

A CAPELA DE RONCHAMP E A PLANTA LIVRE
THE CHAPEL AT RONCHAMP AND THE FREE PLAN

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A Capela de Ronchamp
The Chapel at Ronchamp

Pode considerar-se anômalo incluir a capela de Ronchamp entre as obras a estudar como exemplos da planta livre. No entanto, a obra mostra uma faceta importante da evolução de Le Corbusier em relação a problemas significativos para a compreensão e o desenvolvimento da idéia de planta livre.

O problema da planta livre num sentido estrito, como dialética entre pilares estruturais e elementos de vedação, não está ilustrado em Ronchamp. Não obstante, a construção do espaço que se faz presente aqui manifesta com força alguns propósitos fundamentais por trás da idéia, e mais ainda, da evolução da planta livre.

O mais notável no manejo dessa planta é que todo sistema de referência desapareceu: a flexão a que as paredes são submetidas não tem trama regular explícita, como referência e metro. A complexidade da disposição das paredes atua ao mesmo tempo como figura e marco de referência do espaço.

Apesar de sua importância, essas paredes não são estruturais. A estrutura da cobertura está suportada por pilares incluídos no volume das paredes. A separação entre essas últimas e o céu é uma manifestação explícita desse propósito. Os pilares dispostos em intervalos regulares se fundiram com a complexidade das paredes e, com isso, a polaridade entre regularidade do espaço e particularidade do evento arquitetônico desapareceu.

Uma configuração complexa atua como referente de um espaço complexo que não requer maior explicação pela mediação cartesiana de uma trama regular. Le Corbusier empregou em Ronchamp o que chama procedimento de acústica plástica. A relação entre volumes exteriores adquire uma nova complexidade. A implantação da capela e a maneira de chegar, rodeando-a, justificam essa posição.

Dois fatores sugerem uma proposta peculiar de ordenação visual: o prolongamento de eixos do interior ao exterior e a regulação das flexões das paredes, com base em certos ângulos que configuram virtualmente uma sorte de recinto exterior. A ordenação sutil e mesmo subterrânea dos elementos, com base na superposição de diversas matrizes geométricas, faz-se simultânea aqui com ordenações seriais de raiz musical e com a utilização de dimensões, traçados e ordenações derivados explicitamente do Modulor.

Portanto, e a despeito da aparente anomalia de considerar Ronchamp no contexto da planta livre, poder-se-ia dizer que representa a estratégia de Le Corbusier no seu píncaro: a polaridade da forma livre e precisão geométrica é levada à máxima expressão; a dinâmica da planta se enriqueceu com referências múltiplas, e o traçado geométrico foi cuidadosamente oculto sob a aparência da forma espontânea.

As lâminas inéditas adiante apresentadas substanciam

To include the chapel at Ronchamp among the works to study as examples of the free plan could be considered anomalous. However, the work shows an important facet of Le Corbusier's evolution about significant problems concerning the meaning and the development of the free plan idea.

The free plan problem is not illustrated at Ronchamp in its strict sense of dialectic between structural pillars and elements of enclosure. However, the construction of space in this project makes strongly manifest some fundamental purposes behind the free plan idea, and even more behind its evolution.

The most remarkable point about the handling of the chapel plan is that any reference system has disappeared: the bending to which walls are submitted does not refer to nor measures itself against any explicit regular grid. The complex disposition of walls acts simultaneously as the shape and the reference frame for the space.

Despite their importance, those walls are not structural. Pillars included within the volume of the walls support the roof structure. The separation between the walls and the sky is an explicit manifestation of this purpose. The pillars are disposed at regular intervals but have fused with the complexity of the walls and consequently the polarity between regularity of space and particularity of the architectural event has disappeared.

Thus, a complex configuration acts as referent of a complex space which does not require any further explanation through the Cartesian mediation of a regular grid. Le Corbusier employs at Ronchamp what he calls the plastic acoustics procedure. The relationship between exterior volumes and interior space acquires a new complexity. The location of the chapel and the way access is planned, rounding the building, justify that position.

Two factors suggest a peculiar proposal of visual ordering: the prolongation of an axis from inside to outside and the regulation of the bending of the walls based on certain angles that configure virtually a sort of exterior precinct. Subtle and even subliminal ordering of elements based on the superimposition of diverse geometrical matrices concurs with serial orderings of musical roots and the use of dimensions, layouts and orderings explicitly derived from the Modulor.

Therefore, and in spite of the apparent anomaly of considering Ronchamp in the context of the free plan, one could say that it represents Le Corbusier's strategy at its height: the polarity of free form and geometric precision is taken to its maximum expression; the plan dynamics has been enriched with multiple references and the geometric trace has been carefully hidden under the appearance of spontaneous form.

