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Tropical or colonial?: a reception history of Jean Prouve's prefabricated houses for Africa

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TROPICAL OR COLONIAL? A RECEPTION HISTORY OF JEAN PROUVE’S PREFABRICATED HOUSES FOR AFRICA

A Thesis
Submitted to the Graduate Faculty of the Louisiana State University and Art College
In partial fulfillment of the Requirement or the degree of Masters of Art

By
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Known for his industrialized furniture, Jean Prouvé is recognized as an innovative and idealistic designer. Yet it was the recent sale of one of three Maisons Tropicales prototype houses built for the French colonies in Africa, that he gained real notoriety. Made entirely of aluminum and steel, these flat pack houses were built light enough to be transported by airplane from Europe to remote locations in Africa to address the 1950’s housing shortage in the French colonies. To understand the evolution of these houses from their design to their current resettlement and restorations, this thesis investigates Prouvé’s background and influences that drove him to innovate. Furthermore, as a designer and factory owner, it illustrates how the business and economic challenges he faced played a significant role in directing his designs and manufacturing processes. Rather than being a colonial condescension as some have claimed, this thesis proposes that the initial designs for the Maisons Tropicales incorporated vernacular architectural characteristics, which indicate a desire, on the part of Prouvé, to combine European and African design elements. Finally the resettlements and restorations of the houses speak to those qualities, which are currently admired and those, which are overlooked. In doing so, they highlight the wide-ranging views that exist concerning colonialism and post-colonialism today.
Figure 1: Jean Prouve in front of one of the blue windowed panels from the Maison Tropicale, 1950’s. Nancy, France.
CHAPTER ONE
OVERVIEW

In June 2007, a Jean Prouvé prefab aluminum house from Brazzaville was sold to hotelier and entrepreneur André Balazs at a Christie’s New York auction for almost five million dollars.¹ This structure was one of three Maisons Tropicales that had been “rescued” from the “jungle” by famed art dealer Eric Touchaleaume of Galerie 54 in Paris. One had been shipped to Niamey, Niger in 1949 (Niamey house) and the other two were shipped to Brazzaville, Congo, in 1952 (I shall refer to them subsequently as large Brazzaville and small Brazzaville).² Interestingly, the houses’ descriptive name shifted inexplicably from Colonial to Tropical once the prototypes were approved for France’s colonies in the late 1940’s. They were ‘rediscovered’ during the 1980’s and resettled from Africa to Europe in 2000. Currently, hotelier Balazs owns the large Brazzaville house, which, it has been rumored, is being converted into a bar for his hotel in the Bahamas. The small Brazzaville house was purchased by Robert Rubin for a reported one million dollars and was donated to an American foundation that, in turn, loaned it to the Centre Pompidou where it remains on display on the fifth floor, and the Niamey House is still in the possession of Eric Touchaleaume. The purpose of this paper is to review the evolution of the houses within the context of colonialism both in Africa and Europe: from its design and execution before Congo’s independence to its recent post-colonial rescue and restoration.

Initially, I shall present Jean Prouvé’s background and influences, which shaped his philosophies on industrialized houses in order to contextualize not only the Maisons Tropicales, but also other houses he designed during this period. Then, by highlighting the business and economic challenges he faced between 1939, when the first precursor to the Maisons Tropicales was designed, and 1953, when disagreements with his business partner, forced him to leave his factory, I will provide a background for a broader understanding of Jean Prouvé’s actions and motivations. Finally, I shall compare the differences and similarities between two Prouvé houses: the Maison Tropicale (1949) and the Sahara House (1958), and illustrate how Prouvé embraced principles of universality and flexibility by incorporating indigenous African housing design characteristics to create truly practical solutions.

I shall approach the current status of the Maisons Tropicales from their post-colonial context by reviewing the rescue/removal of the houses and their subsequent restorations. By highlighting the international views toward these houses that are both African and French, I will address questions related to the preservation of cultural patrimony from the colonial era. The philosophies pertinent to the “restoration” of Prouvé’s structures also speak strongly to those qualities which are currently admired and those which are not. I will therefore review what has been restored and what has been removed from the original structures of the houses and how these decisions reveal shifting and differing attitudes towards both France’s colonial past and modernist design.
CHAPTER TWO

BACKGROUND

Introduction

This section will address the characteristics of Jean Prouvé’s design philosophy and show that, despite their original name, the inspiration for the Maisons Tropicales was in fact, anything but colonial. It has been suggested that the Tropical houses were like “flying saucers” from a retro science fiction film when brought to the colonies, and signaled the condescending attitude of the power of European modernity vis-à-vis African culture. 3 This interpretation would have been contrary Prouvé’s intent. By analyzing Jean Prouvé’s background, writings and statements of those who worked for him, I will investigate the forces that drove Prouvé’s designs.

Jean Prouvé’s architecture was not an icon of modernist theory like Le Corbusier’s, but an amalgamation of ideas and styles that found their sources in Art Nouveau ideals, molded by the Arts and Crafts movement, as well as his life experience during the wars. Prouvé, a self-avowed humanist, had great respect for individualism and collaborative work. Socialist in outlook, he espoused a modernist optimism about the future, hoping to leave behind post-war rubble to create a new world free from the legacy of the past through the application of technology. In short, Jean Prouvé’s designs and beliefs were complex. Neither a follower nor a leader of the Modernist and Art Nouveau movements, he worked outside either of their boundaries.

In looking at his works from today’s perspective, it is important to appreciate this complexity and realize that our opinions of Jean Prouvé may speak more of our own stereotypes than his, as our views are shaped by current attitudes towards modernism and colonialism. Although Jean Prouvé worked within the structure of colonial France, this circumstance does not automatically imply that he himself was simply an accomplice to colonialism. In fact, as this thesis will show, once faced with his own complicity in the corporate, colonial strategy of his country and its consequences on mass-production, he redeemed himself at great personal cost and thus remained a symbol of integrity and self-determination.

**Early Years**

Although born in Paris in 1901, Jean Prouvé lived with his family in Nancy during his youth. His father was a painter, and a co-founder of the Ecole de Nancy, which promoted the unity of fine and decorative arts. Much of the art and architecture created by this group (Figure 2) was rooted in Art Nouveau, a floral, decorative art style that defined applied arts at the turn of the twentieth century. Prouvé grew up in an industrious environment as the eldest son of seven. Fascinated by cars, airplanes and even bicycles, he wanted to become an engineer from an early age and yet was forced, due to WWI and the lack of his family’s financial means, to leave home.
at sixteen and move to Paris where he began an apprenticeship with Emile Robert, a well respected ironworker and friend of this father. In this position, he learned the skills he needed to become a true artisan in the “minor arts.” Robert was an older man whose crafts background proved a solid base for Jean Prouvé, but soon the young man started searching for more modern techniques and methods. From 1919 to 1921, Prouvé found new inspiration in the Hungarian Adelbert Szabo, who, despite his Herculean strength, was able produce very delicate and detailed ironwork. As his apprentice, Jean began to see the many creative possibilities of metal, yet he was still experimenting to find his own style. This was obvious from many of his early works that illustrate his skill and originality even whilst adhering to the expectation and direction of both architects and builders. Figure 3 illustrates a grille he produced for a client. In 1983, when discussing it he stated, “When I made this door you see, I was already opposed to all ways other people made grilles.” Figure 4 is an example of his early metalwork. The vase was made by Emile Gallé, the founder of the Ecole de Nancy, in 1896. Prouvé made the stand subsequently, in Gallé’s style. Clearly, he could move between Art Nouveau to Art Deco styles effortlessly and showed no preference or dogmatic adherence to either.

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As a child, Prouvé always hoped to become an engineer, which explains the ongoing interest in technology and industry that seems to permeate all his designs. Years later, he remarked how he often dreamt of building modern cars and airplanes, the aesthetic principles of which his later components and furniture espoused. Perhaps as a result of his lack of formal training, his mindset was that of an aeronautic engineer rather than that of a traditional designer or architect. As Charlotte Perriand, a frequent collaborator said in 1983, “Jean Prouvé is what we can call a unique example of the result of [an] education that combines craftsmanship with thinking without any undue emphasis on either of them.”

Throughout his life, he showed the hunger for discovery typical of a man who saw the entire world as a source for learning rather than one whose education was derived from repeating existing formulas. Figures 5-8 illustrates the resemblance between airplane parts and various building components and furniture from throughout Prouvé’s career. These industrial aesthetics were not an end in themselves; Prouvé believed that it was only when the construction industry would incorporate Fordian manufacturing techniques found in airplane and automobile factories, that the problem of housing shortages could be meaningfully addressed.

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6 Ibid., 23.
Figure 5: Centre d'Apprentissage de Béziers, Jean Prouvé, 1950-1954. Documented in Sulzer, Complete Works, Volume. III.

Figure 6: Component for “maison coque” at Vitra Design Museum uploaded by Vernissage TV Didier.
Figure 7: Baby carriage, Jean Prouve, 1936. Made for daughter of collaborator, Marcel Lods. Base inspired by airplane landing gear. Tajan auction house, Paris.

Figure 8: Rolling Jean Prouvé Rolling step-ladder 1951. Bent steel and wood, 194.5 x 66.5 x 120 cm. Galerie Patrick Seguin. Inspired by stair dismounts for planes.
Influences

After a hiatus of two years during his compulsory military service from 1921-1923, Prouvé began to build his professional reputation. With the financial help of a family friend, Saint-Just Pequart, he opened up his own workshop in Nancy in 1924. Prouvé was isolated in the country with little exposure to either the Paris design scene or the educational opportunities of engineers or architects. As a result, much of the work produced did not adhere to any particular style. It was not until he picked up magazines featuring the work of Le Corbusier and Mallet–Stevens that he was even aware of the existence of these two pivotal modernist architects.9

An important event that marked the young man, one often recounted by both Jean Prouvé and his biographers, was the commissioning of a grille from Mallet-Stevens (Figure 9). Allegedly, young Prouvé contacted the famous architect to obtain a commission. When Mallet-Stevens saw his work, he instantly asked the young Prouvé to produce a grille. In accordance with the traditional commission process, Prouvé

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9 Moulin, Maitre du Metal, 39.
offered to create drawings of the intended work, to which Mallet–Stevens replied, “I want a grille not a drawing.” In spirit, this response was not unlike what Prouvé would later tell his own students and collaborators. This was the first time that the young “constructeur” was allowed to explore his own style, and it opened up an entirely new way of thinking for Prouvé. Creating to design, instead of designing to create, remained one of the central characteristics of the Prouvé style.

