian motif incised into the magnesite floor of the patio, as well as the
"Mayan" concrete flower boxes were possibly included at the insistence of Marie Clarke. The Clarkes had certainly seen pre-Columbian architecture during their travels through Mexico, and there is no direct evidence to connect the overt references to the Maya with Wright, but he does remain a possible source.

The casting of leaves and other plant material into the concrete walls of the Clarke House has been puzzling to historians of Gill, who have dismissed them as an indulgence of Mrs. Clarke, or as Gill's momentary lapse into decorational temptation. Of the architects who pioneered the rediscovery of concrete, it was their goal to incorporate nature literally or figuratively into concrete, which each saw as a return to the natural material. Schindler and Chase had cast leaves and twigs in some of the concrete panels for the King's Road studio, to give the wall a natural texture. Wright wrote of resurrecting the concrete block in order to "find a hitherto unsuspected soul in it - make it live as a thing of beauty- textured like the trees."

He continued that "the building [Millard House] would be made of 'blocks' as a kind of tree itself standing at home among the other trees in its own native land." Gill allowed the use of the leaf, but it would have been against Gill's principle to turn the leaf into a design motif as Wright had done with the stylized hollyhock flower in the Barnsdall house. Wright's Hollyhock iconography became the unifying theme of the house, appearing in the broad frieze around the exterior and even in the furniture.

The profile of the Barnsdall house is massive with a weight and monumentality that evokes a deeper connection to the solidity of the earth. As Kathryn Smith notes:
A clue to Wright's intention to create a reference to an architectural mountain can be found in all the drawings made for Barnsdall before her acquisition of a site. Wright placed the building, theoretically designed for a flat lot, in an imaginary setting on axis with the base of a gently sloping mountain. (Fig. 4.22)

Even when the site of Olive Hill was selected, Wright perceived the house itself as a symbolic mountain in keeping with his admiration for Meso-American pre-Columbian architecture: "gigantic masses of masonry raised up on great stone-paved terrain, all planned as one mountain..."

Irving Gill was committed to a similar theme. Around 1915, Gill made designs for several unrealized apartment projects in Los Angeles for a former client, Homer Laughlin. The most remarkable version of his "Casa Grandes" projects was a perspective drawing showing seven cubic structures with gardens built on the terraced side of a hill. Each house had a symmetrical three-story central core, assembled with abstract irregular pieces of different heights, and very large recessed openings. The terraced gardens with retaining walls were flush with the entry to the houses (with garages at the lower levels). The scale is monumental; the construction appears to be of reinforced concrete. The massiveness of the blocks is emphasized by the canting of the walls towards the top. The houses and landscape merge together in powerful gesture, which had a number of possible allusions: to Mediterranean seaside hilltowns, to pueblo terraced villages, or to the archeological ruins of pre-Columbian temple precincts. Concrete masses planned as one mountain was not far from Gill's intention in the stepped irregular profile of the Clarke House. The Clarke House with its court open to the sky, and its assemblage of cubic masses spoke less about any formal decomposition of the cube, than of the
reinterpretation of the ground. The resemblances between Wright's front elevation for the Barnsdall house and the stark front of the Clarke House, both with a heavy blank attic story cannot be missed.

The parallels between Krankhaven and Hollyhock are not drawn to suggest any mimicry by either architect. Rather these projects show the interconnectedness of their experiments, and more interestingly their respective ambivalence to concrete as a material. For neither the Wrights, Schindler, nor Gill was form fully determined from the material or the methods of reinforced concrete. Wright in fact later recanted on the "sham" construction of Hollyhock. Wright had after all designed and built in 1906, the first completely monolithic integral reinforced concrete structure, roof, walls, floors, jambs, details, ornament, and foundations in the Unity Temple. Wright wrote:

I should say that in this plasticity of concrete lies aesthetic value. As an artificial stone, concrete has no great, certainly no independent aesthetic value whatever. As a plastic material - eventually becoming stone-like in character - there lives in it a great aesthetic property, as yet inadequately expressed.\textsuperscript{43}

Wright was an important advocate of concrete, but he preferred to exploit the "expressive" nature of various materials. Whereas Gill sought out the "idea of concrete" and reinterpreted its special meaning in California. At Hollyhock, Wright's primarily goal was not the study of one material but the creation of romanza. The construction materials became the means to Wright's mastery of iconography.\textsuperscript{44} The strong narrative and figurative content of his multiple allusions
is concentrated in the bas relief of the fireplace with its allusions to natural cycles, cosmic forces and Nature's four elements. (Fig. 4.19)

Wright's planning of Hollyhock was fluid and spatially masterful. Gill's hand was generally stiff, his planning of rooms sometimes awkward, and his detailing at times rather clumsy (e.g., his use of poché in the plan to make certain walls appear thicker). Gill was not interested in the design of the total living environment complete with furniture, fixtures and wall-fittings like Wright. Gill was no master of synthesis nor space. The Clarke House exemplified a more abstracted notion. Gill not only distilled the design to a few basic singular elements, the cube, arch, patio, column, colored floor, even the leaves, but rarefied these to lose any particular reference.

While Hispanic-native imagery enters into Gill's work, it would be wrong to relegate the Clarke House as a mere synthesis of elements: from Pueblo to Mission-Revival, abstracted according to an European "cubism." The Clarke House contained certain references to adobe construction as well as to pre-Columbian architecture as mentioned above, yet the house resists eclecticism. It was about a return to origins, symbolizing the founding of indigenousness for the intransigent new population. The Clarke House was less about romanza than Hollyhock, than about establishing permanence. That is why it was a cruel irony that the noises and smells of oil production forced the Clarkes to abandon their fireproof mansion, which was built from the material which was to last forever.
Charles deKay, "Villas All Concrete," *Architectural Record*, February, 1905.

Gill's tallest building was the Wilson Acton Hotel in La Jolla (1907-8) of six stories.


Wharton James, p.401.

George Wharton James, p.400.


Esther McCoy notes of interview with Louis Gill, Esther McCoy papers, Smithsonian Institution.


23. From November 1922 to January 1923, Gill worked as a senior draftsman by the architect, Horatio Warren Bishop to work on houses for the Carthay Center project in Los Angeles. (Letter from Bishop to Esther McCoy, May 13, 1966, in the Esther McCoy Archives, Smithsonian Institution).


26. Theodor Dreiser also lived on the street, and had used the extensive trellised walks on the grounds of the Dodge house as a setting for scenes in his last novel, *The Bulwark*, published in 1946, a year after his death.


32. In 1914, Gill's former partner Frank Mead, and Richard Requa designed a guest cottage next to the Gill and Mead house for W.J. Bailey of 1907. The cottage was in the pueblo-style and called Hopi House complete with exposed beam ends and a ladder. The interior featured Hopi Indian blankets, rugs and furniture some of which Bailey had collected.


38 Hollywood Citizen News, September 2, 1921.


40 Kathryn Smith, Hollyhock House, p. 43.

41 Frank Lloyd Wright, A Testament, in Kathryn Smith, Hollyhock House, p.43.

42 The drawing was included by Esther McCoy in the catalogue for the 1958 Irving Gill retrospective at the Los Angeles County Museum.

