

Geometric Disciplines + Architecture Skills

Reciprocal Methodoloies

Philibert de l'Orme
1514-1570



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Château d'Anet
Philibert de L'Orme
Anet, France

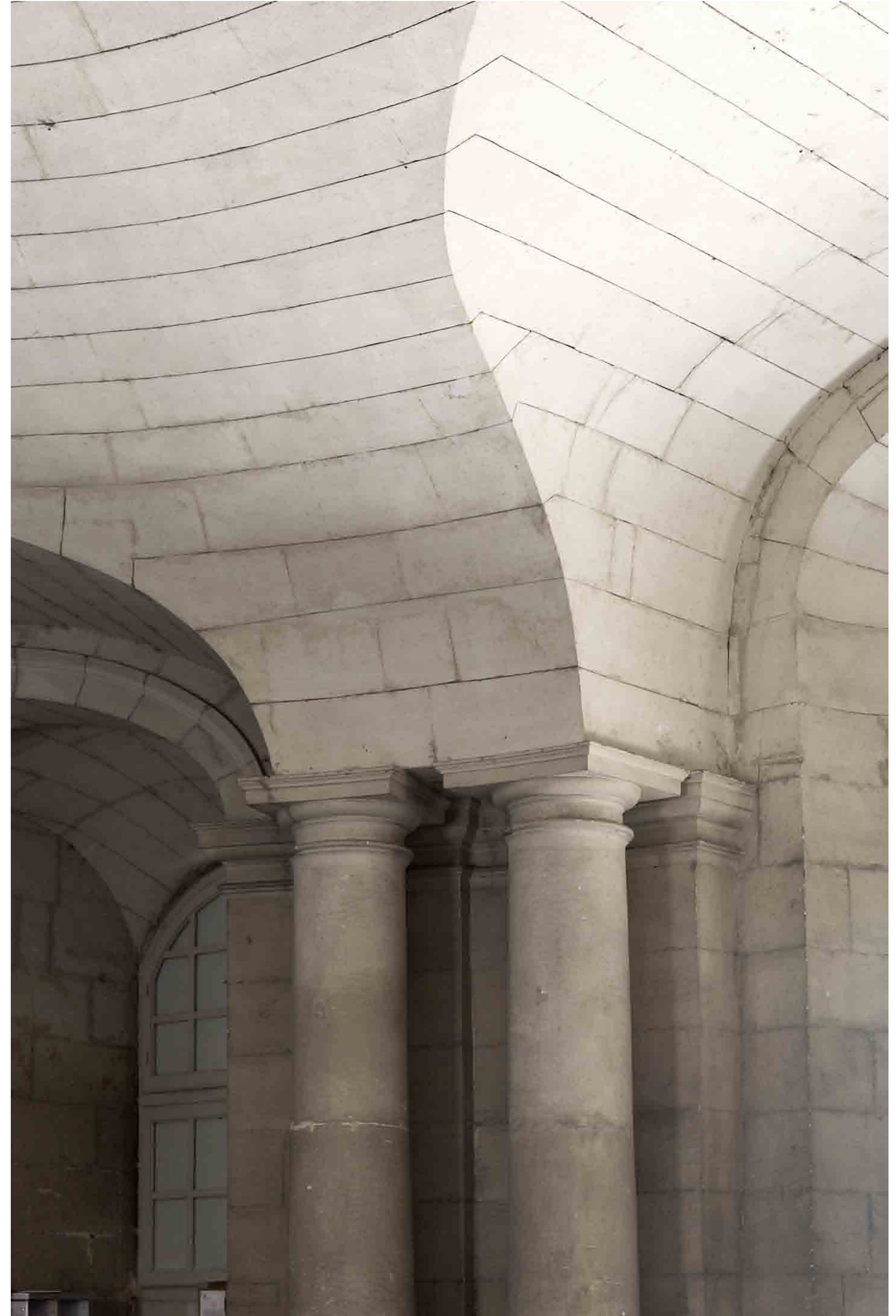


Château d'Anet
Philibert de L'Orme
Anet, France





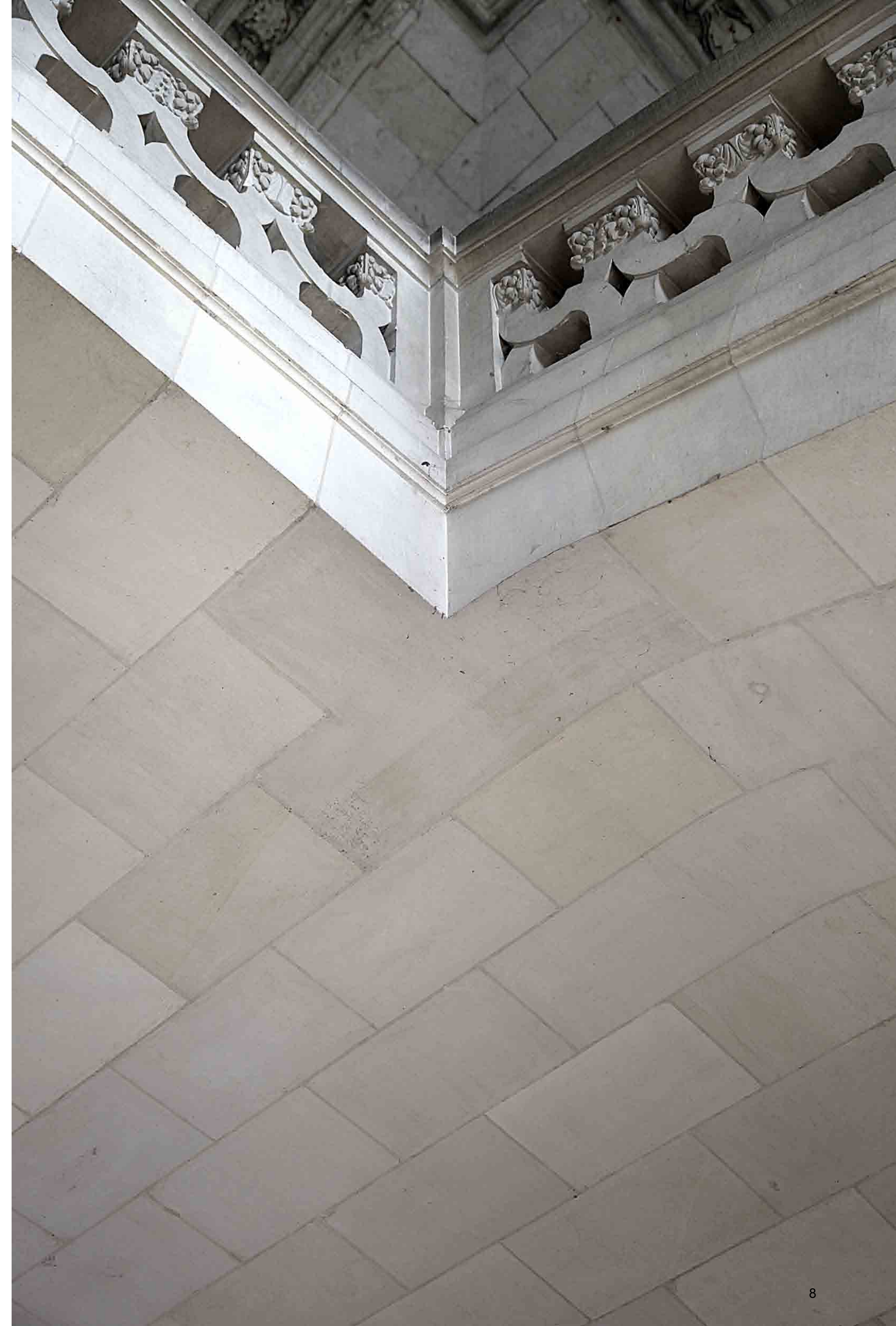
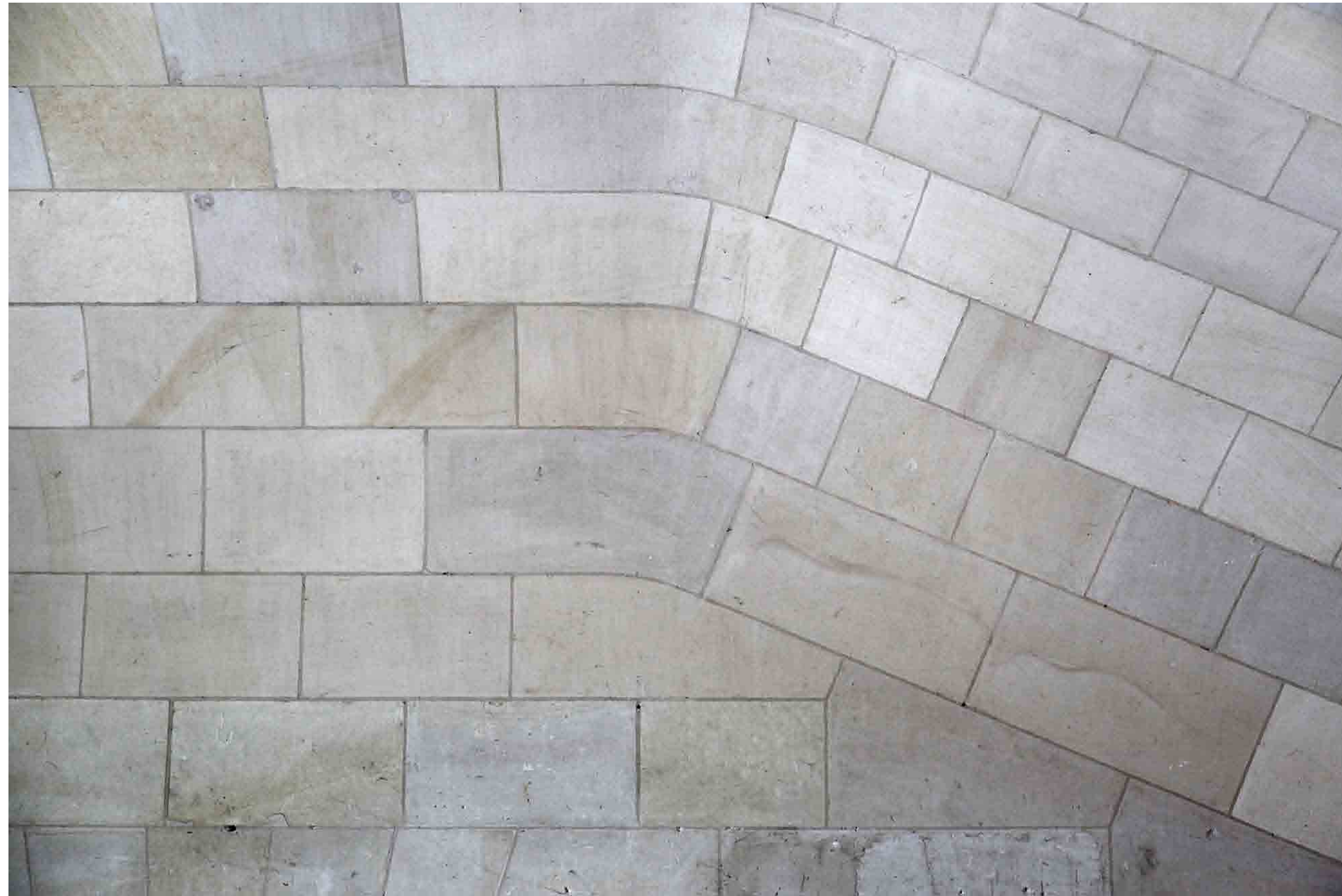
Hôtel de Ville
Philibert de L'Orme
Arles, France