Another man who greatly shaped Prouvé’s outlook was his father, Victor. Always an admirer of his parent, Jean often recalled with gratitude his father’s work and integrity. Although both men created works in profoundly different styles, they felt it was their responsibility to make original contributions. This is perhaps the one central idea that explains Prouvé’s drive for innovation. In the class that he taught at CNAM, he would tell his students:

> Bons ou mauvais, soyez avant tout de votre époque. Je préfère l’originalité primesautière et mal réglée d’un artiste a cette obéissance servile d’un copiste qui ne comprend pas; c’est comme si l’on écrivait sous la dictée d’un mort.  

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This quote eerily foreshadows the decision that he made in 1953 to leave his factory. Faced with either having to bow to his shareholder’s demands for putting profitability over innovation or abandoning his life’s work, he chose the latter. In a book written later in his life he referred to this period as “the year in which he died.” 11 However, the above quote also suggests that it was only by disassociating himself from commercialization that his innovation could remain vibrant,

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10 Ibid., 34.
11 Prouvé reflected on this period using this phrase during interviews. Subsequently, a book by Bernard Marrey was written recounting the events that led up to Prouvé losing his business. It was titled “La ‘mort’ de Jean Prouvé.”
and did not lead to atrophy. As a result of this decision, Jean Prouvé remained an individualist, defined and confined by no one other than himself.

In interviews later in his life, he attributed this focus on creation and innovation to his father and the members of the Ecole de Nancy. As an Art Nouveau artist and one of the heads of a school, Victor and the young Jean were surrounded by both intellectuals and practicing artisans who remained focused on bringing something new and organic to the formalized art of the nineteenth century.

Ils avaient une loi (at the Ecole de Nancy) qui m’a été inculqué: l’homme, quelle qu’il soit, doit s’interdire de copier, de plagier. Il est sur cette terre pour créer, mais ne peut se le permettre qu’avec un bagage culturel important. On ne part jamais de zéro.  

After the artistic quandaries of the nineteenth century, it is no surprise that Jean Prouvé’s father, Victor, embraced the organic and original tendencies of Art Nouveau. After two world wars, Jean, on the other hand, saw it counterproductive to dwell on the past when one was to create an optimistic future. Both men were defined by the present but shaped by the past in how they interacted with the world around them. This is particularly true for Jean, who saw technology as the means to free man from the entrenched patterns of history repeating itself. For him, modernist design was defined by what was not there: the openness, the possibility of change, the absence of heavy masonry, and the habits that confined man to traditional patterns of behavior. In order to be of their own time, nimble and original, creativity was all that either would tolerate. They both believed that it would be better to make their own mistakes than to

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continue making those of others. It is this outlook, coupled with his indifference to profit, that
drove Prouvé to maintain his independence and defined his design philosophy for industrial
production.\textsuperscript{14}

Other than his father, Jean Prouvé was also strongly influenced by other architects with
whom he collaborated as his reputation grew. Perhaps the closest was his life-long friendship
with Le Corbusier. Both men were considered modernists, but Jean Prouvé believed that their
ideas on architecture were very different.\textsuperscript{15}

Le Corbusier n’a jamais pu s’accorder avec les industriels, parce qu’il était individualiste.
Il y avait un cote artisanat dans tout ce qu’il faisait. Vous savez, ce béton mal fichu, cette
volonté du béton brut, des caillebotis un peu de travers, tout cela est tout a fait contraire à
ce que je pensais. \textsuperscript{16}

This distinction may have been lost on most critics at the time, but it is important to note that
Prouvé did not identify himself as a follower of any one architect. He identified himself as a
builder working with his co-workers in a factory setting. The result was a more practical
approach to overcoming technical constraints. Despite their differences, both Prouvé and Le
Corbusier were strong believers in the house as a “machine for living.”\textsuperscript{17} The background for
this outlook was partially grounded in the enormous housing crisis in the wake of two world
wars, which had triggered calls for quick and efficient solutions that could be mass-market.
Jean Prouvé’s relationship with Le Corbusier was consistent with those he carried on with other
modernist architects: combative, honest, intellectual and at times contentious, yet always

\textsuperscript{14} Many disagreements between Prouvé and the Aluminiun Français Company had to do with Jean Prouvé’s not
falling in line with common methods of mass production…namely ease of replication, focus on profit margin and
minimizing cost center expenditures (research and development).
\textsuperscript{15} Jean Prouvé, \textit{Par lui-même}, 73.
\textsuperscript{16} Ibid., 75.
\textsuperscript{17} Flora Samuel, \textit{Le Corbusier in Detail} (Burlington, MA, Architectural Press, 2007), 216.
collaborative. Both men were respectful of each other, and their mutual admiration informed each other’s works. Even though Jean Prouvé defined himself as an industrialist, his attention to detail and insistence on quality in his own work, both in his projects and in the management of his staff, placed him somewhere midway between artisan and industrialist, a role which accommodated Le Corbusier’s ideals.

A master of self-promotion, Le Corbusier, however, seemed to dwarf the more humble and quiet Prouvé in public.\(^\text{18}\) He was a pivotal architect and intellectual whose ideas lay at the very foundation of modernist architectural theory. His ideas on building evolved from these theories. The reverse is true for Prouvé’s innovation. His approach was grounded in a process, which took into account the manipulation of metals as much as material costing, financial planning and project management. The enormous range of problems that Prouvé needed to address, extending far beyond the traditionally defined role of an architect, resulted in an interpretation of modernism that was rooted in the pragmatic and practical.

**Distinct Characteristics of the Atelier de Jean Prouvé**

Being foremost a metalworker, Prouvé would work with the “fluidity of a sculptor or artisan, always open to revisions as they came along even in a factory setting.”\(^\text{19}\) He tackled the development of prototypes and the design process from the perspective of an artisan. When M. Lovag, a former employee, had doubts during the design process, Prouvé would tell him to feel

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the material: “Touch that. See how it reacts to different maneuvers. Then draw it.” From the very first commission he undertook, he professed that design required the testing of material. Traditionally, the architect would control the design process from their offices by producing drawings of prefabs, which would subsequently be sent to engineers in charge of fabrication at the factories where the prefab house components would be produced. Prouvé’s shop incorporated these two steps so that they occurred concurrently. The design and building process was organized collaboratively in the same location under the supervision of both designers and engineers. This method differentiated his process from that of other architects and aligned Prouvé more with the working methods of the aeronautic and auto industries. He stated: “Every object except a building is made by a single organic entity, a single industry equivalent to one firm.”

As a convinced socialist, Prouvé set up the Atelier de Jean Prouvé (AJP) so as to operate with a flat management and social hierarchy. Whenever discussing with his workers, Prouvé would refer to them as “compagnons,” a French term that describes both a friend and craftsman. Prouvé strongly rejected the idea of isolated specialization in the building industry since the collaborative spirit of teachers, artisans and architects at the Ecole de Nancy had shaped him. As we shall see later, the conflict between the collaborative spirit of Art Nouveau and the specialization required for an efficient implementation of Fordian production methods determined his decision to leave AJP. For Prouvé, construction had to be conceived as a

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20 Ibid.,
coherent whole, by the same team and without a separation between idea and its realization.\textsuperscript{22} He was part of a community of artists and philosophers who held true to their socialist and collaborative convictions shaped at the turn of the century.

His philosophy closely paralleled that of the Bauhaus decades earlier, whose practitioners also believed that craftsmanship and industry could be amalgamated in mass-production using a communal artistic process. These ideas were fundamental to many modernists who were to follow, yet the Bauhaus experience seemed to pertain particularly to Prouvé who was not only a designer, but also an industrialist and a factory owner. The following quote by Walter Gropius would have resonated strongly with Prouvé:

\begin{quote}
An honest approach must lead to that osmosis of science, the mind and the hand which can be seen almost everywhere, except in the construction of mass housing. Such an osmosis seems difficult, perhaps impossible to achieve as long as the men concerned are working apart, indeed belong to different organizations.\textsuperscript{23}
\end{quote}

As factory owner, Jean Prouvé was in a rare position to actually put these ideas into practice. Despite his theoretical belief in standardized mass production, the artisan Prouvé found the deficits in quality found in many prefabricated houses at the time to be unacceptable. Often times finishing projects using hand tools, Prouvé with his fine-tuned adjustments to standardized components, could be considered a precursor to post-Fordian processes of semi-customized products of today.\textsuperscript{24} He was, perhaps, ahead of his time and technology because it was only at the turn of the twenty-first century that prefabricated houses allowed for inexpensive technology-

\textsuperscript{24} Branko Kolarevic, \textit{Architecture in the Digital Age: Design and Manufacturing} (New York: Spon Press, 2003), 52.
driven customizations applied to standardized components, which were manufactured in an industrialized setting. However, in the pre-computer age of the early twentieth century, the financial burden of such production was enormous, which explains Prouvé’s unique situation and many dilemmas.

**World War II**

The Second World War sharpened Prouvé’s profile as a humanist and an astute, resourceful businessman. In his forties and not of fighting age, he joined the French Resistance and gave some of their important members cover identities as workers in his factory.²⁵ Often traveling for his work, he carried their messages back and forth during the Occupation. Although his staff was reduced by 50% due to the deployment of many of his workers, he was able to keep his factory running by building small furnaces, among other things. When wartime shortages made it difficult to obtain metal for production, he switched to plastic and wood. His flexibility and agility in managing both materials and customers proved outstanding.

