Charles Eames, Eero Saarinen
Entenza House – Case Study House 9 1945–1950
Pacific Palisades

eames, saarinen

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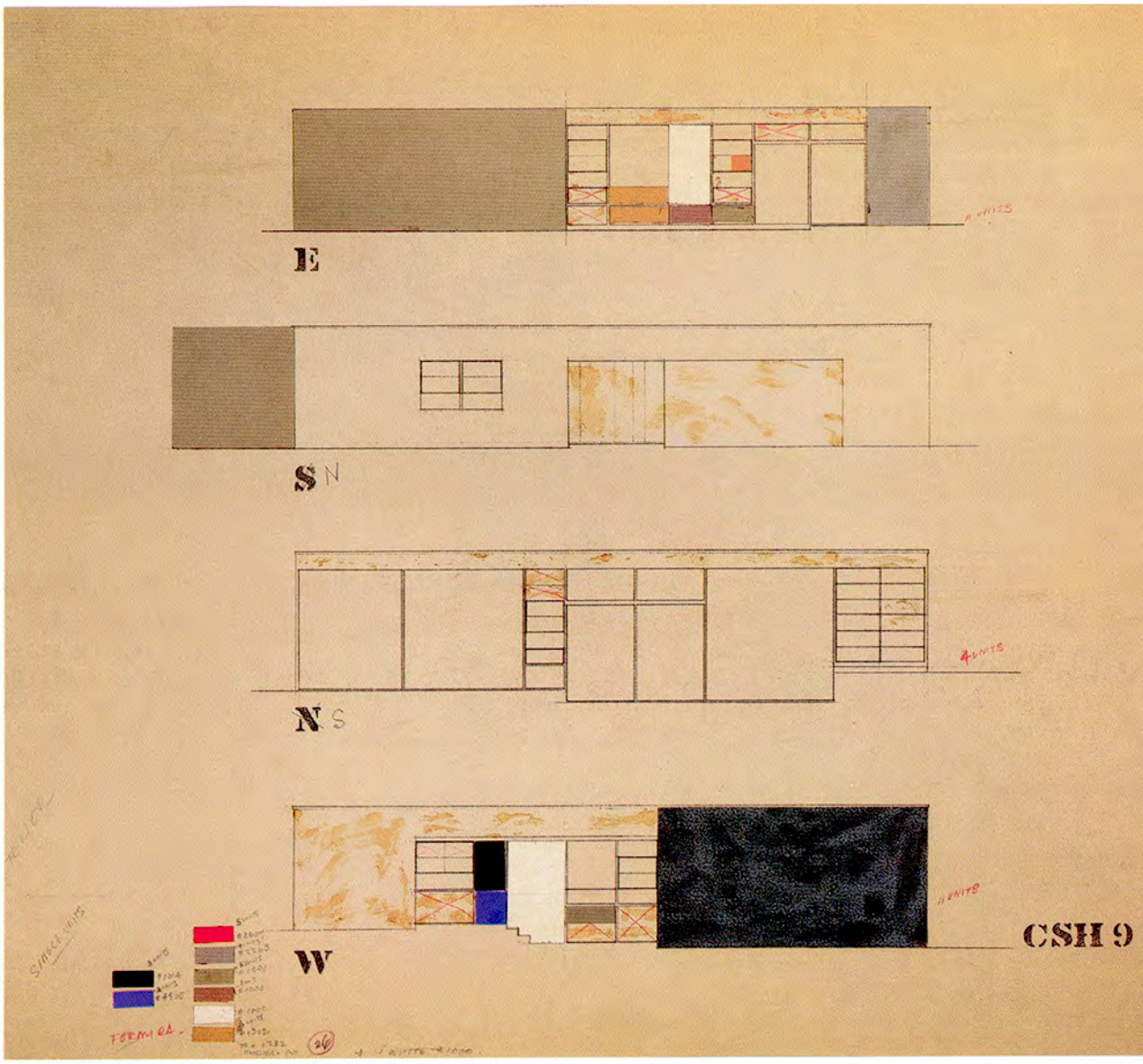

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A Magic Box

La scatola magica

Peter C. Papademetriou

the Entenza House, Case Study House 9, were initially conceived and produced as a pair, must be understood as a clear duality related to a specific site, and manifest their forms as responsive solutions to specific and deliberately contrasting functional imperatives. In fact, the very existence of the Eames House is due to John Entenza, editor of «Arts & Architecture» magazine and creator of the Case Study Program, who «...first offered them [Charles and Ray Eames] a share of the splendid site in Pacific Palisades...»[1].

First published as the cover story of «Arts & Architecture» in 1945[2], the history of the two projects is that CSH9 for Entenza essentially remained unchanged in detail from its initial design, while CSH8 for the Eameses was radically altered from its original *parti* to the built form. The apocryphal history is that «After the steel had been delivered to the site, Eames decided to redesign the house. He put the same set of steel parts together in a completely new way»[3]. This legendary *volte-face* has been a part of the ethos of CSH9, perpetuated by writers such as Esther McCoy as early as 1962, that «While the steel waited in the yard, Eames began working on a new design... only one additional beam was required...»[4]. The original design, clearly ascribed to both Eames *and* Saarinen, has been compared with a truss-form bridge house attached to a hillside, designed in 1934 by Mies van der Rohe, and exhibited in 1947 at an installation at the Museum of Modern Art, which Eames is known to have seen[5]. Moreover, the first version also recalls a relatively unknown (and unpublished) project by Saarinen, a house for Cranbrook student Samuel Bell, designed in 1941, which is also a cantilevered truss-form, and «... the original Eames design may have been abandoned because the designs were too similar»[6]. It was at this point that the historical attribution shifts, with CSH8 being the result of collaboration between Charles Eames and his wife, Ray, while CSH9 remains clearly ascribed to Eames and Eero Saarinen, yet eclipsed as a seemingly minor work.

In many ways, however, the Entenza House/CSH9 deserves renewed critical consideration. In terms of the Eames-Saarinen collaboration, it is probably worth noting the very likely co-equal, collaborative roles of the designers, and possibly even the dominant role of Saarinen in the design of his father Eliel were also marked in part by the presence of Charles Eames, who would become in profound ways, a life-long friend. Part of this involved collaboration on projects in large extent driven by Eliel Saarinen, such as the Kleinhans Music Hall (Buffalo, New York, 1938–40), the Crow Island School (Winnetka, Illinois, 1938–40), and the Tabernacle Church of Christ (Columbus, Indiana, 1939–42), in which Charles Eames played a design role[8]. As an architect, Eames' designs of the mid-1930s were closer to Eliel's at the time he came to Cranbrook Academy in 1938, where he soon became the head of the Design Department[9]. Eero, moreover, was clearly in touch with more contemporary trends, dating from his travels in Europe in 1934–35, work with Cranbrook students upon his return, and a partnership with his father in 1937. His competition entries 1938–39 (such as the famous Smithsonian Institution Gallery of Art Competition, 1939, in which the Saarinens won First Place) involved collaboration with modernists such as Ralph Rapson as well as Eames, and work during the World War II period brought him in contact with former students of Walter Gropius as well. This period of Saarinen's search for a definition of modernism, which has not been scholarly examined in detail, lead in the direction of industrialized and modular building, lightweight construction, and flexible, and somewhat indeterminate, form[10]. At the time of the Case Study House program, Eero had directed the first designs of the project for the General Motors Technical Center in 1945, many of which forms derived from his transposition of an aesthetic of "streamlining" which he had encountered in the Office of Norman Bel Geddes in 1938. Clearly, by 1945, these images, described in a marvelous set of renderings by delineator Hugh Ferris, appeared dated and Eero was driven toward a greater precision of form[11]. Ultimately, this lead to an adaptation of a Miesian vocabulary for the GMTC by 1948, but there is no doubt that the Entenza House was a step toward that direction.

