

# The manifestations of African art in Le Corbusier's architecture

**Gerald Steyn**

Tshwane University of Technology

E-mail: steyns@tut.ac.za

In spite of an emerging African Renaissance, there is still no associated urgency in defining architecture with an African identity. This article explores the claim, made by the African American architect, Melvin Mitchell, that West African art (especially the mask) shaped Le Corbusier's work via cubism. This research relies mainly on formalistic and visual comparisons of typologies and forms, informed by relatively recent literature on the theme of cubism and modernist architecture. There seems to be a considerable alignment between some aspects of Le Corbusier's schemes, and examples of art and architecture from sub-Saharan Africa. Although the findings are impossible to substantiate definitively, they do suggest that there is a need to approach the study of both modernism and African art differently, but explored in conjunction with one another. As such, this article contributes to the idea of Le Corbusier's unfinished project.

**Key words:** Melvin Mitchell, cubism, purism, African art, Le Corbusier

## **Die manifestasie van Afrika-kuns in Le Corbusier se argitektuur**

Ten spyte van 'n opkomende Afrika Renaissance is daar steeds geen gepaardgaande dringendheid om argitektuur met 'n Afrika-identiteit te definieer nie. Hierdie artikel ondersoek die Afrika Amerikaanse argitek, Melvin Mitchell, se bewering dat die kuns van Wes-Afrika, in besonder die masker, Le Corbusier se werk via kubisme gevorm het. Hierdie navorsing maak hoofsaaklik staat op formalistiese en visuele vergelykings van tipologieë en vorms, togelig met betreklik onlangse literatuur oor die tema van kubisme en moderne argitektuur. Daar blyk aansienlike ooreenstemming te wees tussen sommige aspekte van Le Corbusier se skemas en voorbeelde van kuns en argitektuur uit sub-Sahara Afrika. Hoewel dit onmoontlik is om die bevindinge beslissend te bevestig, dui hulle daarop dat daar 'n behoefte bestaan om die studie van beide modernisme en Afrika-kuns anders te benader, maar ook dat hulle saam ondersoek behoort te word. As sulks dra hierdie artikel by tot die idee van Le Corbusier se onvoltooide projek.

**Sluutelwoorde:** Melvin Mitchell, kubisme, purisme, Afrika-kuns, Le Corbusier

**W**ith the expression “Africa rising” appearing in the media with increasing frequency, an African Renaissance seems currently more viable than ever before. Concurrently, an African Renaissance without an associated cultural identity is quite inconceivable, and is clearly dependent on the existence of distinctly African architectural idioms. But in spite of considerable rhetoric and debate, this has not happened.

For this reason it is surprising that Afrocentric architects have not embraced – or at least explored – Melvin Mitchell's claim that modernist architecture has African roots. Mitchell is an accomplished African American practicing architect and academic, and makes a provocative statement in his landmark book entitled *The Crises of the African-American Architect* (2003: xi): “I am saying simply that what Black Architecture looks like is the architecture that Wright and Le Corbusier were making between 1905 and 1960 in Europe and America.”

Mitchell's book is about education and practice, rather than theory or design. He nevertheless provides enough clues to guide the framework for the research that inspired this article with references to the “Picasso-Cubist inspired architecture of Le Corbusier” and to Le Corbusier's “brilliant cubist art derived 1920s villas and seminal apartment houses” (Mitchell 2003: 263). He also reminds the reader that Le Corbusier “quickly adopted a phenomenology” derived via Picasso and others from West African artwork and mask making as he moved between his painting and his architecture” (Mitchell 2003: 69).

It is the aim of this article to probe this assertion by determining how the impacts of Picasso and the West African mask were made manifest in Le Corbusier’s architecture. It is essentially a formalistic investigation, but is intended to contribute to envisaged future research into a major issue that Mitchell (2003: 281) articulates: that the two issues of architecture and black culture must be fused.

### The origins, essential elements and manifestations of purism

The inspiration that African masks and sculpture had on Picasso and his fellow avant-gardes in their conception of cubism has been abundantly analysed and commented on (Appiah 1991, Murrell 2008, Palmer 2008, Pennisi 2011 to cite only a few). Bruno Reichlin (2002: 211) explains that Picasso and Braque simply abandoned “traditional modelling” as a result of “a new appreciation of African sculpture”. As such, the genealogy proposed by Alfred Barr in the 1930s, described as a “formalist interpretive paradigm” (Blau and Troy 2002: 6), is generally accepted (figure 1). Barr’s “paradigm” was prepared for a Museum of Modern Art (MoMA) exhibition in 1936, with the theme “Cubism and Abstract Art”. In 1984, MoMA revived the theme and organised “Primitivism in 20th-Century Art”, which propagated that (Ferris 2010):

[Beginning in 1907], African masks in particular played an important and pivotal role in Picasso’s radical departure into Cubism. The elements common to African art – spirituality, a foursquare frontal perspective, symmetry, frugality of gesture and distortion of proportion – suddenly became part of the Western artistic vocabulary. Artists were freed to focus on conception and stylized emotion rather than mere renderings of what they saw.

It is equally widely accepted that Le Corbusier’s particular style of painting and architecture evolved because of his exposure to cubism after settling in Paris in 1917 (Reichlin 2002: 211). In fact, Barr’s genealogy shows a continuum from “Negro sculpture” to cubism and from cubism to modern architecture via purism – a movement established by Le Corbusier and his painter-friend Amédée Ozenfant. Peter Collins makes a rather brusque remark when he says that “[c]ubism, in fact, was only of direct importance to architecture because it was developed by Le Corbusier into ‘Purism’” (in Colomina 2002: 148).

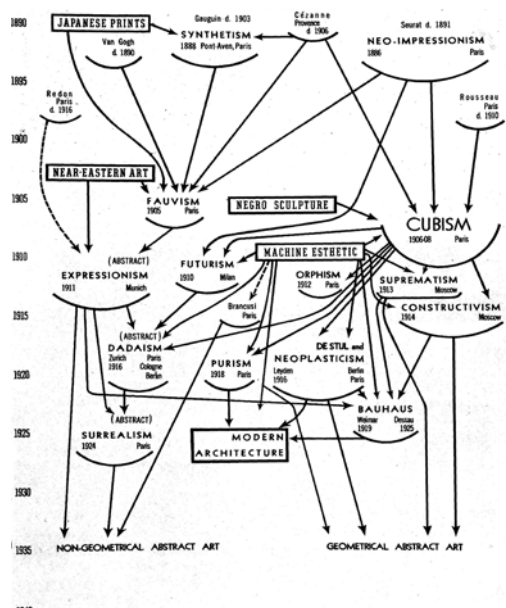


Figure 1  
Alfred Barr’s jacket design for the catalogue of the MoMA exhibition Cubism and Abstract Art of 1936 (source: Colomina 2002: 146).

Le Corbusier and Ozenfant objected to the picturesque and decorative characteristics of cubism and, and designed purism with the aim of achieving rationality, efficiency, precision and controlled geometry. Purism is characterised by the “interpenetration of inner and outer space” (Colomina 2002: 148-9). Bill Risebero (1982: 162) insists that purism “took the cubist rules to more severe and rigorous lengths”. Purism is therefore generally regarded as a post-cubist form of painting with a direct relationship to architecture. Reichlin (2002: 203) explains that both Le Corbusier’s paintings and his architecture relied on “a plurality of views, itineraries, and readings”.