Perhaps his greatest accomplishment was the manner in which he took care of his “compagnons” and their families. Paul Vozelle was a sixteen-year-old apprentice when he started at the Atelier Prouvé in 1943, and remembers him as “un espèce de Tintin avec ses pantalons de golf, toujours très actif. Allant et venant sans cesse en vélo.”²⁶ In 1941, order to facilitate his employees’ commute to work during the war; he even designed and built a bicycle

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²⁵ Remi Baudou, “Prouvé, Reconstruction and the Saarland” in Poetics of the Technical Object (Weil am Rhein: Vitra Design Stiftung, 2006), 186. Prouvé was a member of the Brutus network, the NAP (Noyautage des administrations publics) and the Ceaux de la Resistance. He kept his factory building "essential items" to prevent his workforce from being conscripted, all the while, constructing items to derail trains.

²⁶ Moulin, Maître du Metal, 102.
from bent steel and aluminum (Figure 10). He appeared almost super-human to his workers who remained loyal to him throughout his life. Compagnons were known to play football in the hallways during break, and food was brought in to supplement the meager war rations. Prouvé went so far as to rent some land in the country to plant vegetables for his workers, some of whom were paid to tend and harvest the plots.\(^{27}\) The outcome was that his leadership and support were well known throughout Nancy. This engagement would translate into his appointment as provisional mayor of Nancy in 1945, the year after end of the war. The personal contacts established during these years would prove very helpful in obtaining future commissions.

![Jean Prouvé. Bent steel and aluminum bicycle, 1941. Source: Centre Pompidou.](image)

As the war progressed, the catastrophic number of destroyed and damaged homes demanded immediate action in order to house refugees. Estimates at the time recorded 1,888,000 damaged units and those totally destroyed numbered 452,000 in France alone.\(^{28}\) Despite the metal shortage brought on by the war, Prouvé began building prefabricated houses made of wood that could be erected within a

\(^{27}\) Ibid., 105.

day by a small number of untrained workers (Figure 11).

These houses were intended as inexpensive, temporary structures that were quickly produced and erected. Unfortunately, these utilitarian shelters, which were in reality significantly different from post-war industrialized houses, negatively tainted the French perceptions of prefabricated housing after the war. Yet, from the perspective of the government, the benefits were indeed numerous: the speed of assembly ensured that the houses would be available quickly for refugees of the war. The assembly process was fast and easy, and ensured that skilled labor, which was in short supply, was minimally required at the building site. Finally, the mass production of identical components resulted in minimal waste of valuable resources.

As a result of the successful completion and reception of these homes, Prouvé secured a commission from General Maurice-Henri Dumontier, a former director of the Polytechnique, for
1,000 military barracks (Figure 12, 13). He had no problem filling the order, despite financial and time limitations. He had once more proved himself as a designer who delivered on promises within the constraints of pre-defined parameters. His reputation grew, not only as a visionary and gifted artisan, but also as a trusted businessman.

In France, during the 1940s and early 1950s, any architect or developer looking for his share in the rebuilding of the country after the war had to establish contracts with the Ministry of Reconstruction (MRU). Furthermore, in order to be granted these commissions, a business had to demonstrate the appropriate

Figure 12: Erection of Jean Prouvé’s 6X6 houses commissioned by the Ministry of Reconstruction, 1945 Ateliers J. Prouvé. Source: Archives Eric Touchaleaume, Galerie 54, Paris.
manufacturing capacity. Prouvé realized that, in order to play a vital part in the rebuilding of France and the economic development of the colonies, he had to drastically change the current design configuration to that of a Fordian factory format. He would also have to increase the production capacity of his factory in order to take advantage of the economies of scale created by an industry geared to mass production. Like other designers, he considered the auto and airplane industries as role models, and admired the assembly-line methods of construction as a way to
reduce costs, to optimize resources, and, most importantly, to increase output. However, Jean Prouvé’s major constraint to the factory’s expansion and reconfiguration was the need for significant external capital.

He had very limited time. In post-war France, MRU focused on two significant issues in dealing with the rebuilding of France: speed and cost. The Ateliers de Jean Prouvé (AJP) needed to be able to expand quickly to take advantage of Prouvé’s connections to the Ministry of the Reconstruction which was keen to award him commissions. As more time passed, turnover in the government administration would make it more difficult to remain competitive.

Furthermore, although Modernists enjoyed a certain degree of sympathetic support in France’s government, the conservative French public, keen on rebuilding the country as it had been before did not favor them. Prouvé’s logic and arguments for industrialized houses were well conceived. For instance, he cited a comparison with the then French-occupied Saarland, where 4.5 metric tons of coal were necessary to create components, which in France, using the traditional building methods and materials, required 29 metric tons of coal. In post-war France, given limited resources, the theoretical arguments for the industrialized house were sound, yet Prouvé desperately needed to reduce per-unit cost for each house built. AJP had to compete financially with concrete prefabs and apartment blocks, while dealing on the financial side with volatile, double-digit inflation that could wipe out the already slim profit margins. These two

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29 Penelope Rowlands, Jean Prouvé, 8. Jean Prouvé often cited the 2CV as the example of the perfectly manufactured car. He had hoped to draw parallels between the 2CV and how industrialized houses should be manufactured. There are, of course, significant differences, namely the characteristics of the life cycle position of the car vs. that of prefabricated houses, as well as the complexity of the house components vs. that of the car. According to one representative of Galerie 54, one porthole panel of the Tropical house had 250 pieces alone. This astounding detail would simply not lend itself to the cost effectiveness of mass production that was found in the 2CV during this time period.

problems had to be addressed if Prouvé was to put his ideas of industrialized housing to work. His fastest, and seemingly easiest solution, was an affiliation with Aluminium Français (AF).
CHAPTER THREE
ALUMINIUM FRANÇAIS AND THE ATELIER DE JEAN PROUVE:
THE TRANSFORMATION

Introduction

As a consequence of his collaboration with AF, Prouvé received additional funding that allowed him to build the large Maxeville factory in Nancy, which, in turn, provided a large enough capacity to obtain the required economies of scale. It was in this factory and during the partnership with AF that the Maisons Tropicales and many other pre-fabricated or industrialized structures were designed and built between 1949 -1952.

In 1949, two pivotal, new opportunities appeared: Eugene Claudius-Petit, the French Minster of Reconstruction and Urban Planning (MRU) visited the Maxeville factory, where he began a discussion on a project that was to be called the Meudon Houses. (Figure 14) They would become the Métropole (mainland France) version of the later Maison Tropicale. Both designs used the same central portal frame but the exterior structure of the houses varied according to the specifications and interchange of components, thereby creating variations on the theme of the prefabricated house that were

Figure 14: No. 8 of the fourteen Meudon houses designed and built by Prouvé. The chimney and conversion of the garage were undertaken at a later point by the owner. Source: Marie Claire Maison.
similar in style but remained unique in composition. Another collaboration was established with Paul Herbé and Jean Le Couteur during a competition to supply housing and school buildings to the town of Niamey in Niger. This call for entries, as many other construction projects in post-WWII Africa, could trace its origins back to 1947 when the French Overseas Department launched an initiative that would give rise to the Maison Tropicale. Jean Prouvé and his recently licensed architect brother Henri, were now faced with the challenge to design a house that was not only adaptable to different terrains, but also different climates. As usual, the brothers were eager to solve the problem.

Yet even during the design process and shortly after the delivery of the last two Maisons Tropicales to Brazzaville, Congo in 1952, friction between the now majority shareholder, AF, and Jean Prouvé increased. AF demanded changes in both the design and manufacturing processes that were opposed to the very fundamentals on which Prouvé’s company had been founded. Old compagnons were fired, the design and construction processes were segregated, and Jean Prouvé was pressured to produce for AF profit rather than for innovation. In a memo to the Board of Directors written shortly before he stepped down, he stated:

> In fact, although it has always been considered that my designs belonged to the company, now that I have no control over how they are interpreted, I cannot allow them to be distorted in a way that would totally detract from their value. Indeed, from the business point of view, should this happen, the very confidence placed in the factory’s production by architects could lead to an impossible moral situation, both for the company and for Studal and myself.

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It was at this point that he decided that he could no longer compromise. Prouvé returned to his fundamental tenet that it was better to make his own mistakes than to plagiarize and copy from others. Despite his belief that innovation needed to be paralleled with construction and that theories were useless without action, he had no choice, once he left AJP, but to design without the ability to create prototypes in a teaching and consulting environment. Prouvé often spoke of this period as the “year he died” and yet, as costly as this redemption was to him personally, perhaps it saved him in the long run. Although he claimed that, “evolution can only proceed on the strength of verification, its sole source,” he would continue to create, inspire and motivate countless new architects, not to follow his style, but to create their own.

So how was the idealistic intent behind the design of the Maison Tropicale converted into an economic and political instrument that eventually failed to win public support? This transformation occurred with the introduction of Aluminium Français (AF) as a stakeholder and can best be analyzed by addressing the inherent market and business issues that impacted the company and what prompted Prouvé to enter into this partnership. The factors he faced that most significantly limited his company’s growth were his access to markets and capital as well as the level of government support.

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33 Ibid.
Access to Markets

France’s post World War II economy and its colonial expansion in Africa were strongly controlled by the government. Unlike the English, the French governed their colonies in a much more centralized manner. As a result, Prouvé’s contacts and support from key government decision makers were essential. During the war and shortly thereafter, he was able to obtain military and MRU commissions for barracks and refuge housing from those contacts he fostered as a result of his roles as supporter of the Resistance and as mayor of Nancy the year after the war.34 However, after leaving office, his contacts diminished as they left their positions. Jean Prouvé was a capable designer but had no knack for promoting his products. As a designer and builder known for his work in metals, he reached out to Aluminium Français.