In terms of the architecture of the period, CSH9 is intriguing for its uses of a variety of modern principles. One clear aspect is its manifestation as a "transformable plan", which places it in the pedigree of works such as Gerrit Rietveld's Schroeder House (1924–25) and Pierre Chareau's

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Entenza House *prospetti con le prove di colore e il collage parziale delle facciate (disegno di Ray Eames)*
exterior elevations, with color chips and partial collage of facades (drawing by Ray Eames)

RIASSUNTO La casa costruita a Pacific Palisades per John Entenza da Eero Saarinen e Charles Eames (Case Study House 9) è un capitolo inesplorato della storia dell'architettura americana. Le vicende della costruzione (dal 1945) sono intimamente legate a quella della Case Study House 8 di Charles e Ray Eames. Influenzato da Mies van der Rohe, il progetto coincide con una tappa fondamentale nello sviluppo della ricerca di Saarinen, che dall'amicizia e dalla collaborazione con Eames (dal 1937) trasse stimoli che lo portano a liberarsi dall'influenza del padre Eliel, nume tutelare della Cranbrook Academy of Art dove Charles e Eero si erano formati (cfr. «Casabella» 644, aprile 1997). John Entenza intendeva fare della sua casa una dimostrazione degli intendimenti del *The 'Case Study' Program* che la sua rivista «Arts & Architecture» aveva lanciato nel 1945 per realizzare, facendo ricorso alle tecniche e ai materiali più innovativi, una serie di prototipi di abitazioni che contribuissero a creare un «nuovo ambiente in grado di rimodellare gran parte dei nostri modi di vivere e pensare» (tra il 1945 e il 1949 il programma portò alla costruzione di tredici case e all'elaborazione di sette progetti). La casa Entenza è un volume squadrato con lati di 16,5 m, con una griglia strutturale di 9,5 per 7 metri, organizzata intorno ad un nucleo centrale di minori dimensioni. I dodici elementi portanti verticali sono costituiti da due angolari in acciaio saldati; questi montanti scatolari di 10 cm di lato reggono le travi principali larghe 10 cm e alte 30,5 cm. Agli angoli la struttura della copertura è aggettante. Il prospetto sud, prospiciente l'oceano, è costituito da una parete vetrata continua, protetta dall'aggetto del tetto. La griglia strutturale disegna i volumi degli ambienti interni, organizzati secondo l'andamento degradante del terreno. Le porte possono ruotare di 90° e consentono di modificare la successione degli spazi interni. La composizione è rigorosamente geometrica e le diagonali, sovrapponendosi ai quadrati, individuano le partizioni spaziali e la distribuzione degli arredi. Materiali moderni, di derivazione industriale, impiegati secondo i dettati della prefabbricazione, sono utilizzati per gli involucri sia esterni che interni. Il materiale più largamente impiegato è la lamiera variamente trattata, intonacata all'interno e qui usata in alternativa al cartongesso. I colori sono sommessi e tra i grigi, il nero e il bianco compaiono pochi tocchi di rosso e blu. La fama della casa Eames (Case Study House 8) ha eclissato quella della casa Entenza, che tuttavia rimane uno dei migliori esempi che è possibile studiare per illustrare le finalità perseguite dai programmi varati dal geniale direttore di «Arts & Architecture» e un episodio chiave per comprendere i termini dell'amicizia e dei rapporti di collaborazione che legarono due straordinari progettisti quali Saarinen e Eames nel corso di una delle stagioni più felici per l'architettura americana del Novecento.

"Maison de Verre" (1928–32). In terms of modernist space, it exhibits a collage quality in terms of how walls define and imply spatial volume, and how volumes interact with a variety of floor plane surface materials, in addition to the modernist fascination with inside-outside relationships, for which the California climate provided ample design opportunity. The obvious use of ideal form, based upon a square geometry, reflects the acceptability of centralized plans by the 1950s, yet its pin-wheel structure asserts a modernist imperative toward centripetal composition[12]. Its use of modern, industrial products whose simple finishes became the material core of its decorative program, also reflects the degree to which such "anonymous" elements could actually generate particularized, contextual responses to edge conditions of the site. Finally, the design principles at work in fabricating the Entenza House suggest that «... a new architectural sensibility... investigating the nature and potential of architectural surfaces...» described in the recent Museum of Modern Art exhibition "Light Construction"[13], resonate within this work of 1945–50, a half century before.

As a Case Study House, the Entenza House would seem to carry a mandate to demonstrate the principles of the program's founder. In introducing *The 'Case Study' House Program*, Entenza began by suggesting a speculation on the need for a "house-post war", which would «... fulfil [sic] the specifications of a special living problem in the Southern California area» where «Each house will be designed within a specified budget... every consideration will be given to new materials and new techniques in house construction». The case studies were to «... pose specific problems in a specific program... to expand considerably the definition of what we mean when we say the word 'house'... and perhaps we will realize that in accommodating ourselves to a new world the most important step in avoiding retrogression into the old, is willingness to understand and to accept contemporary ideas in the creation of environment that is responsible for shaping the largest part of our living and thinking»[14].

In consort with the Eames House/CSH8, Entenza asserted that the sharing of a site had to be reconciled with «... the necessity of privacy, or the right to choose privacy from one another and anyone else» and that the programs of both, while unique in this instance, would hope to make «... some contribution to the need of the typical...». As his own house, CSH9 was seen as a place both for individual, personal concentration, and a venue for entertaining, «... space used elastically where many or few people can be accommodated within the areas appropriate to such needs. Intimate conversation, groups in discussion, the use of a projection machine for amusement and education, and facilities for self-indulgent hobbies...»[15].

The design comprises a 54 foot (16.5 m) square volume, framed by 31 foot (9. 5 m) by 23 foot (7 m) structural bays, which pinwheel around a central 8 foot (2.44 m) square bay[16]. This grid is framed by structural columns formed by a composite of two steel angles welded back-to-back into a 4 inch (10 cm) square shape, which in turn carry the principal beams, 4 inch (10 cm) wide by 12 inches (30.5 cm) in depth. The angle-columns comprise one with 2 inch (5 cm) legs, while the other comprises 3 inch (7.6 cm) by 2 inch (5 cm) legs, facing away from the center. This structural armature is then framed by steel open-web bar joists equal to the beam depths, and spanning the short axis of the structural bay at 5 foot, 2 inch (1.6 meter) centers. The only exception is a single additional, offset joist in the Southwest quadrant, which frames the primary interior skylight, a main visual feature bringing light to the dining area. Another narrow slot skylight in the garage bay simply frames into the roof decking. All four bays are offset at the outer corners of the building perimeter, with a secondary column set in from the corners at the dimension of the joist grid, resulting in a structural box which has cantilevered corners. The South-facing facade, open to the primary view of the Pacific Ocean, is a continuous glass wall, the plane of which is set back from the roof fascia at the same depth of the joist line, forming a continuous covered "mouth" terrace. The twelve angle-columns are rotated about their axis around the perimeter, and around the central square bay, as a means of reconciling infill wall conditions, with the long axis of the larger angle being in line with the axis of the wall panels. The final structural element is a pair of steel tensile tie-bars which cross-brace the corners of each of the four main structural bays, keeping the outer corners stiff. The central cluster of four columns provides internal cross-bracing and continuity between the four pinwheel bays, thereby distributing the loads to the perimeter, reducing overall loads within the structure and permitting a relatively thin roof/ceiling plane. The pinwheel yields the shortest common span on the square[17].

