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HOTEL SCHROEDER, MILWAUKEE, WISCONSIN

HOLABIRD & ROCHE, ARCHITECTS

THE HOTEL in America has received some criticism, in recent years, from critics, some of whom are architects. The charge is made that too great stress has been laid upon decorative appointments, and that architects as planners have failed to achieve an ultimate efficiency in the employment of floor space. At the same time there exists a stereotyped expression of hotel façade that fails to clearly reveal the functional and characteristic compartments for the various floor levels.

The existence of "chain hotels," with establishments in a number of cities, has tended to limit the architect and to stress the trend toward stereotyped standardization. This is true in plan, and also in expression of exterior where a particular style is adopted to identify the "hotel chain."

The Hotel Schroeder, in Milwaukee, by Holabird and Roche, is an independent hotel that is free of style restrictions. It was created with full recognition of factors of economy. The architects have combined possibilities for business use of lower floors and a frankly practical layout of reception, registration, entertainment, dining and guest rooms. It was because of the location of the hotel in the business district that it

was decided to derive revenue by devoting the lower street frontages to distinctive shops to serve city as well as hotel patronage.

The exterior of the building is faced with pink Minnesota granite, framing the store fronts. The divisions of the hotel are so arranged as to indicate the nature of the public and guest rooms within.

The lower five stories occupy the entire site, while above the fifth floor the spacing of the windows indicates a uniformity of layout for all of these typical floors. At the sixth floor the plan changes to an "H" shape to insure the maximum of light and ventilation in the bedrooms comprising the bulk of the building above this level.

At the twentieth floor there is another set-back where the building changes from an "H" to an "I" shaped plan and this continues through the twenty-fifth floor.

There are two entrances from the street through arcades which are separated from the central rotunda by additional doors, assuring more than the usual privacy and weather protection.

The arcades open into the rotunda—the focal point of the plan from which all parts of the hotel are conveniently accessible. The floor is of terrazzo in brilliantly colored

patterns. The walls are of marble in a warm cream color, interspersed with purple veinings. To the south of the rotunda are six passenger elevators and an entrance to various shops.

The main lobby is on the second floor, readily reached by two broad stairways of black marble, finished with bronze handrails. The lobby is, of course, a highway to most of the activities of the hotel and here are located the central office, check room, telephone booths, and telegraph office; also space for a cigar and newspaper stand.

The lobby is fifty-three feet in width by eighty-six feet in length. Its floor is of marble laid in patterns with a combination of red Levanto from Italy, black from Belgium and gray from Tennessee. The wall wainscot of red Levanto marble is six feet high, and it continues into all promenades and other spaces around the lobby. The walls of the lobby are painted in shades of dusty black and gray and the woodwork in ebony conforms with the many dark colors of the marble. The ceiling is in a light neutral color with floral ornament relieved in gold leaf. The plaster ornament is finished in gold leaf, and the large columns with reeded pilasters are unusual in that they are treated solidly with gold leaf from the base to the top.

Practically all of the furniture in the lobby is placed between the four large columns in the center of the room, leaving a passage around the columns to be used as a circulation space, insuring comfort and ease where people are sitting.

At a level three steps up from the lobby is the lounge—a room thirty-five feet wide and one hundred and five feet long. The walls are faced with walnut, severely plain and carefully related to the decorative accessories.

From the north of the lobby, crossing the promenade from the lounge, is a broad flight of steps which lead to the main dining room—occupying an entire frontage of the second floor. This room has a floor of black marble with white inserts. The walls are enriched with ornamental plaster. The general color scheme is a warm dove gray and gold, which is used consistently throughout on the walls and

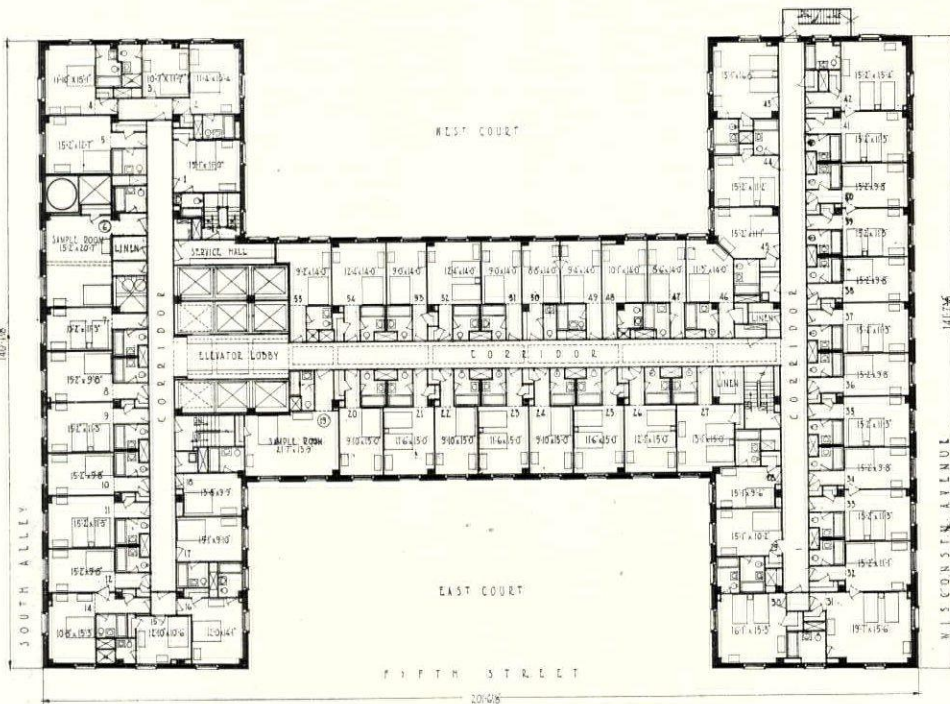
ceilings, with gold leaf picking out the ornamental features.

The guest room floors of the hotel begin at the sixth and continue to the twenty-fourth floor, each containing fifty-four rooms with bath, in various arrangements of connecting suites and separate rooms, planned to answer the requirements of a modern hotel catering to transients as well as residents.

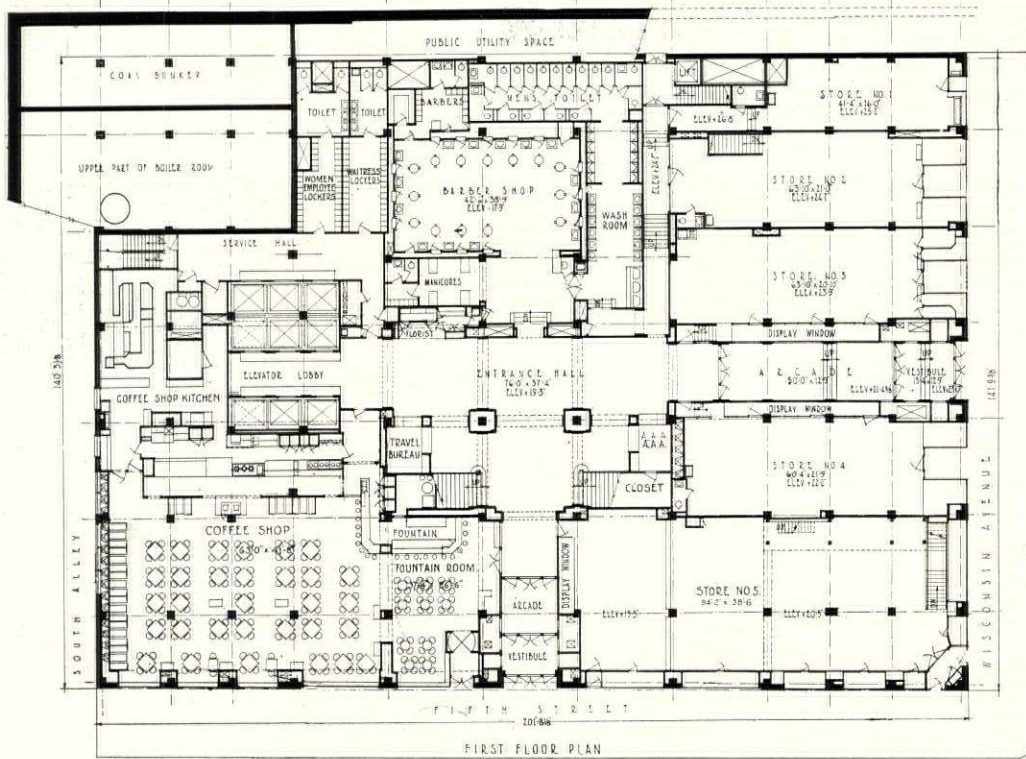


HOTEL SCHROEDER, MILWAUKEE, WISCONSIN
HOLABIRD & ROCHE, ARCHITECTS





LOWER TYPICAL FLOOR PLAN
7TH TO 19TH FLOOR INCLUSIVE



FIRST FLOOR PLAN

HOTEL SCHROEDER
MILWAUKEE WISCONSIN
HOLABIRD & ROGIE ARCHITECTS
CHICAGO ILLINOIS





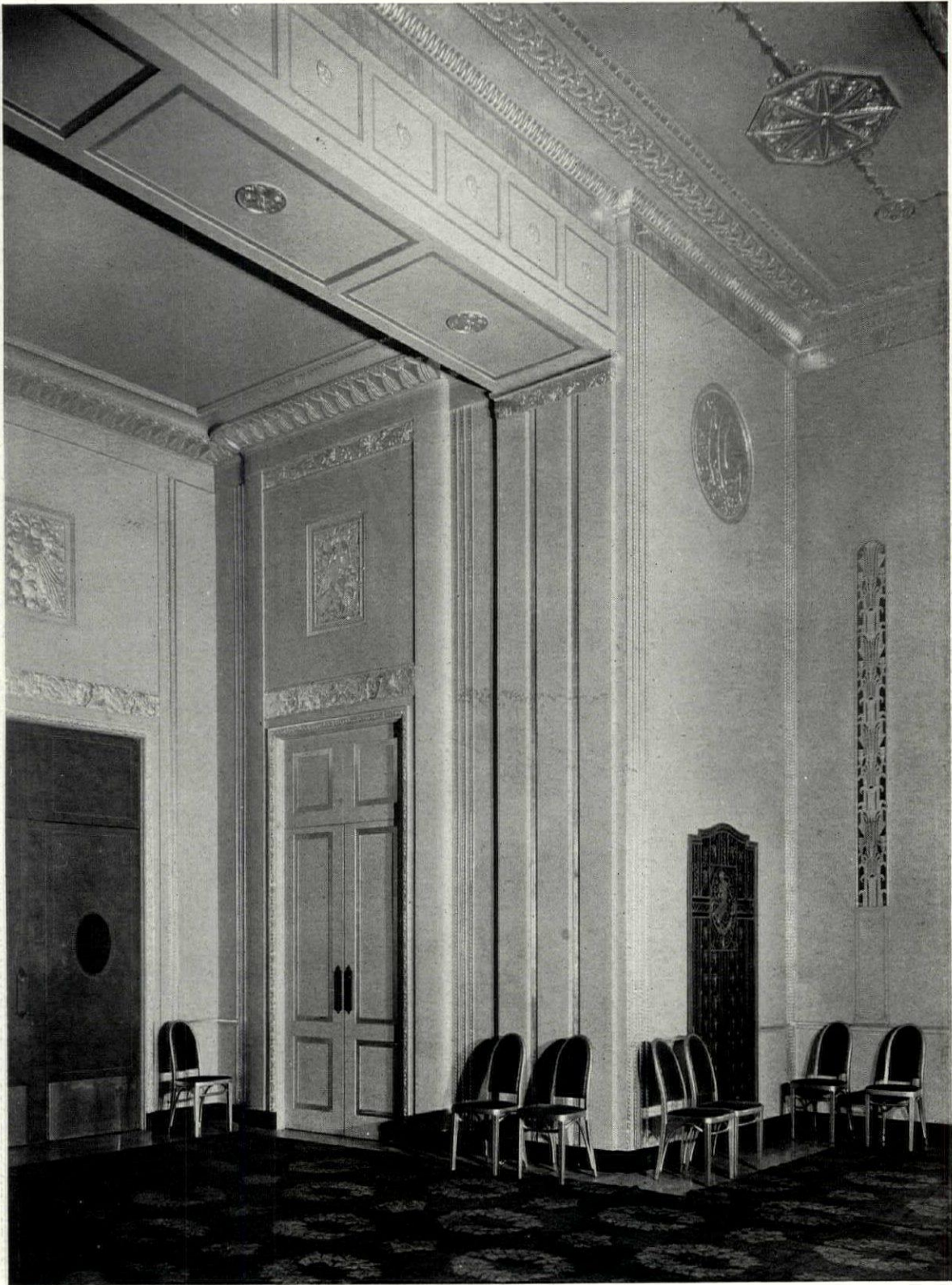
MAIN ENTRANCE
HOTEL SCHROEDER, MILWAUKEE, WISCONSIN
HOLABIRD & ROCHE, ARCHITECTS



LOBBY ON SECOND FLOOR
HOTEL SCHROEDER, MILWAUKEE, WISCONSIN
HOLABIRD & ROCHE, ARCHITECTS



THE BALL ROOM
HOTEL SCHROEDER, MILWAUKEE, WISCONSIN
HOLABIRD & ROCHE, ARCHITECTS



DETAIL OF BALL ROOM
HOTEL SCHROEDER, MILWAUKEE, WISCONSIN
HOLABIRD & ROCHE, ARCHITECTS



ANGLE OF THE LOUNGE (SHOWING WALNUT PANELING)
HOTEL SCHROEDER, MILWAUKEE, WISCONSIN
HOLABIRD & ROCHE, ARCHITECTS



MAIN LOUNGE
HOTEL SCHROEDER, MILWAUKEE, WISCONSIN
HOLABIRD & ROCHE, ARCHITECTS



STAIRWAY
HOTEL SCHROEDER, MILWAUKEE, WISCONSIN
HOLABIRD & ROCHE, ARCHITECTS

ARCHITECTS AND THEIR OFFICES

I. ROB MALLET-STEVENS

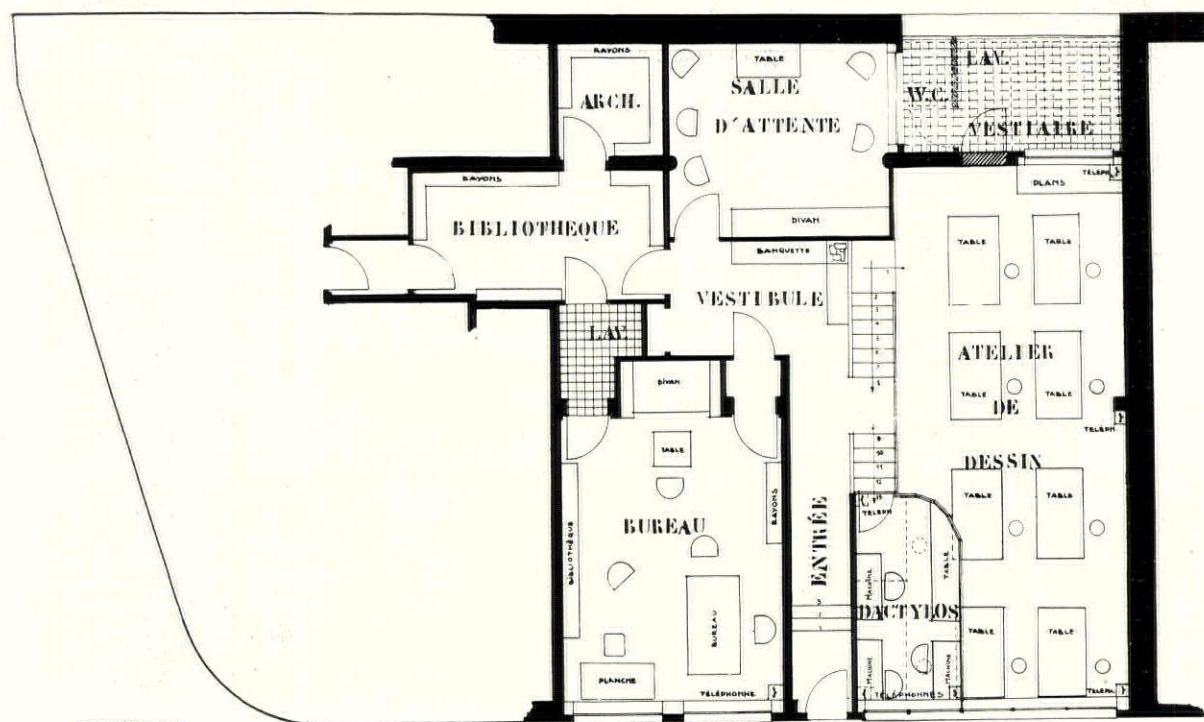
M. MALLET-STEVENS, one of the most successful of the more advanced architects of France, is, in fact, a Belgian by birth. He is well known for his Alfa Romea garage. The greater part of his work has been in the residential field. If there be at times a slight inappropriateness between the large schemes of his country châteaux and his city *hôtels particuliers*, it is due to the fact that his clients have demanded more elaboration from him than the style in which he works easily, provides. In the building of the many houses of the Rue Mallet-Stevens, he has had a large opportunity.

The present illustrations show the ample new quarters in which he works on the ground floor of his house in the Rue Mallet-Stevens. The rooms are painted in clear brilliant colors and the metal furniture is of his own design.

As to his method of work, M. Mallet-Stevens first makes models of his projects at small scale, followed later by large scale working drawings. These drawings are complete with all information bearing upon construction and equipment. He personally oversees the actual construction, assisted in each case by one of his draftsmen, who is delegated as especially responsible.

M. Mallet-Stevens' houses are frequently elaborated with metal work, colored glass windows and other features, always of geometrical design, produced from his drawings and under his supervision.

The illustrations show then, not only one of the most elaborate and complete of modern European architectural offices, but also something of M. Mallet-Stevens interior architecture as well.



OFFICE OF
ROB MALLET-STEVENS

RUE MALLET-STEVENS

q 275 p



(ABOVE) THE ARCHITECT'S PRIVATE OFFICE. (BELOW) THE DRAFTING ROOM
STUDIO OF ROB MALLET-STEVENS, ARCHITECT, PARIS



RECEPTION ROOM
STUDIO OF ROB MALLET-STEVENS, ARCHITECT, PARIS

COLOR IN EARLY AMERICAN ARCHITECTURE

WITH SPECIAL REFERENCE TO THE ORIGIN AND DEVELOPMENT OF HOUSE PAINTING

A. LAWRENCE KOCHER

HOUSE painting as practised in the colonies consisted in the application of artificial pigment, compounded either with water or oil for the purpose (primarily) of checking the action of the atmosphere upon wood, plaster and iron. The earliest painting was inspired by necessity—as a protection against the weather. It was devoid of any artistic intention. The second or decorative function of painting appears to have been realized early in the eighteenth century in attempts to obtain color “effects” and in the occasional adoption of colors in imitation of stone. Artistic intention is likewise apparent in the diversification of painted surfaces by spatter work and simulation of marble.

Our study will seek to identify some of the exact shades and colors as well as processes of painting practised in America up to the period of the Greek Revival.

The evidence given here is the summarized result of an investigation which falls into four general categories. (1) Examination of references to painting and to color by contemporary writers of the period under discussion. (2) Examination of existing early American buildings with a view to discover evidences of pigment which by carefully considered internal evidence can be accepted as original. (3) Examination of contemporary handbooks and price-books of England and America containing allusions to painting. (4) Study of formulas and local recipes covering methods of mixing paints, and their recommended uses for specific purposes.

Lists of paints advertised in newspapers as for sale in color shops have been noted and have served as a check upon pigments

found in the locality where advertised.

“Whitewashing” of walls—the earliest manner of painting in America—was a survival of a medieval custom of England. The abbey church of St. Albans, was “whitewashed” by order of a Norman abbot and was said to have shone like snow; Westminster Hall was “whitewashed” for Edward I. Gradually the “whitewashing” of buildings descended in the social scale, until in the nineteenth century only the more humble buildings such as cottages were so treated.¹ The first reference to “whitewashing” in America and the earliest allusion to color is found in a report made by Governor John Rising of Jersey to the English Government in 1654. He says “there is very beautiful clay of every kind to be found, white to ‘whitewash’ houses with, as good as lime, *yellow, blue, etc.*”² Lime had been previously discovered in 1628 on the Island of Manhattan by Jonas Michaelius, who informed the Dutch authorities of “good material for burning lime, namely oyster shells in large quantities.”³

Oil paints found favor and use at an early date for more permanent painting since William Fitzhugh of Virginia imported from England in 1686 “a large quantity of color, with walnut and linseed oil, brushes and ½ doz. painters’ suits.”⁴

New England was backward in the acceptance of painting, either for purposes of

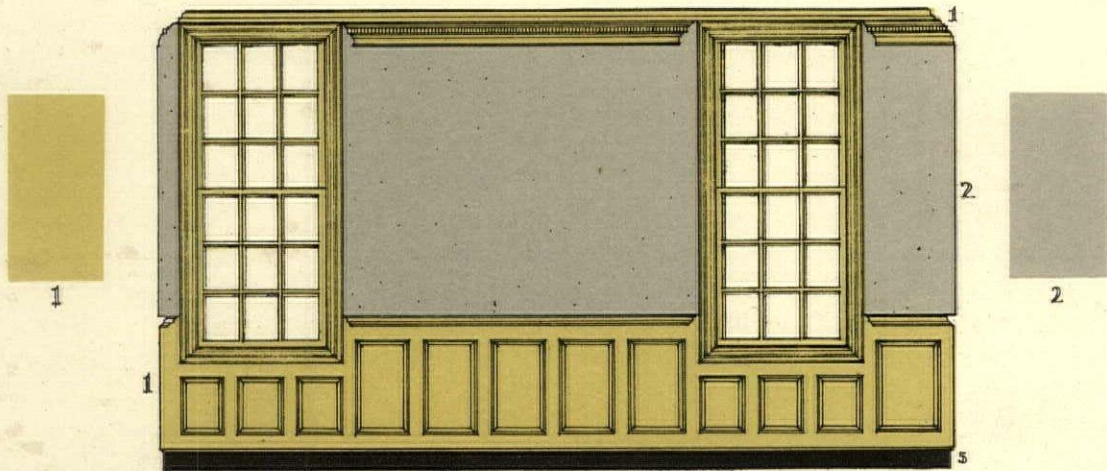
¹ C. F. Innocent, “The Development of English Building Construction,” p. 1.

² A. C. Meyers, “Narratives of Early Pennsylvania, West New Jersey and Delaware,” p. 165.

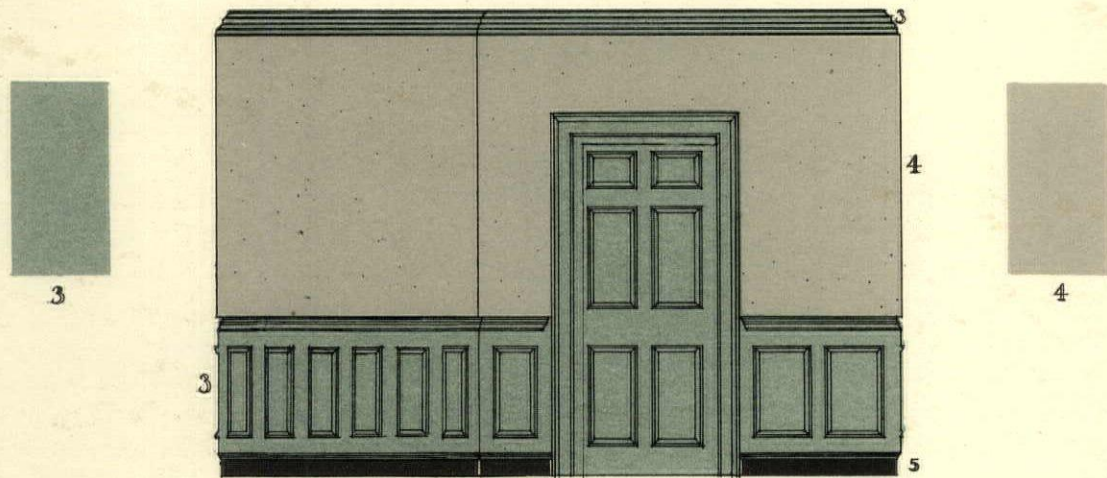
³ A. B. Hart, “American History Told by Contemporaries,” vol. 1, p. 578.

⁴ P. A. Bruce, “Economic History of Virginia,” vol. 2, p. 160.

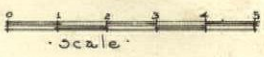
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PUBLIC LIBRARY
SOUTH BEND, IND.



PARLOR

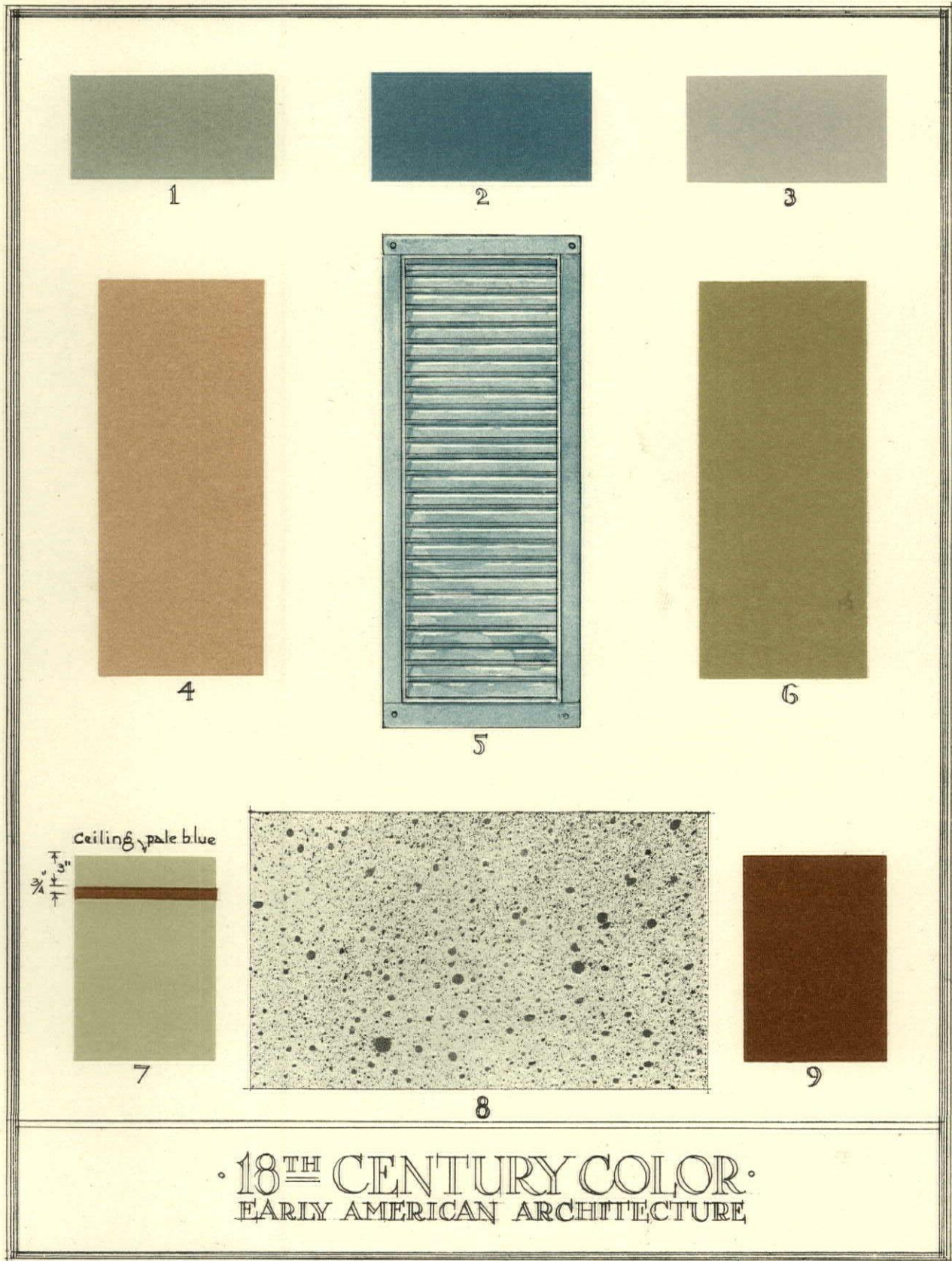


DINING ROOM



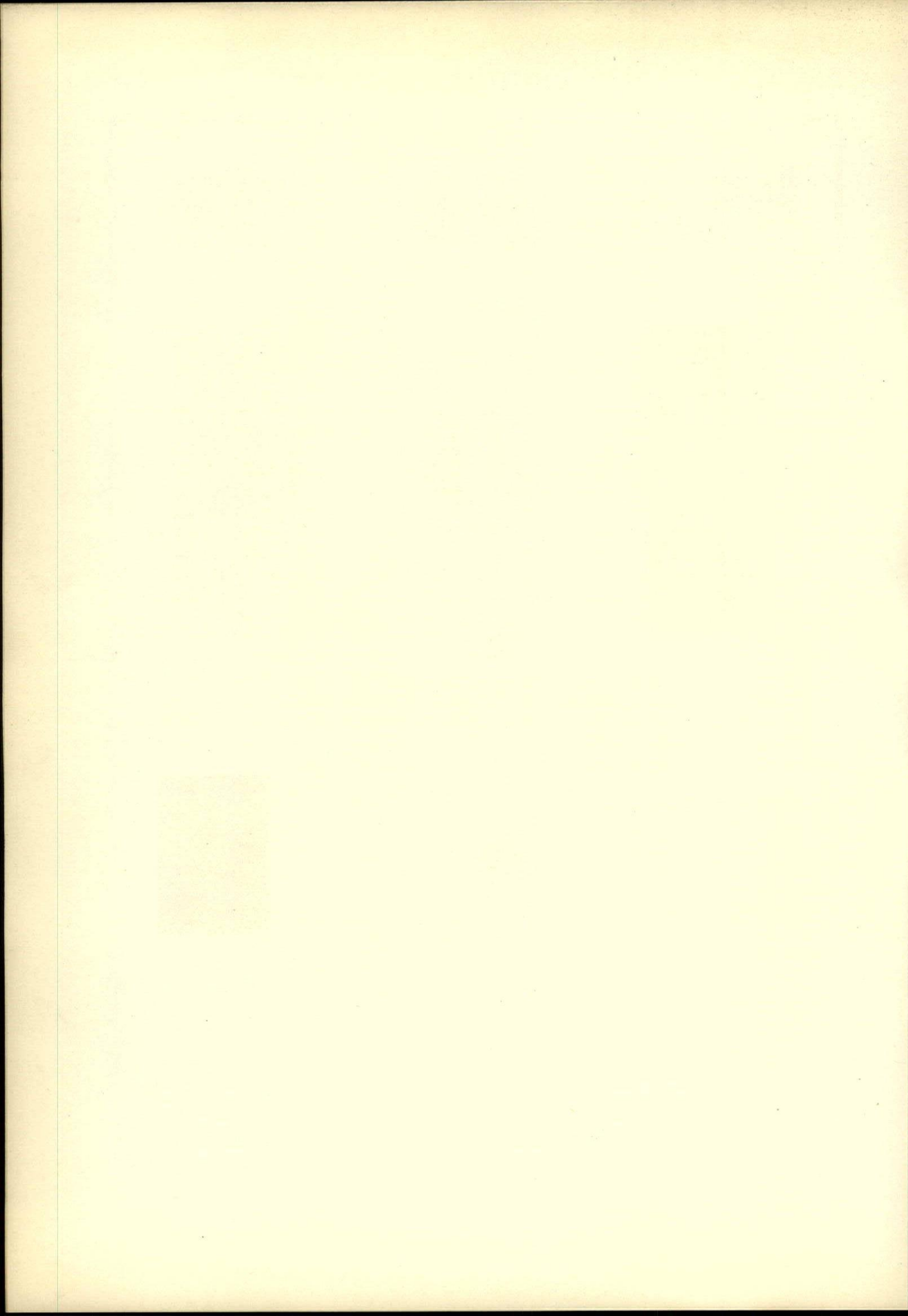
1751

..LUCAS HOUSE..
..WILLIAMSBURG VIRGINIA..