It was a large corporation with strong ties to government, so a partnership with AF could promise to secure the Atelier de Jean Prouvé (AJP) the favored status with government decision-makers Prouvé enjoyed shortly after the war. Also, he believed that government support was shifting from medium and small industry to larger companies so an alliance with a large company was both necessary and strategic to maximize AJP’s access to markets.35 As a result, in 1947, AJP made their first contact with AF and, in 1949 AF acquired 17% of AJP. One of the requirements of this transaction was the establishment of an exclusive sales contract with Société Technique d’Utilisation d’Alliages Légers (Studal), whereby he agreed to increase the use of aluminum in his house designs as a condition of this contract.36

34Peter Sulzer, Jean Prouvé: Complete Works, Volume III, 3:17. Jean Prouvé was invited to attend De General de Gaulle’s Assemblée on March 2, 1945. He was able to obtain contracts for emergency housing.
35Jean Prouvé, Par lui-même, 53.
Clearly, a competitive advantage could be gained from this partnership if both AF and AJP had a shared goal. And yet, they didn’t. The exclusive marketing rights of Studal, made AJP entirely dependent. AF’s strategy for increasing aluminum’s market share in the construction industry was to focus on building components, not entire houses.\(^37\) This contrasted to Prouvé’s refusal to approach his innovations with an eye on a whole design.\(^38\) He insisted that his designs be made whole, like refrigerators or cars and not be broken into component parts.\(^39\) As a result, as AF’s share of the company increased, AJP products had to meet AF requirements thereby foregoing Prouvé’s idealistic, socialist tenets that had previously directed the design and production of the AJP.

**Government Involvement**

Another significant factor that affected the overall market for prefabricated housing in France was the lack of meaningful government assistance to help this industry overcome wartime prejudice against emergency housing.\(^40\) Prouvé’s addressed this issue in his essay “We need Factoried Houses” where he states:

> In France we said “no temporary houses”, we have been reveling in these words – it’s the scourge of the country, “we will put every stone back in place.” After one year our ministry has purchased huts from England that we refused to build in France. One year of asking ourselves: would we or wouldn’t we build temporary structures? And nothing was done and our refugees have barely been housed after one year.\(^41\)

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\(^{37}\) Catherine Coley, ‘From the workshop to the Ateliers,’ *The Poetics of the technical object*, 119.

\(^{38}\) Jean Prouve, *Par lui-même*, 58.

\(^{39}\) Ibid., 59.


\(^{41}\) Jean Prouvé, “We Need Factoried houses” *Poetics of the Technical Object*, (Weil am Rhein: Vitra Design Stiftung, 2006), 179.
As a result, of this policy and the negative impression that the French had toward industrialized housing at the time, the promotion of prefabricated housing would require more than corporate marketing; it would require government incentives similar to those offered in the United States.

Unlike France, agencies like the Farm Security Administration\(^\text{42}\) in the United States helped innovative companies by sponsoring and promoting the benefits of industrialized housing. As the Second World War erupted, the U.S. government injected significant funds into the support and growth of this industry. This leadership and the federal support of private corporations significantly helped to stimulate the growth of these companies from 100 in 1945 to 280 in 1946.\(^\text{43}\) Industrialized housing, with its speed of erection, mobility, reduced resource use, and accessibility would be beneficial to the Colonial and Métropole French as well as the aluminum industry, and yet, without incentives, individuals were not interested in deviating from traditional French building methods and designs.

Many factors affected the French government’s lack of meaningful and long-lasting support. Culturally, the French and Americans were very different in their architectural tastes. The war-weary French favored traditional styles and materials and strongly rejected prefabricated housing that only reminded them of the war. Another important factor in the lack of support for the prefab industry was timing. Government support for this industry was driven by the need to utilize excess capacity in armament factories after the war. This soon diminished with the advent of the Cold War and the resulting increased demand for military hardware. As a result, the

Established in 1937 the FSA attempted to inform the public about the positive aspects of industrialized housing. Its support was not isolated to promotional consideration but it also sponsored the building of low cost housing throughout the country. 1000 homes in Missouri, and 50 steel homes for $1,650.

\(^{43}\) Ibid., 23.
political and economic drive to develop the industrialized housing industry diminished for the French government early in the 1950’s.

Access to Capital

Until this time, Jean Prouvé had slowly grown his company and metalworking machines from internally generated funds and banks. He used the profits earned from his profitable furniture and building components to finance the more interesting, yet risky industrialized housing segments. With the exception of one year, Jean Prouvé never paid himself more than 3000F/month and, as with the Maison de Clichy (Figure 15), he occasionally did not get fully

paid for services and products.\textsuperscript{44} This was his decision, as owner, to be willing to go without financial return in the short term in order to increase production capacity for long term growth. Yet after the war, he realized he would need quick access to significant external capital to purchase machinery to become a viable player for both France’s reconstruction as well as the capital campaign in the French colonies. Government commissions were granted for hundreds or thousands of houses and companies had to prove their ability to deliver. The AF capital infusion seemed ideal to facilitate this.

AJP’s prototype factory would operate as the design and innovation hub and AF would then contract out any significant order to other AF plants. Jean Prouvé had used this formula for the military barracks he built shortly after the war and found it very successful.

What he didn’t foresee was the goal and timing divergences that existed in the cultures of the entrepreneurial company and that of the large company where success is measured in short term profits to shareholders. As this process continued, the design and manufacture of the Maison Tropicale and other prefab housing projects were altered in order to appease AF requirements.

\textbf{Assimilation of Corporate Cultures}

Jean Prouvé’s motives that led to the affiliation with AF were strategic and intelligent but based on naïve assumptions. Accustomed to collaboration before a common goal both with his “compagnons” and architects, he was unprepared to understand the motivations and goals of AF which had invested in several building construction businesses to diversify their financial and

\textsuperscript{44} Sulzer, \textit{Complete Works, Volume III}. 56.
design exposure, yet maximize market penetration. To compete with these other companies for contracts allocated by Studal, the marketing arm of AF, Prouvé was forced to augment the aluminum use in the Maison Tropicale. It was this design element that resulted in the houses’ prohibitive cost. In his autobiography Prouvé, in referring to AF states:

Leur but était de vendre des tonnes d’aluminium. Ils cherchaient une clientèle différente…Au moment où une très grosse commande de maisons a été passée par ‘Etat ou je ne sais qui, et alors que le principe de ma maison de Meudon était prêt, ils ont voulu un autre type de maison; c’était une licence canadienne qui utilisait plus d’aluminium.45

When AJP did not produce the returns they hoped for, AF made changes to streamline both manufacturing and design practices to bring about cost reduction. This impacted the entire model of design and production that Prouvé had developed. No longer a collaborative, organic process, it became a traditionally configured factory.

In addition to already thin profit margins, inflation in France fluctuated between 17.5% in 1941 to 58.7% in 1948. With the significant lead times between the selection process, ordering and then production and his forced adherence to using only one type of building material injected a degree of volatility that exacerbated the problem. When AJP faced similar problems during the war, prior to its affiliation with AF, AJP was able to simply use wood or other materials that were less expensive. Yet within the structure of AF and Studal’s aluminum usage requirements, this was impossible. Prouvé was even powerless to sell houses directly to customers as a result of the exclusive sales contract between Studal and AJP. Prouvé’s innovative design and construction processes were discarded and he realized that, as time progressed, it was only his

45 Jean Prouvé, Par lui-même, 82.
name that was being used, and in his mind, damaged. In 1953, after 30 years of slowly building the company on his terms, he left his factory.⁴⁶

In summary, to understand the Maisons Tropicales we have to understand the motivations of the man who created them. Prouvé was a practical, Jeffersonian man who seemed unwavering in his principles and disinterested in power and financial gains. Although entirely committed to the concepts of industrialization as a means to accomplish his socialist goals, when faced with the dilemma of having to compromise in order to accomplish them, he chose to stay true to his artisan and Art Nouveau roots of collaboration.

⁴⁶ Ibid.
Jean Prouvé designed and built many types of prefabricated houses. His method could be considered incremental, each design building and perfecting on the previous one. He focused on six main prototypes of houses classified by the forms and functions of the main structural elements: jointed frame, shed type, vaulted type, propped type, H-type, and central-core type. The jointed frame used in the Maison Tropicale (1949) and the H-type used in the Sahara House (1959) are of particular interest in the context of Africa, and will be looked at in detail.

**French Policy in Colonial Africa**

After World War II, the French and British governments understood that they did not have the manpower and resources to control and shape their vast colonial empires as they had originally intended. Where the British allowed for a more decentralized rule, the French had introduced highly centralized and regimented structures to their colonial bureaucracies thereby bearing greater administrative costs. Differences also existed between the French and British approaches to African urban planning. The British segregated their towns into black and white neighborhoods, content that neither race should mingle. The French differed somewhat in that they were committed to the assimilation of the African “évoluées” (Westernized African) into the French culture despite the fact that French colonial administrators showed no great interest in

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47 Jean Prouve, *Prefabrication: Structures and Elements*, 28
a desegregated urban planning, especially so when it involved the non-évoluées.\textsuperscript{48} Using innovation and modernization, France’s colonial administration hoped to entice “non-évolués” into embracing French culture.

As Jacques Chirac once stated concerning the French approach to assimilation of minority cultures:

The American model for integration is based on juxtaposing communities that are both different from each other and unequal. In contrast, France makes an effort to take men and women from elsewhere and melt them into a single community centered on shared values. This approach is at once more generous and more ambitious.\textsuperscript{49}

After World War I, changes were made to the policies in place concerning colonial urban planning and architecture. Where previously, only Westernized styles were permitted for new constructions, now entire sections of towns were designated as black, welcoming indigenously inspired architecture. In sharp contrast to these native sections stood, the public buildings and white neighborhoods that openly displayed modern architecture and convenience. It is with this softer form of assimilation that prefab housing could become a visual marker for the amenities of European urban life and the “obvious superiority of the French.”\textsuperscript{50} The advantages of modern architecture should be conspicuous to the Africans so that the indigenous population would willingly embrace the French civilizing influence. Furthermore, building codes in Colonial Africa were based on specification rather than performance guidelines. This meant that,

\textsuperscript{48} A term used to refer to Africans that embraced European dress, culture, society.
although local architectural solutions to deal with climactic and geographic issues existed, the guidelines in place specified both materials to be used and the manner in which they would be utilized.\textsuperscript{51} The result was that brick, aluminum and cement were used extensively for new construction. Clearly, it was essential that colonialists and Africans alike no longer continue to use local and free building material if the capital development of Colonial Africa was to succeed.\textsuperscript{52} Jean Prouvé’s designs helped promote these ideals to the non-évoluées, both visually and structurally. Though practical and innovative, the structures appeared very unconventional with respect to other, more traditional buildings - even for Europeans. Jean Prouvé’s Tropical Houses were designed with the objective of amalgamating African and European building techniques in mind, yet, once erected, they supported the political agenda of the French government.