The most visible impact of purism on Le Corbusier’s architecture was the production of prismatic, porous, stripped-down, white forms (Blau and Troy 2002: 10). To understand how completely radical these forms were at that time, we need only compare an illustration of a typical popular European house design between the two World Wars (figure 2), with Villa Savoye (completed 1931), the iconic design that represents purism at its zenith (figure 3).



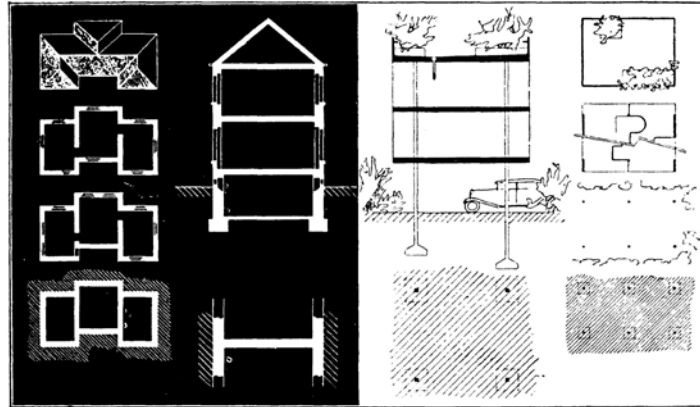
**Figure 2**  
**The Mediterranean villa, a popular style among affluent Westerners during the 1920s**  
(source: Reid 1984: 75).



**Figure 3**  
**Villa Savoye, designed 1928**  
(source: courtesy Hugh Fraser).

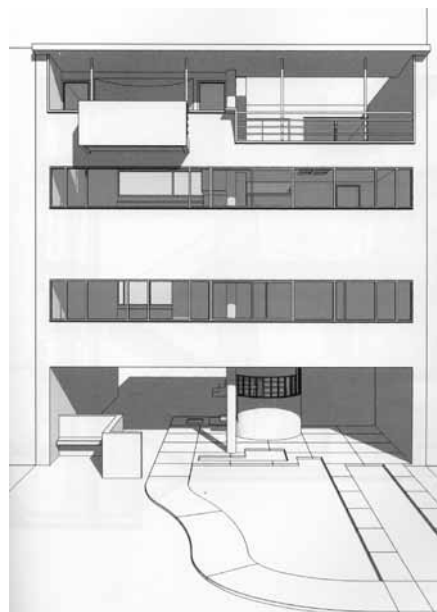
By 1925 Le Corbusier had formulated the essential elements of purism, with his seminal and well-known Five Points of a New Architecture: the use of (1) columns, (2) roof gardens, (3) the free plan, (4) horizontal windows, and (5) the free façade (figure 4). These constitute an

interrelated set of normative principles, establishing basic rules for most of his subsequent building and even city designs. The free plan allowed him to not only place walls independently from the structural frame, but also curve them in a way that was quite alien to Western practice. This is however the dominant pattern in sub-Saharan Africa. Whereas it is reasonable to imagine how the Five Points were applied to achieve the “interpenetration of inner and outer space”, which Colomina writes about, the connection to cubism now becomes rather obscure.

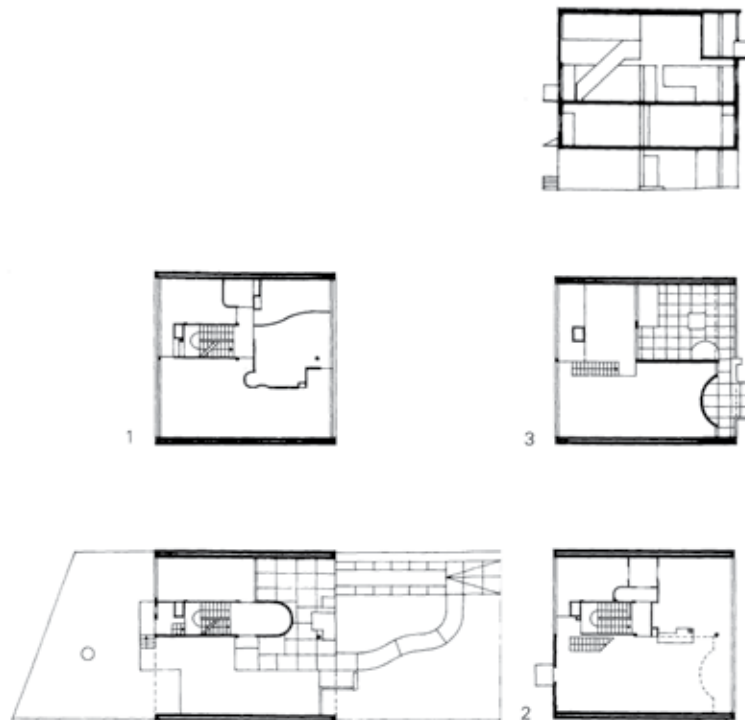


**Figure 4**  
**Le Corbusier's sketch to illustrate the Five Points**  
 (source: Le Corbusier 1964: 24).

All Five Points were applied for the first time in 1926, to Villa Cook in Boulogne, although the curved walls (as free forms) were quite tentative (figures 5 and 6). This was the first of Le Corbusier's houses to be lifted off of the ground, but was supported on the lateral party walls and with only one column. Villa Cook also demonstrates how the Five Points allowed Le Corbusier to articulate the cubist boxes by hollowing out the solid mass, and modulating the empty spaces as double volumes; the seemingly square plan and cubic form is porous and actually contains enclosed L-shaped living volumes, enfolding either utility and circulation quarters at every level, or the garden at roof level.