18TH CENTURY COLOR.
EARLY AMERICAN ARCHITECTURE

1—Interior woodwork, Gadsby's Tavern, Alexandria, Va. (1793). 2—Facsimile of shutter color, Nicholson house, Williamsburg, Va. 3—Exterior woodwork, Dr. Joseph Priestley house, Northumberland, Pa. (1796). 4—Interior trim, Mount Pleasant mansion, Philadelphia, Pa. (1761); courtesy of Pennsylvania Museum. 5—Eighteenth century shutter. 6—Interior woodwork, Brown's Tavern, Haverhill, Mass. (1818); courtesy of Metropolitan Museum. 7—Wall paint and border, Tysen farmhouse, New Dorp, Staten Island, N. Y., last quarter seventeenth century. 8—Facsimile of "spatter" applied to interior mantel and other woodwork, house at Locust Grove, Va. 9—Spanish brown.



protecting wood or as an embellishment.⁵ The list of mechanics made out by the General Court of Massachusetts in 1670 does not contain the name of a painter. Pennsylvania, however, includes two painters among the tradesmen of Philadelphia in 1698.⁶ In 1705, the coat-of-arms of Queen Anne, in the Court House at Salem, Massachusetts, was ordered to receive "a colored covering." This, says Bishop, is the first authentic mention of painting for New England.⁷ "Painters' Colours, most sorts" were advertised as available for sale by Zabdiel Boylston of Boston in 1710.⁸ Painters' supplies were continuously advertised thereafter in newspapers of Boston until the end of the century.

Specific mention is made of color by the Virginia Council in 1727 which ordered for the Governor's Palace at Williamsburg, "that the great Dining Room and Parlor thereto adjoining, be new painted, the one of pearl colour, the other of cream colour; that the window frames, outer doors and eves be also new painted."⁹

The most common color discovered in houses of the seventeenth and early eighteenth centuries in America is a dark red designated in builders' handbooks of the day as Spanish Brown. It was the usual priming coat, although in parts of the colonies it had a wide vogue as the sole paint applied. It was defined in contemporary terms as "a horseflesh colour or a dark dull red. . . ." "This," says Smith, "is a common pigment dug out of the ground . . . but pleasant enough to the eye . . . tis of great use among Painters, being generally used as a first or priming colour, that they lay upon any kind of timber work, being cheap and plentiful."¹⁰

Instances of "tawny" or red similar to this

⁵ Isham says, "Paint was not used in houses to any extent till near middle of the eighteenth century in Connecticut." (Isham and Brown, "Early Connecticut Houses," p. 267.)

⁶ Gabriel Thomas, "Pennsylvania the Poor Man's Paradise," (1698). C. T. Brady Edition, p. 42.

⁷ J. L. Bishop, "A History of American Manufacturers," vol. 1, p. 209.

⁸ Boston News-Letter, Mar. 5, 1710.

⁹ Fiske Kimball, "American Domestic Architecture," p. 136.

description are found frequently in New England, Pennsylvania and Virginia. It was this color that the German traveller, Schoepf, observed in regions settled by the Pennsylvania Germans when he described the interior woodwork, "daubed with red."^{11, 12} In the recent restoration of the Cooper-Austin House, Cambridge, (1657), to its original state, the lath and plaster surface was sheared from the south and west inside walls, revealing the old sheathing boards, which were found painted with this familiar dark red.¹³ Additional instances are given under color notes, pages 288-290.

Blues and green were favorite colors, often with the green altered to an olive, or blue made gray by a mixture of black. Peter Kalm writes of houses in New York in 1748 that "The alcoves, and all the woodwork were painted with a bluish-grey colour."¹⁴ Paints in a variety of colors are described in the diary of William Bentley, of Salem, in 1816: "Visited the Woodbridge house, said to be 140 years old, to view Holliman's painting. He died about 1744. The great southeast room is pannelled on the north side around the fireplace. The ground is variegated white and black shaded. The pannels brown framed in white. Above in the chamber the ground white and red variegated shades, frame & pannel as below. One beam till lately covered by a closet exhibits all the beauty of this man's colouring."^{15, 16}

¹⁰ John Philomath Smith, "The Art of Painting in Oyl," London, (1723), p. 21, First Edition published in 1685. Last edition with minor changes published in 1825.

¹¹ J. D. Schoepf, "Travels in the Confederation," (1783-1784), vol. 1, p. 104.

¹² Samuel Powel, Jr., ordered 3 lbs. white lead, ½ lb. Spanish brown of David Barclay, London, July 30, 1732. Ms. Coll., Pennsylvania Historical Society.

¹³ Bulletin, S.P.N.E.A., Ser. 17, p. 10, 14.

Wm. Leyburn in his "Mirror of Architecture," London, (1700), gives directions for the "laying on of Paint." "Outside painting," he says, "for Doors, Shop Windows, Window cases, Pediments, Architraves, Friezes, Cornices & all other Timber-works which are exposed to the Weather, ought at first setting up to be primed with *Spanish Brown*, *Spanish White*, and *Red Lead* (about a 5th part) to make the other two Colours to dry, well grown'd with Lintseed Oyl, will make excellent Primer; then afterwards with the same Colour (but much more whiter) for second Primer; and lastly, with *fair white*, made of white lead." p. 71.

¹⁴ Peter Kalm, "Travels," vol. 1, p. 250.

Vivid colors for woodwork and plastered walls of interiors of dwellings are not unknown. Pumpkin yellow is found in New England and in the South; pea green bordering on emerald occurs in Pennsylvania.

The Hart house parlor (c. 1640) now reproduced in the Metropolitan Museum, has a decorative band above the fireplace in vivid carmine red and black.¹⁷ The paneled fireplace of the west chamber in the Jacob Goodell house, is painted in brilliant sky blue.¹⁸

The parlor of the Lucas House, Williamsburg, Virginia, (1751), has a unique color scheme of king's yellow, black, gray and touches of red. The paneled wall-dado to the height of chair rail, and also the trim are of deep yellow. The skirting at the base of the wall retains its dead black paint. The walls of plaster above the chair rail are of gray, with the ceiling in white. The yellow doors facing on the room are enlivened by brush strokes in red paint, thus giving a suggestion of marble.

The paneled dado and other woodwork in the adjoining dining room were given a

¹⁵ "Diary," William Bentley, vol. 4, p. 392.

¹⁶ Black occurs as an adjunct to other colors as skirting and trim in Pennsylvania and Virginia.

Mrs. Papendick writing in England in 1790, says: "In those days, (first half of eighteenth century) all doors were black, the panels white, except sometimes a raised pattern painted blue or light green. The skirtings also were black." P. Mac Iver, "Old English Furniture," p. 148.

¹⁷ "Handbook of the American Wing, Metropolitan Museum," p. 80.

¹⁸ Bulletin, S.P.N.E.A., Ser. 14, p. 24.

surface of cerulean blue, the walls of plaster have a gray water color finish similar to the parlor. The black skirting occurs again in the dining room and in the stairhall. The balusters and handrail of the stairway were stained in Spanish brown with other woodwork in cerulean blue.

The practice of strewing woodwork ("hit and miss" or "spatter") was known to New England and the South. A Boston color shop advertised "Smalt for strewing" in

1761.¹⁹ An example of spatter in gray shades applied to wood trim and mantel was found by the writer in a late eighteenth century house near Locust Grove, Virginia. John Philomath Smith in his "Art of Painting in Oyl," published in London, (1723), with its several editions during the eighteenth century, gives full directions for "strewing," and imitating marble.²⁰

While the importance of white as the distinctive pigment of colonial architecture has been over-emphasized, nevertheless its vogue late

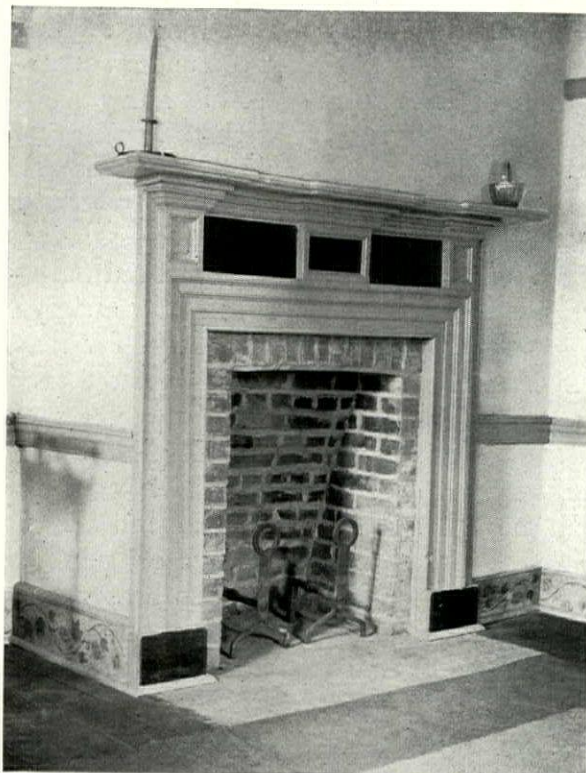
in the eighteenth century must be recognized. White and light color shades bordering on white afforded a pleasing contrast when used as trim with red brickwork.

¹⁹ Boston Gazette, Mar. 9, 1761.

²⁰ J. P. Smith, "The Art of Painting in Oyl," London, 1723.

See Leigh French, Jr., "Colonial Interiors." Plate 125 illustrates "typical eighteenth century stenciled patterns and coloring for floors." Spatter work in red and purple and light gray background.

See also, J. Stalker and G. Parker, "A Treatise of Japanning and Varnishing," Oxford, (1688), with "rules for counterfeiting Tortoise shell and Marble. . . . How to lay Spreckles or Strewings . . . on mouldings, &c. . . . lacquering and varnishing."



PANELS AND BASE IN BLACK; BASEBOARD WITH APPLIED ORNAMENT
THE HEADLEY INN, NEAR ZANESVILLE, OHIO



Courtesy, Mr. I. T. Frary

STAIRWAY DECORATION
THE HEADLEY INN, NEAR ZANESVILLE, OHIO
(FIRST HALF OF NINETEENTH CENTURY)

White, gray, pearl color and stone shades were favored for meeting houses and churches. The plastered interiors of some of the lesser Pennsylvania and New York Dutch churches received an annual coating of white lime. The more formal places of worship adopted white for the inside because of its power to reflect light and for reasons of cleanliness and economy. Trinity Lutheran Church of Lancaster, Pennsylvania, is an example, described by Thomas Anburey who visited it sometime during 1776-1781. The interior is minutely visualized with its "altar piece very elegantly ornamented; the whole of the church as well as the organ, painted white with gilt decorations, which has a very neat appearance; it greatly reminded me of the chapel at Greenwich Hospital."²¹ During recent restorations of Christ Church, Boston, it was determined that the original paint of trim and spire discovered by scraping through the layers of gray was white.²²

Smyth, a traveller in America in 1784, made the observation that "many buildings in Halifax, Virginia, and vicinity are painted white."²³ Wansey, still another eyewitness, gives an account of houses in Connecticut which he observed in riding from Boston to New York; "The houses which we passed in the woods are generally built after the following mode; a framed work of timbers, weatherboarded and roofed with shingles, two stories high . . . two windows on each side of the door, five in the next story, all sashed, and the whole neatly painted; some of free-stone colour, others white with green doors and window shutters."²⁴ A farmhouse with a similar

color scheme is mentioned by F. Cumins in West Virginia early in the nineteenth century.²⁵ "At two miles from Wheeling, I passed a very handsome house . . . I could not help being struck with the difference in appearance between this wooden house painted white, with green jalousie window shutters and red roof, and the stone and brick houses of Ohio and Kentucky: much in favor of the former, however better in reality the latter may be."

It is not possible to associate specific colors exclusively to the early or to the late periods of our native architecture. Color fashions changed so slowly and gradually that while new colors were introduced the older favorite ones were continued. The following statements indicate the prevailing tendency:

Stone color, walnut-tree color, cream, gray, wainscot color and white are frequently mentioned for exterior work during the early eighteenth century.

Interiors, until after the Revolution, are usually more brilliant with occasional use of intense blues, yellows, reds, olive and other greens.

Exteriors of the last half of the eighteenth century continue the earlier shades but include an increasing use of white. Shutters and exterior doors were given a finish of intense green or of blue-green produced with a copper oxide.

For interiors after the Revolution, pale shades and white are preferred. Moldings in churches are sometimes picked out in gilt. Ceilings are in white, cream and light green.

* * * *

"Whitewashing"—the 'poor man's paint'—deserves further mention because of its long and extensive use which continued down to the nineteenth century.

The first houses of the settlers and traders were given simple washes of white, pink and other colors. On Staten Island walls of Dutch houses were given a ruddy tone by

²¹ T. Anburey, "Travels," (1776-1781), vol. 2, p. 304. Anburey also noted that "outside doors of houses near Quebec are painted green . . . these afford a pleasing contrast to the whiteness of the house." vol. 1, p. 125.

²² Restorations discussed in Bulletin of Society for the Preservation of New England Antiquities, Ser. 8, p. 5. "that white had been the former color was determined in finding white paint under gray." It would be impossible to determine with certainty that white was the original color, merely by its presence next to wood, nor could it be readily proved that paint was applied immediately after the completion of the church.

²³ J. F. D. Smyth, "A Tour," (1784), London, vol. 1, p. 84.

²⁴ H. Wansey, "Excursions," p. 55.

²⁵ F. Cumins, "Sketches of a Tour," (1810), p. 105.

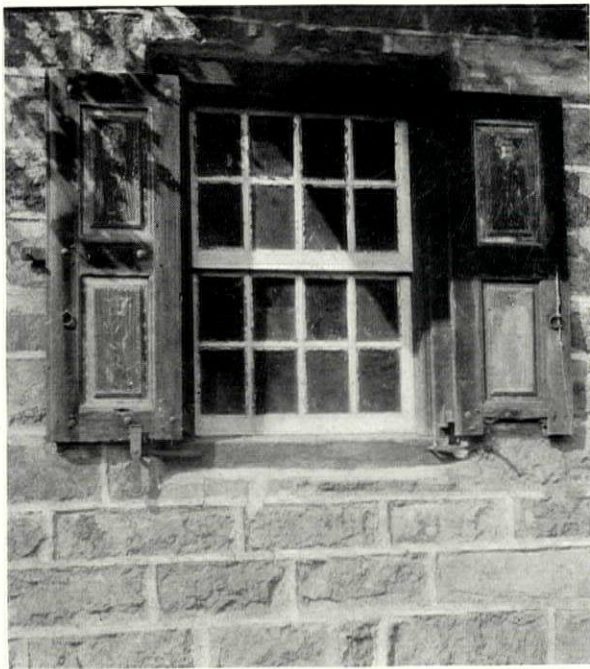
the admixture of lime and decomposed iron ore. Blue and green obtained from vitriol was recommended for coloring in Pennsylvania.²⁶ Whitewashing was done in the spring of the year and was considered to have a cleansing and sanitary result.²⁷ It was sometimes applied to back walls of porches to increase light, and to the interior of fireplaces to add to the radiation of heat. Peter Kalm writes in 1748 that the "walls of New York houses were whitewashed within,"²⁸ and many other observers allude to the practice in houses of rural districts.

Paints and oils brought from London by sailing vessels were advertised by druggists and color shops in the newspapers of the day. These advertised paint lists include an extremely wide range of brilliant colors and softer shades. Reds, blues, yellows and greens are fully represented—together with white lead, flake white, ivory and lamp black to modify color intensity. Some colors are advertised as "common." The frequent repetition of colors is of interest as indicating preference or demand. The "common" and most frequently listed ones include: pearl color, vermilion, king's yel-

low, orpiment, wainscot or oak color, Spanish brown, stone yellow, lead color, verdigris, chocolate brown, walnut-tree color, olive green, pea green, Indian red, umber, yellow ochre, green and blue verditer, carmine and lake. The "fancy" and less usual colors are Dutch pink, apple-blossom color, ultramarine, Naples yellow, purple red, smalt, indigo and rose-pink. Linseed oil, raw and boiled, nut oil and

turpentine were always to be had. Varnish, "white and brown," was available in Philadelphia as early as 1732.

Colors and oils had been imported from London during the early years of the colonies with very little effort to produce colors by local manufacture.²⁹ This attitude changed, however, when in 1765 a bill was introduced into Parliament which imposed a duty in the colonies on painters' colors, glass and tea. This was the celebrated



WINDOW OF THE DE TURCK HOUSE
NEAR FRIEDENSBURG, PA., 1767
Characteristic "Pennsylvania German" ornament on panels

Stamp Act which aroused the citizens of Boston to pass resolutions "to encourage home manufactures." The American Society for the Promotion of Useful Knowledge of Philadelphia aided the cause of its local color industry by publishing information about clays and minerals that have suitable properties as dyes and stains. In January, 1768, the Society described in its minutes "a clay, found near Newcastle on Delaware, which, used as a paint, retains its colour for years, even when exposed to the weather, without any mixture of oil. In many places," the

²⁶ Willich, *Domestic Encyclopaedia*, Ed. by James Mease, Philadelphia, (1804), vol. 4, p. 219. See also vol. 5, p. 404.

²⁷ In the *New York Gazette*, May 26, (1777), Benj. Huggett, No. 43 Nassau St., advertised: "A small quantity of lime, so necessary at the present season for whitewashing houses."

The painting contract for Greenwich Hospital, London, (1696), by Wren in the Library of the Royal Institute of British Architects, specifies "Wainscott colour [natural oak shade] Walnut Tree colour or Cedar colour, well and substantially done 3 times in Oyle." Ware specifies for the buildings which he illustrates that all the woodwork is to be painted a "common or stone colour."

²⁸ Peter Kalm, "Travels," vol. 1, p. 249.

²⁹ J. L. Bishop, "A History of American Manufactures," vol. 1, p. 202.

report continues, "is found a kind of earth which has been used instead of Spanish brown, and answered the end. In other places there is an ochre which dyes a wainscot colour."³⁰ In Boston in 1769 John Gore advertised: "Very good red, black, yellow paints, the produce and manufacture of North America."³¹ A coal tar paint was made in New York in 1787,³² which it was confidently announced would supersede other paints because the new product would insure complete protection against the weather. Its use was advocated for roofs, paling, posts and common painting. Shortly after 1800 Dr. James Mease of Philadelphia speaks of "Paints of twenty-two different colours, brilliant and durable . . . in common use from native materials, the supply of which is inexhaustible, including that superb yellow colour scarcely equalled by any foreign paint."³³

COLOR NOTES

A Record of individual houses and other buildings on which original or early color (paint) has been established.

Hart House, Ipswich, Massachusetts.

(c. 1640) "Above the fireplace opening runs a band of decoration, an effective use of a double row of dentils cut from a molded board. On them is introduced the use of color—*red and black*—of which traces remained on the original room before it was renovated some years ago." (Handbook of American Wing, Metropolitan Museum, p. 80.)

Jacob Goodell House . . . (1669) Paneled fireplace of west chamber painted brilliant *sky-blue*. (Bulletin S.P.N.E.A., Ser. 14, p. 24.)

Balch House, Beverley, Massachusetts, (Seventeenth Century). Trim painted *dark red*. (Old Time New England, vol. xiii, p. 94).

³⁰ Pennsylvania Chronicle, Feb. 29, 1768.

³¹ Boston News-Letter, Dec. 21, 1769.

³² "Account of and Directions for using the different kinds of coal tar and varnish," Pamphlet, 1787, New York.

³³ J. Mease, Picture of Philadelphia, (1811), p. 75.

Marmion, Virginia. (Late Seventeenth Century) "In the drawing-room from Marmion, Virginia, now in the Metropolitan Museum, the panels bear designs with vases, garlands, and horns of plenty" (Fiske Kimball, "American Domestic Architecture," p. 137). There are traces of marbleized wood surfaces. The Siena marble fireplace frame with white moldings, is an important part of the color scheme. Probably executed early in eighteenth century.

Cooper-Austin House, Cambridge, Massachusetts. (Seventeenth Century.) When plastering was recently removed from south and west walls, original sheathing and ceiling revealed. Sheathing painted *Indian red*. Oak joists, summer beams and girts and under side of second floor *white-washed*. (Bulletin, S.P.N.E.A., Ser. 17, p. 10, 14.)

Governor's Palace, Williamsburg, Virginia, Virginia Council ordered, May 2, 1727, "that the great Dining Room and Parlor thereto adjoining, be new painted, the one of *pearl colour*, the other of *cream colour*; that the window frames, outer doors and eaves be also new painted." (Fiske Kimball, "American Domestic Architecture," p. 136.)

Graeme Park, Horsham, Pennsylvania, (1728). Traces of *gray-blue* paint visible on interior woodwork.

Woodbridge House, Salem, Massachusetts. (Prior to 1744) "Southeast room panelled on the north side around the fireplace. The ground is *variegated white and black shaded*. The panels *brown* framed in *white & red variegated shades*, frame and pannel as below. One beam till lately covered by a closet exhibits all the beauty of this man's colouring." (Diary, William Bentley, vol. 4, p. 392.)

New York Houses described by Peter Kalm, "Travels" (1748-1749). "The walls of the houses are whitewashed within." . . . The alcoves, as well as all of the woodwork . . . painted a *bluish-gray*

colour. (P. Kalm "Travels," vol. 1, p. 249, 250.)

Lucas House, near Williamsburg, Virginia. (1750) Woodwork of parlor painted in *deep yellow*, doors *marbleized* with red brush strokes, skirting at base of wall in *black*, plaster walls *gray*. Wood trim of dining room in *cerulean blue* with walls *gray*, skirting at base of wall in *black*. Balusters and handrail stained *Spanish brown*, woodwork a *cerulean blue-gray*, skirting *black*. (Established by investigation.)

Mount Pleasant, Fairmount Park, Philadelphia, (1761). "At Mount Pleasant Mansion, we found a very subtle shade of red which Mr. Kimball called "*ashes of roses*." It is a soft gray lavender red. Also at Mount Pleasant the use of *pearl-gray* and *lavender-gray* is quite frequent. (Erling H. Pedersen) Assistant to the Director, Pennsylvania Museum.

Trinity Lutheran Church, Lancaster, Pennsylvania, observed by Thomas Anburey, (1776-1781). "Altar piece is very elegantly ornamented; the whole of the church, as well as the organ, painted *white* with *gilt* decorations . . . it greatly reminded me of the chapel at Greenwich Hospital." Anburey, Travels, vol. 2, p. 304.

Houses near Quebec observed by Thomas Anburey, (1776-1781). "outside doors of houses near Quebec are painted *green* . . . these afford a pleasing contrast to the *whiteness* of the house." T. Anburey, "Travels," vol. 1, p. 125.

Assembly room in Alexandria, Virginia, (Last quarter of eighteenth century). Original woodwork *light gray-green*. (Bulletin of American Wing, Metropolitan Museum, p. 177.)

Christ Church, Boston, Massachusetts. Woodwork of spire and trim painted in *white*. (Established by investigation by Committee of Restoration.) Bulletin, S.P.N.E.A., Ser. 8, p. 5.

Houses near Reading, Pennsylvania, observed by Schoepf, (1783-84). Interior woodwork "with everything *daubed with red*." (J. D. Schoepf, Travels, vol. 1, p. 104.)

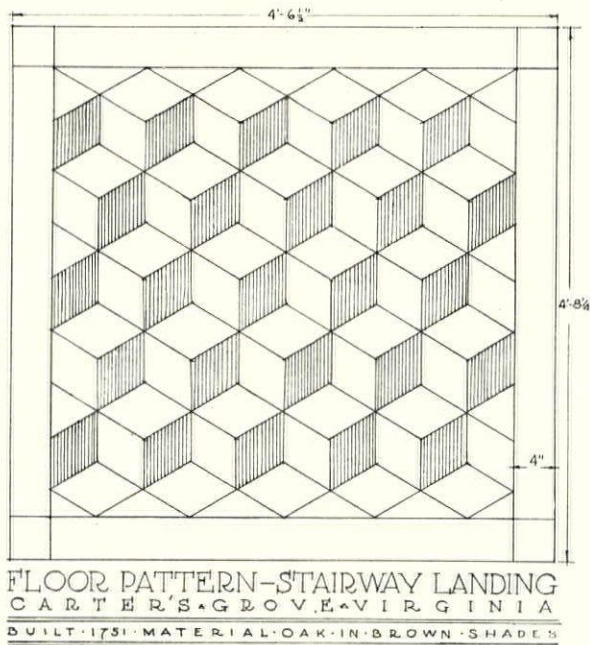
Halifax, Virginia. J. F. D. Smyth noted in 1784 "Many handsome buildings in Halifax, [Virginia] . . . constructed of timber and painted *white*." J. F. D. Smyth, "A Tour," vol. 1, p. 84.

Houses in Maryland "are for the most part built of wood and painted *Spanish brown*; and in front there is generally a porch painted *white*." (Weld, "Travels," (1795-97), vol. 1, p. 246.)