**Maison Tropicale Design**

In 1948, architect Paul Herbé, advisor to Bernard Zehrfuss and urban planner for Bamako and Niamey, and Jean le Couteur, regional architect for Northern Tunisia, developed a plan to modernize Tunisia.\textsuperscript{53} Together they spent a month traveling through France’s colonies familiarizing themselves with the local architecture for which they showed great admiration. Two main kinds of building components were used: adobe and brick/cement. According to


\textsuperscript{52} Ibid.,

\textsuperscript{53} Eric Touchaleaume, *Jean Prouve: Les Maisons Tropicales* (Paris: Editions Eric Touchaleaume, 2006), 29. Bernard Zehrfuss was a prix de Rome winner 1939 and French architect that joined the Free French Forces during the war in Africa. He was the director of public works in North Africa and was responsible for the construction of housing, schools, and other public buildings.
Herbe’s notes, colonial buildings had used “banco”, a type of adobe construction with roofs made of timber and covered with “argamasse” as used by indigenous builders. This type of construction however, proved unsuitable for the expat populations that would have to rebuild after rainy seasons. Instead, brick and cement had been subsequently favored by Europeans for their permanence. Although convenient for houses in urban areas that were close to quarries and kilns, this form of construction proved difficult for building in remote locations. Furthermore, they found that cement constructions trapped heat during the day, thereby making it impossible to inhabit the structures without the comfort of air conditioning.  

The two men concluded that neither traditional colonial European constructions nor impermanent indigenous residential housing would be suitable and that a more flexible, modern solution was necessary that both mimicked local architecture’s cooling functions and yet maintained the strength against the elements that traditional European construction offered. Jean Prouvé, with his pragmatic and innovative problem solving approach, was asked to collaborate.

Although Prouvé never visited the tropical sites himself, he consulted with Zehrfuss, Le Couteur, Herbé and other professionals to ascertain the central challenges facing colonial residents, paying special attention to the variable climates of Western and Central Africa. In 1949, Herbé formally requested that AJP submit their plans for a junior high school to be built in Niamey. Based on their designs, AJP received the unanimous support of the committee and were commissioned to build a prototype house. The payment agreed upon by the two parties was based on the cost of a traditionally built house in Niger plus 10% to ensure the financial viability of the project. Intended for the school’s headmaster and family, one portion comprised

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54 Paul Herbe quoted in Touchaleaume, *Maisons Tropicales* 96.
the living room, kitchen and houseboy’s bedroom and toilet while the other, separated by a veranda, had two bedrooms and with separate bathrooms (Figure 16). Upon completion, it was decided that the cost of the house was too significant, despite its short lead time of five months rather than the eighteen months normally anticipated for traditionally built colonial homes.

Figure 16: Niamey house in Niger. 1949. Source: Centre Georges Pompidou, Paris.

55 Techniques & Architecture no.5-6 “l’Architecture intertropicale” April 1952 as quoted in Touchaleaume, Maisons Tropicales, 95
The Brazzaville house (1952) was intended as both the Information Bureau for Aluminium Français and the home of its director. The office building (small Brazzaville), 10x12 meters, was separated into a waiting room, office, secretary’s office and toilet. The house (large Brazzaville), 10x18 meters, separated by a walkway from the office, had a living room, two bathrooms, kitchen, and three bedrooms (Figure 17, 18). Both shared many of the same basic characteristics of the first house, yet the Niamey house was placed on a concrete slab, while the two Brazzaville houses were placed on pilings (Figure 19).
Figure 18: Plans Brazzaville large and small. Source: ADAGP, Paris, 2006.
The differences in the base structure can be attributed to several factors. The most significant concern was the slope of the site in Brazzaville, which would have made the house invisible from the street had it been placed on a concrete slab.\textsuperscript{56}

As they served as both the Aluminum Français office and a residence for an executive, the visual impact of the aluminum house from the street had to be maximized for promotional

\textsuperscript{56}Ibid., 59.
reason. Also, as was the case with the Métropole version in Meudon, uneven terrains required alternative anchoring techniques.\textsuperscript{57} The site in Niamey was much flatter than the one in Brazzaville, so site preparation was less costly since a concrete slab would suffice. Furthermore, the order for the Niamey house was placed in April of 1949 and delivered to Niamey in July 1949. Despite this short lead time between order and delivery, the house was not available for occupation until October 1949. This was due in part to complications resulting from the installation of the concrete slab.\textsuperscript{58} Although there is no documentation indicating this was factored into the selection of the base for the Brazzaville house, it is quite possible that AJP chose to use the pilings to minimize the risk of similar delays. It certainly would have proven prudent for them to highlight the speed of installation since the cost of the house was higher than they had hoped. Finally, when comparing temperatures in the two regions of Africa, one finds that Niamey is more variable than Brazzaville; it is also significantly less humid and dry. Elevated houses were the design solution preferred by native builders in Congo in to facilitate ventilation.\textsuperscript{59} Although only several centimeters were necessary to promote ventilation, the additional time and cost required to use pilings in residential construction, also conveyed status and importance.\textsuperscript{60} Prouvé adopted this characteristic from indigenous tradition simply because the native methods addressed the challenges faced by colonists most efficiently. Indeed, both the

\textsuperscript{57} Jean Prouve had designed the houses to sit on the ground much like the Abbé house yet, when the site was selected, the hilly terrain required the houses to sit on a structure.
\textsuperscript{58} ‘l’Architecture intertropicale’ April 1952 as quoted in Touchaleaume, \textit{Maisons Tropicales}, 95
\textsuperscript{59} Njoh, \textit{Tradition, Culture and Development in Africa: Historical Lessons for Modern Development Planning}, 166.
\textsuperscript{60} Ibid.,168.
Germans and the French were known to have incorporated the characteristics in their buildings abroad.  

The precursor to Prouvé’s Maison Tropicale can be found in a drawing dated 1939 (Figure 20). In it we discern many of the same characteristics that were to appear on the final houses delivered to Africa: louvered venetian blinds and a ventilated, dual layered ceiling. The Tropicale and Métropole (Maison de Meudon) houses were very different visually, yet Henri and Jean Prouvé had designed both with the same made of steel with an attached aluminum façade. Although Prouvé created all his industrialized houses to be prefabricated in a factory setting, and then to be easily transported to the installation site; the tropical design is slightly different. Not only were these houses to be transported, but they were customized specifically to be airlifted from Europe to Africa, so as to provide affordable and comfortable housing in remote locations (Figure 21). This solution met two objectives: the AJP model of industrialized houses

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required the manufacture of component parts in a central factory location, and planning bylaws required that all building components used in Africa be of European manufacture.\textsuperscript{63}

This law was most likely put in place to convince the Métropole electorate of the financial benefit to be obtained from the colonies, and to prop up political support for colonisation; yet, one should be wary of imposing the same political motivations to Jean Prouvé.\textsuperscript{64} It is true that he was welcoming government commissions (virtually the only market for mass-produced housing in France) for Africa, but this does not imply that his design embodied colonial objectives. In a post-colonial world that has strongly been affected by the writings and philosophies of Edward Said, who politicized virtually all European exchanges with the Orient and the non-European “Other”, it is important to realize that not all interactions with the colonies had political intentions. As Ibn Warraq, critic of Said states in his book, \textit{The Defense of the West}, one of the truly unique characteristics of Western intellectuals, is the search for knowledge for its own sake.\textsuperscript{65} This does not imply that the colonial power structure and domination did not breed atrocities but it does affirm that not all individuals involved with the government should be


\textsuperscript{64} The monetary policy of the French government also ensure that African colonies, rich in commodities, used French controlled francs exclusively thereby further restricting purchases to the French motherland.

considered colonialists and oppressors. The complete absence of any derogatory or political statements concerning the indigenous populations in any of his memoirs and writings indicates that Prouvé was focused only on building and problem-solving without regard to political or colonial interpretations by others.

**Maison du Sahara**

Another example of his innovative approach to synthesizing local building customs with modernist materials and design is the house he designed for oil industry workers in 1958 (Figure 22, 23). These houses were to be erected in oil-producing countries of North Africa. The magazine Marie-Claire, in an initiative to promote design innovations, funded this project. The hot arid climate of the desert and the large daily fluctuations in temperature meant that the materials and design had to minimize the climatic impact of both hot and cold weather. Prouvé combined a Bedouin-like living space with such modern amenities as air conditioning. Much like the Maison Tropicale, the house featured a two-compartment design with divided sleeping and living quarters of 16 square meters and 28 square meters respectively, but this time to control wide fluctuations of day, and night temperatures in the desert were needed. Materials were selected and combined in a way so as to avoid heat accumulation during the day and increase thermal inertia in the compartments thereby minimizing costly air-conditioned living spaces.

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Interestingly, vernacular architecture in the Sahel region of sub-Saharan Africa also employed curvilinear shapes in small buildings and minimal openings to concentrate thermal radiation in a way that European, rectangular buildings did not. And, in a simplistic nod of appreciation to the Bedouin’s nomadic lifestyle, a large aluminum tent allowed for interior and exterior living, while providing shelter from the elements. Finally, the houses were to be delivered either by truck or dragged through the sand on a sled-like metal thus facilitating transportation to remote locations with limited accessibility. In his memoirs he states: “La maison saharienne de 1958 est dans le fond une maison traditionnelle par rapport aux habitudes sahariennes.”


Figure 23: Sahara house, 1958. View of two components from beneath parasol. Source: Centre Pompidou, Bibliothèque Kandinsky.

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69 Prouvé, Par lui-même, 73.
structure clearly does not resemble an actual Bedouin tent and, out of context, can be seen as a simplistic colonial condescension of vernacular architecture. Yet, Prouvé writings indicated that he strongly rejected the use of new materials to create traditional construction in Europe. We can thus infer that his intent was not to recreate a traditional Bedouin tent out of aluminum but rather to apply the design characteristic of this tent to provide protection from the sun and increase outdoor living space in the evenings.\textsuperscript{70}

Although it did not enjoy the fame of other houses, the Maison du Sahara illustrated Prouvé’s flexibility, which was far removed from the rigid orthodoxy of high modernism. Unlike his traditionally trained peers, Prouvé accumulated information from every possible source to solve problems. His willingness to incorporate indigenous construction and design methods attest to this open-mindedness, even though it alienated some colonists who just wanted to recreate a second France abroad.

