

The Pennsylvania State University

The Graduate School

**LE CORBUSIER AND THE OCEAN LINER:
METAPHOR AND MACHINE AESTHETIC**

A Thesis in

Architecture

by

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Submitted in Partial Fulfillment
of the Requirements
for the Degree of
Master of Science

May 2020

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ABSTRACT

The 1923 publication of *Towards a New Architecture* cemented the association between Le Corbusier, architectural modernism, and the ocean liner. Le Corbusier, along with other modernist thinkers, used the ocean liner as a metaphor for many different ideas: as a design object which meets the demands of mechanics, as a product of the spirit of a new age, and as an example of formal and spatial organization. Despite extensive study of Le Corbusier and his design thinking, including frequent mentions of the influence of ocean liners, critical scholarship to date has yet to grapple with the full implications of the liner's role in his opus. By creating a chronology of Le Corbusier's experiences and travels aboard ocean liners and other ships and analysis of their relationship to his theoretical writings and built works, this thesis illuminates the details of the ocean liner's role as a design device. A series of case studies of his pivotal works, in combination with the timing of his maritime travels, reveals three distinct periods in which the ocean liner influenced Le Corbusier's work: first as formal icon for modern design, second as a tool for communicating architectural ideas, and third as a template for the efficient design of housing and social infrastructure. Finally, this close analysis demonstrates the reciprocal relationship between maritime and architectural history. In addition, clearer understanding of ocean liner design, in particular elements such as the faux funnel, problematizes the metaphorical image of the ship as an example of pure mechanical function.

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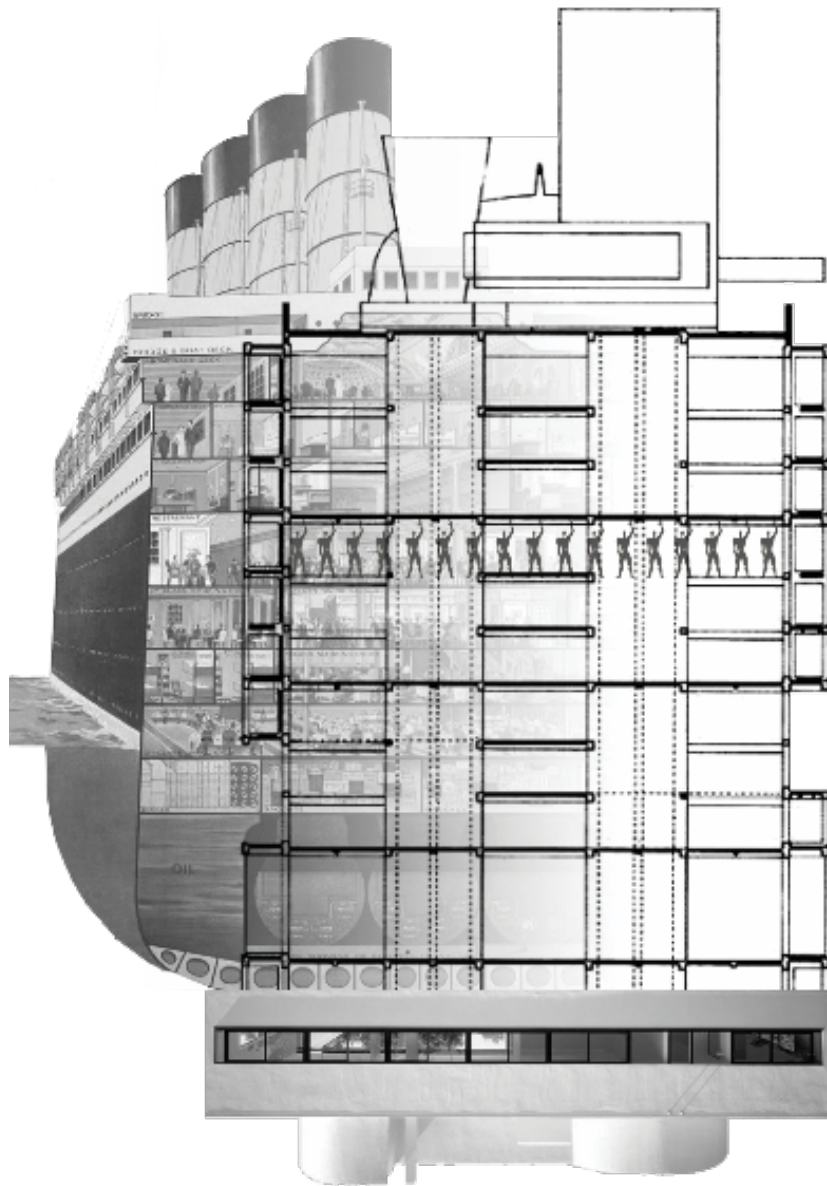
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ACKNOWLEDGEMENTS

I would like to thank all whose support and guidance made this thesis possible. First, thank you to my advisor, Denise Costanzo for her robust enthusiasm, guidance, and knowledge. Thank you to my committee members, Jamie Cooper, and Ute Poershke, whose perspectives and expertise helped guide my research. A special thanks to Daniel Purdy for his supplementary support and knowledge which helped frame my research in the larger context of modernist architectural theory. Finally, special thanks to my parents Grant and Tammy Davis for fostering my interest in maritime history as a child and their ceaseless support for my architectural education.

LE CORBUSIER & THE OCEAN LINER

Metaphor & Machine Aesthetics



Chapter 1

Le Corbusier & Ocean Liners: The Contemporary Understanding

Introduction

“A house is a machine for living in.” There are few other phrases which have garnered such iconic status in the canon of modern architecture as this one. Coined by Le Corbusier in his seminal work *Towards a New Architecture* (1923), “a house is a machine for living in” has been elevated to the pantheon of modernist orthodoxy, with such august companions as “ornament and crime” and “form follows function.” Le Corbusier does not proclaim “A house is a machine for living in”¹ in the book chapter entitled “Mass Produced Housing,” but rather in “Eyes Which Do Not See: Liners.” This phrase joins a curated collection of images and diagrams of ocean liners, which Le Corbusier pairs with ardent prose to form a foundational argument for a new style of architecture based on the rationality of engineering, simplicity, and cleanliness.² Particularly noteworthy is a comparison diagram of the *Aquitania*³ and various monumental buildings which historians such as William Curtis have frequently referenced when discussing Le Corbusier’s work (fig. 1-1).⁴ These images and text, in the *Liners* chapter of *Towards a New Architecture*, are frequent and equivalent points of reference as emblematic Le Corbusier’s architectural ideas.

Le Corbusier’s association with ships is well known. Architectural discourse, from Deborah Gans and William Curtis to Jean-Louis Cohen, covers his fascination with the ocean liner and the presence of its aesthetic and formal elements in his architecture. In *Le Corbusier:*

¹ Le Corbusier, *Toward an Architecture*, trans. John Goodman (Los Angeles, California: Getty Publications, 2007), 151.

² Le Corbusier, *Toward an Architecture*, 147-58.

³ Le Corbusier, *Toward an Architecture*, 149.

⁴ William Curtis, *Le Corbusier: Ideas and Forms* (New York, New York: Rizzoli International Publications, 1986), 121.

Ideas and Forms, Curtis tells us “Le Corbusier looked upon ships, aeroplanes, and cars as more genuine expression of the times than the style-bound creations of official architecture. The captions in *Vers une architecture* associate the pristine forms of ships with moral values like ‘temerity, efficiency, and purity,’ as is seen in the caption of an image of the *Empress of France*, describing the promenade deck as “an architecture that is pure, crisp, clear, clean, sound.”⁵ Cohen directly identifies the connection between ocean liners and the phrase “a house is a machine for living in” in his introduction to the 2007 translation of *Toward an Architecture* by John Goodman. He states: “Le Corbusier’s fascination with ocean liners, the first class of objects taken up in his ocular triad, long predated his writing of *Vers une architecture*...The ocean liner is what inspired Le Corbusier to create the provocative aphorism: ‘*La maison est une machine à demeurer*’ (the house is a machine for residing).”⁶

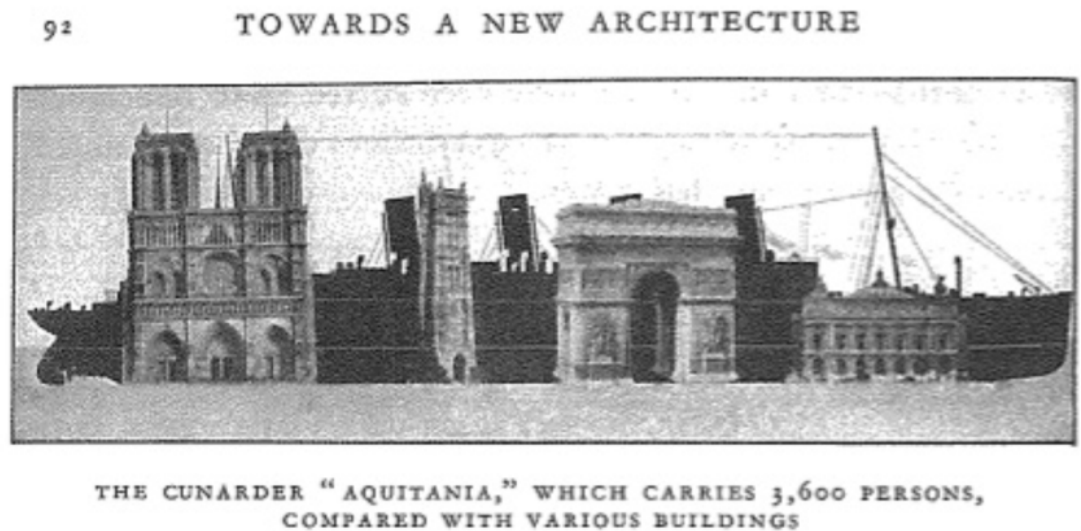


Figure 1-1: Comparative diagram of R.M.S. Aquitania, Notre Dame, a bell tower, the Arc de Triomphe, and Palais Garnier as printed in *Towards a New Architecture*

⁵ Curtis, *Le Corbusier*, 53.

⁶ Jean-Louis Cohen, “Introduction,” in *Toward an Architecture*, by Le Corbusier, translated by John Goodman (Los Angeles, California: Getty Publications, 2007), 14.

Numerous authorities in both architectural and maritime history note Le Corbusier's use of the image of the ocean liner as a *form* in architecture, as established in the "Liners" chapter. Most, such as Curtis, approach the liner, in conjunction with the aeroplane and automobile, as part of a summary of the overall themes of *Towards a New Architecture*. Other discussions focus on the ocean liner in the "Liners" chapter as simply another expression of modernity in a much larger picture, such as Tim Benton in his review of *Voiture Minimum: Le Corbusier and the Automobile*. Benton regards these objects as the measure "by which any modern architecture must be tested."⁷ While most authors summarize the essence of the "Liners" chapter, no one does a close reading of the symbiotic relationship between the prose and images of the chapter.

Ocean Liners in *Towards a New Architecture*

A close look at exactly how Le Corbusier deploys the ocean liner as a symbol reveals that he is interested in objects which are divorced from past notions of "style" and reflective of a new modern spirit, and that he views the liner as just such an object. The actual text of the "Liners" chapter only makes direct mention of the ocean liner a few times within a larger narrative about the necessity for a new way of building to reflect the machine age and its new spirit. In his verbal argument, Le Corbusier commends the steamship as a triumph of the *engineer*, rather than the architect. He lays out the failure of continued revival-based architectural styles to both reflect and take advantage of the increasingly mechanized and scientific means by which buildings are being constructed. He states, "On the valuable ground of large cities, we still see enormous piles of masonry spring forth from building foundations, even though simple concrete piles would be just as efficient." To Le Corbusier, traditional decorative elements such lamps, garlands and

⁷ Tim Benton, "Review of *Voiture Minimum: Le Corbusier and the Automobile*, by Antonio Amado," *Journal of Design History* 25, no. 2 (2012), 239–42.

“boudoirs decorated with ‘pumpkin cushions in black and gold velvet’ are the “insufferable witnesses to a dead spirit.” He favors a more clear, clean, simple, and rational way of building.

Le Corbusier argues that an architecture which achieves these qualities does not yet exist, but that “the liner is the first stage in the realization of a world organized in accordance with the new spirit,” along with the engineering triumphs of the automobile and aeroplane.⁸

Le Corbusier pairs this argument about the new spirit of architecture with selected vignettes of ship images and captions instructing the reader on what to garner from the image. This interpolation between text and images is key to Le Corbusier's rhetorical strategy: anchored by just a few direct mentions, the reader is able to connect the various images of liners as examples of each of his abstract points due to their strategic placement within key points of the text. Thus, architectural writers have based their understanding of Le Corbusier's appreciation of the liner on the connections they themselves have made between his text and images rather than Le Corbusier's own direct proclamations of admiration. Le Corbusier mentions his admiration for boldness of ship designers, stating “the builders of liners, bold and masterful, realize palaces



beside which cathedrals are tiny things; and they cast them onto the waters!” However, he never specifically references any of the accompanying images in the body text. Rather, the images and their (sometimes lengthy) captions exist as a separate but parallel narrative which the reader must connect with the main textual arguments of

Figure 1-2: Promenade deck of R.M.S. Aquitania as printed in *Towards a New Architecture*

Le Corbusier, *Toward an Architecture*, 158.

the “Liners” chapter.⁹ Le Corbusier argues that an architecture of the new spirit contains clean, well illuminated, and functional spaces, as well as formal composition which reflects the physical nature of the structural system rather than masking it in stylistic flourishes. The ship images, in particular, help illustrate these two qualities. There are three images of the promenade decks of *Aquitania* and other liners in “Eyes Which Do Not See.” Le Corbusier describes one such image with the caption “An Architecture that is pure, crisp, clear, clean, sound —contrast the carpets, cushions, canopies, damasked wallpaper, gilded and carved furniture, musty and Ballets Russes colors: the dreary dullness of our Western bazaar,” and follows the other images with similar prose (fig. 1-2).⁹ The remaining images reinforce the machine nature and material honesty of the ship and its hull. Images depicting the liner in its entirety dramatize its vast scale, and the fact that it *moves* against the backdrop of such monumental buildings as Notre Dame as well as the port cities of the world. What remains is a peculiar collection of cropped and curated images which isolate elements of the superstructure and massing of the liner and present them in their most clean and abstracted form. Notably, all of these cropped images emphasize the ribbons of promenade deck openings and accessible roof decks, and all are cropped so as to include at least one smokestack.⁹

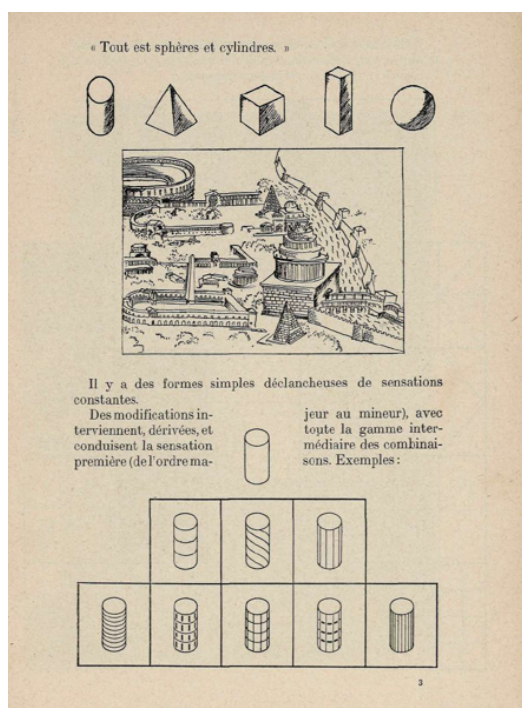
Selective Imagery in *Towards a new Architecture*

Critics have acknowledged how selective, and sometimes deceptive Le Corbusier was in his choice of images in *Towards a New Architecture*. Most notable, perhaps, is the removal of the dome of the Bonsecours market in the background of a photo of a grain silo in Montreal, Canada. Cohen referred to this episode of visual editing as “one of the most notorious falsifications in the

⁹ Le Corbusier, *Toward an Architecture*, 149.

history of modern architecture.”¹⁰ He also notably removed aediculae and statues which decorate the interior of the pantheon in the “The Lesson of Rome” chapter. This level of attention and editing indicates that Le Corbusier was very intentional in his choice of images and their content so as to reinforce his arguments and beliefs. Daniel Naegele wrote at length of Le Corbusier’s ability to use the photography not just as a documentary tool but as a tool to visualize new architectural possibilities. He achieved this by taking the time to make sure each image corresponded completely to his vision and ideas, cropping and editing accordingly.¹¹

This pattern of editing and curation is seen throughout *Towards a New Architecture*, including within the “Liners” chapter. Le Corbusier’s specific crop regions in his images of liner



superstructures intentionally include areas containing multiple levels of promenade decks, masts, air vents, and smoke funnels. The formal elements of the ocean liner which he curates are consistent with the archetypes of massing and form which he first establishes in his 1925 “Five Points of Architecture” and reinforced throughout *Towards a New Architecture*.¹² He first discusses his proposal for the primary shapes and formal massing of architecture in the chapter “Volume” (which is also where he displays grain silos and factories).

Figure 1-3: Cylinders and primary forms as illustrated in *L'Esprit Nouveau*(1920)

¹⁰ Cohen, “Introduction,” 8.

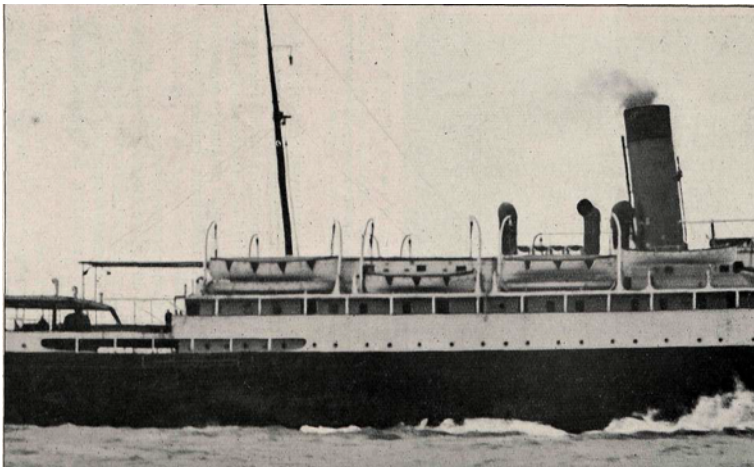
¹¹ Daniel Naegele, “Seeing What Is Not Yet There: Le Corbusier and the Architectural Space of Photographs,” in *Architecture Conference Proceedings and Presentations* (Iowa State University, 2016).

