

Lantern of Coutances Cathedral

The cathedral at Coutances has been written about in two previous issues: 2nd Quarter 1996, and 2nd Quarter 2013. The issue's limited edition print of a sketch by Ladd P. Ehlinger is of the lantern. To repeat:

The lantern is the most striking feature of this cathedral. A lantern is a raised clerestory type of upper lighting at the crossing of the nave (the main space) with the transept (the secondary space at right angles to the main space intersecting the

main space). The Coutances lantern is a ribbed dome over the crossing which is expressed within the cathedral as well as on the exterior. There are conical barrel vaults spanning between the radial ribs. The keystone of the lantern dome is 134' above the floor of the crossing. The lantern brings an evenness or uniformity to the lighting of the interior, because in other cathedrals, the area under the crossing can be quite dark. Above the lantern is a tower that balances the two front towers and announces the crossing, being visible from miles away.

Le Modulor

Le Modulor is the name given to the system of determining scalar measurements and proportions of built objects invented by Le Corbusier (Pierre Edouard Jeanneret-Gris), the Swiss born - French architect who is the subject of the succeeding article in this issue as well. Le Corbusier (affectionately or derisively known in design circles as "Corbu") researched and studied the issues involved in measurements and proportions for over twenty years, and finally published his treatise in 1945. This study earned Corbu the honorary degree of Doctor of Philosophy from the University of Zurich.

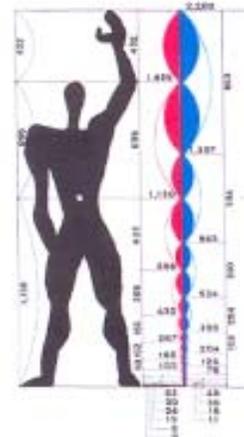
The Imperial (feet and inches) system of measurement by the British is said to be scalar, or scaled to the human body, as the basic units were more or less derived from people: an inch equals the length of the outer portion of one's thumb, whereas twelve inches equals one foot which also equals an average length actual human foot. Objects designed in Imperial units then naturally tend to fit or scale to the people that use them, based upon everyone being more or less the same size - even though we all know this not to be true.

There is a long history of other scalar systems of measurement in other cultures, especially during Roman times. With the development of sophisticated systems of arithmetic though, it became apparent to many that multiplication and division by

12 or even by 16 in the case of ounces, and the lack of relationship between the volumetric systems of measurement to the spatial and distance systems within the Imperial system made for a very cumbersome methodology, especially with respect to the scientific method and the needs of the industrial age and mass production.

This led to the Metric system, in which the basic unit is derived from the meridian of the globe that we inhabit, and is further based upon units of 10 arithmetically and in multiples, with space, distance and volume interrelated.

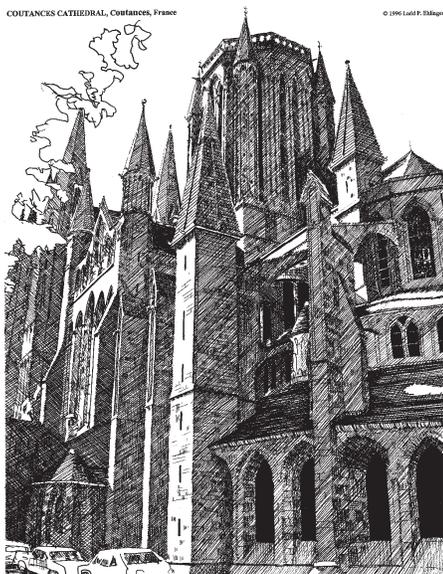
The whole problem here is that people were left out of this equation, and while the units of measurement were easy to manipulate and calculate, objects made within this system were quickly



judged not to relate to people. There was no identity of size at all - that is people to objects with the result that people felt alienated from the objects. Designers were soon using rules of thumb to come up with standards that used translated Imperial units into Metric units, thereby solving the problem though awkwardly.

