

Rudolph Schindler's Church School Lecture on 'Form Creation' (1916): A Preliminary Reading

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Abstract

The primary aim of this paper is to contribute to the task of identifying and discussing the original ideas put forward by Rudolph Schindler in his writings. This paper examines a lecture on 'Form Creation' given by Schindler in 1916, the notes for which have survived in an unpublished manuscript (the 'Church School Lectures') in the University of California, Santa Barbara Archive. Containing notes for 11 lectures, this manuscript contains Schindler's most extended and theoretical discussions on architecture. This paper offers the first transcription of the lecture, and provides a commentary that contextualises Schindler's thought at this period.

Schindler's views represent important advances on the architectural thinking developed by Frank Lloyd Wright and Adolf Loos: (1) The design thinking about form as the shape of matter and space involves a two-step process of "Form Conception" (geometric concerns) and "Form Creation" (material concerns) (2) Highlighting the role of machines and machine-based processes and then investigating their implications for the older understandings of what rooms should be. (3) A novel argument that positions the machine as something operating between meaning and technique.

The Church School Lectures

In a previous study on Rudolph Schindler's Church School Lectures, we called attention to the significance of 112 pages of handwritten notes for 11 lectures presented by Schindler at the Chicago School of Applied and Normal Art in 1916, and we offered a close reading of his lecture on decoration (Lecture No. XI).¹ In the present paper, we extend our study of his lecture notes by presenting a close reading of Schindler's lecture on "form creation" (Lecture No. X).

The lectures on decoration and on form creation share a common set of issues: space and enclosure, construction and purpose, the cultural status of the architect and the role of the machine. Many of these topics had been discussed in the writings of Gottfried Semper, Otto Wagner, Adolf Loos and Frank Lloyd Wright. Thus one of the main objects of our present study is (1) to situate Schindler's remarks in their nineteenth and twentieth-century context, and (2) to call attention to the distinctiveness of Schindler's remarks.

This distinctiveness is not only found in by comparing various architects' statements on the same set of issues, indicated by the same keywords. Rather, different architects might use a different cluster of terms to discuss a particular issue. For instance, Semper discussed enclosure in relation to material and ornament, Loos discussed it in relation to material and space, while Schindler discussed it in relation to space and texture. In what follows, our intention is to show how subtle variations in the clustering of terms indicate shifts of horizons. Thus the task of analysing Schindler's architectural discourse might avoid the pitfall of cognitivism, the pretense that thinking and the literal content of sayings are neatly aligned in a one-to-one correspondence. We hope to show how the clustering of terms, shifts of horizons, statement and implications can help in teasing out the sense of Schindler's lecture notes.

Here we would like to configure the frame of analysis in terms of an interplay between the said (clustering of terms, statements) and the unsaid (shifts of horizons and implications). The advantage of doing so is related to an insight expressed by Harry Francis Mallgrave in his analysis of Schindler's 1913 manifesto "Modern Architecture: A Program."² Mallgrave observed a shift in Schindler's thinking around 1914: the initial concerns of 'space' and 'comfort' had shifted to those of 'space-form, texture and color.'³ The implications of such a shift have not been discussed by scholars. This had given too much credence to the unity and rigidity of Schindler's thinking.⁴ By paying attention to the interplay of what Schindler says and what he leaves unsaid, we shall argue that there are two orders of silences in Schindler's lecture notes and in his general thinking in the years around 1913-1915. (1) Schindler's thinking on form creation revolves around a series of contrasts. We shall argue, however, that he would often focus on one term of discussion explicitly while implying its relationship to two other terms. Thus the conceptual clustering of terms crosses a divide between the said and the unsaid. (2) In his lectures, Schindler raised more issues than he could resolve. This could be due to the limited circumstances of the lecture presentations (time and audience), but it could also, at least in part, reflect the limitations of his own thinking at the time.⁵

If we follow the flow of ideas and their implications across the lecture, it is clear that the subtext of the lecture is Wright, Wagner and Loos. Schindler is maintaining the tradition of room enclosure. However, it is also evident that Schindler wishes to depart from this tradition through the use of the possibilities of the machine and the discovery of surface design.

Textual Structure

The manuscript for Schindler's lecture has a number of typographic elements. The lecture is handwritten on five sheets numbered consecutively and written on both sides. Pagination was recorded on the upper right of the recto pages. Each page is partitioned vertically, with the headings and subheadings on the left and the notes on the right.