Connecticut Houses (from Boston to New York). "Houses which we passed are generally weather boarded . . . painted, some of a *free-stone* colour, others *white* with *green* doors and window shutters." (H. Wansey, "Excursions," (1794). p. 55.)

Mount Vernon, Virginia, Visited by Isaac Weld, (1795-1797), who observed "The house . . . is of wood, cut and painted so as to resemble hewn stone." (I. Weld, Travels, vol. 1, p. 92.)

Joseph Priestley House, Northumberland-Pennsylvania, (1796). Exterior wood,



work of stone color. (Established by investigation.)

Laws House, Sharon, New Hampshire, (1800). "The Interior could hardly be more simple . . . with sheathing of the plainest type painted *Indian red*." (Bulletin, S.P.N.E.A., Ser. 14, p. 4.)

Houses of Pennsylvania and New England. Mr. Erling H. Pedersen, Assistant to the Director of The Pennsylvania Museum, Philadelphia, has made a study of color and offers the following observations:

"In the simple farm houses we found *deep olive greens* and *deep grey blues*. . . . The plaster walls when not *white* washed were often of a *clear yellow*.

"Colors, naturally, are paler in shade after the Revolution and during the early part of the nineteenth century much of the wood work was white. Colors often found in these later houses just mentioned are fawn, which is a pale tan-gray; a pale gray-blue; and a pale gray-green.

"*'Spanish brown'* is probably the *red ochre* which I found in the majority of the very early houses in Nantucket, dated about 1725. I think it was the first use of paint on woodwork which had been left unfinished for perhaps a generation or two before. This same *red* color was often used along the baseboard or mop-board, as it is called in New England. Even when the rest of the woodwork was not painted, in rooms where the wood sheathing extended to the floor on the fireplace side, this *red ochre* paint or stain was carried across at the floor at the baseboard. It was an extraordinary custom also to carry the *red* base across the bottom of the rail of the doors the same height as the baseboard."

PAINT FORMULAS

Directions for mixing and applying oil and water paints are given in several publications in America of the period discussed.

"To paint arbours and all kinds of garden work, give a layer of white ceruse [white

lead] grinded in oil of walnuts and diluted in the same oil, with the addition of a little litharge [yellow protoxide of lead], then give two layers of green, composed of one pound of verdigrease [a bright very bluish green, the green of copper] and two pounds of white lead, grinded and diluted in oil of walnuts . . . this color is of great service in the country for doors, window shutters, arbours, gardens, seats, rails, either of wood or iron; . . ." vol. 13, p. 652, 653.

Dobson, Thomas, Encyclopaedia or Dictionary of Arts and Sciences, Phila., (1798), 1st Am. Edition.

"For painting ballustrades, and railings, to preserve wainscoting, to paint wainscoting. Ibid. p. 653.

Prussiate of copper as a pigment was recommended by Dr. James Mease of Philadelphia. . . . "It was tried," he says, "by Mr. Benjamin West, Mr. Trumbull and Sir H. C. Englefield, in oil and water—who agreed that in beauty and intensity it surpasses every brown paint now in use. It forms with white—various shades of *lilac color*, which do not appear liable to fade."

P. 218, vol. 4, Domestic Encyclopaedia, Willich, J. Mease, Editor, Phila., 1804.

Green Paint for Inside Walls. The method of producing a *green* water-paint for inside walls of plaster was "supplied to Willich, Domestic Encyclopaedia, by S. W. Johnson Esq., of 'New Jersey.' . . ."

Vol. 4, p. 219. Willich, Domestic Encyclopaedia, Ed. by J. Mease, Phila., 1804.

The above Encyclopaedia also offers paint directions for gates, pales, barns, roofs and timber. See under paint.

Color for Exterior Plaster Walls. Badigeon is a pale yellow color applied to plaster to give it the appearance of stone. "It gives to old houses and churches," says the author of the formula (1798), "the exterior effect of a new building, by assuming the color of stones newly cut."

See Dobson, Thomas. Encyclopaedia or Dictionary of Arts and Sciences, Phila. 1st Am. Edition [1798], vol. 13, p. 650.

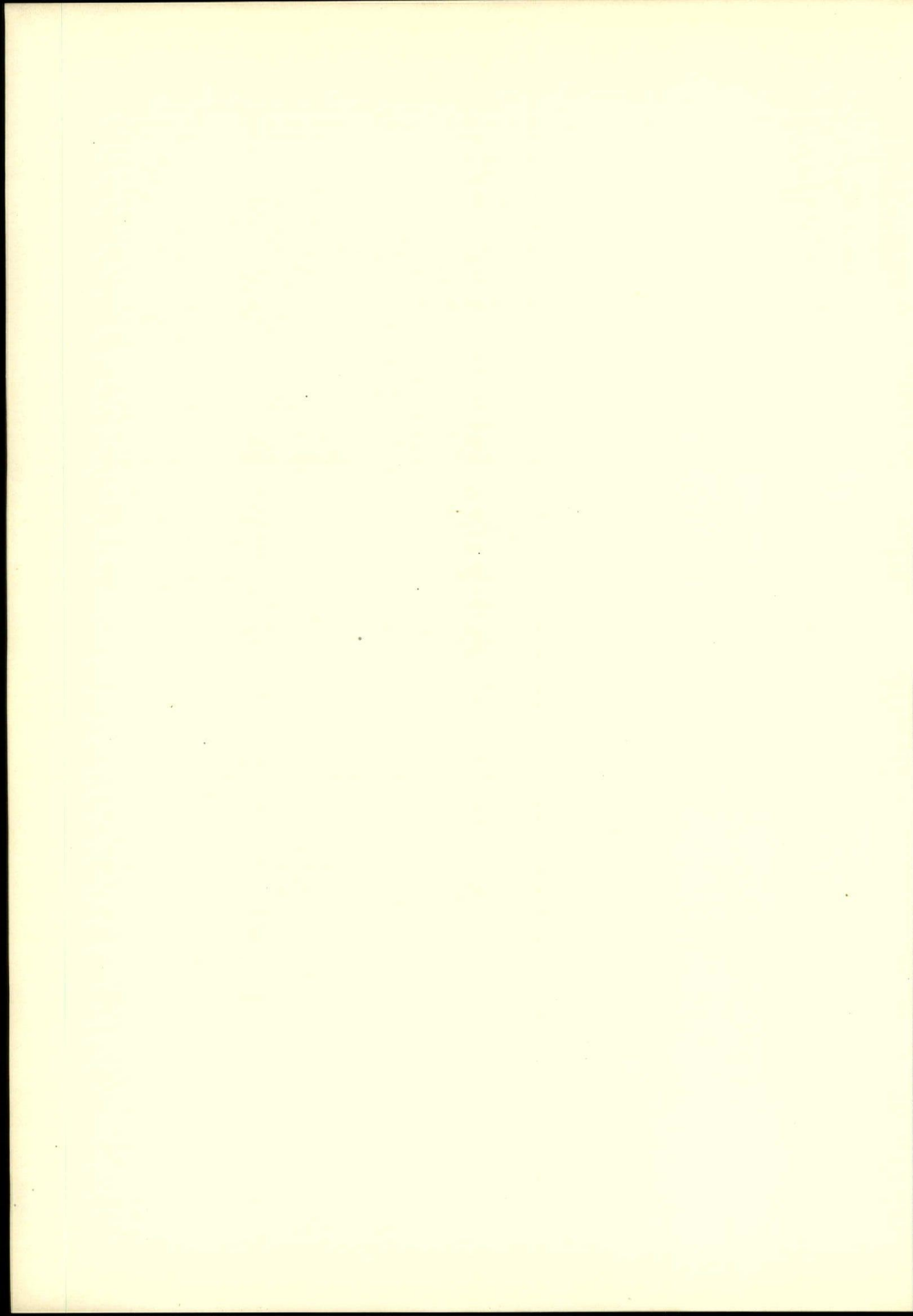
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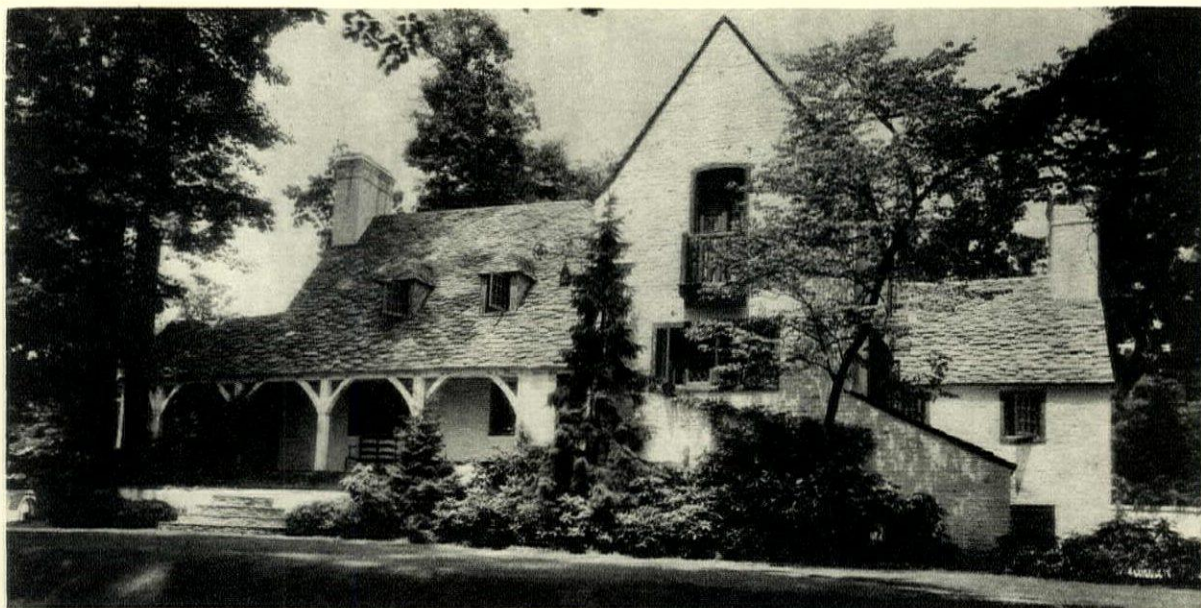
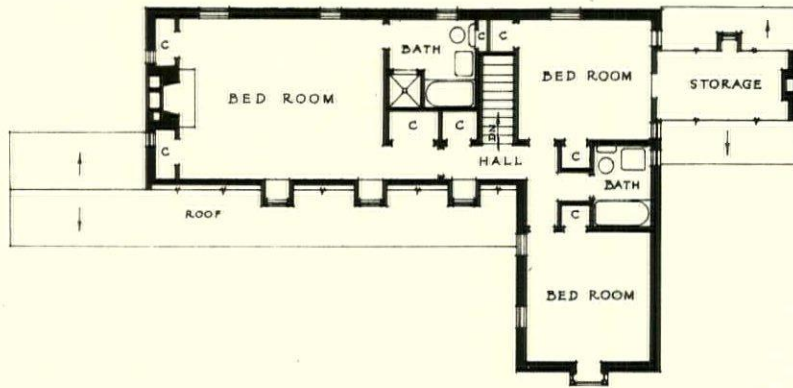
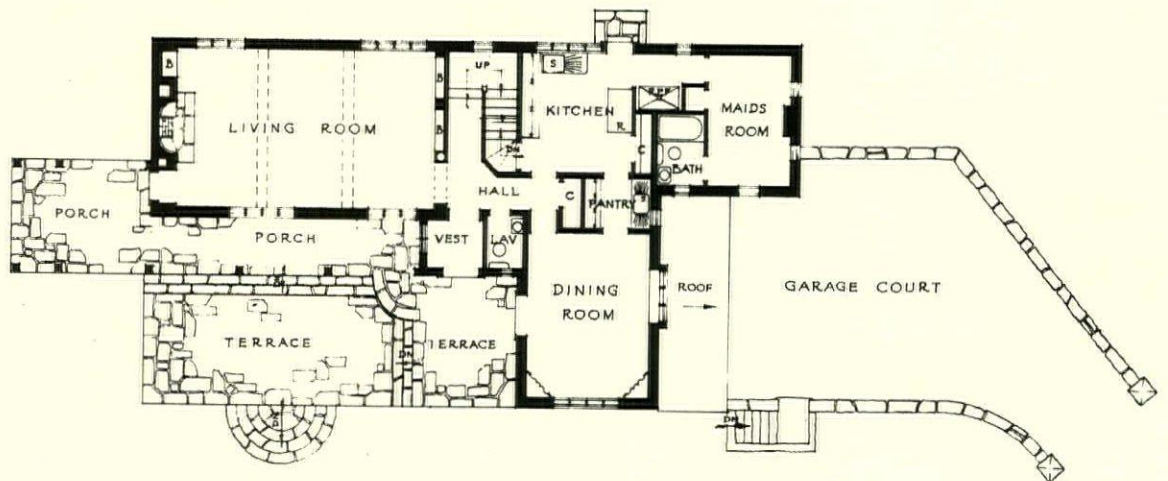


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SECOND FLOOR PLAN.



FIRST FLOOR PLAN.

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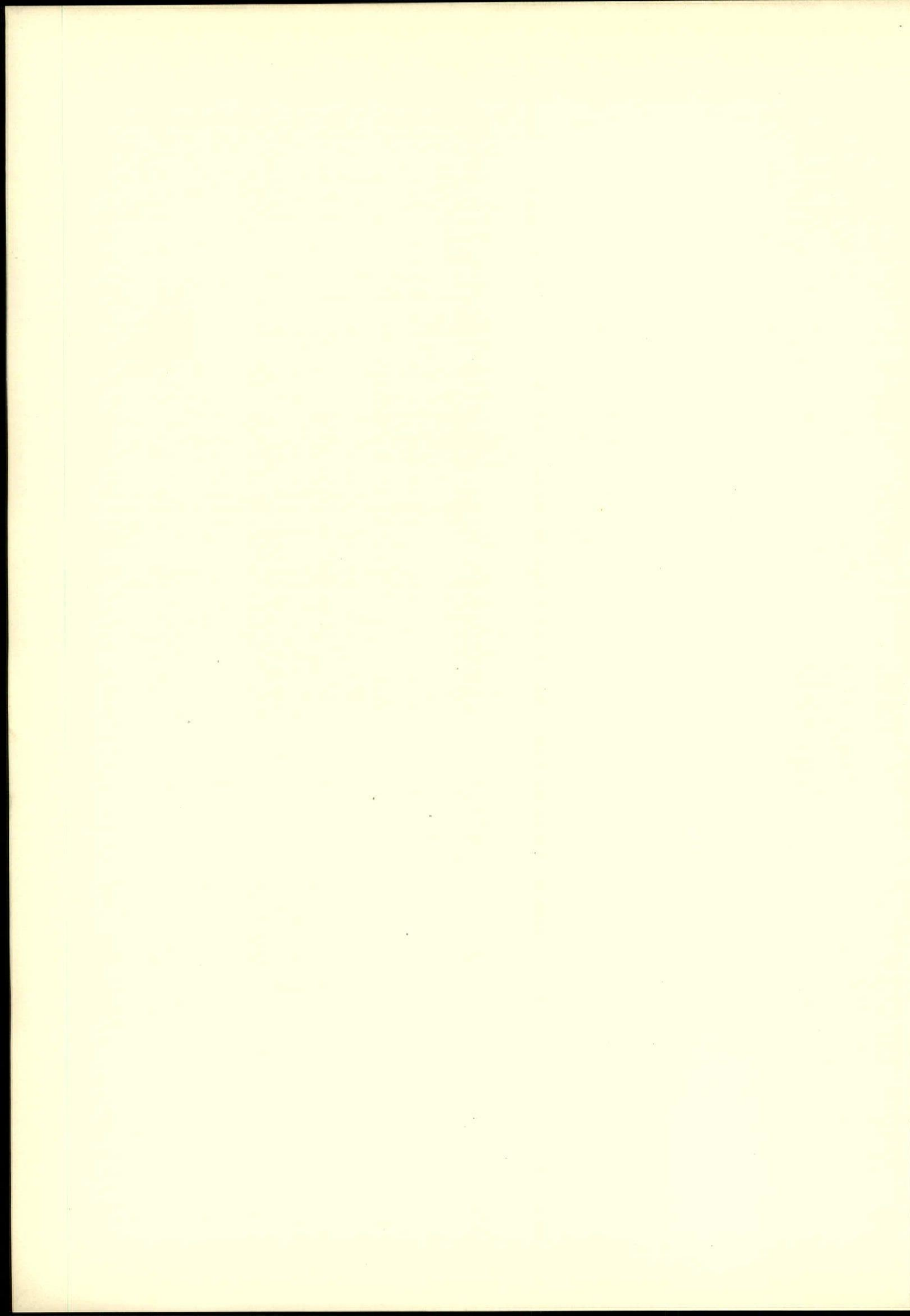




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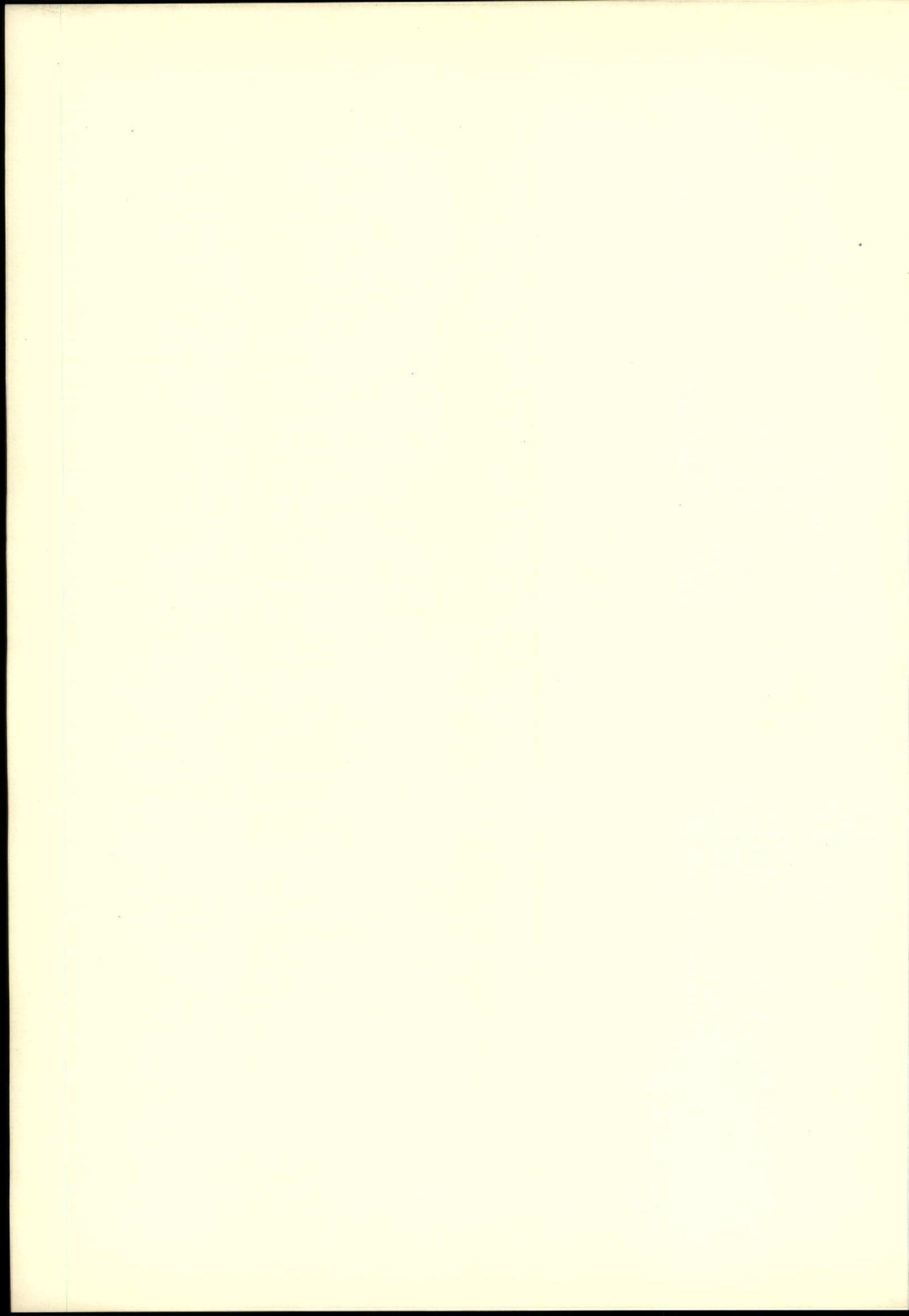




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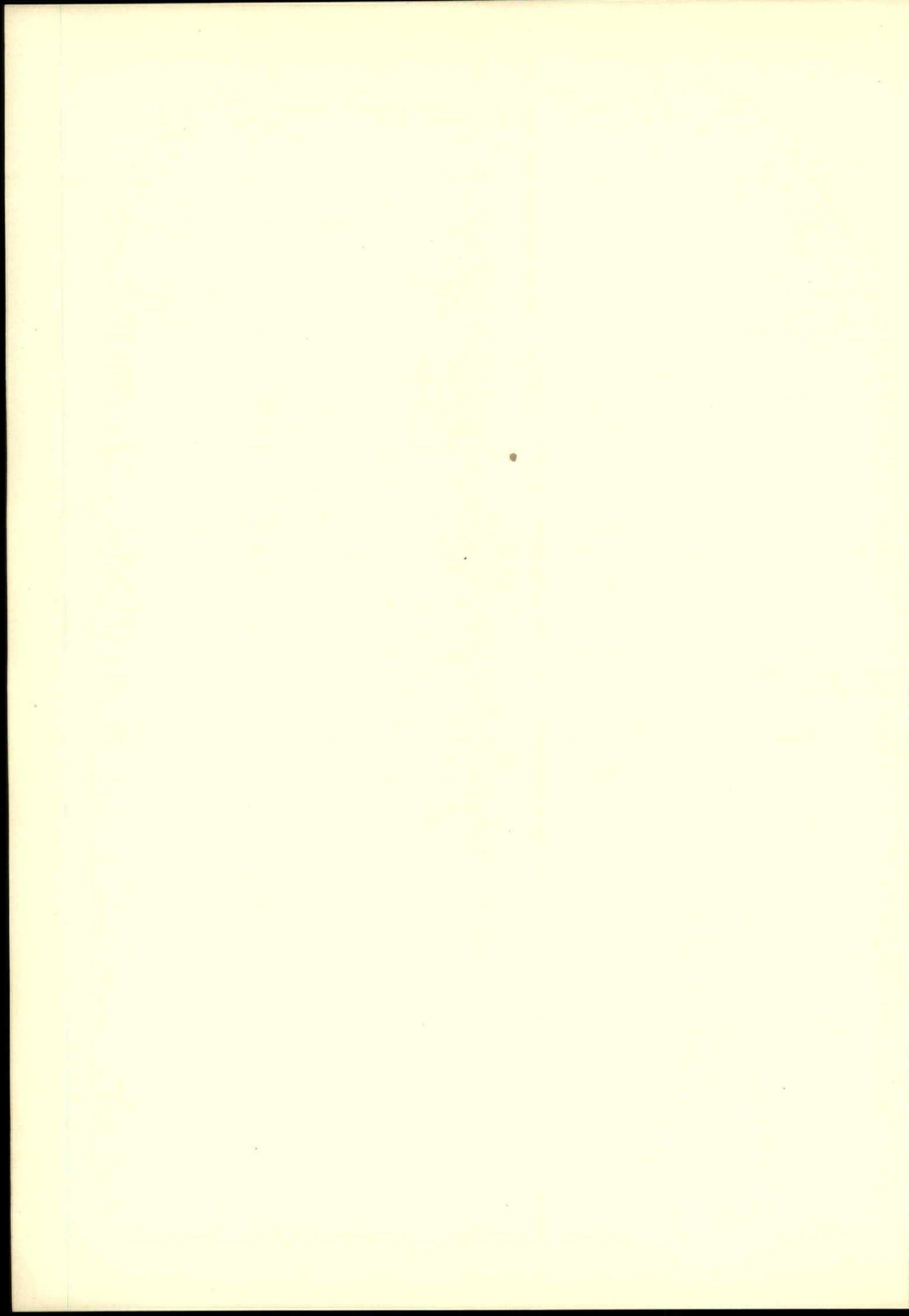
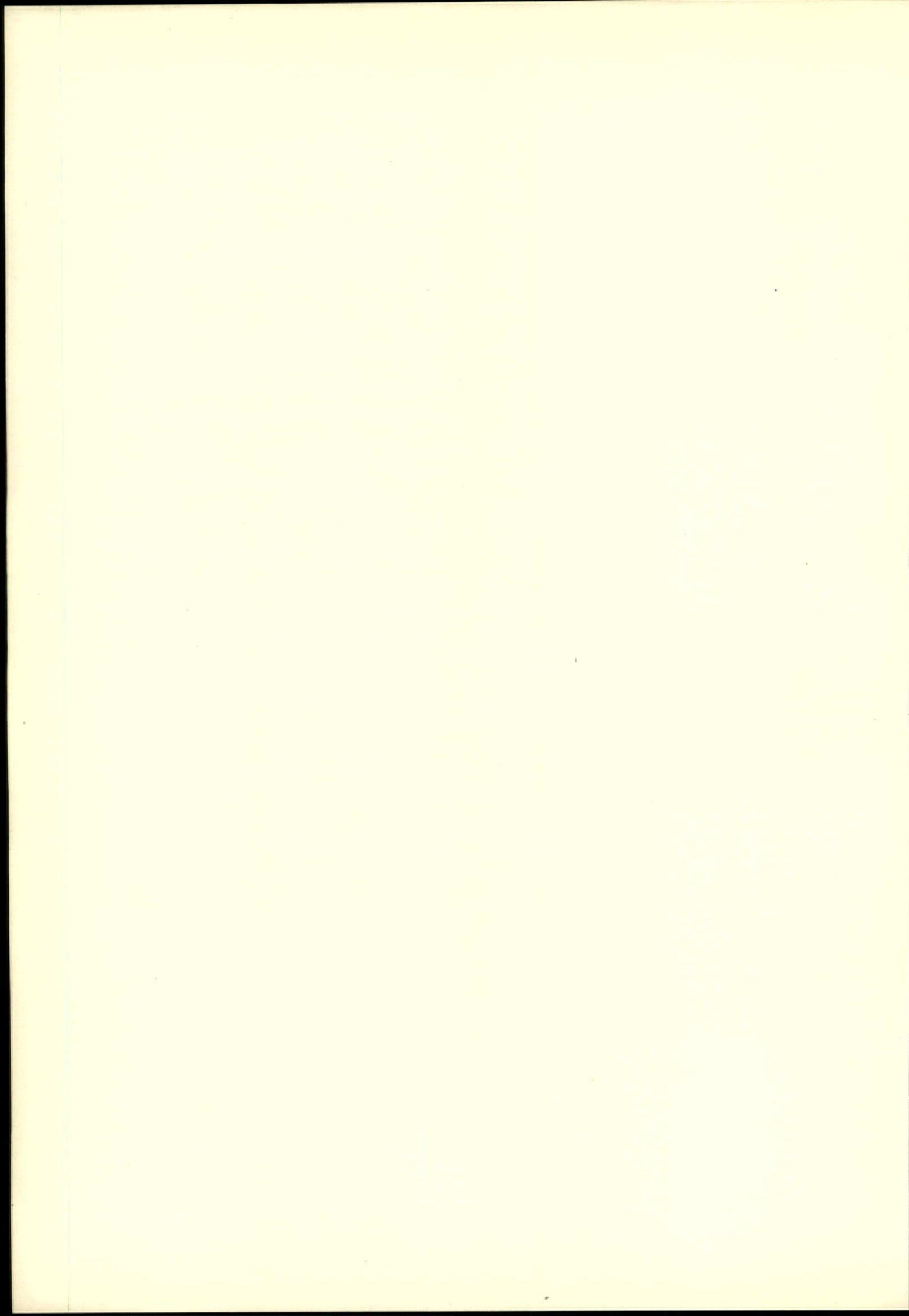