43 Frank Lloyd Wright, In the Cause of Architecture, in Kathryn Smith, p.120

44 The motifs would give way to pattern in Wright's later concrete textile block. In the four concrete-block houses in Los Angeles area, Wright returned to reinterpreting concrete as a constructive system, in the search for an organic synthesis of form and construction through the textile block. Wright's blocks became "the structure, skin inside and out, and the pervasive ornament." In the Freeman House, the blocks' asymmetric composition represented even the building on its triangular site, and also formed a basic module for the building.
Fig. 4.1 Interior view and detail. W.J. Bailey house. La Jolla. 1907. Irving Gill.
(Kamerling, 1933)
Fig. 4.3 Bentham Hall. Bishops school. 1909. Irving Gill. (Kamerling)
Fig. 4.4 Mission San Diego de Alcalá, founded 1769. (Elder)

Fig. 4.5 The Campanile of San Gabriel, founded 1771. (Elder)
Fig. 4.6 The St. James Chapel, La Jolla. 1907-8. Irving Gill. (Photo: Marvin Rand)
Fig. 4.7 Perspective of T.P. Martin House, Taos, New Mexico. 1915, R. M. Schindler. (Gebhard, 1971)
Fig. 4.8 Plan for T.P. Martin House. Taos, New Mexico, 1915. R. M. Schindler. (Gebhard, 1971)

Fig. 4.9 Perspective view of patio. T.P. Martin House, Taos, New Mexico. 1915, R. M. Schindler. (Gebhard, 1990)
Fig. 4.11 Sacred Heart Church in Coronado, 1919-20. Gill & Gill. (Kamerling, 1993)
Fig. 4.12 View of King's Road House. Hollywood. 1921-2. R. M. Schindler. (McCoy, 1960)

Fig. 4.13 Plan of King's Road House. Hollywood. 1921-2. R. M. Schindler. (Gebhard, 1971)
Fig. 4.14 View of King's Road House, under construction. Hollywood, 1921-2. R. M. Schindler. (McCoy, 1960)
Beach Cottage, La Jolla, Calif. Mead & Requa, architects. (From: W. J. Bailey, Western Architect. 29. June 1920, plate 4.)

Fig. 4.15
Fig. 1.16: View of interior courtyard, looking West (above), looking East (below).
Hollyhock House, 1916-21, Frank Lloyd Wright. (Smith)
Fig. 4.17 Interior patio, looking West (above), looking East (below). Clarke house, Irving Gill. (Kamerling, 1993)
Fig. 4.18 Plan, Hollyhock House, 1920. Frank Lloyd Wright. (Hitchcock)
Fig. 4.19 Detail of fireplace. Hollyhock House. (Hoffmann)

Fig. 4.20 View of loggia. Hollyhock House. (Hoffmann)
Fig. 4.21 Section. Hollyhock House. (Smith)

Fig. 4.22 Elevation study. Hollyhock House. (Hoffman)
V. ARCHITECTURE AS NATURE

(Photo: Marvin Rand)
The Restoration of the Clarke Estate

In 1989, the Clarke House was extensively restored. When Marie Rankin Clarke died in 1948, the Clarke House was inherited by three heirs. Of these, James E. Siemon lived in the house through the 1950's until 1986, when it was purchased by the City of Santa Fe Springs as a historic landmark. By the time of the restoration, the house required various structural upgrades. For example, since the wood-framed roofs were set on ledges in the parapet walls and not embedded, they were seismically inadequate. The 1989 restoration included reroofing and waterproofing the concrete roof slabs, improving the drainage, refitting the mechanical, electrical and plumbing services, as well as re-landscaping the grounds. Many of the concrete paving stones were also replaced. In order to make the house viable as a venue for meetings, wedding receptions, and other special events, the interiors walls were extensively re-appointed and the entire house re-furnished. A pergola, and an access ramp was added to the South service entrance, as well as a new entrance gate. In 1986, although in some disrepair the superstructure of the house was relatively intact. James Siemon had the square pool in the West garden enlarged in the 1950's, but there had been virtually no major alterations or additions made since 1922.

The textured white stucco finish which now appears on the exterior walls was not original, but added during the 1989 renovation. Because Gill used a board formwork, the poured concrete walls had a very rough finish. Onto this Gill applied
a skim-coat of cement. Sometime during the building's history, a layer of stucco was applied to the building which had subsequently deteriorated. Informal tests by the restoration architects revealed a layer of light bluish-green paint with the cement's natural gray color behind the stucco. According to Gill's letter to Neutra regarding the "Gill System" of construction used in the Clarke House, the explicit goals were to prevent condensation or "sweating" on the inside surface of the concrete, to avoid cracking of the cement, and do away with exterior painting. Unfortunately, material and color analyses were not done in 1989 to determine the original 1922 wall finish.

Given the interests of both Gill and Marie Clarke in landscape gardening, they would have both wanted a house to appear raw and natural. However Marie Clarke must have shared Aline Barnsdall's apprehension as the latter wrote to Wright: "I don't want it to look green, but to feel green as a background for the rich hollyhock and rose reds." Gill invariably painted his window and door frames a dark green. We get a more accurate idea of Gill's intentions in the patio where the light green in the concrete surfaces and the magnesite floor in the patio are closest to their original state. We know that the wooden decorative balconies now painted a persimmon red were a revision to the original intention (Fig. 1.27), shown in the construction drawings, which was for these to be low flower boxes, also in concrete.

New Ideas For Concrete Floors

In a 1915 article, "New Ideas About Concrete Floors" in Sunset magazine, Gill promoted concrete for domestic uses. He sought to revise the popular
prejudice against this largely despised material, which even after 1900 was seen to be most appropriate for sidewalks and factories. Whereas Gill’s work often rhetorically emphasized concrete’s mass and solidity, his writings revel romantically in the material’s formlessness and plasticity:

Before it has set, cement is a wonderful plastic material, more wonderful than clay. It can be colored, molded, shaded, surfaced and then of itself hardens into an everlasting expression of the workman.

It takes the knack or the inspiration or the gift - whatever its name - that differentiates craftsmanship from mere mechanical perfection, that raises the artist above the artisan, to make a cement floor a thing of beauty it can and should be....

Cement... will not come into its own until architect and workman study them as an art.  

Gill wanted to “rediscover” a craft tradition for concrete construction, which had no such tradition. He professed the integrity of the material, and warned that concrete should not be made to imitate stone, "...should not be scored or marked off into squares or designs," nor should concrete floors be covered up with wood, but with rugs. He added that when properly laid, waxed and polished concrete floors were ideal for dancing. Gill romantically described the beauty and mystery of the technique of laying a concrete floor, especially at the moment when it was given color and polish. Eloise Roorbach, a journalist contemporary with Gill, tells of the curious sight of Gill and his nephew each on their hands and knees, mixing color into the wet cement in an early cottage, because none of the workmen was willing to do it. Gill described his art thus:

Instead of using paint I mix color with the cement, usually tones of red and yellow, red and brown or yellow and brown slightly mottled. Tempered by the gray of the cement these colors produce neutral tones that are a splendid background for rugs and furniture. When quite dry, the cement should be
cleaned with a weak solution of ammonia and water, given two coats of Chinese nut oil to bring out the color, then finished with a filler and waxed like hardwood. Well done, this treatment gives an effect of old Spanish leather. 7

Color for Gill was not appliqué, but rather made integral with material. He often used a dark green polished magnesite for floors, offering more dramatic contrast to the bright sunlight. Indeed, the floor slab in the Clarke House patio was similarly tinted green. It was recalled that Gill used 1,000 egg whites to cure the magnesite, and achieve the hard polished surface! Since all the floors throughout the Clarke House were finished with cement, colored, "rounded into walls, waxed and waterproofed, 8 these would have enlivened the rich colors of the Clarke's tropical plants and flowers, and their oriental carpets. (Fig. 5.1)

Gill sought a similar, yet more subtle effect in the interior walls of a house. This was achieved by the mixture of white wall paint with the three primary colors, "blended to a pregnant neutrality." 9 "By varying the proportion of the pigments, a wall could be keyed to the blues, the violets, or any color he wished." 10 Gill consistently used this device for his interiors as early as 1900. and it is highly probable that he used the same system in the Clarke House. although during the restoration, color analyses were not carried out on the interior walls or cement floors. Eloise Roorbach wrote that Gill's interior walls took on the color of their surroundings, which gave the effect of "living in the heart of a shell." 11 Gill also liked to mass red geraniums near windows, "which took a second blooming upon the walls." 12 With such devices, Gill sought to preserve concrete's plastic nature: it would continue to reflect the colors of exquisite objects and flowers. The changing
patterns of the California sunlight would "dance on the walls." In his attention to color and surface, Gill looked to make concrete work a craft akin to ceramics. Yet this handcrafting of the material was at apparent odds with the precast construction systems he also advocated. It is this irreconcilability of opposing tendencies that explains, at least in part, why Gill's investments in the concrete building trade yielded little financial success.