¹² Le Corbusier, *Toward an Architecture*, 101-129, 195-200.

In that chapter, he states, "...cubes, cones, spheres, cylinders, and pyramids are the great primary forms that light reveals well; the image is clear and tangible for us, without ambiguity."⁹ Later, he visually presents the primary forms (fig. 1-3) in "The Lesson of Rome," with the cylinder listed first and the replacement of the cone with a rectangular prism. He makes clear the difference between classical monuments, which are derived from the primary geometries and revival styles which bastardize them and plagiarize their symbolic elements. Modern architecture, he argues, will return to classic and rational geometry, but through industrial means of building.⁹



The rectangular massing of the superstructure of an ocean liner and its cylindrical funnels (fig. 1-4) represent those primary forms and are thus included in the crop of Le Corbusier's image choices. Furthermore, two of his five points for architecture, ribbon windows and roof gardens, are also featured in the stacked decks of promenades and open boat decks of these same images.¹³ Thus, in his chosen images of ocean liners we find two of his five primary volumes and two



of his five points for architecture, a hefty representation in just a handful of imagery.

Figure 1-4: Cropped images of ocean liners printed in *Towards a New Architecture*

¹³ Le Corbusier, *Toward an Architecture*, 154-155.

Discourse on the Liner and Le Corbusier Since 1923

Since its publication, *Towards a New Architecture*, which effectively canonized the ocean liner as a symbol of modernity—an idea also being promulgated in commercial culture during this same period through promotional materials for the passenger ship market—has resulted in the continued association between Le Corbusier, ocean liners, and architectural modernism. In a 1953 essay, André Wogenscky refers to Le Corbusier's roof garden terrace of the Unité d'Habitation as the “superstructure”, a term which denotes the above ground portions of a building but *also* describes the upper, open decks of a ship.¹⁴ In his 1986 work *Le Corbusier: Ideas and Forms*, William Curtis reinforces Le Corbusier's choice of images of ships to reflect the moral values of “temerity, efficiency, and purity” which he held for modern architecture. He adds that the formal references to automobiles and ships in Le Corbusier's architecture also reinforce the notion of mobility in modern life.¹⁵ Curtis, in his almanac of Le Corbusier's work, further identifies each time the motifs of a ship appear in his architecture. In the 1926 Maison Ternesian in Boulogne, a corner of the house is formed into a slender blade which Curtis finds to have “suggested the shape of a musical instrument or even a ship's prow (thus completing the liner analogy...” The parliament building at Chandigarh features a large cylinder which Curtis compares to a smokestack or cooling tower set above its rectilinear base.¹⁶ The mezzanines of the Ozenfant house recall the curved bridge wings of an ocean liner as well. Curtis goes so far as to describe Corbusier's Villa Church as “a luxury liner on land” fit for their lifestyle of entertaining.

Other authors such as Kenneth Frampton identify the application of the spatial essence of the ship to Le Corbusier's work, such as in the La Tourette Monastery. Frampton considered La

¹⁴ André Wogenscky, “Description of the Marseilles Block,” in Le Corbusier, *The Marseilles Block*, translated by Geoffrey Sainsbury (London, England: The Harvill Press, 1953), 59.

¹⁵ Curtis, *Le Corbusier*, 53-54.

¹⁶ Curtis, *Le Corbusier*, 151, 71-102.

Tourette to be an example of two heterotopias which Le Corbusier had previously studied, the monastery and the ocean liner, “which in this instance went beyond the characteristic bridge superstructure as we find that reinterpreted in the Villa Savoye.” He summarizes the design intent succinctly in his biography *Le Corbusier*:

The domestic corpus of La Tourette, namely the two layers of monks' cells which cap the complex, is suspended high above the valley on attenuated concrete piers. Thus the main residential body of the building may be seen as analogous to the portholed hull of a liner, tethered as it were, to the high ground of the ridge, while the public spaces of the 'vessel'—the classrooms, library refectory, etc.—are housed underneath. Beneath this 'buoyant' mass the rolling landscape sweeps in like a metaphorical sea, surging about the rather random reinforced concrete props and blades upon which the entire bulk is suspended.¹⁷

Here Frampton makes an important transition amongst architectural historians from discussing Le Corbusier's application of the Liner motif as an aesthetic or essence to a true programmatic exemplar, more anchored in the liner's spatial organization than overall composition.

Analysis of Le Corbusier's symbolic use of, and passion for, ocean liners, extends beyond architectural scholars to maritime historians. In *Designing Liners: A History of Interior Design Afloat* (2006), Anne Weallans theorizes additional motivations for Le Corbusier's choice of the ocean liner as one of the paramount symbols of the new age. Weallans argues that the ocean liner is a form of *heterotopia*—a real-world-like “other” space which exists within our own temporal reality, but which is somehow unsettling, escapist from, or incompatible with it. In fact, Foucault described the ship as “the heterotopia par excellence,” in the 1967 lecture which introduced the concept to the architectural audience.¹⁸ This, Weallans argues, positioned the ship as the perfect paragon of design divorced from the baggage of traditional styles and the past which was seen on land at the time--outside the heterotopia of the ocean liner.¹⁹ Additionally, the

¹⁷ Kenneth Frampton, *Le Corbusier* (New York, New York: Thames & Hudson Inc., 2001).

¹⁸ Michel Foucault, Of Other Spaces: Utopias and Heterotopias, in *Architecture | Mouvement | Continuité*, 1984.

¹⁹ Anne Wealleans, “Introduction,” in *Designing Liners: A History of Interior Design Afloat* (New York, New York: Routledge 2006), 1-5.

ocean liner - building relationships and the symbolism of Le Corbusier's villas as *the* icon of modernism are being explored in contemporary art. Most recently, Asmund Havsteen-Mikkelsen's 2018 floating sculpture *Flooded Modernity* depicts the Villa Savoye, with its ribbon windows and funnel-like roof terrace, *sinking* beneath the water (fig. 1-5). Havsteen-Mikkelsen stated that this work was symbolic of the loss of the values of modernity and rationality amongst increasing socio-political changes in the 2010's.²⁰ In this work, the architecture of Le Corbusier



transfigures back into the form of the ship—the ship in the throes of death as it sinks—an image reminiscent of Charles Jencks' “death of modernism” with the 1972 destruction of Pruitt-Igoe.²¹

Figure 1-5: *Flooded Modernity*, Asmund Haysteen-Mikkelsen, 2018

Gert Kähler, in *Architektur als Symbolverfall: Das Dampfermotiv in der Baukunst* (*Architecture as Broken Symbol: The Steamer Motif in Architecture*) (1981), unites analysis of Le Corbusier's writings of the ocean liner with an in-depth analysis of the evolution of the ship as an architectural symbol throughout history. Kähler outlines how the ship has gone through three distinct eras as a model for architecture since the eighteenth century. First, sailing ships of the pre-steam era “stood for the form that is inevitable from the requirements and impacts of the forces of nature, which result in, at the same time a shape that is both beautiful and which meets and responds to external requirements.” The second phase, brought on by the advent of the

²⁰ Zachary Edelson, “Artist Creates Full-Scale Model of Sinking Villa Savoye,” in *Metropolis* (July 31, 2018).

²¹ Charles Jencks, *The Language of Post-Modern Architecture*. 6th ed. (London, England: Academy Editions, 1991).

steamship, is one of the ways in which Le Corbusier understands the ship. Here, the ship stood for “unprejudiced formal development based on new conditions,” such as steam propulsion and greater passenger numbers. Thus, the ship became a model for an architecture which answers the requirements for an era of industrial production. Kähler notes that the contrast between these two phases demonstrates two different attitudes of functionalism; one organic, rooted in the ideas of such figures as Horatio Greenough, and one mechanic, rooted in the likes of Le Corbusier. The third and final form the liner has taken as a symbol is also, to Kähler, the least cause for the literal form of the steamship to be applied to architecture (à la Corbusian villa). This form is a model for the organizational and programmatic potential of modern architecture. The ocean liner operates as an organization of discrete spaces, particularly in the context of the anonymity created by modern society. The liner is made up of small cabins which minimize personal private space, while carefully choreographing public spaces to foster communal interaction. Le Corbusier also sees this model of the liner and applies it in his *Unité d’Habitation* and other housing projects.²²

Kähler also makes the point that while the ocean liner as described in *Toward a New Architecture* is an example of the second model of the ship as symbol (mechanical function), it is actually an example of Le Corbusier’s belief that architecture should be derived from passion and from the spirit of an epoch. The ship, Kähler argues, is an example of a design object which achieves this goal.²³

²² Gert Kähler, *Architektur Als Symbolverfall: Das Dampfermotiv in Der Baukunst* (Braunschweig: Frieder. Vieweg & Sohn, 1981), 50-54.

²³ Kähler, *Architektur*, 135-37.

Contradictions and Criticisms

Since the publication of *Towards a New Architecture*, several critics have noted the contradictions present in Le Corbusier's choice of the ocean liner as a symbol of modern architecture and the modern spirit. According to Cohen, Paul Budry, co-founder of *Cahier Vaudois*, pointed out the schizophrenia between the decorative and historicist bourgeois interiors of ocean liners and the clean exteriors and promenade decks which Le Corbusier so adored. Budry stated, "pure hulls of ocean liners...harbor countless salons copied after the Gare d'Orsay," noting that the Beaux Arts traditions which Corbusier so disliked were lurking within the steel facade of an ocean liner's hull.²⁴ As Tim Benton noted in his chapter "Modernist Architecture and the Liner" in *Ocean Liners; Speed and style*, Le Corbusier found the contrast between the exterior order of the liner and its decorative public rooms off-putting. "Just now I showed you the ocean liner *Paris*, which you regarded as a remarkable thing, superb. Then, from the same ship, I showed you the salon, which certainly left you feeling depressed; it seems in fact astonishing to



find at the heart of such a perfectly ordered construction, such a contrast, such a contradiction, such a lack of coherence between the great lines of the ship and its interior decoration," state Le Corbusier. Additionally, as noted by Benton, Bruno Taut, in *Modern Architecture*, criticized the

Figure 1-6: Bruno Taut, sketch showing a liner's superstructure in the countryside (1929)

²⁴ Cohen, "Introduction," 42.

superficial nature of Le Corbusier's nautical design motifs and caricatured his *villa* model with a drawing of the superstructure of an actual ship surrounded by gardens (fig. 1-6).²⁵

Despite early and persistent criticism of the discrepancy between the exterior form and interior decoration of the liner, it has not diminished the continued discussion of the liner's influence on Corbusier's ideas and works by both architectural and maritime historians. Though the interior to exterior schism of the liner is acknowledged in discussions *Towards a New Architecture*, it is quite clear that when scholars discuss Le Corbusier's evocation of the ship in his work, they are talking about the exterior only. When we talk about the relationship between Le Corbusier and the ocean liner as a model of architectural ideas, we are speaking of the ship's hull. After all, the facade is separate from the interior of a building and is the element most liberated by advances in structural technology, so why not allow the form of the ocean liner, built of the same structural steel materials and free of ostentatious symbolic motifs, to inform the initial use of this material on land? The liner here operates as a metaphor for the possibilities of modern construction, seen through its exterior composition, rather than the discrete interior spaces within.

Le Corbusier, The Liner and Other Early Modernists

Le Corbusier was not alone in his appropriation of the ocean liner aesthetic. While his book chapter is an especially famous statement of the connection; he was only one of many early modernist architects to evoke the ship formally in their work. Walter Gropius, who had worked with Le Corbusier under Peter Behrens in 1910, notably deployed the use of copious ribbon

²⁵ Tim Benton, "Modernist Architecture and the Liner," in *Ocean Liners: Speed and Style*, edited by Daniel Finamore and Ghislaine Wood (London, England: V&A Publishing, 2017), 230-43.

windows, and horizontal balcony rails in his 1925 Bauhaus building in Dessau.^{26,27} László Maholy-Nagy, another practitioner of the Bauhaus, wrote in the *The New Vision* (1928) of the multi-functional nature of ocean liners and their problem-solving buildings. He states, “The ocean liners built since the [eighteen] nineties are the precursors of modern architecture. The necessity of attaining maximum space content and complete stability with the smallest possible weight forced the shipbuilding engineer to solutions similar to those the modern architect achieves.”²⁸ Eileen Gray, in her E1027 house on the French Riviera, deploys nearly identical horizontal railings similar to those on a ship and features a life preserver bound to the balcony balustrade; meanwhile the horizontal organization of the facade and balconies are formally similar to Le Corbusier's later work as well as the superstructure of an ocean liner (fig. 1-7). Inside, the nautical theme continues with blue rugs which mimic the sea below and murals depicting maps and navigation. The E1027 house was constructed from 1926 to 1929, around the same time that Le Corbusier's more famous villa style homes were also began.^{29,30} Notably, Le Corbusier painted murals within the house while staying there, depicting Algerian concubines, and an abstraction of Gray herself. He later he built his own small vacation cabin, Cabanon de Vacances, just next door.³¹

²⁶ Herbert Bayer, *Bauhaus, 1919-1928*, edited by Herbert Bayer, Walter Gropius, and Ise Gropius (New York, New York: The Museum of Modern Art, 1938), 102-110.

²⁷ Cohen, “Introduction,” 14.

²⁸ László Maholy-Nagy, *The New Vision*, translated by Daphne M. Hoffman, 4th ed (New York, New York: Wittenborn Schultz Inc. 1947), 58.

²⁹ Peter Adam, “Eileen Gray-Jean Badovici-Le Corbusier” in *O’neil Ford Monograph 7: E.1027*, edited by Wilfried Wang and Peter Adam (New York, New York: Wasmuth, 2017), 20-24.

³⁰ Silvia Beretta, “The Villa and Its Surrounding Landscape” in *O’neil*, 62-70.

³¹ Beatriz Colomina, “Battle Lines: E.1027,” in *Architecturally Speaking: Practice of Art, Architecture and the Everyday*, 141-150.

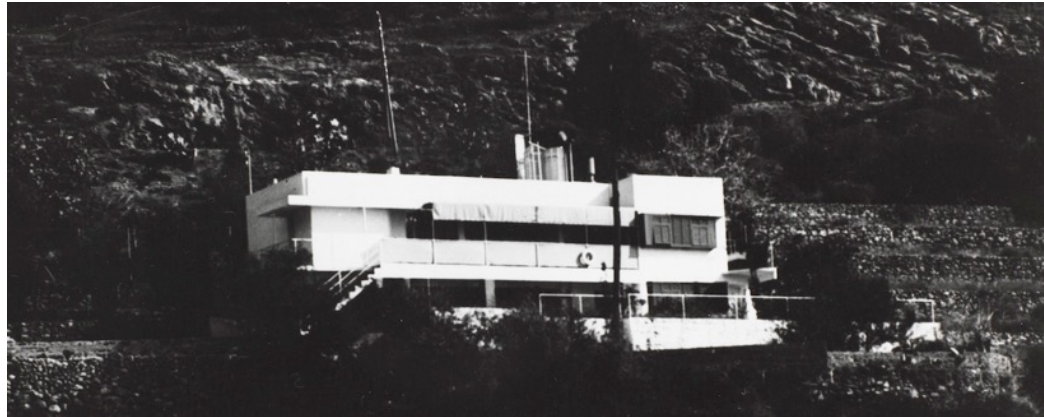


Figure 1-7: E.1027 House, Eileen Gray, 1929

The idea of associating the ocean liner and architecture also reached Le Corbusier while studying under Charles L'Eplattenier at the Ecole d'Art at La Chaux-deFonds, where he enrolled in 1902.³² Jean-Louis Cohen points out that Le Corbusier read the works of Camille Mauclair, a critic who compared houses and ocean liners and that he was likely influenced by Adolf Loos' texts *Architektur* (1912) and *Ornament and Crime* (1913) to laud "the honest expression of the constructor of ocean liners."³³ Deborah Gans, in *The Le Corbusier Guide*, points out how some of Le Corbusier villas played on formal ideas first explored by Adolf Loos. She commented, regarding the enclosed protruding mass on the facade Le Corbusier's 1927 Maison Planeix in Paris, that "Von Moos has suggested that this closure is Le Corbusier's conscious reversal of the huge open Loggia of Adolf Loos's house for Tristan Tzara in Montmartre." The reflection of the ship-motif in Gray's E.1027 and the potential influence of Loos on Le Corbusier's work affirms his choices of imagery as reinforcers of modernist values shared by other notable architects and critics of his time.

³² Curtis, *Le Corbusier*, 19.

³³ Cohen, "Introduction," 14.

Implications

A close, critical reading of both Le Corbusier's most famous writing on ocean liners—the “Liners” chapter—reveals several inconsistencies in the current understanding of Le Corbusier's relationship with the liner. Le Corbusier was not unique in his appreciation for the ocean liner as a design exemplar, yet his evocation of liners has received more attention from scholars than others. Other architects of the time, such as Gray and Gropius, echoed many of the visual motifs of the liner used by Le Corbusier. Historians such as Curtis and Cohen have continued to emphasize the importance of that visual relationship. Meanwhile, the analysis of others like Frampton has suggested a spatial correlation between liners and Le Corbusier's tied to interior programming and layout—a problematic relationship considering the criticisms of the chasm between the interior decoration and exterior purity of the liner. To date, no scholarship has provided a succinct explanation and understanding of the complete picture. Kähler, for example identifies the evolving symbolic role of the liner in Le Corbusier's work, but leaves gaps in the specifics of Le Corbusier's actual experiences with ships. In light of such inconsistencies, a more rigorous analysis and chronology can provide valuable clarifications.