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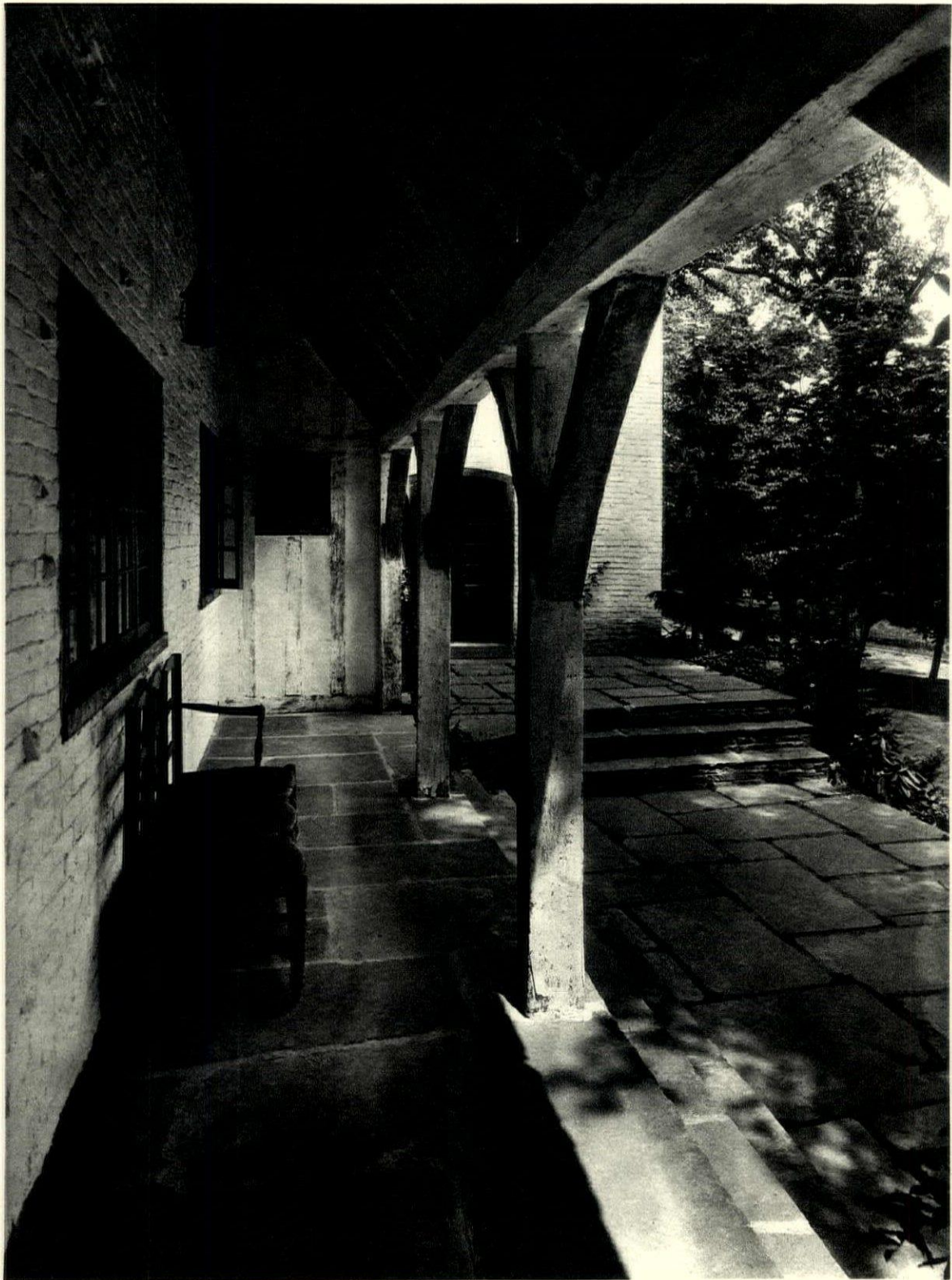


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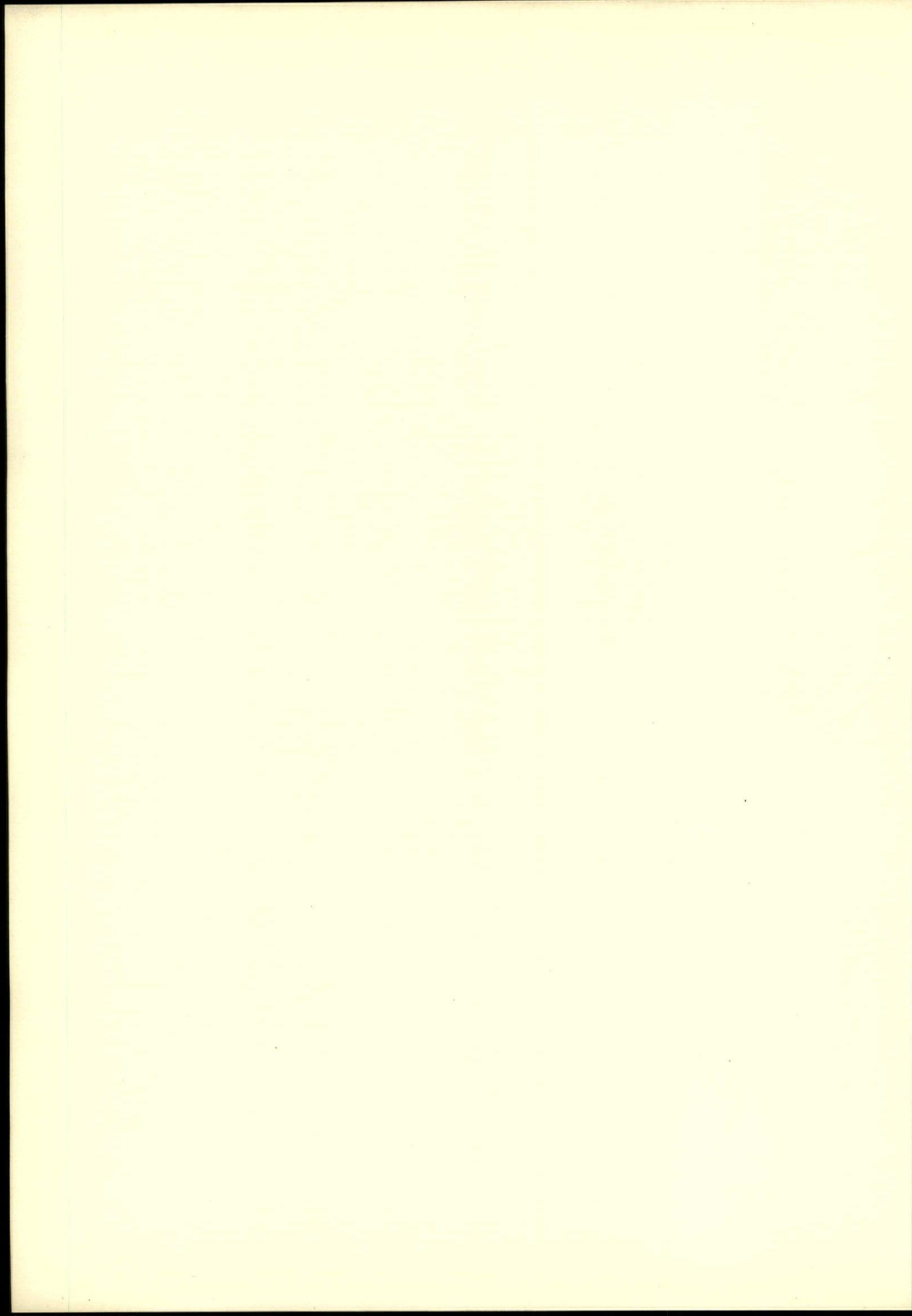




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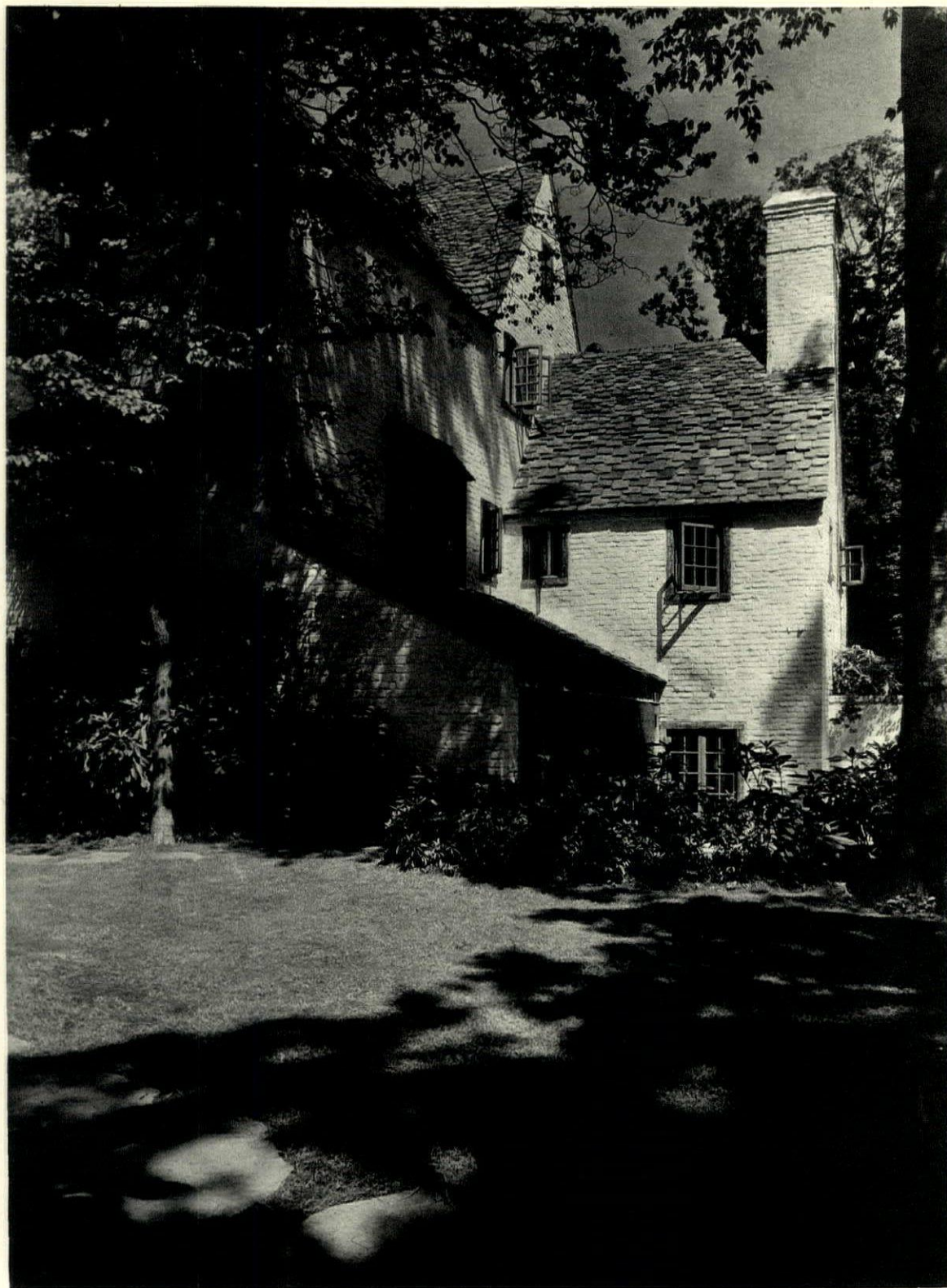
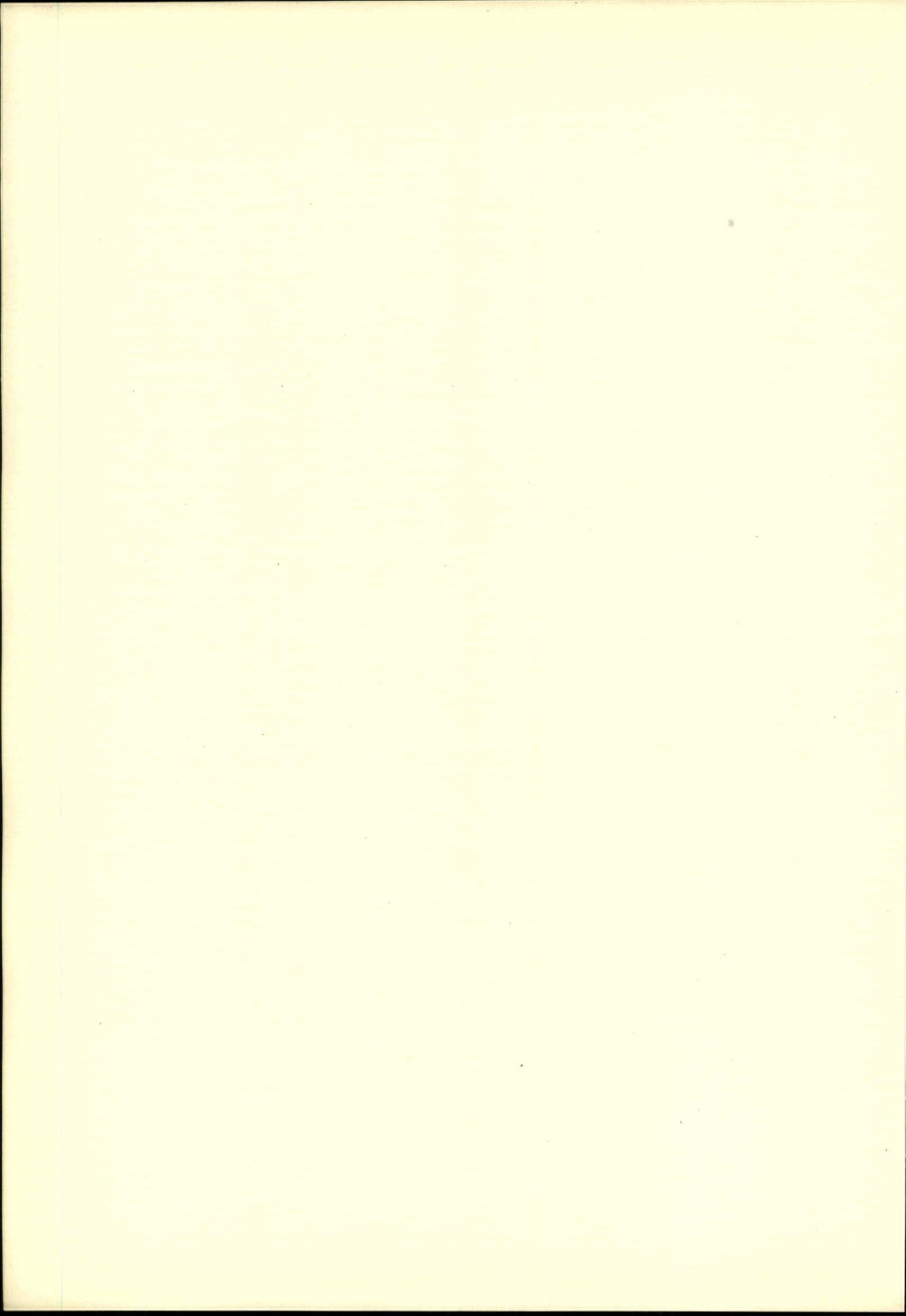


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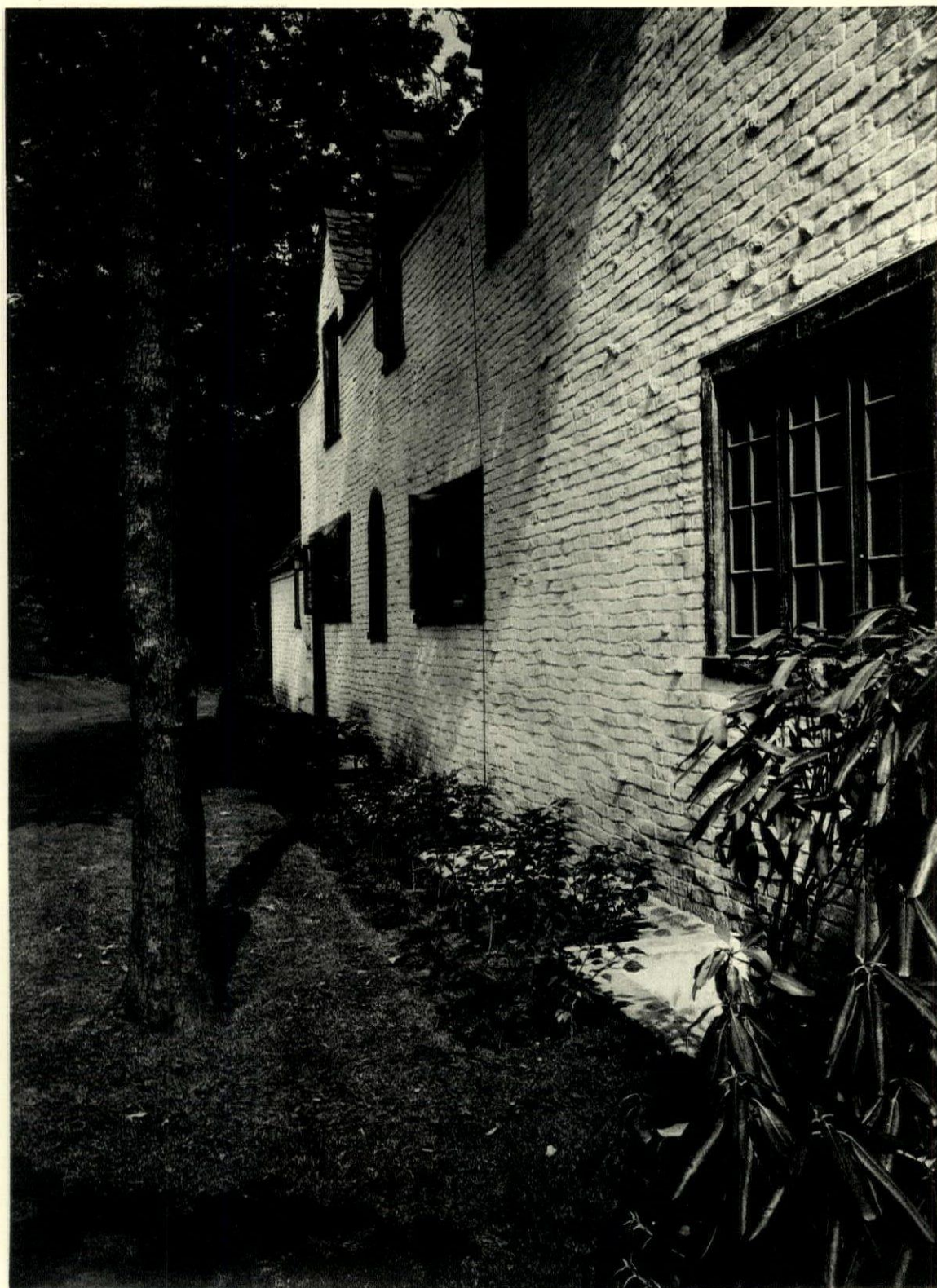


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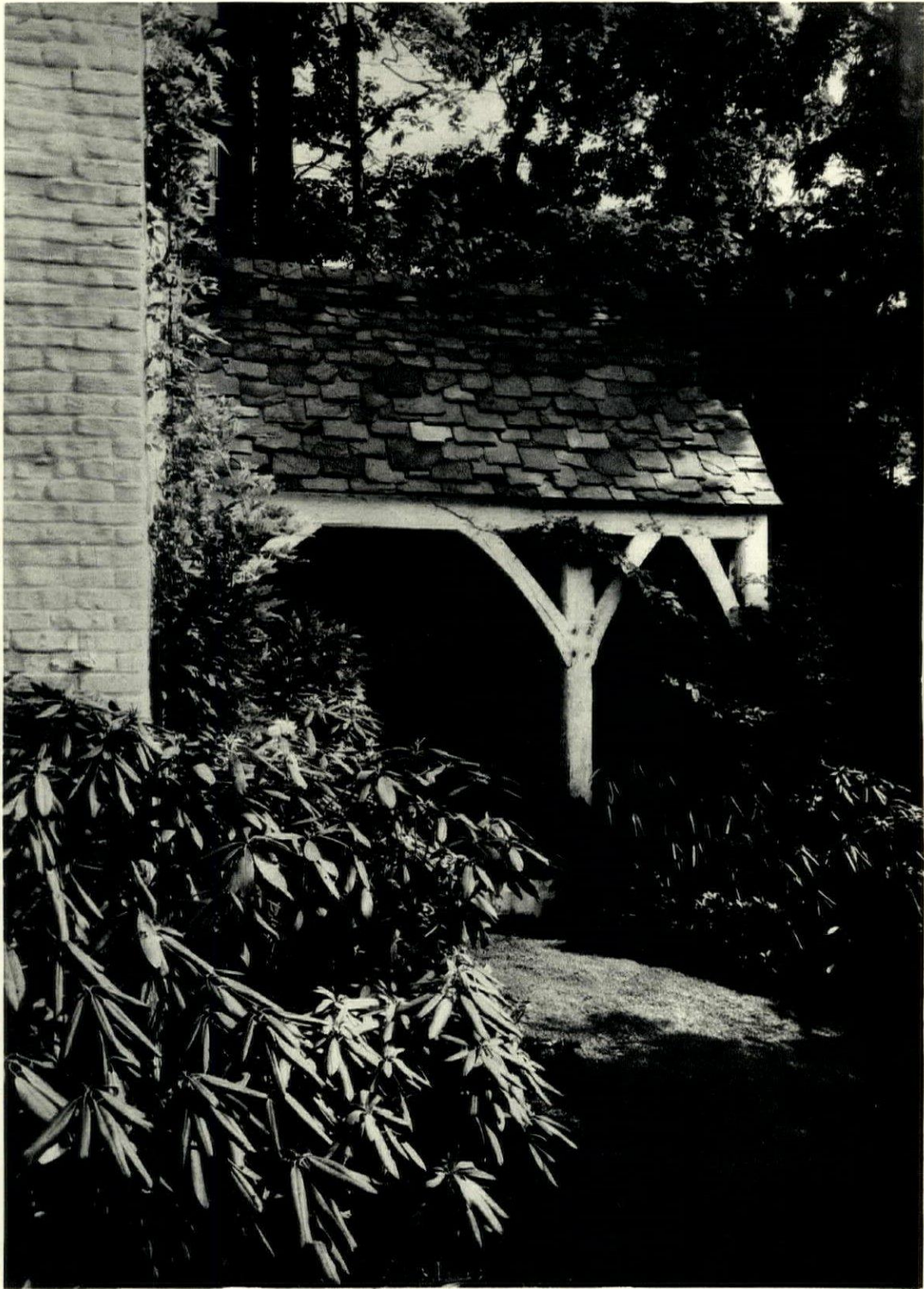
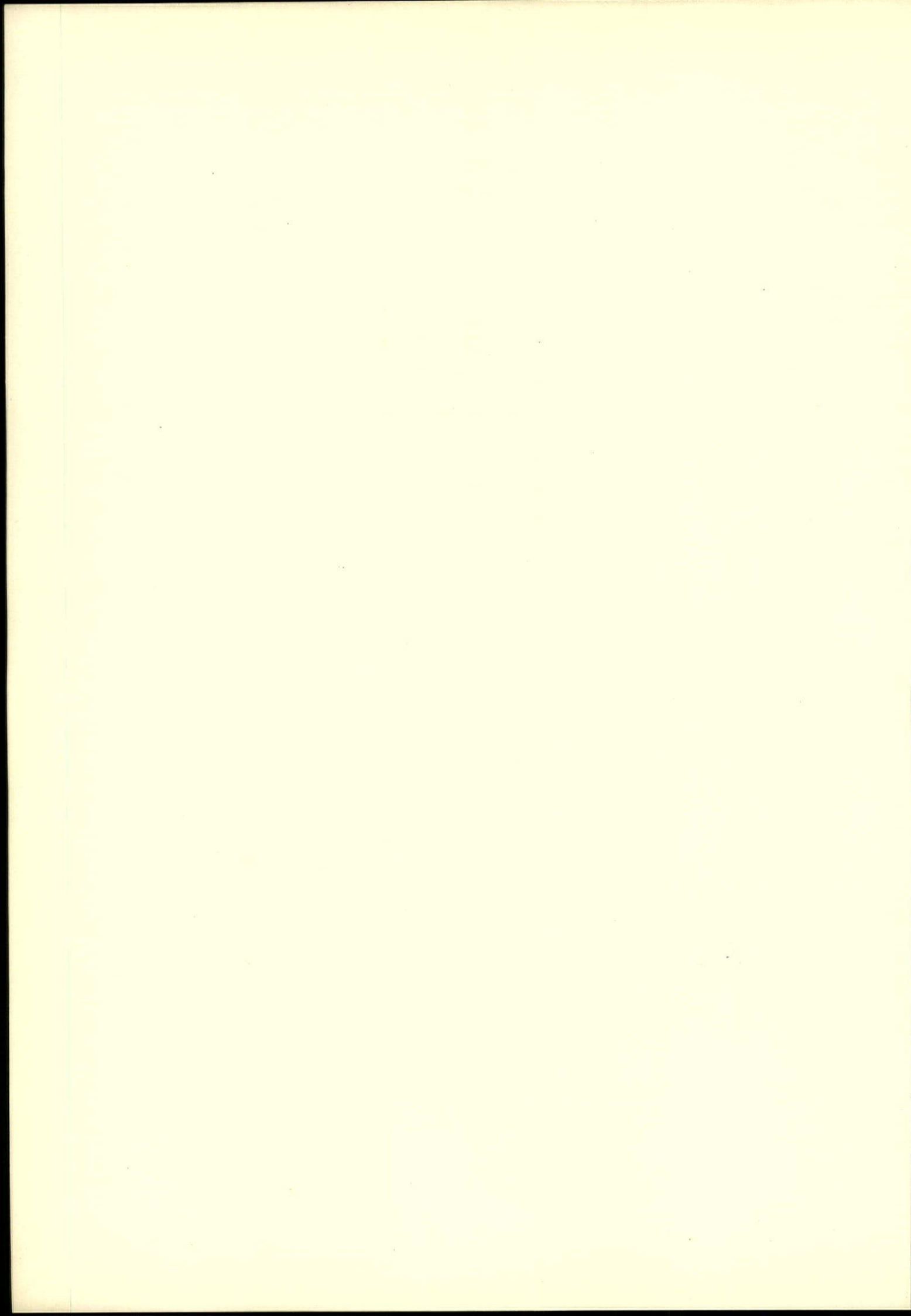


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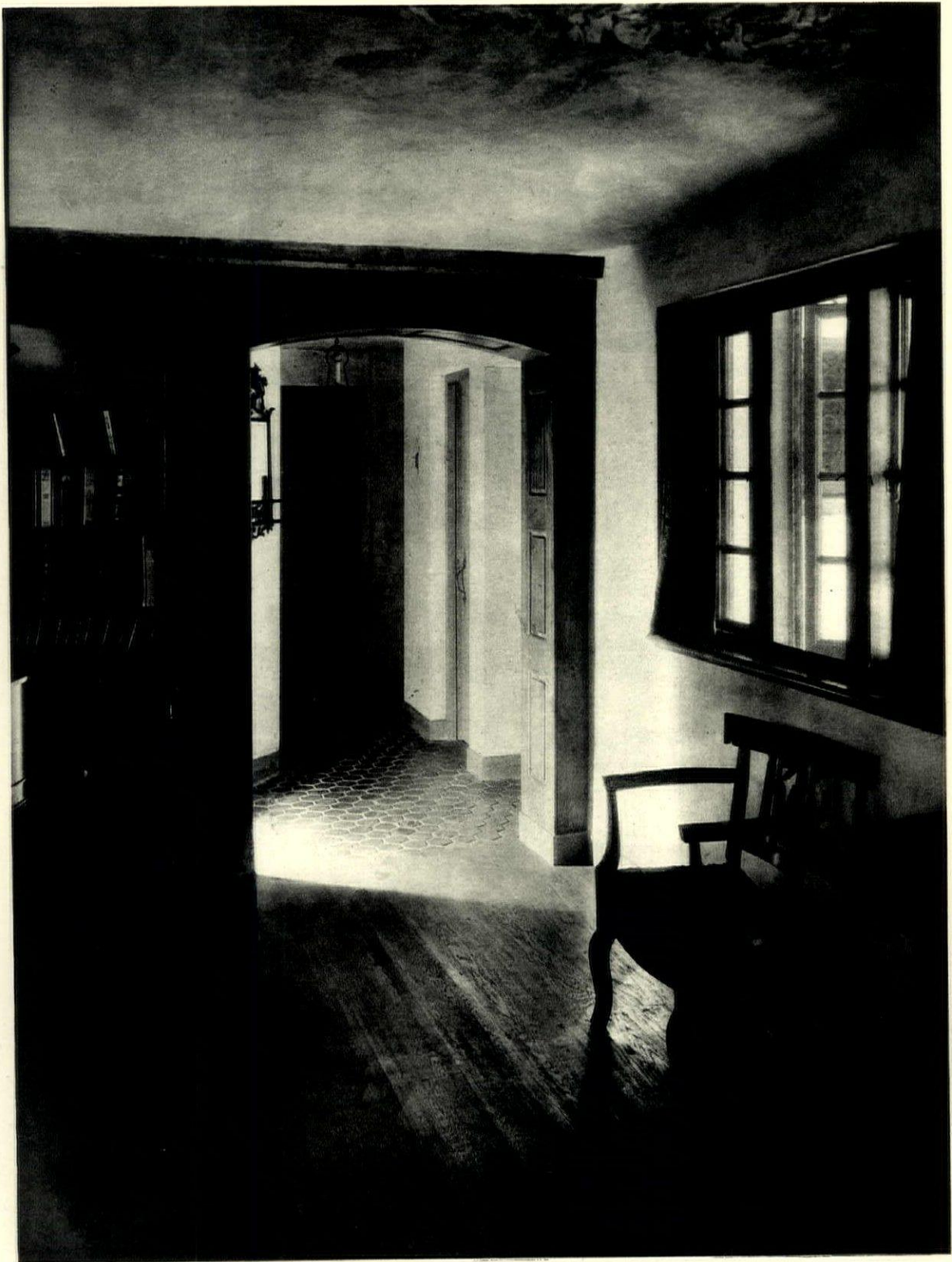