**Figure 5**  
**Villa Cook, Boulogne-sur-Seine, 1926, built**  
 (source: Park 2012: 83).

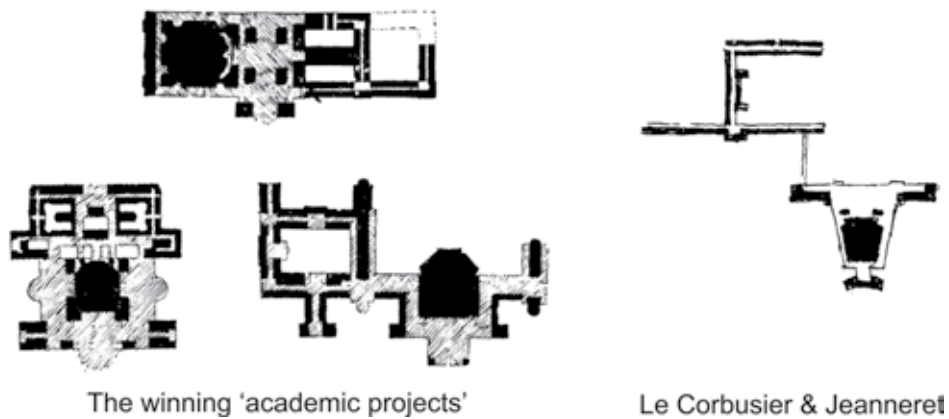


**Figure 6**  
**Plans and section of Villa Cook, Boulogne-sur-Seine, 1926, built**  
**(source: Risselada 1989: 106).**

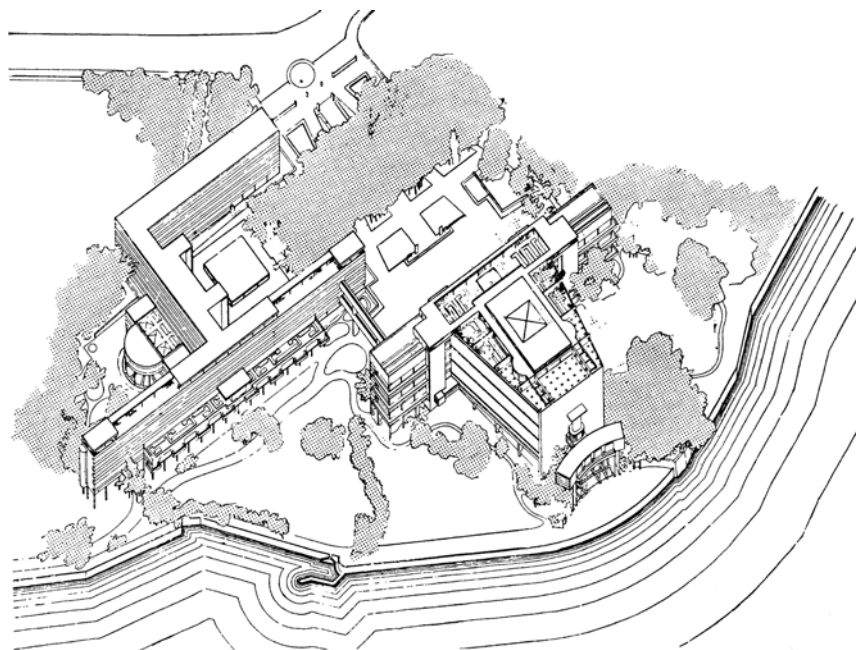
Blau and Troy (2002: 3), maintain in their seminal publication (*Architecture and Cubism*), that Colin Rowe and Robert Slutzky developed the most “compelling” interpretation of the link between architecture and cubism in their 1963 essay, entitled “Transparency: Literal and Phenomenal”. They explain that the formal qualities of cubism, as applied by Picasso, Braque and Gris, were aligned with “the complex spatial layering, deliberately ambiguous interrelationship of parts, and multiple signification of Le Corbusier’s Villa Stein-de Monzie of 1926-1927 at Garches and his League of Nations competition entry of the latter year”. Essentially Rowe and Slutzky conclude that “for architects in the 1920s, and particularly for Le Corbusier, the translation into three dimensions of ‘cubist space’ was not only optical but phenomenological”.

In the League of Nations competition design, this complex layering is somewhat obscure. Le Corbusier claimed that the design submitted by himself and Pierre Jeanneret “embodied the spirit of [their] own age instead of the outworn routine methods of traditional architects of the academic school” (1995: volume 1, 161). The winning schemes were all firmly in the tradition of the *École des Beaux-Arts*, the three-hundred year old architectural school, known at that stage for what Risebero (1982: 161) describes as the “excessive rhetoric of Beaux-Arts classicism and Imperial Baroque”.

Compared with the footprints of his competitors, Le Corbusier’s design had a distinguishable overall irregular footprint (figure 7). An h-shaped office building is linked to the symmetrical main auditorium, with a narrow, elevated skywalk. But the outline of the auditorium very vaguely (and only noticeable if paying very close attention) resembles that of an African mask, the artefact that originally inspired cubism, and by implication purism, on which the design was based (figure 8).

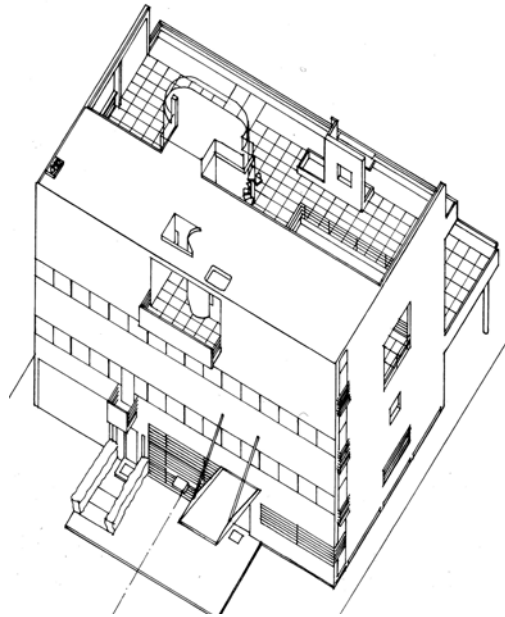


**Figure 7**  
**Le Corbusier's sketches after the results of the League of Nations competition**  
 (source: Le Corbusier 1995: volume 1, 161).



**Figure 8**  
**League of Nations**  
 (source: Le Corbusier 1995: volume 1, 163).

Blau and Troy (2002: 11) observe that some authors and critics only consider Le Corbusier, of all the modernist architects, as a “cubist”. For example, Yve-Alain Bois (2002: 191) identifies Villa Stein-de Monzie at Garches (1926-1927) as sharing the “structuralist logic” of Picasso’s *Guitar* (1912), and being characterised by its “transparency” and in which “empty space is articulated as a positive sign” (figure 9). Unlike *Siegfried Giedion*, most scholars do not consider the transparency of a glazed building, like the Bauhaus (1925-6), as “cubist” (Mertens 2002: 233).



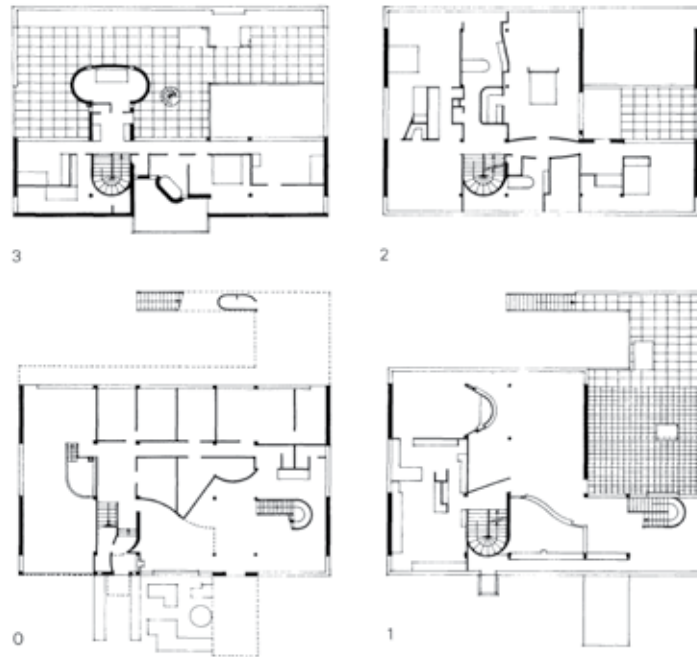
**Figure 9**  
**Villa Stein-de-Monzie at Garches, 1927**  
(source: Baker 1996: 189).

Villa Stein-de Monzie at Garches (1927), famous for the regulating lines, applied by Le Corbusier to compose the façade, illustrates the use of a free plan within a rigid four-storey box. Although built in a suburb, it shows how the “interpenetration of inner and outer space” – achieved with the free plan and roof garden referred to by Colomina (2002: 148-9) – could expose the interiors to light and air, even in a dense, urban fabric. It is also in relation to Villa Stein-de Monzie that the influence of the African mask is mentioned for the first time. Bernard Tschumi (1976: 356) describes the phenomenon vividly:

[T]he rational Cartesian framework was then transgressed through the introduction of distorted anthropomorphic forms with close kinship to African masks. A mask was not literally represented in the elevation, but rather operated as a palimpsest mysteriously guiding the location of the walls. The space was thus a dislocation induced by the forms of the masks. The effect was to create within the rational space of the grid a violent juxtaposition of perplexing spaces. The Villa Stein at Garches was then considered as the prototype of modern architecture. Rather than a simple fetish, the mask here served as subversion for the order of reason through its spatial implications.