\textbf{Comparison of Jean Prouvé’s African Houses to Indigenous Constructions}

The elevation of the Brazzaville house was not the only characteristic the Maison Tropicale shared with local, African housing. Indeed, had the AJP house not been identified as an industrialized prefabricated design, it would be, with the exception of the aluminum frame, amazingly similar to indigenous housing. Although it has been argued that Prouvé’s design was

\textsuperscript{70} Prouve, \textit{Par lui-meme}, 62.
meant to overpower and intimidate the indigenous Africans, his tribute to their housing characteristics in his design could be just as easily considered an assimilation of styles.

Indigenous housing found in the Sahel and in the Congo tends to minimize the impact of negative climactic conditions and to augment the positive ones. In a study of African architecture Labelle Prussin states:

Concerning tropical climates:

The climate of the humid coastal rain forest belt, where there is little temperature change between day and night or even between wet and dry seasons (for example Brazzaville), calls for a shelter with a maximum of cross ventilation to ensure bodily comfort. To achieve such a design, the indigenous coastal builder will strive to incorporate some variant of louvered or natural openings into the house he builds (Figure 24). Bamboo walls simulating openwork screens are designed to encourage air circulation. Floors are often raised high off the ground on platforms to catch the ocean breezes. The traditional rectangular building form found in the rain forest is, by virtue of its easy adaptation to a cardinal orientation, more suited for the exploitation of cross breezes.

Figure 24: Village near Half Assini, Ghana. Note the raised platform, and natural openings in the construction of the houses. Photo by Labelle Prussin.
Whereas in Sahel climates,

the inland Savannah, climate by contrast, [has] a brief annual rainy season and a long, dry season during which the dessicating desert harmattan winds blow down from the Sahara… Savannah climates require a solution, which can cut the cold and biting winds and at the same time provide a cool respite from the intense heat of the midday sun. The earthen roundhouse with its insulating walls can accumulate and store the heat of the day for evening comfort (Figure 25). The circular form, in contrast to the rectangular, helps to concentrate thermal radiation in a central, enclosed, interior space. Rather than strive for maximum ventilation, the savannah builder will shun window openings and limit the single door opening to the smallest possible dimension so that the thermal properties offered by the thick earthen walls will be maximized. 71

In comparing the above descriptions of indigenous architecture, certain design elements in the two housing types can be compared to the Prouvé’s structures.

The porthole wall panels, the louvered blinds on the outside of the house, the long rectangular shape of the houses, and, in the case of the two Brazzaville houses, raised floors, were similarly used to exploit ventilation. In the case of the Sahara House, the curved corners of the house render the house more circular. Furthermore, Prouvé attempted to utilize Bedouin tent design in covering the entire structure to insulate the dwelling from the elements. Indeed, in his analysis of

African architecture, Ambe J. Njoh noted that, both the English and French used vernacular building characteristics in their construction to deal with climatic constraints.  

Can it not be argued then that the design of the Maison Tropicale itself, with these shared qualities was equally influenced by African architecture as it influenced Congolese building practices? Prouvé appears to have been less of a stereotypical colonialist or industrialist, but a man deliberately seeking alternatives to a set of climatic and geologic constraints, thereby not discounting any possible design solution.

**Tropical or Colonial?**

With these considerations in mind, we can now look critically at the individual elements of the house. Was this a Tropical house as it was later called, or indeed a Colonial house, as it was referred to in early literature? The first step would be to define colonialism, which may prove difficult. The Petit Larousse of 1972 describes colonialism as “a doctrine or attitude to transform a county into a territory dependant on the mainland ruling country.” Britannica in 2009 defines it as “control by one power over a dependent area or people. The purposes of colonialism include economic exploitation of the colony’s natural resources, creation of new markets for the colonizer, and extension of the colonizer’s way of life beyond its national borders.” Perhaps most contentious of all, Petit Robert of 2007, added: “To colonize:

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colonizing a country in order to enhance it, exploit its wealth.” Clearly, the definition of colonialism has varied significantly over time. For our purposes, can this house be considered an instrument of colonialism? Based on Prouvé’s history and influences, what was his intent? Did he create a colonial house or a tropical house?

**Design Process**

An often-cited argument in favor of labeling the Maison Tropicale, “Colonial” is that Jean Prouvé designed the houses without ever visiting their sites to understand the local conditions in Africa, nor studying local architecture. This indifference to the African reality could be construed as being patriarchal in spirit, or, as defined by the previously cited dictionary definition, to “extend the colonizer’s way of life beyond its national borders.” This argument is, however, faulty because Jean Prouvé conceived the project as a prefabricated house from the start. The very nature of prefabricated housing lies in the universality and interchangeability of its units. It would be unnecessary to visit each site to ensure the viability of the house in its environment, much as it would be unnecessary for architects of current prefab houses to visit sites upon which their houses will sit. The Tropical House was one of several houses that Jean Prouvé designed without ever seeing - or at times even knowing – their final destination. The most significant examples of this series would be the Abbe Pierre’s house (Figure 25). This was a simple prefabricated house, intended for the poor and homeless, which was designed to sit on

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75 *Le Nouveau Petit Robert* ed. Paul Robert; ed. Josette Rey-Debove; ed. Alain Rey, (Paris: Dictionnaires Le Robert, 2007). This was a very controversial addition in France and considered, by some, to be revisionist.

any flat surface. It could have been transported and erected anywhere in France. The Métropole version of the Maison Tropicale was located in Meudon and it is another example of this principle. The sites for each of the fourteen houses were different, yet the houses were all prefabricated based on only two types of plans. Only the concrete base and pillars of each of the houses was made specific to the site. The universality of all these houses and their components is what defined them as prefabricated. Hence, as a result of the nature of prefabrication, Prouvé’s lack of first-hand knowledge and involvement with the African sites and communities are not evidence of a colonial intent.

Portability

Portability of completed houses and their separate components is another important aspect of all Prouvé’s prefab houses. Unlike most colonial structures in French architecture, Prouvé’s remain light, ephemeral, and transportable. Prouvé believed that architecture had to be able to move to where it was needed. This was not only the case with houses, but also with schools, churches, and factories. He, like many other modernists who worked in the field of industrialized housing, believed that populations were mobile while architecture, up to this point, was conceived to remain permanent. As a result, individuals were forced to inhabit the places and architectural styles of past generations or live in slums not unlike those around Paris, full of

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77 The houses in Meudon were not considered a success. The inhabitants of the houses were intended to be low-income working class families, yet a much more affluent group was targeted. As a result, much of the complaints were due to the expectation gap between designer and owner.
abandoned buildings and factories. Prouvé’s fascination with impermanence resulted in the unusual design of his houses. Their design was not intended to intimidate, but to bring new solutions to universal problems. In many ways, the portability and light footprint of the house designs mirrors the structures developed by Africans and other indigenous people who recognize that houses were “simply tools for living.” From the Inuit in northern Canada to the mud huts of Senegal, indigenous architecture is transient. Particularly in West Africa, the common thread in all residential construction is that it requires little time, energy and materials to build and is easily dismantled. As stated by Njoh, “Temporary and at least semi-permanent housing is common in Congo.” Although granaries and temples of Western African vernacular architecture can be made of permanent building materials as is the case in Mali, the distinction in building materials and methods between residential and communal buildings is significant in sub-Saharan Africa. Arguments that cite permanent Moroccan and Sudanese architecture such as kasbahs and other communal living configurations, where Arab influence was significant, do not apply in either the Sahel region of Niamey or the rainforest region of Brazzaville where Arab influence was not as great. Mobile and ephemeral, the design of the Maison Tropicale, whether deliberately or inadvertently, embodies some of the best features of African living, while its alleged roots in colonialism remain tenuous. Yet, once the design was converted into products sent to Africa, the houses were transformed into tools for industry and colonialism.

78 Jean Prouvé, Jean Prouvé, Prefabrication: Structures and Elements, ed. Benedikt Huber and Jean Claude Steinegger, 121.
80 Ibid.
Industrialization

The industrialized, prefabricated house was a method of building that modernists, on either side of the Atlantic, embraced as the new way of erecting “machines for living.” By definition, there was a lot of overlap with this style and the International Style that defined mid-twentieth-century architecture at large. Prouvé’s industrialized houses were intended to provide housing for the masses. As he stated in his memoirs: “Pourquoi visais-je l’industrialisation et pourquoi en étais-je un défenseur? Je pensais simplement qu’il n’y avait pas d’autres moyens pour résoudre le problème de l’habitation (après la guerre).” Despite the many innovative solutions it had to offer, industrialized housing received very little popular support in Europe and, even in the United States, and relied on significant government subsidies and promotion.

Twentieth-century industrialism was initially defined by the production methods developed for Henry Ford’s Model T of 1908. Here was the living proof that mass production could manufacture large objects of quality and, by doing so, significantly reduce the unit cost of the products. Shortly thereafter, companies both in Europe and the United States began to explore this manufacturing method for houses. Sears sold nearly 100,000 kit houses between 1908 and 1940. After World War I, France, Britain, and Germany, all worked on developing prefabricated systems made of concrete and steel. In 1910, when Walter Gropius, founder of the Bauhaus, called for a “new architecture for a new age” he was thinking of industrialized housing. Even the movie industry pushed prefabrication into popular culture by releasing a Buster Keaton

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82 Jean Prouvé, Par lui-même, 61.
83 Bryan Burkhart and Allison Arieff, Prefab (Gibbs Smith, Layton, Utah, 2002), 12. Subsidies were received in the United States through the Farm Security Administration of 1937. This was not the case in France where government commissions awarded reconstruction contracts.
84 Ibid., 13.
movie, *One Week* (1921), in which Buster and his new wife built themselves a new prefab home (Figure 26). In the context of the question, “Were the houses colonial or tropical?”, the industrialized nature of the house designs has to be assessed within the context of this international movement, and not independently. The industrialized method of design and construction were not reserved for colonies, but rather, employed throughout the world as a new means of addressing housing shortages brought on by war, as was the case in Europe, colonial expansion in Africa, or significant population growth and redistribution in America. As a result, it is more valid to identify this international architectural trend as well as vernacular architectural characteristics as the inspiration that differentiated Prouvé’s design methodology rather than colonial intentions.