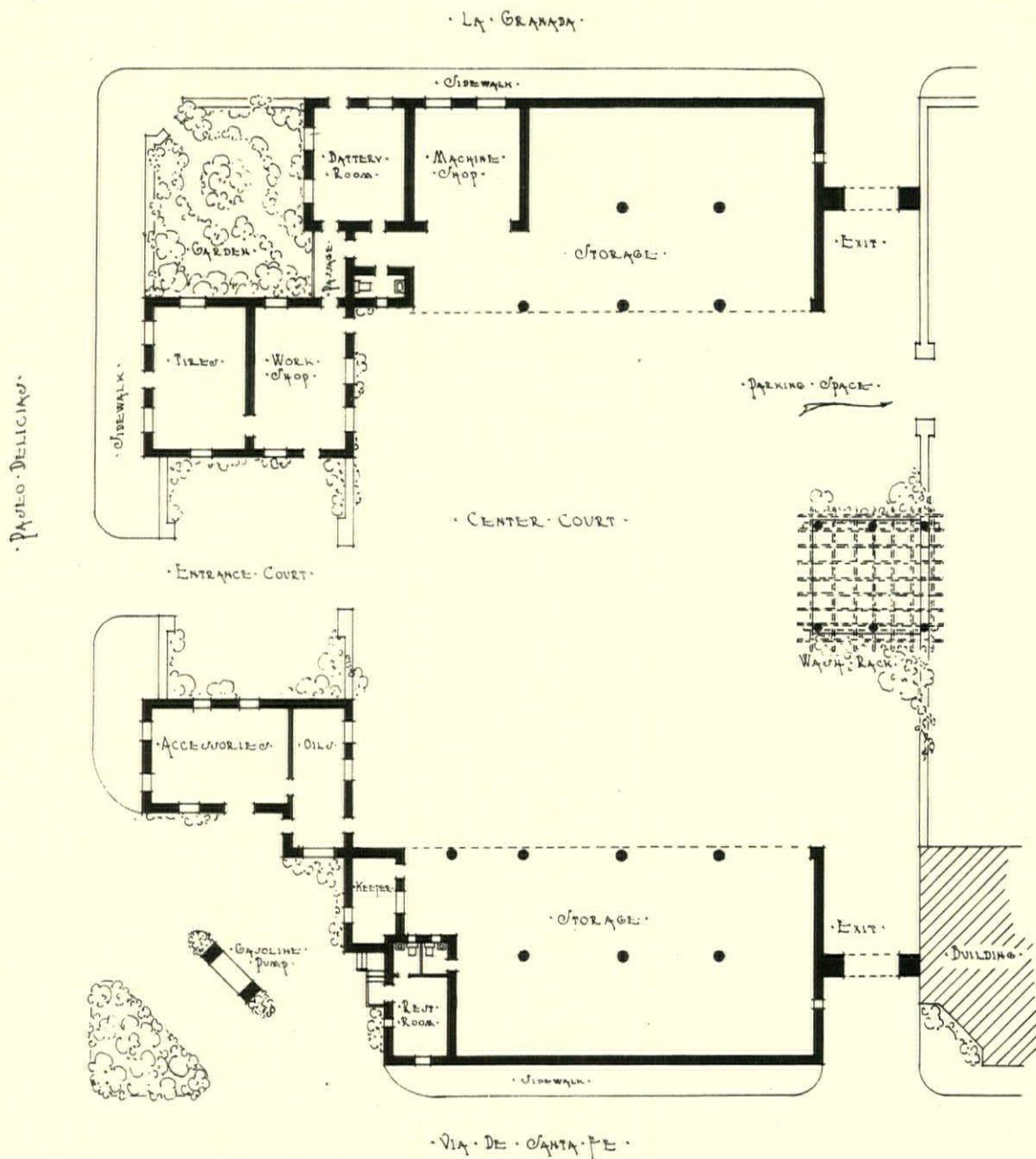
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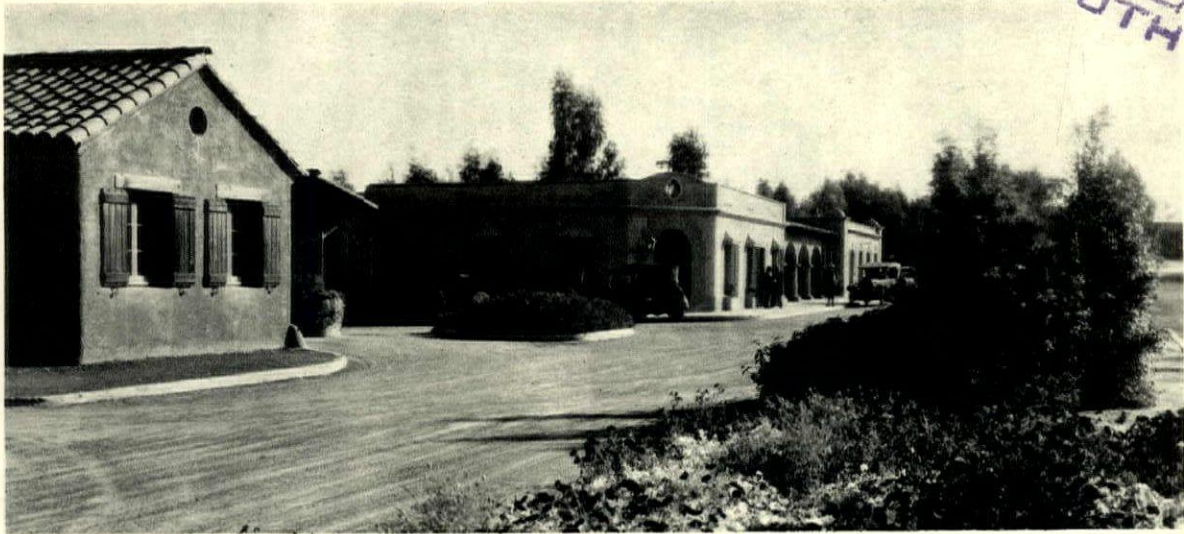
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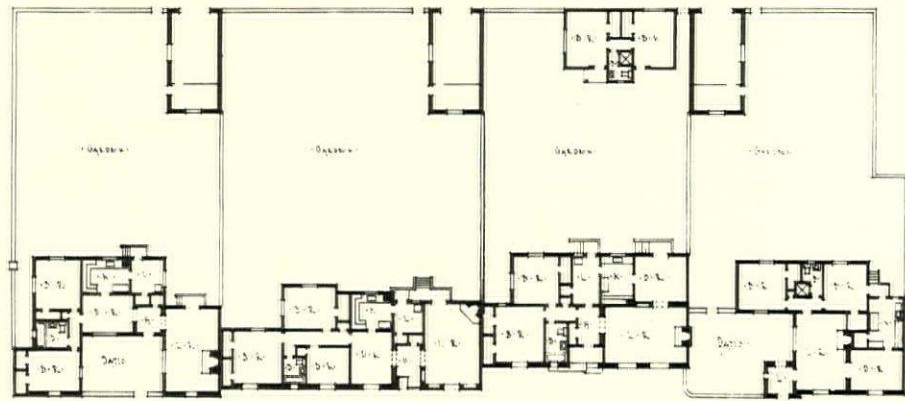
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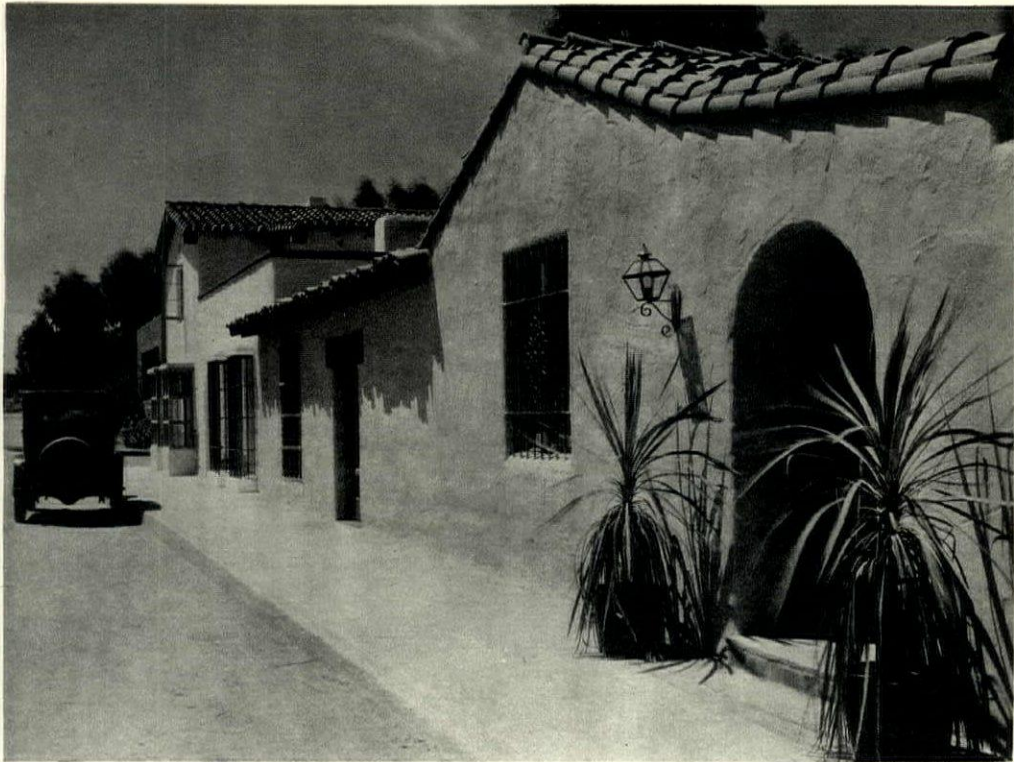


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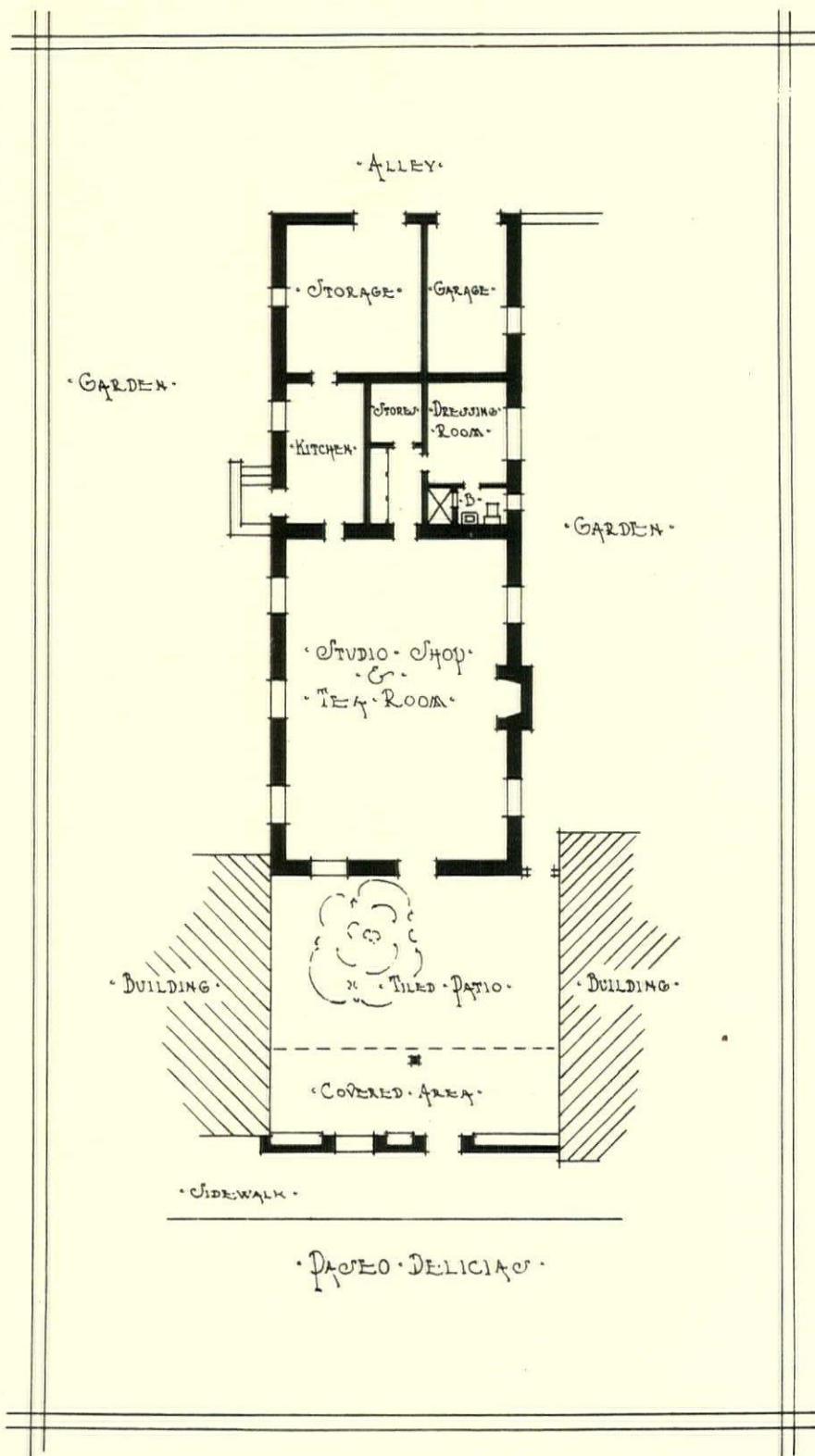


PAOLO DELICIAO

GROUP OF RESIDENCES IN CIVIC CENTER - BLOCK D - RANCHO SANTA FE - CALIFORNIA



Apartments and Studio Shops
Civic Center, Rancho Santa Fé, California
LILIAN J. RICE, ARCHITECT



Plan of Tea Room and Court
Civic Center, Rancho Santa Fé, California
LILIAN J. RICE, ARCHITECT



Grilled Windows
Civic Center, Rancho Santa Fé, California
LILIAN J. RICE, ARCHITECT



ITALIAN STONEWORK

BY MYRON BEMENT SMITH

PART II

THE QUARRIES OF FLORENCE

The famed *pietra forte*, the sandstone used for practically all of the Florentine work, is quarried on the south side of the Arno. The Pitti Palace, for instance, was built of this stone taken from the quarry now covered by the Boboli Gardens. *Pietra forte* is a warm buff, in varying tones, ranging from a brownstone depth to light ochre with an occasional cold gray tint on the rare quarry seams. The texture is dense, the strata peculiarly stirred and twisted, with fine dark lines running in different directions, (Fig. 32 in Part II of this series). It is best adapted to rough picked or point tooled work though it may be worked down with patience to a fine surface. It weathers darker, intensifying and enriching the colors while never becoming too dark. An added charm of this truly beautiful stone is provoked by the heavy street dust of Florence which collects on the lower stories of the palaces, grading out at the cornice to clean stone. The effect is that of a rendered drawing on which precipitating washes have been carried down to settle near the ground level. With possibly no exception the stone palace façades of Florence are built of this *pietra forte*, a fact that will make unnecessary further mention of color in connection with the details.

Another stone of the locality is *Macigno Bigio*, from Fiesole, similar to the above but much softer and with a tendency to weather very dark. Fiesole also furnishes *pietra serena*, a cold gray sandstone of fine grain used mostly in interiors, such as the Pazzi Chapel or S. Spirito.

FLORENTINE PALACES (Continued)

PALAZZO PITTI is built in three stages.

Central part of façade by Brunelleschi, 1435. See Plate I on page 233 of the September issue of *The Architectural Record* and Figs. 32, 39, 40, 41, 46, and 47 of this issue. Palace is 660' long and 119' high with a fourth story intended. The stone was quarried on the spot, which explains the huge dimensions.

Basement story: Rusticated ashlar worked with a coarse point. The bosses sweep out in irregular curves to a projection of 6" to over 24". The channel faces are 1" wide with minute joints midway, averaging $\frac{1}{8}$ ". Courses, reading up, are 20½", 21½" etc. One stone is 27' long. Note that the astragal over the plain base is missing in the original central part.

Second story: Rustication projects 7" to 9½", radii more even with an approximately flat face treated with coarse point tooling. Channels 1¾" wide with joints midway. Typical course heights 20½" and 25".

Third story: rustication approximates 5½" projection with a short radius. Channels and course heights similar to second story. See Fig. 32.

Great Court, added 1568 by Ammanati, who also put the windows and lions' heads on the façade arcades. (Figs. 31, 33, 34, 35, 36, 37 and 38). The court faces the Boboli Gardens, which may account for its playful treatment. De Brosse is said to have taken these rusticated orders as the model for his Palais du Luxembourg, from which the idea became popular in France. The detail photographs show the three orders with variations in tooling, all interesting in themselves though the court as a whole seems overburdened with rustication.

The end pavilions and their supporting ramps: added 1763. (Figs. 42, 43, 44 and

45). The ramps end in colossal walls pierced by heavily voussoired arches. The typical course is 28" high. From a $\frac{5}{8}$ " draft on either side of a $\frac{1}{4}$ " joint the stones project out 18" to 44". The rock-cleft faces of the south ramp are interesting. The wall stones appear to have been roughly dressed with Cyclopean hammers though they are lying in even beds. The stone has weathered to very dark color.

PAVILIONS

The pavilions were built in a technique imitating the main façade but as Fig. 45 shows, they are in a slightly different tooling.

PALAZZO PAZZI-QUARATESI, by Brunelleschi in 1445. See Fig. 20 on page 230 of the September issue of The Architectural Record and Figs. 57 and 84 of Part III of this series. The basement is much like the Riccardi but in smaller stones to accommodate its height of 25 feet. The rustication projects from 2" to $7\frac{1}{2}$ " from channels $1\frac{1}{2}$ " wide. The joints are as wide as $\frac{1}{4}$ " in places. Course heights, reading up: $7\frac{1}{2}$ ", 11", $16\frac{1}{2}$ ", $15\frac{1}{2}$ ", $13\frac{1}{2}$ ", $18\frac{1}{2}$ " etc. Masons' marks show, some the same as on the Riccardi though the finish of the stones is not so considered as on that palace.

PALAZZO RUCELLAI, by Alberti, 1451-55. (Fig. 53, and Figs. 74, 75 and 85 of Part III of this series). The actual construction of the palace is believed to have been carried out by B. Rossellino. The three stories are treated the same. The basement plinth shows a rare use of *opus reticulatum*, false jointed, however. Its bosses are 9" square and project $\frac{9}{16}$ ", $\frac{1}{4}$ " radius at edge, $\frac{1}{2}$ " channels, microscopic joints. On the basement story above the projection of bosses is $1\frac{1}{2}$ ", $\frac{1}{2}$ " radius at edges, channels $1\frac{1}{8}$ " wide with $\frac{1}{8}$ " joint at bottom of channel. Many blind joints come across the bosses. The course heights begin as 18", $10\frac{1}{4}$ ", $21\frac{1}{4}$ ", $15\frac{1}{8}$ " etc. Pilasters project $2\frac{7}{8}$ " from channel face and are $22\frac{7}{8}$ " wide with a $\frac{1}{2}$ " draft at joints and edges, the balance of the surface

fine point tooled. Wall bosses are point tooled but coarser. Moldings are point and chisel worked. Main cornice reaches 63' from ground.

PALAZZO GUADAGNI, attributed to Simone del Pallajuolo, called Il Cronaca, 1490. Plate II on page 325 and Figs. 3 and 13 (September issue of The Architectural Record). The high basement story is of flat faced ashlar in 12" courses with the doorways and angles set off by rustication. The upper stories are decorated with *sgraffito*. The rustication of the doors, (Fig. 3), is in a style different from that of the angle, (Fig. 13), as may be seen from the drawing, Plate II. The angles are drafted with a $\frac{3}{8}$ " chisel, the field left slightly coarser with point tooling. The rustication is worked with a finer point than the walls, though the difference is hardly appreciable.

PALAZZO STROZZI, begun by Benedetto da Maiano in 1489 and carried to the cornice which, with the court, was added by Simone del Pallajuolo, (Il Cronaca), c. 1500. See Plate I and Fig. 5 (September issue of The Architectural Record); Figs. 50 and 51 of the current issue and Figs. 58, 71 and 80 of Part III of this series. The diminished rustication carries up the three stories in a manner which appears monotonous when compared with the Riccardi, Pazzi or Gondi palaces. Nevertheless this palace is generally reputed the best in Florence. The stone, *pietra forte*, is point tooled on the bulging bosses and worked with a fine point on the molded parts. The contrast in texture, however, is hardly sufficient. Attention is called to the profiles of the bosses which are segments of ellipses, this even in the upper story. The intersection of the curved planes at the angles is accommodated with a slight radius, sufficient to prevent a hard angle. The architect apparently had in mind an expression, by means of these bulging bosses, of the weight of the stone above, which increases as it progresses downward, bulging the stones out as cheeses in a press.