However, any similarity between the curves on the plan and an anthropomorphic theme is rather weak (figure 10). The first clear evidence of some resemblance is only found the following year, in the design of Villa Savoye. But first, Le Corbusier had to deal with the challenging climate of the North African coast, which inadvertently provided him with the outline to integrate the mask with the plan of the house.





**Figure 10**  
**Villa Stein-de-Monzie at Garches, 1927**  
 (source: Risselada 1989: 109).

### **A turning point – Villa Baizeau**

Villa Baizeau in Carthage, Tunisia (1928), was Le Corbusier's first African project. The client rejected the initial proposal for a five-storey house with an umbrella roof over an interlocking sectional configuration, ostensibly for air flow (a surprising configuration since Le Corbusier insisted earlier that air-conditioning would allow the same house to be built anywhere). He forced Le Corbusier to confront the North African climate with a three-storey house, with a surrounding veranda (figures 11 and 12). Le Corbusier (1960: 81) was disappointed, but later alluded to the embryonic value of this house in the formulation of "sunbreaks", and uses it to formulate his third compositional system.

He realised that the form needs not be a modified cube; he may use only the frame as a cage and provide any shape at all within that wholly permeable perimeter. This is exactly what he did with the ground level plan of Villa Savoye, designed roughly at the same time.



**Figure 11**  
**Villa Baizeau in Carthage, Tunisia, designed 1928, built**  
 (source: Risselada 1989: 118).





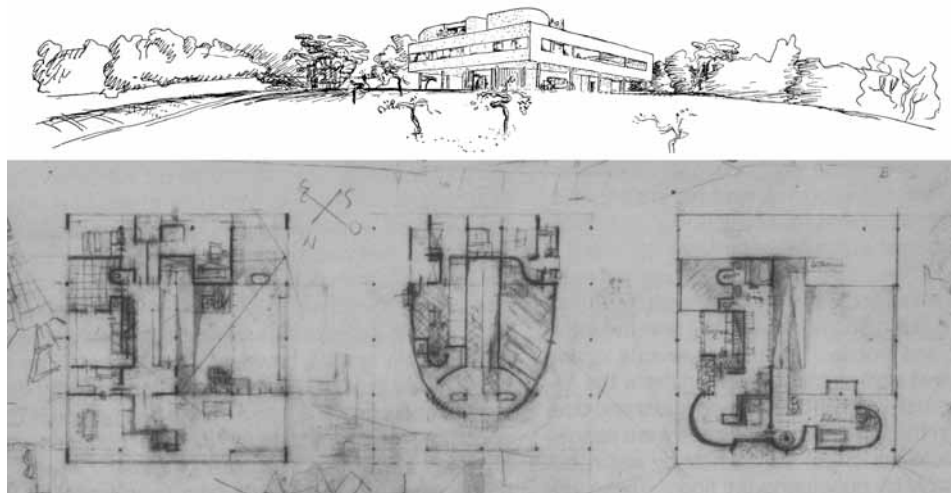
**Figure 12**  
**Villa Baizeau plans and section**  
 (source: Risselada 1989: 117).

### **Consolidating purism – Villa Savoye and the Four Compositional Systems**

Villa Savoye in Poissy (designed in 1928, constructed in 1930), is generally assumed to be the culmination of his Purist design doctrine, with its combination of prismatic and curvilinear forms and slick white finishes. Significantly, the curved ground floor layout constitutes the first design that seems to be overtly based on an African mask (figure 13). Without referring to Villa Savoye directly, Garth Rockcastle proposed in 1987:

The primitive was appropriated by some members of the architectural avant-garde via cubism... . More suggestive, however, was the impact of the primitive on the structure itself, most evident in Le Corbusier's work, where the traces of the primitive mask were incorporated into architecture through the exploitation of the "free-plan".

Up to this point it is assumed that purism absorbed and modified techniques embedded in cubism. However, the mask is evidence of a direct connection to the source of inspiration – straight to the artefact – substantiated by both Rockcastle above, and Mardges Bacon (2001: 221), who declares that under the influence of Ozenfant and Legér, Le Corbusier embraced African art for its "geometrical, formal, mechanistic, decorative and expressive properties".



**Figure 13**  
**Villa Savoye, designed in 1928, built**  
 (source: iso from Le Corbusier 1995: volume 1, 187,  
 plans from Risselada 1989: 56).

In 1929, on completion of the design of Villa Savoye, Le Corbusier formulated his Four Compositional Systems which, together with the Five Rules, set out the criteria and parameters of his design options (figure 14). They are represented as a set of houses, extending from Maison La Roche-Jeanneret (1923) via the Villas Stein-de Monzie (1927) and Baizeau (1928), and culminating with Villa Savoye (1929). Le Corbusier (1960: 82) later called them “carefully weighed reflections on architecture”:

- La Roche-Jeanneret.....Picturesque and not difficult to handle
- Stein-de Monzie .....Difficult to articulate a basic cube
- Baizeau.....Problem simplified by incorporating other forms
- Savoye.....A positive architectural statement

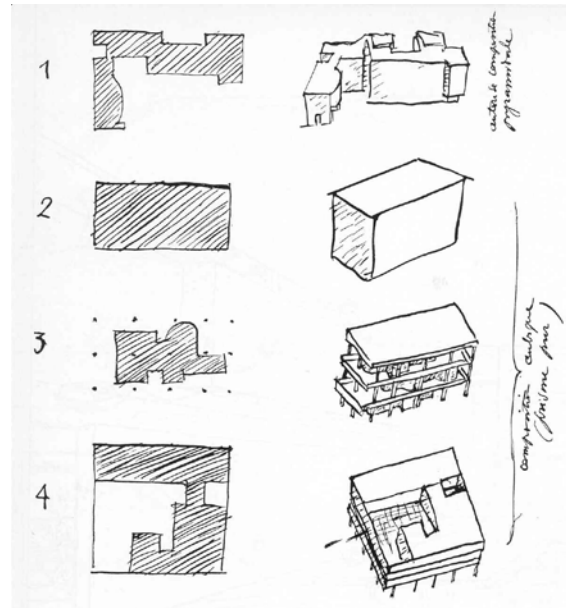
Le Corbusier (1991: 134) described the first type as an aggregation which, in his own words “can become busy if one doesn’t watch out”.

The second type shows the compression of organs within a rigid envelop, absolutely pure. A difficult problem, perhaps a spiritual delight.

The third type furnishes, with a visible framework (skeleton structure), a simple envelop, clear, transparent as a network; it allows the creation of useful volumes of rooms different on each floor in form and quantity. An ingenious type appropriate to certain climates; such compositions are easy, full of possibilities (Tunis).

The fourth type attains, on the outside, the pure form of the second type; inside it has advantages, the characteristics of the first and the second. A very pure type, very ample, also full of possibilities.

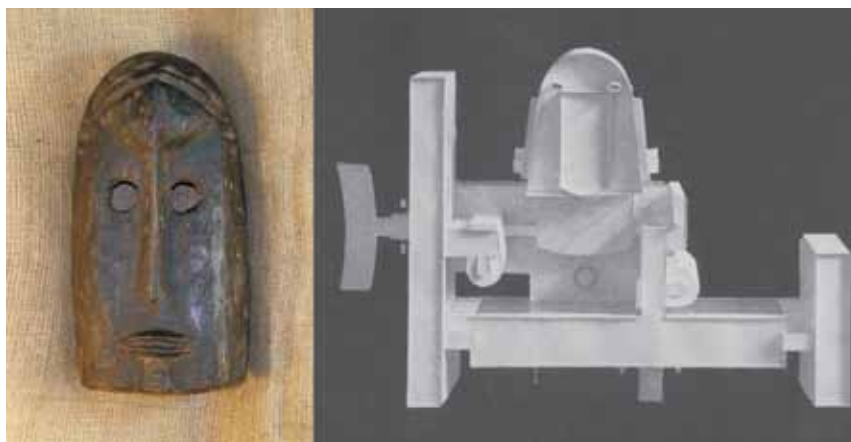
If it is considered that the Five Points and the Four Compositional Systems collectively constitute the theoretical superstructure that guides purism, it now becomes clear that the mask is fully integrated in this creative framework.