Though the “Liners” chapter in *Towards a New Architecture* is perhaps the best known and most discussed instance of Le Corbusier's study of and commentary on ocean liners, this is a topic sporadically revisited throughout his opus. No existing literature about the life and work of Le Corbusier compounds the entirety of his travel experiences or the summation of his written discussion of ships in relation to art and architecture. However, through a compilation of various biographies and Le Corbusier's own writings, it is possible to establish a timeline of Le Corbusier's maritime travels and subsequent writings and lectures, from his earliest experiences in 1918 to the last manifestations of the ship motif in his architecture in the 1950s. This analytical compilation makes it possible to document the changing ways Le Corbusier writes about ships,

particularly after he begins travelling distances aboard them in the late 1920s. This exercise better clarifies what his actual experiences were and how they correlate to his theoretical deployment of and physical inspiration from ocean liners.

Chapter 2

The Liner as Design Object: 1900-1924

Early Travels and Writings

Le Corbusier's first significant experience with ships was likely that documented in his *Le Voyage d'Orient*, which chronicles his 1910 expedition to eastern Europe with August Klipstein. Rather than journey via train on the Orient Express, the two men reached Istanbul by way of a paddle boat on the Danube river, providing Le Corbusier with his first known experience of travel aboard a ship. While visiting Greece, in order to move from island to island, Le Corbusier (at the time still Charles-Edouard Jeanneret) journeyed by boat. Nicholas Fox Weber reveals this experience in *Le Corbusier: A Life*, describing Jeanneret's preference for the vessel's deck rather than interior. "He wrapped himself in a brightly colored Romanian rug he had acquired on the trip and slept on the deck as the ship made its way toward the Greek mainland," wrote Weber after describing Jeanneret's first voyage of three days on a larger vessel



to Athens.³⁴ Though Jeanneret's perceptions of his experience aboard ship are unclear, sketches of the harbors and sailboats he viewed made their way into his personal documentation of the journey and this experience may have sparked his later interest in larger ocean liners (fig. 2-1).

Figure 2-1: Harbor at Constantinople, Le Corbusier, printed in *Voyage d'Orient*

³⁴Nicholas Fox Weber, *Le Corbusier: A Life* (New York, New York: Alfred A. Knopf, 2008), 81-93.

The 1918 publication of *Après le Cubisme* (*After Cubism*) marks both the beginning of a years-long collaboration between Charles-Edouard Jeanneret and Amedee Ozenfant, with whom he would later publish *L'Esprit Nouveau*. *After Cubism* was one of the foundational texts of the Purist movement, a reaction against and rebuffing of romantic tendencies of Impressionism and early Cubism. In this text, Jeanneret begins to describe the present state of art and architecture with verbiage similar to what he used later in *L'Esprit Nouveau* and *Towards a New Architecture*.



Figure 2-2: Paintings of ships, George Braque, 1905 Figure 2-3: Le Corbusier, 1921, Still Life

He asserts how modernity is found in professions outside the arts: “can't we hazard the assertion that modern art is to be found everywhere except in the ateliers of painters and decorators, everywhere except in the architects' offices?” He goes on to assert that current painters, rather than documenting the natural perfection of ships, abstract and romanticize them into scenes and landscapes. He writes of contemporary artists:

They praise, they describe, they paint modern objects; hence they believe they are being modern, are in touch with their time. They paint ocean liners, railway cars, the North-South metro line, retaining from them only what is picturesque, romantic, accidental. They completely miss the point. The structure of an ocean liner has an organic beauty; it leaves them indifferent; but let the war make camouflaged ships necessary, and all of a sudden these vessels become the unhopd-for theme of the 'renewal of the subject' and the 'originality of vision' Poor magnificent ships, marvelous in their balanced structure and ample

architecture, gleaming and crisp beneath their clear varnish, they are admired for their camouflage, misshapen, ludicrous, blending into the ambient landscape...³⁵

In contrast to the whimsical and decorative nature of other paintings, the Purism advocated by Jeanneret and Ozenfant was founded on mathematical fact, precise geometry and was visible through the clear study of form and shape in their paintings. Weber summarized their philosophy thus: “Jeanneret and Ozenfant advocated the ‘tendency toward rigor, toward precision, toward the best utilization of forces and materials, with the least waste, in sum a tendency toward purity’—as it was found in ocean liners and other streamlined and efficient objects. Their goal was to create a pure and serious art based on invariable laws, mathematics, and order as it exists in nature.”³⁶ In *L’Esprit Nouveau: Purism in Paris 1918-1925*, Carol S. Eliel and Andrea L. Rich emphasized the importance of technology and purity of form to the purist movement. “Purism is an aesthetic refinement, a cultural aesthetic devoted to the rejection of excess in all forms and to the embrace of physical clarification and purification,” wrote Eliel in the book’s introduction, suggesting a complete departure from ornamentation and decoration.³⁷ This common focus on both pure geometry and mechanical perfection (as exhibited by the likes of the liner) would continue to dominate Jeanneret’s writings through his publication of *Towards a New Architecture* as Le Corbusier in 1923.

Ocean Liners and Purism: Geometry and Symbol in *L’Esprit Nouveau*

The famous “Liners” chapter from *Towards a New Architecture* was originally published in issue eight of *L’Esprit Nouveau*. The discussion of the importance of primary geometry and

³⁵ Charles-Edouard Jeanneret, and Amedee Ozenfant, “After Cubism,” in *L’Esprit Nouveau: Purism in Paris, 1918-1925*, edited by Carol S. Eliel (Los Angeles: Los Angeles County Museum of Art and Harry N. Abrams Inc, 2001), 144–45.

³⁶ Weber, *Le Corbusier*, 165.

³⁷ Carol S. Eliel, “Purism in Paris, 1918-1925” in *L’Esprit Nouveau: Purism in Paris 1918-1925* (Los Angeles County Museum of Art and Harry N. Abrams Inc, 2001), 11.

volume in *L'Esprit Nouveau* came in the first issue with the publication of the “Volume” chapter, as it would later be known. Here, Le Corbusier first asserts his famous maxim: “Architecture is the learned, correct and magnificent play of volumes assembled under the light. Our eyes are made for see the forms under the light; shadows and highlights reveal shapes; cubes, cones, spheres, cylinders or pyramids are the great primary forms that light reveals well; the image is clear and tangible to us, without ambiguity.”³⁸ This basic assertion of the purity of certain shapes is consistently repeated in nearly every issue throughout the publication run of *L'Esprit Nouveau*. In issue two, for instance, where Le Corbusier reasserts, “The surface of the temple or the factory is, for most of the time, a wall with doors and windows: these holes are often destructors of form; they must be made accusers of form. If most of the architecture is spheres, cones and cylinders, the generators and the accusers of these shapes are based on pure geometry.” Interestingly, in this same issue Le Corbusier lauds Adolf Loos as one of the few contemporary artists to embrace the same tenets of design which he advocates: “Mr. Loos is one of the precursors to the new spirit. Already in 1900, when the enthusiasm for the modern style was in full swing, in this period of excessive décor, intrusion, and untimely art in everything, Mr. Loos, clear minded and original, began his protests against the juiciness of such trends.”³⁹

With the eighth edition of *L'Esprit Nouveau*, the focus shifts temporarily from a study of geometric form to a study of mechanical objects, their designers and operators, and how said individuals embody the formulaic precision of the new spirit. Issue 8 contains the original version of what was later published as the “Liners” chapter in *Toward a New Architecture* and canonized by the success of that publication. As outlined in the previous chapter, the ocean liner is deployed in this chapter as a symbol of an object which is designed in accordance with the new spirit and

³⁸Charles-Edouard Jeanneret and Amedee Ozenfant, “Sur La Plastique” in *L'Esprit Nouveau* 1 (1920), 39–45.

³⁹ Charles-Edouard Jeanneret and Amedee Ozenfant, *L'Esprit Nouveau* 2, 1920.

which satisfies the conditions of modernity. This was an argument made by the careful interplay of images of liners with a written text in which Le Corbusier laments the failure of existing architectural styles to both create formal and volumetric clarity and reflect the technological reality of the modern age.⁴⁰ The ocean liner, along with the automobile and aeroplane, represented the latest in both technology and form at the time, foundational qualities of purism, as described by Rich: “Purism...embraced with a focus on pure geometric forms...championed new technologies, new materials, and an advanced machine aesthetic.”⁴¹ Through these (literal) vehicles, Le Corbusier and Ozenfant established an aspirational attitude about the future of design. In Le Corbusier’s view, it is not only ship builders but also ship captains who are embodiments of the new spirit. He equates the skill of mastering a liner as a machine to the work of mathematicians and scientists: “The captain of the liner must be an astronomer, meteorologist, mathematician, electrician, and sometimes judge. The storm before him taking place inhabits his brain. The possible iceberg, the sea current which brings it, the speed which exhausts the holds, the sudden call by wireless, he is thinking.”⁴²

Resonating with the notions of purism and geometry also being raised in *L’Esprit Nouveau*, issues twelve and thirteen (both 1921) begin to equate the liner and other industrial objects as the embodiment of perfection. Le Corbusier writes, “We have claimed, on behalf of the liner, the plane, and the car, health, logic, boldness, harmony, and perfection.”⁴³ Though at this time he has not yet expressed admiration for the interior organization of the liner, in issue thirteen Le Corbusier does begin to compare liners with houses in his proposal for the “serial house” due to its repetitiveness and unity of materials, qualities which he observes in several industrial

⁴⁰ Le Corbusier, *Toward an Architecture*, 147-158.

⁴¹ Andrea Rich, “Director’s Forward.” in *L’Esprit Nouveau: Purism in Paris 1918-1925*, by Carol S. Eliel (Los Angeles County Museum of Art and Harry N. Abrams Inc, 2001), 6.

⁴² Jean Epstein, “Le Phénomène Littéraire” edited by Charles-Edouard Jeanneret and Amedee Ozenfant, in *L’Esprit Nouveau*, no. 9 (1921), 53.

⁴³ Le Corbusier, “Annual Review: Engineering Aesthetics in Architecture” in *L’Esprit Nouveau*, no. 12 (1921), 128.

objects. He describes the creation of the serial house as such: “When [the serial house] is created, we are at the gates of beauty (the car, the ocean liner, wagon, plane). Because the serial house will impose the unity of elements, windows, doors, construction processes, materials.”⁴⁴ In the same 1921 issue, Le Corbusier first laments the chasm between the exterior design and interior decoration of ships at the period. Through his critique of the decorated interiors of the S.S. Paris in a review of the new liner (authored under the pen name “De Fayet”), he establishes that his previous celebrations of the liner’s form were reserved to its exterior. After claiming that the ornamented stairwells and entrance hall of the ship are hardly of the modern spirit he writes, “Of this magnificent ocean liner: alas, alas misters Tardif and Cie, the designers from the hull give you a proud lesson.”⁴⁵ This statement is important because it makes clear that Le Corbusier sees no issue with the exterior form of the liner, the primary element which he has exhibited pictorially thus far in *L’Esprit Nouveau* and later in *Towards a New Architecture* and more closely connects with his and Ozenfant’s notions of pure form.

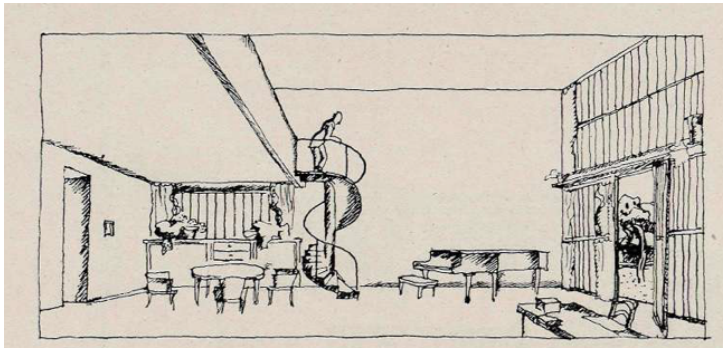


Figure 2-4: Perspective, Maison Citrohan as printed in *L’Esprit Nouveau*

⁴⁴ Le Corbusier, “Maisons en Série” edited by Amedee Ozenfant and Charles-Edouard Jeanneret, in *L’Esprit Nouveau*, no. 13 (1921), 133.

⁴⁵ De Fayet. “Le Salon d’Automne” edited by Charles-Edouard Jeanneret and Amedee Ozenfant, in *L’Esprit Nouveau*, no. 13 (1921), 97.

In the later issues of *L'Esprit Nouveau*, the focus again turns to geometric concepts, particularly volumes such as cylinders and cubes—the point is reiterated several times in issues nineteen, and twenty-one through twenty-five. In Issue 21, Le Corbusier writes of the foundational elements of cities and urban planning and describes cylinders as one of the primary forms of cities. He also feels that the applications for these forms stretch beyond the realm of the constructed environment; the cylinder, cone, and square are all geometries which can be applied to music, he claims. He writes of how modernity has created a new profession in the “constructor” which requires precise geometric knowledge and that the lessons taught by machines render new geometries and therefore freedom in design.⁴⁶ He speaks further of his admiration for builders and engineers in the final two issues of the magazine where he states that in the culture of the new spirit, engineers appreciate the mechanics of cargo ships. Further, he asserts that failure to recognize the new spirit is the intellectual equivalent of being on a sinking ship.⁴⁷

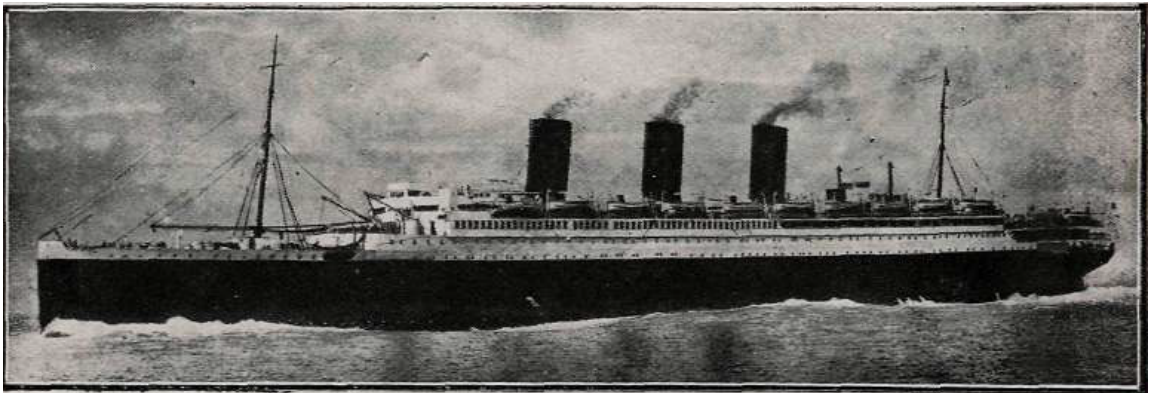


Figure 2-5: Ocean liner *Paris* as pictured in *L'Esprit Nouveau*

⁴⁶ Charles-Edouard Jeanneret and Amedee Ozenfant, *L'Esprit Nouveau*, 19, 21, 23, 25, 1923-24.

⁴⁷ Charles-Edouard Jeanneret and Amedee Ozenfant, *L'Esprit Nouveau*, 22, 24, 1924.

Case Study: Comparing Villa Ozenfant to Villa le Lac and Maison Citrohan

Le Corbusier's 1922 house for Amedée Ozenfant deploys several of the formal and geometric ship motifs discussed in *L'Esprit Nouveau*. William Curtis points to this house as one of many examples of the visual ocean liner motif in Le Corbusier's Purist villas. With ribbon windows, tight, vertical layout, horizontal railings, and a loft styled like a ship's bridge wing, the villa appears to be a clear example of Le Corbusier application of his knowledge of liners to buildings of the period. Is Villa Ozenfant a demonstration of the full breadth of his understanding of the architectural exemplar of the ship in this period, though? Is it actually *like* an ocean liner, as Curtis claims?⁴⁸ This answer depends on whether likeness is characterized by appearance or by operation. In 1921, Le Corbusier begins to first imagine the ship as an example of domestic organization in an article for *L'Esprit Nouveau*—in the same issue in which he reviewed the liner *Paris*—describing his Maison Citrohan or “Serial House” concept.⁴⁹ The similarities between the Villa and a liner are clearly visible in form and massing, while its functional cues remain less obvious, warranting a spatial comparison between the Villa le Lac and Maison Citrohan.



Figure 2-6: Villa Ozenfant



Figure 2-7: Cabin, *Aquitania*

⁴⁸ Curtis, *Le Corbusier*, 151, 71-102.

⁴⁹ Le Corbusier, “Maisons En Série,” 133.

As a means of assessment, let us compare both Maison Citrohan and Villa Ozenfant with a liner contemporary to their construction and well known to Le Corbusier: *Aquitania*. We see that on *Aquitania* (fig. 2-7) the core domestic unit is the individual passenger cabin. Space is organized sequentially, remaining open to the light source of the port holes. Sleeping space, living space (chairs) and hygienic space all share the same basic area for the sake of economy. Likewise, in the plan for Maison Citrohan we see open lavatories accompany each bedchamber, sized as wide as the length of a single bed, similar to a typical cabin layout such as on *Aquitania*. While each chamber has its own lavatory, they share a common water closet. Communal water closets and showers were standard, even in first class, on liners like *Aquitania*.

Taking another example of Le Corbusier's built work from this period, we again see the beginnings of the essence of the ship's cabin applied to domestic architecture for land. In Villa le Lac, Corseaux, Switzerland 1923, Le Corbusier designed a lakeside retreat for his parents which is not only functionally but organizationally similar to a liner's cabin. For example, just like on ships, here again the water closet is separated from the lavatory. In the villa, a long rectangular plan privileges a southern facing ribbon window, similar to a liner's promenade deck. Within we find yet again separated bathroom functions between the water closet and lavatory. Further, the sleeping, living, and eating spaces are arranged in sequence, open to one another as the sitting area, lavatory, and bed of the *Aquitania* cabin above are.