On the top of the first sheet of the manuscript is a header marked 'tenth lecture'. On the upper right corner, roman numerals mark this. On the first sheet on the recto side, Schindler gives the title of the lecture "Form Creation."

The lecture consists of 13 headings. Each heading has a distinctive title. For ease of reference, we have added roman numerals in square brackets and the end of each section in our transcription. In accordance with the rules of transliteration, words that were originally abbreviated in the notes have written out in full. All abbreviations have therefore been expanded, with additions underlined.

On first inspection the manuscript raises a series of issues as if they were all of equivalent status. Upon closer analysis, however, the manuscript has implicitly two major sections. (1) Schindler initially addresses the spatial interplay between form and materials. (2) In the second section of the manuscript, he outlines his views on how 'the room' should be conceptualised.

In our reading, we have broken these two sections into four parts in order to maintain the flow of ideas and their implications. It is clear that the issues of colour, structure facing and form discussed by Schindler were issues first announced by Frank Lloyd Wright and Adolf Loos, and that Schindler is giving them a new twist. However, not all the issues raised by Wright and Loos are being modified, and so we endeavour within the commentary to show when and how this is happening and clarify this within Schindler's text.

DOORS GOLDEN/
THRESHOLD BRAZEN/
DOORPOSTS] /
LINTEL] SILVER/
WALLS BRACEN/
FRIEZE BLUE! /

APPRECIATION OF COSTLY & SHINY METALS /
FRIEZE — BLUE — OTHER MATERIALS ONLY COLOR/
CONSIDERATION/

EXPLAINS PLASTERING MARBLE TEMPLES/
 COLOURING MARBLE TEMPLES/

NOTE IN MARGIN: ALL CLASSIC ARCHITECTURE = DECORATIF [sic] — /
 FACINGS (STRUCTURAL MATERIAL /
 DISSAPPEARS — DEMATERIALISED)/
 FACINGS APPLIED (INFLUENCE /
 OF USE OF TEXTILES?)/
 ADOBE ETC. /
 (SEE SEMPER)/

MODERN TIMES/
 HIGH APPRECIATION OF MATERIALS /

NOTE IN MARGIN: POSSIBLY
 JAPAN INFLUENCE
 IS CONSEQUENCE OF GOOD
 CRAFTMANSHIP — ONLY AS
 PART OF CRAFTMANSHIP CONNECTION WITH ART

NOT FOR DURABILITY & STRENGTH ONLY/
MARBLE — SICK — PASTED UP CAREFULLY/
FOR SAKE OF BEAUTY./

ADDITIONAL NOTE IN MARGIN:
 MODERN ARCHITECTURE /
 NO FACINGS/
 DEVELOPMENT/
 SPACE BUILDER NOT /

"Form Creation" is not an abstract consideration, idea or principle of form. According to Schindler, the creation of form needs to consider materials. In Lecture IX of the Church Street Lectures, entitled "Form Conceptions," Schindler had defined form as the 'shape of matter or space'. Forms in nature were described as both 'organic' and 'anorganic' and could not be invented by the mind, only imitated, while man's conceptions were geometric (although he does not specify what kind). Schindler argued that "Form Conceptions," had to take into consideration issues of materiality, as material execution 'has an influence' on 'art-form' and should not upset its geometric conception. Thus, Schindler's approach to form is extremely specific and not at all abstract. In Lecture X, "Form Creation," Schindler will outline how geometric "Form Conceptions" conceived mentally would be impressed upon 'matter or space.'

After positioning the materials in relation to form, Schindler argues that not all forms can be executed in materials and that each material has a disposition towards certain forms. It is the 'artist' who can intensify the interrelationship between form and material.

The relation of materials to form should be viewed neither as an aesthetic consideration nor in terms of 'truth to materials'. On the contrary, Schindler argues that materials are to be considered in relation to space, in which the architect feels the material possibilities. 'Feeling the material' was not a new idea, as Adolf Loos had previously argued for its importance in "The Principle of Cladding" (1898).⁷ Schindler uses relatively few technical terms in his lecture notes but, as will become clear, he departs from Loos's approach through a reconsideration of surface design.