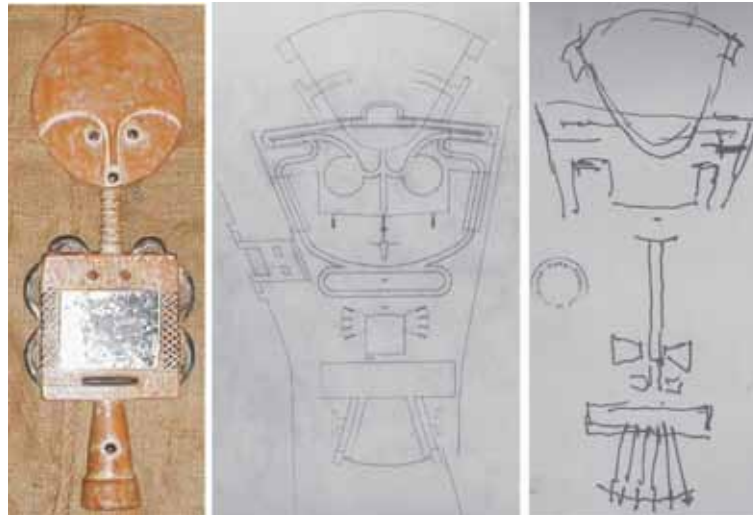
**Figure 14**  
**1929 – the Four Compositional Systems**  
 (source: Le Corbusier 1960: 82).

### **Big buildings – Centrosoyus Building (1929) and Palace of the Soviets (1931)**

The mask was retained as a theme and a dominant element for the site plans of both the Centrosoyus Building (designed 1929, built) and the Palace of the Soviets (designed in 1930-1, unbuilt), both in Moscow. The similarities with the mask are more obvious on plan, with eyes and other facial features quite recognisable (figures 15 and 16).



**Figure 15**  
**Dogon mask, Mali compared with the Centrosoyus Building, designed 1929, built**  
 (sources: mask from <http://www.genuineafrica.com/African-Masks-Dogon-Mask-12.htm>;  
 model from Le Corbusier 1960: 88).



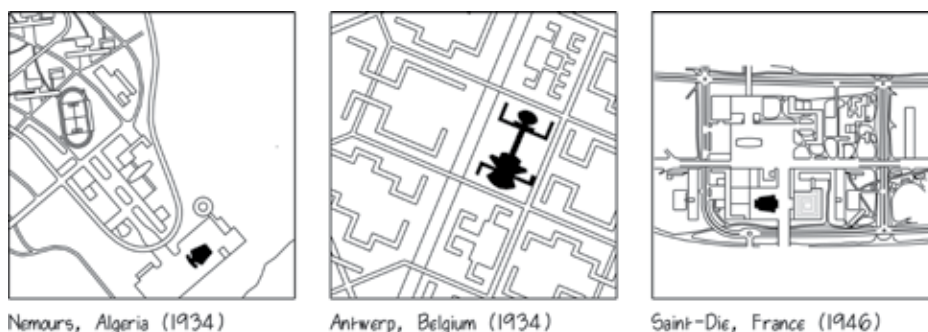
**Figure 16**  
**Asante fertility doll compared with Palace of the Soviets, 1930.**  
**Sketch by Le Corbusier at a lecture in the USA, 1935**  
 (source: doll from [http://www.genuineafrica.com/ashanti\\_fertility\\_doll\\_2.htm](http://www.genuineafrica.com/ashanti_fertility_doll_2.htm);  
 plan from Frampton 1985: 54; sketch from Bacon 2001: 77).

To this day, the education of an architect is associated with a formal, academic route, inevitably with Eurocentric curriculum contents. *Giedion (1977: 520) was probably somewhat puzzled when, in *Space, Time and Architecture* (first published in 1941) he comments that when Le Corbusier arrived to settle in Paris in 1917, he cruised the museums looking at “primitive and prehistoric art – woven carpets and carved idols”.*

Some authors have criticised cubism for its focus on the visual properties of the African mask, and for “its tendency to physically and theoretically abstract objects from their cultural contexts” (Palmer 2008: 187). But as Bacon (2001: 221) comments:

[The Parisian avant-garde] freely coopted [sic] representations of African and African-American art and artifacts [sic] as metaphors for the exotic, vital, primitive, and mechanical. Such coded messages, long separated from their cultural and anthropological contexts, now served the interests of modernism.

Like his contemporaries, Le Corbusier was certainly guilty of “decontextualizing cultural objects” (Palmer 2008: 187), but Melvin Mitchell, a staunch advocate of black culture (to the point of militancy), has not commented on, or objected to this fact. Both the mask and the fertility doll appeared in later urban plans too, probably only because Le Corbusier celebrated the African connection and because they were considered appropriate shapes for the envisaged buildings (figure 17).



**Figure 17**  
**African imagery (drawing by the author).**

### A new paradigm (without sacrificing the Five Points)

Curtis (1986: 106) maintains that the Villa Savoye (1928), the Cité de Refuge for the Salvation Army (1929), and the Pavillon Suisse (1930) were Le Corbusier's best known work of the 1920s, having had "a seminal influence on the work of at least four generations of architects worldwide". The Cité de Refuge is known for its flawed climate control, and also for its hierarchy of elements, forming an architectural promenade – from the giant doorway through a cantilevered canopy, to a curved portico, on to a large hall and into the "glass dormitory slab" (figure 18). Geoffrey Baker (1996: 343) also hints at the physical resemblance between the entrance complex, and Le Corbusier's painting of a violin in 1920. The Pavillon Suisse (1930) was a dormitory slab with roof garden on *pilotis*, and attached ground level communal elements (Curtis 1986: 93). According to Jencks (2000: 210) this building exemplifies "the old and new Corbu in juxtaposition: the purist slab in back, accommodation for the students, is contrasted with roughcast masonry and a curve" (figure 19). He states that this was so understated that the Modernists did not even notice.

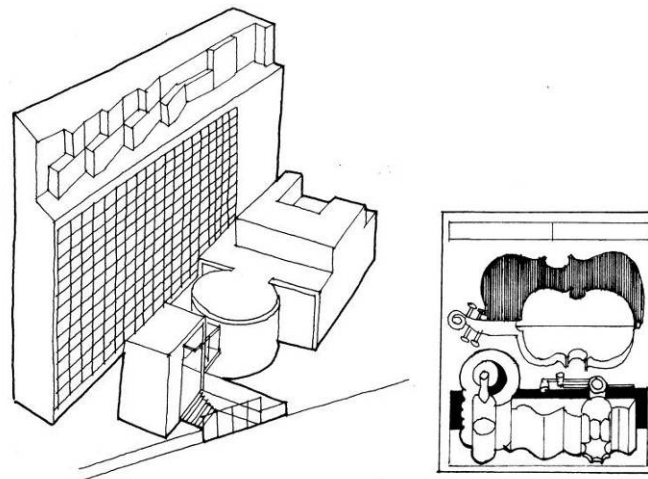


Figure 18

Salvation Army Refuge in Paris of 1929 and a painting dated to 1920 (source: Baker 1996b: 343).