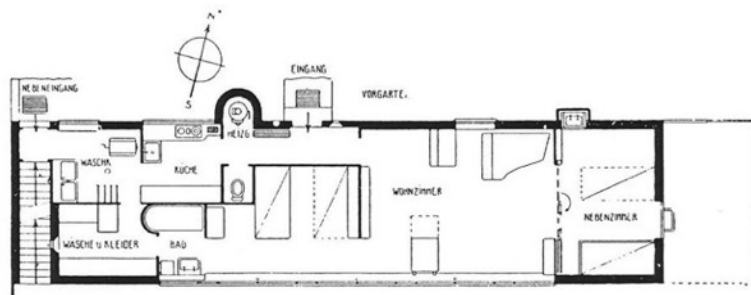


Figure 2-8: Plan, Villa le Lac



Figure 2-9: Plan, Maison Citrohan

Both the Villa le Lac and Maison Citrohan enlarge and rationalize some of the organizational aspects of the cabin of a liner. In the case of the Maison Citrohan, this is done with the objective of standardization and mass production in mind.⁵⁰ However, the hull of an ocean liner is not a rectilinear mass; it curves and tapers in response to the demands of hydrodynamics. Thus, within this form, the geometric standardization of the cabin is sacrificed for the sake of volumetric efficiency in the interior layout of the cabins. The slight changes in geometry, hardly perceptible in a photograph, likely went un-noticed by Le Corbusier, who at the time had yet to embark on an extended voyage aboard a large liner.

Study of the actual drawings of Le Corbusier's work from the *L'Esprit Nouveau* period (figs. 2-8 and 2-9) reveals a connection between the space planning of his villas and the basic organizational tenets of a ship's cabin. The visual similarities between the volumetric elements of a liner and the spaces within the Ozenfant house are not inaccurate observations. However, the fact that the Maison Citrohan and Villa le Lac embody spatial characteristics of interior space aboard ship reveals that Le Corbusier, at this time, was perhaps more aware of the potential for the liner motif beyond just semiotic device than previously expressed.

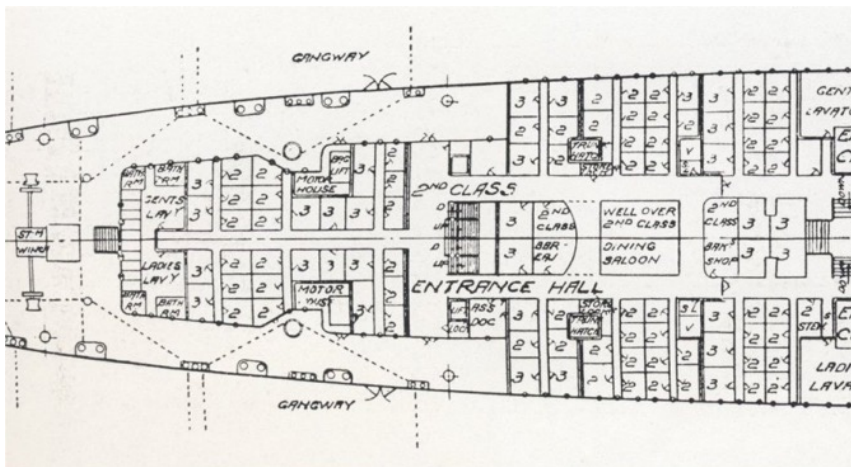


Figure 2-10: *Aquitania*, Deck plan showing gradual distortion of passenger cabins as stern curves.

⁵⁰ Le Corbusier, "Maisons en Série," 133.

Chapter 3

The Liner as Exemplar: 1924-1935

Liners and Lectures: The Ship as Rhetorical Device

Amidst the publication of *L'Esprit Nouveau*, Le Corbusier also began giving lectures on the topics being covered in the magazine. At one such lecture, given in November 1924 at the Salle Rapp in Paris, he displayed images of the *Paris*, likely accumulated when a review of the ship was published in Issue 13 of *L'Esprit Nouveau*, to contrast the ornate art nouveau interiors of the ship with its simple and streamlined exterior. Tim Benton reproduced the transcript of Le Corbusier's explanations of the *Paris* at the Salle Rapp:

You saw just now the ocean liner *Paris* which struck you as a remarkable thing, superb. Then, from the same liner, I showed you the salon which certainly sent a chill through you. It seems astonishing to discover at the heart of such a perfectly organized work such an antinomy, such a contrast, so great a lack of relationship, to tell the truth such a contradiction, a total divergence between the great lines of the ship and its interior decoration. The former is a product of engineers; the latter is the work of what are called specialist decorators.

This examination of the ocean liner through the example of the *Paris* represents a moment when Le Corbusier starts to emphasize the conflict between its exterior and interior. He then used it as an illustrative tool, all while still asserting the ship's exterior profile is "remarkable, superb, and perfectly organized."⁵¹

Le Corbusier used the chasm between the liner's flawed, problematic interior decoration and its exterior perfection as indicative of the contrasts and contradictions of modern life, as society grappled with new innovations while clinging to traditions. In the Salle Rapp lecture, he compares this chasm with the case of architects who design clean, functional bank buildings in the United States but dwell in offices with Louis XIII style furniture. The liner and bank are

⁵¹ Benton, *The Rhetoric of Modernism*, 69-71.

examples which serve to illustrate the point of tension in society in the 1920s, where the new spirit has been only quasi and unconsciously adapted. As Benton puts it in his annotations of the Salle Rapp lecture:

It is clear from his explanation that Le Corbusier's aim with his slide projections, was to point out the contrast between machine age realism (ocean liners, American banks) and the escapism of architects into the styles of the past (the liner's interior and the architect's office). The juxtaposition of good versus bad had been a leitmotiv of *L'Esprit Nouveau* magazine from its origins.⁵²

Not all were convinced by the rhetorical style and argumentation displayed by Le Corbusier in these lectures. In a June 1924 review for a Paris journal, Leandre Vaillant points out that Le Corbusier's main tactic was to imply or suggest a conclusion rather than to use logical argumentation.⁵³ He states: "He doesn't use logic, but a form of stark suggestion. He doesn't prove, he strikes. He advances using regular coupling of antitheses."⁵⁴ This was backed up by Le Corbusier's own admission that he gauged the way an audience responded to the images in his lectures as an indicator of their acceptance or rejection of the new spirit. Vaillant was further critical of a comparative diagram of the *France* which Le Corbusier had displayed in his 1924 Sorbonne lecture. The *France*, another four funneled liner, was similar in appearance to the *Aquitania* as depicted in the famous diagram comparing it to various monuments in *Towards a New Architecture* (fig. 1-1). He claimed the Le Corbusier was confusing measures of quantity, such as the liner's size in comparison to buildings, with measures of quality. Vaillant considered the juxtaposition of ships and buildings to be an exaggerated comparison.

Le Corbusier continued to evoke ships as a symbol of modernity in *L'Esprit Nouveau* throughout 1924 and 1925, including via the writings of other authors. In issue twenty-seven, Paul Bouldard describes liners, planes, and cars as objects of perfection particularly and notes the

⁵² Benton, *The Rhetoric of Modernism*, 69-71.

⁵³ Reprinted by Tim Benton in *The Rhetoric of Modernism*.

⁵⁴ Benton, *The Rhetoric of Modernism*, 71-75.

architecture being built in Germany at the time as examples of the perfection of the new spirit.⁵⁵

In the final issue of the magazine, Vauvrecy uses airships and ocean liners as examples of the architecture of the future. These reaffirmations of the inherently modern character of the ocean liner are again paired with appreciations for geometric form. In an article on sources for new ideas, Henri Serouya claims that Euclidian geometry provides absolute truth.⁵⁶ In a later article from that same issue, Le Corbusier states that geometric form must triumph over the ills of the current city.⁵⁷ The renewed exemplification of the ocean liner in *L'Esprit Nouveau* demonstrates how Le Corbusier, while aware of the complications presented by the ships interior decoration held steadfast to the idea that the ship was an embodiment of the modern spirit.

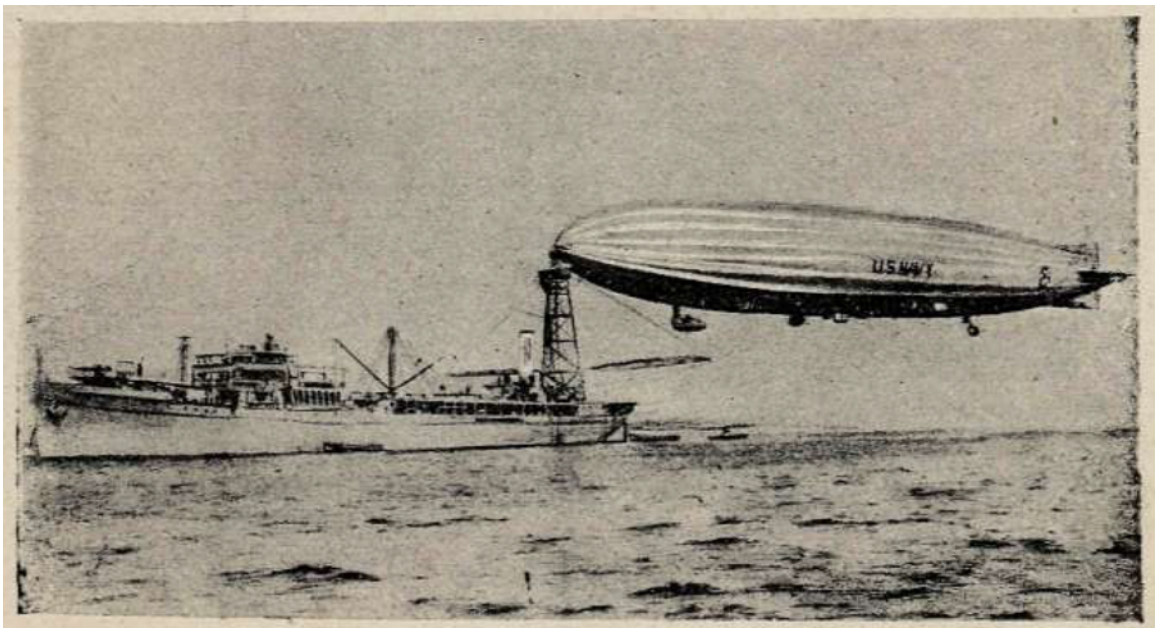


Figure 3-1: U.S. Navy airship docking at sea, published in *L'Esprit Nouveau* (1925)

⁵⁵ Paul Boulard, "Allemagne," edited by Charles-Edouard Jeanneret and Amedee Ozenfant in *L'Esprit Nouveau*, no. 27 (1925), 29–37.

⁵⁶ Henri Sérouty, "Le Bergonisme: Source Des Idées Nouvelle," edited by Charles-Edouard Jeanneret and Amedee Ozenfant in *L'Esprit Nouveau*, no. 28 (1925), 36.

⁵⁷ Charles-Edouard Jeanneret and Amedee Ozenfant, "Une Ville Contemporaine," *L'Esprit Nouveau*, no. 25 (1925), 85.

Le Corbusier at Sea: The Liner as Dwelling

The years after *L'Esprit Nouveau* ceased publication in 1925 represent a pivot in the way in which Le Corbusier studied and appreciated ships. He shifted from emphasizing the essence of their overall form as a design object to an analysis of their potential to inform layout of efficient architecture in the modern city. This pivot aligns with Le Corbusier's first long-range voyages on transatlantic ocean liners, a time when he moves from a critique of their interior decoration to a precise study of their spatial organization and cabins as models for housing and urban development. As a result of an invitation to lecture in Buenos Aires and Rio de Janeiro in 1929, Le Corbusier journeyed from France to the south Atlantic, travelling by sea over several weeks. In a letter to his mother from September 1929 from aboard the *Massilia* heading south from Le Havre to Buenos Aires, Le Corbusier expressed his adoration for the ship, "a miracle of modern construction and organization." Fox Weber wrote of this experience: "Le Corbusier adored the ship. With its architecture based primarily on necessity, it provided a vantage point for splendid vistas."⁵⁸ Before his return to Europe aboard the *Lutetia*, during which he chronicled his lectures into *Precisions*, he journeyed between Buenos Aires and Rio de Janeiro by sea, but this time on the Italian Line's *Giulio Cesare*. Of this experience Fox Weber wrote, "Le Corbusier preferred the *Giulio Cesare* to the *Massilia*, both for its scale and its layout. He was especially conscious of boat design because of his own work that year on the "Floating Asylum project for the Salvation Army. This eighty-meter-long Barge resembled a freighter. Its three equal rectangular blocks with industrial windows housed dormitories with rows of 160 beds."⁵⁹ Earlier that year, Le Corbusier had been commissioned by the Salvation Army, before his later work on the *Cite de Refuge* to convert a barge on the river Seine to a homeless shelter. This was his first opportunity to apply

⁵⁸ Weber, *Le Corbusier*, 296.

⁵⁹ Weber, *Le Corbusier*, 306.

his architectural design thinking to an actual ship—albeit one permanently moored in *Paris* that would never cross the Atlantic.⁶⁰

Le Corbusier expanded upon the content he presented in his South America lecture series in his 1930 publication *Precisions on the Present State of Architecture and City Planning*.⁶¹

Benton described *Precisions* as follows:

Precisions is a brilliant synthesis of Le Corbusier's ideas on architecture and urbanism, a fact which he himself would later confirm ...The South American lectures constitute the apogee of the teaching and rhetorical techniques of Le Corbusier...They are the conclusion of a five-year campaign over the course of which he tried to impose his point of view on what modern architecture and urbanism should be come.⁶²

In these lectures and in *Precisions* Le Corbusier, after having spent nearly a month aboard ship (including his experiences aboard the *Massilia*, *Giulio Cesare*, and *Lutetia*), demonstrates a clear understanding of the spatial layout of the liner and the relationship between the subunit of the cabin dwelling to the connected public spaces of the promenade decks.



Figure 3-2: Asile Flottant, Le Corbusier, 1929, Paris

In a lecture from his Buenos Aires series entitled “A housing cell to a human scale”, delivered to the Faculty of Pure and Applied Natural Sciences at the University of Buenos Aires,

⁶⁰ Weber, *Le Corbusier*, 306.

⁶¹ Le Corbusier, *Precisions On The Present State of Architecture and City Planning*, Zurich, (Switzerland: Park Books, 2015), 63.

⁶² Benton, *The Rhetoric of Modernism*, 135.

Le Corbusier uses the image of the ocean liner as well as the monastery as “exemplary models of dwelling”. Le Corbusier choose these two familiar typologies to demonstrate the possibility for a small-studio sized dwelling unit in a way which would not be shocking or alienate the public listening to the lecture. “What better to convince them than to show that the cells of Carthusian monks offered an idyllic and calm lifestyle in the countryside or that the luxurious life aboard a transatlantic ocean liner could be organized around a 10-square meter cabin,” wrote Benton of Le Corbusier’s rhetorical strategy.⁶³ In contrast to his descriptions of the ship cabin as an example of a minimally scaled dwelling, Le Corbusier traveled aboard the finest, largest first class cabin of the *Giulio Cesare*. Writing to his mother on November 14, 1929, he lamented the stylistic decor of his lavish appointments: “My salon is huge in the purest fake Faubourg-St. Antoine Louis XVI. Louis XVI! They cut his head off, but he takes his revenge with a resurrection which seems to last forever!”⁶⁴ On his return journey from Rio de Janeiro, Le Corbusier famously was accompanied by the dancer Josephine Baker, whom he sketched, while writing *Precisions* on the return voyage aboard the *Lutetia*.⁶⁵

In *Precisions* Le Corbusier documented the content he had just covered in his South American lecture series, primarily dealing with issues of urbanism, housing, and modern architectural form. He illustrated the cross section of a ship (a three-funneled liner, likely inspired by the *Massillia*, *Paris* or *Ile de France*), to show the possibility for new modes of high-rise housing in his *cite radieuse* model. He described the advantages of open space and ground level and balconies at every apartment, citing the ocean liner as an example of how to organize a housing

⁶³ Benton. *The Rhetoric of Modernism*, 178.

⁶⁴ Weber. *Le Corbusier*, 304.

⁶⁵ Weber. *Le Corbusier*, 311.