Château de Blois
Philibert de L'Orme
Blois, France



Château de Blois
Philibert de L'Orme
Blois, France



Hôtel Bullioud
Philibert de L'Orme
Lyon, France



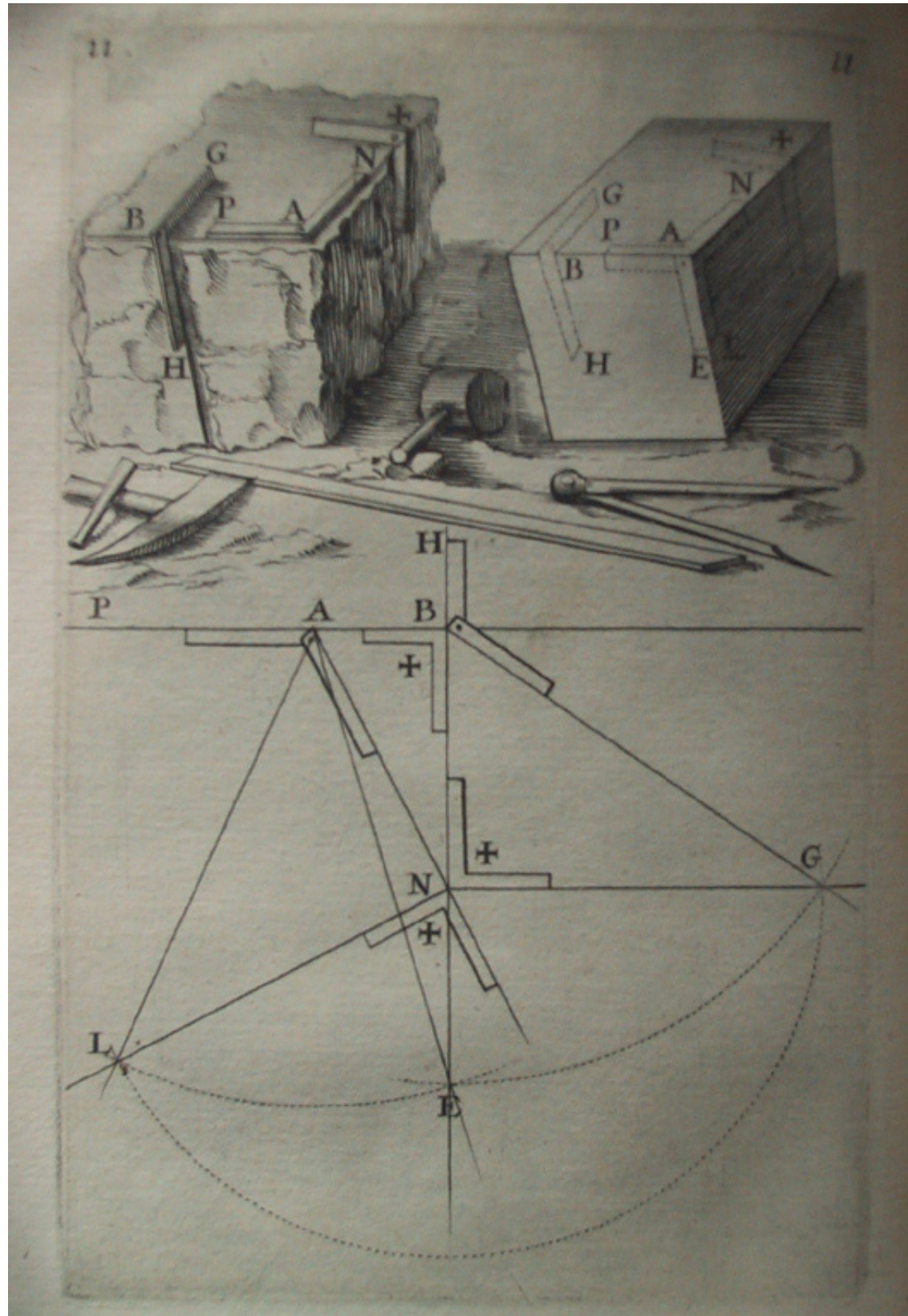
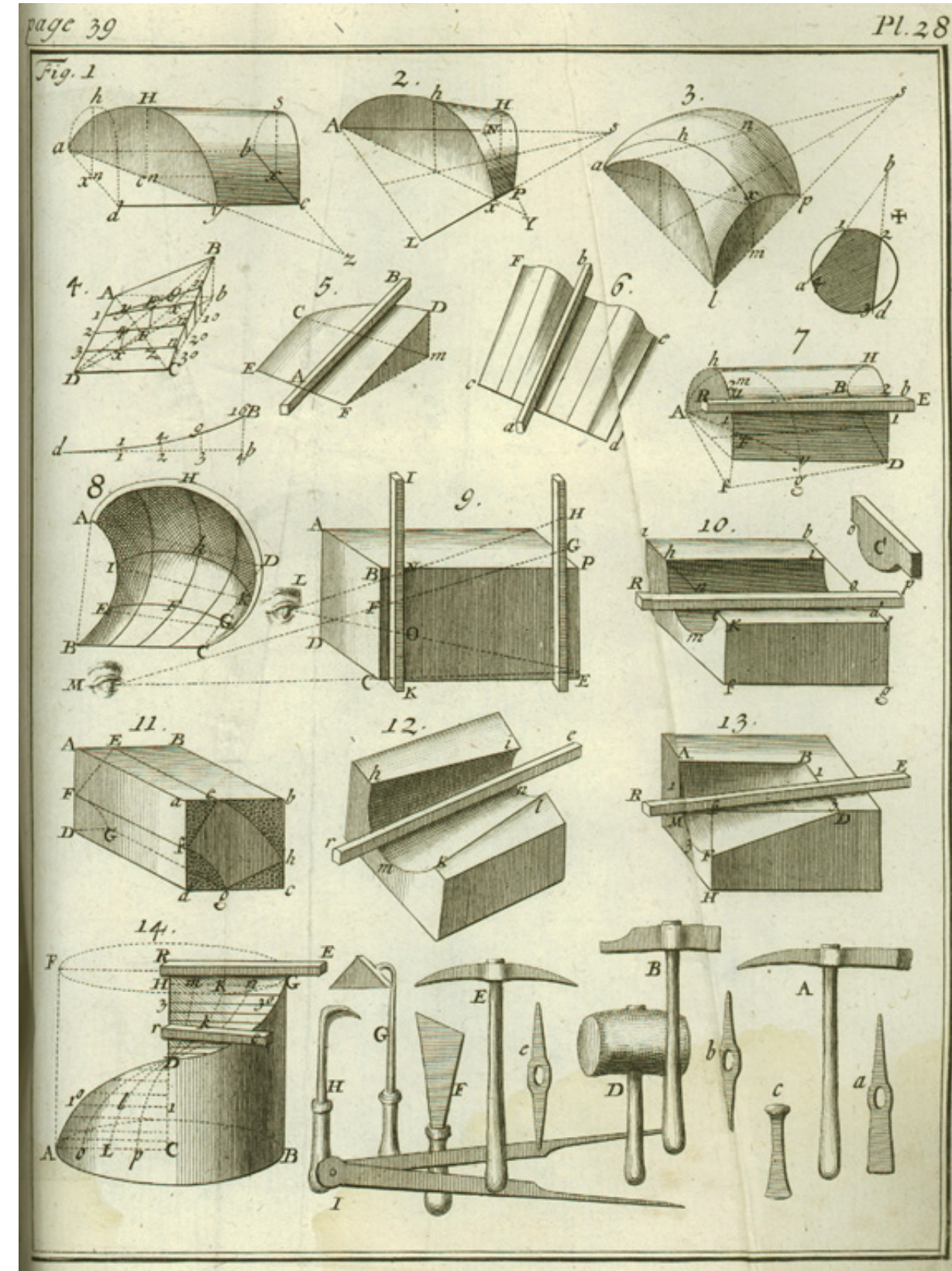


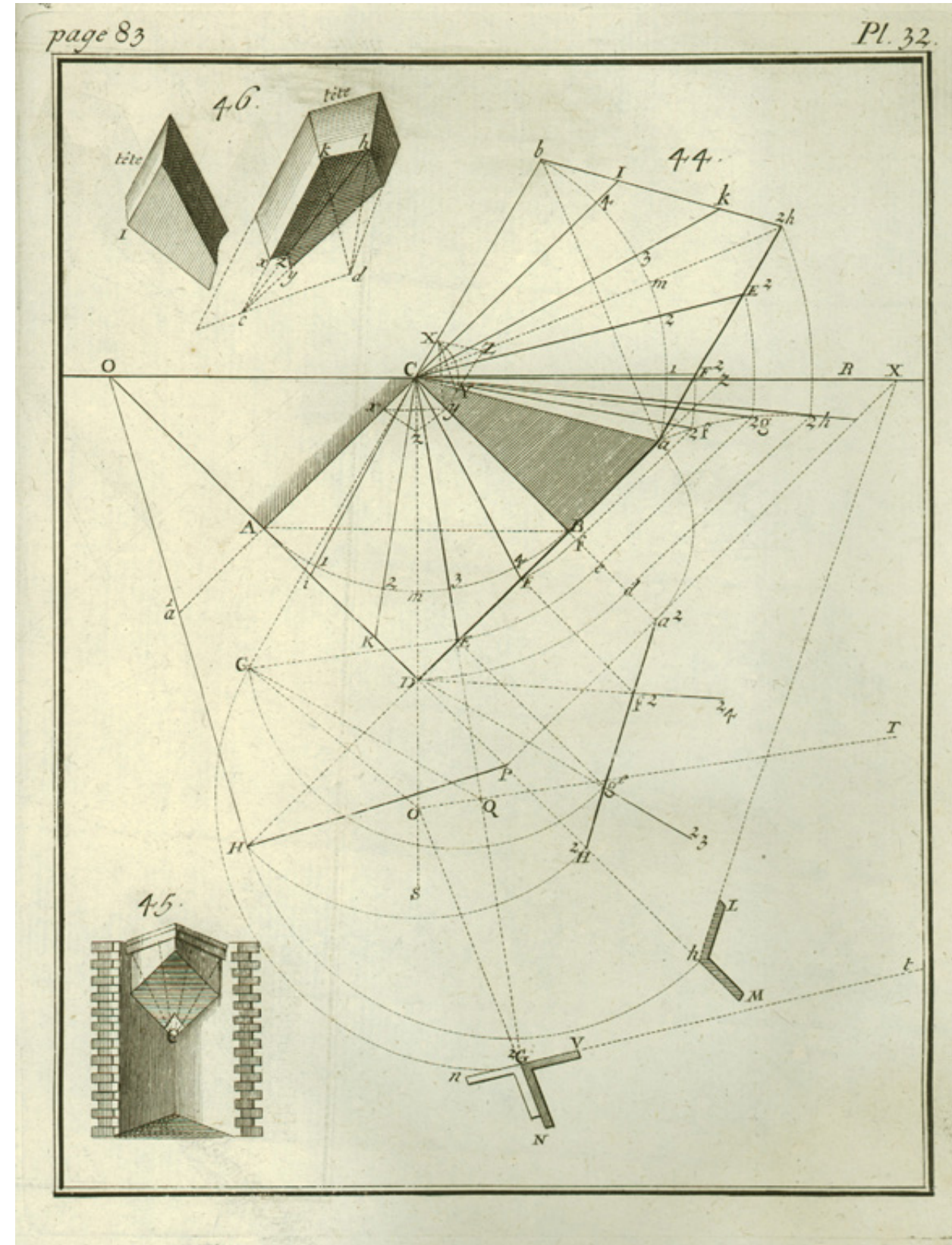
Plate 11: Illustrating the carving of a right angle.

Source: Bosse, Abraham. *La Pratique du trait à preuves de Mr Desargues Lyonnais, pour la coupe des pierres en l'architecture par A. Bosse, graveur en taille douce, en l'Isle du Palais, à la Roze rouge devant la Megisserie.*