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Figure 26: Movie still from Metro Picture Company, *One Week*, with Buster Keaton. (1921)

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85 Ibid., 15.
Given this context as a whole, can we say that Prouvé’s Maisons Tropicales were colonial? Perhaps the answer is both. Clearly, during the design process, which Prouvé controlled entirely, the house was Tropical, yet as a result of business issues he faced and his affiliation with Aluminium Français, design and Prouvé’s ideology became ancillary to corporate and colonial goals. His houses, the property of AF, became the symbol of colonialist intentions in the Congo, where the aluminum industry merged with politics due to local bauxite mining in Congo.86

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86 Significant amounts of bauxite were extracted from French colonial Africa. This, and other materials, would be shipped to Europe where they were used in the manufacture of final products. These European manufacturers would then look to Africa as an important new market to expand sales and revenues.
CHAPTER FIVE

RESETTLEMENT AND RESTORATION

Introduction

The resettlement and approach to restoration of the three houses stand in sharp contrast to their design and the manner in which they were built. Whereas much has been written about how colonialism and modernism influenced Prouvé’s design, the postcolonial rescue and restoration of the African houses has frequently been omitted from the discussion. The latter, however, have much to reveal about our current attitudes – revisionist, selective and often distorted – of these historical periods.

Although the acquisition of the house has been portrayed as a “rescue,” for the purpose of this thesis, I shall refer to it as the resettlement of the houses. I believe this to be a more fitting description since, although these houses were both removed and rescued from almost certain decay in the long term, Prouvé designed and built the Maisons Tropicales to be mobile. Its very purpose and greatest characteristic was its transportability. In assessing the impact of the move, the term resettlement presents the least inherent prejudice and adheres to the non-political intentions with which Prouvé designed the houses.

Rediscovery

There are two significant and interrelated issues that brought the Maisons Tropicales back into European consciousness. Men like Jasper Morrison and Konstantin Grcic valued the
furniture of Jean Prouvé for the simplicity and rationalism of their design. Soon after, Parisian gallerists Patric Seguin and Philippe Jousse and fashion designers Azzedine and Alaia and Helmut Lang began showing interest, not to mention the well-known actor, Brad Pitt. Prices for the works of this previously overlooked designer started to rise significantly as early as the late 1980’s, making his works the subject of speculation. Touchaleaume first sold Jean Prouvé furniture in 1987 at the prestigious Arcurial auction house in Paris. This show was an enormous success and was followed up by two more. On the other side of the Atlantic, of the 109 lots at the Christie’s sale, only four remained unsold with most items exceeding their pre-auction estimates. After the sale of his Galerie 54 in 2007, Touchaleaume had one last sale on April 15, 2008 at Arcurial where he sold the last of his collection. Even with the resulting influx of Jean Prouvé items on the market, prices remained strong. By 2002, a dining table made in 1952 for the Air France offices in Brazzaville was sold by Phillips de Pury and Company for $125,000. In 2004, this same company sold a pair of aluminum door panels that line the Maison Tropicale, for $254,000, well above the pre-auction estimate of $50,000 – $70,000. Prices reached their peak this same year at Sotheby’s, where another pair of doors sold for $680,000. At the time, the director of twentieth-century design at Sotheby’s, James Zemaitis stated: “There is an insatiable thirst for Prouvé furniture.” The magnitude of this increase in values is astounding when considering the fact that Prouvé, unlike Le Corbusier or Mies Van Der Rohe, mass-produced his furniture. Nonetheless, as Eric Touchaleaume, the art dealer who transported the

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87 Alice Rawsthorn, “Jean Prouvé: A factory man that became a 90’s auction star” New York times, 26 September 2006.
African houses from Brazzaville and Niger, stated, the supply of Jean Prouvé items was dwindling. Reports of dealers leaving French provincial schools with trucks loaded up with his children’s chairs or even the stripping of his prefabricated houses for individual items surfaced.92 One famous French fashion designer even displayed parts of a Prouvé gas station in his Paris loft.93 Clearly, any dealer who could ferret out more Prouvé items would be able capitalize on this exuberant market.

Prouvé’s African houses received renewed attention after their rediscovery in 1982 by Patrice Bartoli, a former government architect during the colonial period in Brazzaville and several humanitarian volunteers working in Congo-Brazzaville. Also, it was Mr. Bartoli who, in the 1990’s, discovered that the owner of the Brazzaville houses planned to tear them down.94 As a result, he contacted the French Embassy and a Paris-based organization called “Friends of Jean Prouvé” in hopes of saving the houses. It was at this point, in 1997, that Eric Touchaleaume and Robert Rubin began to show interest in transporting the structures out of this war-torn country and organized their own “search and rescue” mission.

**Eric Touchaleaume**

Touchaleaume owned a series of art galleries in Paris at one point or another. At the time of the “search and rescue” mission, he was operating Galerie 54 which specialized in procuring difficult to find works of twentieth-century designers. After the New York auction of the larger

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94 Ibid.
of the two Brazzaville houses at Christie’s, he opened a private practice in an office building designed by Mallet - Steven serving museums and private collectors. Nicknamed the “Indiana Jones of Modernist design,” he has been known to travel the world in search of Prouvé designs to put up for auction. For the last two decades, he developed a reputation as a man who was able to bring goods back from remote locations, such as Cameroon, Niger and Morocco. 95 Individuals close to him described the dealer who roars down the streets of Paris on his 1973 Kawasaki motorcycle as “strong, massive, robust and reliable. A man who is no diplomat but one you can trust and isn’t afraid of making investments and taking risks.” 96 In short, he is a pragmatic and sophisticated antiquarian.

The similarities between his career and that of famed tribal art dealer Jacques Kerchache, who convinced French president Jacques Chirac to build the Quai Branley Museum, cannot be overlooked. Both men were passionate about the works they collected and saw themselves as preservers of art, but were not selective in the means, especially on the African Continent. They carefully groomed their image as sophisticated men who awed the rich of Paris, shrewd in their businesses, knowledgeable in all facets of their expertise, be it “primitive” or modernist - and yet somehow, more at home in the “wilds of Africa.” They seemed to personify the energy and qualities they themselves found emanating from the objects of their passions. Kerchache’s approach to African sculpture is illustrated by the following quote:

He liked to think of the art object as above all a body, something to be caressed with the hand and with the eye, imbued with a magical force, a soul in the wood that was alive and quivering. As Kerchache remarked, ‘With African Sculpture, you need to allow yourself

to be invaded; you have to come close to it, frequent it, appropriate it, love it, give it time, open your sexuality to it."^97

Touchaleaume feels similarly about Prouvé furniture. "Furniture bores me. But Prouvé’s work is more like sculpture. And I’ve always been passionate about metal."^98 Clearly, these men are as enthusiastic about the works they acquire as they are about the manner in which the acquisition came about. They are the Stanleys of modernist design in the twenty-first century.

**Robert M. Rubin**

Founder of a commodity and currency trading subsidiary and executive of American International Group, Robert Rubin developed an interest in twentieth-century design only after he suffered, as he states "a larger midlife crisis that included a divorce and a change of profession."^99 Rubin, who holds a doctorate from the Columbia Graduate school of Architecture, Preservation and Planning, leaned about Prouvé as a result of both his studies and his passion for vintage cars, in particular, the Citroen Sahara 4X4 Deux Chevaux. As noted earlier, Prouvé was also captivated by the Deux Chevaux, a machine that shared similar characteristics that defined his houses: simplicity, affordability, and economy of design. Central to Prouvé’s interest, however, was the mass-production techniques of the automobile industry, which he hoped to adopt at his own factory.

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The motivations of Mr. Rubin certainly differed from those of Touchaleaume. His focus was on the preservation of the house as a complete unit and the public exhibition of not only the “rescued” structures but also the installation process that made Jean Prouvé construction and design unique. As prices continued to increase for Jean Prouvé items during the 1990’s, architectural components were salvaged and used as decorations. They were no longer an integral part of Prouvé’s architecture but fetishes that represented his idea of architecture.\textsuperscript{100} The energy and optimism of Prouvé’s ideas and works were neutralized and separated from the overall design. Prouvé recognized this tendency himself and spoke in disdain about looking at his design details in isolation:

Pour moi, il faut toujours proposer un ensemble et non pas un morceau...Il n’y a qu’en Amérique qu’on peut construire en choisissant des éléments de construction sur catalogue. C’est une architecture abominable.\textsuperscript{101}

The Maisons Tropicales, by virtue of their geographical location, were isolated from the cannibalization that affected the works by Jean Prouvé in Europe. The discoveries of the complete houses, in the Congo and Niger, were hence significant events. The risk of their being sold component by component remained significant, especially in light of the Congolese owner’s intention of tearing down the houses in Brazzaville. The efforts of Rubin and Touchaleaume to keep the houses intact reflects not only their interest in paying homage to Prouvé’s works, but also in preserving the dynamism of his designs by displaying the houses in the context of their assembly process.

\textsuperscript{100} Article by David Armstrong of Forbes Magazine April 10, 2006 suggest that the house that Rubin purchased for one million dollars could have been portioned off in smaller component units and been sold for up to ten million dollars.  
\textsuperscript{101} Jean Prouvé, \textit{Par lui-même}, 59.
Mr. Rubin accomplished this goal by recording the assembly of the smaller of the three houses at Yale University during the exhibition: “Jean Prouvé: A Tropical House,” in June 2005. The process was filmed using time-lapsed photography in an effort to document the speed of installation, something that Prouvé always valued. After its stay on the East Coast, the house was on show in a similar fashion in Los Angeles at the Hammer Museum in the fall of 2005 (Figure 27,28) and various museums in Japan in 2006. Each show was accompanied by educational demonstrations of the assembly, disassembly and moving process that were so inherently important to all Prouvé houses.