The following and previously unpublished plates sum up the graphic analysis of the chapel at Ronchamp that was developed within the context of the research "Meaning and evolution

a análise gráfica da capela de Ronchamp, desenvolvida no âmbito da pesquisa "Sentido e evolução da planta livre em Le Corbusier", realizada na Escuela de Arquitectura da Universidad Católica de Chile, graças a um auxílio dessa universidade. A equipe foi coordenada pelo professor arquiteto Fernando Perez Oyarzun e integrada pelo professor arquiteto Hernán Riesco Grez e pelos pesquisadores arquitetos Antonio Lama Atalah, Josefina García Huidobro Valdés e Camila del Fierro Carmona. O relatório final incluiu texto discutindo o objeto da pesquisa e as análises gráficas das casas Citrohan, Cook, Weissenhof, Stein e Savoye, do Pavilhão Suíço e do albergue do Exército da Salvação, da capela de Ronchamp e do palácio da Associação de Tecelões de Ahmedabad. Foi complementado por análises gráficas dos Sketchbooks, alguns artigos e resumos de artigos traduzidos para o espanhol, bem como bibliografia referente ao tema.

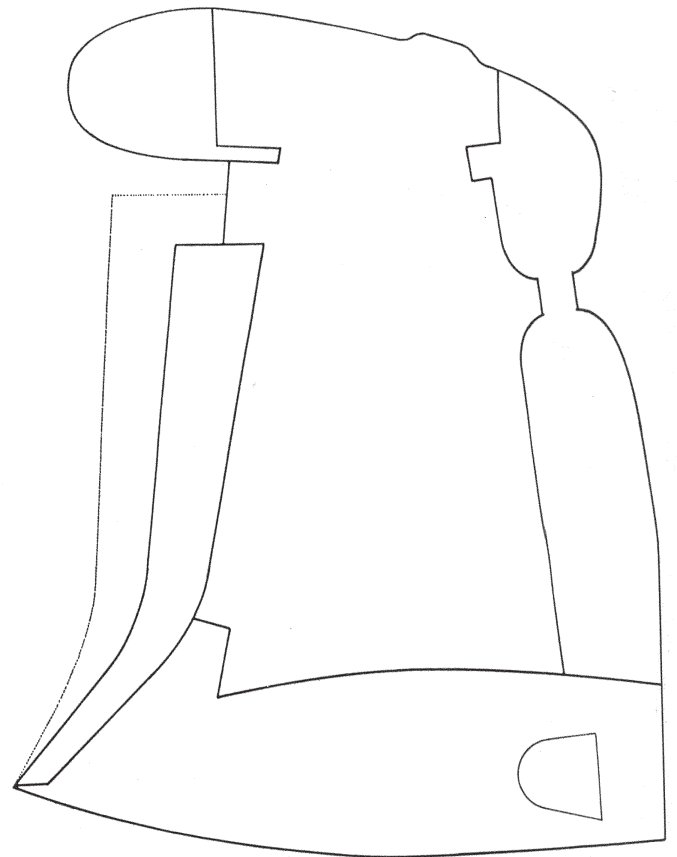
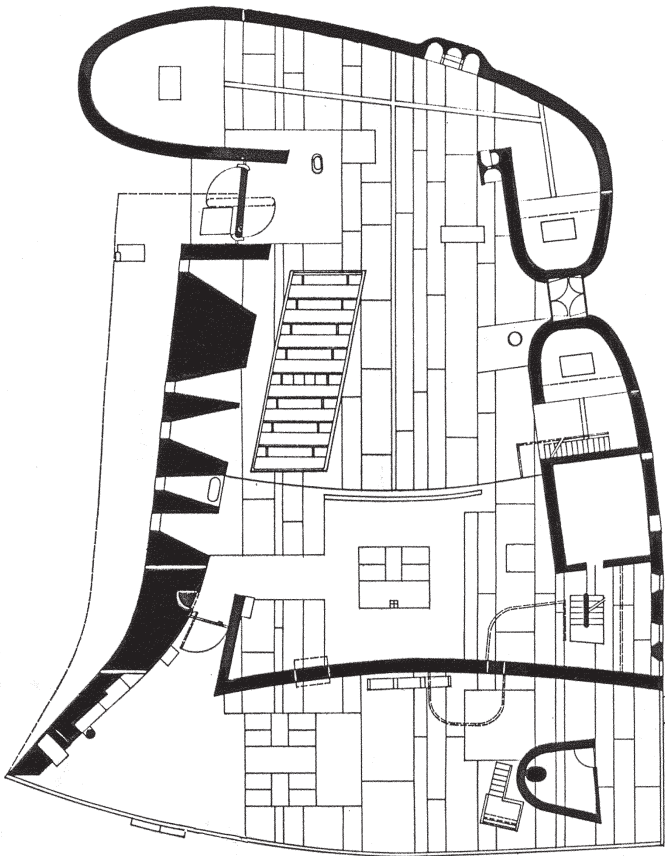
Uma versão condensada dos resultados foi publicada como Caderno de Extensão em maio de 1985, acompanhado da síntese analítica escrita sobre a capela de Ronchamp, que se transcreveu acima, ilustrando com esse caso especial o tipo de nota que introduz as demais análises gráficas. As oito lâminas reproduzidas mostram planta e áreas de organização, trama espacial e pilares, dimensões e trama estrutural, três tipos de trama geométrica e quatro tipos de tramas implícitas de 113x113. As oito demais lâminas destacam limite inferior e exterior, organização interior e paredes estruturais, paredes retas e especiais, elementos de conexão vertical e planta de cobertura, tramas implícitas de 432x432 e 113x113, tramas implícitas de 140x140 e 33x33, tramas implícitas de 296x296 e 495x495, mais tramas implícitas alternas.