This basic grid outlines the blocks of interior

2
modello del 1945 di casa Eames nella soluzione a ponte e di casa Entenza sullo sfondo
model of 1945 with Eames House –First "Bridge House"– and Entenza House in background

3
modello di studio per casa Entenza, nel quale si nota la massa interna delle stanze e il collage formato dalle finiture dei pavimenti
Entenza House study model, showing internal massing of room elements and collage of floor surface finishes

4
modello della fase progettuale intermedia
study model of intermediate scheme

spaces; the underlying pinwheel geometry results in a dynamic juxtaposition of these program areas, activating the interior volume. Complementing this is a gradual change in floor elevation over a total drop from the North (entry) side to the South (terrace) side of 2 feet,10 inches (0.86 m). These changes in floor elevation are played off against the continuous roof plane, resulting in a further volumetric articulation of program, from an 8 foot,6 inch (2.6 m) ceiling at the garage and bedrooms, 9 foot, 10 inches (3 m) at the kitchen and dining, and 10 foot, 10 inches (3.3 m) at the lower living room and terrace[18].

Perhaps the Entenza House is ultimately the more "American" of the pair, since a substantial part of its footprint is dedicated to an internal garage and its support spaces, not so much as embracing the machine in the sense of Le Corbusier's Villa Savoye (1929), but in the non-rhetorical, nonchalant, obvious reality of a mature modern building in Los Angeles in the late 1940s. From the garage, whose entrance shares a covered slot in the building volume with the "front door" along the North elevation, there are two options for entering the house: directly to the entry at the front, or directly into the kitchen along the West wall, which in turn accommodates the North face, which is overall, a relatively blank facade. Representationally, this aperture stands alone, apart from the visual system of other openings, and the sole "punched hole" facade element. The East facade is dominated by Entenza's bedroom, bathroom and dressing suite: the spaces are physically extended, implicitly overlapping inside and outside. The bath has a full-glass opening, suggesting a private sun terrace for taking morning coffee after the routine, and this extends through to both a dressing zone and the bedroom itself. In fact, some internal partitions do not extend to the ceiling, so that the spatial volume is continuous for the kitchen in relation to the large entertainment function of the dining-living room, with 7 foot, 3 inch (2.2 m) walls, and also at the master bedroom, dressing and bath suite. Contrasting with this is Entenza's study, a dense, windowless core interior space reflecting a design solution mandated by the proportion of the building mass, but also a unique concept[19], which was «Sound-proofed (the occupant was accessible only on an intercom system), and designed without windows in the belief that more work would be done without the distractions of natural light and sound...»[20]. The master bedroom, on the other hand, features a solid sliding wall along its South end, which may be tectonically removed into a concealed pocket, thereby throwing the room open both to the living room, and more importantly, the Pacific Ocean view. It becomes one with the public domain, but being at the highest datum, literally overlooks and is spatially removed from it. A processional sequence is established by the entry, descending into the main body of the house at the point of the internal square bay, to a kind of platform, and thence down two additional elongated step-seats to the living room, whose boundaries are somewhat ambiguous, culminating in a sliding glass opening onto the covered exterior terrace and the vista across the meadow to the ocean. Spatially, while most interior room dimensions are on the order of 10 feet (3 m), the width of the living room is nearly 36 feet (11 m). Its East end is anchored by a built-in sofa, which "cups" the cross-axis, and forms a generous niche embracing the colorful freestanding fireplace. The West end of the room is a small dining extension of the kitchen, articulated both by the floor material and a set of double bi-fold doors. These doors allow for three spatial possibilities: completely open and folded against the kitchen wall; extended across the opening to the living room on the N-S axis, thereby combining it with the kitchen; or extended across the kitchen front, thereby defining the room as part of the living room. The doors pivot through a full 90° turn, function without a floor track, and may also be extended in a partially open position, adding two more spatial options, and multiplying the possible transformations of the plan.

The interior landscape of the floor plane, combining carpeted areas with tile surfaces, appears like a collage composition whose material interaction activates the multivalent reading and perception of dynamic occupation of the space and its multiple levels. An early sketch by Eero Saarinen suggested a more aggressive collage of surfaces and levels in biomorphic form played off freely against the Cartesian container of the house volume; in this scheme, which Saarinen humorously notes, «Charlie: I am sending this stuff now and some more to-nite [sic] take it for what it is worth or a "side door" from a covered porch. The kitchen faces West toward the Eames House, but its windows are spatially screened by the porch, which is a very light construction appendage, acting as a small loggia, and an environmentally responsive sunscreen to the West orientation. The only other opening on the North face is the window of a small guest bedroom, conceptually outside the program of the house's sole occupant and therefore part of the "public" domain represented by

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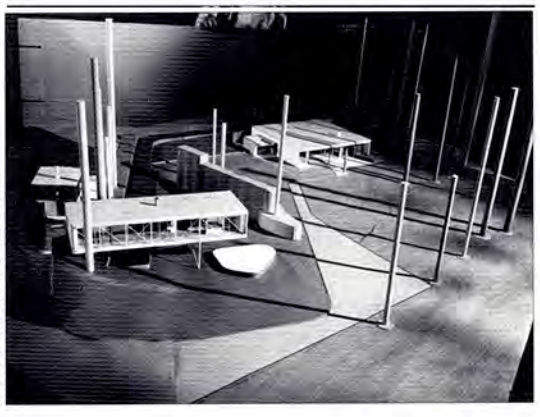
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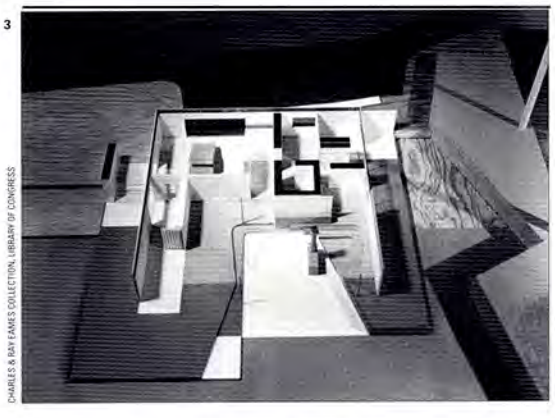
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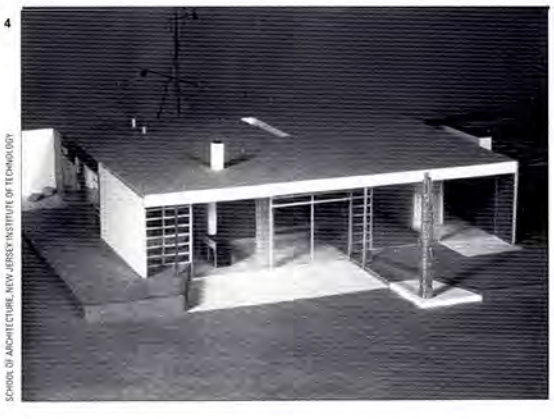
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a little less», the interior and exterior flow together. A perspective view shows a cantilevered fireplace as part of a wall form which "zooms" through the glass to the terrace beyond. Another Saarinen perspective, from the viewpoint of Entenza's bedroom, illustrates the vision of this sofa niche as an intense space for intimate group discussion.