By using this approach, Rubin de-fetishized Prouvé’s design and brought it into the contemporary world. It was no longer a symbol of the modernist legacy of colonialism, but rather a contemporary catalyst for education and creativity. Just as Jean Prouvé

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Figure 27: Rubin’s Brazzaville small on display at the Hammer Museum, UCLA, 2005. Source: Hammer

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viewed each of his prototypes as being a result of prior experiments, Rubin recognized that the lesson to be learned from prefab housing was that innovative architectural solutions must be collaborative.

Illustrating Rubin’s vision is the case of Lawrence Sass of MIT’s SGA (Self-Guided Assembly) houses that were developed in response to the overwhelming housing needs in New Orleans after Katrina. By employing modern technological tools, he hopes to find “cheaper faster and better ways to build buildings (Figure 29).” His aims are similar to those of previous modernists such as Prouvé, since the need for mass housing is not a new one. His solutions rely unapologetically on historical modernist prefab housing theories.

Figure 28: Robert Rubin's small Brazzaville Tropical House, Hammer Museum, Los Angeles, October 2005. Photo by Elon Schoenholz.

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From a pragmatic point of view, Rubin’s resettlement of the small Brazzaville house is not merely a preservation of past modernist designs, but a catalyst that allows modernism’s legacy to create possibilities for future successes.

**Criticism of the Resettlement**

That Prouvé’s African houses were dilapidated and at risk of being sold off for parts are not in question, but there are also critical accounts of their resettlement in circulation. As Edward Said, and other post-colonialist and postmodern theorists have argued, our views of the “Other” can be interpreted as a marginalizing outgrowth of Eurocentric thought. This is a point of view shared
by some reports that focused on the voids created where the Prouvé houses used to exist in Africa. These voids are not merely physical but also symbolic. The loudest voice in addressing the “African point of view” in this affair is that of a professor of comparative literature at NYU, Manthia Diawartha.

In the wake of the media attention that surrounded the auction of the large Brazzaville house in 2007, little attention was given to the context in which these houses had existed all these years. Titles like “Prefab Utopia – for the discerning Jungle Dweller”104 and descriptions of the houses’ transportation were typically filled with references to danger and the overcoming of seemingly insurmountable challenges. The stories conveyed a sense of excitement; for instance, in this example from the New York Times:

After several trips back to Africa and, says Touchaleaume, ‘six months of betrayals and dirty tricks’ by local officials and the two families, who disputed ownership, he finally clinched the deal for the houses. Getting the structures to France was the next challenge. He hired 15 locals to assist his four-man team in dismantling and packing them into 14 containers. With roads in a catastrophic state and no planes available, rail and sea were the only options. The 320-mile Congo-Ocean railroad—constructed between 1921 and 1934 at a cost of 17,000 lives—ran through tropical forest and mountainous terrain, including the Massif du Mayombe area. This was a rebel stronghold, and Touchaleaume had to hire an escort of 20 armed guards. Even so, the train was halted for three days in Dolisie until the dealer gained its release by greasing rebel palms. When the convoy finally reached the coast, it took three more days in Pointe-Noire to find a ship.105

The spectacular account, clearly keeps the reader interested in the story and yet something is missing. Omitted were the issues of cultural patrimony and the African history of the house.

Although the sale of the houses were private and legal transactions, Prof. Diawartha, one of the

105 Simon Hewitt, “Out of Africa”
few who actually visited the sites after the resettlement, claims that the very act of shipping
artifacts out of Africa by sea constitutes a parallel with the slave trade of centuries past, since
“the idea of taking something out of Africa in containers to be shipped to Europe reminded me of
enslaved Africans during the Atlantic slave trade.”106

Another voice is that of artist Angela Ferraira, born in 1958 in Maputo, Mozambique, but
raised in South Africa, who obtained her MFA from the Michaelis School of Fine Art, University
of Cape Town. At the 52nd Venice Biennale, she showed in 2007 in Portugal’s national pavilion
a mock-up of one of the houses flying back to France. Realized with the help of a movie created
by Prof. Diawartha, her intention was to document how the houses were decontextualized by the
resettlement. They became no longer African, French or American, but were set in-flux, or in-
transit, never again to be understood in their own context. The pictures of the empty site in
Niger (Figure 30) conjure up emotions of something missing; something has been taken away
and nothing has replaced it. The house will no longer carry its African past now that it has been
relocated to Paris, and the site will remain defined by what is no longer there. The symbolic
meaning of a reversal and re-writing of the colonial past is clearly present and yet, the fact
remains that the prefabricated, mobile house was not tied to any particular place. There is
clearly a gap between the utilitarian modernist purpose of the house as a structure of
convenience, and the meanings that individuals attach to architectural landmarks surrounding
them.

A rebuttal to these arguments comes from supporters of Jean Prouvé who make the point that, had it not been for the resettlement, the Brazzaville houses (large and small) would have been torn down and the Niamey House would have disintegrated.

As Michel Leiris, the famous French ethnologist once said, “when it comes to art objects, no matter how the people who possess them are indemnified, its part of the cultural patrimony of the whole social group that is being taken away from its true owners.” Indeed, in his recounting of the resettlement process, Robert Rubin admitted that, “it can be a controversial process, taking buildings away from their original setting, but in this case everyone was happy that it was being moved.” And yet he concedes that, “There were problems at the border. Local authorities refused to let it pass through Customs, arguing that it should remain in Africa.” Were there disagreements or not? I received no response to either of my queries to the Ministry of Art and

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Culture in Congo-Brazzaville or to Professor Manthia Diawara. Eventually the house was exported after the payment of $68,000 in export duties to the government of the Republic of Congo. At the centre of the debate that ensued after the resettlement was the question of whether the houses are French or African. Certainly, however, what the resettlement accomplished was the editing out of the African community of which these houses were a part.

**Restorations**

Touchaleaume initiated the resettlement of the houses, but once in France the restoration of the two Brazzaville houses was managed by a different set of individuals. The larger of the two Brazzaville houses was restored under the supervision of Eric Touchaleaume and later sold at the New York Christie’s auction. The smaller of the Brazzaville houses was sold to Robert Rubin for a reported one million dollars. The last of the houses and the largest, the one from Niamey, is still in Eric Touchaleaume’s private collection and is perhaps the best preserved one due to the arid climate of Niamey.¹⁰⁹

In both cases, the fundamental

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decision was whether to display the houses as they were, or to restore them to their colonial condition. All African Houses were in poor shape due to exposure to the elements over the course of sixty years. Figure 31 shows the Brazzaville houses in 1996 prior to their resettlement in 2000. This was to be anticipated as Prouvé never intended his houses to last longer than fifteen to twenty years. So when factoring in this characteristic of the houses, the climate and political and economic state of Brazzaville, the state of the houses was surprisingly good.\textsuperscript{110} This was not the case for many of his buildings in Europe.

Robert Rubin indicated that, since his house was intended as an educational tool and would be displayed in museums, safety concerns over visitors walking in and out of the building needed to be addressed.\textsuperscript{111} In Touchaleaume’s case, he indicated that he had hoped to restore the house in the same manner that vintage cars were restored.\textsuperscript{112} In his opinion, to accomplish this, it was important that the same specialist head not only the restoration but also the dismantling. The specialist Touchaleaume chose was Gerard Pannertrat (Figure 32, 33).

The area of greatest concern for the larger house was the sheet metal components that made up the platform for the house, where decay was at an advanced stage.\textsuperscript{113} Structurally, the rest of the components, the axial portal frames and the aluminum exterior panels were in good condition and did not need replacing. The most significant work involved the removal of dents, cut outs for air conditioning, tears and, of course, a portion of the bullet holes (Figure 34).

\textsuperscript{110} Jean Prouve, \textit{Prefabrication: Structures and Elements}, 121.
\textsuperscript{111} Rubin, “Preserving and Presenting Prefab.”
\textsuperscript{112} Eric Touchaleaume, Jean Prouve: Les Maisons Tropicales, 122.
\textsuperscript{113} Galerie 54, interview by Kathleen O’Day, 29 October 2009.
Figure 32: Touchaleaume’s restoration at the Tate Modern in London. Photo by Jim Linwood.

Figure 33: Touchaleaume’s restoration in New York. Photo by D.J. Huppatz.
An additional factor prompting Robert Rubin to fund the full restoration was his intention to “present the house again as a prototype to highlight the moment of greatest promise...on the eve of departure.” 114 During the restoration, Mr. Rubin consulted Christian Enjolras, an architect who knew Prouvé and who put a construction firm based in Presles, France, in charge of the restoration. 115 His goal was to restore it as “a document, not as a house.” 116 The house was restored to its pre-exportation state with all marks and indication of its inhabitants, removed, again, as was the case in Touchaleaume’s restoration, with the exception of some bullet holes. According to interviews, he chose to leave them to “testify to its hard life in the thick of the Congo’s endless civil war.” 117 Installed today on the roof of the Centre Pompidou, the house symbolizes the past and future promise of prefabricated modernist architecture.

Both the American and French restorations thus incorporated a postcolonial marking that can be read as either an acknowledgement of the negative impact of colonialism on French Congo or as a reinforcement of all the worst stereotypes about third-world countries, as Said claims, a

114 Rubin, “Preserving and Presenting Prefab.”
116 Ibid.
117 Rubins, “Preserving and Presenting Prefab.”
Eurocentric tainting that allows no evolution for the “Other”.\(^\text{118}\) Clearly, the varying historical interpretations of the bullet holes speak to the complex and diverging opinions in France, and throughout the world, concerning the era of colonialism. What is clear however is that buildings ridden with bullet holes are not an unusual site in Brazzaville (Figure 35). They attest to the realities of life in Brazzaville and its inhabitants. Their inclusions in the restorations, and the resulting discussions they elicit, have, at the very least, focused some attention on the contemporary African’s life that remains a far cry from the Utopian visions of colonialism.

Figure 35: Bullet holes marking a building in the center of Brazzaville, 2008. Photo by Gil Briones.

Perhaps, if the third house is ever displayed, an opportunity would present itself to move beyond the colonial and postcolonial debates so as to engage the contemporary African dimension and voice of an artifact that bridges cultural boundaries between Africa and Europe.
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