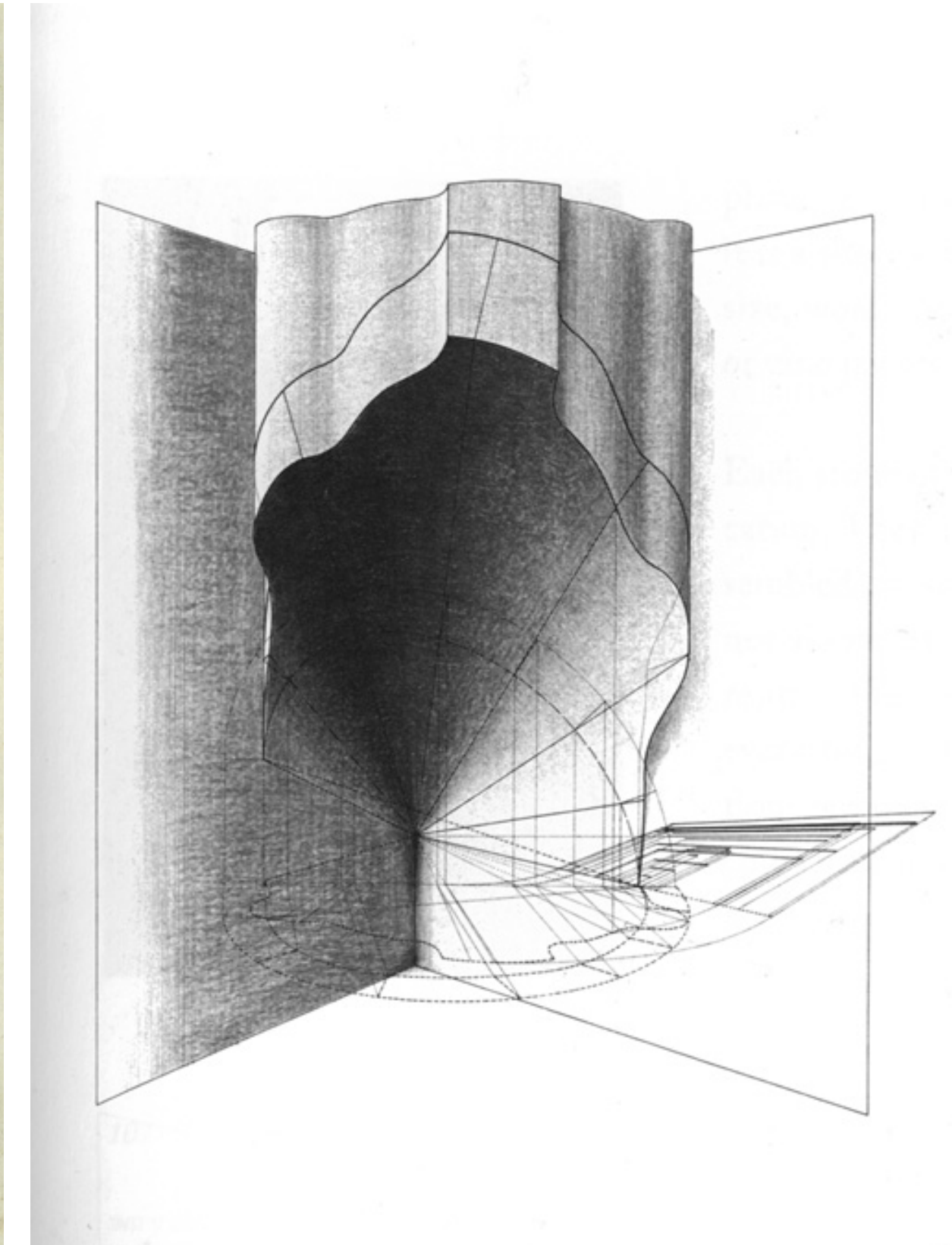
Full text available through Conservatoire national des arts et métiers, Conservatoire numérique, <http://cnum.cnam.fr>



Source: Frézier, Amédée-François. *La Théorie et la Pratique de la Coupe des Pierres et des Bois pour la Construction des Voûtes et autre Parties des Bâtimens Civils & Militaires, ou Traité de Stéréotomie à l'Usage de l'Architecture.* L.H. Guerin, 1738.



Source: Frézier, Amédée-François. *La Théorie et la Pratique de la Coupe des Pierres et des Bois pour la Construction des Voûtes et autre Parties des Bâtimens Civils & Militaires, ou Traité de Stéréotomie à l'Usage de l'Architecture.* L.H. Guerin, 1738.

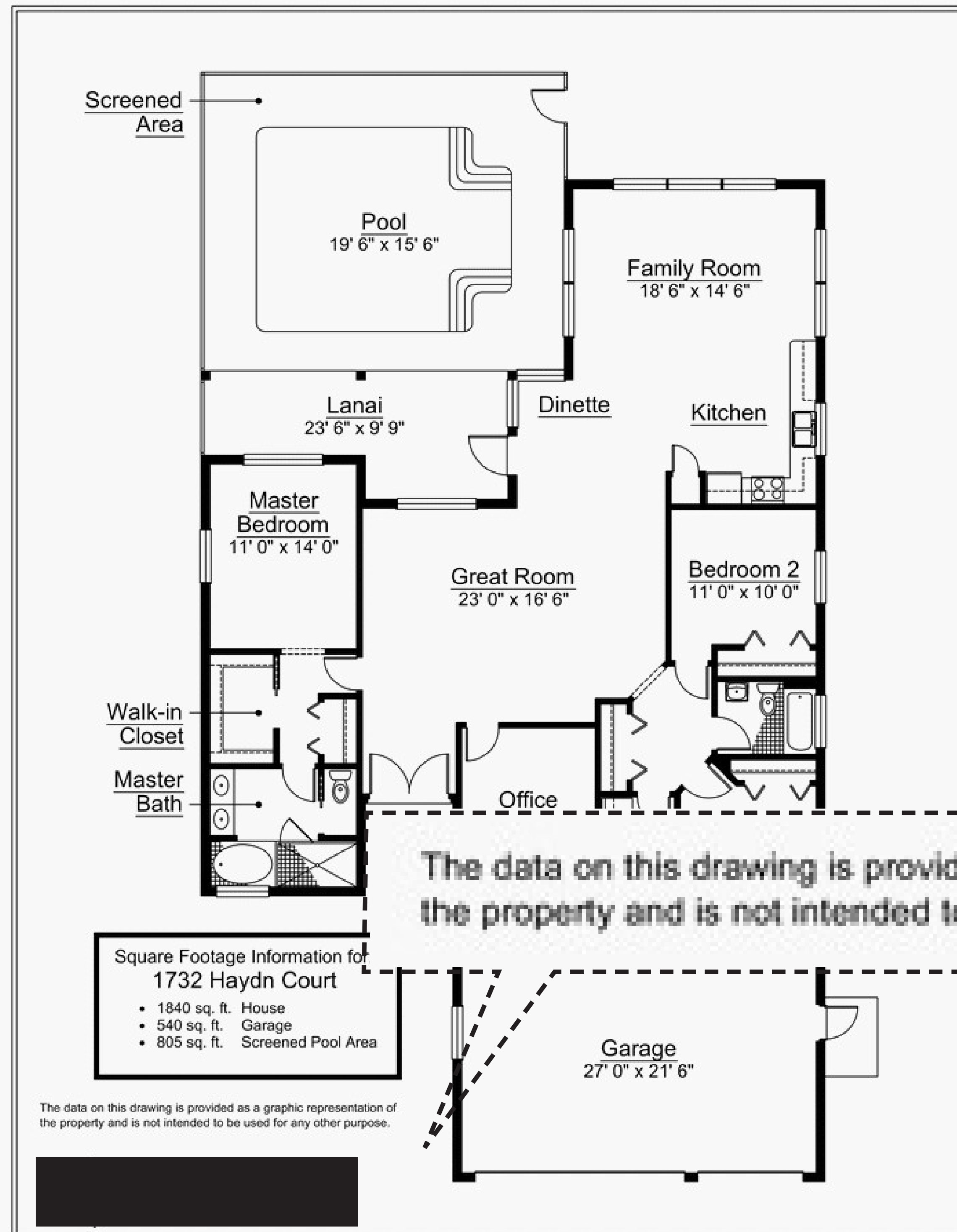


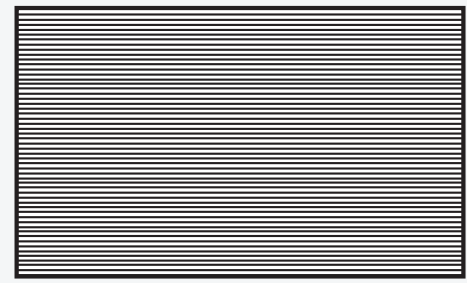
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Sacsayhuamán