In its final form, the rigor of the structural geometry is elaborated. Two features are discernible: both a system of interlocking and overlapping squares are a fundamental referent in the fabrication of the plan geometry, and the oblique lines which are clearly part of the final design are not mere whimsy. In fact, a close analysis of the obliques imposed upon the plan reveals their inherent linkage to the square geometrical underpinnings[21]. Both systems interact together in generating the placement of spatial divisions and begin to describe the position of other objects, such as the ultimate location of the freestanding fireplace[22].

Modern, prefabricated, industrial grade materials are the palette for interior and exterior surfaces. A primary finish was 'ferroboard', used as roof decking, tack-welded to the structural joists, and as both an interior and exterior wall finish[23]. Only the recessed entry/garage slot is different, but consistently treated as if it were another infill panel, and therefore distinguished from the external volume of the overall form, by being finished in vertical strips of clear-heart redwood. The interior partitions alternate between gypsum board sheets and ferroboard finished in plaster, the roof fascia is ferroboard with a plaster finish, and all exterior walls are finished in vertical panels of 6 inch (15.2 cm) ferroboard; in the case of the East elevation (the master bedroom suite), the panels are painted alternating stripes of white and gray[24]. Color for the Entenza house was largely restricted to a palette of grays, black and white, or warm browns and tans, with a occasional accent of primary red and blue (one operating window frame in the kitchen is painted red); a color study by Ray Eames shows that she was directly involved in refining this feature of the design, as she was credited with that for the Eames House/CSH8[25]. Solid panels in the window systems were color "Formica" plastic laminate, an *avant-garde* material. Other details include the "bare-bones" use of exposed shelving, a series of prefabricated modular metal closets in the bedroom hallway, exposed plumbing fixtures, and a corrugated wire-glass wall between the entry hall and the garage, behind which were plants in the garage receiving light from the slot skylight above, and casting their shadows through the glass as a kind of naturalistic texture. The ceiling plane is finished in wood strips, which are continuous in the N-S direction, thereby neutralizing any expression of the dynamic pinwheel structural bays in the roof. This may be regarded as perhaps an inconsistent resolution between the rigor of the structural armature and its expression or representation as a logical organizing element within the composition. Or perhaps more directly, it was the choice of reducing the potential visual "busyness" of the ceiling, and a design decision to emphasize the main axial promenade, and the orientation of the view to the ocean[26].

What is curious is the clear and rigorous design of the steel structure, which «...is perhaps even more of an engineering triumph than that of the Eames House, but the eye is not permitted to enjoy it... [the wood ceilings] prevent even a suspicion of its existence»[27], and what has been characterized by the consulting Engineer, Edgardo Contini, «... to be anti-structural, to be as anonymous as possible. In the Entenza house no beams are expressed, no columns visible»[28]. Contini does acknowledge that the key detail in developing the angle-columns was to evolve a combination of columns and window mullions so that all that would show would be the flat edge of the angle, instead of the H-shape or a pipe column; this provided an "invisible" structure, and a floating roof plane was further articulated by an angle where walls meet ceilings, clarifying their separation, and the non-structural nature of interior walls[29]. Generally, the finish of walls containing columns is to cover the columns in the principal rooms, more reasonably to provide uninterrupted wall planes. This is also true in the central square bay, yet two columns are revealed: the corner of the study wall on the living room side is a negative vertical slot resulting from the concave outer legs of two structural angles, but also resulting in a clean articulation of the living room wall plane as being separate from the entry hall plane, and the lone column which stands at the landing may best be understood as being rhetorical and assertive, marking almost as a didactic declaration, the latent image of the structural frame[30].

Eclipsed in the recent history of architecture by its companion, the near-icon Eames House/CSH8, the Entenza House/CSH9 is both an enigma and a magic box. Through analysis, it evokes an awareness of the possibilities for industrial production and principles of abstract composition, to take their muteness and provide a responsive container of human activity which asserts, again, the design potential for a modernist sensibility.

Notes

1 Kirkham, Pat, *Charles and Ray Eames: Designers of the Twentieth Century*, MIT Press, Cambridge Massachusetts 1995, pag. 114.

2 *Case Study Houses 8 and 9 by Charles Eames and Eero Saarinen, Architects*, «Arts & Architecture», vol. 62 (December 1945), pagg. 43–48.

3 Colomina, Beatriz, "Reflections on the Eames House" in *The Work of Charles and Ray Eames: A Legacy of Invention*, Harry N. Abrams Inc., New York 1997, pag. 132.

4 McCoy, Esther, Chapter 1,"The first five Years: 1945–1949", *Modern California Houses* [Case Study Houses 1945–1962, second edition], Reinhold Publishing [Hennessey & Ingalls, Inc.], New York [Los Angeles] 1962 [1977], pagg. 62–67; this assertion is challenged in Ford, Edward R., *The Details of Modern Architecture, Volume 2: 1928–1988*, MIT Press, Cambridge Massachusetts 1996, pagg. 229–231.

5 Colomina, *op. cit.*, pag. 143, and Kirkham, *op. cit.*, pag. 111.

6 Kirkham, *ibid.*, pag. 112.

7 At this writing, no written papers which might articulate the Entenza-Eames-Saarinen relationship have been available for scholarship; conjectures are based upon the careers of the individuals, relevant patterns of contemporary design work, and the physical evidence which is now a part of the Eames Collection; Prints and Photographs Division; Architecture, Design & Engineering Collections; Library of Congress; Washington, DC. Saarinen and Eames had enjoyed their collaborations, which no doubt played a role in their evolving friendship: the Cranbrook Faculty Exhibition Cranbrook Academy of Art of 1939, and their First Place entry in the Museum of Modern Art "Organic Design in Home Furnishings" Competition (1940–1941). Saarinen continued a history of collaboration, including the period 1937–50 with his father Eliel, but also Oliver Lundquist, Dan Kiley, Alexander Girard (see below), Paul Rudolph, Matthew Nowicki, and perhaps the most original, the decision to combine a public library and museum with a repertory theater as a solution to a difficult site at Lincoln Center, New York City with Gordon Bunshaft of Skidmore, Owings & Merrill (1958–64).

8 See the somewhat respectful misgivings of Eliel's esthetic expressed by Joseph Hudnut in

5
schizzo prospettico della nicchia del divano in rapporto al camino a sbalzo (disegno di Eero Saarinen, 1945?)
perspective sketch showing view of sofa pit in relation to cantilevered fireplace (drawing by Eero Saarinen, 1945?)

6
John Entenza, a sinistra, con Alfred Auerbach, a destra, consulente marketing per Herman Miller Furniture Company, davanti alla struttura in acciaio di casa Entenza, 1950
John Entenza, to the left, with Alfred Auerbach, to the right, marketing consultant for Herman Miller Furniture Company, in front of Entenza House steel framing, 1950

7
fotografia di cantiere della struttura in acciaio di casa Entenza con Charles Eames sulla scala (primo piano a sinistra); notare sullo sfondo la Ford Tudor decappottabile del 1950
construction photograph of Entenza House steel framing, Charles Eames on ladder (left foreground); note 1950 Ford Tudor convertible in background

Kleinhans Music Hall; Buffalo, New York, «Architectural Forum», vol. 75 (July 1941), pagg. 335–42.