Figure 19

The Swiss Pavilion at the Cité Universitaire in Paris, 1930 (source: Le Corbusier 1995: volume 2, 75).

In reality, these projects concluded his Purist period. Whether they were Late-Purist or Post-Purist is debatable, but from 1929 onwards, Le Corbusier's designs became increasingly characterised by climatic responsiveness, vernacular awareness, and regionalist sensitivity that

could arguably be called “critical”, in line with Lefaivre and Tzonis (2012). But although the slick, white forms of purism were generally discarded for rough, natural and earthy finishes, he continued to employ the Five Points regularly until his death. At this point it becomes clear that two generative issues are relevant here: firstly, the physical forms of African masks and sculpture as planning templates, and secondly, the apparent theoretical tenets of purism.

### **Reflections – perpetuating purism**

The Five Points independently have certainly been more resilient and prevalent than purism as a whole. They persist as the prerequisite normative tenets of most Modernist designs, particularly in bigger buildings, probably because they are less constrained. The purist tradition was nevertheless pursued by some Modernist architects, notably Richard Meier. Harry Mallgrave and David Goodman (2011: 205) add that the minimalist design trend that emerged in the 1990s is essentially a neo-modernist movement, grounded in purism.

Since the theory is therefore still relevant, it is meaningful to consider some of the most pertinent and current sources. In *Precisions* (1991), of which the original was published in French in 1930, Le Corbusier’s theories (Five Points and Four Compositional Systems) describe the various aspects of his architecture in simple and perfectly logical, pragmatic terms. On the other hand, critics subsequently seem obsessed with abstract theorisations. For example, the “phenomenal transparency” that is at the centre of Rowe and Slutzky’s argument, has absolutely no bearing on either ecological or cultural concerns – in other words it is about architectonic ideas, rather than architecture as habitable, social space.

According to Reichlin (2002: 207), Rowe and Slutzky’s narrative corresponds with what Le Corbusier apparently described as the effects of “spatial interference, of overlap or ambiguity” (commenting on Le Corbusier’s *Notes à la suite* of 1926, published in French only), which means “the overflow of one space into another or, again, the breaking of the congruence [similarity] between functional space and structural space”. It is obvious that Le Corbusier’s free plan quite deliberately challenged the conventions of traditional European architecture: “[The free plan] allows us to escape from the square cellular form of rooms”. He does however tend to justify his objectives in considerably less flowery and in more pragmatic terms: “I also show how with curved partitions, easy to build, one obtains two bedrooms with their bath in a space that would normally have allowed only one traditional room” (Le Corbusier 1991: 130).

As far as Rowe and Slutzky’s issue of transparency is concerned, Le Corbusier (1991: 38) states simply: “I am going to announce an outrageous fundamental principle: *architecture consists of lighted floors*. Why? You can easily guess: you do something in a house if there is light; if it is dark you are sleeping.” He adds “If I want to I can have windows on the entire surface of the facade – windows or other things I shall explain to you. If by chance I need an opaque surface on an elevation instead of a transparent one, it is no more than a screen, it is the floors that will carry it, a complete reversal of traditional practice.” And finally (1991: 54): “[T]he immense benefits of the ribbon window that give the best light to interiors, that allow all subdivisions possible from floor to floor”.

Giedion (1977: 525) notes that Frank Lloyd Wright’s application of “open planning” was different from that of the European architects’ (clearly referring to Le Corbusier), with that of the latter based on “the new conception of space as essentially many-sided which grew out of cubism.” He adds that “Le Corbusier always tried to create new possibilities for connections

between its interior and exterior and within the interior itself.” Considering the porosity of the illustrated cubic forms, this statement cannot be challenged.

Colomina (2002: 141) refers to the “splintering image of the cubist painting”, where views are not experienced in sequence, but rather “juxtaposed”. This is exactly the effect described by Le Corbusier (1991: 136), but his language is so much more comprehensible. He reports that visitors to Villa Savoye “turn round and round inside, asking themselves what is happening, understanding with difficulty the reasons for what they see and feel; they don’t find anything of what is called a ‘house’. They feel themselves within something entirely new. And they are not bored, I believe”. There is absolutely no doubt that Le Corbusier conceptualised the *promenade architecturale* precisely to enhance the “visual and phenomenal/spatial experience” (Blau and Troy 2002: 11), and even to force a “tour” through the building (Reichlin 2002: 205).

Le Corbusier’s practical solutions are often overshadowed by his impassioned writing style, for example (1991: 36, 139), that architecture moves from “precise, reasonable things, techniques (material elements), along a trajectory to a work of art ‘with eternal values’, to poetry and lyricism”, exclaiming quite characteristically: “Poetry, lyricism, brought by techniques.”

### **Transparency from cubic doctrine [abstraction] to plain, boxlike geometry**

When defining the relationship between cubism and architecture, Rowe and Slutzky distinguish between literal and phenomenal transparency (Blau and Troy 2002: 3). The former is real and visual, and the latter is “seeming” and derived from the “analytical cubist compositions” produced by Picasso, Braque and Gris. Their formal characteristics were “frontality, suppression of depth, contracting of space, definition of light sources, tipping forward of objects, restricted palette, oblique and rectangular grids, and propensities toward peripheric development”.

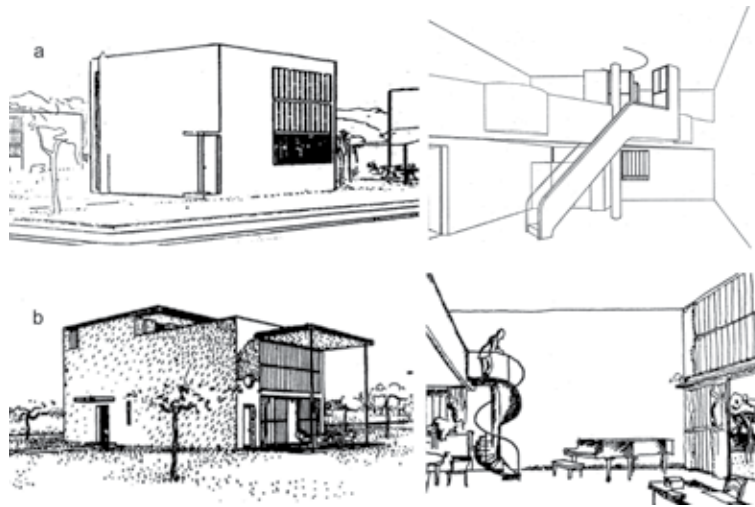
Rowe and Slutzky’s argument represents a highly theoretical position that has dominated the topic for more than half a century (since 1963). However, although theoreticians tend to vehemently deny that the term ‘cubism’ signifies any geometrical likeness, the reality is that modern architecture is widely associated with cubism, significantly more for the “proliferation of cubic, boxlike forms in modern architecture” (Blau and Troy 2002: 10), than for transparency. As Overy (2002: 117) suggests: “Early uses of the term ‘cubist architecture’ implied an architecture of ‘cubic’ (i.e. boxlike or crystalline) forms, rather than one that exploited the ambiguous play between flatness and illusions of shallow space that has generally been represented as the most important cubist device.”

As Bois (2002: 190) quips: “[T]here were precious few cubes in cubist painting”. Colomina (2002: 148) relates that László Moholy-Nagy, the legendary Bauhaus professor in the 1920s, wrote that some landscapes painted by Picasso and Braque, contained some “cube-like” shapes. Some of Le Corbusier’s early residential designs such as the Citrohan house (1920) and the Workers’ housing (1924) were essentially boxes with roof gardens and double volume living rooms (figure 20). Was it really the dogma of cubist painting that inspired these patterns?