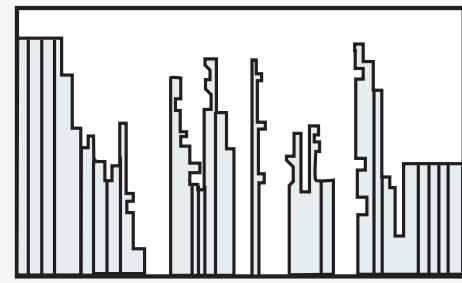
Incan
Cuzco, Peru



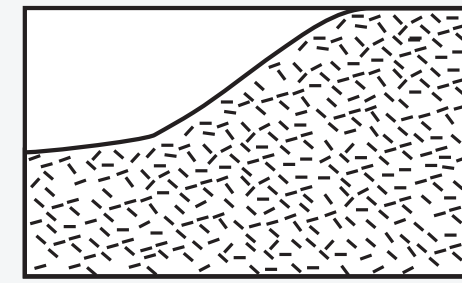




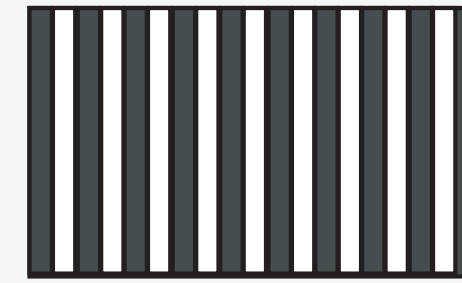
Glass, Cross Section



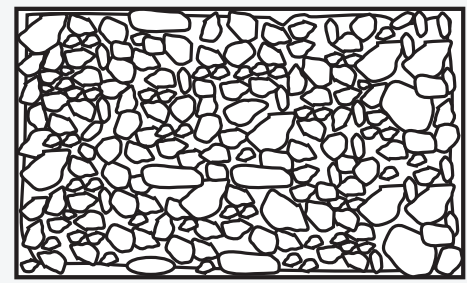
Metal



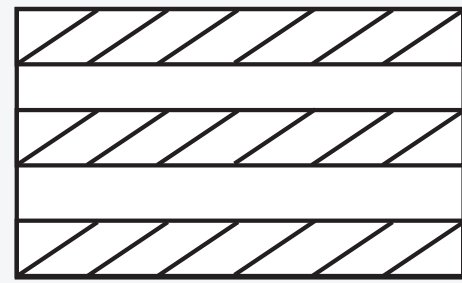
Sand



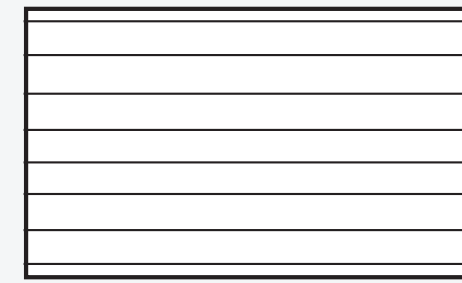
Tile, Ceramic, Structural; Facing



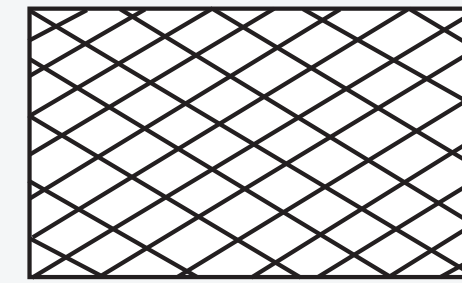
Gravel



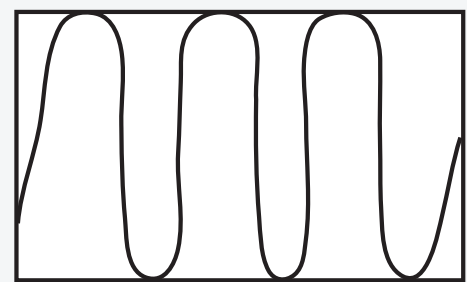
Plywood



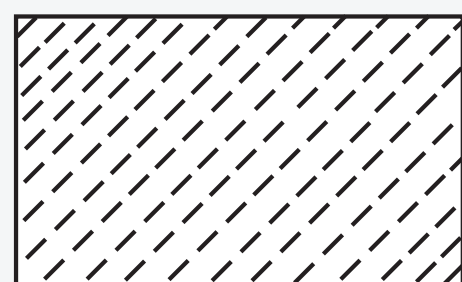
Slate



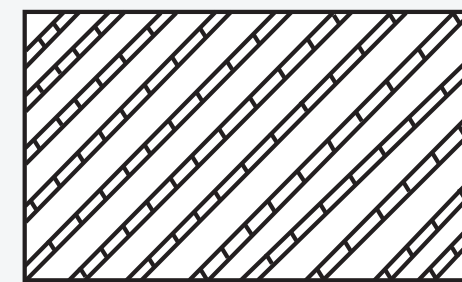
Tin



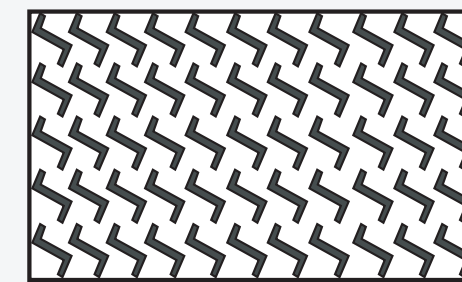
Insulation, Thermal Acoustics



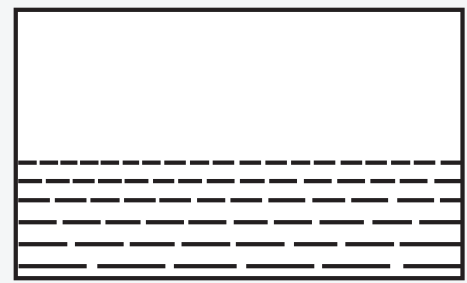
Porcelain



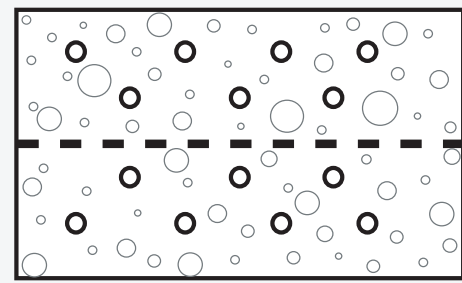
Special Alloys



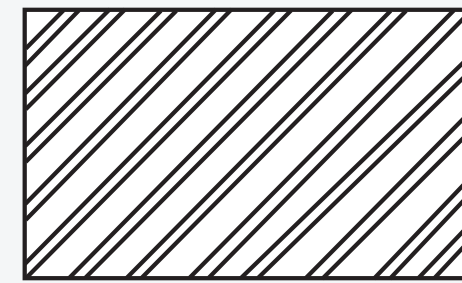
Titanium



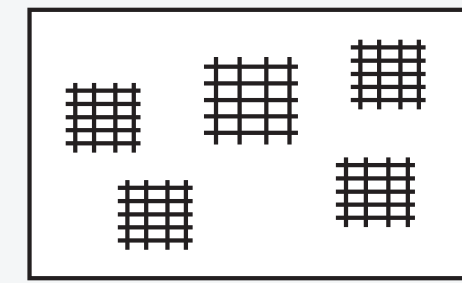
Liquids



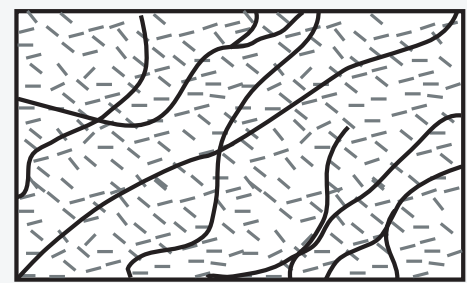
Reinforced Concrete



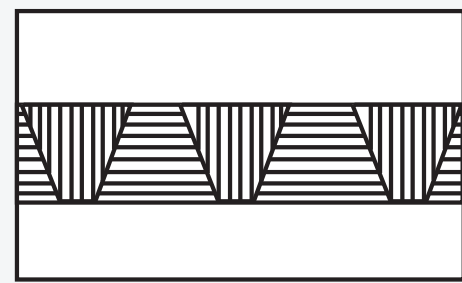
Steel And Wrought Iron



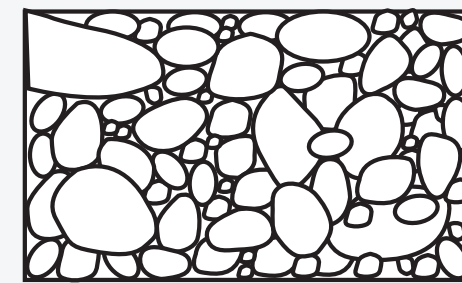
Wire Mesh



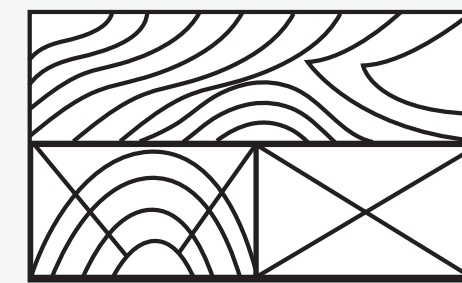
Marble



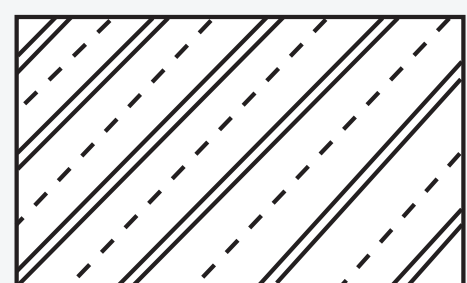
Rock



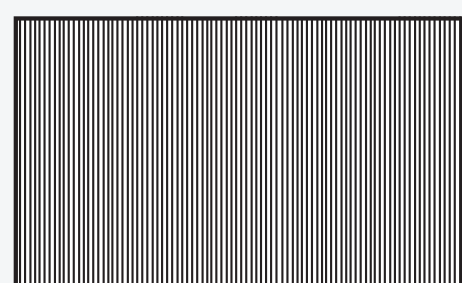
Stone



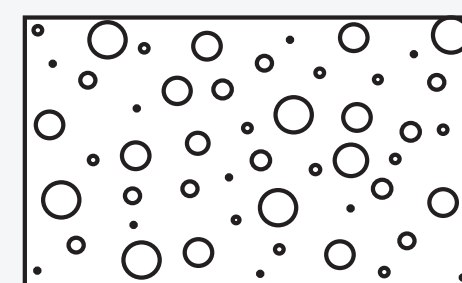
Wood With Grain; Cross Grain; Blocking



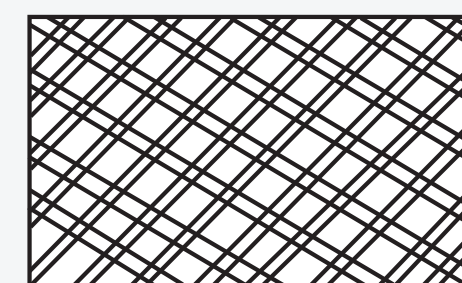
Material Fissionable



Roofing Tile

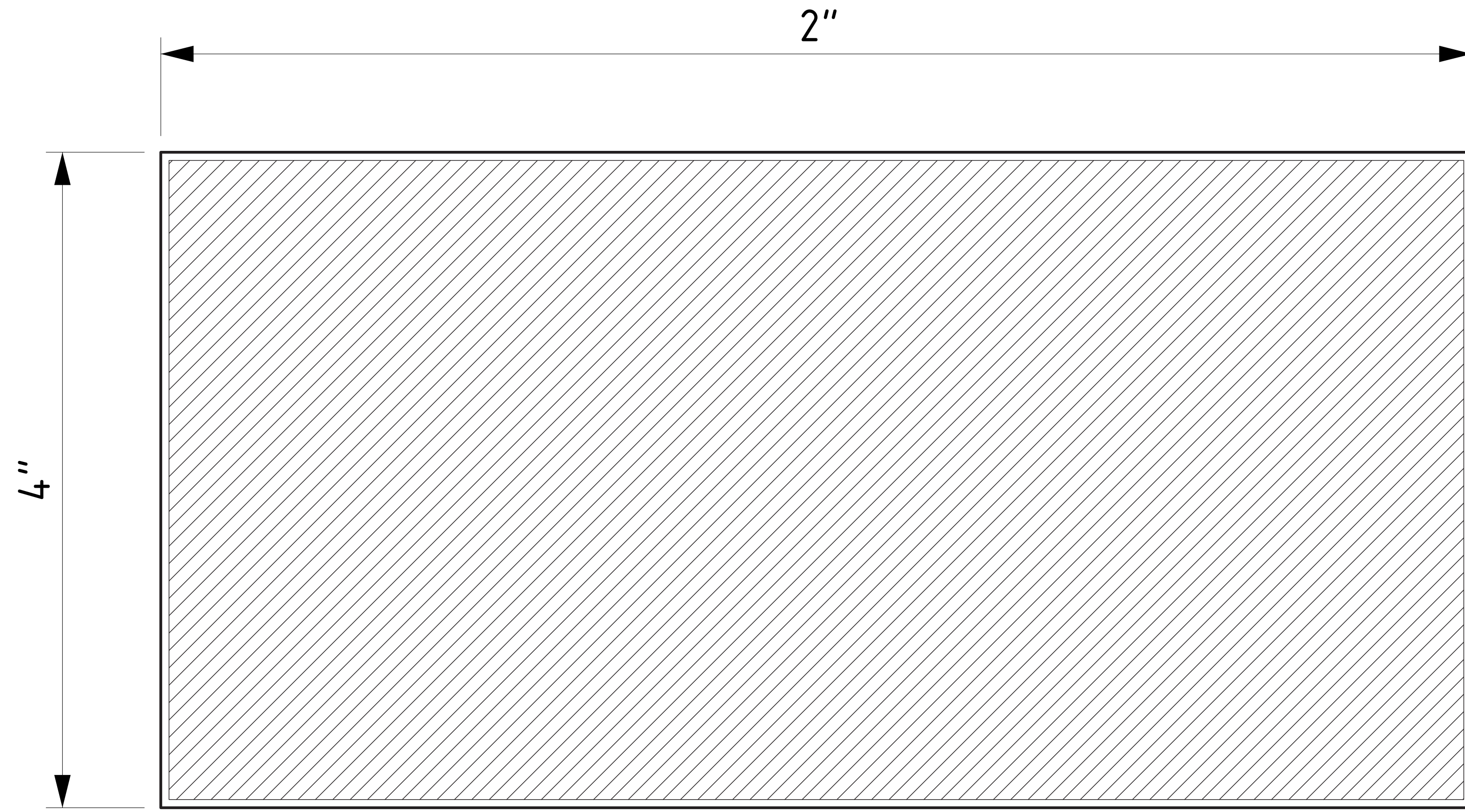


Stucco, Plaster



Zinc

Section drawing of nonstructural exterior wall removed due to copyright restrictions.
Source: Fig. 6, http://www.wbdg.org/design/env_introduction.php.