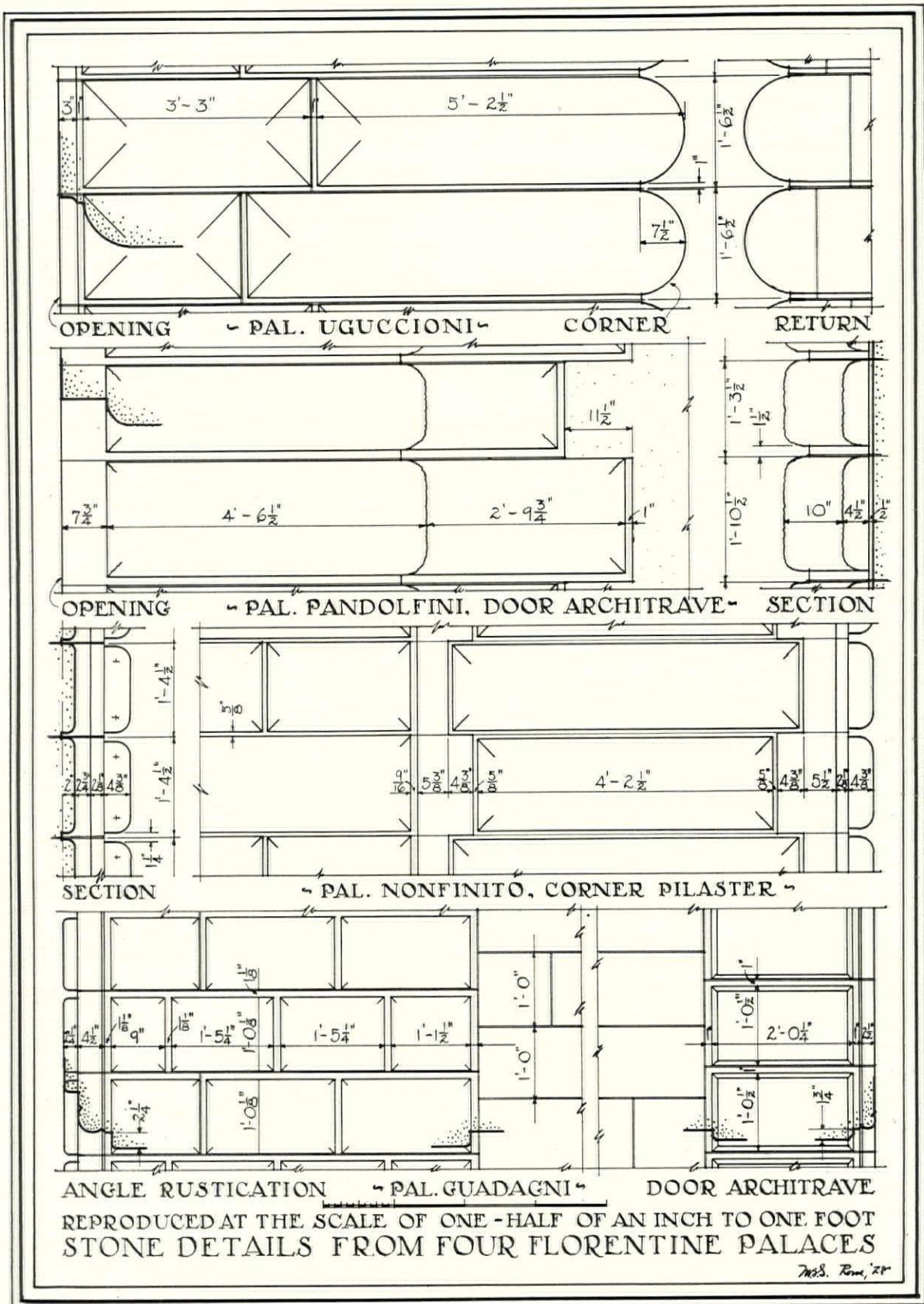


PLATE II. ITALIAN STONEMWORK



FIG. 31. PILASTER BASE AT SECOND FLOOR,
GREAT COURT OF PITTI PALACE, FLORENCE
AMMANATI, ARCHITECT, 1568

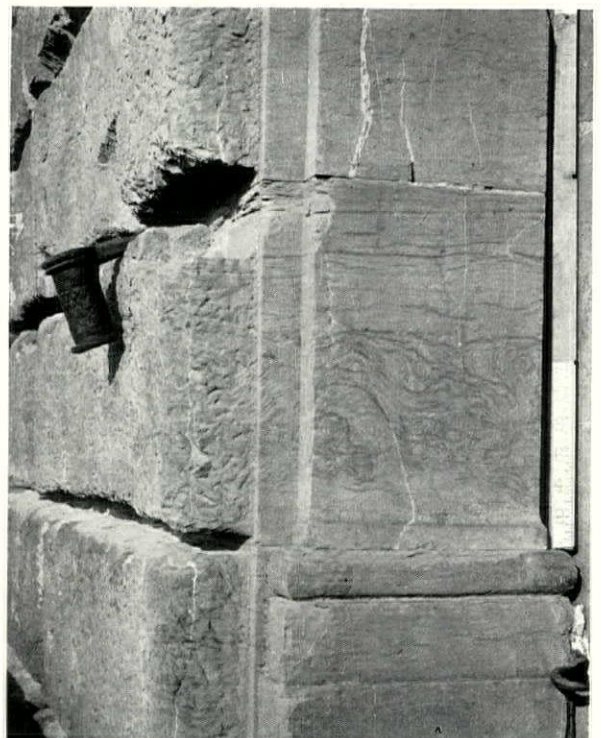


FIG. 32. REVEAL OF WINDOW, THIRD FLOOR,
FAÇADE OF PITTI PALACE, FLORENCE
BRUNELLESCHI, ARCHITECT. CIRCA 1435

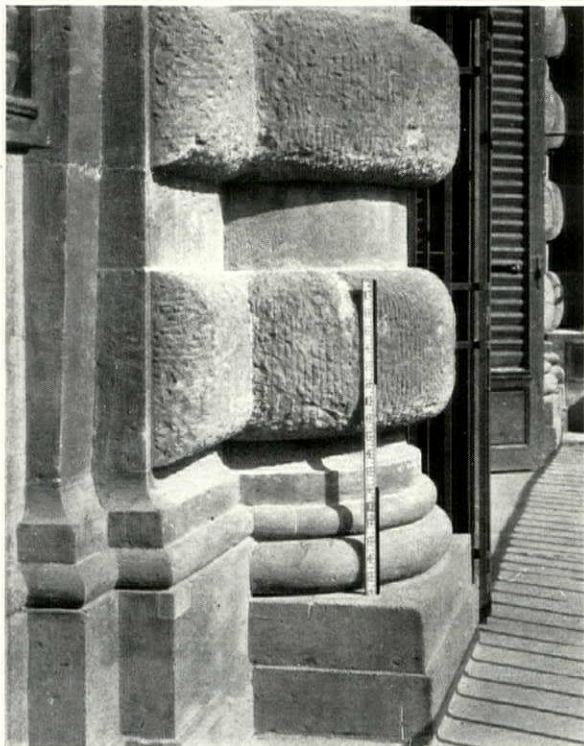


FIG. 33. PILASTER BASE AT THIRD FLOOR,
GREAT COURT OF PITTI PALACE, FLORENCE
AMMANATI, ARCHITECT, 1568

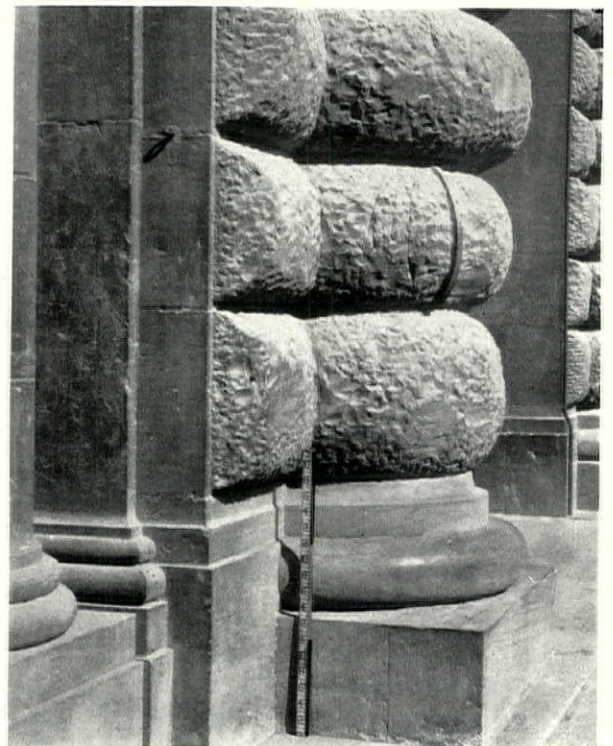


FIG. 34. PILASTER BASE AT GROUND FLOOR,
GREAT COURT OF PITTI PALACE, FLORENCE
AMMANATI, ARCHITECT, 1568



FIG. 35. ORDER AT SECOND FLOOR, GREAT COURT OF PITTI PALACE, FLORENCE
AMMANATI, ARCHITECT, 1568

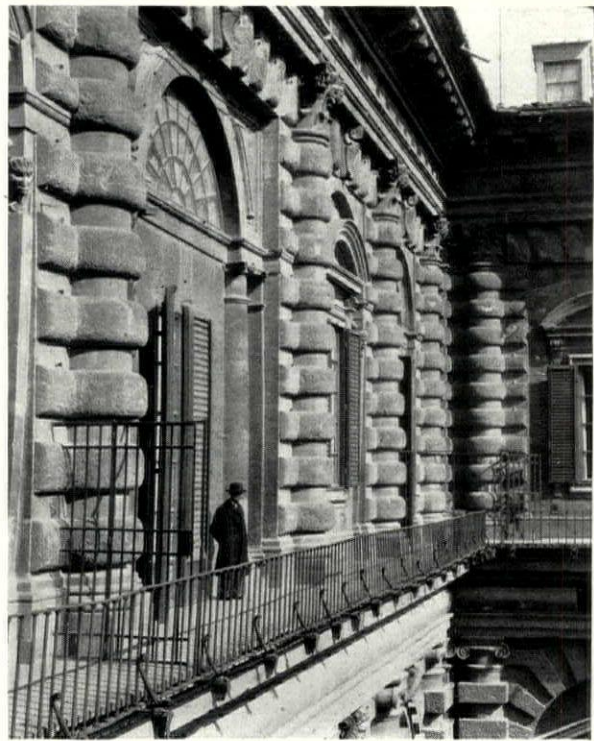


FIG. 36. ORDER AT THIRD FLOOR, GREAT COURT OF PITTI PALACE, FLORENCE
AMMANATI, ARCHITECT, 1568

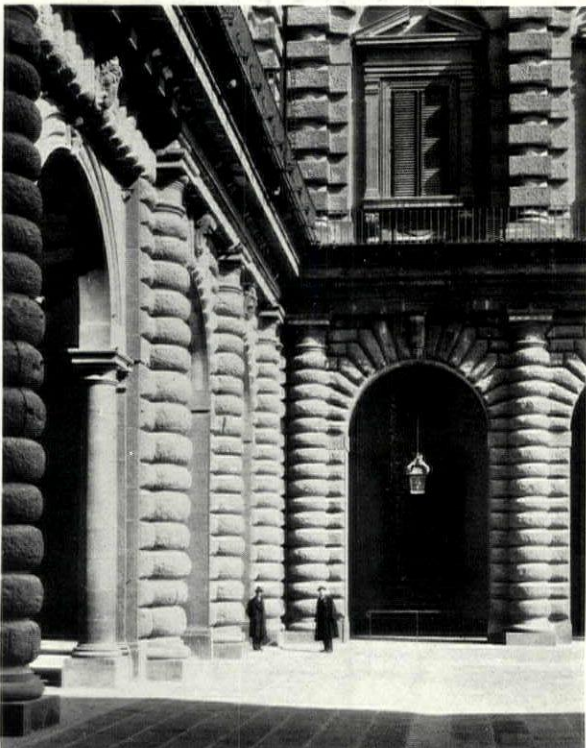


FIG. 37. ORDER AT GROUND FLOOR, GREAT COURT OF PITTI PALACE, FLORENCE
AMMANATI, ARCHITECT, 1568

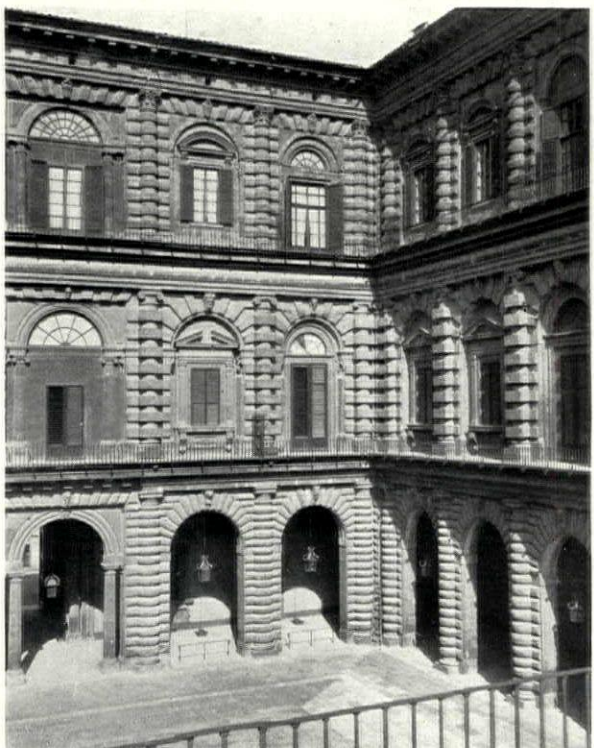


FIG. 38. VIEW SHOWING THREE ORDERS, GREAT COURT OF PITTI PALACE, FLORENCE
AMMANATI, ARCHITECT, 1568

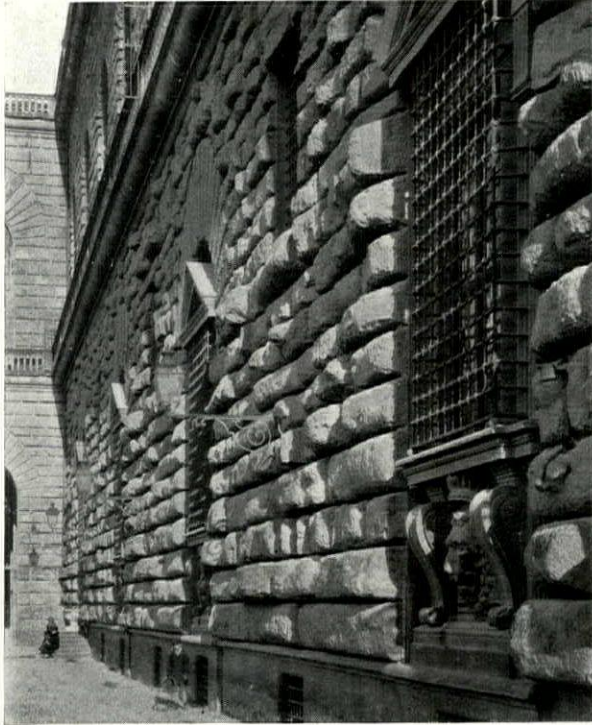


FIG. 39. MAIN FAÇADE, PITTI PALACE
WALL BY BRUNELLESCHI, 1440
WINDOWS BY AMMANATI, 1568

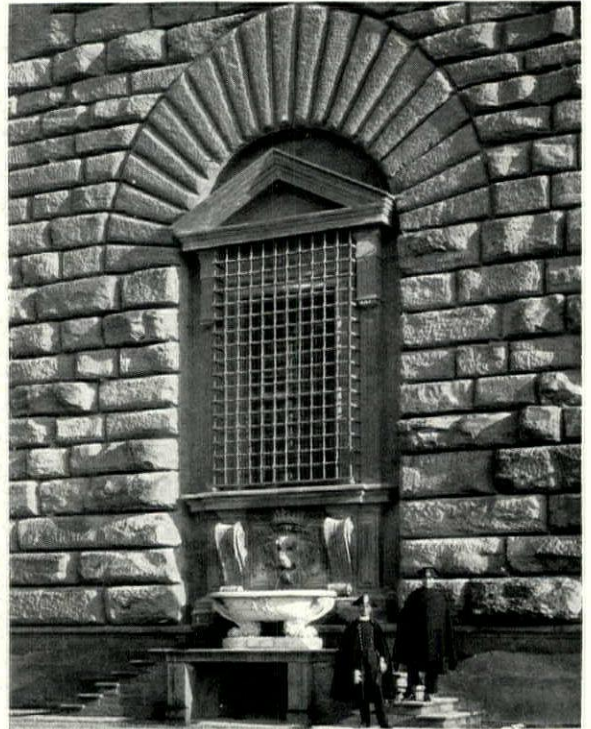


FIG. 40. DETAIL OF MAIN FAÇADE, PITTI PALACE
WALL BY BRUNELLESCHI, 1440
WINDOW BY AMMANATI, 1568



FIG. 41. MAIN FAÇADE. SHOWING TWENTY-SEVEN FOOT STONE,
PITTI PALACE, FLORENCE
BRUNELLESCHI, ARCHITECT, 1440
ITALIAN STONEMWORK. PART II



FIG. 42. SOUTH RAMP OF THE PITTI PALACE, FLORENCE



FIG. 43. NORTH RAMP, SIDE. PITTI PALACE, FLORENCE



FIG. 44. NORTH RAMP, FRONT. PITTI PALACE, FLORENCE

ITALIAN STONEMASONRY. PART II



FIG. 45. ANGLE OF WING, 1763, PITTI PALACE

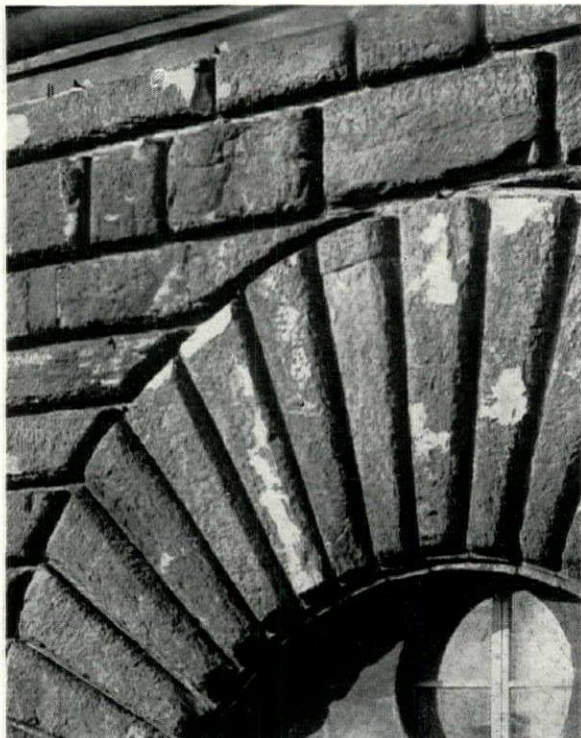


FIG. 47. CROWN OF ARCH, THIRD FLOOR

FIG. 46. SPRING OF ARCH,
THIRD FLOOR OF PITTI
PALACE, FLORENCE
BRUNELLESCHI, ARCHITECT, 1440

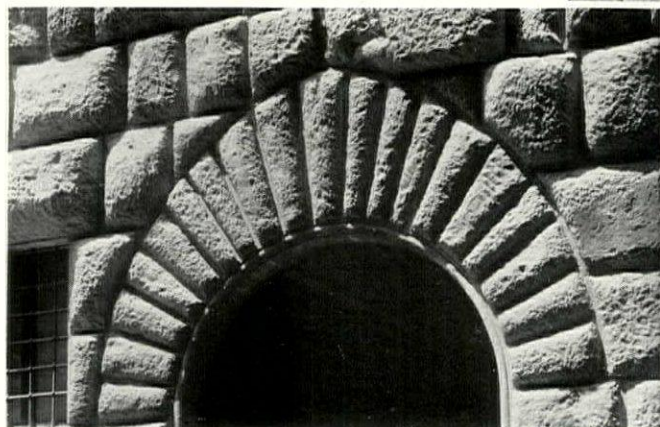
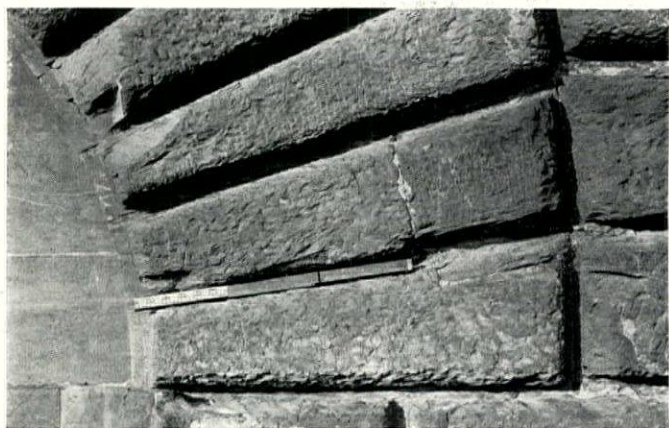


FIG. 48. DETAIL OF FAÇADE,
NERONI PALACE,
VIA GINORI 7, FLORENCE
After the manner of Brunelleschi



FIG. 50. WINDOWS AND WALL AT THIRD FLOOR. STROZZI PALACE, FLORENCE
B. DA MAIANO, ARCHITECT, 1489

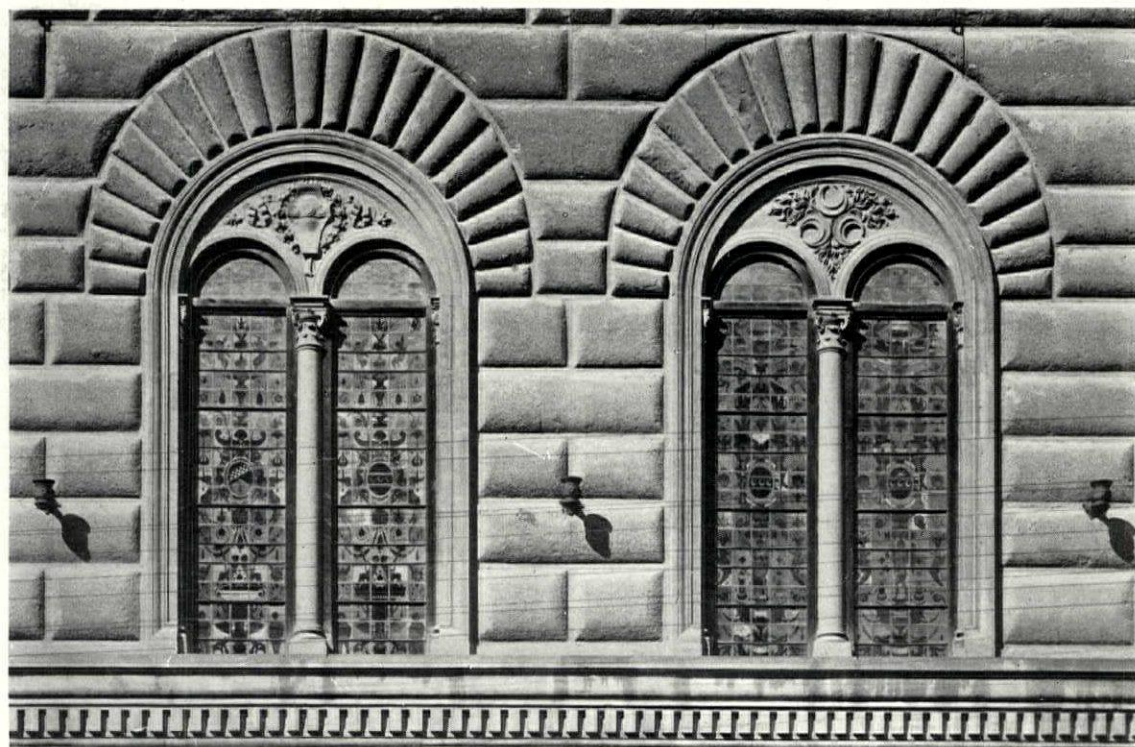


FIG. 51. WINDOWS AND WALL AT SECOND FLOOR. STROZZI PALACE, FLORENCE
B. DA MAIANO, ARCHITECT, 1489

ITALIAN STONEMASONRY. PART II

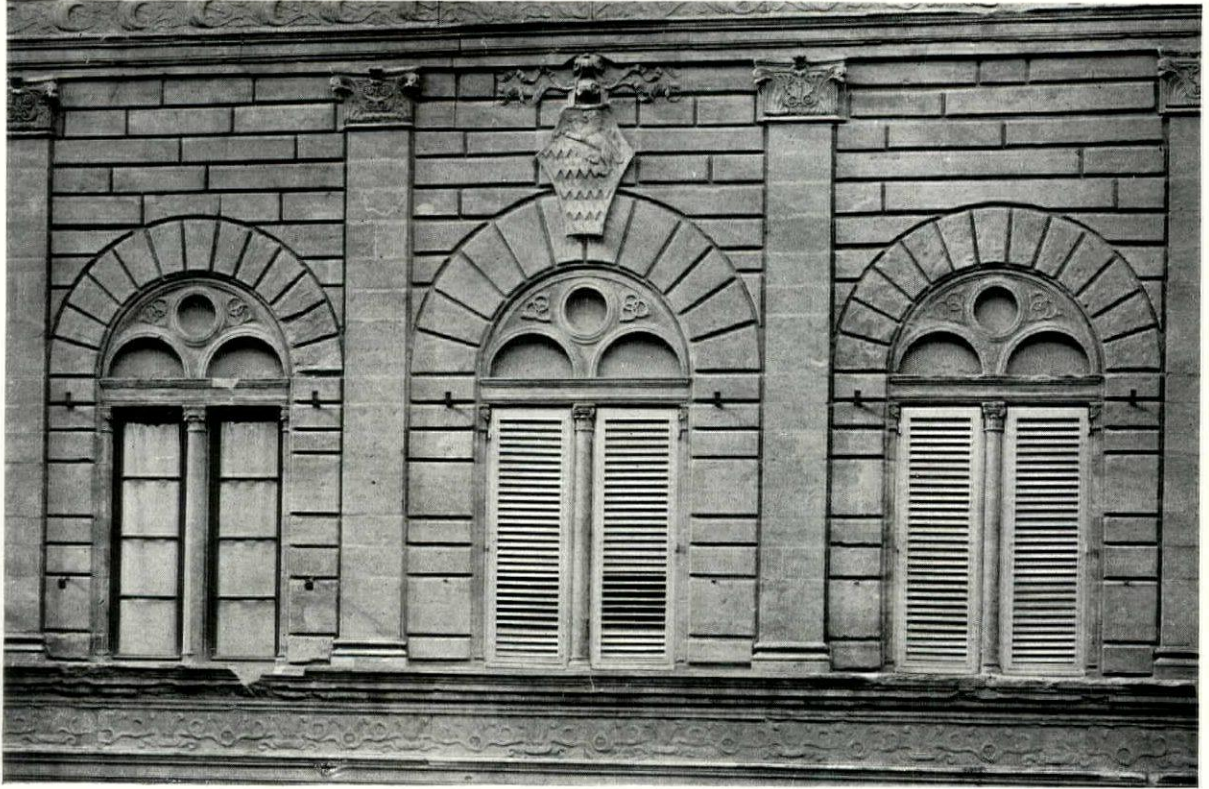


FIG. 53. WALL SYSTEM AT SECOND FLOOR. RUCELLAI PALACE, FLORENCE
ALBERTI, ARCHITECT, 1451

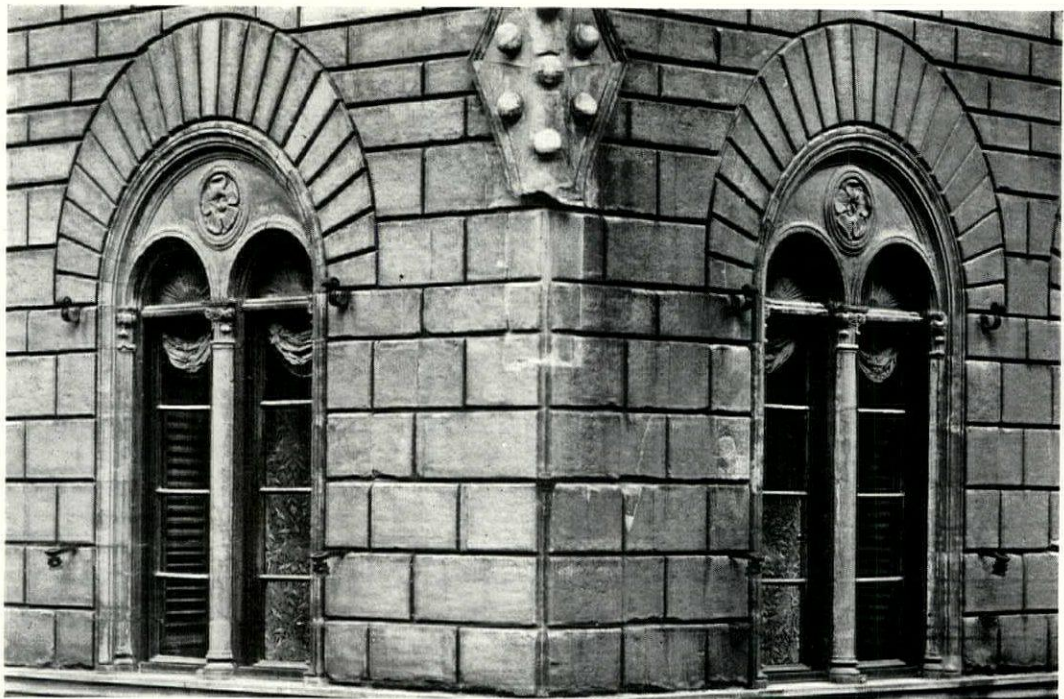


FIG. 52. WALL ANGLE AT SECOND FLOOR. RICCARDI PALACE, FLORENCE
MICHELOZZI, ARCHITECT, 1430

ITALIAN STONEMWORK. PART II

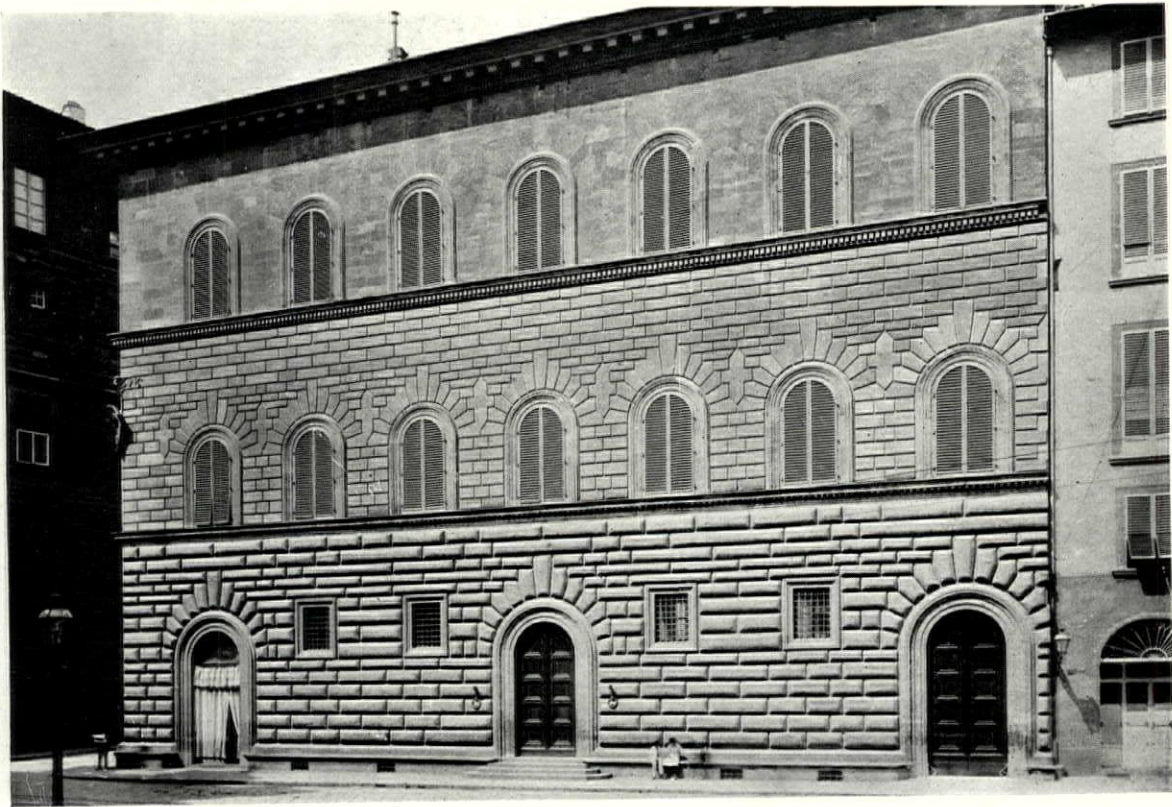


FIG. 55. MAIN FAÇADE, OF GONDI PALACE, FLORENCE
G. DA SAN GALLO, ARCHITECT. CIRCA 1490 (Restored in 1874)

The implied elasticity of this material intrigued the critic Geymuller. The lengths of the stones are studied to a nicety. Some of them are pieced, with blind joints, to give the required length.

Basement story: coursed rusticated ashlar, bosses projecting 6" from channel face which is $1\frac{3}{4}$ " to 2" wide, the $\frac{1}{8}$ " joint falling along its center. The courses approaching the string are slightly less in projection. Heights of courses, reading up: $25\frac{1}{2}$ ", $23\frac{1}{2}$ ", $17\frac{1}{4}$ ", $23\frac{1}{2}$ ", $18\frac{3}{4}$ " etc.

Second story: as basement, but with bosses projecting 3" from a channel $1\frac{1}{2}$ " wide. Course heights, reading up 23 ", 21 ", $19\frac{1}{2}$ " etc. Joint at bottom of channel.

Third story: like other stories save that the bosses project but $1\frac{3}{4}$ " from a 2" channel face, the joint falling at the bottom of the channel. Heights, reading up: 23 ", $19\frac{1}{4}$ ", $19\frac{1}{4}$ ", $19\frac{1}{4}$ ", $22\frac{1}{2}$ " etc.

PALAZZO GONDI, by Giuliano da San Gallo, 1490, restored 1874. See Plate I and

Fig. 2 (September issue of *The Architectural Record*); Fig. 55 on page 331 of the current issue and Figs. 59 and 77 of Part III of this series. One façade was never extended its full length.