of the free plan in Le Corbusier", conducted at the Escuela de Arquitectura da Universidad Católica de Chile, thanks to a research grant of the university. The team was led by professor architect Fernando Perez Oyarzun and integrated by professor architect Hernán Riesco Grez as well as architects Antonio Lama Atalah, Josefina García Huidobro Valdés and Camila del Fierro Carmona. Final report included a chapter discussing the research object and the graphic analysis of the Citrohan, Cook, Weissenhof, Stein and Savoye houses, the Swiss Pavilion, the hostel of the Salvation Army, the chapel at Ronchamp and the Mill-owners' Association Palace at Ahmedabad. They were complemented by graphic analysis of the "Sketchbooks", some articles and abstracts translated to Spanish and a bibliography related to the subject.

An abridged version of the results was published as an Extension Paper in May 1985, accompanied by the analytical synthesis of the chapel at Ronchamp above transcribed, exemplifying with this special case the kind of note that introduces other graphic analysis. The eight plates here reproduced show plan and organization areas, spatial grid and pillars, dimensions and structural grid, three kind of geometric grids and four types of implicit 113x113 grids. The remaining eight plates feature interior and exterior limits, interior organization and structuring walls, straight and special walls, vertical connection elements and roof plan, implicit 432x432 and 113x113 grids, implicit 140x140 and 33x33 grids, implicit 296x296 and 495x495 grids, plus alternate implicit grids.