Schindler then provides a short history in which he contrasts a classical and modern use of materials. Schindler instances the description of the Palace of Alcinous to the time of Homer — where materials were appreciated for their function as a display of wealth and for their lustre, but consideration was limited to their colour. In order to advance the claim on the decorative use of facings within the classical, Schindler additionally refers to Gottfried Semper's discussions of the textile enclosure in which a hidden secondary support is secondary to the primary facing.

In contrast, Schindler posits a shift during "Modern times."

Speculating both that the craftsman's use of materials and the influence of Japan had brought about a high appreciation of materials, he suggests that the modern concern is one of 'space building' and not that of decoration.

Schindler's use of key terms has a specificity rooted in nineteenth-century German and Viennese discussions on the interplay between material forces and architectural form.⁸ Space building is not objective; space is sensation. Here, Schindler is refusing a Kantian understanding of space.⁹

IMITATIONS CARING FOR MATERIALS BRINGS UP MANY/
IMITATION/
VERY ANTAGONISM AG. [??] IMITATIONS ON/
OTHER SIDE/
IMITATIONS NOT POSSIBLE
ALWAYS SURFACE EFFECT
~~STRUCTURE~~ TEXTURE OF MATERIAL CAN BE FELT
THROUGH/
SURFACE/

[Sheet 2, recto]

X₂

EVERY MATERIAL HAS EFFECT ON FEELING INSTINCT/
WHICH CAN NOT BE IMITATED/

IMITATIONS SOMETIMES TRIED THROUGH „FACING”/
USING LESS COSTLY MATERIAL INSIDE/

FACINGS FACING ALWAYS WRONG IF IT DOES NOT /
SHOW AS SUCH/
DECEIVING HAS NO PLACE ANYWHERE [sic] /
NOT IN ART EITHER/
TAKING FORM AS THE MATTER OF FACT /
NOT AS MEANS FOR EXPRESSION /
OR IMPRESSION /
IT HAS TO FOLLOW ITS INNER LAWS /

AND WILL ALWAYS SHOW ITS CONCEPTION /
& MAKESHIFT /

THEREFORE WE CAN TALK ABOUT A FEW /
PRINCIPLES FOR FACING /

PRINCIPLES

1) THE MATERIAL FOR FACING MUST /
BE DIFFERENT IN TEXTURE/
FROM THE SUPPORTING ONE/
WILL GENERALLY BE THE FINER /
SUBTLER [sic] COSTLIER [sic] MATERIAL.

2) THE FACING MATERIAL MUST HAVE ITS /
OWN FORM IN SPITE /
OF SHOWING ITS CHARACTER /
OF FACING /

[Sheet 2, verso]

EXAMPLE:

IF YOU FACE A BRICK FLOOR OR WALL /
OR ANY OTHER FLOOR OR WALL /
WITH CARPET OR WALLPAPER /
THIS CARPET SHALL NEVER /
HAVE THE LINES OF BRICKWORK /
ON IT./

OR IF YOU PAINT WOOD/
IT GETS TO BE A WORK /
OF PAINTING CRAFTSMENSHIP/
THE FORMS SHALL BE SUCH TO FIT /
THE TECHNIC/

OF PAINTING — NO WOODWORK /
& THE PAINT SHALL NEVER IMITATE /
WOOD./

THE FACED MATERIAL IS ONLY SUPPORT/
NOT FORM GIVING/

CLASSIC ART: ONE FACING ON TOP OF OTHER — /
WALL + PLASTER + GOLD + ENAMEL [??] /
LATER — GOLD PAINTED TO IMITATE CHEAPER /
MATERIAL/
TEPPICH = RAUMABSCHLUSS (NICHT MAUER)/
DACH AUF SÄULEN (NICHT APF, MAUER)/¹⁰
ROMAN — RENAISSANCE!!/

NOTE IN MARGIN: SEE SEMPER SEE XI ₅

Continuing with the contrast between the classical and the modern, Schindler's discussion turns upon the surface at a time in which material imitations and surrogates dominated through industrialisation. The caring for materials, linked to an earlier context of homemaking within the domestic interior,¹¹ is interpreted as one of surface effect, while Schindler advances the surface texture of materials as it can be felt.¹²

According to Schindler, a material's surface texture produces tactile impressions that cannot be 'imitated' through material surrogates and imitations. It is as if the feelings themselves are within the material itself. Further, the use and production of material imitations had made it necessary for Schindler to develop two key principles. Here, Schindler followed Loos, who had also perceived the necessity of developing a principle of cladding.¹³ Schindler's contribution to the discussion on cladding and the removal of ornament is twofold.¹⁴ First, Schindler draws attention to a material's texture, insisting that texture of the facing must be distinct from its supporting structure (Schindler suggests that the facing is usually finer and more expensive material than the support) and second, that the facing material must be considered independently from its backing. Both insights extend Loos's argument for structural clarification.