What Corbu did was to take the average Frenchman of 5'-7" height and measure all of his parts/components in the metric system, and then confect standard lengths based upon both the "Golden Rule" of proportion and the Fibonacci series of numbers, such that all objects designed with these standards would be automatically calculable in Metric units, scalar and proportionate. He later had to adjust the numbers to an average 6' tall man because people grew taller after WWII due to better nutrition. Another fault commented upon by many was that the system ignores women!

Ladd P. Ehlinger



Social Engineering Through Architecture Part III: Urban Isolation

Swiss born -French Architect Charles-Édouard Jeanneret-Gris, better known by his nickname, Le Corbusier (The Crow), was a contemporary of Frank Lloyd Wright, and his visions of architecture were just as, perhaps even more influential than Wright's, particularly where his vision for architecture overlapped with societal engineering.

Similar to Wright, Le Corbusier had a grand opinion of his mostly arbitrary ideas of what constitutes "architecture". He is famous for his Five Points of architecture. The first is that a structure should be lifted up above the ground on pilotis (concrete columns), providing a space below the building for parking. The second, that a building should have a free facade; one that is supported by the structure, and not a part of the structure itself. The third, that the floor plan should be open, so that bearing walls are not a concern within the space. Fourth, the facade should have stretches of horizontal windows. Finally, the rooftop should be a garden, to account for the displacement of vegetation beneath the structure.

The results of his 5 points makes for some visually powerful buildings, and Corbusier is often considered "the father of Modern Architecture," for creating a system with which to utilize many of the new industrial technologies into architecture.

However, besides aesthetically, most of the 5 points have no basis in improving the functionality or integration of the architecture into its surroundings, or even within itself. It's as though the structure itself is simply extruded from the ground, hovering elitely on its *piloti*, crowned by a garden to match the garden it sits within. It was a powerful and novel idea, and reflected on his views of "industrial spirituality," but also, especially of his later works, could be considered mechanistic and alienating to inhabitation.

It is a style of architecture many might appreciate, and even call beautiful in its sleek modernity and crisp, ordered arrangement, but few would elect to live there.

Corbusier tried to expand his five points to larger structures and urban planning in post-war Europe. He attempted to integrate the modularity of the industrial age into everyday living, while simultaneously giving



Villa Savoye (1930), a residence near Paris, is one of Corbusier's best known early works, and incorporates all of his 5 Points of Architecture.

homage to nature. He was commissioned for several large apartment complexes, the ideas for which he drew heavily from the Soviet Narkomfin buildings, to which he incorporated his 5 points, and his newer concepts concerning urban planning.

To Corbusier, homes were a machine for living within, and buildings were destinations between each other; so he built modular apartments, separated by large swaths of green space. The result is often referred to as brutal (in fact, there is a style of architecture called "Brutalism" which draws heavily from Corbusier).

When his ideas were incorporated into a larger urban planning scale, it could be said to be one of the fundamental concepts leading to sprawl. Large buildings, isolated from other structures, requiring transportation as they are destinations in and of themselves and not part of their community beyond the landscaping of a park surrounding it.

Perhaps the greatest failure of his planning concepts would be at the Cabrini-Greene housing projects in Chicago. Though not designed by Corbusier, the urban planning drew heavily on his concepts and ideals. When jobs and factories moved from the city to the suburbs, the designed isolation of Cabrini-Greene from major traffic routes prevented those without means from finding employment. This created the condition for the other problems which ultimately led to the demolition of most of the projects, and the eventual, recent changes from concentrated urban housing projects to a more diverse approach.

Corbusier was a talented and gifted architect, but he was also a product of his time: living through the brutality of Fascism and Nazism, yet embracing and mixing the miracles of the industrial era with the utopian promises of socialism into his own concepts of order and beauty.

R. Perrin Ehlinger



Le Corbusier's Unité: isolated from surrounding urban structures.