CAPILLA DE RONCHAMP

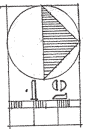
1930-34



PROYECTO

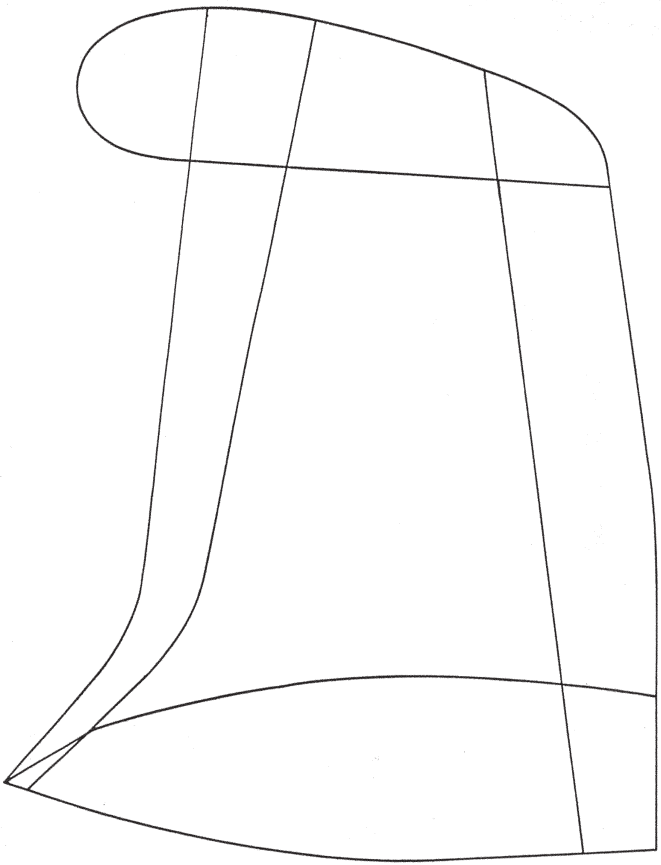
AREAS DE ORGANIZACION

RONCHAMP 1/50

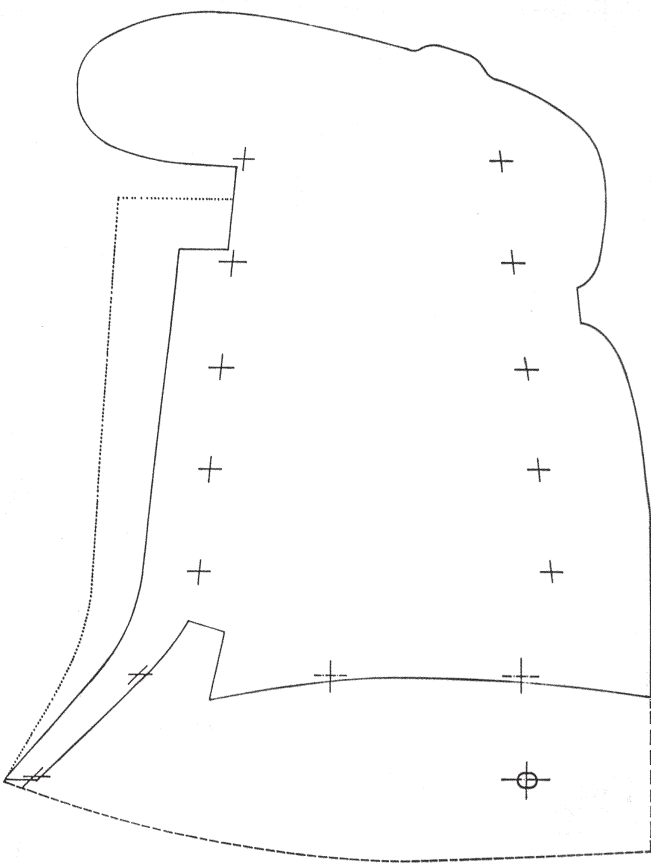


CAPILLA DE RONCHAMP

1950-54



TRAMA



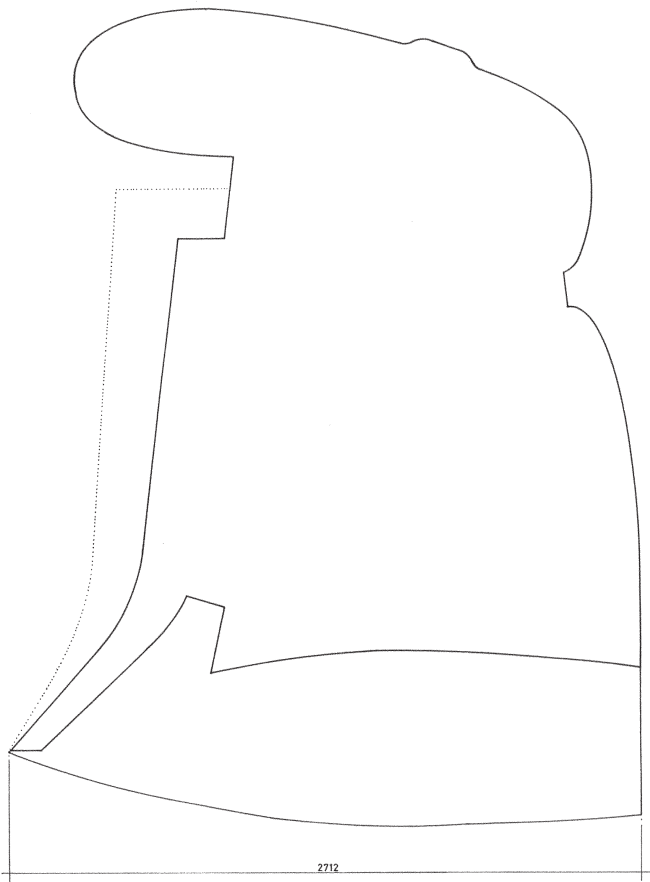
PILARES



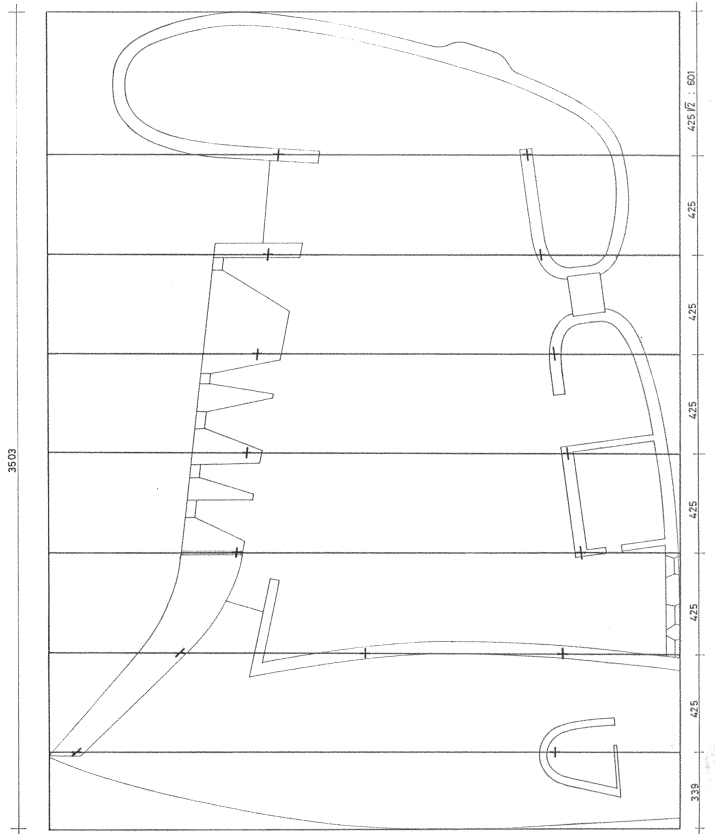
RONCHAMP 5

CAPILLA DE RONCHAMP
análisis formal