Schindler's examples here and later in the lecture are more important than might be generally realized, because he has to raise so many issues. The examples suggest his thought but do not express it thoroughly. He is exploring, not presenting a fully worked-out body of theory. The importance of Schindler's examples is that he is thinking about materials in terms of techniques in relation to space building and not in terms of a look or an aesthetic. Techniques bring out the texture. Therefore facings should not resemble the supporting brickwork, nor a painted surface the timber backing.

Later on in this lecture, Schindler will reveal the impulses that drove the shift towards texture and form. In the meantime, it is worth noting the importance of 1) the machine, new manufacturing processes and materials, and 2) Schindler's long held desire to work for Wright. Furthermore, Schindler's observations (as Ákos Morávanszky has observed) must be seen in a particular context:¹⁵ discussion of ornament and cladding among Wagner's students had for some time been in crisis, prompting a range of different responses.

[Sheet 3, recto]

X₃

QUALITY OF MATERIALS THE FORM GIVING QUALITY OF
MATERIALS/
IS THE TEXTURE/
WHAT IS MATERIAL — /
WHAT IS DIFFERENCE OF
APPRECIATION/
OF MATERIAL OR COLOR LIKE FORMER/
TIMES/

TEXTURE & COLOR ARE DIFFERENT THINGS/

COLOR IS AN EFFECT ON „EYE”/
IS DEPENDING FROM LIGHT/
IS SURFACE APPEARANCE/

TEXTURE & COLOR TEXTURE IS FORM/
ARCHITECTURE ART OF SPACE = ART OF FORM/
STRANGE TO COLOR/
NEAR RELATION TO TEXTURE/
CAN BE FELT LIKE FORM = FORM
COLOR — TIMED — LIGHT INFLUENCE—

EMOTIONAL/

TEXTUR[E] — ETERNAL = MONUMENTAL/
COLOR NOT MONUMENTAL/
THEREFORE MONUMENTAL BUILDING — MATERIAL/
IN NATURAL COLORS = TEXTURE/
COLORING OF MATERIALS ONLY POSSIBLE ON THE /
TEMPORARY PARTS/

CAN COLOR — CLOTH/
MAY STAIN — WOOD/
NEVER TOUCH — STONE/

[Sheet 3, verso]

COLOR USED IN FACINGS FREELY/
PAINT IN ALL COLORS/
DO NOT USE COLOR AT MATERIALS OF VALUE/
NOT NECESSARY/
NATUR[E] PROVIDES MARBLE ALL COLORS/
WOOD MANY COLORS/
WOOL FEW COLORS TO BE/
FREELY COLORED/

TREATING OF MATERIALS MODERN METHODS/
TECHNIC/

MACHINES FOR QUALITY/
MACHINES MAKING MATERIALS/
HAVE OWN CHARAKTER [sic] —
MOSTLY PLAIN/
SMOOTH/

STRAIGHT UNIFORM LINES/
GLASS— /

NATURAL MATERIAL ALL SIGNS OF ERUPTIV[E] BIRTH/
MARBLES/

TEXTURE & FORM

INFLUENCE OF TEXTURE
COARSE — LARGE FORMS STONE/
FINE — SMALL FORMS METAL/
SHINY POLISH — SMOOTH ROUND WOOD/
NATURAL GRAIN — PLAIN MARBLE/
PLAIN — RICHER FORMS/

MACHIN[E] MADE MATERIALS = PLAIN TEXTURE BUT!
SIMPLE FORMS/
MACHIN[E] FORMS ALWAYS SIMPLE — REPETITION/
WOULD MAKE ELABORATE FORM TAST[E]LESS/
CHARACTER OF MACHINE — PLAIN!