Le Corbusier worked intermittently for Auguste Perret from July 1908 to November 1909, in Lyons. There he met Tony Garnier, the French architect, who “overthrew the Beaux Arts approach with a scenario for the future so prophetic and complete that it still plays a major part in architectural thinking” (Risebero 1997: 238). His *Cité Industrielle* was exhibited in 1904 and published in 1917, and Le Corbusier included several drawings depicting the scheme in *Towards a New Architecture*, including figure 21, with the caption: “Drawing showing the passages or



walks between houses”. These very Mediterranean-looking cubic houses certainly impressed Le Corbusier, hence their illustration in his book.



**Figure 20**  
**(a) Citrohan housing of 1920 and (b) Workers' housing, 1924**  
**(source: Le Corbusier 1931: 240 and 254, 255).**



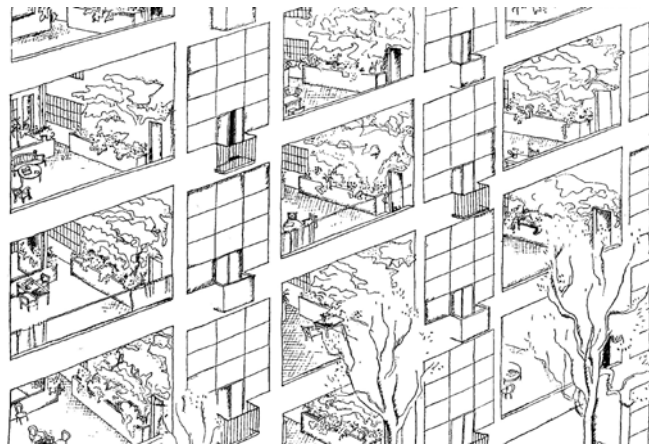
**Figure 21**  
**Drawing Garnier's Cité Industrielle (source: Le Corbusier 1931: 55).**

Allen Brooks (1999: 458) suggests that Maison Bouteille, by Auguste Perret, provided the concept for the double-height living rooms that Le Corbusier was so fond of, describing Perret's design as a "two-storey living room with glazed facade overlooked by a second-floor gallery." The Bistro Legendre, in rue Godot-de-Mauroy, where the architect lunched daily, has also been mentioned as a source of inspiration. Le Corbusier told Willy Boesiger and Hans Girsberger (1967: 25) that one day while he and Pierre Jeanneret were having lunch there, they realised that the place had all the elements "necessary for the organization [sic] of a dwelling house", including the high room with gallery (mezzanine), and that one large window offered "simplification of light sources". They imagined these features in small houses with standardised components and roof gardens. The result was the Citrohan House, in 1920.

In the Immeubles-Villas and Contemporary City of 1922, each apartment (the prototypical Pavillon de l'Esprit Nouveau of 1925) is in fact a small L-shape double-storey villa with a double-volume living room and a patio. Le Corbusier (1931: 248) referred to the patios as

“hanging gardens”, which he imagined as having flowers and creepers. The generous patio and double-height interior volume are clearly visible in figure 22. Rob Krier (1988: 11) would later comment: “It [Pavillon de l’Esprit Nouveau] was an achievement that upgraded social housing enormously.” There is nothing philosophical or abstract about recognising how pleasant such a generosity of space and plenty of natural light may be in a dwelling. Nevertheless, the concept remains unique to this day.

In *My Work*, Le Corbusier (1960: 49) reveals: “Space and light, the corner stones [sic] of L-C’s character, the fountain-heads of all his endeavours”, unquestionably referring to both his painting and architecture. This is a purely pragmatic explanation and simply incompatible with the abstractions critics subsequently offered.



**Figure 22**  
**Immeubles-villas.** The generous patio and double-height interior volume are clearly visible  
(source: Le Corbusier 1995: volume 1, 43).

### **Purism and cuboid houses derived from M’zab and Zanzibar?**

Antoni Folkers (2010: 67) introduces a completely different dimension to the discourse; he suggests that the cubic forms may have been derived from houses in the M’zab and Zanzibar. These are roughly square courtyard buildings of two or three storeys, in a massive, solid squat form, with a flat roof. Those in Zanzibar have regularly spaced shuttered windows facing the street. Loggias (colonnades) surround (or partly surround) interior courtyards (figure 23).

Folkers’ statement may not be so far-fetched after all. Francesco Siravo (1997: 31-32) mentions the “austere precepts of the Ibadi sect, which is the dominant Muslim dogma, not only in Oman and Zanzibar, but also in the M’zab. This Ibadaite austerity is the common denominator (see Folkers 2010: 67 for the suggested link between Zanzibar, the wadi of Beni-Izguen in the M’Zab, and Le Corbusier). It should be noted, however, that Le Corbusier only visited Beni-Izguen in 1931.



**Figure 23**  
 A typical mid-19<sup>th</sup> century Omani house in a rural setting outside Zanzibar City  
 (source: Hugon 1991: 110).

These cuboid forms were adopted in the semi-arid Sahelian belt, south of the Sahara that stretches across the continent and include southern Mauritania (visited by Le Corbusier), and also parts of Senegal and Mali. In Hausaland in Northern Nigeria, in its main urban centres (including Zaria and Kano), the vernacular comprises both cuboid and cylindrical forms. The purest cuboids can probably be found in the vernacular of Djenné and Timbuktu in Mali, an enduring adobe tradition to this day (figure 24).



**Figure 24**  
 Timbuktu, Mali in 1830. Engraving by the French explorer, René Caillié  
 (source: Guidoni 1975: 170).

A comparison between Pavillon de l'Esprit Nouveau and a typical Omani house in Zanzibar (one of several surveyed by the author), reveals a number of pertinent typological similarities, including form, size, shape, spatial organisation, and indoor-outdoor relationships (figure 25). For example, since the ground and first floor loggias are linked by the staircase, they form a journey to the various parts of the house, both indoors and outdoors, with a different view and sense of enclosure at every change of direction. The circulation route is therefore a classic example of a *promenade architecturale*.