1930-34



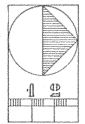
DIMENSIONES



TRAMA ESTRUCTURAL

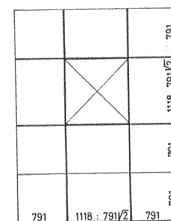
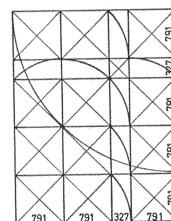
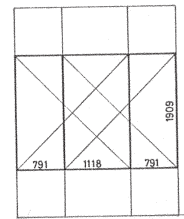
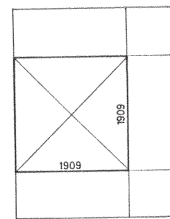
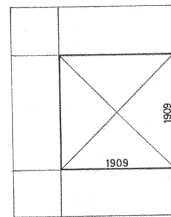
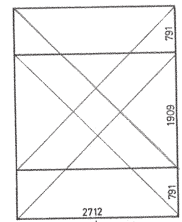
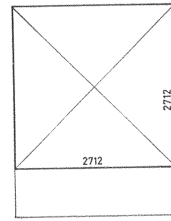
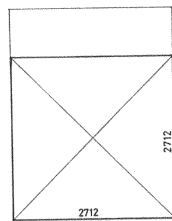
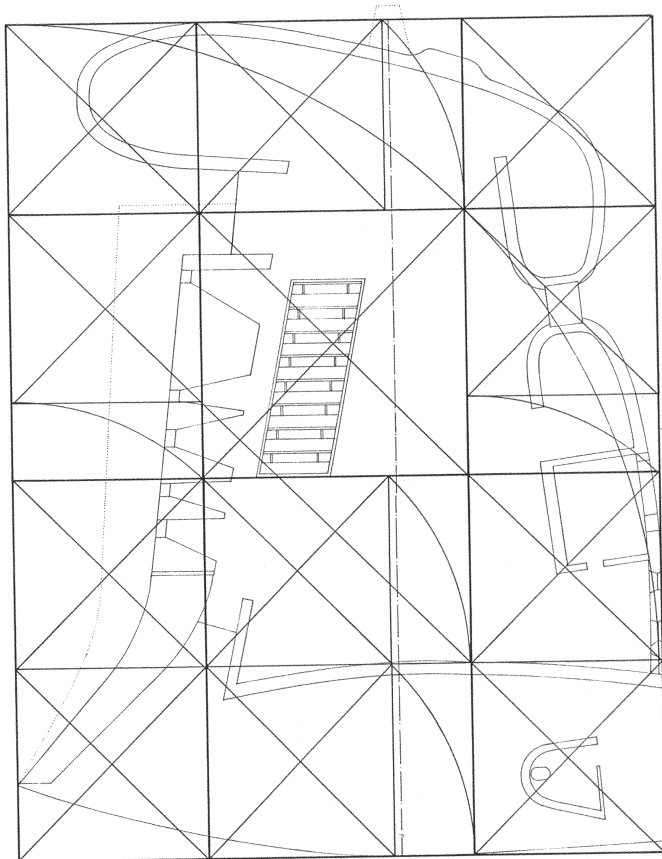
RONCHAMP

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CAPILLA DE IRONCHAMP

1930-34

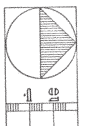


$2,96$
 $4,95$
 $2,96 + 4,95 = 7,91$
 $7,91 / 2 = 4,18$

TRAMA GEOMETRICA

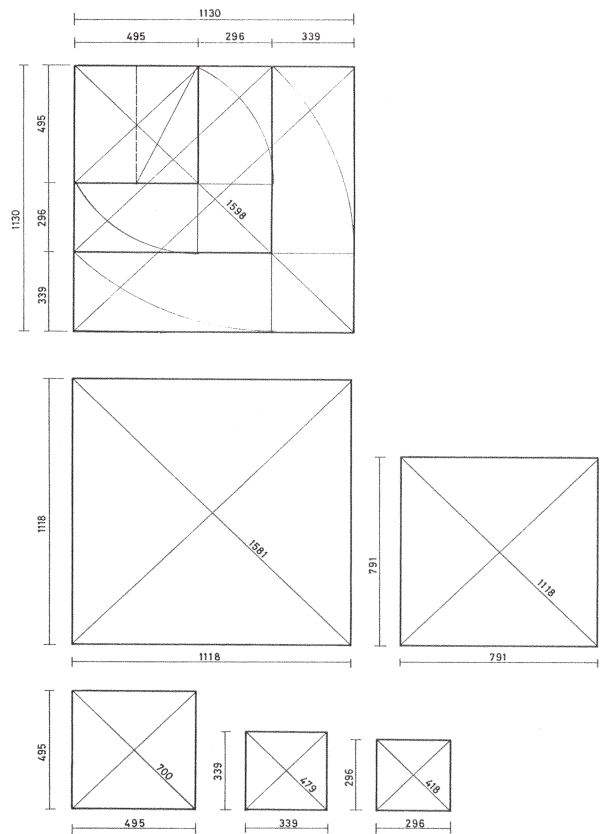
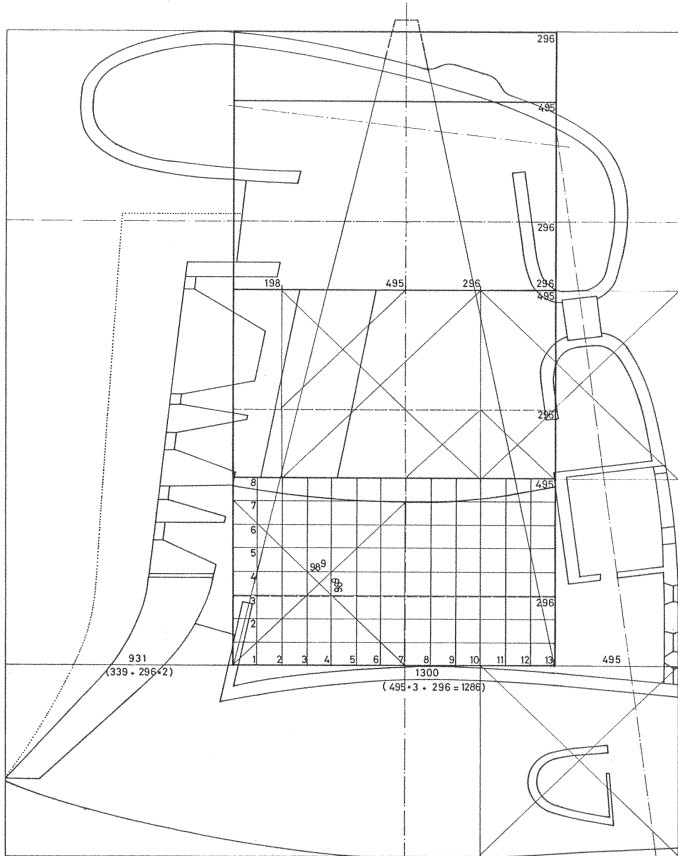
IRONCHAMP