Basement story: elliptical bosses project 7" to 8" with a lug on the top of each stone to form a channel 1" wide, bringing the $\frac{1}{8}$ " joint at the bottom of the boss. Intersection of the curved planes is left sharp. Tooling is coarse pointed on bosses, channels and mouldings are worked fine with a point or chisel. Course heights, from base: $22\frac{1}{2}$ ", 21 ", $21\frac{3}{4}$ ", $21\frac{1}{2}$ " etc. Blocks up to 9' long.

Second story: flat rusticated ashlar in courses that begin at $17\frac{1}{4}$ " but become narrower at window vousoirs. The faces project $1\frac{3}{4}$ " with a $1\frac{1}{4}$ " radius at edges. The channels are $1\frac{1}{4}$ " wide. The face of the stone is fine tooled.

Third story: flat faced coursed ashlar, tooled as second story.

IN THE CAUSE OF ARCHITECTURE

BY FRANK LLOYD WRIGHT

VIII. SHEET METAL AND A MODERN INSTANCE

THE MACHINE is at its best when rolling, cutting, stamping or folding whatever may be fed into it.

Mechanical movements are narrowly limited unless built up like the timer of a Corliss engine or like a linotype.

The movements easiest of all are rotary, next, the press or hammer, and the lift and slide works together with either or both. In these we have pretty much the powers of the "Brute." But infinite are the combinations and divisions of these powers until we have something very like a brain in action—the Robot itself, a relevant dramatic conception.

The consequences may well be terrifying when man's volition is added to these brute powers. This volition of man's, deprived of soul, may drive these powers to the limit of human endurance, yes—to the ultimate extinction of the humanity of the race.

* * * *

Commerce, as we have reason to know, has no soul.

Commercial interests left to themselves would soon write their own doom in the exploitation of their own social life. They would soon cease to reproduce. They would fail to reproduce because the elements of commerce are those of the machine—they lack the divine spark necessary for giving life. The margin of profit, piling up into residue, is inert, inept, impotent.

The Machine itself represents this margin of profit in the physical body of our modern world: a profit, inept, inert, impotent.

The question propounded in these papers and the continual haunting reference in all of them—"What is this interpreter of life, the Architect, going to do about it,"—is

again insistent here. For in sheet metal there is opportunity to give life to something the Architect seems to despise while forced to use it because it is cheap. He avails himself of it as a degraded material. In the building trade, we find cornices, gutters, downspouts, water-sheds, in lead, zinc and tin, iron and copper, everywhere. Imitations too in these materials, of every other material, are everywhere.

But where may sheet metal be seen used as a fine material for its own sake?

Oh yes, occasionally. But why not "everywhere." It is the one "best thing" in modern economy of materials brought by the Machine. Building trades aside, we now make anything at all of sheet metal—kitchen utensils, furniture, automobiles and Pullman coaches. And in flashings and counter flashings or roofing it is keeping nearly all the citizens of America dry in their homes at the present moment.

Copper is easily king of this field and what is true of copper will be true also of the other metals in some degree, with certain special aptitudes and properties added or subtracted in the case of each.

Back of this sheet metal tribe, literally, we have the light rolled steel section for stiffening any particular sheet metal area in all particular cases whatsoever. All "spread" materials need reinforcement. Metal sheets no less than concrete slabs.

In the building trades we have had recourse to these metal fabrics in the cheapest and most insulting fashion, in buildings where the architect has either never been seen, or has been set aside. Sheet metal is prime makeshift to his highness the American jerry-builder.

Roofs seem to be the building problem

naturally solved by sheet metal, as it may be stamped into any desired form, lock seamed, and made into a light, decorative and permanent water-shed. It is possible to double the thicknesses in long panels or channels, sliding non-conducting material between them and lock-seaming together the continuous slabs thus made so that they lie together like planks on the roof framing, finished from below as from above. Each slab is a natural water channel.

The machinery at work in the sheet metal trades easily crimps, folds, trims and stamps sheets of metal as an ingenious child might his sheets of paper. The finished product may have the color brought up in surface treatment, or be enameled with other durable substances as in enamel color glazing or plating, or by galvanizing the finished work may be dipped and coated entire. But copper is the only sheet metal that has yet entered into architecture as a beautiful, permanent material. Its verdigris is always a great beauty in connection with stone or brick or wood, and copper is more nearly permanent than anything we have at hand as an architect's medium.

But now that all metals may be rolled into sheets and manipulated so cheaply—combinations of various metals may be made as any other combination of materials may be. And will be.

The Japanese sword-guard shows how delightful these properties of metal become when contrasted and harmonized in the hands of a master-artist. A collection of these mighty little things in art and craft should be the vade-mecum of every metal student or worker. In fact it seems that upon metals the Japanese, and before them the Chinese, have lavished much of their genius and have excelled from the making of a keen cutting-blade that would hold its edge against blows on steel to inventing subtle texture-treatments in iron for all decorative purposes.

Leaving the precious metals in a category by themselves, these sympathetic treat-

ments of various humble metals are most significant for us who, as masters of metal production, are committed to it in our industries, though we have developed the beauty of it in use not at all.

In previous ages, beyond the roofer's use of lead in roofing and water-leads and the blacksmith's wrought-iron as seen in gates and lanterns, there has been little use made of metal by architects excepting such occasional use of bronze as Ghiberti made in his famous doors. But Ghiberti was a sculptor, not an architect, or his doors would, probably, have been wood elaborately ironed in the mode.

I believe the time is ready for a building of sheet copper wherein the copper may be appropriate carriage for glass only. What would such a building be good for and what would it be like?

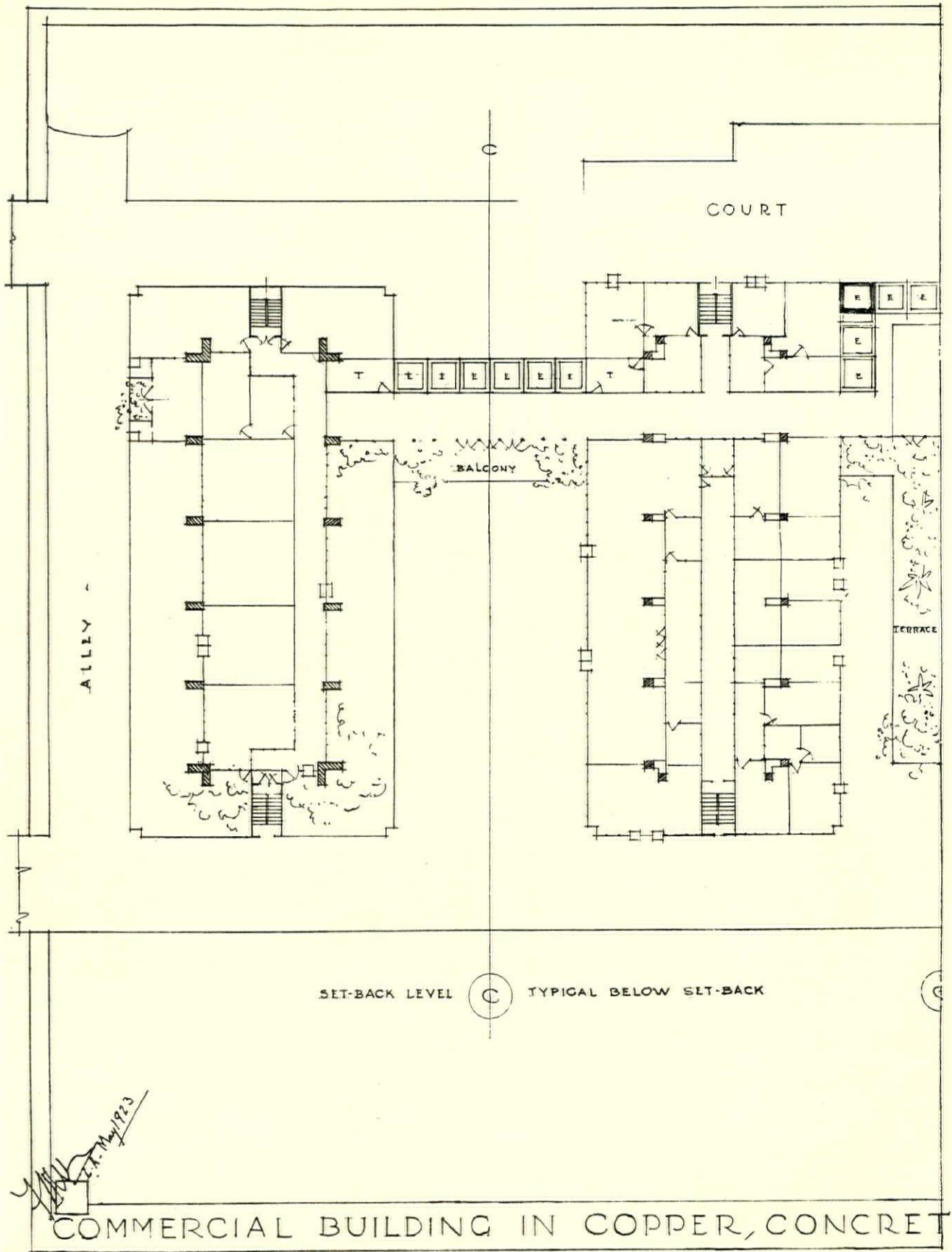
Why should we have such buildings? This architect will try to answer in his own fashion.

Since first meeting, thirty years ago, James A. Miller, a sheet-metal worker of Chicago, who had intelligent pride in his material and a sentiment concerning it (designing a house for himself at one time he demanded a tin-floored balcony outside his bedroom window in order that he might hear the rain patter upon it), I have had respect for his sheet-metal medium.

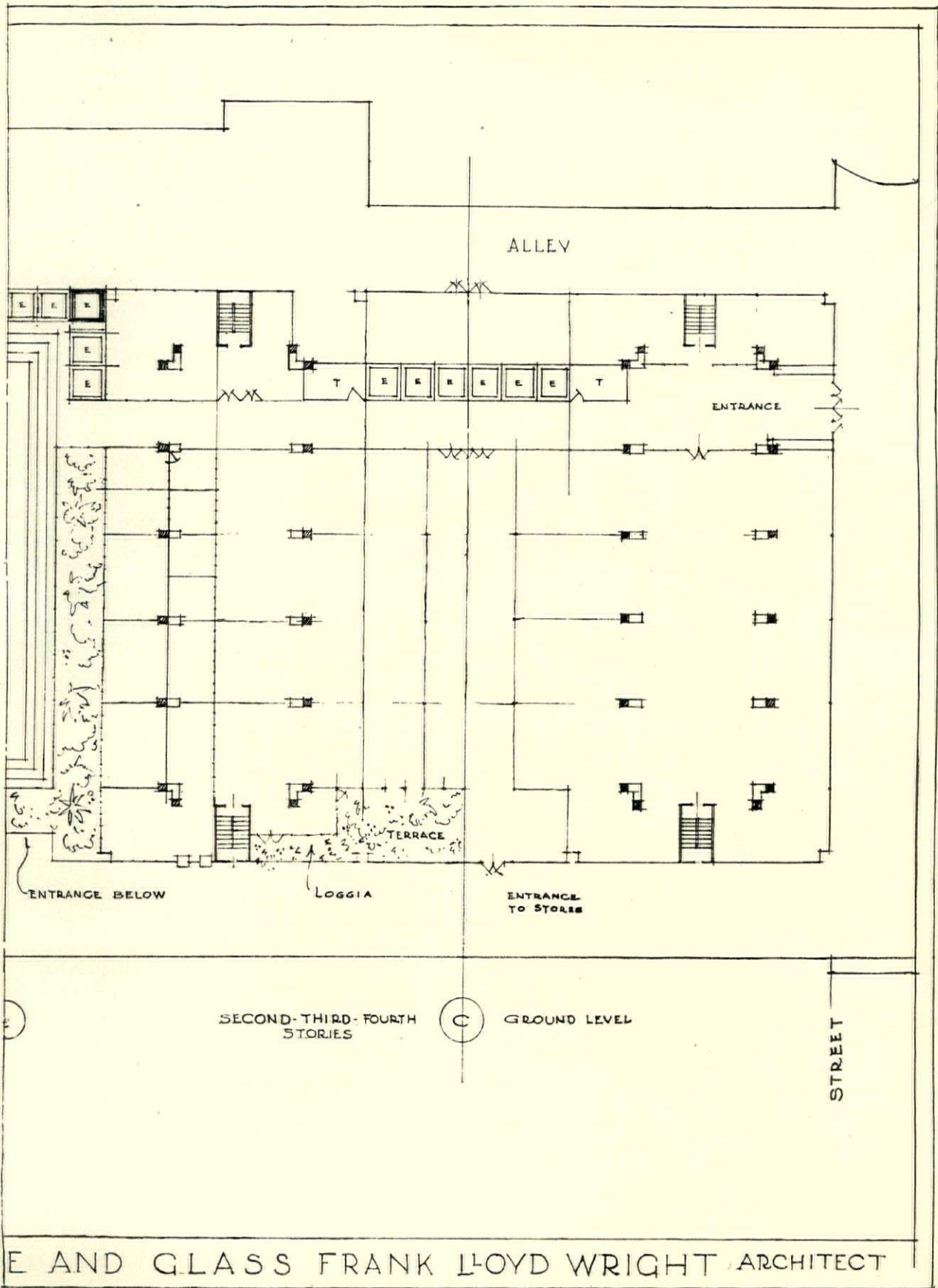
At that time I designed some sheet copper bowls, slender flower holders and such things, for him, and fell in love with sheet copper as a building material. I had always liked lead, despised tin, wondered about zinc, and revolted against galvanized iron as it was then used in Chicago quite generally as a substitute for granite.

Miller Brothers in addition to other offices of that factory were then interested in sheet metal window-sash and frames—especially in skylights and metal doors.

We had contempt for them because they were made to imitate wooden sash. The doors too were made up in wood and covered with metal, the result being an imita-



COMMERCIAL BUILDING IN COPPER, CONCRET



E AND GLASS FRANK LLOYD WRIGHT ARCHITECT

tion in metal of a wood paneled door. It was usually "grained" to complete the ruse.

No one thought much about it one way or another. The city demanded these mongrels as fire-stops in certain places under certain conditions and that was that.

They were not cheap enough in those days—forcing the material as it was forced in this imitation work—to offer much incentive to bother with the problem.

But see how the matter has since grown up! We need no statistics to add to the evidence of our eyes wherever we go, which may see that what is left of the architectural framework of the modern world after concrete and steel have done with it will be in some form or other, sheet metal.

Twenty-seven years ago, under the auspices of Jane Addams, at Hull House, Chicago, an arts and crafts society was formed, and I then wanted to make a study of the Machine as a tool at work in modern materials. I invited Mr. Miller, Mr. Bagley, Mr. Wagner to come to the tentative meeting to represent respectively sheet metal, machined marble work and terracotta. I wanted them there with us to tell us what we as artists might do to help them. At that time, to put the matter before the proposed society, I wrote (and read) the "Art and Craft of the Machine" since translated into many languages.

It was useless. As I look back upon it, I smile, because the society was made up of cultured, artistic people, encouraged by University of Chicago professors who were ardent disciples of Ruskin and Morris. What would they want to see, if they could see it in such a programme as mine?

It all came to nothing—then—although next day's Tribune, in an editorial, spoke of "the first word said, by an artist, for the Machine." I suspect Miss Addams of writing it herself. Ever since my stand taken there, however, the matter has grown for me, and, if not for them, it is all about them now in nearly everything they use or touch or see, still needing interpre-

tation to-day as much as it was needed then.

But to get back from this reflection to this sheet-copper and glass building which has eventually resulted from it.

I have designed such a building.

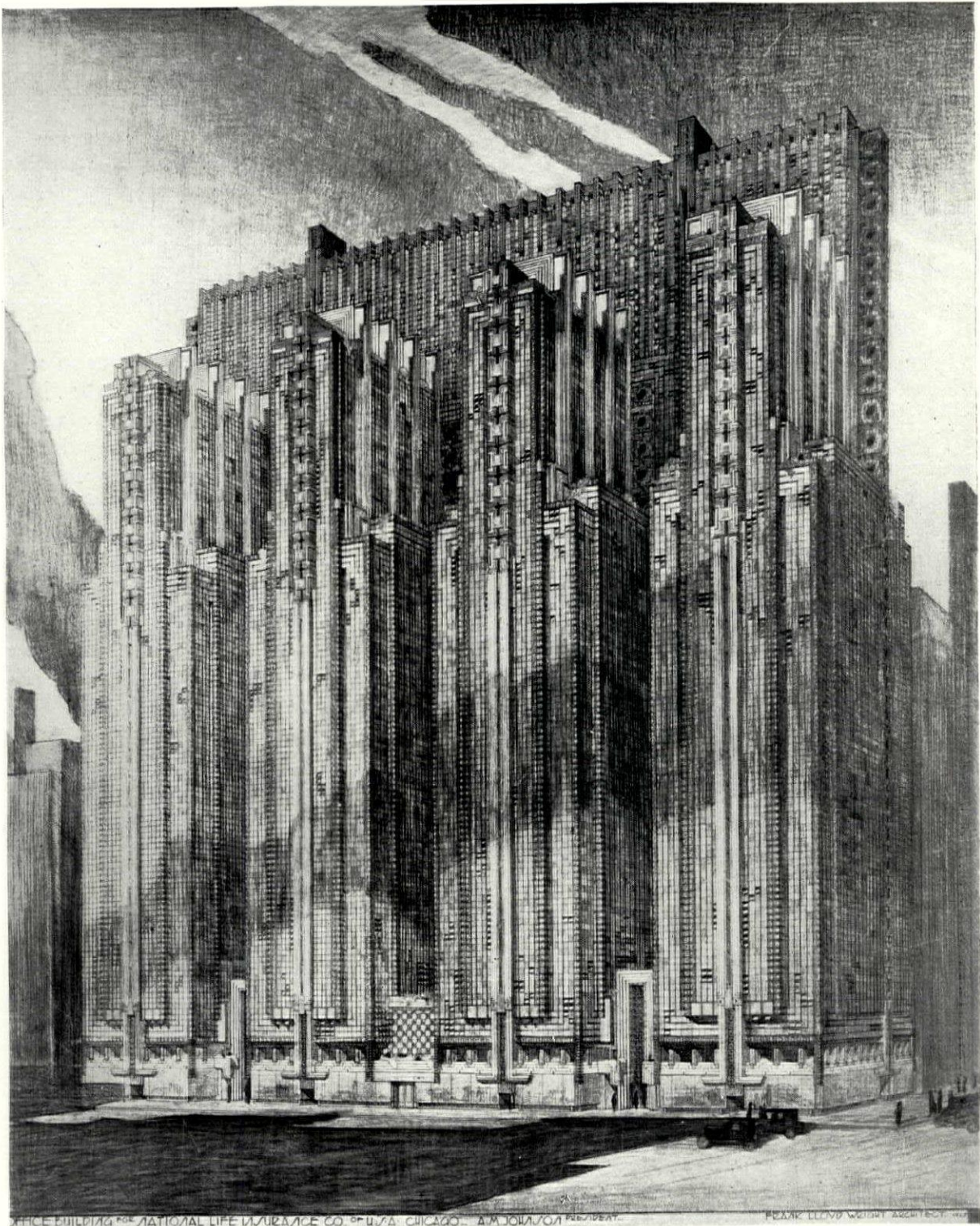
It is properly a tall building.

It is a practical solution of the skyscraper problem because the advantages offered by the material and method add up most heavily in their own favor where they can go farthest—either up or crosswise.

Standardization here may come completely into its own, for standardization is in the nature of both sheet-metal process and material. It may be again seen that the life of the imagination awakens its very limitations to life.

The exterior walls, as such, disappear—instead are suspended, standardized sheet-copper screens. The walls themselves cease to exist as either weight or thickness. Windows become in this fabrication a matter of a unit in the screen fabric, opening singly or in groups at the will of the occupant. All windows may be cleaned from the inside with neither bother nor risk. The vertical mullions (copper shells filled with non-conducting material), are large and strong enough only to carry from floor to floor and project much or little as shadow on the glass may or may not be wanted. Much projection enriches the shadow. Less projection dispels the shadows and brightens the interior. These protecting blades of copper act in the sun like the blades of a blind.

The unit of two feet both ways is, in this instance, emphasized on every alternate vertical with additional emphasis on every fifth. There is no emphasis on the horizontal units. The edge of the various floors being beveled to the same section as is used between the windows, it appears in the screen as such horizontal division occurring naturally on the two-foot unit lines. The floors themselves, however, do appear, at intervals, in the recessions of the screen in order to bring the concrete



A PRACTICAL SOLUTION OF THE SKYSCRAPER PROBLEM
FRANK LLOYD WRIGHT, ARCHITECT

structure itself into relief in relation to the screen as well as in connection with it.

Thus the outer building surfaces become opalescent, iridescent copper-bound glass.

To avoid all interference with the fabrication of the light-giving exterior screen the supporting pylons are set back from the lot line, the floors carried by them thus becoming cantilever slabs. The extent of the cantilever is determined by the use for which the building is designed. These pylons are continuous through all floors and in this instance exposed as pylons at the top. They are enlarged to carry electrical, plumbing, and heating conduits, which branch from the shafts, not in the floor slabs, but into piping designed into visible fixtures extending beneath each ceiling to where the outlets are needed in the office arrangement. All electrical or plumbing appliances may thus be disconnected and relocated at short notice with no waste at all in time or material.

Being likewise fabricated on a perfect unit system, the interior partitions may all be made up in sections, complete with doors, ready to set in place and designed to match the general style of the outer wall screen.

These interior partition-units thus fabricated may be stored ready to use, and any changes to suit tenants made over night with no waste of time and material.

The increase of glass area over the usual skyscraper fenestration is only about ten per cent (the margin could be increased or diminished by expanding or contracting the copper members in which it is set), so the expense of heating is not materially increased. Inasmuch as the copper mullions are filled with insulating material and the window openings are tight, being mechanical units in a mechanical screen, this excess of glass is compensated.

The radiators are cast as a railing set in front of the lower glass unit of this outer screen wall, free enough to make cleaning easy.

The walls of the first two stories, or more, may be unobstructed glass—the dreams of the shop-keeper in this connection fully realized.

The connecting stairways necessary between floors are here arranged as a practical fire-escape forming the central feature, as may be seen at the front and rear of each section of the whole mass, and though cut off by fire-proof doors at each floor, the continuous stairway thus made discharges upon the sidewalk below without obstruction.

The construction of such a building as this would be at least one-third lighter than anything in the way of a tall building yet built—and three times stronger in any disturbance, the construction being balanced as the body on the legs, the walls hanging as the arms from the shoulders, the whole, heavy where weight insures stability.

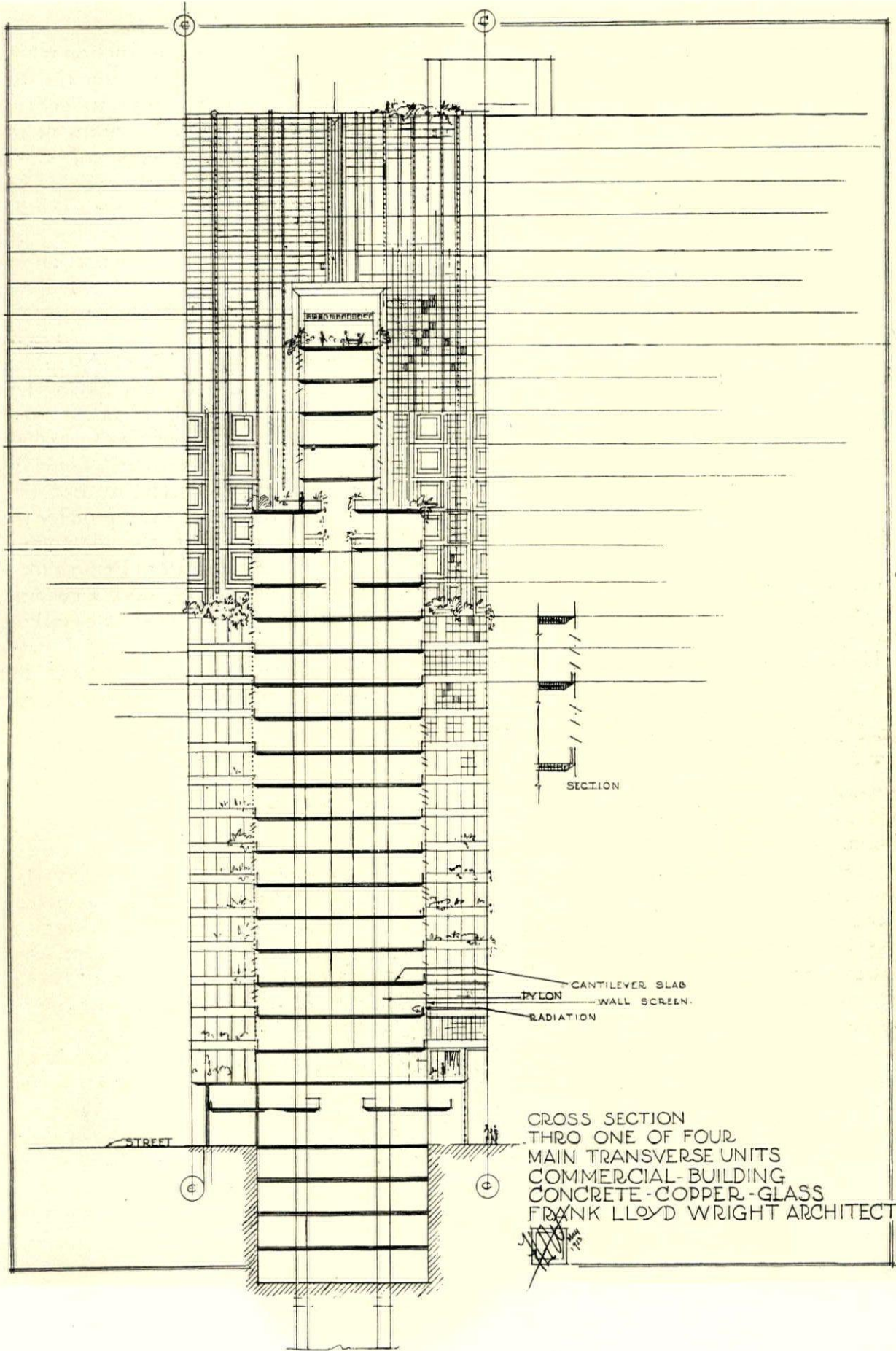
But of chief value as I see it is the fact that the scheme as a whole would legitimately eliminate the matter of "architecture," that now vexes all such buildings, from field construction, all such elements of architecture "exterior" or interior becoming a complete shop-fabrication—sembled only in the field.

The shop in our mechanical era is ten to one, economically efficient over the field, and will always increase over the field in economy and craftsmanship.

The mere physical concrete construction of pylons and floors is here non-involved with any interior or exterior, is easily rendered indestructible, and is made entirely independent of anything hitherto mixed up with it in our country as "Architecture." In the skyscraper as practised at present the "Architecture" is expensively involved but is entirely irrelevant. But here it is entirely relevant but uninvolved.

Also the piping and conduits of all appurtenance-systems may be cut in the shop, the labor in the field reduced to assembling only, "fitting" or screwing up the joints being all that is necessary.

Thus we have, literally, a shop-made building all but the interior supporting posts and floors, which may be rein-



forced concrete or concrete-masked steel.

In this design, architecture has been frankly, profitably and *artistically* taken from the field to the factory—standardized as might be any mechanical thing whatsoever, from a penny-whistle to a piano.

There is no unsalable floor space in this building created "for effect," as may be observed.

There are no "features" manufactured "for effect."

There is nothing added to the whole merely for this desired "effect."

To gratify the landlord, his lot area is now salable to the very lot-line and on every floor, where ordinances do not interfere and demand that they be reduced in area as the building soars.

What architecture there is in evidence here is a light, trim, practical commercial fabric—every inch and pound of which is "in service." There is every reason why it should be beautiful. But it is best to say nothing about that, as things are now.

The present design was worked out for a lot three hundred feet by one hundred feet, the courts being open to the south.

There is nothing of importance to mention in the general disposition of the other necessary parts of the plan. All may be quite as customary.