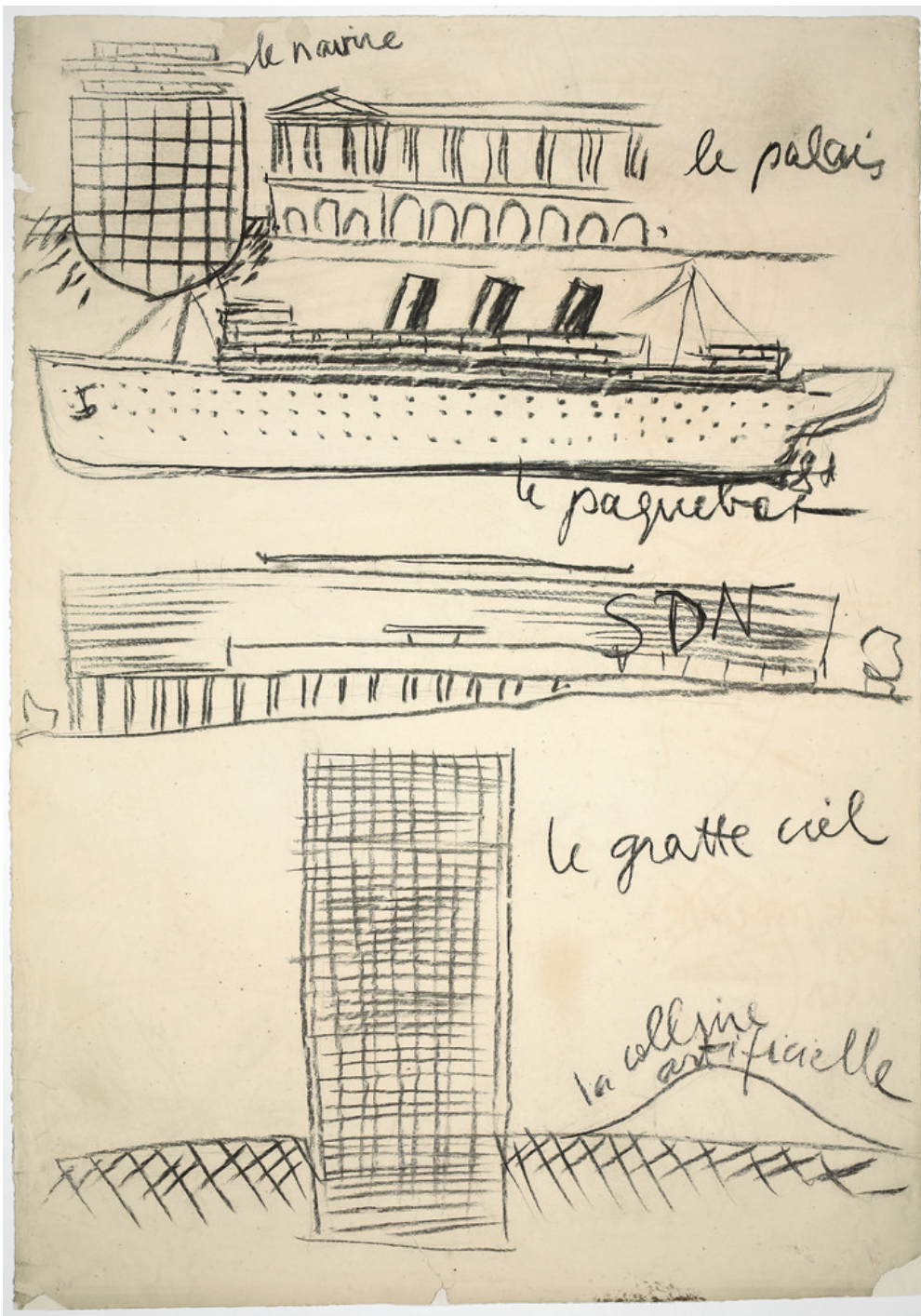


Figure 3-3: Ocean liner sketches as printed in *Precisions*

unit in this new environment. He asserts that building should be entirely self-contained (like ships) and separated from the streets: “Traffic is on the horizontal plane, has nothing to do with what is

going on above. Streets are independent of buildings.”⁶⁶ He elaborated on the rationality of the layout of a liner in comparison to the large buildings of Paris at the time:

I continue to develop my idea. It leads to imminent realities. Here is the section of an ocean liner shown between the two palaces of the Place de la Concorde. I draw the liner in the opposite direction. Better still, I want to visit it from top to bottom. There are 2,000 to 2,500 persons on this liner. It is a big house. There is no confusion here, but perfect discipline. One eats, one sleeps, one dances here, one meditates one strolls; everybody on earth without exception has a profound admiration for the ocean liner. We are facing a new dimension in housing.⁶⁷

The ideas of new means of housing which Le Corbusier had explored in *Precisions* were later codified as doctrine in the *Athens Charter*, penned at the fourth CIAM conference, which fittingly took place partially aboard the liner *S.S. Patris II* between Marseilles and Athens in late July 1933.

A Liner in a Park: The *Ville Radieuse*

In 1933, Le Corbusier published the first French edition of the *Ville Radieuse*, which marked the culmination of his ideas on urban planning as they had been developed from the *Ville Contemporaine* (1922) to the writing of *Precisions* (1929) through CIAM IV (1933). The Radiant City concept, one of Le Corbusier’s best-known architectural ideas, was in line with other works such as the *Modulor* and *Towards a New Architecture*. Besides summarizing a decade of Le Corbusier’s urban planning ideas, *The Radiant City: Elements of a Doctrine of Urbanism to be Used as the Basis of Our Machine-Age Civilization*—as the English translation reads, also featured multiple references to the ocean liner. The liner is evoked in both a symbolic and programmatic sense, tracing Le Corbusier’s slow transition from an understanding of the liner as the former to an understanding of it as the latter. Unlike in *Towards a New Architecture*, where Le Corbusier

⁶⁶ Le Corbusier, *Precisions*, 60-63.

⁶⁷ Le Corbusier, *Precisions*, 60-63.

discusses the symbolic value of the liner in terms of form, volume, and purity, he uses it primarily as a semiotic depiction of scale in *The Radiant City*.

In the chapter “Where Is the Money to Come From?” Le Corbusier grapples with the logistical challenges, primarily cost, which stand between his idea of the Radiant City and its deployment as actual architecture. Here, he again equates the ocean liner with other works of engineering rather than architecture as an example of the collective will needed to construct buildings on a mass scale. He pictures the construction of the *Normandie* alongside the Panama Canal and a dam as examples of large-scale projects completed under state supervision. He writes in the body text accompanying these images, “Life is precise, strict and economical. The law of nature makes it so. And our human creations—the artificial world that is now an indispensable part of man’s future—must follow this universal law: Strictness and economy. That is where the money must come from.”⁶⁸ As this quote illustrates, Le Corbusier’s goal in this section is to illustrate the possibilities for large scale construction in an economical manner should principals of efficiency be observed. However, knowledge of the *Normandie* from the perspective of maritime history complicates its position in this role. The *Normandie* is widely acknowledged as having been one of the most luxurious and ostentatiously designed liners to ever sail. Historian John Maxtone-Graham reflects this sentiment in his introduction to *Normandie: France’s Legendary Art Deco Ocean Liner*. He writes, “*Normandie* was unquestionably the most beautiful ocean liner ever built. The world’s largest at the time, she also became the world’s fastest. Her art deco interiors were unrivaled, capacious, elegant, and chic, decorated by teams of France’s most

⁶⁸ Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as The Basis of Our Machine Age Civilization*, translated by Pamela Knight, Eleanor Levieux, and Derek Coltman (New York: The Orion Press, 1964), 75-76.

talented artists.”⁶⁹ Le Corbusier would later go on to travel to America aboard the *Normandie*, taking notice of her impressive scale and layout more so than her lavish décor.

Later, in the conclusion chapter of *The Radiant City*, Le Corbusier elevated the ocean liner to its place as part of the ocular triad in *Towards a New Architecture*, alongside automobiles and aeroplanes. In this section Le Corbusier describes the hope and promise for the future brought on by the standardized, open, and mechanical design of the Radiant City. He establishes this sense of freedom with an image series of “the new highways of the world” which he shows to be planes, airships, the ocean liner (*Bremen* pictured here), and the automobile.⁷⁰ This is reflective of the equation of modernity with notions of transportation and mobility by Le Corbusier and others in *Towards a New Architecture* and *L’Esprit Nouveau* in the early 1920s.

The rest of the ocean liner references in *The Radiant City* deal primarily with the ship in a programmatic sense, as an example of how to organize architecture in a new and efficient manner. One of the tenets of the Radiant City concept, and modernism in general, is its applicability to a variety of sites and lack of context. Le Corbusier explores this reality in the chapter *Artificial Sites* where he notes that the deck of the ocean liner—which can freely travel all over the world in complete isolation via the sea— will dictate the size and use of the rooftops of buildings in the Radiant City (fig. 3-4). He writes, “This, in the middle of the ocean, on a ship: tennis, a swimming pool sunbathing, conversation and amusement: Ships are 22 to 27 meters wide. So are the buildings of the Radiant city. On the whole expanse of the city, above the sea of trees, new ground would be gained in this way.”⁷¹

⁶⁹John Maxtone-Graham, *Normandie: France’s Legendary Art Deco Ocean Liner* (New York: W.W. Norton & Company, Inc., 2007), 1.

⁷⁰ Le Corbusier. *The Radiant City*, 340-342.

⁷¹ Le Corbusier. *The Radiant City*, 59.

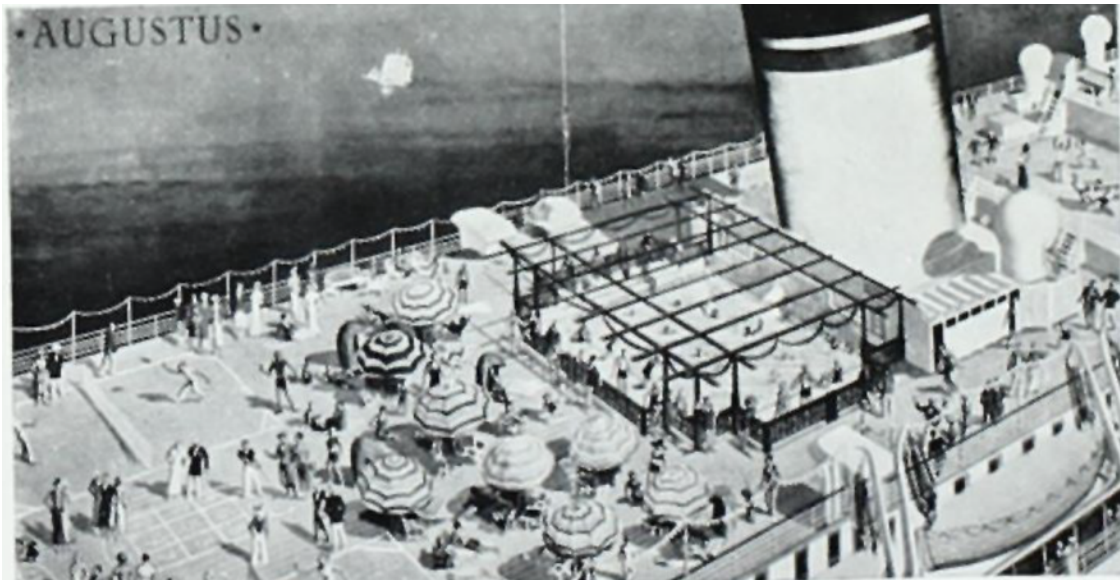


Figure 3-4: Lido deck of the liner *Augustus* as printed in *The Radiant City*

He further lauds the self-contained nature of the liner in a description of the provisions aboard *Normandie* added in the 1935 edition of *La Ville Radieuse*. After presenting the exhaustive list of resources aboard ship, he states, “the ship has seen stories of living quarters, 13 elevators with operators on permanent duty, etc. (I suggest we moor a tired liner on one of our new housing developments as a demonstration of *what can be done!*)”.⁷²

Le Corbusier also explores how the efficient layout and design of ocean liners permits a maximum number of passengers to voyage in relative comfort. He explores this extensively in the chapter “To live! (To Inhabit)”, where he first shows photographs of second-class cabins on a liner. He writes, “these pictures are not intended as examples of how to build our houses. But they show the results of strictly observed economy.”⁷³ Interestingly, Le Corbusier seems to have not taken his own advice as both the bedrooms of the *Maison Citrohan* and *Cite de Refuge* were quite similar to the typical cabin layout of a liner, as will be seen in the next section. He goes on in the “To Live!” chapter to express his admiration of the rigorous organization of public, private, and

⁷² Le Corbusier. *The Radiant City*, 116.

⁷³ Le Corbusier. *The Radiant City*, 115.

service spaces aboard ocean liners. He presents readers with both transverse and longitudinal cross sections of the *Aquitania* (figs. 3-5, 3-6), going so far as to caption the transverse section “Cross section of a ‘floating apartment house’.” He lauds the ability of the ship to function in harmony while accommodating a wide variety of programs and people. His main assertion is that if the passengers on an ocean liner can travel in novel comfort and pleasure for a few weeks in spaces smaller than those proposed for the Radiant City, then apartment dwellers should be equally satisfied living in their relatively more commodious dwellings. He writes:

But let us not wander too far from our apartment buildings, our ribbons of housing winding through the parks of the Radiant City. Will it be possible to live comfortably on the proposed basis of 14m² of floorspace per occupant?

He goes on to explain that on ocean liner, using data from the *Bremen*, passengers are provided, even in the most luxurious accommodations, with less nominal area than he is proposing for the apartments of the Radiant City. This reflects his understanding that for a dwelling of permanent residence more space is required:

On the great ocean liners in which passengers are confined and cabined for periods of from 10 to 15 days (though they are provided with the amenities of promenade decks, deck games, libraries and bars—all of which the Radiant City offers on a far larger scale even in its most modest neighborhoods) I must point out that the *luxury suites*, which are intended for only the most exceptionally wealthy passengers, measure only 56m² for 5 to 7 persons. This means that they provide only 11m² or 8m² in *luxury class*. For one passenger, or two: 15m²; which means either 15 or 7.5 m² per person. For 2 to 4 passengers, 24m²; which means either 12 or 6 m² per person.

Although in the above quote Le Corbusier grapples with the specifics of cabin areas on ships, he proceeds to reinforce the ideas of purity and cleanliness in the ocean liner:

The Ocean liner can only continue to function within these astonishing physical limitations because its communal services are rigorously organized, because the living quarters are stripped of all parasitical elements, and because life aboard (and I am deliberately limiting myself to luxury accommodations only, even though the theories I am arguing for are concerned with low-cost housing) is

governed by an intelligent use of innovations that *permit a solution of the space problem*, on the one hand, and that **REJECT ALL WASTE**, on the other.⁷⁴

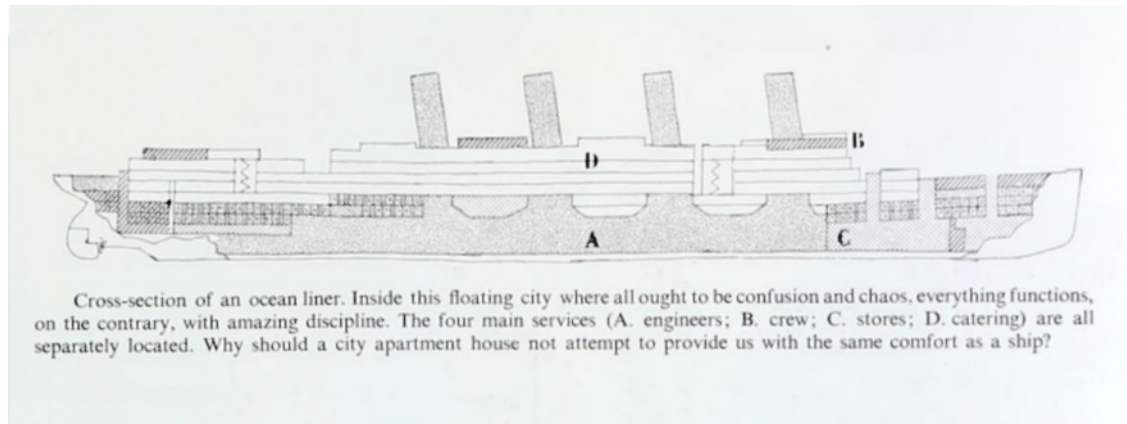


Figure 3-5: *Aquitania* section diagram as printed in *The Radiant City*

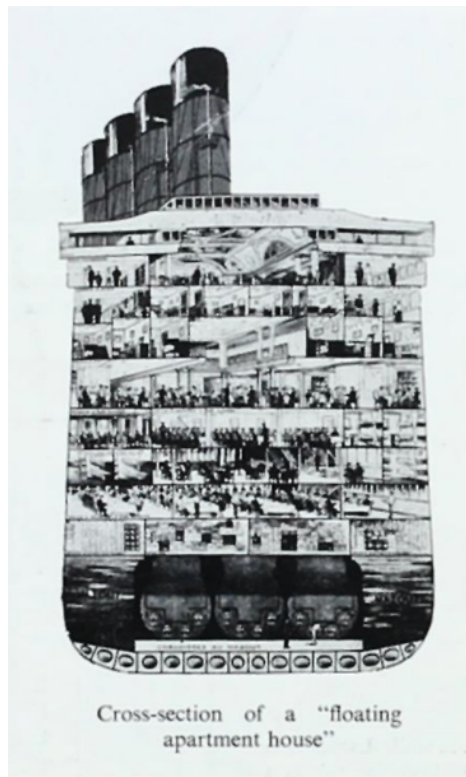


Figure 3-6: *Aquitania* section compared to an apartment building in *The Radiant City*

⁷⁴ Le Corbusier. *The Radiant City*, 117-118.

Case Study: How the Cite de Refuge and Villa Savoye Evoke the Liner

The year 1929 was crucial in the evolution of Le Corbusier's understanding of the ocean liner as it was the year in which he embarked on his first transatlantic crossing. While the impact of this experience on Le Corbusier's written work was studied in the previous section, this section will explore that impact on his built work of the same period. The first exemplar, the Villa Savoye, was constructed between 1928-1931 and represents the apex of Le Corbusier's *villa* typology. Likewise, it marks one of his last major works designed before the 1929 South America journey. The Cite de Refuge in Paris (1929-1933), the second building of study, marks one of Le Corbusier's first major works after said journey. Comparing the architectural drawings of these two buildings will reveal how each evokes the Liner differently as well as how Le Corbusier's use of ocean liner as an influence evolved as a result of the voyages to and from South America.



Figure 3-7: Villa Savoye, Poissy, 1928-1931

The Villa Savoye (fig. 3-7), like the Villa Ozenfant before it, presents several of the visual motifs of the liner. On the second floor, a living terrace is partially enclosed by a ribbon window, akin perhaps to the promenade deck of an ocean liner. Likewise, on the roof, the solarium is presented not as a rectangular walled-in garden but rather as a curving surface connecting two semi-cylinders as it rises from the rectilinear superstructure beneath. Perhaps a ship's funnel?⁷⁵ Like the bridge wing loft of the Villa Ozenfant, both of these design elements are primarily visual cues, drawn from the exterior language of a liner. However, inspection of the plans of the Villa Savoye (fig. 3-8) reveals that unlike the Villa Le Lac and Maison Citrohan discussed in Chapter 2, the Villa Savoye's interior layout bears little resemblance to that of a liner. For example, bedchambers are of varying sizes, feature private water closets, and are separated from the promenade-terrace by a service corridor. Likewise, they occupy the same level as the communal living areas in plan, spaces typically on separate decks aboard a liner.