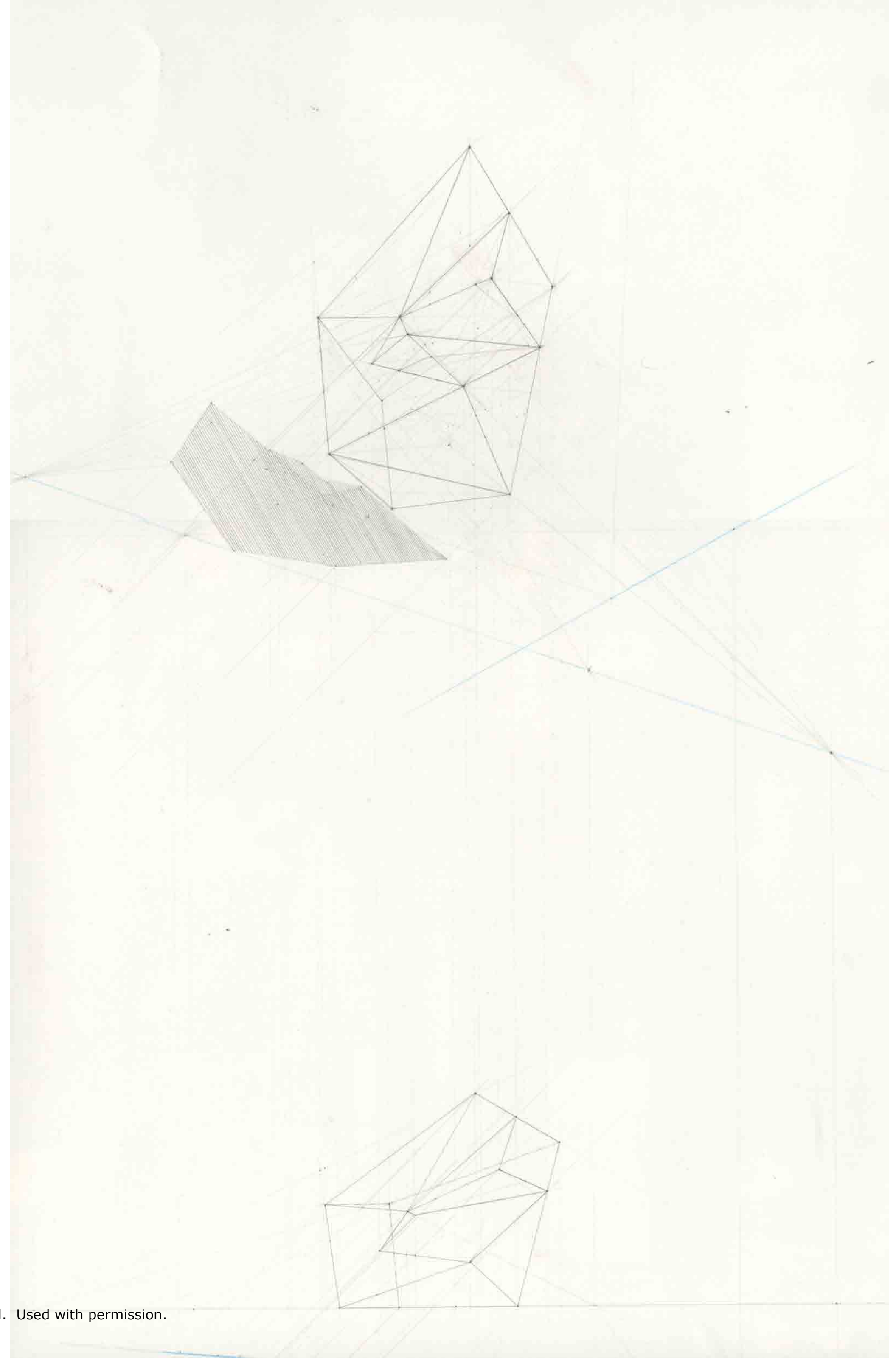
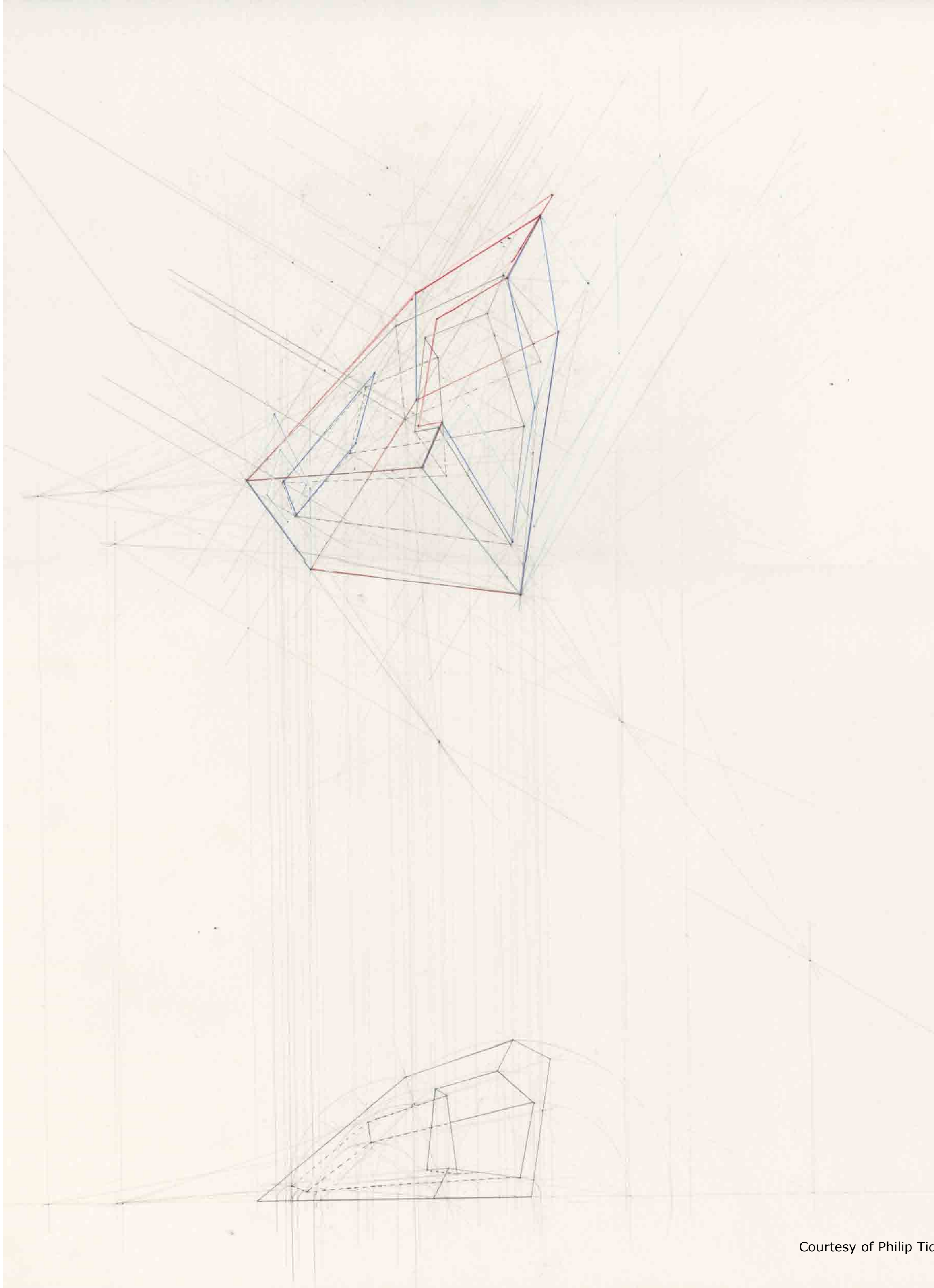


Architect

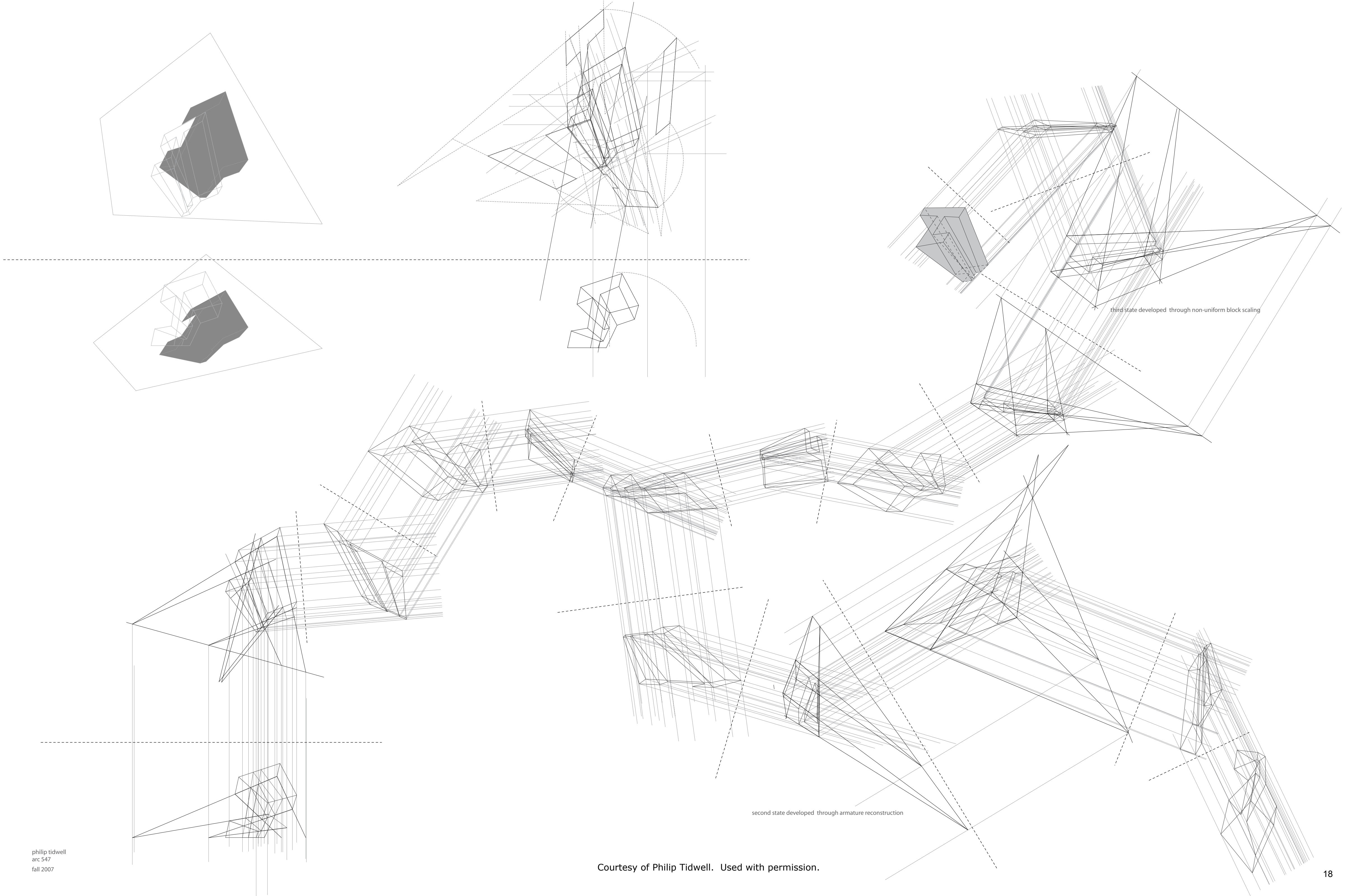
Architectural Intent

Contractor

Means + Methods of Making



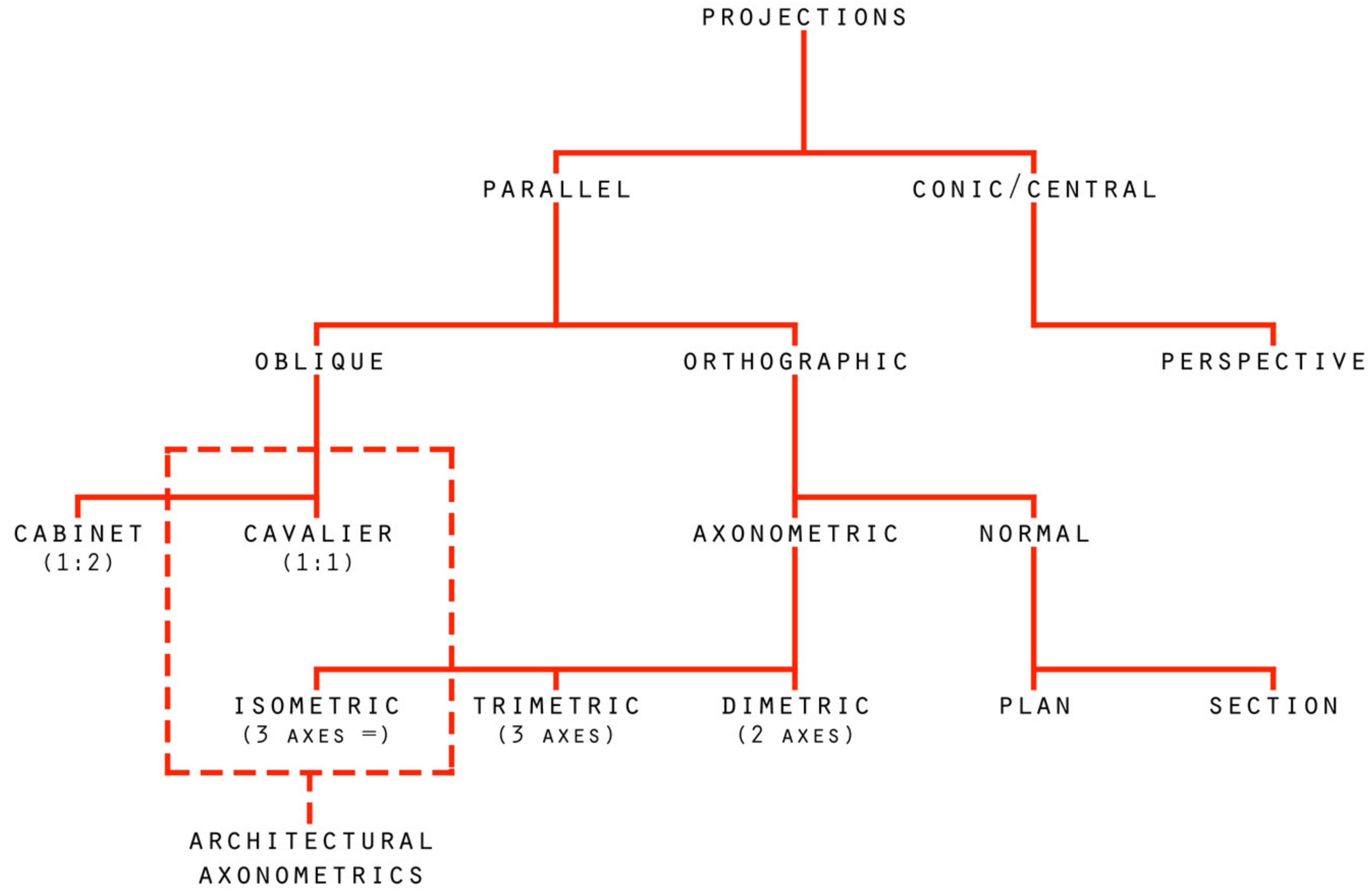
Courtesy of Philip Tidwell. Used with permission.