A New Architecture of the West

Irving Gill was certainly more of a builder than a businessman, and certainly not a writer. He did publish two writings, both articles. In the previous section I have already quoted from the first, which was a sort of builder's guide to potentials of concrete entitled "New Ideas for Concrete Floors," published in Sunset Magazine, December 1915. The second and lengthier article was entitled, "The Home of the Future; New Architecture of the West, Small Homes for a Great Country," published in the Craftsman, May 1916. The latter was essentially Gill's manifesto for an appropriate architecture for California. Following Frank Lloyd Wright's famous 1901 lecture "The Art and Craft of the Machine," Gill also begins his article with a reference from Victor Hugo's Notre Dame de Paris, (1832). Gill calls Hugo's analysis "inspired," for privileging architecture as the chief register of the stages of development of human civilization. Architecture is likened to a universal writing; the architect to the native poet; and the landscape to the sensitive blank page on which architects could still write "significant sentences... with brick and stone, wood, steel and concrete."18 Gill's sheer optimism for the West prevails over Hugo's darker prognosis for architecture i.e., that the "the book will kill the building," (that the
machine will make architecture obsolete). Indeed the New World was perceived as ahistorical, insulated by sheer distance from the "dusty" European culture of books and conventions. Gill challenges his California contemporaries, extending Hugo's metaphor of the palimpsest:

In California we have great wide plains, arched by blue skies that are fresh chapters as yet unwritten. We have noble mountains, lovely little hills and canyons waiting to hold record of this generation's history, ideals, imagination, sense of romance and honesty.14

Gill's romantic feeling for the possibilities for the West is coupled with his conservatism, in his appeal to preserve what he felt were authentic building types in California: "It would be much better for California if there were less complicated, meaningless originality and more frank following of established good types: the Spanish Mission and the India bungalow." From Gill's point of view, an authentic architecture for the West demanded both a frank simplicity and some form of permanence, amidst the haste of the newly arrived influx of "health- or fortune-seekers." Hastily built, their sham architecture has no connection with the ground: "the surface of the ground is barely scraped away...." He continued:

If we, the architects of the West, wish to do great and lasting work we must dare to be simple, must have the courage to fling aside every device that distracts the eye from structural beauty, must break through convention to get down to fundamental truths.16

Gill saw the architecture of simple forms as the answer to the Western thirst for authenticity. And concrete played an important role for several reasons. First, it had strong allusions to the moral purity of traditional adobe types: the usefulness
and building traditions of the Spanish Mission and the Hopi Pueblo. Second, concrete was of course literally permanent, built to last forever. And finally, the formlessness of concrete was itself analogous to the West, which Gill called "an unparalleled opportunity in the history of the world, for it is the newest white page turned for registration." It was not enough that a simple house was built of concrete, Gill wanted his house to "symbolize" concrete's cultural meaning for the West, not merely imitate it, or show it off. The synthetic distillation of Gill's ideas was the symbolic plain, moral image of the concrete cube house (Fig. 5.2):

There is something very restful and satisfying to my mind in the simple cube house with creamy walls, sheer and plain, rising boldly into the sky unrelieved by cornices or overhang of roof, unornamented save for the vines that soften a line or creepers that wreathe a pillar or flowers that inlay color more sentiently than any tile could do. I like the bare honesty of these houses, the childlike frankness and simplicity of them.

Simplicity for Gill was not the result of economy or expediency. it had higher symbolic meaning; it was "the source of architectural strength" and "the fountain of Art:"

Every artist must sooner or later reckon directly, personally with these four principles - the mightiest of lines. The straight line borrowed from the horizon is a symbol of greatness, grandeur and nobility; the arch patterned from the dome of the sky represents exultation, reverence, aspiration; the circle is the sign of completeness, motion and progression, as may be seen when a stone touches water; the square is the symbol of power, justice, honesty and firmness.

Gill's belief in pure form in the end overcame the specificities of material or of region. Helen Ferris has pointed out the affinity of Gill's passage with John Ruskin's praise of pure form: "The Romanesque arch is beautiful as an abstract line."
Its type is always before us in the apparent vault of heaven and horizon of the earth. The cylindrical pillar is always beautiful, for God has so molded the stem of every tree.\textsuperscript{20} However, for Gill, the straight line and the arch not only mirrored nature, but took on symbolic value and mystical overtones. Eloise Roorbach testified to Gill's personal mysticism: he had an interest in Eastern philosophies and liked to read from Kahlil Gibranh's \textit{The Prophet}.\textsuperscript{21} Gill was also certainly aware of the Point Loma Theosophical Society established in 1897 near San Diego (in Lomaland, as it became known). Its founder, Katherine Tingley, dreamed of building "a White City and School for the Revival of the Lost Mysteries of Antiquity."\textsuperscript{22} The theosophists sought higher wisdom through the bringing together of Eastern and Western theological and philosophical thought. In their art school, students probed the relation between Symbolist Art (inspired by William Blake and select pre-Raphaelites) and Theosophy.\textsuperscript{23} Gill's common sense, however, might have resisted the flagrancy of Katherine Tingley's alleged despotism, and the community's more idiosyncratic and exotic tendencies. Gill's interest was not in "mystification," but like his English contemporary, another prophetic figure, William Lethaby, he sought out the basis for a modern symbolism, which was immediately comprehensible and apparent. Lethaby took a delight in the symbolism of form which transcended building, calling architecture thought embodied in form. In \textit{Architecture, Myth, and Mysticism} (1891), he had argued that a modern architecture should have an intelligible rational and egalitarian symbolism. Such was Gill's vision in the transparent and frank morality of the simple cube house. Gill's belief and sensitivity to pure form, and his veiled mysticism ran deep through his work; it stemmed from a compelling source in Louis Sullivan.
Sullivan's Form and Polychromy

In 1891, Irving Gill arrived as a young draftsman in the office of Adler and Sullivan in Chicago. At the time, Frank Lloyd Wright was Sullivan's chief draftsman. Gill was twenty-one years old, and Wright three years his senior. (Wright and Gill had each worked earlier in the Chicago office of J. Lyman Silsbee; Wright from 1887 to early 1888, and Gill in 1890 and part of 1891. Silsbee had moved his practice in 1884 to Chicago from Syracuse, near Gill's home town). Gill's spent almost two years in Sullivan's office, from 1891 until just before the opening of the Columbian Exposition in 1893, which undoubtedly made an impression on the young draftsman. For one thing, Gill had been exposed to the boldness of steel construction in Chicago. By the time Gill arrived, the Auditorium Building had just been completed. Gill's experience with Sullivan was during the very height of his success. The projects in the office included the Charnley House in Chicago which Sullivan designed with Wright in 1892, the Wainwright building in St. Louis (1891), and the design of the Guarantee building in Buffalo (1895). Gill's assignment was to work under Wright on the construction drawings for the Transportation Building for the 1893 Chicago World's Columbian Exposition (Fig. 5.3), for which the design evolved between February and September of 1891.24

The sheer strength of Sullivan's personality would have by itself made a strong impression on Gill. Primarily, Sullivan would have inspired a belief in the strong character and architectural power of pure form. The Getty and Wainright tombs completed in 1890 and 1893 respectively, straddled Gill's tenure at the office. These two buildings were Sullivan's purest expression of form and would have best taught...
his sensitivity for mass, surface and simple monumentality. Distilled here was the square, which Gill later called the symbol of "virile" virtues: power, justice, honesty and firmness - coupled with the arch, simplified and abstracted from a Richardsonian Romanesque - and the dome. Anticipating Gill. in 1906 Sullivan reiterated the purity of elemental architecture in the Craftsman:

> The pier, the lintel and the arch. These are the only three letters from which has been expanded the architect art as a great and superb language wherewith man has expressed through the generations the changing drift of his thoughts. Thus throughout the past, each building stands as a social act. In such an act we read what cannot escape our analysis, for it is indelibly fixed in the building, namely the nature of the thoughts of the individual and the people whose image the building is or was.\(^{25}\)

Wright described the young Gill as a rank individualist. Sullivan's own profound isolation from historical convention would have inspired independence in his protégés. He scorned the tyranny of historicism: "Sullivan turned the faces of the young men away from Europe and bade them look to Africa, a land of the serene wall, of earth forms, of decorative details."\(^{26}\) Between 1890-1892, Sullivan experimented with both Islamic forms and principles of design in the Getty and Wainwright tombs.\(^{27}\) The form of the Wainright Tomb in St. Louis resembles a North African funerary *qubba*.\(^{28}\) The octagon used as module of design was inspired by the Islamic. The ornament had a symbolic organic content but made use of more rigid geometries.