NOTE IN MARGIN:	BRICK =	UNIFORM QUIET./
	STONE =	<u>UNIFORM QUIET/</u> PANNELS SHALLOW TO/ KEEP STRENGTH, SURFACE/
	WOOD =	PANNELING./

TECHNIC :

WILL BRING OUT THIS QUALITIES/
MAY BE ABLE TO OVERCOME THEM/
BUT INSTINCT HAS TO BE FOLLOWED/
SHALL NOT GIVE FORM WHICH CAN /
BE DONE, BUT ONE/
WHICH BRINGS ESSENTIAL /
QUALITIES OF MATERIALS OUT./

EXAMPLE: SKY SCRAPERS/
SKELETON BUILDING./
SEE DURING CONSTRUCTION — FINE/
LATER SKELETON CANNOT BE SEEN/
HUMAN BODY — BONES/
SKY SCRAPER LOOKS LIKE BRICK BUILDING./

FORMS OF ROOFS:

SMALL UNITS SHINGLES ETC./
STEEP ROOF/
LARGE UNITS SHEETMETAL/
PAPER = HIDE/
FLAT ROOF/
ROUND ROOF/

In this section of the document, Schindler raises the problem of the machine in relation to materials. The machine had previously been discussed by Wright in 'The Architect and the Machine (1894), 'The Art and Craft of the Machine' (1901) and 'In the Cause of Architecture' (1908).¹⁹ Critiquing the use of the machine to imitate craft-based techniques, in which the labourer was distanced from the handicraft, Wright saw the potential to integrate machine-made elements to produce new artistic forms of expression.²⁰

In "The Art and Craft of the Machine" (1901), Wright highlighted wood as an example. Rejecting the use of the machine to imitate wood carving, Wright argued that the architect ought to draw out the beauty of materials, "its beautiful markings," "its texture" and "its color" through the "cutting, shaping, smoothing and repetitive capacity." Steering the discussion away from jointing and connection to fabrication processes, Wright argued for an aesthetic that permitted "beautiful surface treatments" with the extended use of stained wood and plaster.²¹

Wright similarly discussed the steel frame. As he had done with the printing press, Wright interpreted the frame as a representation of the machine. Pointing to a disconnection between art and the machine within existing arts and crafts practices,²² where the "art" is torn and hung upon the steel frame of commerce', Wright argued for a new 'robe of ideality' in which the building façade is "sincere"; that "idealises its [the steel frame's] purpose without structural pretence."²³ Wright had seen in the skyscraper a way of developing the art of architecture which could integrate machine methods and processes, and give "sincere" expression to a relationship between façade and structure.

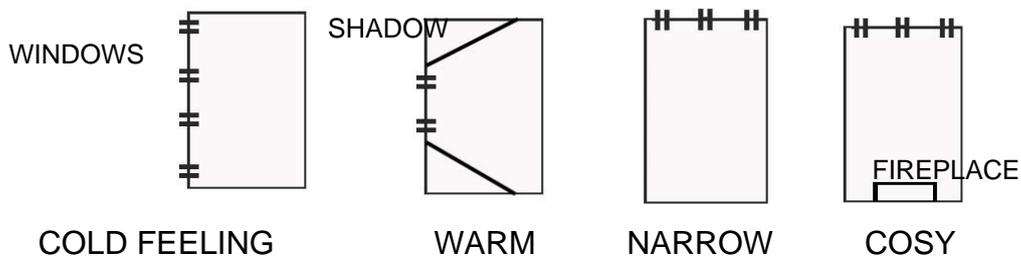
There is an implicit relationship between Schindler's discussion of the size and type of roofing material in relation to form and Wright's discussion of the steel frame. Schindler is attempting to articulate a relationship between material and form, in which materials are not subordinate to forms. Schindler's argument, however is not just about domesticity but also about a condition of modernity. He clearly found Wright's views congenial, as he was prepared to include skyscrapers in his vision of modernity.

In raising the subject of the machine, Schindler is clearly following Wright, who departed from a craft tradition. While Semper had earlier despaired of the overwhelming capacity of the machine to produce decorative effects with cheap materials, and Loos had remained within a craft tradition, both Wright and Schindler display a certain optimism in contemplating its use.²⁴ While Wright develops an ornament from the process of fabrication, Schindler's

discussion is much more specific, as he is exposing a European discourse on cladding to American discussions on the machine.²⁶

In Schindler's discussion, there are two shifts of horizons: first, architecture as a technical object is presented as something with its own sense of meaning. Schindler is implicitly attacking the dissonance between culture and technology in the arts and crafts by pointing towards a technical culture. Second, Schindler was not only interested in the clichéd discussion of architecture as technical object there was fixated on utility and usage. He was interested in the genesis of technical objects.