9 See discussion in Giovannini, Joseph, "The Office of Charles Eames and Ray Kaiser: The Material Trail" in *The Work of Charles and Ray Eames: A Legacy of Invention*, Harry N. Abrams Inc., New York 1997, pagg. 49–52, and in Kirkham, *op.cit.*, pagg. 20–27.

10 Papademetriou, Peter C., *On Becoming a Modern Architect: Eero Saarinen's Early Work 1928–1948*, «OZ», Journal of the University of Kansas, vol. 9 (May 1987). Saarinen had also participated in a wartime symposium organized by Wallace K. Harrison on the theme *The Architect & Prefabrication*.

11 A discussion of this stylistic switch, explained in technological terms, is contained in Ford, *op. cit.*, on Chapter 7, *Saarinen, Eames, Fuller, and the Case Study Houses: 1940–1959*.

12 See discussions of this tendency in Johansen, John M., *Space-Time Palladian*, «Architectural Record» (December 1955), and Rowe, Colin, *Neo-Classicism and Modern Architecture*, «Oppositions #1» (1974).

13 Riley, Terrence, *Light Construction*, Museum of Modern Art, New York 1995.

14 Entenza, John, *Announcement: The Case Study House Program*, «Arts & Architecture», vol. 51 (January 1945), pagg. 37–39.

15 *Ibid.*, pag. 43.

16 This detail is pictured in McCoy, *op. cit.*, incorrectly as being framing for CSH8, when it is in fact the Entenza House, pag. 59; additionally, the composite-angle columns are described as «The frames of both are composed of 4 inch H-columns...» and also «Four 4 inch round steel columns in the center of the house...» (McCoy, *op.cit.*, pag. 54), and the span between joists stated as «...7 feet on center» (caption, pag. 65), both of which are details from the Eames House; this error is perpetuated in John Neuhart, Marilyn Neuhart and Ray Eames, *1950 «Arts & Architecture» Magazine Case Study House #9, Eames Design: The Work of the Office of Charles and Ray Eames*, Harry N. Abrams Inc., New York 1989, pagg. 122–3.

17 Technical drawings for CSH9 refer to «Charles Eames and Eero Saarinen, Associate Architects, Bloomfield Hills, Michigan» and a shop drawing from California Cornice, Steel & Supply Corp. refers to «Case Study House No.9, Bloomfield Hills, Mich.»; these suggest that the Saarinen office (Eames was in California, Saarinen in Michigan) had a direct role in the construction aspects of the Entenza House.

18 This obvious deliberate strategy contradicts Giovannini's assertion that «...what was lacking in Eames's work was the spatial dimension – even in a project on which he collaborated with Eero Saarinen, Case Study House #9...»; however, this might further suggest the direct design role of Saarinen; *op. cit.*, pag. 56.

19 Mercedes Matter, wife of Herbert Matter (who was working with Eames at the time), asserts that the notion of such an intense room was initially hers (although she had envisioned a skylight); see Giovannini, *op. cit.*, pag. 68.

20 Kirkham, *op. cit.*, pag. 126.

21 The use of a similar oblique angle played off against a Cartesian grid may be seen in the entry submitted by Charles Eames and John Entenza for a *City Hall for 194X*, «Architectural Forum», vol. 86 (May 1943), pagg. 88–90.

22 Another, later Saarinen house design for J. Irwin Miller in Columbus, Indiana (1953–1957) is also a square plan, and its private spaces occupy a pinwheel configuration around a central, skylighted living room, which is in the form of a "conversation pit", akin perhaps to the sofa area of the Entenza house. This design was also a collaboration with Alexander Girard, Kevin Roche, and Dan Kiley planning the site and landscape.

23 Ford totally misses this construction feature, when he refers to «...the Entenza house with its walls of solid brick...», *op. cit.*, pag. 229.

24 An interesting note appears on the elevations: «careful – do not get paint on concrete».

25 See Giovannini, *op. cit.*, pag. 56 and illustration, pag. 68; Saarinen, Eames and Alexander Girard had also collaboratively participated in The Museum of Modern Art "Competition for Printed Fabrics" in 1946, and Ray Eames and Girard submitted separate designs. All three designs received Honorable Mentions and were exhibited in the 1947 exhibition *Printed Textiles for the Home* (MoMA Exhibition #345).

26 Kirkham glibly asserts «The extensive use of wood...was probably Saarinen's idea...» (*op.cit.*, pag. 124), although this assertion implies a kind of "Scandinavian" (although Finland is not properly a part of Scandinavia) esthetic, which seems a superficial conclusion and characterization.

27 *Castle-Cabana of John Entenza*, «Interiors», vol. 110 (December 1950), pagg. 92–99.

28 McCoy, *op.cit.*, pag. 57.

29 Conversation with Peter C. Papademetriou, 28 March 1985, Los Angeles, California.

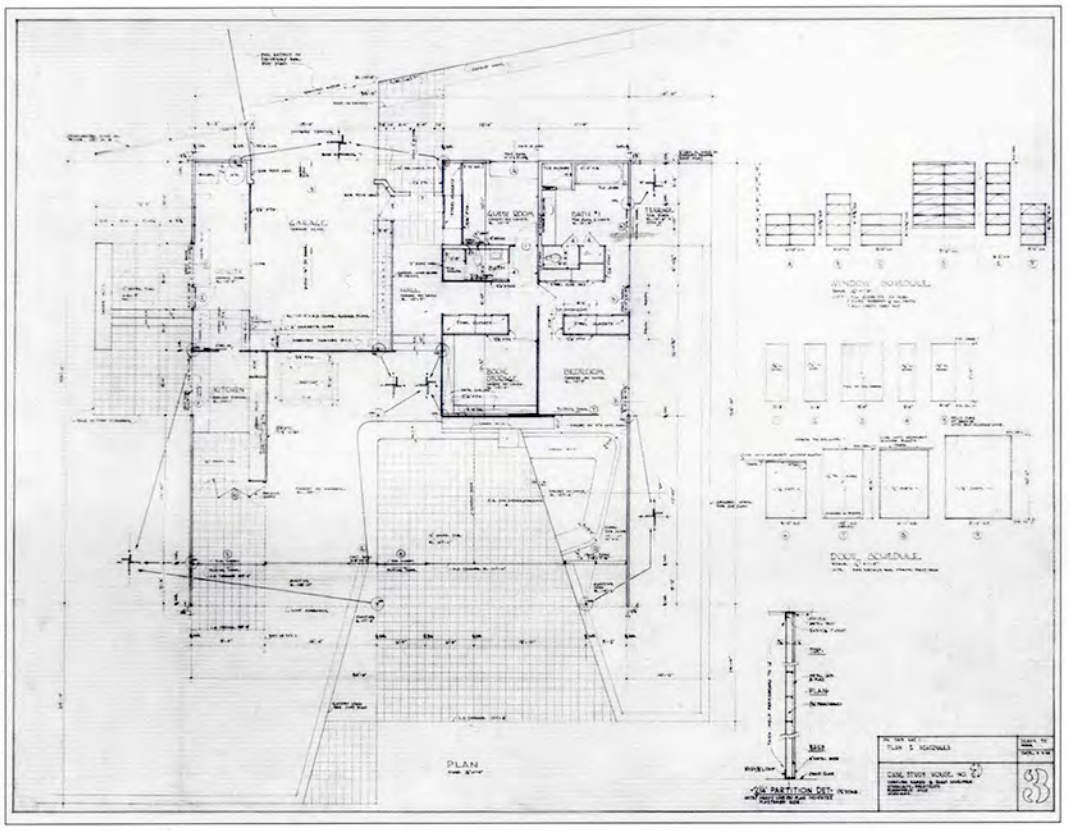
30 Ford gives a reasonable assessment of the extent to which the Entenza and Eames houses represent categorical manifestations of structural- versus non-structural expression; see Ford, *op. cit.*, pag. 229.