It was not only through Sullivan that Gill had knowledge of North African architecture, but also through Frank Mead (1865-1940) who worked with Gill,
1903-1907, the last seven months as Gill's partner. Mead had traveled to North Africa c. 1900, and made photographs of the indigenous architecture, which Gill was sure to have seen, though it seems had never himself even traveled to Mexico. Gill was later in his career to use simple forms inspired from North African forms: the masonry dome, long vertical slits, low forms, especially in his projects for the city of Oceanside. (Fig. 5.4)

For Louis Sullivan, as Narciso Menocal notes, whereas the "Richardsonian Romanesque had been a catalyst for Sullivan's earlier, more austere style [1887-89], by 1890 Moorish architecture came to serve Sullivan as a basis for studying exterior decoration." Gill's work on the Transportation Building was an important lesson for three reasons. First for its purist form; secondly, because of its vigorous originality (which would have inspired Gill's own empiricism). Finally, it was the climax of Sullivan's use of Islamic forms, in which he introduced "that most characteristic of Islamic features, polychromy." The main portal of the building, a series of immense concentric arches, was called the Golden Doorway. Sullivan wrote that the large plain surfaces were prepared in view of the ultimate polychrome treatment. This was dominated by a deep red, yet "thirty different shades of color... were so delicately and softly blended and so nicely balanced against each other that the final effect suggests not so much many colors as a single beautiful painting." Sullivan's design was a most important lesson for Gill: the coupling of pure form with the love of rich and sensuous textures and surfaces and colors. In 1892, (also while Gill was working in his office), Sullivan published Ornament in Architecture in which he wrote:
We have in us romanticism, and feel a craving to express it. We feel intuitively that our strong, athletic and simple forms will carry with natural ease the raiment of which we dream, and that our buildings thus clad in a garment of poetic imagery, half hid as it were in choice products of loom and mine, will appeal with redoubled power like a sonorous melody overlaid with harmonious voices.

Gill was not categorically averse to ornament. He only scorned that ornament which was at the expense of usefulness and economy, which "tend to cheapen rather than enrich, they acknowledge inefficiency and weakness." Gill was to later fully incorporate Sullivan's feeling of Moorish color into his own work. Indeed, Gill liked the Casa de los Azulejos or House of Tiles in Mexico City. (Fig. 5.5) This legendary house had a patio surrounded by graceful but unusual stone columns, and a baroque fountain. Its facade not only contained the rich carving of the Baroque-Plateresque character in its pilasters, copings, and around its windows and doors, but the entire area of its external walls is covered with blue, white and yellow glazed tiles, product of the flourishing Puebla tile industry. Gill used hand-crafted mosaic tiles in the 1913 Torrance station in an "Indian design" around the clock. In the Dodge House, he used handmade tiles around the hearth representing griffins and fleurs-de-lis. In that same house, Gill's typically Mediterranean dry garden, with small localized pools of water, contained points of concentrated bright color in a square pool and in the hand-crafted colored mosaic tiles which appear in the beautiful wall fountain in the far wall under a vine-covered pergola. (Fig. 5.6) The landscaping of the Clarke House also has similar features: the entry garden was designed around a small circular pool and fountain; another small square pool in the West was turned at a diagonal to the prevailing axis of the house.
Color was part of the "garment of poetic imagery" which Gill used to clad his own buildings. Like Sullivan he employed an ornamental filigree to clarify and symbolize pure form. Gill's use was more abstracted, but included color, symbolic elements, and planting. Whereas Sullivan was never committed to the exploration of any single material, Gill's symbolization of pure form was through a close study of the material concrete. Yet, for both Sullivan and Gill, the creation, clarifying and symbolizing of pure form was more important than the "expressive" nature of different materials, as it would be for Wright.

Gill left Chicago for San Diego to recover from ptomaine poisoning in the Spring of 1893, before the fair opened in May.\textsuperscript{34} Wright's personal reminiscences that it was his incendiary comment that provoked Gill's instant resignation from Sullivan's office are probably irrelevant. Gill's nephew recalled that Irving Gill considered his experience in Chicago to have been a personal defeat, although it is not clear why. The presence of Sullivan persisted in Gill's work long after 1893. However, Gill's course to understanding Sullivan's lessons of "luminous simplicity" did not proceed without folly. The Hebbard and Gill partnership (1897-1907) dabbled with Sullivanesque motifs. Their early project for a large bathhouse in San Diego (1897) with a rather fanciful Hispano-Moresque facade, included several elements from the Transportation Building -- except that starfish, dolphins, and tridents had replaced Sullivan's traceries!\textsuperscript{35} In 1898, Gill added an elaborate "Sullivanesque" organ screen to his earlier design for a private Music Hall (1896-98) for Ralph Granger in National City. (Fig. 5.8) The original design included a large concrete vault at one end to house the client's collection of rare violins.\textsuperscript{36} However, Gill's
design for the Pickwick Theater (1904-5) was the most blatant copy of Sullivan's Golden Doorway. (Fig. 5.9)

Gill soon abandoned such literal mimicry and came to find Sullivan's sensibility through his own independence. Gill's mature solutions show his profound understanding of Sullivan's lessons especially the means of symbolizing the organic relation between Nature and architecture. Sullivan's design philosophy hinged on polarities of the rational and the emotional, the simple block and the ornamental filigree. Sullivan's system of architectural ornament was not intrinsically geometric but natural (vegetal), yet it resulted from a series of transformations beginning with a geometric frame. (Fig. 5.10) For Gill, the tracery of vines against smooth walls, was analogous to the intention of Sullivan's almost calligraphic ornament.

Admittedly Gill wrote,

We should build our house simple, plain and substantial as a boulder, then leave the ornamentation of it to Nature, who will tone it with lichens, chisel it with storms, make it gracious and friendly with vines and flower shadows as she does the stone in the meadow.37

Yet this passage, often quoted, is misleading, since planting in Gill's buildings played a more definite role than generally "softening" the monumentality of pure form.38 Gill's landscaping also played an important ordering role. Gill used the pergola to create green roofed passages or outdoor loggias, and vine-clad arches to emphasize entry threshold. (Fig. 5.11) He used vines on walls as light tracery, or framed a gnarled tree through a doorway. He never intended for his buildings to be overgrown or strangled with foliage; instead his crisp openings provided a frame to
natural forms. In the Clarke House, twin persimmon trees symbolically announce the entry to the citrus groves, while at the back, Gill designed a formalized garden, which unfolds in a series of distinct spaces. The large bowling green to the North, a freestanding pergola with wisteria vines create an outdoor green room to the East. The entire garden is relieved by two small pools of water, and enclosed by manicured hedges, as a foil to the extended neat rows of citrus groves.