ROOM: CORRIDOR — MOTION
 LIVING ROOM —
 BEDROOM — REPOSE



DOORS MUST NOT BREAK UP ROOM IN /
 ANY DIRECTIONS/

[Sheet 5, recto]

X₅

ROOM FORM ARCHITECTURE MATERIAL=ROOM
 PURPOSE & ROOM EVERYROOM IS NOW[?] CONCEIVED IN VIEW
 OF ITS/
 PURPOSE/
 THE GREEN OR BLUE CHAMBER OF THE LOUIS
 XV/
 IS BEDROOM WITH BED/
 & DINING ROOM WITH TABLE/
 (OLD FIREPLACE)/
 EVERY ROOM ONLY FOR ONE PURPOSE/

ROOM CONCEPTIONS PLAIN STRAIGHT OUTLINE [?]/
CURVED OUTLINE[?]/

3 KINDS: CENTRIC/
EXCETRIC/
ACENTRIC/

CENTRIC ROOMS CENTRIC ROOM: CIRCULAR/
GEOMETRIC CENTER: DOM[E]S/
SQUARE WITH CENTRIC FORMS/
MOSTLY ROOMS WITHOUT PURPOSE/

EXCETRIC ROOM CENTER OF ROOM NOT GEOMETRIC/
BUT CENTER OF INTEREST/
MOSTLY ROOM WITH DEFINITE PURPOSE/
POINT OF INTEREST:/
ALL LIVING ROOMS FOR HUMAN BEINGS/
TO HAVE SUCH CENTER — COZY & LIVABLE/
HIGHTS OF ROOMS — HUMAN FIGURE/
INTERLOCKING OF ROOMS/
LIVING IN A ROOM (BACK DOOR, PRIVACT ETC.) PRESENTATION)/

[Sheet 5, verso]

CENTER EITHER FURNISHED BY/
LONGING FOR HEAT = FIREPLACE/
LONGING FOR LIGHT = WINDOW/
CHURCHES, THEATER — ETC./

ACENTRIC ROOM ACENTRIC: NO CENTER/
ROOMS WITH CHANGING
PURPOSES/
SHALL NOT APPEAL LIVABLE./

OUR TIME DOES NOT CREATE/
CENTRIC ROOMS/
NOT "MODERN"/

THE RENAISSANCE CHURCH WITH DOM[E] = /
MIXTER CENTRIC & /
EXCENTRIC/
PROVES: NOT CONCEIVED AS ROOM/
BUT AS SCULPTED CONSTRUCTED MATTER/

Having previously defined architecture in his discussion of material texture as the "art of space," Schindler asserts here that the issue of materiality is linked directly to the topic of the room and defines three room typologies, two of which are described as "modern." Along with the Acentric room, the Excentric room is described as "Modern" and is contrasted with Centric rooms. The Excentric room is horizontally compressed, having been scaled to the height of a human, with an expression of comfort, such as a fireplace or daylight penetration, at its centre. Acentric rooms have neither a fixed mode of use or point of interest, while Centric rooms—a room type affiliated with the nineteenth-century mass-space architecture of Semper—as one of implicit hierarchy, are driven by geometry and have little relation to a specific use.

It is important to note how, in maintaining a focus on the topic of the room, Schindler is giving it a new sense.

Overall, there is an implicit relationship between the two sections of the lecture; the discussion of form (texture of material) and the geometric concerns of room. Schindler did not comment on this relationship explicitly, but he had previously alluded to a range of structural materials or systems and discussed types of cladding that could work with that structure. He then seems to be thinking about using it in a way that maintains the articulation of the new possibilities of structure and cladding. In following the flow of ideas across Schindler's lecture, we would logically expect his thinking to have implications for the room type, in the sense of whether rooms are centred or not centred.

If materials are changing due to the development of the machine, then we cannot think about the materials individually because we are always putting them together. For Schindler, the context of putting materials together is the room. Schindler wants to explore how this way of using materials has an impact on the room, notably by doing away with the centric room.