8
pianta del piano terra con in evidenza la posizione dei pilastri strutturali e delle principali aperture, maggio 1948
_
floor plan which illustrates positions/orientation of structural columns and principal window schedule, May 1948
9
pianta dello schema strutturale e disegno esecutivo del costruttore per l'incastro trave-colonna, novembre 1948
_
structural framing plan-fabricator shop drawing, beam connections, column connections, November 1948
10
stampa rovesciata della pianta parziale del piano terra dell'area di soggiorno a sud-est con note a Charles Eames scritte a specchio (disegno di Eero Saarinen, 1945?)
_
reverse-print of floor plan, south-east corner of living room-sofa niche, with "mirror-writing" notes to Charles Eames (drawing by Eero Saarinen 1945?)

PAGINA SEGUENTE / FOLLOWING PAGE

11
pianta del piano terra 1:150 e serie di diagrammi schematici sulla costruzione geometrica della pianta (disegni di P. Ratas e P. Papademetriou)
_
ground floor plan 1:150 and a series of schematic diagrams for the geometric designing of the plan (drawings by P. Ratas and P. Papademetriou)
12
veduta dal prato di casa Entenza guardando verso nord-ovest: la terrazza rivolta a sud è riparata dall'intradosso del piano di copertura formato dall'innesto della parete vetrata continua dalla faccia dell'armatura strutturale
_
exterior view of Entenza House from meadow, looking northwest: south-facing terrace is sheltered by soffit of roof plane resulting from inset of continuous glass wall from face of structural frame
13
la parete vetrata tra camera da letto principale e bagno inserita tra i due pilastri strutturali. I pannelli dei muri esterni in "ferroboard" sono dipinti in bianco e grigio a fasce alterne. Il muro del prospetto nord della casa si estende (lato destro della foto) in modo da nascondere alla vista la terrazza esterna
_
master bedroom and bath infill glass wall fit in between two structural columns. "Ferroboard" exterior wall panels are painted alternating stripes of white and gray. Front (north) wall of house is extended (right side of photo) to shield the exterior terrace from view

8



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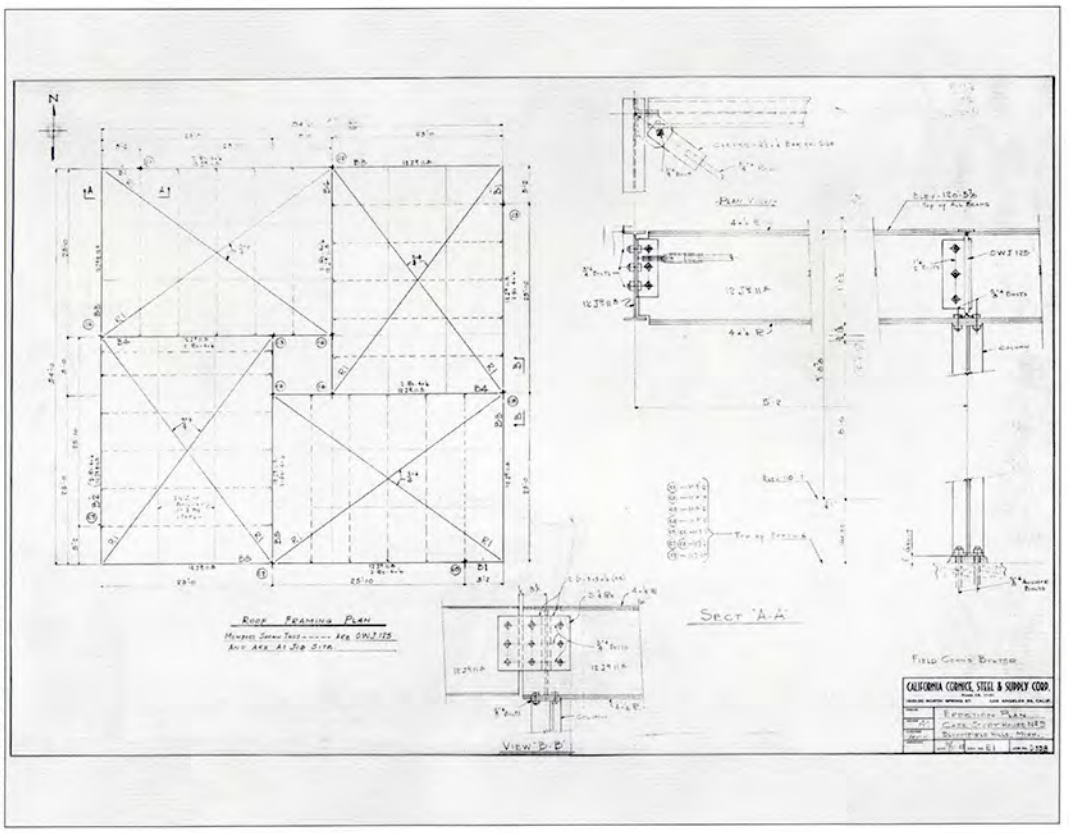