Metaphors of Nature in the Clarke House

Gill makes symbolic use of natural imagery in the Clarke House. (Fig. 5.12 & 5.13)
The most curious features in the Clarke House are the leaves cast into the cement during various stages of construction and in various places: on the patio walls, the exterior walls, and on the square concrete pavers. One of these is a California Sycamore leaf, probably from the oldest tree on the property just West of the house, and on axis through the court. These castings are puzzling. Anomalous in Gill's work, they have been dismissed as either the whimsy of Mrs. Clarke or as Gill's folly, a "concession to simple decoration." However, in his 1915 essay, Gill had referred specifically to the literal representations of leaves made in relief on concrete surfaces by the heroic concrete workman:

Sprawling there, his soul in his work, with great sweeps of his trowel an artist wrought that plastic, responsive material, blending the colors marvelously in the broad central spaces, coaxing them to a rare harmony of tone and exquisite finish, and around the outer edges he carved in low relief the lines of acanthus and other simple conventionalized leaf forms. In the entrance hall he lined the feather-like fôns of a palm, using his color with consummate skill and an artist's feeling. The appeal of this most modern manifestation [transformation] of ceramic art is far more subtle than that of the mosaics which were the acme of floor-making among the Greeks and
Romans, and it has the singular advantage of being within reach of beauty lovers of moderate means.  

Gill identified the technique of laying cement with the rediscovery of Roman mosaic tile and ancient ceramic arts. (The Clarkes must also have been infected with the theatricality of this material, for their handprints appear impressed in the low cement wall of the shuffleboard court on the North side of the side).  The leaf however was a direct emblem of Nature. The acanthus leaf, via Vitruvius' allegory of the birth of the Corinthian order, had overt symbolic references to origins and to Antiquity. The leaf casting was an unusual conceit in Gill's work; he rarely applied ornament to his buildings. However, the same year Schindler had also cast leaves as well as twigs into the concrete panels in his King's Road house. While Schindler had used the natural elements to harken to a primitive use of material, Gill's use of them remained on a more symbolic level, as an emblem of Nature, which brought with it an allusion to classicism.

The symbolic classicism of the Clarke House was akin to that of Bernard Maybeck's concrete villa for geology professor Andrew C. Lawson, (Berkeley, 1907). (Fig. 5.14 & 5.15) The house was an early example of a monolithic concrete construction: the walls, roof, and floor were of a single continuous material. The house was Maybeck's reinterpretation of a Roman villa. The stark symmetrical cubic mass was provided a thin Classical filigree which softly wrapped the house denying its solidity: "Necklaces of colored stones adorned the second-story walls and the facias of the overhanging slab; around the double arches of the recessed porticos were stylized patterns of acanthus leaves in sgraffito." Maybeck shared with Gill a will to
simplify the house, and a feel for surfaces. He loved the properties of different materials especially wood, but also experimented with new materials such as Gunite and bubble stone. Maybeck transformed decorative details from stucco, mosaic, and sgraffito into concrete, playing on the adaptability of concrete. He had an intense interest in the dialectic between structure and decoration, and the development of motifs, which Gill never shared, however. Through such devices adapted to concrete, Maybeck reinterpreted not only Roman constructional techniques, but the typology of the Roman villa for California with its round arches, symmetry, and deep recessed porches, and its pergola. The Clarke estate also has a similar Roman grandeur, overlaid with allusions to classicism: the Tuscan column, the tri-fora window, the leaves in colored cement. These in turn abstract the "structural logic" of concrete, e.g. the Tuscan columns that flank massive corners of the loadbearing walls reveal their symbolic over their structural value.

While Maybeck looked to the villa via profile, material, and classical motifs, Gill's symbolism of classicism came largely through the use of the court typology, and its particular significance for local California living. Though Gill was probably inspired directly from the Mexican patio house, the typology of the patio itself held a lineage back to classical origins. A 1903 issue of House and Garden noted the perceived genealogy of the patio house, in which the court, traced through the ruined villas of Pompeii, had come down to Californian in an unbroken tradition:

Taken by the Roman colonists to Hispania and meeting with no modification of any importance since, the court or patio, to give it its Spanish name, was the common property of Moor and Christian in the Gothic Period and was brought over to Mexico by the earliest conquerors, at once making its way northward in the wake of the mission priests.42
In Mexico, the Spanish patio took on a regional character. Due to the development of the tile industry at Puebla, the patios were adorned with their lavish color, attributing a "freshness and spontaneity" to the more blatant order of the Spanish patio plan.

**Mediterraneità**

The Clarkes called Krankhaven a ranch. However, the California ranch house in 1920 had a Spanish Colonial imagery, more characteristic of their later home in Point Happy. When Gill married at the age of fifty-eight he himself moved into such a house, which was described by Curtis Zahn as:

...one of those incredible Palos Verdes "Spanish" mansions-- a non-Catholic marriage between Mexican adobe and European renaissance replete with crossed swords, shawls draped over iron railings, a "Spanish galleon on the "adobe" hearth, forests of tile that gave way to walls which tried to look two feet thick.43

In contrast, the Clarke's concrete patio house designed by Gill was no such clearinghouse of Hispano-Mexican and European imagery. Gill's purist sensibilities in fact went against the tide in the 1920's which saw the popular rise of the Spanish Colonial Revival in California, a style otherwise called "Mediterranean." Gill had fallen out of the public favor by the 1920's. His purist symbolism on the other hand resulted from a distilled choice of classical imagery and a moral self consciousness vis-à-vis his use of material. In an essay called "Spírito Latino", Italian architect Carlo Enrico Rava praised California architects Irving Gill and George Washington...
Smith for exemplifying the concept of *mediterraneità* which he saw as the proper course for modern architecture. Rava was of the Italian Rationalist "gruppo 7," and had seen Richard Neutra's snapshots of Gill's projects in the series *Neues Bauen in der Welt* (1930). In the following year he wrote a series of articles in *Domus*, in which he reevaluated the strict adherence of modern architecture to logic and rationality. He called for a reinterpreted modern architecture based on the rapport of the Latin and Mediterranean character with the bare beauty of simple forms. He noted that Gill's work was based in a Latin spirit, which he saw as a concatenation of forces: the culture of the middle classes, the American conquest of technology, the influence of older (Latin) Spanish cultures found in central and south America, and the concept of the house and the landscape as a supreme art. As diagnosed by Rava, it was in fact the pragmatic socialism of the middle classes that Gill had sought to reconcile with his empirical research on the modern technology of concrete, and with the spirit and dignity represented by the Spanish Missions. As represented in the Clarke House, his use of color was not a sign of the exoticism of travel nor were his use of classical arches and columns mere fanciful images. Gill sought always to abstract a distinct set of images. The arch, the Tuscan column, and the natural metaphors inscribed in the concrete represented a purified version of the authentic "Mediterranean spirit." It was through such a link with a classical tradition that Gill sought a permanent architecture for the West.

It is Tony Garnier's Cité Industrielle (1899-1918) which suggests the most intellectually European satisfying parallels to Gill's work, and a means by which we may understand Gill's veiled Classicism, along with his interest in concrete and his
reformist social philosophy. Tony Garnier was Gill's contemporary; born in 1869, he was one year Gill's senior. Much like Gill, Garnier wrote very little, and traveled even less, (although he had been to Greece in 1903). He "lived in relative isolation in Lyon, far from the great centers of European culture." Garnier's houses were strikingly similar to Gill's: simple cubic masses, plain walls unrelieved by cornices and moldings. Garnier also used advanced construction methods in reinforced concrete adapted from Francois Hennebique's technologies. Garnier's interest in reinforced concrete was enmeshed in questions of hygiene, the provision of basic amenities at affordable cost, and "arrangements which would best satisfy the material and spiritual needs of the individual..." Each room in his houses ideally had direct access or ventilation to the outdoors, and like Gill, he provided for rounded corners of interior spaces to eliminate dust and facilitate cleaning. Garnier's use of concrete was ultimately towards a social ethic of city living re-founded from Antiquity. Central to his residential districts in the Cité Industrielle were house-types planned around a courtyard, in some instances planned around classical atrium courts complete with impluvia. (Fig. 5.16) With exterior pergolas and light garlands of vines on the crisp walls. Garnier's classicism alluded to a Mediterranean ideal of living, and lent an Arcadian purity to his socialist vision. (Fig. 5.18 & 5.19) Gill's projects for the Lewis Courts, Sierra Madre and the Horatio West Court with their individual units clustered around a common garden stem from the same spirit (Fig. 5.17), and suggest not only references to a strong regional style in California, but to deeper Mediterranean origins.
Conclusions