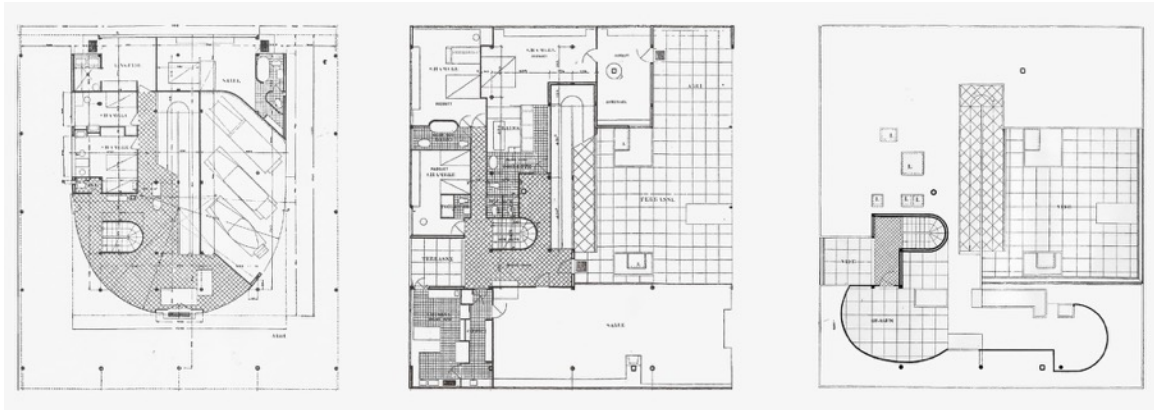


Figure 3-8: Villa Savoye, 1931, Plans

⁷⁵ Although several authors such as Cohen and Curtis have celebrated the similarity between the roof garden of the Villa Savoye and the deck of an ocean liner, to date, I have yet to find any mention of the formal similarity between the garden's curving wall and the funnel of a liner; Jean-Louis Cohen, *Le Corbusier: The Lyricism of Architecture in the Machine Age* (Cologne, Germany: Taschen, 2004), 44 and Curtis, *Le Corbusier*, 94.

The Cite to Refuge, on the other hand, was constructed *after* Le Corbusier's prolonged voyages aboard the *Massilia* and *Lutetia* between France and South America. The plans reveal a vastly different interior organization to the Villa Savoye, partly due to the difference in scale. Upon further inspection, the differences between the two become more nuanced; the Cite de Refuge deploys a much stricter regimentation and hierarchy of spaces. Such careful management of space, particularly the separation between public and private areas, was also found on the ocean liners Le Corbusier traveled on such as the *Giulio Cesare*, which he took from Buenos Aires to Rio de Janeiro (fig. 3-9).



Figure 3-9: Promotional section view of the liner *Giulio Cesare*

As can be seen when comparing the plans of the Cite de Refuge to the section of the *Giulio Cesare*, both separate dormitories and sleeping accommodations at opposite ends of the structure, with public space in the middle. Aboard the *Cesare*, the right quarters of second and third class are relegated to the ends of the ship; the more luxurious also small accommodations of first class are located amidships several decks below the public areas.

The plan of the Cite de Refuge (fig. 3-10) centralizes all circulation and administrative services on the dormitory floors, while the men's lounge on the first floor is tethered alongside, almost like a tender vessel in service to the mother ship. The uppermost floors of the building transition from a mass dormitory layout to an individual "roomette" style layout for mothers with children. These small cabins share communal baths while each having their own lavatory and

layouts are standardized other than minor adjustments to accommodate the street side datums of the building. This approach bears notable resemblance to the cabin layouts (fig. 3-11) aboard the *Bremen* (1928), which Le Corbusier used in his 1933 book *Ville Radieuse* to describe the possibilities of architecture where economy and efficiency are strictly observed. The firsthand experiences aboard ship from the South America tour as well as his observations of other liners such as the *Bremen* gave Le Corbusier an extended understanding of the functional operation of space on an ocean liner.

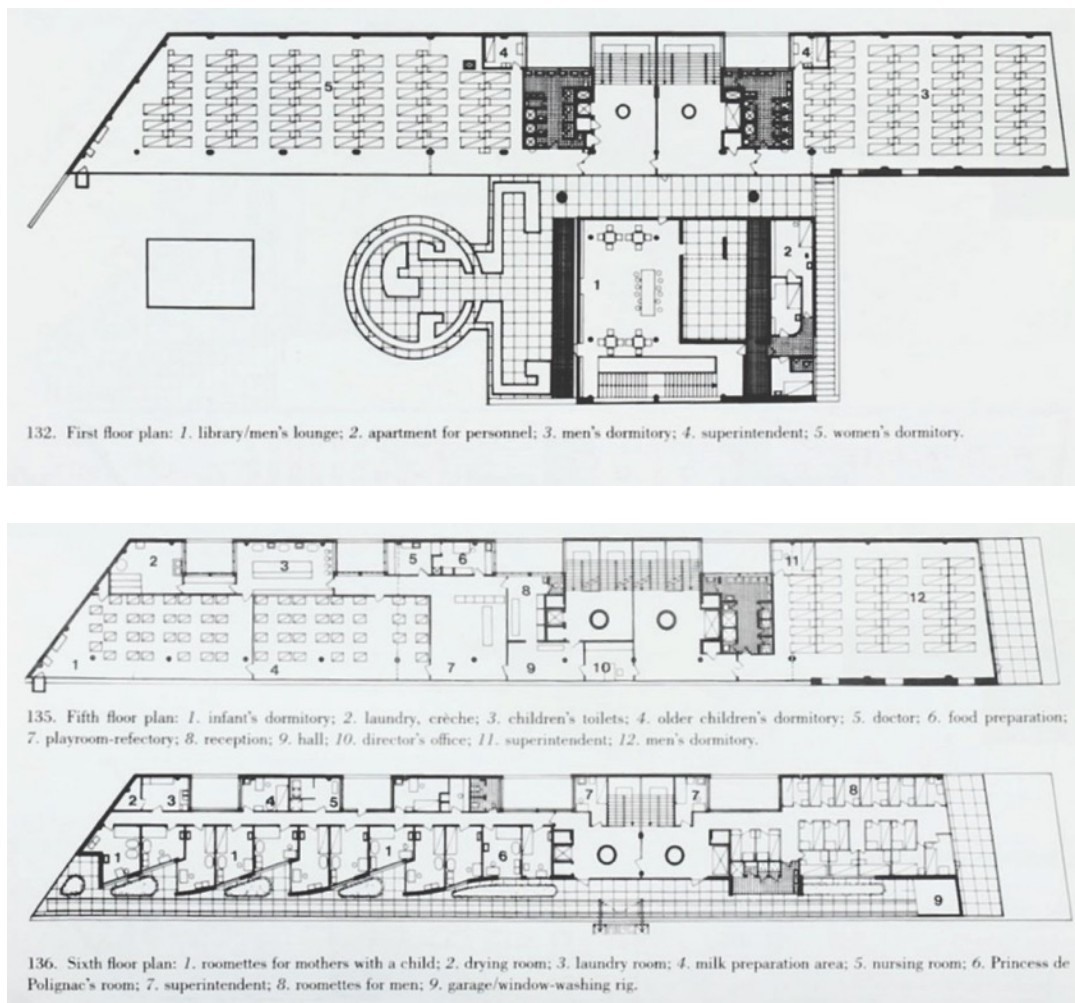


Figure 3-10: Cite de Refuge, Plans

As can be seen by the above analysis, though they date from roughly the same time period, the Villa Savoye and Cite de Refuge take influence from liner design in very different ways. This transition is pivoted around Le Corbusier's 1929 voyages to Buenos Aires and Rio de Janeiro, and his long exposure to shipboard conditions on that journey. The Villa Savoye draws on formal semiotics from the liner such as the funnel and promenade deck, while its interiors bear no strong influence of the operations of ship. In contrast, the Cite de Refuge draws heavily on the interior organization of a liner as a precedent for the arrangement of space. Interestingly, the Cite de Refuge organizes its private spaces above the public ones rather than below like on a liner, likely due to the practicality of street access. Likewise, it is not free of formal allusions to the ship, with its sharp west corner slicing through the urban fabric of Paris like a liner's prow through the waves.



Figure 3-11: Cabin Plans, *Bremen* as printed in *The Radiant City*

Chapter 4

Ideas Realized: 1935-1965

Le Corbusier in America: The “Tonic Steamship” and “Modulor”

Extending his adventures to lands beyond western Europe, Le Corbusier made a journey to the United States in 1935 to both participate in an exhibition at the Museum of Modern Art and travel the U.S. to gauge its receptiveness to modern ideas, which had been received enthusiastically in the southern continent. Le Corbusier arrived in New York after a crossing on the *S.S. Normandie* where he mingled with the rich and famous in first class and made use of his little knowledge of English to express the architectural ideas he developed on board, such as “inside streets not exposed to rain, snow, or sun” and “linking and connecting.” It was a few days after his arrival in New York that he first proposed the idea of the “tonic ship” —a liner built for the goal of habitation and recreation rather than simply transportation—to Nelson Rockefeller at a cocktail party, which he later documented in his summary of the American experience *When the Cathedrals Were White*.⁷⁶

In his proposal to Rockefeller, Le Corbusier dove deeply into his aspirations for the possibilities of designing ships like his “Tonic Steamship”, perhaps having his interest piqued by his experience aboard *Normandie*. He wrote in *Cathedrals* of the experience of a transatlantic voyage: “The ship is a place of repose, of preparation, of incubation. It is a delightful life. It's hardly a journey. It's a period of leisure. Thus, for instance, the three nights and two days on the train to Moscow are, on the contrary, a severe trial. The ship is a joy. Someday steamship companies will realize that ships can be made which are not imitations of palaces on land.”⁷⁷ Le

⁷⁶ Weber. *Le Corbusier*, 361.

⁷⁷ Le Corbusier, *When the Cathedrals Were White*, translated by Francis E. Hyslop, Jr. (New York, New York: Reynal and Hitchcock, 1947), 93.

Corbusier was particularly impressed by *Normandie*'s scale, which he regarded as more similar to American achievements like the skyscrapers of New York than the cities of Europe from which it sailed: "The *Normandie* was an ambassador of France in America. The dimensions are not those of France, but those of America...the stewards dressed in vermillion are in(?) keeping with the pomp of the ship; at dinner the rest of us are like people at a country funeral." Le Corbusier regarded the *Normandie*, which had been largely funded by the French government, as true perfection. "A technical masterpiece has been achieved," he wrote, "the *Normandie* (rightly or wrongly—I am neither a mariner nor a guardian of the French Treasury) was constructed at an American scale."

This interest in the juxtaposition between the European and American scales of building was even better illustrated in his writings of skyscrapers; "They carry up a thousand feet in the sky, a completely new and prodigious architectural event," he wrote. He described his concern that Europe had no response to the innovation of the skyscraper "The USA has grown up; its shoulders are formidable, its animating breath powerful," he stated. He compared the American skyscraper to Europe's closes architectural achievements palaces hundreds of years old: "What are we in our flat cities? What is our response to the skyscrapers of Manhattan? Versailles and Fontainebleau, Touraine with Chenonceaux and Chambord? They came to study at the Ecole des Beaux-Arts in Paris, and they have made skyscrapers out of them!"⁷⁸

Le Corbusier describes the "tonic steamship" which he had proposed to Rockefeller in *Cathedrals* as a ship where the voyage itself is the experience rather than liners at that time, whose primary design function was to distract the passengers whilst speedily crossing the Atlantic—a concept more akin to the structure of a contemporary cruise ship. He describes it as such:

⁷⁸ Le Corbusier, *Cathedrals*, 95-97.

I hope to collaborate in the planning of a tonic steamship, a ship on which you do not dissipate a week in the midst of Capuan delights, but on which you use your time; where you feel yourself on the sea, where etiquette is banished or at least has got rid of the vestiges of past times. The ship would be transparent, you would always see the ocean; from every part. For, in the Normandie, you don't suspect for a minute that you are at sea; you have to go on deck to look for the sea. The main deck is not very helpful: it is a covered walk barricaded by thick wooden panels. There should be a number of swimming pools which are not studiously "decorative," race tracks, opportunities to climb up and down.

He further emphasizes the importance of passengers aboard the tonic steamship to engage with the mechanical functions of the vessel:

It should be possible to see the superb machinery by means of properly arranged mirrors. There should be available popularizing marine instruments which would allow some participation in the activities of the bridge. Sports clothes, an ambient stimulated by the purser, an ambient of activity and not of cocktails. An informal ballroom. A library which would enable you to enter into marine interests: voyages, adventures, ship building, conquests.

He continues by making it clear that on his new ship, the interior will reflect the technical prowess of the ship's hull, unlike the ships of his experience such as the *Paris*. "Public rooms and cabins done in nautical architecture and not by 'interior decorators'," he writes, asking "why this dissimulation, this equivocation, this hypocrisy through which the passenger is made to feel that he is still in the Place de L'Opera or at Vichy?"⁷⁹ For Le Corbusier, the "tonic steamship" was an opportunity to apply his appreciation for the liner's exterior form and interior layout to its decoration, thus concluding its apotheosis into the ultimate modern object. His interest in designing a "tonic steamship" also marked a departure from his earlier categorization of the ocean liner as an object of *engineering* to an object of *architecture*, which is to be appreciated for the entirety of its design, not just its mechanic.

This notion would be further emphasized in the publication of Le Corbusier's *Modulor* (1948), one of his most famous postwar theoretical writing accomplishments, comparable in its resonance to *Towards a New Architecture* and his "Five Points". In the introduction to the first

⁷⁹ Le Corbusier, *Cathedrals*, 93.

volume of *The Modulor*, Le Corbusier defines the scope of architecture for the reader, broadening it to included mechanical objects; “The word Architecture here covers: the art of building houses, palaces, and temples; ships, cars, railway trucks, and aeroplanes.”⁸⁰ Le Corbusier did much of the development for the Modulor concept while journeying to the United States a second time in December 1945 for a goodwill visit and to participate in the planning of the United Nations Headquarters in New York. The *Modulor* evolved concepts from his existing understanding of the golden ratio, geometric form, and proportion. With the Modulor Le Corbusier sought to develop an architectural unit scaled around the proportions of a human being at its occupation of architectural space.

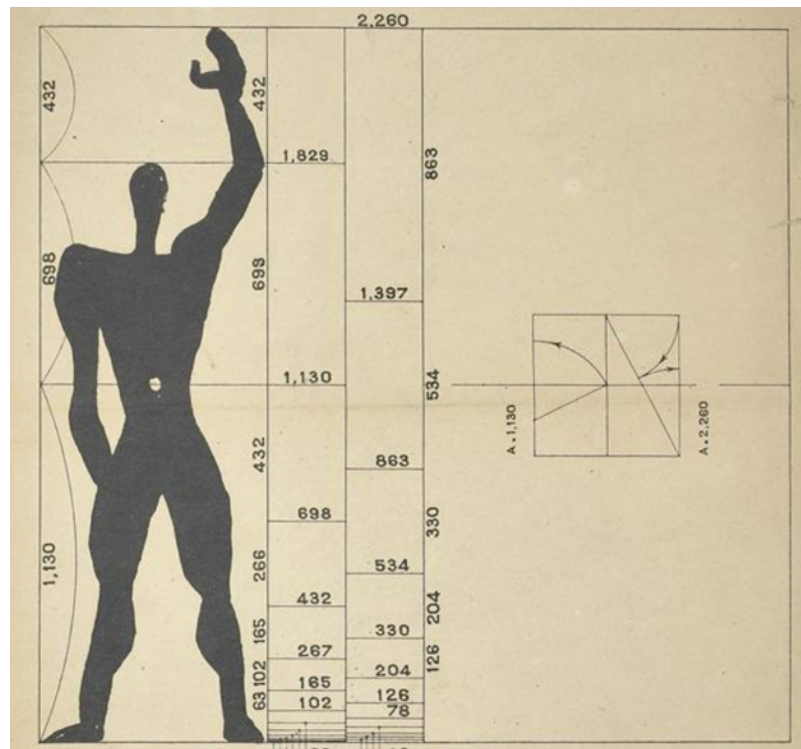


Figure 4-1: Diagram of the Modulor

⁸⁰ Le Corbusier, *The Modulor*, translated by Peter De Francia and Anna Bostock (Cambridge, Massachusetts: The MIT Press, 1954), 9.

Interestingly, Le Corbusier made the midwinter crossing aboard the *Vernon S. Hood*, an American Liberty ship. These mass-produced cargo carriers used during World War II to transport supplies between the United States and other allied forces. Nearly 3000 Liberty Ships were built between 1941 and 1945, a scale of production never before seen in the shipping industry and requiring the full support and mobilization of the United States government and workforce. Every Liberty Ship was identical, their construction distributed among eighteen shipyards throughout the United States.⁸¹ Le Corbusier described the harrowing experience, likely a very stark contrast from his last crossing aboard the lavish *Normandie* ten years before:

Then came the Liberty ship *Vernon S. Hood*, sailing from Le Havre in the middle of December 1945 and arriving in New York after a nineteen-day crossing. During the first six days there was a frightful storm and for the rest of the time a strong swell. The American company had told us that the crossing would take seven to nine days. On the second day, when the previous day's run was announced, it became obvious that it would take eighteen or nineteen. Imagine the rage of the twenty-nine passengers! We slept in dormitories; the cabins being occupied by the crew. I said to Claudius Petit, who was travelling with me: I am not going to leave this confounded boat before I have found the explanation of my golden rule. A helpful passenger appealed to the ship's officers; the cabin belonging to one of them was put at our disposal from 8 to 12 each morning and from 8pm until midnight. There, to the roaring of the storm, I tried to work out a few ideas, each one arising from the last.⁸²

In his pursuit of a new explanation to his golden rule, Le Corbusier developed the now famous sketch of a man with arm outstretched with measurements (fig. 4-1). He formulated the drawing while confined to the tight quarters of the officer's cabin on the *Hood*: "While the boat rolled and tossed heavily, I drew up a scale of figures: These figures pin down the body at the decisive points of its occupation of space: they are therefore anthropocentric."⁸³ In the end the

⁸¹ M. D. Harris, W. J. Grogg, A. Akoma, B. J. Hayes, R. F. Reidy, E. F. Imhoff, and P. C. Collins, "Revisiting (Some of) the Lasting Impacts of the Liberty Ships via a Metallurgical Analysis of Rivets from the SS 'John W. Brown'" *JOM* 67, no. 12 (December 1, 2015), 2965–75, <https://doi.org/10.1007/s11837-015-1668-1>.

⁸² Le Corbusier, *The Modulor*, 48-51.