The Significance of Lecture X

One of important aspects of Schindler's Lecture X is that he dis-articulated the relationship between structure and cladding. In Schindler's argument, texture provides a way of thinking about modern structural relationships with the cladding and facing that implies a move away from the centric room both structurally and constructionally.

Schindler's discussion implies that architects might have been too much concerned about effects and too little about the genesis of the material object. For Schindler, Loos's approach to culture was inherently conservative and looked backwards towards existing modes of culture. Loos's handicraft is essentially reproducing the normative framework of pre-industrial technical culture, and points to the cultural anxieties of a *petitbourgeoisie* that was experiencing rapid modernization at the turn of the twentieth century. For Schindler, Loos's approach was based on a misunderstanding of the mechanization of production techniques. In hindsight, what Schindler considered a misunderstanding was about the tool-bearing ability of human beings, and how that ability was transferred to machines in the industrial age.

For those attached to handicraft, the transfer of the tool-bearing function from humans to machines heralds the prospect of kitsch, when machine-made products simply mimicked hand-made products. For Schindler, however, the question was whether it was appropriate to construe the industrial age in terms of a transfer of the tool-bearing function from humans to machines. He was looking for a positive and liberating potential in the relationship between building construction and industrialization. Like Wright, Schindler was searching for the reintegration of technology into culture, but he did not merely admire machines made by industry in the way other architects wrote about cars and aeroplanes. Schindler's line of thinking pointed to a new sense that machines and new fabrication processes would allow him to make larger surfaces with particular textures within the room, whereas in the craft tradition large surfaces could not be made with particular textures. Schindler was not talking about using machines to replace human beings, a proposition sometimes discussed in arts and crafts circles. The working of machines and the relation between machines—their coordination—became a key concern in Schindler's thinking about the room.

Schindler was not thinking of the room as a site for registering arts and crafts sensibilities or registering a machine aesthetic. Rather, he saw architects as transducers between machines. The terms of his lecture on form creation can then be placed in an overall

understanding of life: the room as a situation of life should be (at least partially) construed in terms of the rhythm of machines.