Like Garnier, Gill sought a naive classicism through the social ideal that the court typology offered. Such a naive understanding implied an eternal model of architecture which could be adapted to changing present conditions. Without consideration of the latter, Gill thought one would fall into the trap of redundant stylistic eclecticism which could never offer an authentic model of American living. Gill had stripped the patio house of its sham and plagiarist allusions, and reinterpreted it according to pragmatic concerns for its building materials and its social use. The patio offered a permanent type which was related to both the regional architecture of the Southland and to the European tradition of classicism through its origins in Rome. The patio was appropriate for California largely due to the climate which fostered an integration of building with landscape and an architecture of outdoor living. It was simply the most expedient arrangement of spaces for the climate. The court in the Clarke House effectively synthesizes the two ideals: the plan symbolizes the classical court of Spanish lineage, while the stark and bold concrete elevations assimilate the adobe-like masses integrated within the landscape. Gill thus sought to integrate a Mediterranean ideal of living and the court as the central focus to the house, with a concern for modern techniques of construction as exploited in the elevations. The communal 'good life' could only be achieved through a reinterpretation of methods and conditions of workmanship. The social ideal of an American pragmatism was attained only when construction was unhindered by inefficient methods or laboring.
Gill's experimentation with concrete stemmed primarily from moral foundations and from an impatience with the "hasty, careless and thoughtless" methods of building that characterized his time in California. His inventiveness with concrete should be understood in the light of the modern improvement of domestic architecture. Gill never advanced an overarching system for construction, nor any perfect type. His multiple experiments with the new material were inventions that sprung from specific problems, and were always subjected towards a higher social good, i.e. "the perfectly sanitary, labor saving house." As emphasized above however, it was not concrete per se that embodied this ethic, only that its flexibility and strength allowed for its actualization. Gill's devotion to concerns of hygiene, and to modern technologies undoubtedly ally him with the beginnings of the modern movement but his particular use of them suggest, indeed insist, that an authentic architecture of its time must be founded within a tradition. As discussed above, concrete was the modern material that allowed for him and his contemporaries to evoke the primitiveness of indigenous adobe architecture. In Gill's case, his use of concrete or the monolithic appearance of the Clarke House was only a material analogy to the Missions, and never professed to be a purist revival of adobe building. The Clarke House is important as a synthesis of ideas that followed Gill throughout his oeuvre: the experimentation with concrete, the adaptability of the patio to the program of house, and the subtle integration of building with landscape. The uniform green coloring of the Clarke House suggests that Gill's reference to tradition was always abstracted, and bold. Similarly his references to Moorish architecture and polychromy were abstracted and used with discretion, like the Pre Colombian inscription on the floor beneath the green layer of polished cement.
The restoration of the Clarke Estate was executed by John Lumis, project architect, Thirtieth Street Architects, Newport Beach, California.

Telephone interview with John Lumis.

Letter from Gill to Richard Neutra (Appendix B).

Letter from Barnsdall to Wright, in Kathryn Smith, Hollyhock House, p.83.


Esther McCoy, Five California Architects, 1960, p.83.

Esther McCoy interview with Eloise Roorbach notes. Esther McCoy Archives, Smithsonian Institution.

Esther McCoy, Five California Architects, 1960, p.83.

Irving Gill, "The New Architecture of the West," The Craftsman, p. 120.

Irving Gill, The Craftsman, p. 141.


Irving Gill, The Craftsman, p. 141.


Irving Gill, The Craftsman, p. 142.


Esther McCoy interview with Eloise Roorbach. Esther McCoy Archives, Smithsonian Institution.

Kamerling, "Theosophy and Symbolist Art," 1980, pp. 231-2. The community had a conspicuous presence on a 500-acre tract near San Diego, which included forty buildings, in a partly Moorish, partly Egyptian style, included a School of Antiquity, a Theosophical University, a Greek Theater, a Raja Yoga College, and a Iris Temple of Art, Music and Drama. (Carey McWilliams, 1946, p.252).


Esther McCoy, Five California Architects, p. 60.

Menocal, p. 34.

Menocal, p.36.

Menocal, p.36.


Gill's sensitivity to color in buildings and landscape was mirrored in the drawing style: he drew very quickly color perspectives in painterly style. He rendered shadows in purple, used ink, watercolor, and color pencil to give added texture.

Irving Gill, The Craftsman, p.142.


Gill left Chicago shortly before another young twenty-three year old, Adolf Loos arrived in Chicago for the 1893 fair.

Kamerling, Irving Gill, p. 22-3.


Irving Gill, The Craftsman, p.147.

This was noted by Lloyd Wright, who had done the planting for the town of Torrance. Taped interview, Esther McCoy with Lloyd Wright, February 1970. Esther McCoy Archives, Smithsonan Institution.


It was to be five years later at the opening of Grauman's Chinese Theater on Hollywood Boulevard in 1927, with the premier of Cecil. B. DeMille's King of Kings, that actress Norma Talmadge accidentally stepped into wet cement and began the famous tradition of hand- and footprints in the courtyard.

Esther McCoy, Five California Architects, p. 20.

Undated letter from Curtis Zahn to Esther McCoy. Esther McCoy Archives.

Several European contemporaries recognized Gill's accomplishments through Neutra's publication. His Gill's 1936 obituary states that "At the time of his death authorities form Vienna were in this country collecting material with the idea of publishing a monograph on his work."

Enrico Rava, "Spirito Latino," *Domus* 38 (Febbraio, 1931): 24-29. I thank Brian McLaren for calling my attention to this reference.


Benevelo, p. 331.

Fig. 5.2 Sketch of court. Residence for Mr. O’Kelly, drawn by Lloyd Wright.

Fig 5.3 (Kamerling, 1993)
Fig. 5.4 Americanization School. Oceanside. 1930-1. (Photo: Sean Scensor)
55. Detail from the "House of Tiles" in Mexico City

Fig. 5.5 (Kilham, 1927)
Fig. 5.6 Detail of mosaic fountain, Dodge House. (Marvin Rand)
Fig. 5.8  Music Hall. National City, 1896-98. Irving Gill. (Photo: Marvin Rand)
Fig. 5.9 Pickwick Theatre, San Diego, 1904-5. Hebbard & Gill. (Kamerling)
Fig. 5.10 Getty Tomb. Chicago. 1890. Louis Sullivan. (Menocal)
AN ARCHWAY ENTRANCE TO A PATIO—THE DARST HOUSES, SAN DIEGO, CAL.
Irving J. Gill, Architect.

Fig. 5.11 ("The Craftsman," May. 1914.)
Fig. 5.12 Exterior view of stair to balcony, Clarke House.  
(Photo: Sean Scensor)
Fig. 5.13 Leaf impression, Clarke House. (Photo: Sean Scensor)
Fig. 5.14  Elevation study, A.C. Lawson residence, Berkeley, 1907. (McCoy, 1960)

Fig. 5.15  A.C. Lawson residence, Berkeley, 1907. (Longstreth, 1983)
Fig. 5.16 Cite Industrielle. atrium with impluvium house. Tony Garnier. (Wiebenson)
Fig. 5.17 Horatio West Court Apartments, Santa Monica, 1919, Irving Gill. (Concrete in California, 1990)
Fig. 5.18 Cite Industrielle, house. Tony Garnier. (Benevelo)
Fig. 5.19 Pergola of Miltimore residence, South Pasadena, 1911. Irving Gill
(Photo: Marvin Rand)
APPENDIX A


UNITED STATES PATENT OFFICE.