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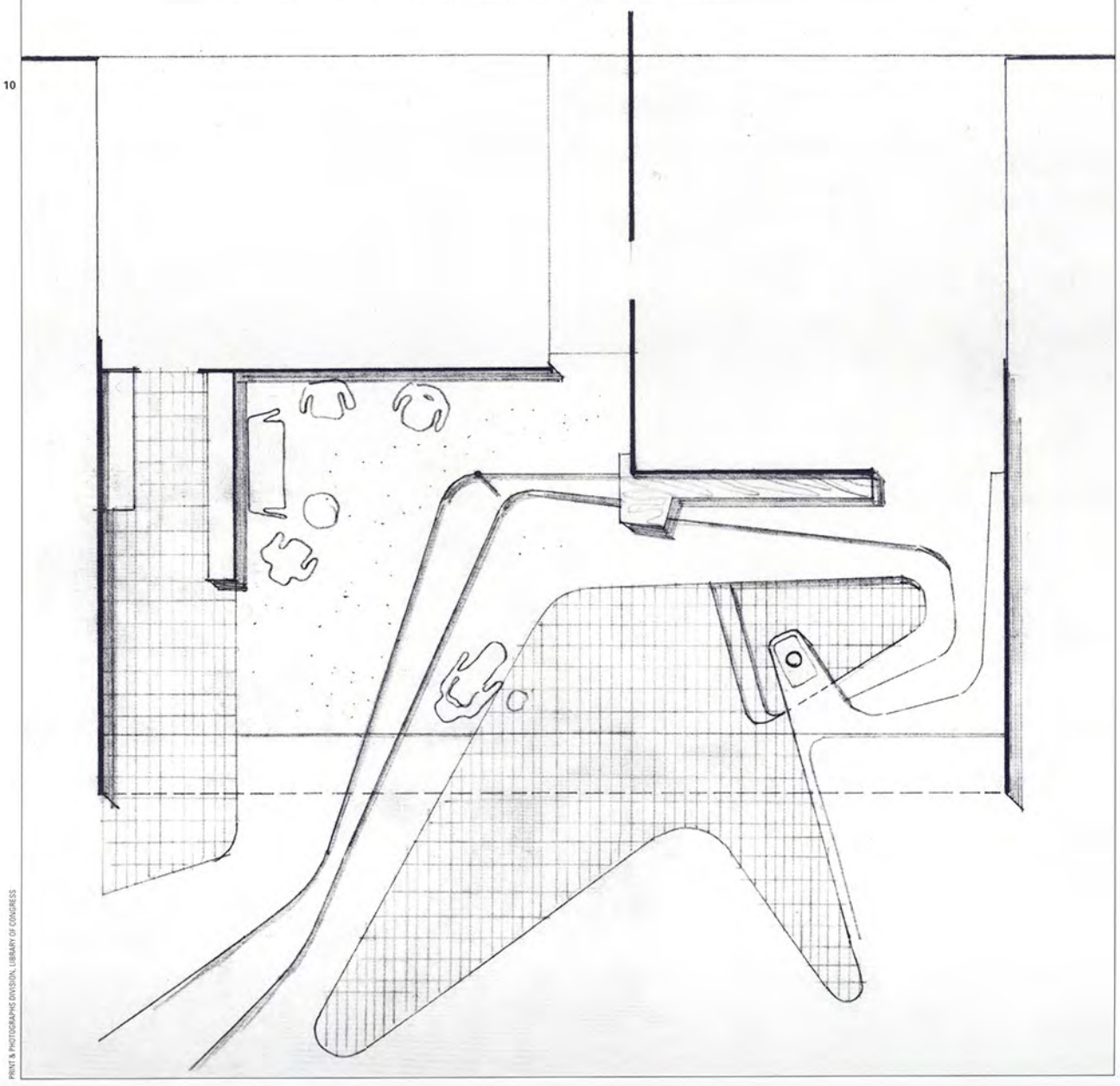

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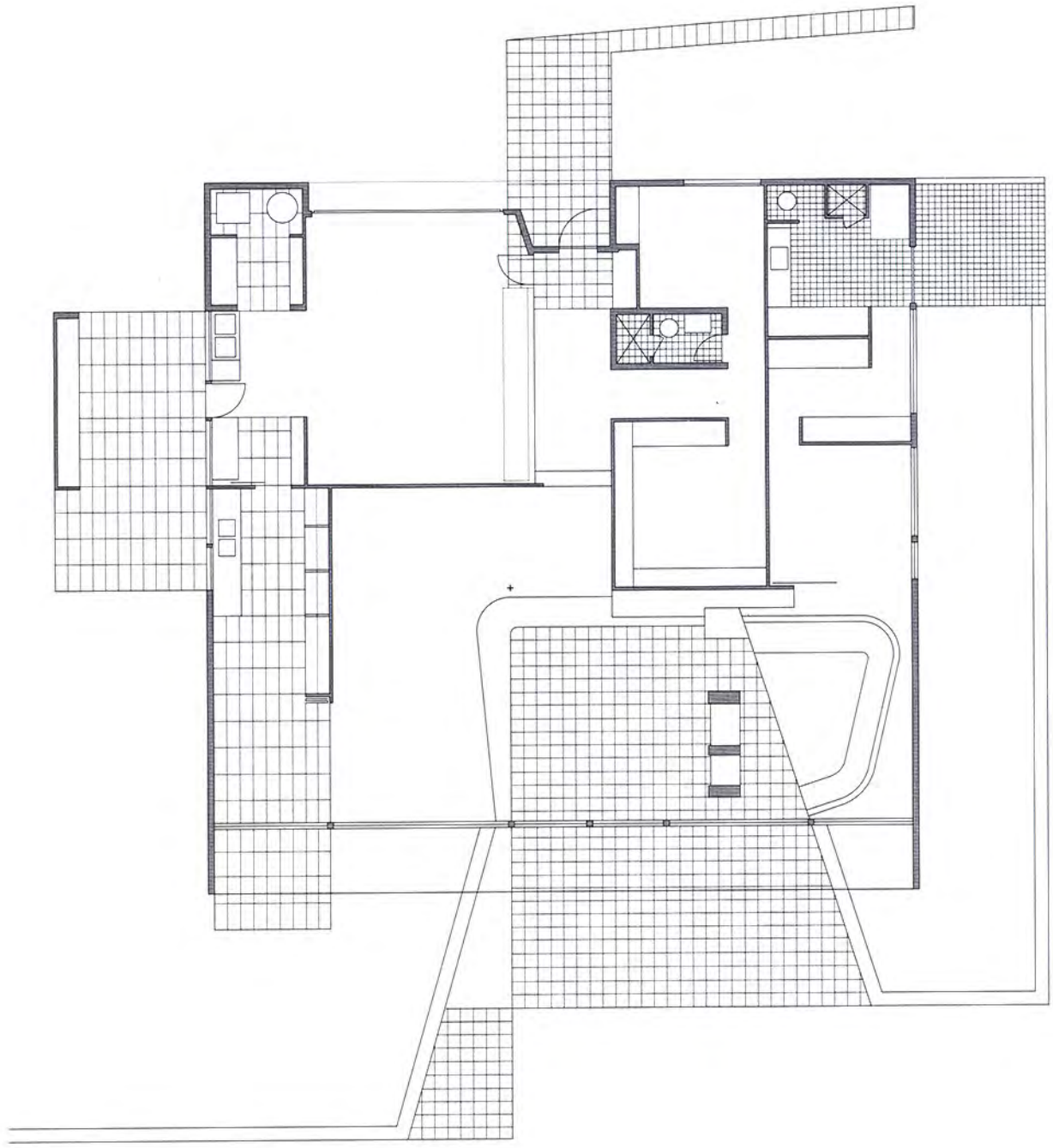
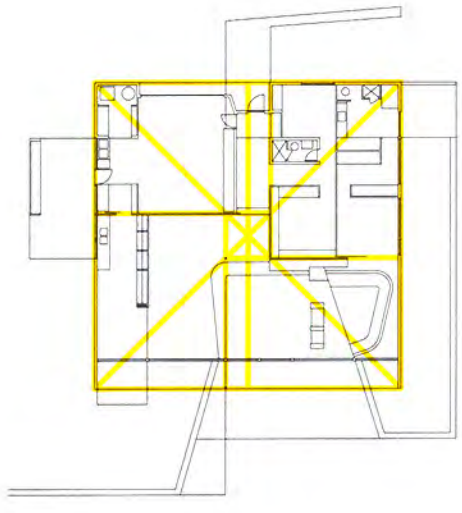
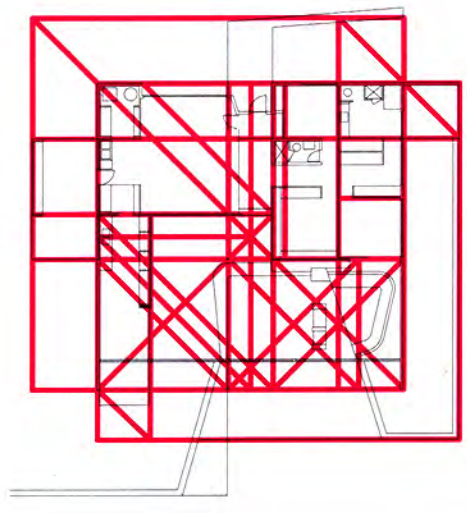
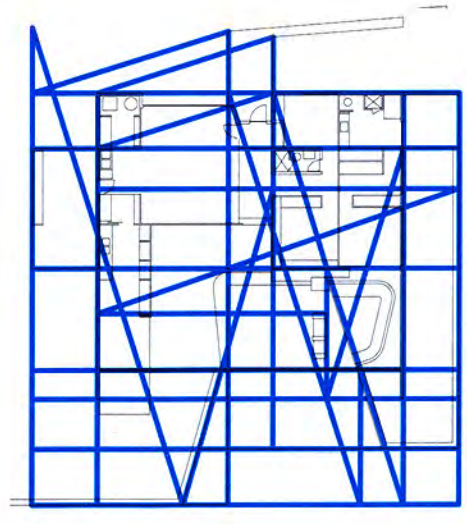
Charlie I am sending this stuff now and some more B-rate take it for what it is worth or a little less.