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- 1 See James Curry & Stanislaus Fung, 'Rudolph Schindler's Church School Lecture on 'Decoration' (1916): A Preliminary Reading' paper given at 'Quotation' SAHANZ 2017. R.M. Schindler, Lectures "Church, School, Chicago" delivered Chicago School of Applied and Normal Art 1916, are held by the University Art Museum at the University of California, Santa Barbara (UCSB) UCSB Box 3, Folder 231.
 - 2 R.M. Schindler, 'Modern Architecture: A Program (1913)', in *R.M. Schindler: Composition and Construction*, eds L. March and J. Sheine. (London: Academy Editions, 1993), 10–12.
 - 3 H.F. Mallgrave, 'Schindler's Program of 1913', in *R.M. Schindler: Composition and Construction*, eds L. March and J. Sheine. (London: Academy Editions, 1993), 19.
 - 4 The discussion within scholarship of the lecture notes has been brief, having prioritized Schindler's earlier 'Modern Architecture: A Program' (1913). The most extended discussion of the notes can be found in Jin-Ho Park, "Numerical Properties of Rudolph Michael Schindler's Houses in the Los Angeles Area," *The Mathematical Intelligencer* 28, no. 1 (2006). Park similarly locates Schindler's approach to space as emerging from both the theoretical writings of Loos and Semper. However in Park's analysis, Schindler's discussion of materials, the machine and the importance of texture are not discussed.
 - 5 In the lecture notes, Lecture I, 'Introduction', Schindler describes the character of his lectures: '[The] form of lectures was not developed', but would 'cover all ground', providing a 'skeleton of ideas.' Then, he declared, 'I want to show our problem of architecture, new conception, new aims . . .'
 - 6 The description of the Palace of Alcinoos can be found in BkVII:78-132 of Homer's *Odyssey*.
 - 7 Adolf Loos, 'The Principle of Cladding (1898)', in *Spoken into the Void*, trans. Jane O. Newman and John H. Smith (Cambridge, MIT Press, 1982).
 - 8 M. W. Schwarzer, 'The Emergence of Architectural Space: August Schmarzow's Theory of Raumgestaltung,' *Assemblage*, 15 (1991), pp. 49 – 61.
 - 9 For a discussion of Kant's development of the Cartesian dualism between mind and matter, see Michael Prodo, *The Critical Historians of Art* (New Haven: Yale University Press, 1982). 9-11
 - 10 The English translation of the text reads "CARPET = BORDER OF THE ROOM (NOT WALL)/ ROOF ON PILLARS NOT [?], WALL". Our thanks to Urs Bette for the translation.
 - 11 Charles Rice, *The Emergence of the Interior: Architecture, Modernity, Domesticity*. London and New York: Routledge, 2007.
 - 12 Curry & Fung, 'Rudolph Schindler's Church School Lecture on 'Decoration' (1916)
 - 13 Adolf Loos, 'The Principle of Cladding (1898)', in *Spoken into the Void*, trans. Jane O. Newman and John H. Smith (Cambridge, MIT Press, 1982).
 - 14 Schindler was familiar with the theoretical writings of Semper, Wagner, Sullivan, Wright, and Bragdon. Their names are listed in various freehand lecture notes throughout Schindler's writings. Further Schindler attended Loos's lecture course at his Museum Café. See . Giella, *R. M. Schindler's Thirties Style: Its Character (1931 – 1937) and International Sources (1906 – 1937)* (PhD dissertation, New York University, 1985).
 - 15 Ákos Moravánsky, *Metamorphism: Material Change in Architecture* (Basel, Verlag Birkhäuser, 2018), 236.
 - 17 The discussion on polychrome can be found in Gottfried Semper, 'Preliminary Remarks on Polychrome Architecture and Sculpture in Antiquity' in Gottfried Semper, *The Four Elements of Architecture and Other Writings*, trs, Harry Francis Mallgrave and Wolfgang Herman (Cambridge, Cambridge University Press, 1989), 45–73.
 - 18 Jin Ho- Park has made the observation that the terms space, room and form are in 'reciprocal relationship' where matter was tied to form, space with the room. see, 'R. M. Schindler's theory of space architecture and its theoretical application to his Space Development of 1945 *The Journal of Architecture*, 11:1, 37-54,
 - 19 Frank Lloyd Wright's, 'The Architect and the Machine (1894)', 'The Art and Craft of the Machine' (1901) and 'In the Cause of Architecture' (1908) can be found in *Frank Lloyd Wright: Collected Writings, vol. 1*, ed. Bruce Brooks Pfeiffer. New York: Rizzoli, 1992
 - 20 See A. Alofsin, *Frank Lloyd Wright The Lost Years, 1910 – 1922* (Chicago and London, The University of Chicago Press, 1993).158 and Kenneth Frampton, "Frank Lloyd Wright and the Text-

Tile Tectonic," in *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture* (Cambridge, MA: MIT Press, 1995), 101-2.

21 Wright 'The Art and Craft of the Machine'(1901) in *Frank Lloyd Wright: Collected Writings*, 64-5.

22 Kenneth Frampton, *Wright's Writings: Reflections on Culture and Politics 1894-1959* (Columbia Books on Architecture and the City, Columbia University New York 2017), 17

23 Wright 'The Art and Craft of the Machine' (1901) in *Frank Lloyd Wright: Collected Writings*, 62-3.

24 The discussion of the machine in Semper and Loos can be found in Aline Payne, *From Ornament to Object, Genealogies of Architectural Modernism* (New Haven: Yale University Press, 2012), 46–48 & 217–229.

26 For a discussion Wright's use of ornament in relation to a Semperian tradition, see of Kenneth Frampton, "Frank Lloyd Wright and the Text-Tile Tectonic," in *Studies in Tectonic Culture*, 101.

Both Louis Sullivan and Frank Lloyd Wright were exposed to Semper's theories. His influence was discussed by Frederick Baumann in 'Thoughts on Architecture'(1890) and "Thoughts on Style' (1892). While Wright's knowledge of Semper's theories may have been due to John Root and Fritz Wagner's English translation of 'On Architectural Styles', *Inland Architect and New Record*, 1889 – 90. Roula Geraniotis "Gottfried Semper and the Chicago School" and Barry Bergdoll, "Primordial Fives: Frank Lloyd Wright, Gottfried Semper and the Chicago School" both papers delivered at the Buell Center, Columbia University, 1988.