IRVING J. GILL, OF SAN DIEGO, CALIFORNIA.

MEANS FOR REINFORCING WALLS.

1,202,990.


To all whom it may concern:

Be it known that I, IRVING J. GILL, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented a new and useful Means for Reinforcing Walls, of which the following is a specification.

In building structures heretofore made the margins of the window and door openings have not been sufficiently reinforced, so that the weight of the portion of the wall above the lintel tends to deflect the center of the lintel, and the weight of the portions of the wall transmitted through the jamb tends to raise the center of the sill.

An object of this invention is to overcome the foregoing difficulties by my special construction for reinforcing the walls of building structures.

The structure may be made by bending a reinforcing member into a frame having the shape and proportion of the desired opening, placing such bent-up frame either in its final position in the structure or placing said frame horizontally on a table, and then pouring concrete around the reinforcing frame so as to, more or less, embed said frame in the concrete and cause the frame to become an integral part of the wall.

In the completed structure the frame becomes a form for the opening during the construction of the wall and likewise becomes a permanent reinforcing member for the margins of the opening.

I may in some instances employ but one form of reinforcing member bent to form a reinforcing frame, and in other instances I may employ such reinforcing frame together with other forms of reinforcing members, such as rolled rods of any desired shape ordinarily employed as reinforcing members in reinforced concrete construction. These reinforcing rods may be plain, twisted or of any preferred or desired construction, and when said rods are used they may be suitably anchored to the reinforcing frame.

Another object is the production of suitable bent and rolled forms of reinforcing members, adapted to secure the best results.

Besides the forms of frames invented and employed by me in this invention, it is understood that I may employ the forms of metal window frames shown and described in my previous invention for building construction filed July 11, 1912, Serial No. 708,911, or that I may employ any other suitable forms which I may invent in the future.

I am aware that concrete has been poured around wooden frames and also that metal has been used as a sheathing for wooden 60 frames in fireproof building construction but I am not aware that a reinforcing member has been formed into a frame, and that said frame has then been incorporated into a wall as an integral part thereof in the process of making the wall so that the frame truly forms a tension member for the lintel, jamb and sill of an opening in the wall.

Other objects and advantages may appear in the drawings filed herewith and in the 70 subjoined detail description.

The accompanying drawings illustrate the invention.

Figure 1 is an external elevation of a wall built in accordance with and embodying this invention. Fig. 2 is an enlarged fragmental detail of some of the reinforcing members shown in Fig. 1. Fig. 3 is a reduced plan section on line indicated by x-x. Fig. 2. Fig. 4 is an enlarged fragmentary view of some of the parts shown in Fig. 1 with the window sashes in place. Fig. 5 is an enlarged plan section on irregular line indicated by x-x. Fig. 4. Fig. 6 is a perspective view of a fragment of one of the 85 reinforcing frames in the preceding views. Fig. 7 is a fragmentary plan section analogous to Fig. 5, but including a different form of reinforcing frame.

The wall 1 may be of any suitable material as brick, stone, concrete or the like and, if of concrete, may be poured in place by the use of forms, not shown but well-known in the art, or may be poured in a horizontal position and subsequently moved into vertical position as shown, for instance, in the patent to Aiken for method and apparatus for constructing concrete buildings, No. 1,023,349, patented April 16, 1912.

The wall 1 is provided with reinforcing members of any suitable design, one of the reinforcing members being bent to form a door frame 2 for an opening as the doorway 8, and another of the reinforcing members

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being bent to form a window frame 11 for a window opening 5. The wall 1 may be further reinforced by reinforcing members in the form of rods 6, or the like, of any desired shape and arranged at intervals in the manner well-known in the art, though it may not be necessary to employ the rods 6 in combination with the reinforcing frames.

The reinforcing frames 2, 4 entirely surround the openings 3, 5 respectively and comprise tension lintel members 7, tension jamb members 8, and tension sill members 9.

The reinforcing frames 2, 4 may be bent from sheet or strip metal in the form shown in Figs. 1 to 6 inclusive, or in the forms shown in my hereinafore mentioned invention, or may be bent in any other desired forms; or said frames may be formed from rolled members as in Fig. 7.

In some instances, as in said former invention and as in Fig. 7, the reinforcing frames 2, 4 may each be formed of but one piece of material; and, in other instances, where the shape of the piece will not admit of its being bent at the corners of the opening, the lintel, jamb and sill members 7, 8, 9 may be provided with mitered ends 10 as in Fig. 2 soldered or otherwise securely joined to one another.

The reinforcing frames 2, 4 may be provided at intervals with perforations 11 as in Figs. 1 to 6 through which some of the constituents of the wall will pass so as to firmly anchor the frame in place, and the frame may be additionally anchored, if desired, by connecting the reinforcing rods 6 thereto in any suitable manner as for instance by providing the rods with hook ends 12 to hook over the edges of the perforations 11.

In the form shown in Fig. 6 the reinforcing frame is bent to form a frame face 13 and anchor leg 14 at right angles to one another and is bent to form a slanting anchoring leg 15 connecting the outer ends of the frame face and leg 13, 14; altogether substantially forming a triangular member of great strength. The edges of the legs 14, 15 are joined in any suitable manner and, in this instance, the leg 14 is bent at its edge to form a channel 16 to receive the edge of the leg 15. and the joint may be further strengthened, if desired, by rivets or the like, not shown.

In the form shown in Fig. 7 the reinforcing frame is provided with the frame face 13, as in the form shown in Fig. 6, and is provided at right angles thereto with an anchor arm 17 terminating in a flanged head 18, said leg being perforated to receive the hook ends 12 of the reinforcing rods 6. Each frame face 13 is offset to form a stop 19 which is provided with a narrow tongue 20 adapted to contact with the face of the sash 21, said tongue being spaced apart from the edges of the sash to form a channel or groove 22 so that when water works in between the edges of the sash 21 and frame face 13, capillary attraction will be broken up at the channel 22 in order that said water will not pass the stop and will be excluded from the inside of the window. The channel 22 also prevents to a maximum degree the entrance of wind as it forms a chamber or reservoir in which the air circulates.

The reinforcing frame bent from sheet metal as in Figs. 5 and 6 may be provided with a reinforcing strip 23 fastened by rivets 24 or the like along the inner side of the frame face 13 so that the fastenings 25 of the hinges 26 can be passed through the frame face and through said reinforcing strip.

In practice reinforcing frames 2, 4 will be placed in those positions where door and window openings are desired and, if further reinforcement is desired, reinforcing rods 6 will be placed at intervals and anchored to the reinforcing frames. This may all be accomplished in a vertical position in the manner generally employed in connection with pouring of the walls of large building structures, or may be done in a horizontal position in accordance with the method outlined in the hereinafore mentioned patent to Aiken. When the reinforcing members have all been thus placed in position, the concrete is then poured around the frames to more or less embed them in the concrete and cause them to become integral parts of the wall.

I am aware that finishing strips of various kinds have been anchored in concrete and I do not broadly claim such construction but it is noted that I form reinforcing wall members into door and window frames and that I then incorporate said door and window frames into the walls of the building structure as integral parts thereof in the process of making the wall, so that the lintels, jamb and sills not only have compression members formed by the concrete but are held in place at the margins of the openings but also have tension members cooperating therewith and formed by the frames.

I claim:

A metal door and window frame comprising a reinforcing frame provided at intervals with perforations through which some of the constituents of the wall may pass so as to firmly anchor the frame in place and also affording seats for reinforcing rods, which may be hooked over the edges of the perforations; said reinforcing frames being bent to form a frame face and an anchor leg at right angles to one another and to form a slanting anchor leg connecting the outer ends of the frame face and leg all together, the edges of the legs being joined together, the frame face being offset to
I. J. GILL.
MEANS FOR REINFORCING WALLS.
APPLICATION FILED OCT. 2, 1913.