11









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14
veduta verso sud dalla parete ovest con l'ingresso di servizio alla cucina: la pensilina, oltre a proteggere dal sole la parete vetrata, costituisce uno schermo visivo rispetto all'adiacente casa Eames
_*view looking south, from west wall service entry to kitchen: covered loggia provides sun-screen to window wall, and a layer of privacy to views from the adjacent Eames House*
15
veduta del soggiorno che si affaccia sul prato e sull'oceano al di là della parete vetrata continua, verso sud-est. La zona superiore del soggiorno, rivestita in moquette, crea un contrasto con la zona inferiore, pavimentata con mattonelle
_*view into living room, looking out to meadow and ocean view beyond through continuous glass wall, in southeast direction. Upper carpet area contrasts with tile floor of lower living room*
16
veduta notturna della terrazza esterna attraverso la porta scorrevole che conclude l'asse proveniente dall'ingresso della casa. La luce entra, attraverso una parete di vetro smerigliato, dal lucernario del garage alla hall d'ingresso e dal lucernario del soffitto alla sala da pranzo. I grandi sedili-gradini suggeriscono l'utilizzo del soggiorno come zona di conversazione
_*night view from exterior terrace through sliding door which terminates the axis from the house entry. Light enters through corrugated glass wall from garage skylight into entry hall, and from ceiling skylight over dining area. Broad seat-steps encourage use of living room as conversation area*

PAGINE SEGUENTI / FOLLOWING PAGES

17
veduta del soggiorno-sala da pranzo: la parete bassa, a sinistra, nasconde la zona della cucina consentendo continuità spaziale
_*view of living room–dining room: low wall, left, conceals kitchen zone, providing spatial continuity*
18
la nicchia del divano, con la parete scorrevole della camera da letto principale in posizione aperta; la parete bassa dietro il letto garantisce continuità spaziale con il bagno retrostante
_*view of sofa pit, with sliding wall to master bedroom in open position; low partition behind bed provides spatial continuity with bath beyond*
19
la nicchia del divano, con la parete scorrevole della camera da letto principale in posizione chiusa
_*view of sofa pit, with sliding wall to master bedroom in closed position*
20
veduta dalla parete scorrevole aperta della camera da letto principale verso il soggiorno, affacciato a sud sul prato e sull'oceano in lontananza
_*view from open sliding wall of master bedroom into living room, looking south to meadow and ocean beyond*
21
veduta dalla zona cucina-pranzo verso il soggiorno, guardando verso est. Notare la parete aperta verso la camera da letto principale sopra il divano e l'armadio a muro modulare con funzione di archivio e appoggio per impianti audio-video. Il pilastro isolato in acciaio inquadra l'ingresso nel soggiorno. Le porte con battente a doppia piega sono ripiegate contro la parete della cucina
_*view from kitchen-dining area to living room, looking east. Note open wall to master bedroom above sofa, and built-in modular storage-entertainment media cabinet. Single steel column frames entry into living room. Bifold doors are folded against kitchen wall*

14

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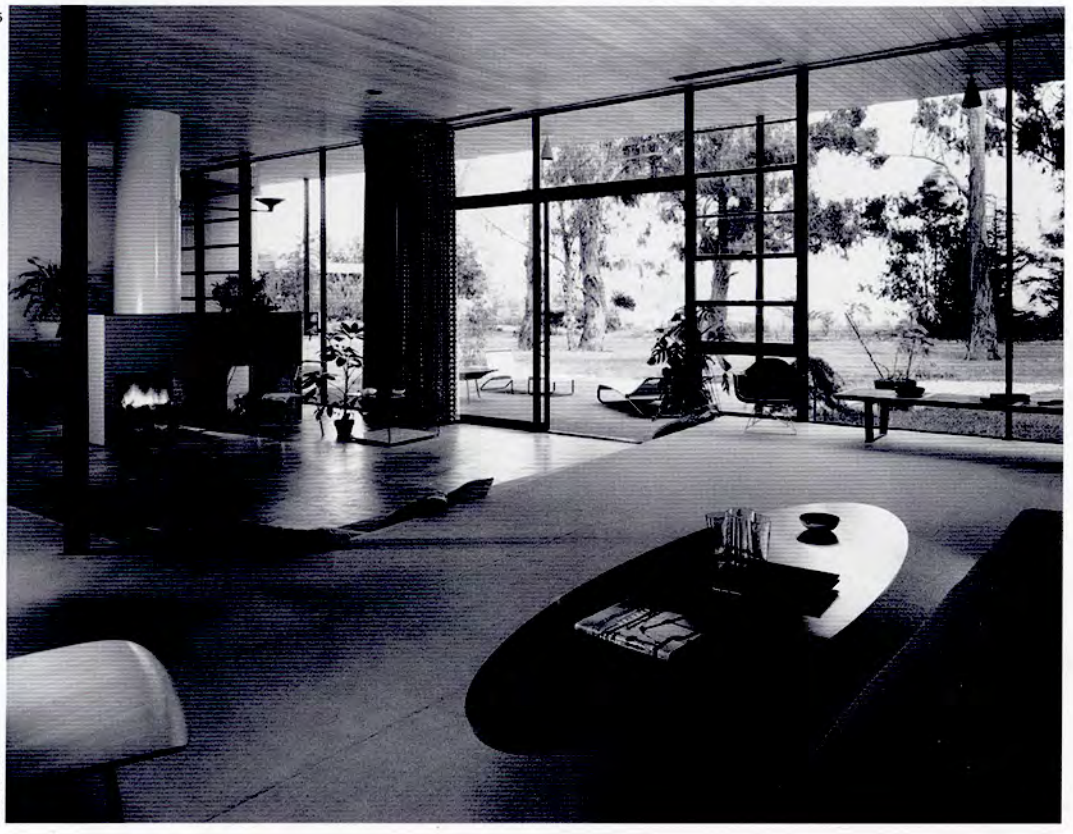

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