third state developed through non-uniform block scaling

second state developed through armature reconstruction

MATRIX OF PROJECTION TYPES





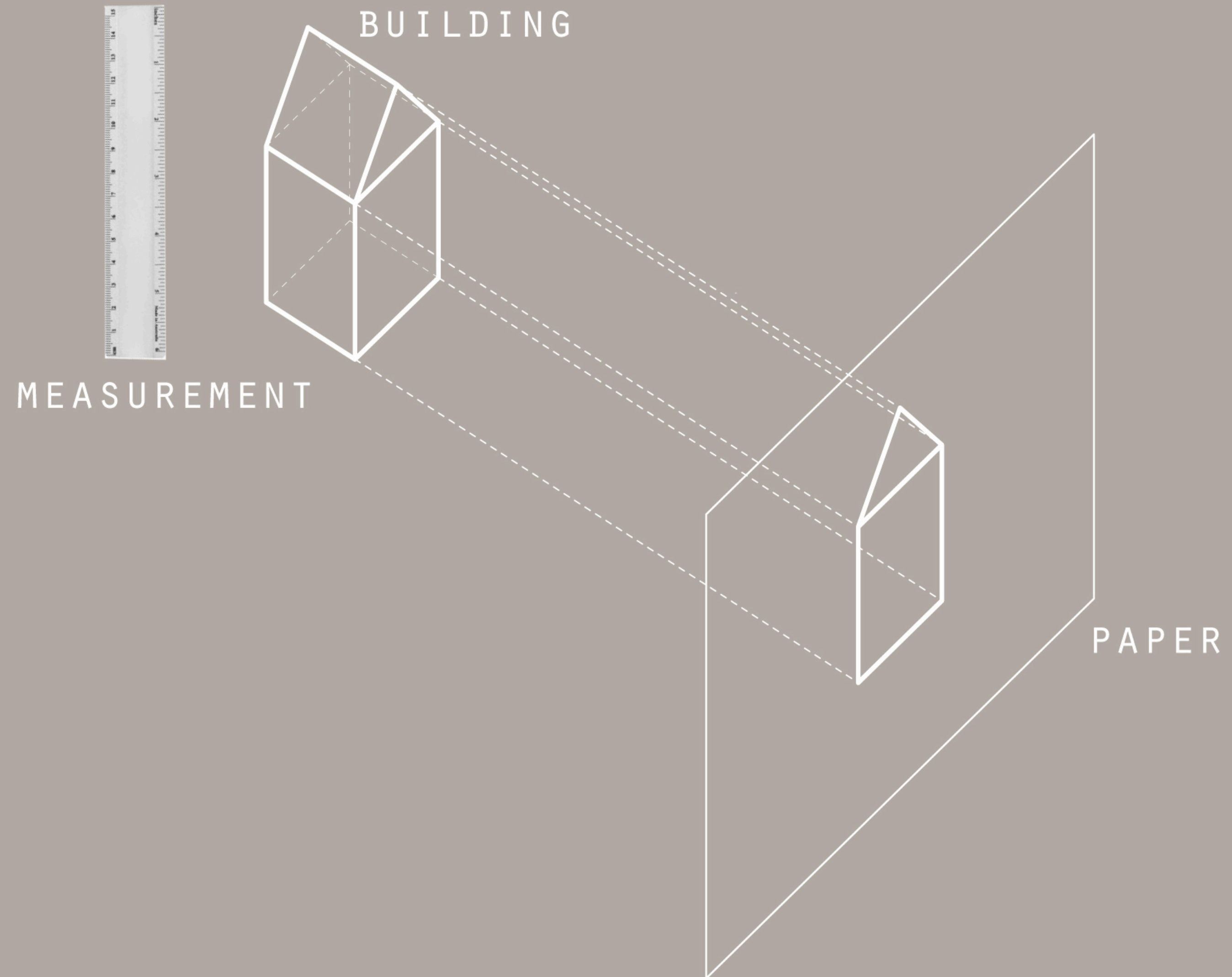
LIGHT SOURCE

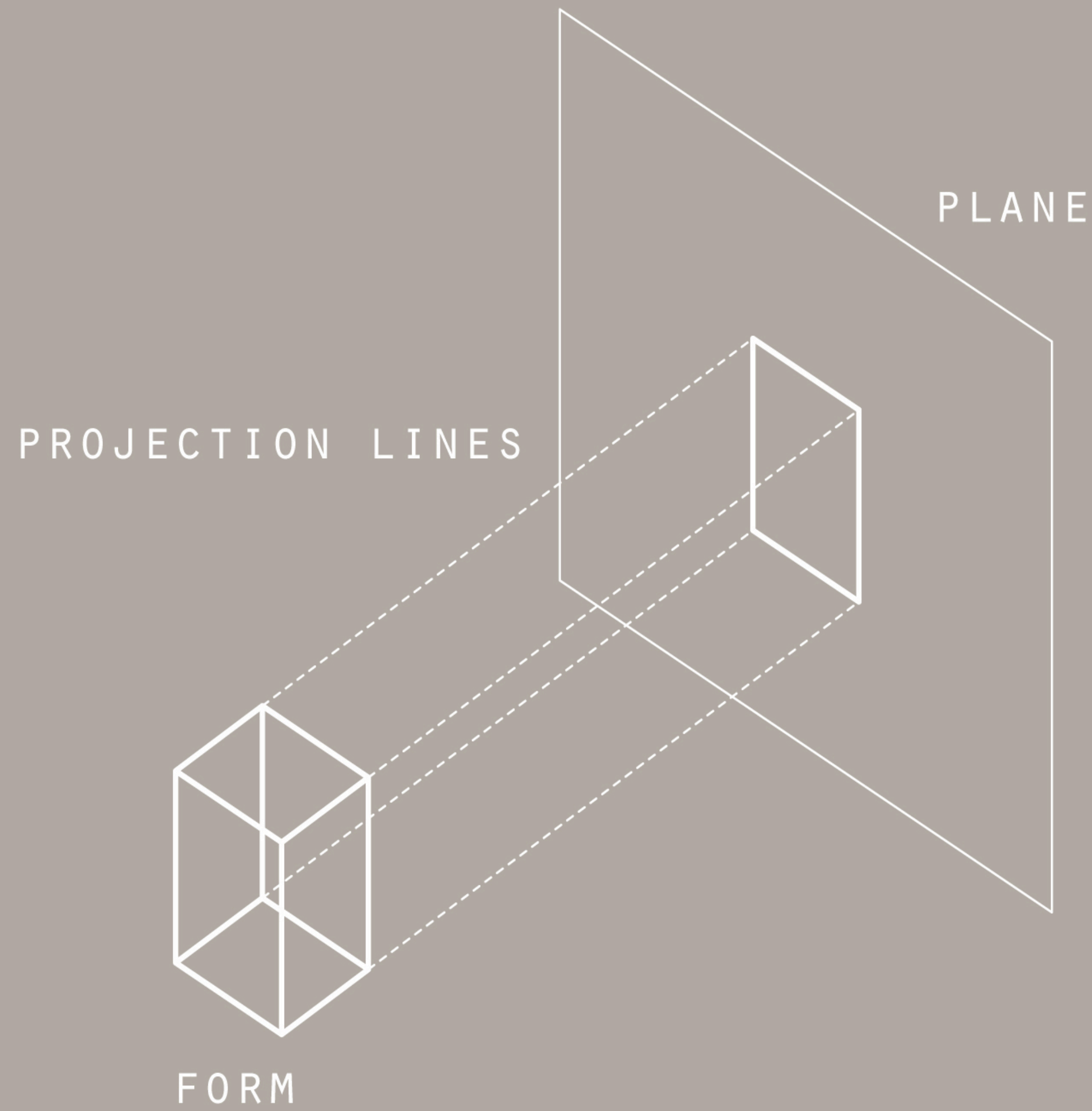


OBJECT

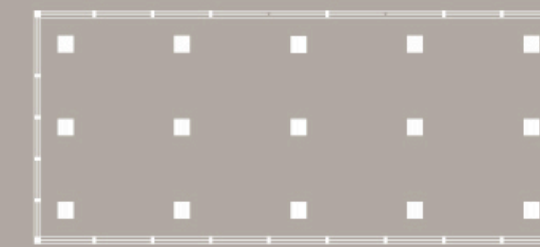


SURFACE





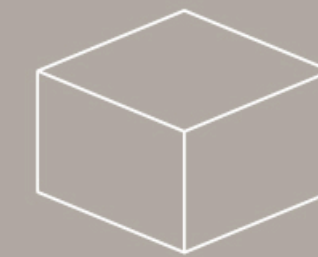
EXAMPLES:



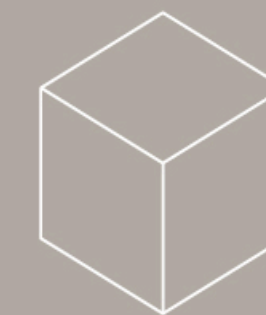
PLAN



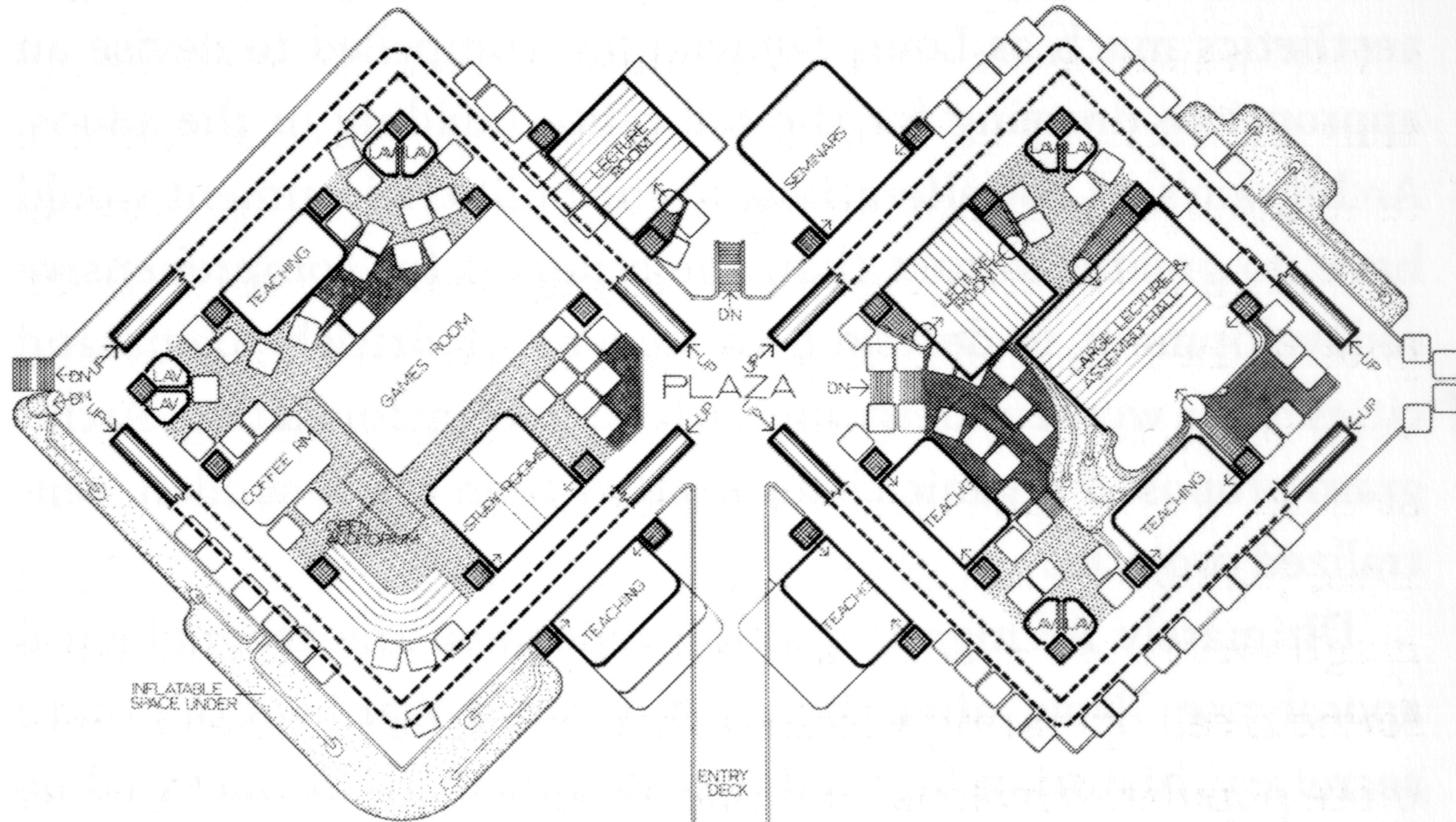
SECTION



TRIMETRIC



ISOMETRIC:
SPECIAL CASE OF
TRIMETRIC

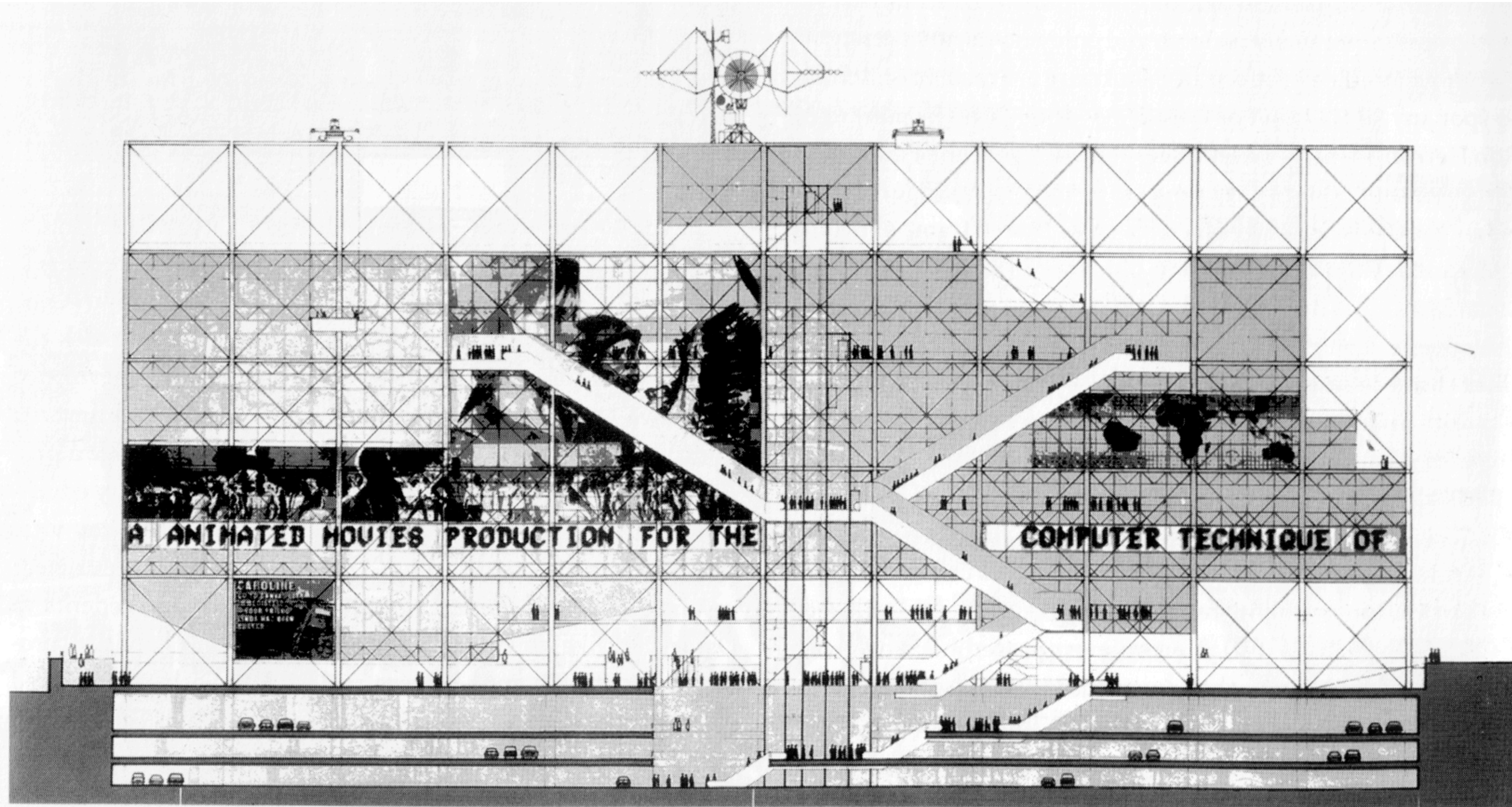


UNIVERSITY NODE (PLUG-IN/6)