2 SHEETS—SHEET 1.

[Diagram of wall structure with various labeled components, including numbers and lines indicating reinforcement elements.]
form a stop which is provided with a narrow tongue adapted to contact with the face of a sash, said tongue being spaced apart from the edges of the sash to form a channel or groove substantially as and for the purpose set forth.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 25th day of September, 1913.

IRVING J. GILL.

In presence of—

JAMES R. TOWNSEND,

GEORGE H. HILES.

Copies of this patent may be obtained for five cents each, by addressing the “Commissioner of Patents, Washington, D. C.”
APPENDIX B

Letter from Irving Gill to Richard Neutra, Jan. 13, 1929.

Dear Mr. Neutra,

The following sketches will tell you more in detail of the construction of the
houses at Ocean Park.

The walls were first formed by bracket
on the ground. A lattice of frames of 21\" x 6
O. P. with 2 ply asphalt roofing between.
These frames

were nailed on one side on the ground. The whole wall was formed out of the wire mesh on the other
side. This light frame was covered by
the fiber mesh or these could be

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very change (fees)

The window & door frames were cut in 2 parts connected to door frames.

This light frame was set on wood concrete & raft boards.

2 ply roofing membrane for water proofing.

1/2" rock every 12"

Fill concrete grade beam.

The concrete beams into monolithic form which were 24" wide at the ground level of building.

1x2" 4x2" upright.

Wires, tubes, etc.

Holes in members were filled.

These, etc. left in place.
(3)

Making two 3" concrete walls for a 6" wall or two 4" for an 8" wall.

½" rods were placed in every 12" x 12" to give more strength to the slab or footing.

On interior walls, the memorandum was omitted.

Corners were constructed as follows:

This inner order corner forms were first in full height of walls so that the other concrete forms could slide up ½" to level in plaster.
The object of this construction was to provide a more water proof membrane and to stop any cracks from running through the walls. It also helped construction of moisture on the inside walls. I put up a number of houses using this construction and found it did not cost over 20% more than frame construction for the walls alone or about $160 for an 8000 sq. house. The walls alone for an 8000 sq. house would cost about $800 or 10% of the total cost of the house.

The windows and doors frames were made thin 4" stuff hardware cloth 1/2" mesh.

12 x 72" stuff set in woodblock.
with this construction, slats, dirt, and dust can be blown away with casings or
wound corners, or mighty cracks.

Sincerely yours,

[Signature]

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APPENDIX C

“New Ideas About Concrete Floors”
by Irving J. Gill.
Reprinted from Sunset Magazine, December 1915.

Why do most people hate concrete floors? Partly because we are all slaves to habit, partly because concrete floors are not what they really ought to be.

Twenty years ago I built for myself a concrete floor. I expected it to be cold, I expected it to be damp, I expected it to be all the uncomfortable things people said it would be. I found it warm and dry and all the comfortable things people had not said it would be. Best of all, I knew it would never harbor the vermin of sorts that infest old wooden flooring, mice that scamper at night, or the accidental cat.

The charges against the concrete floor are precisely those made years ago against the cement sidewalk. We had come from dirt paths where feet find comfort in the happy medium between dust and mud, and the board sidewalk with its awkward surprises of heel-trapping cracks, loose nails and broken boards, to the smooth, hard, level cement. At first the rut-lovers wailed. But who would now go back to uneven board walks or the pleasant uncertain earth paths? In foreign lands where the cement walk is unknown, who does not pray long and loud for its revelation to all the world?

Perhaps the earth floor is the ideal thing, but we have passed that stage, and in the evolution of house-building the wood floor is finding a rival. Wood floors above ground without a basement are unhealthful. There is always a musty odor from the poisonous fungus growing on the wood and on the ground. The ground underneath an old house is poisoned to such an extent that plants will not grow in it. The soil from under a cement sidewalk is very fertile.

Most concrete floors have not yet been developed beyond the sidewalk stage. If half the thought and time and money had been expended on perfecting the concrete floor that has been spent on developing wood from the rough board sidewalk to fine parquetry flooring, everybody would want the concrete.

To overcome the popular prejudice against concrete floors is the business of the architect. There are certain definite conditions to be observed in the laying of concrete floors. They are fundamental and in their strict observance lies the answer to the charge of the physical discomfort of concrete. After practical objections are overcome, attention may be given to esthetic considerations.

Concrete floors are usually laid free from the ground, with a dead air space underneath. In most of my houses the concrete floors are laid directly on the ground, doing away with air circulation under the floor and giving a more equable temperature. They are raised at least twenty-one inches above the surrounding ground, and particular attention paid to the preparation of the earth bed. After the foundation is laid the ground is puddled and tamped, puddled and tamped until very firm. Over the surface is spread from four to six inches of sand or sandy loam. Then the concrete is put on. If one part of the floor is below grade, the ground under it is carefully drained, after which the layer of sand prevents moisture from coming through.

The main body of rough concrete should be reinforced to one third of one per cent to prevent cracking, and scored to give a key to the top coat and prevent its loosening from the bottom. The finish coat should be reinforced with number...
eighteen gauge half-inch mesh galvanized wire to prevent cracking.

From four to six weeks should be allowed for cement floors to dry. During this time there is a continuous process of absorption and radiation of heat until a mean temperature has been reached after which the temperature of the floor is more equable than that of wood.

To cover a cement floor with wood is about as logical as to cover cement sidewalks with boards. Everybody who has lived on cement floors laid according to the given specifications has been wholly converted to them and would never again be bothered with the care and trials of wood floors. It is not, of course, expected that concrete floors should be left bare. They should be partly covered with rugs, the same as a polished wood floor. Incidentally, when properly laid, waxed and polished, cement floors are ideal for dancing.

When troweled and finished almost to a gloss, cement floors do not mar or scratch. They should not be scored or marked off into squares or designs. The natural crazing of the top coat is far more pleasing. I have found no cement floor paint that produces a good effect. The hard monotonous flat colors are unpleasing, the paint soon wears off and shows the cement. Instead of using paint I mix color with the cement, usually tones of red and yellow, red and brown or yellow and brown slightly mottled. Tempered by the gray of the cement these colors produce neutral tones that are a splendid background for rugs and furniture. When quite dry, the cement should be cleaned with a weak solution of ammonia and water, given two coats of Chinese nut oil to bring out the color, then finished with a filler and waxed like hardwood. Well done, the treatment gives an effect of old Spanish leather.

It is quite as impossible to tell how to lay and finish a cement floor to bring out all its potential beauty as it is to give exact rules for the painting of a picture. Specifications and instructions carry one just so far, but beyond that point each builder must study out the problem for himself. It takes the knack or the inspiration or the gift—whatever its name—that differentiates craftsmanship from mere mechanical perfection, that raises the artist above the artisan, to make a cement floor the thing of beauty it can and should be.

Before it has set, cement is a wonderfully plastic material, more wonderful than clay. It can be colored, modeled, shaded, surfaced, and then of itself hardens into an everlasting expression of the workman.

The protest against ordinary cement floors is the unconscious demand for the thing well done. At heart we are never satisfied with any work that is not done right, and cement floors will not come into their own until architect and workman study them as an art.

The cement floors in the home of Homer Laughlin in Los Angeles, forecast the possibilities of the future. Sprawling there, his soul in his work, with great sweeps of his trowel an artist wrought in that plastic, responsive material, blending the colors marvelously in the broad central spaces, coaxing them to a rare harmony of tone and exquisite finish, and around the outer edges he carved in low relief the lines of acanthus and other simple conventionalized leaf forms. In the entrance hall, with big free strokes he limned the feather-like fronds of a palm, using his color with consummate skill and an artist's feeling. The appeal of this most modern manifestation of ceramic art is far more subtle than that of the mosaics which were the acme of floor-making among the Greeks and Romans, and it has the singular advantage of being within reach of beauty lovers of moderate means.

Concrete floors are cheaper than wood for the first story, they are enduring, they require a minimum of care, they are comfortable and healthful when laid right, and they can be more beautiful than any other floor.
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