⁸³ Le Corbusier, *The Modulor*, 55.

final vertical height of the Modulor was set at 2.26 meters, which was also the *exact* height between the decks of a ship. Le Corbusier visited Istanbul in 1948 to exhibit the Modulor and shared his knowledge of ship construction with his seat mate on that flight. He details this exchange in his publication of *The Modulor*:

Travelling by plane from Izmir to Istanbul, I sat next to a young engineer of the Turkish merchant marine. He told me he was going to Gothenburg to take over a new cargo boat for his government. 'Can you tell me what is the standard height between decks used in ship building?'—'Yes: 2.26 meters'—'Will you make a drawing to show me how this works?'—'Here you are. And let me add that the same applies to the construction of passenger ships, for cabins and so forth.' The search for convenience and general economy of labor has put modern shipbuilders on the same track as the architects of the seventeenth century, who tried to establish intimacy and comfort and to meet the women's demand for 'les petits apartments'.⁸⁴

Though Le Corbusier claims that the dimensions of the Modulor are purely anthropocentric, it is clear here that the efficiency-based dimensions of the *Hood's* standard deck heights, which were kept at the absolute minimum to conserve space in non-public areas, must have influenced that final decision. The correspondence between the spatial architecture of the liner and the origins and applications of Le Corbusier's Modulor concept marks the completion of the rhetorical transition of the ocean liner in his opus.

Radiant City: Liners on Land

In the last decade of his life Le Corbusier was presented with the opportunity to apply the lessons he had learned from his travels at sea and expressed in his writings to large scale, built works. The *Unité d'Habitation* series, which began with the Marseilles version at the same time Le Corbusier was publishing *The Modulor*, marked the first attempt at such a goal. The *Unité* featured elements drawn from Le Corbusier's years of experiences at sea, such as a recreational

⁸⁴ Le Corbusier. *The Modulor*, 206.

promenade deck on its roof, and apartment units sized based on the principles of the *Modulor*. Efficiency and economy were important aspects of the *Modulor* concept, as displayed in Liberty ships. Contrary to this goal, the *Unité* went severely over budget bringing into question its social and economic aspirations. *Time* magazine, for example, reported that the *Unité*, which could house 300 families cost the equivalent of building 600 private homes. In Describing this coverage, Nicholas Fox Weber wrote: "Le Corbusier is cited as having motives of which few readers would have grasped the significance. 'My mother was the slave of the little house,' he said. His new apartment type was its alternative, fulfilling his wish "to make life as luxurious as a first-class cabin on an ocean liner." No reader of *Time* in 1950 would have realized that in essence what the architect wanted was to have his mother in the setting he had shared with Josephine Baker."⁸⁵ Weber further explored how Le Corbusier's past aspirations for dwelling and cities were channeled into the *Unité*. He writes, "One becomes aware of air circulating not just above and around the great structure but also beneath it. Le Corbusier had created the quality of one of those ocean liners that had intoxicated him as a young man.... Le Corbusier had experience physical love most ecstatically surrounded by sea and sky--not tethered to the earth in the confines of a city. The shack in Darien, the *Lutetia*..."⁸⁶ Here Weber implies that Le Corbusier had channeled a romantic nostalgia for his past experiences on liners as well as his genuine study of their spatial operation, to influence his design for the *Unité d'Habitation*.

In the La Tourette monastery, one of Le Corbusier's later buildings, he was able to refine the execution of the liner paradigm through an infusion with the programmatic requirements of a monastery. The monastery, situated in the French hillside, programmatically arranges the many public spaces of the monastery above and below the main dormitory blocks. Also, it includes

⁸⁵ Weber. *Le Corbusier*, 593.

⁸⁶ Weber, *Le Corbusier*, 587.

several larger public spaces he didn't have the opportunity to include in the *Unité* such as a library and refectory. La Tourette represents the purest application of Le Corbusier's latter understanding of and passion for the organization of the ocean liner and is perhaps a more accurate reflection of his practical understanding thereof of ships as not only a design object but an architectural space.

Case Study: Unité d'Habitation and La Tourette Monastery

While both the Unité d'Habitation and Monastery of Sainte Marie de La Tourette are representative works of Le Corbusier's later style—with heavy use of concrete, pilotis, and rectilinear massing—the Unité has had a more lasting role as an example of the liner motif in Le Corbusier's work. In the previous section, Nicholas Fox Weber described how the Unité embodied a spiritual and heterotopic essence of the ship and a nostalgia for Le Corbusier's South American Voyages. William Curtis, on the other hand, like other authors, addressed the relationship between the Unité and the liner in a more programmatic sense, stating:

Haunting the Unité idea were older collective archetypes such as Fourier's *phalanstère*, with its communal street and surrounding nature; the monastery at Ema....as well as, of course, the ocean liner (which Le Corbusier had been studying for nearly a quarter of a century). In the organization of the Unité these schemata are so completely fused that it is pointless to harp on them too fully: however, it is the image of a ship, with funnels, decks, cabins, and public walkways which seems to be most telling at Marseilles.⁸⁷

Curtis' analysis reflects the transition between visual modernity and programmatic modernity in Le Corbusier's later works. Curtis later suggested the Monastery at Ema was also influential to the design of La Tourette, but was it perhaps the ocean liner which provided a more powerful point of reference? A comparison of the architectural drawings of the Unité, La Tourette, and the

⁸⁷ Curtis, *Le Corbusier*, 170.

liners Le Corbusier voyaged on during this period will shed light on the true programmatic relationship between the three.

As discussed, Le Corbusier's 1935 voyage to America aboard the *Normandie* was influential to his development of the "tonic ship" concept. Weber described how Le Corbusier communicated his architectural ideas about interior streets linking and connecting spaces to his fellow passengers.⁸⁸ Interestingly, the *Normandie's* interior organization reflected the potential of these ideas in ways other liners of the day did not. *Normandie* was constructed with divided funnel uptakes which allowed for linearly planned and connected public spaces organized along the longitudinal axis (fig. 4-2, 4-3). This layout deviated from other liners of the day such as *Normandie's* main competitor the *Queen Mary*, which featured public spaces spanning the width of the hull and enclosed by funnel uptakes, separating passenger accommodations between the bow and stern. The resulting open, sequential spaces provided by the divided uptakes were a distinct spatial experience that Le Corbusier would have been aware of, as it was so different from the arrangement of the liners on which he had previously voyaged in 1929.

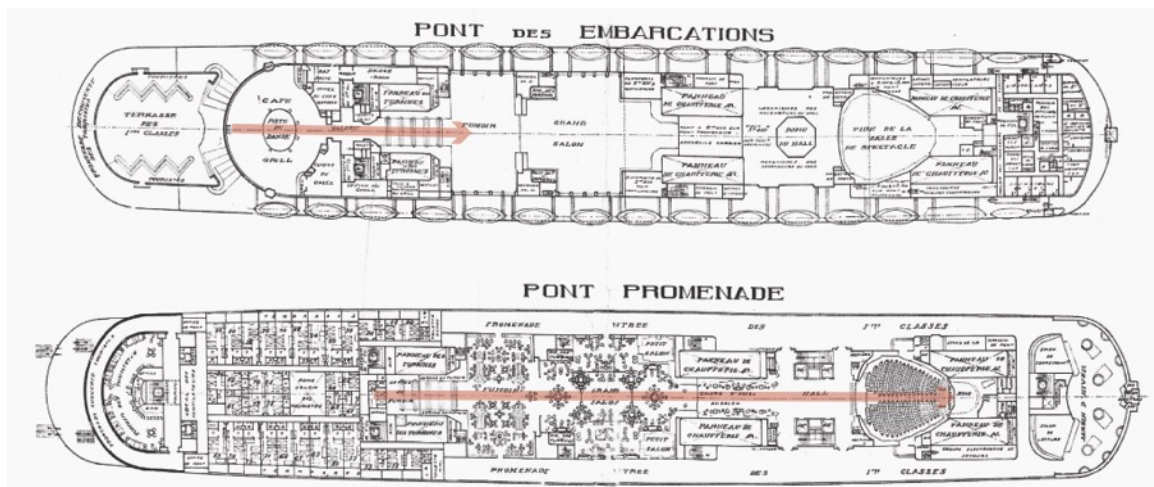


Figure 4-2: *Normandie*, Deck plan of public space, showing linear planning

⁸⁸ Weber, *Le Corbusier*, 361.

While the Unité d'Habitation is a linearly organized building, the layout of the Monastery of Sainte Marie de La Tourette is actually more reflective of the interior scheme of the *Normandie*. Here, rather than organizing La Tourette's housing units in a linear vertical stack, Le Corbusier organizes them *around and over* the public spaces. This is programmatic a strategy bearing resemblance to both traditional monastic architecture such as the Charter House at Ema, as well as the first-class cabins of the *Normandie* which surround its longitudinal dining salon and embarkation lobby. Philippe Potié, in his profile of the Monastery at La Tourette for the *Foundation Le Corbusier*, describes how Le Corbusier was influenced by the “functional unity that would combine working time with leisure as well as community life with private life” as present in the Monastery. He cites the Charter House at Ema and the Unité d'Habitation as equal influences on the design of La Tourette—the new monastery a fusion of the two. While the Monastery at La Tourette quite clearly resembles both these structures programmatically and aesthetically, it also reflects in unique ways the culmination of the programmatic lessons of the liner Le Corbusier had acquired over the years.

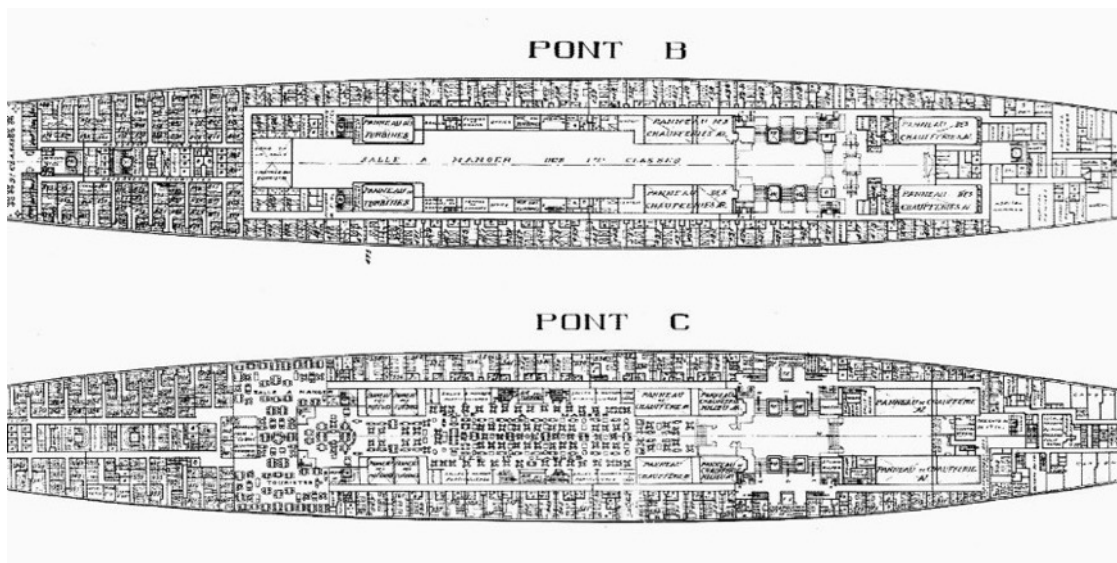


Figure 4-3: *Normandie*, Deck plan showing cabins around dining salon

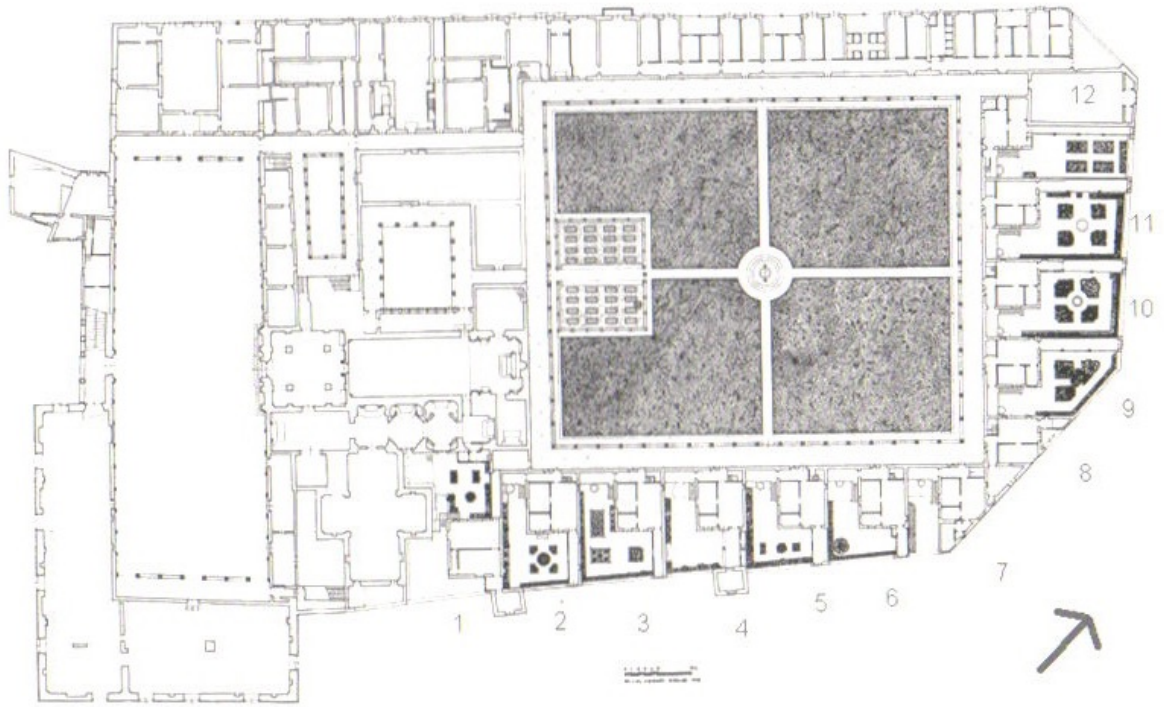


Figure 4-4: Charter House at Ema, Plan

At first glance, the plan of the housing areas of La Tourette bears quite a resemblance to the typical “cloister” arrangement of the Charter House and other convents and monasteries. However, upon further inspection and consideration of the public programs, the similarities to the ocean liner come into focus. The two main public spaces of the monastery, the chapel and refectory (dining hall) are located below, rather than at grade with the housing as they are in the Charter House at Ema. Likewise, while the refectory is tucked beneath one of the housing wings, its lobby, corridors, the other public spaces, and the chapel occupy the central void space created by the separation of the housing wings. Here, Le Corbusier has affectively *split* the “interior street” of the Unité and infilled it with public space, much in the same manner as the how the divided funnel uptakes of the *Normandie* separated wings of passenger cabins allowing for a soaring, central interior space at the dining salon. Interestingly, the chapel and lobby of the *Normandie* are directly in sequence from the dining hall axially. Thus, the programmatic contents of the void spaces at La Tourette and aboard *Normandie* are functionally the same: dining, circulation, and worship.

280-82 La Tourette, by Le Corbusier: plan of the three floors

- 1 Church
- 2 Reception rooms
- 3 Porter's lodge
- 4 Lay-brothers' common room
- 5 Lay-brothers' study
- 6 Oratory
- 7 Library
- 8 Lecture-rooms
- 9 Study
- 10 Common-room
- 11 Corridors or 'cloister'
- 12 'Atrium'
- 13 W.C.
- 14 Pantry
- 15 Refectory
- 16 Chapter-house
- 17 Lower church, with chapels
- 18 High altar
- 19 Sacristy
- 20 Spiral staircase connecting all three floors
- 21 Sick-rooms
- 22 Treatment room
- 23 Guests' rooms
- 24 Monks' cells
- 25 Director of studies' cell
- 26 Novices' cells
- 27 Lay-brothers' cells

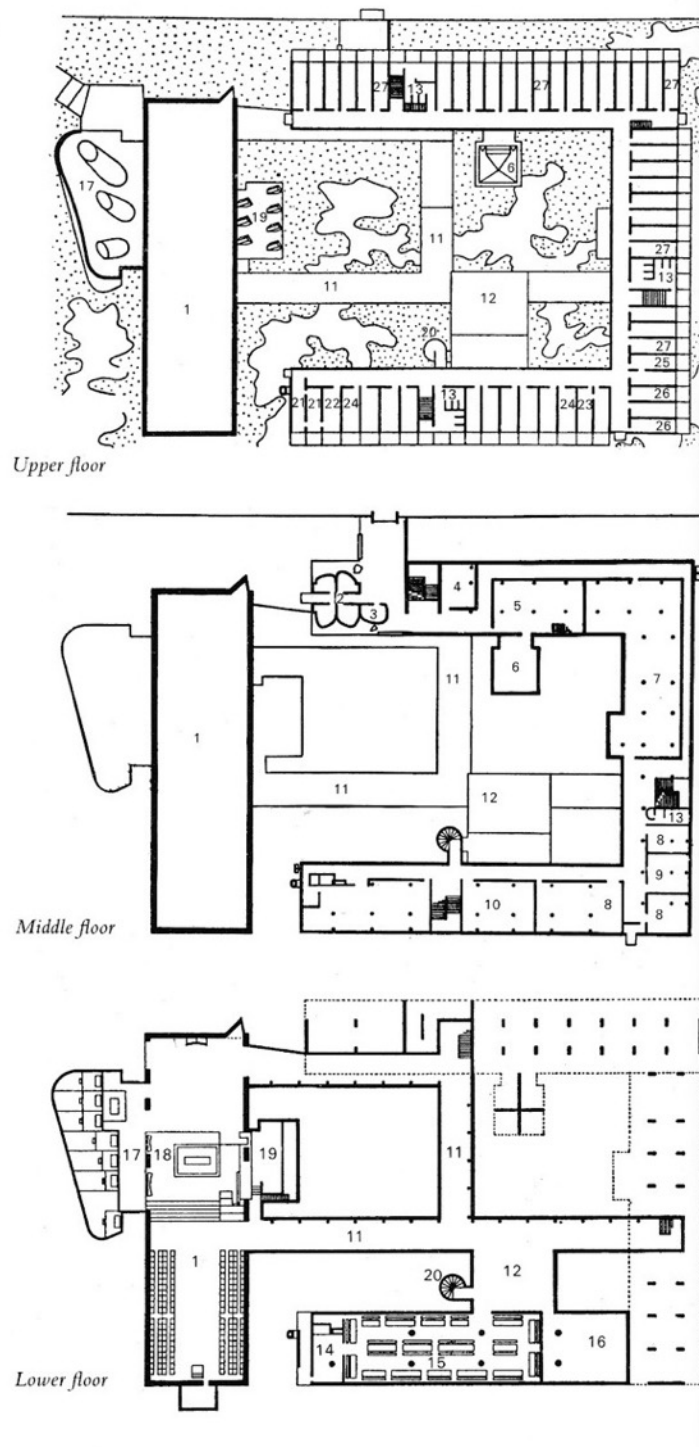


Figure 4-5: Monastery of Sainte Marie de La Tourette, plans

On the other hand, a close look at the interior planning of the Unité d'Habitation reveals points of both similarity and difference with the La Tourette Monastery and the typical planning of ocean liners. A significant difference between the apartments of the Unité and the cabin arrangement of an ocean liner is the fact that in the Unité Le Corbusier uses loft style two floor apartments. These interlock in section in a series of "L" shapes which segment the "interior streets" of circulation to every other floor (fig. 4-6). Ocean liner cabins were not arranged this way in a two-story loft format did not ever span the full width of the vessel. This would have created separation between the bow and stern in plan would have prevented the circulation of goods and services throughout the entire ship on every deck—a necessary feature when a single deck may contain cabins for all three classes of accommodation requiring access by the crew. The monastic accommodations of La Tourette, with their small, standardized shape on a single level are more reflective of a typical ocean liner cabin than the apartments of the Unité d'Habitation.