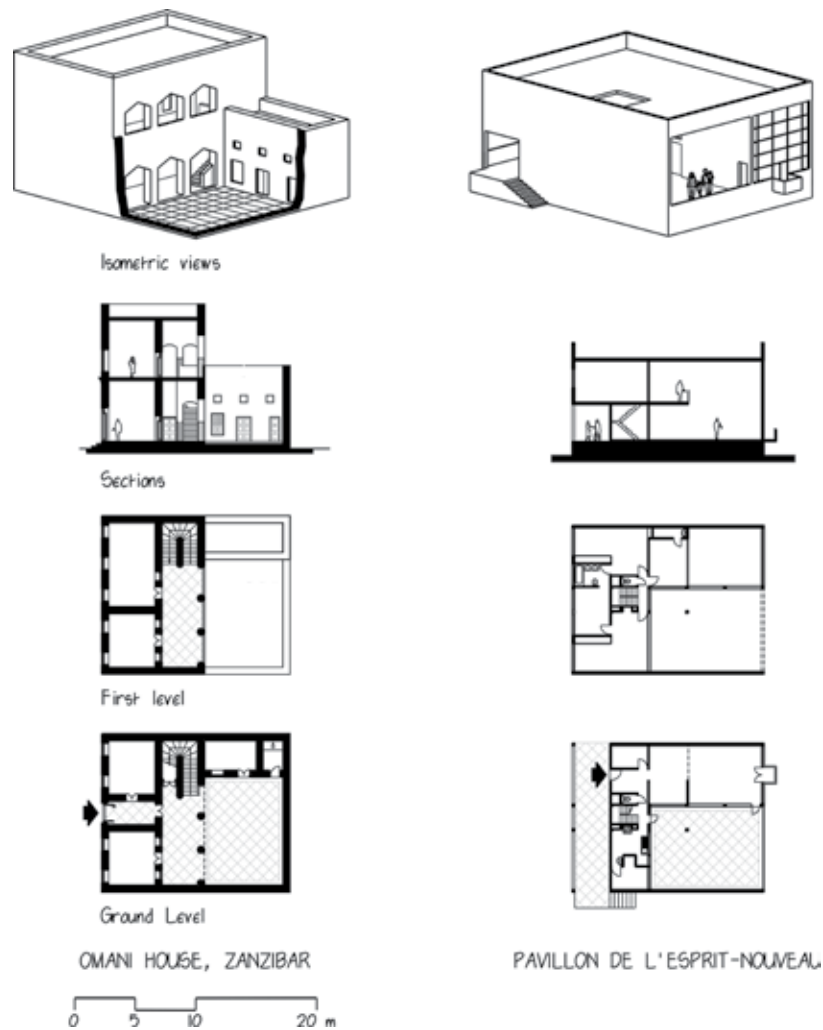
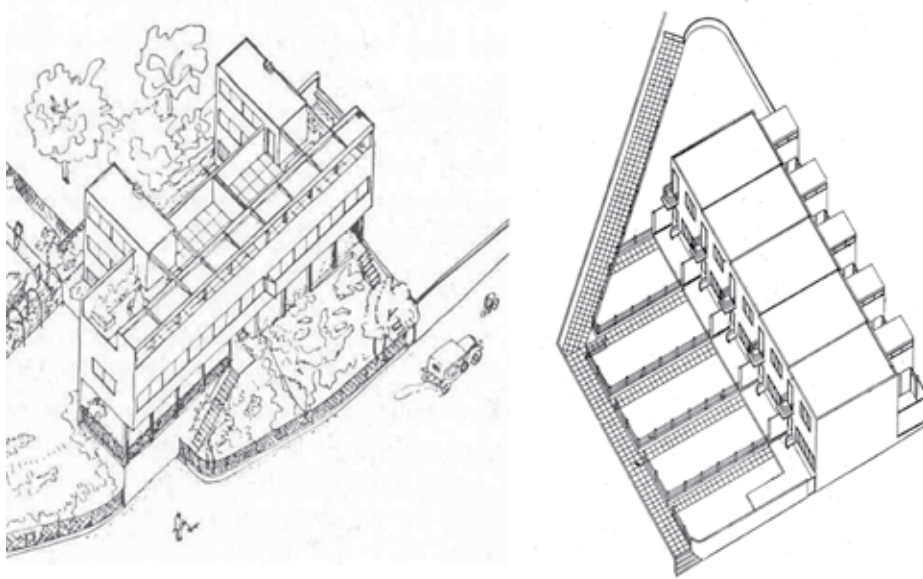


Figure 25  
 An Omani house in Zanzibar compared with Pavillon de L'Esprit-Nouveau  
 (drawing by the author).

### The zeitgeist and cubism

What did Le Corbusier's fellow cubist-inspired modernists do? Paul Overy (2002: 117) summarises the situation as follows: "What modern architects found compelling and useful in cubism ... were the possibilities of using structure as symbolic form, of repetition and gridding as ways of building up the whole from its parts, of achieving unity in diversity." The Weißenhof Exhibition, in Stuttgart in 1927, involved some of the best-known modernist architects of that era and provides an opportunity to compare their work. Their manifestos were closely aligned in some instances, particularly in their disdain for decoration and historical references, and in their preference of functionality and flat roofs. In fact, when reading *Towards a New Architecture*, J.J.P. Oud thought that Le Corbusier had plagiarised him (Bois 2002: 189). There can, nevertheless, be no doubt that his peers simply did not exploit the modulation of the cube to the extent that Le Corbusier did (figure 26). Their designs clearly lacked the complexity and nuances that he managed to achieve so regularly.



**Figure 26**  
**Weißenhof 1927: Le Corbusier's semi-detached houses at Weißenhof compared with J.J.P. Oud's row houses**  
 (source: Besset 1992: 88-9).

## **Conclusion**

The wide range of sources and methods employed by Le Corbusier to inform his design concepts are well-known and widely recorded. These include geometry (golden section nearly everywhere and at every scale), proportions (Fibonacci for Modulor), biology (differentiation of functions similar to anatomy), analogies from nature (pineapple for Antwerp urban plan, tree for Algiers skyscraper), historical (site planning of Acropolis and Moghul complexes for Capital Complex at Chandigarh) and vernacular precedent (Mediterranean patterns for Maisons Jaoul and many others), ideas from his contemporaries (stepped buildings in Algiers), and formative ideas from every historical age, from antiquity to the futurists.

Although he wrote profusely, and seems to share his generative thoughts with readers, these were usually post-rationalisations, tailored to suit the audience, the context, and the spirit of the moment. He was in fact notoriously vague and often unquestionably deliberate in misleading the audience when describing conceptualisation. It is well-known that Le Corbusier not only appreciated African masks and sculptures, but he also enjoyed jazz and African songs and dance, and admired the vitality of the African psyche. In addition, he certainly shared with African Americans the experience of being discriminated against by conservative, white, elderly, male dominated institutions. Certainly, he also shared a preference for collectivism with African culture.

The continuum from African art to cubism to purist painting to purist architecture appears to be a neatly packaged hypothesis, but on closer scrutiny, it is not a defensible one. Whereas the African inspiration of cubism is undisputed, the inevitability of link between cubism and purism is debatable. Similarly, purist painting and purist architecture may share texture, tone, frugal forms and complex spaces, as well as some compositional geometries, but these are extremely basic and superficial qualities. Insinuations that there are commonalities at the level of deep structure or ideology are purely academic.



Le Corbusier admired African art, not for any deep-seated ideological reason, but because a richness of expression and beauty is achieved with such an economy of material and gesture. The geometry of the mask possessed a logic that satisfied the programmatic requirements of some of his buildings. Similarly, African architecture provided him not only with the spatial solutions that enabled him to draw the outdoors into the building, but also with the organisational patterns – layering, courtyards, thresholds and transitional spaces – that created diverse and unpredictable visual experiences. These are qualities that European typologies generally do not offer. It is irrefutable evidence of his genius (and conviction) that he avoided trying to mystify his theories with the incoherence so typical of contemporary architectural critique. Instead, as with the mask, he derived his concepts directly from their African contexts and actually re-imagined them quite literally.

If we assume that Le Corbusier's peers were also competent architects, what allowed him to be so obviously more creative and innovative? It is possible that African art, artefacts and construction comprised a secret conspectus that provided him with formative ideas for his architecture and urbanism. Melvin Mitchell's argument seems, therefore, to be very persuasive. It certainly justifies a deeper investigation of the relationship, and ideally also a more Afrocentric alignment of modernism in architecture and urbanism.

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**Gerald Steyn** is a Research Professor at the Department of Architecture of the Tshwane University of Technology. He holds BArch and MArch degrees from the University of the Free State, and a PhD from the University of Pretoria. His academic and research interests include settlement dynamics and vernacular African architecture, with a special focus on African urbanism, affordable housing and good neighbourhoods.