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CAPILLA DE RONCHAMP

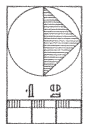
1950-54



RELACIONES GEOMETRICAS DE LAS DIMENSIONES PRINCIPALES

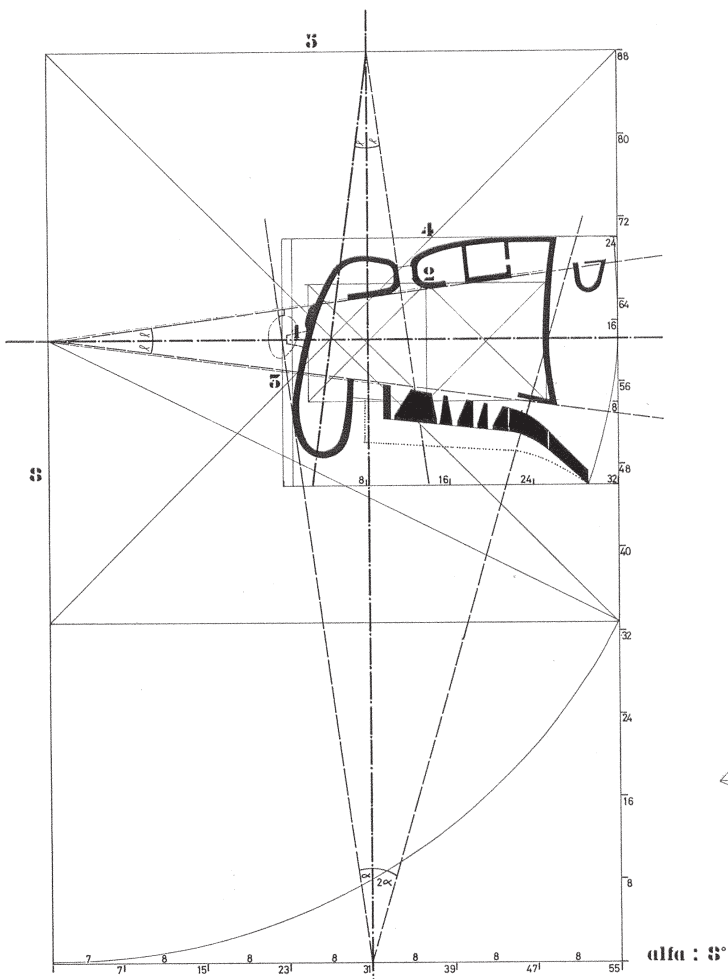
TRAMA GEOMETRICA

RONCHAMP

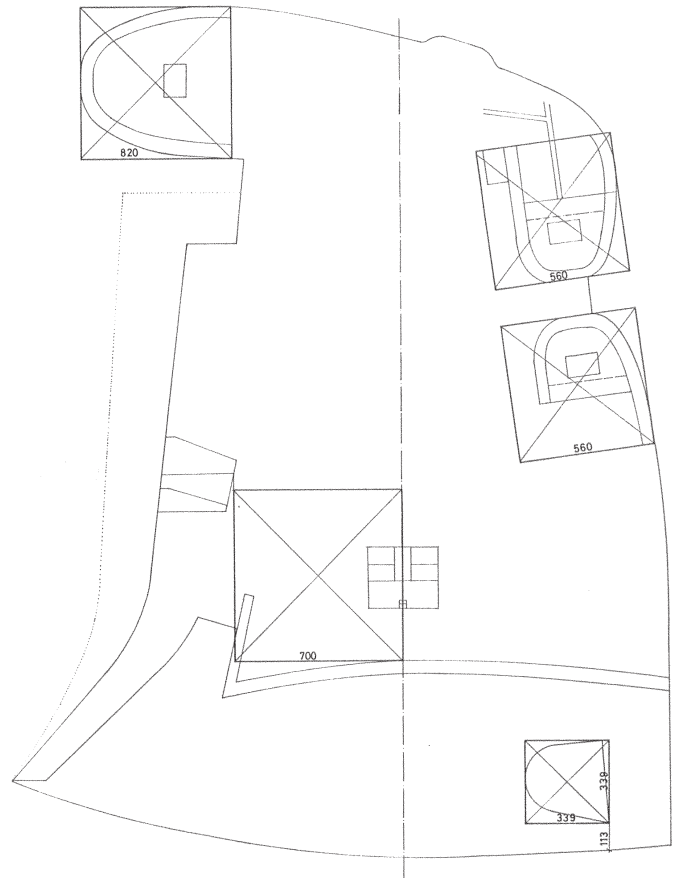
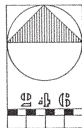


CAPILLA DE RONCHAMP

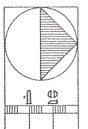
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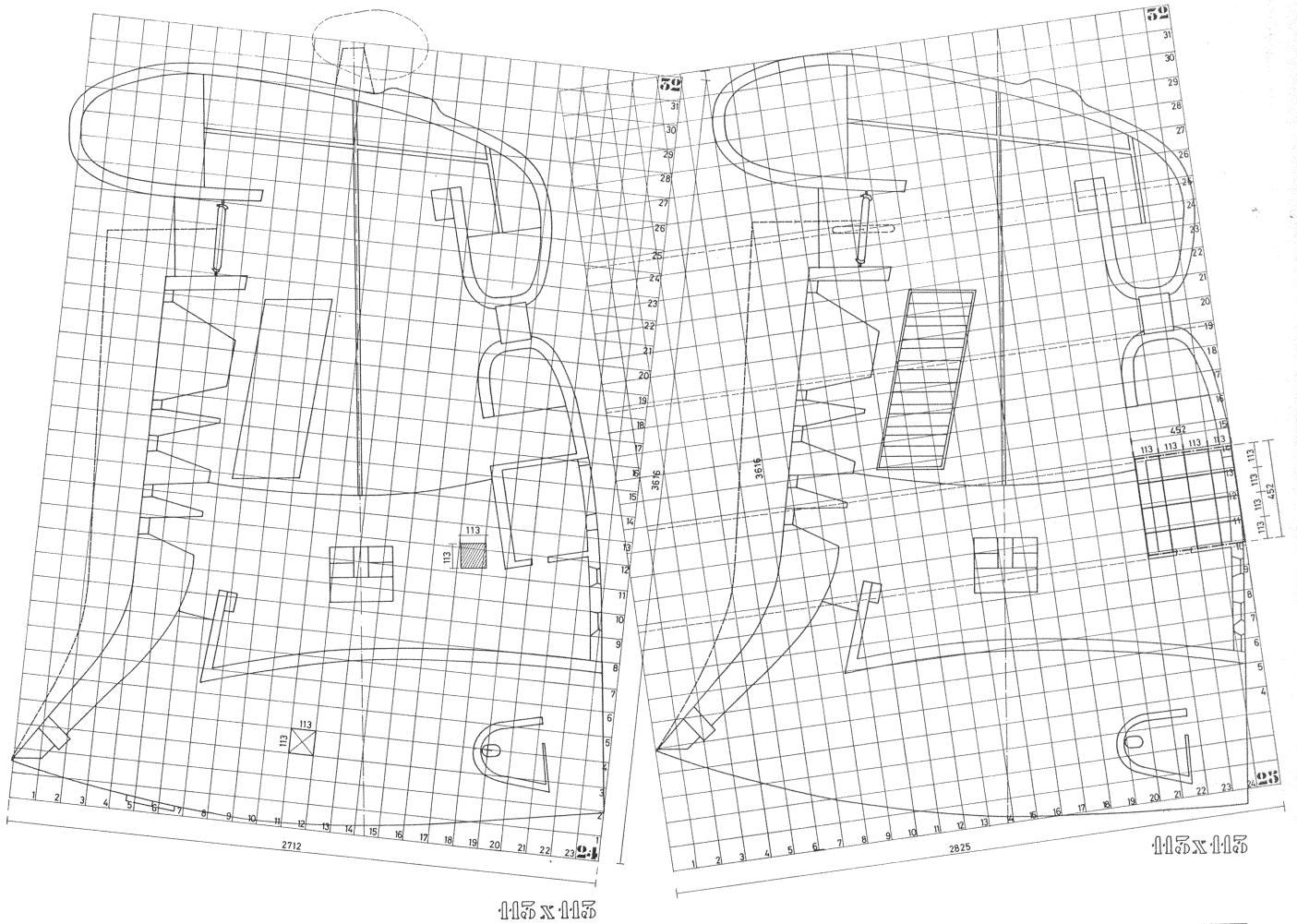