Likewise, the proportion of public to private space in the Unité is considerably less than that of the liner. Typically, ocean liners featured vast public spaces to supplement the limited private passenger accommodations. The layout of La Tourette, with two full floors of public space, is more reflective of the typical liner both in overall arrangement and accommodation size, such as can be seen in the Normandie plan (figs. 4-2, 4-5). The Unité does feature some elements of a liner more accurately, such as a superstructure on its roof with amenities and communal facilities. It is also 24 meters wide, which is within the 22-27 meter width of a ship the Le Corbusier described in the *Ville Radieuse*, and is also built in proportion to the 2.26 meter height of the "modulor" which Le Corbusier developed aboard the *Vernon S. Hood*. However, its funnel-esque plumbing vents and other inconsistencies place it further into the semiotic region of ocean liner influence than programmatic influence. La Tourette, even though it may *look* less like a ship than

the Unité is a better example of the fundamental organizational elements of the ocean liner as experienced by Le Corbusier.

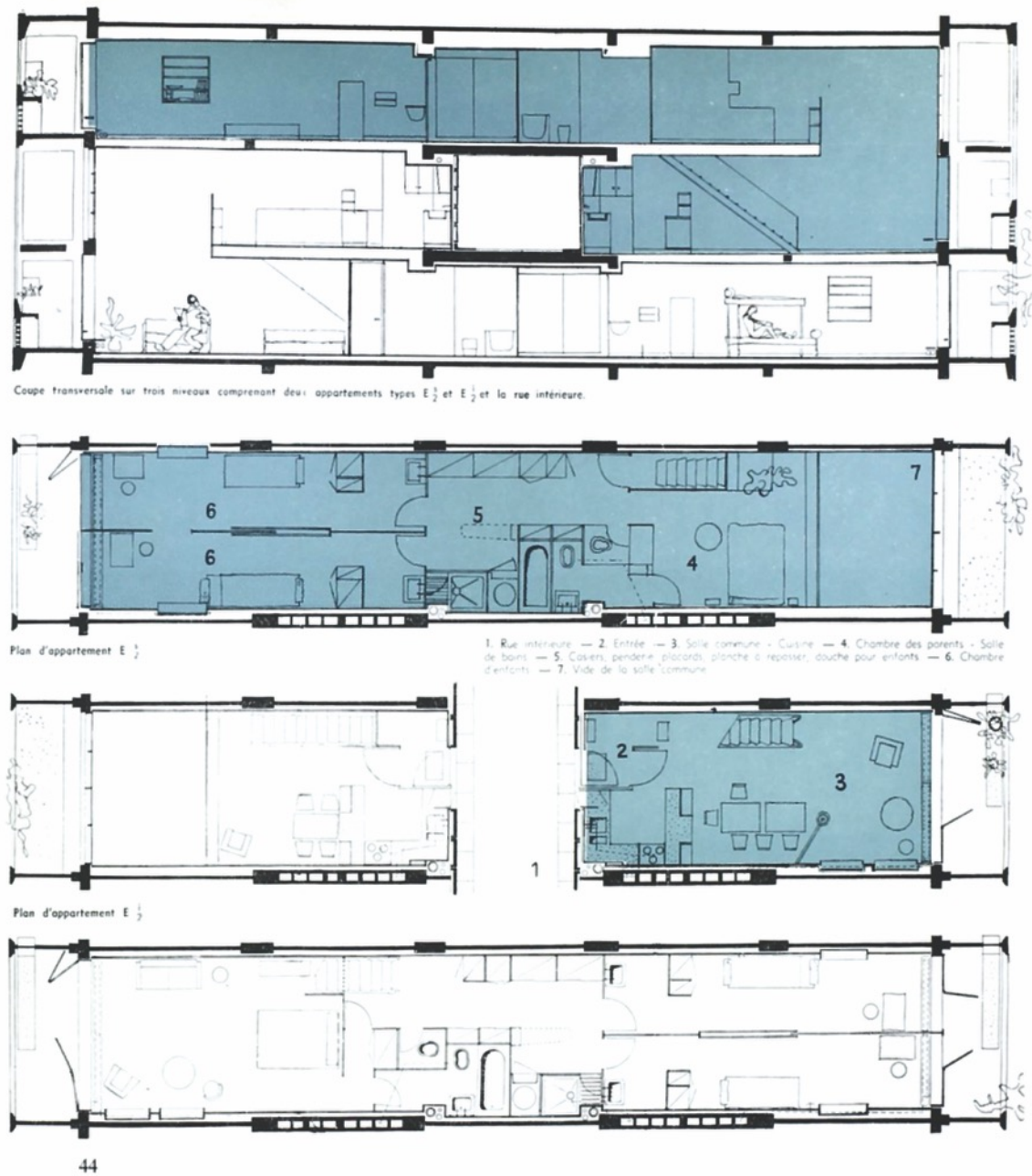


Figure 4-6: Unité d'Habitation, plans and sections showing interlocking layout

Chapter 5

Through the Porthole: Viewing Le Corbusier's Work in the Context of Mass Housing, Cruise Ships, and Semiotics

The Reciprocity Between Sea and Land: Liners and Architecture

While the study thus far has focused on the timeline of Le Corbusier's experiences at sea and the direct implications of those experiences on his writing and designs, some questions regarding the general relationship between liners and architecture remain. By reanalyzing both Le Corbusier's ideas and developments in architecture and the shipping industry since his time with the lens of maritime history, the complexity of those relationships only increases in richness.

Le Corbusier, as discussed previously, was not the only architect to invoke the liner for symbolic purposes, and ships and buildings have obviously been built since his time. Thus, it is pertinent to reflect on the evolving state of both the ocean liner and contemporary architecture since Le Corbusier conjoined the two in his own work. One of the most lasting and relevant architectural results of Le Corbusier's work is the development of the "tower in a park" typology for housing development which reached peak popularity in the mid twentieth century, with mixed success. This type of architecture, the large-scale apartment block, spans a variety of programmatic and income types from public projects to luxury condominiums. All of these reflect on some levels the ideas of Le Corbusier as they developed through the *Ville Contemporaine*, *Ville Radieuse*, and the *Athens Charter*, drawing various levels of influence from his understanding of ocean liners throughout that process.

Interestingly, while the end result of Le Corbusier's urban planning ideas may have been houses, whether villas or towers, which are *like* ocean liners, the ocean liner as he understood it

has all but ceased to exist, as airline travel has almost completely supplanted the market for long-distance transportation since the 1960s. At the same time, the large apartment block style of housing has fallen out of favor, particularly in the United States, as a form of public housing. Meanwhile, since the death of Le Corbusier in 1965 the transoceanic ocean liner industry has been gradually replaced by pleasure cruising in places like the Mediterranean and Caribbean. With transition, the engineering and mechanical strain provided by the rough waters of the open ocean was replaced by the need for more and more recreational space aboard ship, bringing modern cruise ships closer in line to breadth of facilities Le Corbusier imagined would be available in the Radiant City. Finamore and Wood described this transition in their conclusion to *Ocean Liners: Speed and Style*:

As industry demands transitioned from the requirements of North Atlantic winter crossings to maximizing recreational amenities—such as increased cabin space, private balconies, entertainment venues and dining opportunities—designs evolved towards towering superstructures (with up to 16 passenger decks) that stay largely in protected waters. The largest modern cruise ships bear little exterior resemblance to traditional liners.⁸⁹

Writers and maritime historians noted how the removal of cargo hatches from the liner's bow and stern, used to transport goods in the days of commercial transoceanic service, resulted in the extension of the superstructure on cruise ships to occupy nearly the entire width of the vessel in a much more box-like fashion. Karl Zimmerman even went so far as to directly point out how similar the contemporary cruise ship looks to a typical apartment building:

Passenger demand for small private decks—called verandas or balconies—attached to their staterooms has also dramatically altered the look of ships. Seen from the side, ships appear more like apartment buildings than old-fashioned liners. And "supersizing" has clearly been the trend, with most major cruise lines building ships that dwarf those of even two decades ago.⁹⁰

⁸⁹ Daniel Finamore and Ghislaine Wood, "The Afterlife of Ships" in *Ocean Liners: Speed and Style* (London, England: V&A Publishing, 2018), 262-270.

⁹⁰Karl Zimmermann, *Ocean Liners: Crossing and Cruising the Seven Seas*, (Honesdale, Pennsylvania: Boyds Mills Press, 2008).

The result of all this has been ships which look more like buildings than ocean liners in the traditional sense (fig. 5-3). A few contemporary cruise ships have actually been built as permanent residences such as *M.V. The World* (ROW Management, Ltd.) which features condominiums for permanent residency rather than temporary cabins, a perfect embodiment of Le Corbusier's "tonic ship" concept. This completes an intriguing reciprocal relationship between ships and modern architecture, a relationship that began with Le Corbusier's inspiration from ocean liners, was translated into his work and thousands of buildings which have followed, and was then set back to sea aboard massive cruise ships which are the visual and programmatic embodiment of an apartment building or resort tower on land. Thus, the cruise ship in its current state is both the result of the intersection of gradual osmosis of the shipping industry with a reciprocal relationship between liners and modern architecture.



Figure 5-1: Monastery of Sainte Marie de la Tourette, perspective



Figure 5-2: *Scarlet Lady*, Virgin Voyages, 2019

Metaphor, Machine Aesthetics, and the Faux Funnel

An examination of Le Corbusier's earliest and arguably most famous understanding of the ocean liner—as a semiotic device—through the lens of maritime history reveals further intriguing complications. Le Corbusier's logic, as epitomized in *Towards a New Architecture*, is that whether or not there may be “fake” and stylistically objectionable decorative elements within, the exterior of a ship is logical, functional and pure.⁹¹ However, there is a problem with this assumption of the exterior purity of the liner, which is revealed through the study of ships contemporary to those featured by Le Corbusier. For example, the *Olympic* (1911), a ship whose size and appearance were nearly identical to Le Corbusier's exalted *Aquitania*, features the same design elements Le Corbusier admired. The *Olympic* contains, just like *Aquitania*, long open promenade decks, clean, horizontal lines, an occupied top deck, and above it all, four enormous smokestacks. However, it is here in these funnels, that we find a contradiction to the aesthetic and structural rationality of a ship's exterior as understood by Le Corbusier: *Olympic's* aft-most funnel is an ornamental fake.

From the dawn of the steam age in the mid-nineteenth century until the debut of the *Olympic* in 1911, all of the funnels on a ship were functional smokestacks venting the boiler rooms. As ships grew in size and boiler capacity and the engineers grew in confidence, more funnels replaced the auxiliary masts and sails of early liners. The introduction of the *Kaiser Wilhelm der Grosse* in 1897, marked the beginning of a new era for ship building, as this liner was both faster and larger than anything seen before. As such, the ship's four funnels, products of its increased boiler count, soon became synonymous with speed, prestige, and safety at sea, and subsequent liners followed suit in their design. This response to public taste and perception led to the White Star Line, in an effort to compete with Cunard's speedy four-stackers *Lusitania* and

⁹¹ Le Corbusier, *Toward an Architecture*, 147-58.

Mauretania, to add a fourth faux-funnel to their *Olympic*, *Titanic*, and *Britannic*. The ships Le Corbusier selected as illustrations, particularly *France* and *Aquitania*, were both four funneled liner which fueled this competitive environment.⁹² Furthermore, the *Normandie*, which was influential to Le Corbusier's development of the "tonic ship" concept and is programmatically similar to the Monastery of La Tourette, also featured an enormous fake funnel. By this time, Le Corbusier's writings about ocean liners were more focused on their interior organization than exterior purity. Le Corbusier makes no indication that he was aware of this large ornamental feature aboard the *Normandie*, which he otherwise lauded for its grand scale and ambition.⁹³ The practice of adding an additional fake funnel to ocean liners has continued from the *Olympic* through the construction of modern cruise ships; most notably, all Disney Cruise Line ships feature both one functional funnel and a fake one, the purpose of which is to evoke the image of a classic liner.⁹⁴

The decorative and superfluous nature of faux funnels calls into question the association between the funnel and Le Corbusier's primary geometry of the cylinder and creates a logical conundrum between the ship *as* architectural metaphor and the architecture of the ship. The funnel motif is also a superficial *formal* element which Le Corbusier copied onto his villa typology of buildings in the 1920s. Le Corbusier's villas sought to *visually* embody the liner for purposes of symbolism, while his later works, which look less like an ocean liner in color and material, function *spatially* more like one. The faux funnel is the perfect symbol for the complexity of this relationship as it represents aspirations for mechanical superiority channeled through a symbol which is at the same time arbitrary as it is essential. Much in the same way, Le Corbusier's early use of ocean liner motifs were not essential to the *programmatic* operation of

⁹² Melvin Maddocks, *The Great Liners* (Morristown, New Jersey: Time-Life Books, 1978), 6-50

⁹³ Le Corbusier, *Cathedrals*, 93.

⁹⁴ "Now It's Heigh-Ho, Off to Sea We Go," *New York Times* (January 16, 1997).

those buildings but fulfilled the tasks of function in other ways. By communicating the contrasts and possibilities of Le Corbusier’s architectural ideas (such as the “Five Points”), the liner motifs in his villas conveyed the concept of modernism in an accessible way.



Figure 5-3: *Disney Dream*, view showing forward faux funnel

Literature about the ship as a model of functionalist ideals does not deal with the issue of these fake funnels, which raise profound questions about what qualifies as ornament, machine aesthetics, and the semiotic evolution of ocean liners in both maritime and architectural history. Knowing about “dummy” funnels problematizes our understanding of how the metaphor of the ocean liner operates architecturally and suggests the need for a further and more in-depth analysis of how the ocean liner funnel has evolved symbolically and technologically.

Conclusions

The fact that ocean liners influenced Le Corbusier’s architectural theories and designs has been frequently pointed out by architectural historians, and exhaustively reviewed in the previous

chapters. However, careful study of the life cycle of Le Corbusier's relationship with ships has revealed new depths of understanding of his work in a variety of ways, as demonstrated by the various case studies of buildings throughout his opus. Writers such as Curtis, Cohen, and Weber acknowledged more obvious points of influence such as in *Towards a New Architecture* and Le Corbusier's purist villas as well as in the Unité d'Habitation. The former is presented an example of the liner as a symbol of the technological age, the latter of its functional and programmatic role. While these two distinct roles have been acknowledged and discussed, the chronology outlined here has revealed the complex transition between the two, and more importantly the role of Le Corbusier's actual experiences aboard ships in shaping said transition. Incorporating maritime design history has further complicated the situation. The faux funnel, for example, problematizes Le Corbusier's early interpretations of the liner —the ones which are the most famous ("Liners" chapter, etc.) At the same time the reciprocal relationship between his ideas about housing, as influenced by liners such as the *Normandie* and *Lutetia*, have manifested in modern cruise ships to this day, validating his later understandings.

With this understanding in mind, how then does our collective understanding of the "Le Corbusier and Liners" relationship, as presented by architectural historians and biographers, hold up against the actual evidence of Le Corbusier's experiences? The ample acknowledgement of Le Corbusier's relationship with ocean liners among authors reflects the disparate points of reference of the ocean liner as a symbol versus as a demonstration of program. Curtis and Benton exemplify the former understanding by chronicling the role of the liner within the overall picture of Le Corbusier's theories on architecture. Curtis, as discussed, identified each moment where the Le Corbusier used the formal elements of the liner in his villas. Meanwhile, Frampton and Weallans understood the more complex programmatic relationship between Le Corbusier's work and the liner. This was demonstrated in Frampton's analysis of the Monastery of Sainte Marie de La Tourette and Weallans analysis of the ocean liner as an architectural heterotopia in Le

Corbusier's view. On the other hand, Kähler demonstrates an understanding of the entirety of the evolving role of the ocean liner as a symbol in Le Corbusier's work, but stops short of revealing the complexities of that relationship that an understanding of maritime history brings.

Even with an understanding of the chronology of Le Corbusier's experiences with ships and the implications of maritime history, the question remains: why has his association with the liner been so long lasting and prolific when it was only one of many technological influences on his work? Unlike the other visual embodiments of modernity Le Corbusier explored, in particular the automobile, airplane, and zeppelin, the ocean liner is the only one which is both an object of transportation and engineering *and* an accessible, inhabitable space on a perceptible architectural scale. Le Corbusier so adores the liner *because* it is the man-made design object closest in line with his own formal and programmatic aspirations for architecture and the city. Its relative ubiquity to the general public also made it the ideal vehicle for the delivery and reception of his architectural ideas to the public. The *imperfection* of the ocean liner, its funnels, and its cabins as straightforward, yet flawed, symbols of modernist values allow us, as critics, the license to think differently about how liners can teach lessons on architectural form and meaning.

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