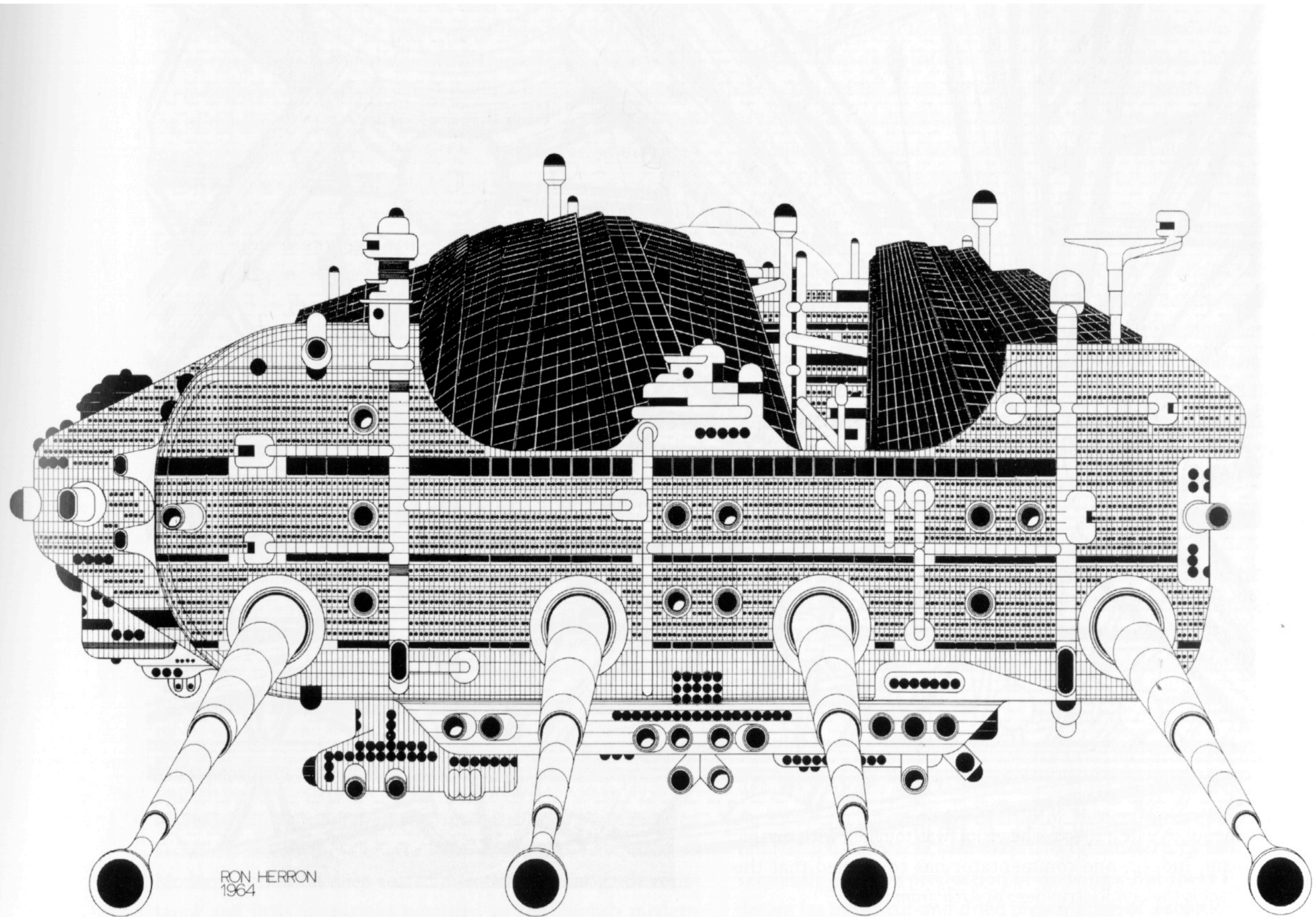
PLAN AT LEVEL 2 0 100

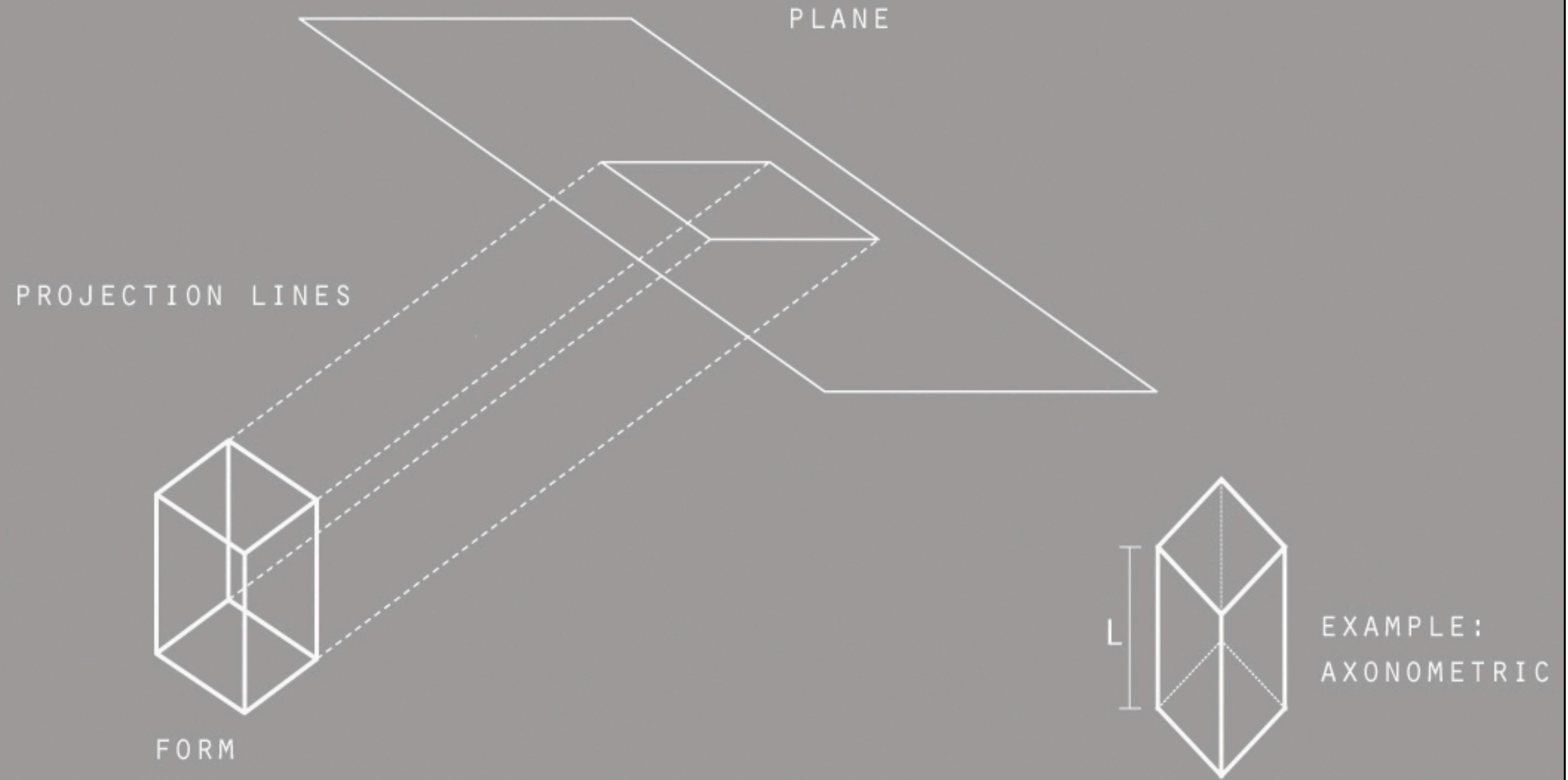
PARALLEL ORTHOGRAPHIC PROJECTION

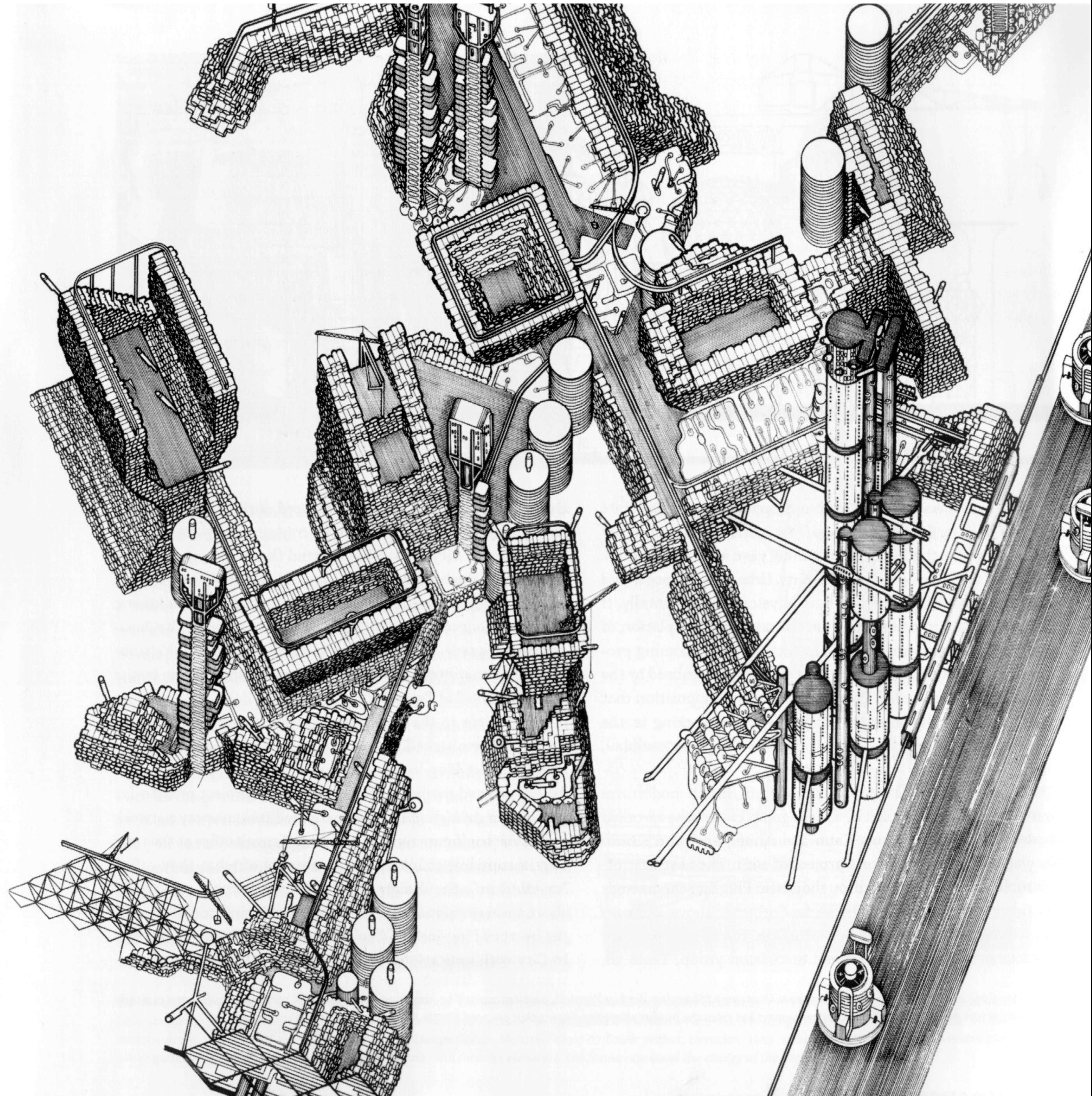
ELEVATION: POMPIDOU CENTER / ROGERS + PIANO



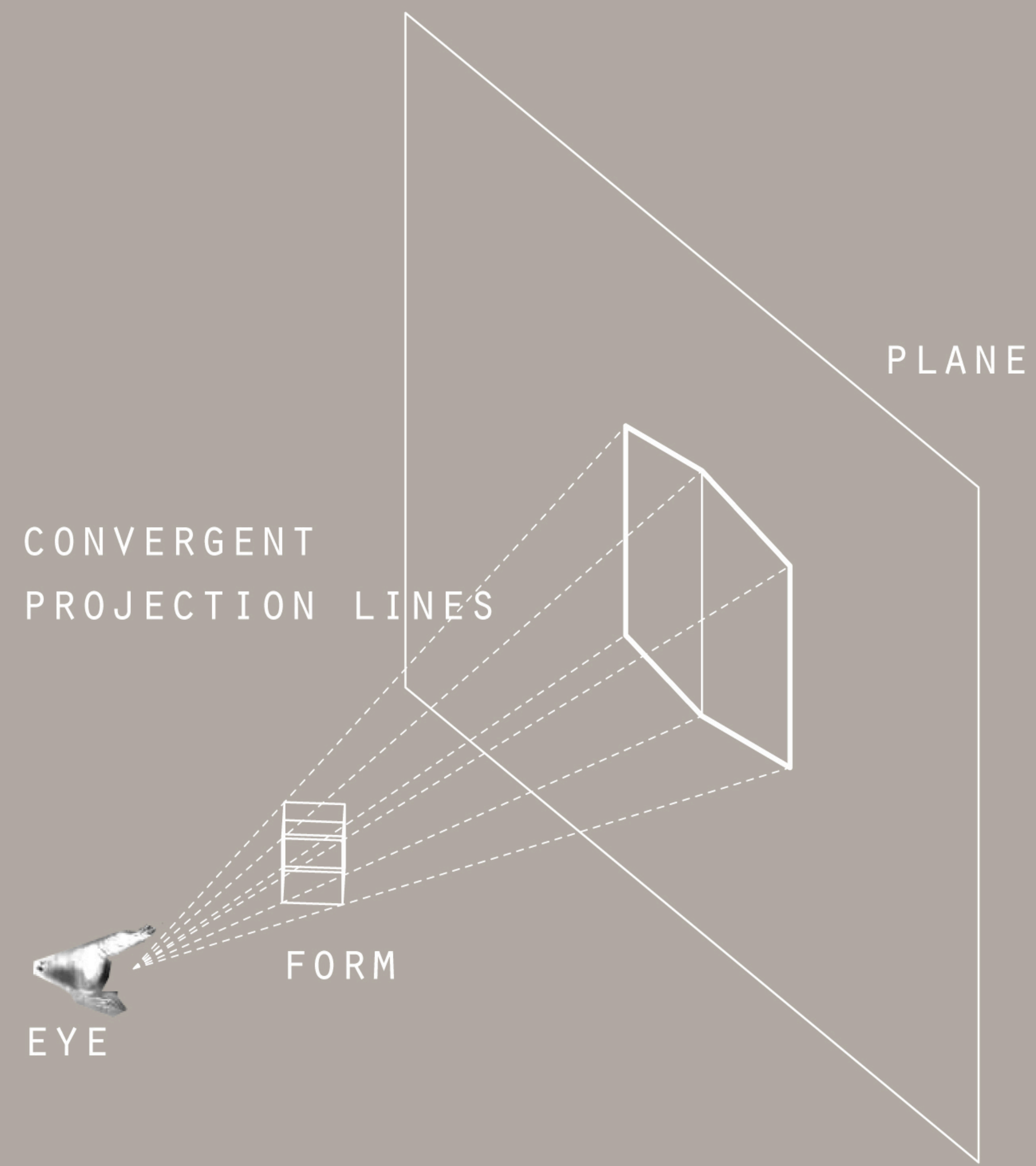
Courtesy of Richard Rogers Partnership. Used with permission.



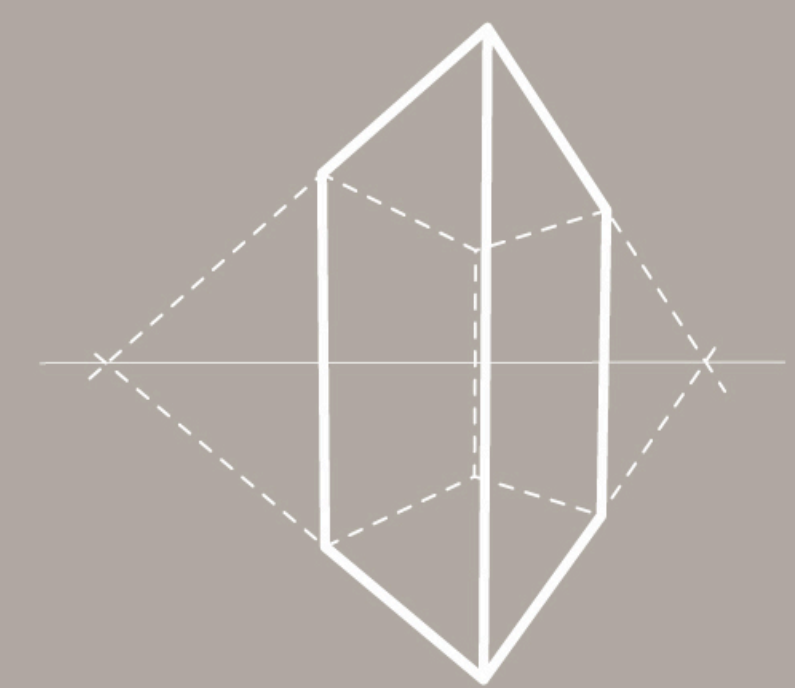




CENTRAL (CONICAL) PROJECTION



EXAMPLE:
TWO-POINT PERSPECTIVE



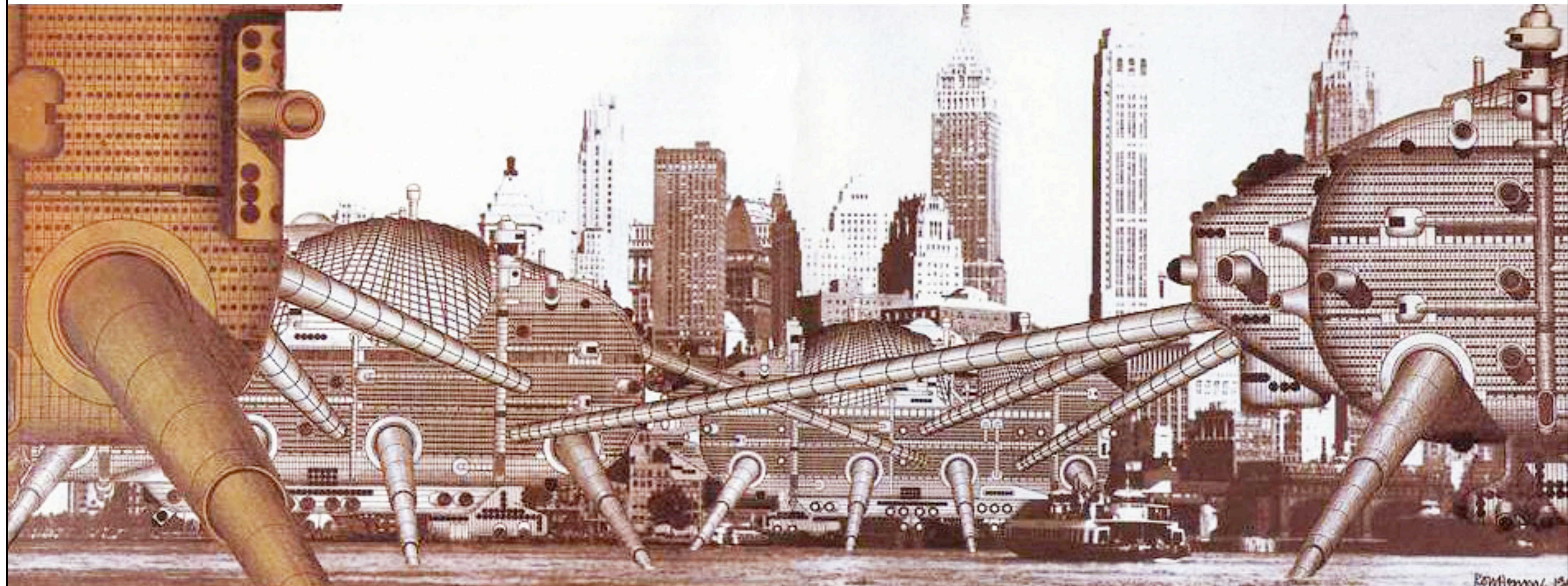
CENTRAL (CONICAL) PROJECTION

PERSPECTIVE: SUPERSURFACE-LIFE / SUPERSTUDIO

Image from *Supersurface/Life* (1972) by Superstudio removed due to copyright restrictions.
See [VVORK archive](#) for a reference image.

PERSPECTIVE: MOVING CITY / ARCHIGRAM

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Possible Resources

In Technique:

- Girard Desargue: L'Oeuvre Mathématique de Desargues
- Frank Ching: Design Drawing
- Preston Scott Cohen: Contested Symmetries
- Pottaman, Asperil, Hofer, Kilian: Architectural Geometry

In Discourse:

- Robin Evans: "Translations from Drawing to Building"
- Robin Evans: The Projective Cast
- David Leatherbarrow: Architecture is its own Discipline
- Edward Robbins: Why Architects Draw
- Dalibor Vesely: Architecture in the Age of Divided Representation

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4.105 Geometric Disciplines and Architecture Skills: Reciprocal Methodologies
Fall 2012

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