RONCHAMP (K)



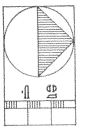
CAPILLA DE RONCHAMP

1950-54



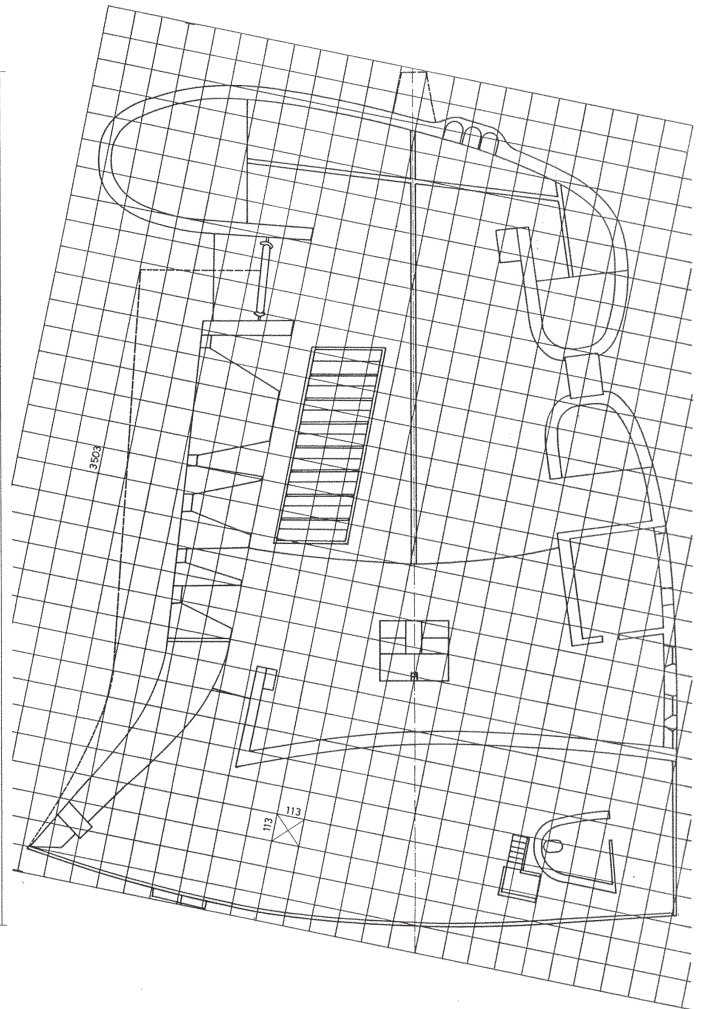
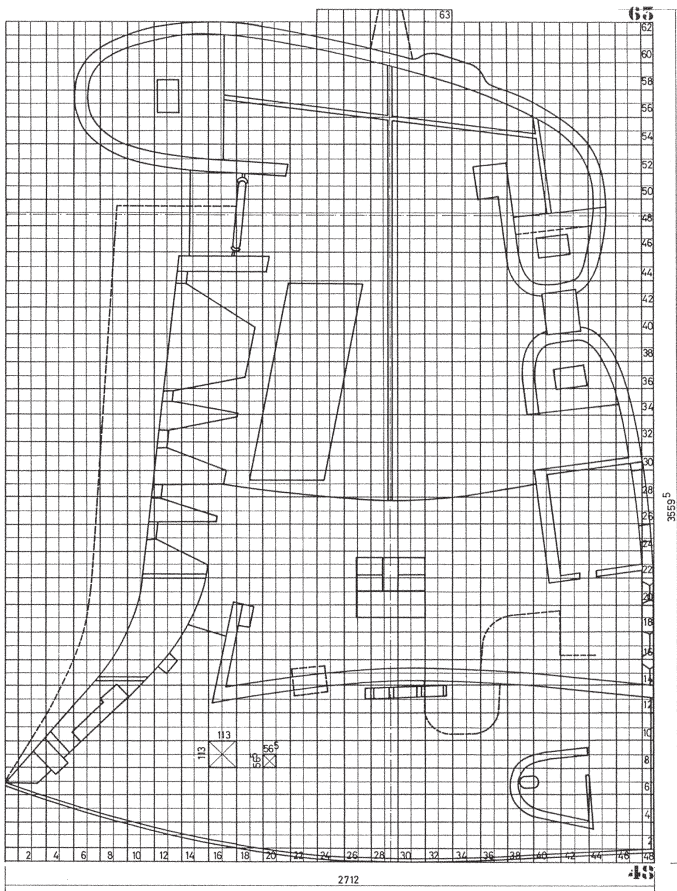
TRAMA IMPLICITA

RONCHAMP 192



CAPILLA DE RONCHAMP

1950 - 54

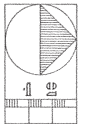


115 x 115
 3565 x 3565

115 x 115

TRAMA IMPLICITA

RONCHAMP 15



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