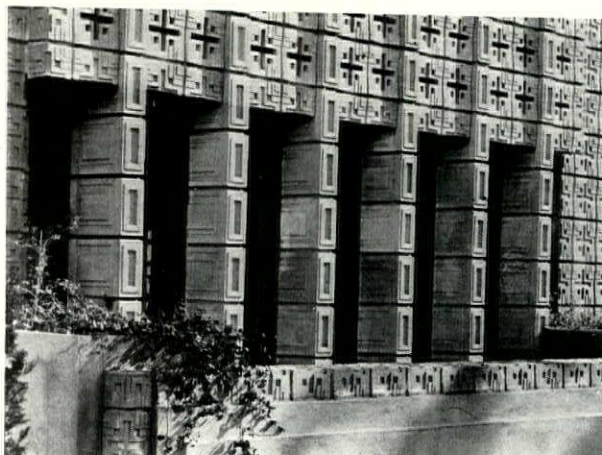
My aim in this fabrication employing the cantilever system of construction which proved so effective in preserving the Imperial Hotel at Tokyo, was to achieve absolute scientific utility by means of the Machine—to accomplish—first of all—a true standardization which would not only serve as a basis for keeping the life of the building true as architecture, but enable me to project the whole, as an expression of a valuable principle involved, into a genuine living-architecture of the present.

I began work upon this study in Los Angeles in the winter of 1923 having had the main features of it in mind for many years. I had the good fortune to explain it in detail to "lieber-meister" Louis H. Sullivan, some months before he died.

Gratefully I remember—and proudly too—"I have had faith that it would come," he said. "This Architecture of Democracy—I see it in this building of yours, a genuine, beautiful thing. I knew what I was talking about all these years—you see. I never could have done this building myself, but I believe that, but for me, you could never have done it."

I am sure I should never have reached it, but for what he was and what he did.

This design is dedicated to him.



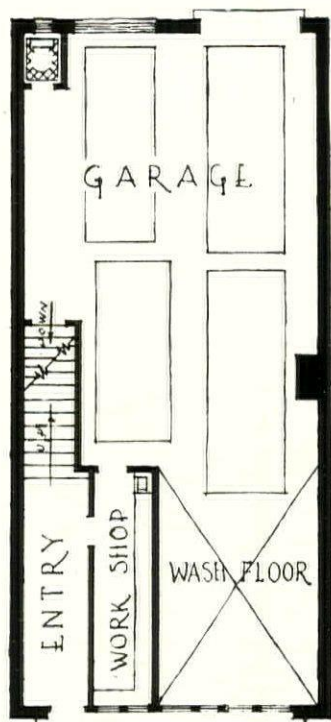
A PRIVATE GARAGE IN NEW YORK CITY

HOWARD & FRENAYE, ARCHITECTS

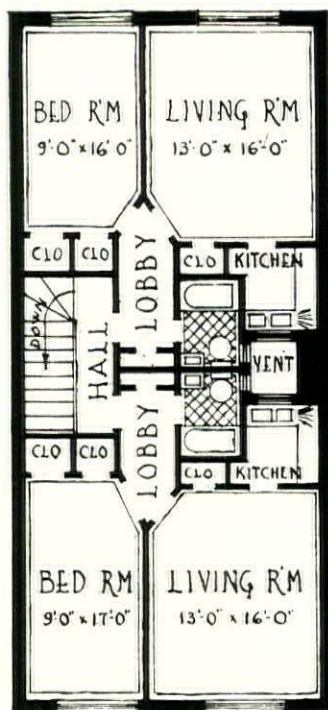
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343



1ST FLOOR PLAN



2ND FLOOR PLAN

GARAGE AT 232 EAST 63RD ST.
NEW YORK CITY

HOWARD AND FRENAY, ARCHITECTS
NEW YORK.

Pages 343 and 344 illustrate a privately-owned garage. The first floor is arranged to accommodate four automobiles. On the second floor are two apartments for the chauffeurs, each of which contains a small lobby, a living room, a bed room, bath and kitchen.

The garage, of fireproof construction, cost, approximately sixty cents per cubic foot to

build. Whitewashed brick was used for the façade. Over the front doorway, superimposed on the fireproofed lintel, are ornaments depicting New York scenes. These were formed from lead sheets and cut out with a pen-knife. Doors and the window trim are painted a bright vermilion—a gay touch among drab surroundings. The columns on the doors are white.

NOTES AND COMMENTS

SPANISH?

TODAY architectural art finds itself in the unprecedented and paralyzing posture of being self-conscious. If there is any human activity which demands spontaneity and naturalness, it is artistic creation. By this I do not mean to deny intellectual effort in art, which is quite another thing. As to a desirable ratio between head and heart there can be no agreement, because temperaments differ widely, along with the ends they seek. But in normal art the medium of expression should be a matter of common consent rather than caprice. Whenever functions which should be involuntary are made objects of attention the result is awkward. As children we have probably all been admonished by elders to walk with toes out or chest back. The result, however hygienic, was surely ridiculous. Now an architect who has to pick his style, verify it and justify it, is as unfortunately placed as a walker who has to consider the position of his toes or chest. The style should just be there, unconsciously accepted, except in so far as new conditions and the personality of the artist effect modifications. This is the only fruitful basis of Style with a capital "S"—a true interplay of tradition and evolution.

Toward the close of the last century American civilization in California, which had dominated the country for something over half a century and mitigated its thirst for wealth and power, became aware of its aesthetic sterility. For architecture there was no possible salvation in the natural process of evolution. The art had literally to be born again. This is a religious act, which calls for faith. There stood the examples of the régime supplanted a generation and more before. They were beautiful, and physically appropriate (but all that is another story). What more natural than that designers in search of a foothold should turn their way?

Now if this could have taken place without saying

anything about it, some subsequent trouble would have been avoided. From a reasonable starting point we might have set out on an orderly journey. But of course there was no censor empowered to proscribe the use of that word "Spanish." Inevitably it was pointed out that the starting point was Spanish. Whereupon discussion of Spanish ensued. It only takes a moderate use of an attractive word to start a cult. In this case the point of departure became canonized as the end in view, and the word was made lath and plaster and dwelt among us.

At their best the results have been both fruitful and delightful; at their worst, frankly appalling. Many designers who might be creative in their efforts, frequently seem constrained merely to be Spanish.

So it is understood that, largely for the advantage of being on common ground, "Spanish" is admitted into the discussion. What must not be forgotten is that, essentially, the real problem of architecture in California now is to get out from under the word.

IRVING F. MORROW



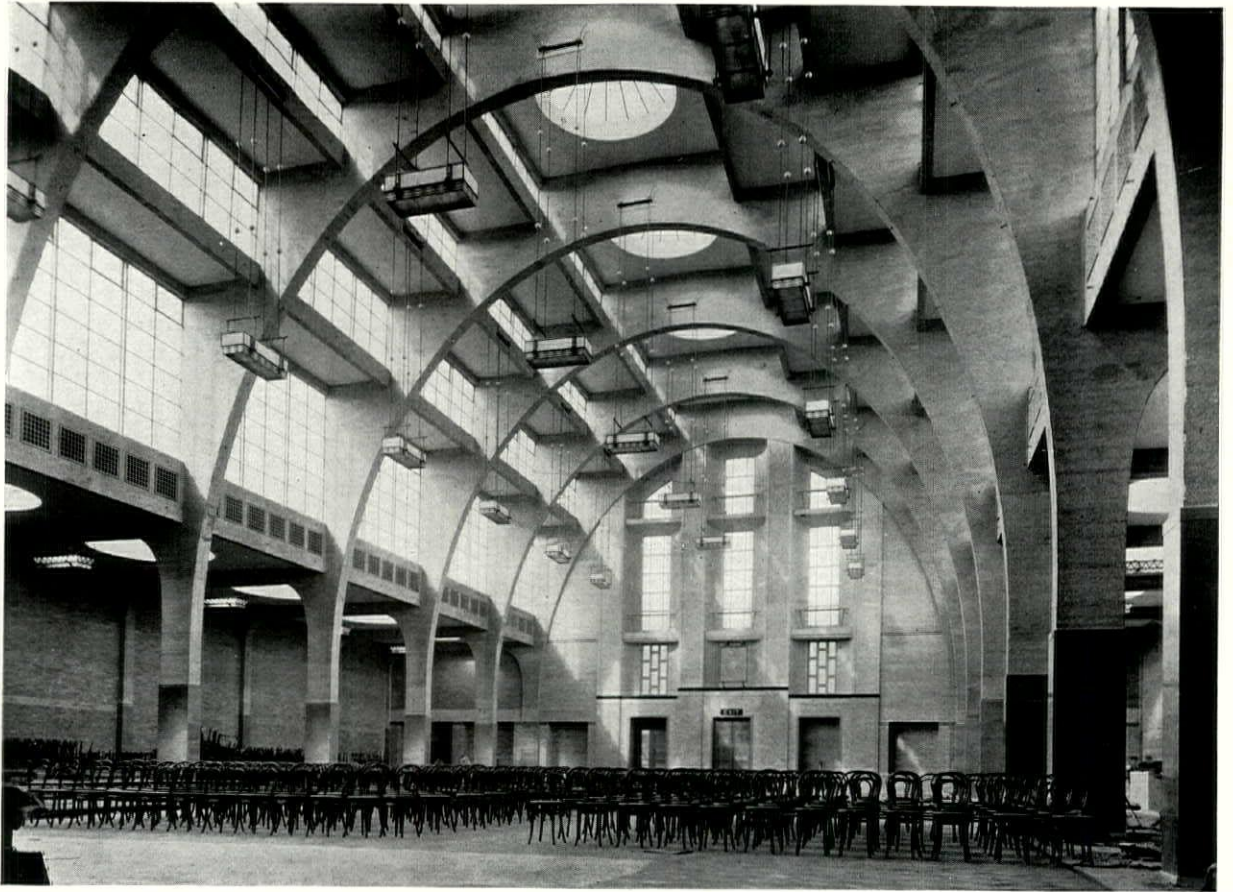
ROYAL HORTICULTURAL SOCIETY'S NEW HALL
IN LONDON

J. M. EASTON AND HOWARD M. ROBERTSON, ARCHITECTS

NEW HALL OF ROYAL HORTICULTURAL SOCIETY,
IN LONDON

THE FORM taken by new buildings arises from an attempt to fulfil in the most direct and expressive way the special requirements of the case. A relatively small site demanded economy in planning. This has been met by keeping the entrance hall low enough to enable a dais, some 2,000 square feet in extent, to be added to the main hall, while by raising the latter several feet above the pavement, areas are dispensed with and light admitted to the basement.

The hall itself is 150 feet long by 125 feet wide, the total area being about twice that of the old hall. It is lit by four stepped tiers of clerestory windows carried on elliptical arches 58 feet high and 69 feet in span—29 feet wider and 27 feet lower than the nave of St. Paul's. The thrust of these arches is taken by the flat roof of the aisles which act as vast



INTERIOR OF THE ROYAL HORTICULTURAL SOCIETY'S NEW HALL IN LONDON

J. M. EASTON AND HOWARD M. ROBERTSON, ARCHITECTS

horizontal girders and are tied in at both ends. The whole structure is of reinforced concrete and has absorbed 5,000 tons of Portland cement and 500 tons of steel rods. This form and construction arose from the desire to obtain lighting that would closely approximate outdoor conditions and which would yet lend itself to a satisfactory architectural expression, and be of such a permanent nature as to require very little upkeep.

Heating is chiefly by means of panels in the concrete ceilings and cleaned and warmed air is introduced at aisle roof level. The electric lighting can be varied from the usual color to a whiter light nearer to daylight, and ample provision is made for special lighting, power, gas, water, and telephones all over the hall.

In the basement a restaurant to seat 200 people is provided and the kitchens are so arranged that banquets can be served in the main hall. Cloak-rooms, lavatories, heating chambers and a large storage space are also located in the basement. The upper part of the Greycoat Street block is devoted chiefly

to lecture and committee rooms. The first mentioned is equipped for use as a cinema and it can be partitioned off into three rooms. The second and third floors have each three large rooms, those on the third floor which floral committees will use having north light. There are in all three electric lifts, one large hoist and three hand lifts.

The treatment of the elevations and the detail throughout does not arise from the adaption of any "period" style. Neither is it a denial of tradition but rather an attempt to allow the general conception to make itself felt in, and be furthered by, every part.

B. S. TOWNROE

HOUSING

DIFFERENT periods of history have found their best architectural expression in different types of building. Religious monuments have not been by any means always the field in which great styles have found their most adequate fulfillment. Neither, to choose very widely, in the age of Sargon II or of

Louis XVI were the temples comparable to the palaces. The architectural hierarchy varies in each style and period. In our own day in America there is a general feeling that the commercial structures, which have developed into skyscrapers, provide the type expression *par excellence*; yet on account of the tradition of earlier hierarchies this affects hardly at all the design of other sorts of buildings which continue to be largely uninfluenced by the skyscraper.

In Europe there are, from the American point of view, no skyscrapers. The present period of architecture produces its best work in the field of factory design and of housing development. Indeed, these two types of building are having an increasingly marked effect on all other building and are thereby assisting powerfully in the integration of a modern style—as the skyscraper has not done with us. But neither factories nor housing developments are restricted to Europe. It may be asked therefore if in America the general acceptance of a modern style might not be better brought about if architecturally we gave to these types of building, surely as characteristic of our age as the skyscraper, more attention and importance.

America has, of course, many magnificent factories. Nevertheless, they are distinctly less the creation of architects than of engineers. It too often appears that where architects have worked on them they have less respect for the essential aesthetic possibilities of the type than engineers. With regard to this, there is at the present time little to be said. The difficulties are in large part technical and functional. When architects work on factories they are expected, not to build better factories, but to embellish factories already built by engineers.

In regard to the question of housing, universally accepted as within the domain of architecture, there is more to be done. The reports on the situation in New York and elsewhere presented in the magazine *Housing* indicate most clearly the very great need of development in this field of building in America. These reports also indicate that the problem here, for legal and financial reasons, is far more complicated than in Europe. At the same time various technical proposals are made which should, if adopted, lead to great improvements. As a prime example of how little different the problem ideally ought to be here from what it is in Europe, the new recommendations of the Housing Division of the New York City Planning Commission for universal height restriction to six stories, if streets are to be the present width of those in New York, is of very great significance. However great the present development of the skyscraper, sociologically it is condemned for the future unless—as is little likely—radical changes in the layout of our cities make it possible to create about it

the necessary open spaces. In this field then, the problem for American architects may become in cities the same as in Europe. In suburban and rural districts it has never been essentially different.

Comparing such of our housing schemes in suburban and rural districts as have had serious architectural treatment with similar schemes abroad, the first point of importance to note is that the problem here has generally been exaggerated by the popular insistence upon individual houses. It is to be hoped that in the future the specious individualism which demands separate and distinct units—almost impossible to group successfully in large numbers—may give way, as already in the very successful town of Sunnyside, Long Island City, to the rows and groupings which in Europe permit dignity of scale and integration of treatment.

A further and related difficulty has been the general desire, even at the expense of the very technical conveniences on which Americans are supposed to be most insistent, for too great individualization of design by means of "architectural" features so cheaply provided as to have no value and so multiplied as to destroy the actual scale of the small houses. Too many low cost houses have been designed as reduced copies of mansions. In the future, it may be hoped, American architects will be freer and more willing to treat small houses for themselves, as is being done in Europe, and to depend on the larger virtues of mass and proportion for effect—as can be done by grouping—rather than on applied features of ornament, almost necessarily meretricious when cheaply provided.

But it may be hoped that as these extraneous matters of function are better cared for, with the increased consciousness of the problems which *Housing* illustrates, our architects may be ready to provide, in those matters of design which are their province, for the establishment of a great and modern style which, unlike the skyscraper, may prove to have permanent and universal validity.

HENRY-RUSSELL HITCHCOCK, JR.

A COMMERCIAL BUILDING

ELSEWHERE in this issue Frank Lloyd Wright describes a building of his design which he advances with arguments as a solution for skyscraper construction and expression. It is an organic architecture involving the use of the cantilever principle of steel and reinforced concrete construction. It comprehends, in its conception, the engineer's aesthetic, contemporary building products—the materials of the mine, the forge and the factory and, needless to say, it has nothing to do with various styles. It is dedicated to the memory of his associate in experimentation, Louis Sullivan.

THE ARCHITECT'S LIBRARY

BOOK REVIEWS

INDUSTRIAL ART AND THE MUSEUM

RICHARDS, CHARLES R.

Industrial Art and the Museum. Illus. Macmillan, 1927.
\$1.50.

MR. RICHARDS understands industrial art to be the production of objects both of use and of industrial beauty. A Chippendale chair is industrial art; a Whistler etching is not, because, in an economic sense, it is not useful; and a motor cycle is not because, whether beautiful or not, it is not beautiful intentionally. The meaning is plain though the application may frequently be uncertain. At any rate Mr. Richards' test would be purpose and not method. Handwork and machine work are often so interwoven to-day that no line of demarcation there is possible.

Science museums and fine arts museums began to appear in Europe in the 18th century; the fine arts collections generally contained examples of industrial art, tapestries, goldsmith work and so on; but the industrial art museum *per se* is a late arrival. There was little demand for it because craftsmanship was traditional. But with the coming of the machine and its quantity production the requirements of the new methods upset all tradition, manufacturing wandered aimlessly for a time seeking plausible forms for its products, and at length the need was felt for studying the fine things of other times. The Romantic Revival turned men's minds to the past, and people began to collect odds and ends of Gothic art. The movement never worked out complete decorative schemes nor influenced production to any extent, but it did result in the amassing of collections.

The first distinctive museum of industrial art was the Victoria and Albert, 1852, a direct outcome of the Crystal Palace Exposition of 1851; but the type had its largest development in Germany until practically every large German city had its distinctive museum or important department of industrial art. The collections were arranged—on the basis of Semper's Report on the Crystal Palace Exposition—according to material purpose and technique rather than on any historic basis, although chronological within the technical group. This point of view was generally adopted by museum authorities in Central Europe up to recent years. With the closing years of the century, however, the idea grew up of the education of public taste as the proper function of a museum rather than the collection of models for the use of designers and workers in the crafts. Out of this came the new arrangement, namely, period

grouping with appropriate settings, intended to reflect the history of human culture. The Bayerische National Museum represents this system in its most complete form, a series of rooms representing periods from the Romans down. The system has been criticized on the ground that part of the exhibition is genuine, and part of it imitation and restoration, which is apt to be misleading. "The vital necessity for the historical imagination is the genuineness of the facts on which it builds" and the theory leads to many compromises. It is not in all respects satisfactory, and many kinds of modification have been introduced.

All the French art museums are in Paris, and the two most important for applied art are the *Musée des Arts Decoratifs* and the *Musée Galliera*. The collections are mainly arranged in period rooms.

The great English example is the Victoria and Albert. It is an enormous collection both in size and variety, and the arrangement is still on the older plan, to assist craftsmen and students rather than to stimulate the popular imagination.

Industrial Art Museums are numerous in other European countries, large ones in Vienna, Budapest and Prague; in Switzerland five at least that are important; in Belgium the chief one is the *Musée Royale* in Brussels; in Holland, at Amsterdam, the industrial art department of the Rijks Museum, and the Sophia Augusta Collection at the Stedelijk are notable. The Danish Industrial Art Museum at Copenhagen is not large but is well selected; in Sweden are the Northern Museum at Stockholm and at Gothenburg one called the *Robbska Konstslöjdmuseet*. "There are seventy-eight separate industrial art museums in western Europe, besides many important collections in museums that are regional or containing also some other branch of art or science." Mr. Richards gives excellent and concise descriptions not only of their general character and contents but also of their arrangement, administration and purpose. He devotes a special chapter to certain special museums, such as the Historic Textile at Lyons; and in Germany, the Art in Commerce and Industry at Hagen, the Wall Paper Museum at Cassel, the East Asiatic Art Museum at Cologne, and the Textile School Museum at Crefeld.

For over fifty years industrial art has been recognized in Europe, but in America until recently our art museums have given it scant consideration. Museum authorities are becoming roused to it, however, and the questions are: what should be the scope of

the collections, under what arrangement should they be displayed, how should they be housed, and what educational activities should be associated with them? It seems probable that the development will be within the general art museums rather than as separate institutions, and on the whole it seems more advisable. Extensive collections already exist there. American museums discharge a peculiarly important function. We lack the background of endless examples of fine and applied art so general in Europe. We are dependent on museums for artistic education to a far greater degree. It is the general agreement in Europe now that the first purpose is the education of public taste, and while the line between fine art and applied art is definable enough their functions in the education of taste are inseparable.

The Metropolitan has been the leader in experiments. The American Wing attracted wide attention. The Museums of Art at Boston and Philadelphia are taking up the problem extensively.

The questions which Mr. Richards discusses so intelligently and illustrates from the practice of many museums are too many even to be mentioned here. Prominent among these questions is the relation of the museum to public education, to the artist craftsman. America is weak in artist craftsmen. "In the severer conditions of competition in the older countries, individuals of exceptional energy, intelligence and artistic talent are often found working alone as craftsmen." Such men are needed in the industrial arts, and whether the conditions of American economic life will allow the support of such workers is a question.—Recent developments suggest the possibility that our great industrial establishments may gradually absorb a number of superior craftsmen and so bring them into direct relation with our industrial system." No progress on the part of museum authorities is more important than in the comprehension of the significance of quantity production. It may be that in quantity production art can only enter in matters of design, but whatever it can do there is of

far-reaching importance. Mr. Richards' book seems to be for architects one of the most useful among recent issues.

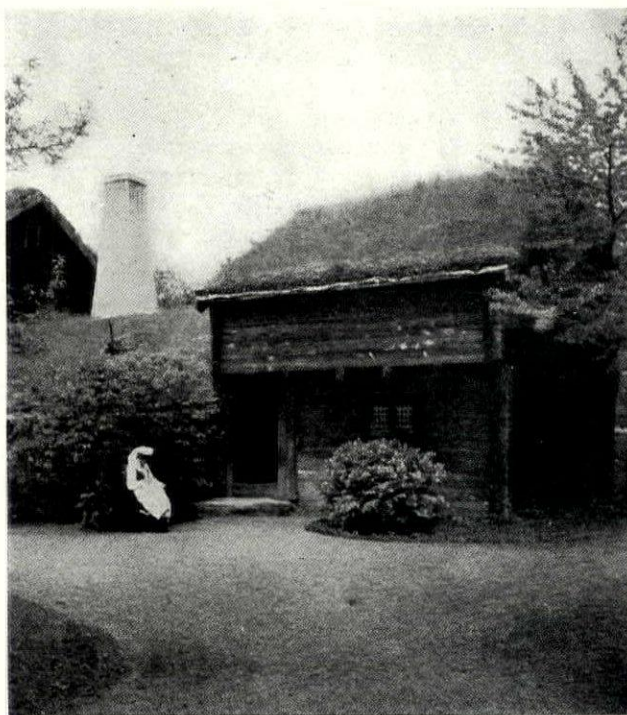
ARTHUR W. COLTON

THE ANALYSIS OF ART

DE WITT H. PARKER

The Analysis of Art. Yale University Press, 1926. \$4.00.

GENIALITY, urbanity and restraint—these are the qualities that make so attractive this little book by one of our leading students of the philosophy of art. The book is the expression of a mind that is finely tempered, of a mind for which sanity of judgment is the first condition for adequacy in the analysis of art. There is in it none of the rabid egoism of the *doctrinaire*. Moreover, it is pleasant to note an absence of academic lifelessness in an analysis of art by a professor of philosophy—especially since one finds so much of it in the discussions of art by those to whom academic art is the product of an academic mind and to whom both are anathema. Professor Parker, it is clear, views with urbane sympathy the movements in art and discussions of art that are marked by antagonism to the academic



AN OPEN AIR MUSEUM IN STOCKHOLM

From *Industrial Art and the Museum*

tradition. Philosophical theories, including those dealing with art, never receive a final refutation. They have their day in court, and are found wanting—but they return in every generation to demand another trial. The movements called new and the doctrines they express have a way of turning out to be old theories, reorganized and restated, claiming a new hearing, or old creative tendencies that are novel primarily because they express today's mind and not yesterday's. Good humor, when the *doctrinaire* and his doctrine are to be appraised, is a valuable quality—and the reader surmises that Professor Parker does not lack it. His good humor, indeed, prevails even in the statement of his own definition of art. The result is a truly serviceable book—a work that will stimulate the special student of the philosophy of art and never-

theless effectively enlarge the appreciative powers of those whose interests lie with art rather than with its philosophical interpretation.

"What is art?" asks Professor Parker. An old question, and like that asked by Pontius Pilate, it can be intelligibly treated only when the search for finality is abandoned in favor of many-sided satisfactoriness. Even the most extravagant theories concerning art are advanced only because the living wealth of aesthetic creation has suggested them. Unless the arts themselves have given grounds for the doctrine, the ancient definitions of art as concerned with imitation could never have come into being. The facts and the doctrine, however unsatisfactory the latter may be, abide as indications that more satisfactory definitions can be attained only by covering the facts that suggested the theory of imitation. In the same sense, the doctrine of significant form, so militantly championed by Clive Bell, is equally rooted in the creations and experience of art. The experiments of the artist, particularly in the vociferous modern world, get reflected in the extravagancies of the *doctrinaire*, and the *doctrinaire* in turn intensifies the impatient experimentation of the artist. But human nature and the structure of the world about us stubbornly persist as checks upon all extravagancies, whether of creative impulse or partisan formulation. Professor Parker, who knows all this, and knows moreover that Clive Bell was long ago refuted by Aristotelean metaphysics, quite realizes that Clive Bell must be reckoned with. But he realizes just as keenly that recent advances in psychology cannot be neglected. And so Parker is led to insist upon certain factors which no definition of art dare omit. Art is expression, both for the artist as creative and for those who, in the appreciation of art, are led by the artist to re-creative expression. To assert this is to assume that art is a bridge whose piers are the constitutive traits of human nature. Again, art is a satisfaction of desire—a definition of art that omits reference to desire and feeling would forget the humanity of artist and spectator. Were all our desires appeased at the very moment that they emerged—or, what would be in effect the same thing, were man that imaginary monster, an intellect without desire—art could never exist. The recent advances in the psychology of dream have thrown light upon the nature of art and also upon its source. A mind that is intellect and nothing more could never dream. Because men desire, and because desire hopelessly outstrips the possibilities of satisfaction, men dream the dreams of art. Nevertheless a dream cannot be art unless it conveys a certain convincing feeling of reality. The world of art is one of imagination—yet it must be somehow a veritable extension of the world in

which practical affairs go on rather than something merely imaginary. For Parker it is evident that the basis of analysis lies in this, that art "provides an imaginative mode of expression for the unbounded excess" of the human capacity of desire.

With these points fixed as the basis of investigation, it is possible rightly to appraise imitation and representation, distortion and significant form. From desire come both form and content in the work of art, and their inseparability follows from their common source. "Art, like the dream and many forms of play, is a mode of the imaginative realization of desire. This is the primary source of its value and the initial motive to creation. But in art this impulse is connected with the impulse to express and communicate, so that art may also be regarded as a mode of expression or language. It is expression for the sake of expression because in the process of expression a dream is embodied, a wish satisfied. Moreover, when expression becomes an end in itself, it tends to assume a harmonious delightful form-design. Finally, through expression, the dream is clarified and socialized, and instead of remaining a private possession, becomes the dream of all men and the surcease of superabundant desire."

The difficulty of an expressionist theory is to keep from explaining too much. There is the ever-present danger that the dictum, "art is expression," may slip into the form, "expression is art." Perhaps there is a profound sense in which this conversion is legitimate. But before that can be affirmed, the factor called "desire" must be integrated with the totality of human nature. There are imaginative satisfactions of desire (unless analysis carry the matter far deeper), that are not aesthetic satisfactions. There is a difficulty here that Parker faces in the special form of the paradox of the painful in art. Can it be that Rodin's "Old Courtesan" is an imaginative satisfaction of desire? What are the wishes expressed in painful art? How are they satisfied in imagination? He answers these questions by asserting the presence in human nature of just such desires and in art of just such satisfactions. The horrors of Rodin's "Old Courtesan" can be viewed as springing from desire and furnishing its appeasement. In this special problem, and in Professor Parker's analysis as a whole, there remain difficulties enough. The doctrine, however, rests upon the conviction that the function of art is the harmonization of human nature and its world. Such a proposition is highly abstract and empty—but at bottom it is irresistible. We can only be grateful to Professor Parker for so fine an effort to give the proposition a meaning that is sound in principle even though it does not fathom all the mysteries of art.

ALBERT G. A. BALZ

LIST OF NEW BOOKS ON ARCHITECTURE AND THE ALLIED ARTS

COMPILED BY

PAULINE V. FULLERTON

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ARCHITECTURE, THE NEW YORK PUBLIC LIBRARY

ARCHITECTURE

ALDRICH, CHILSON D.

The real log cabin. New York: Macmillan, 1928.

xiii, 278 p. illus., plans. 8°. \$4.00. 728.7

An architect who has made a specialty of log cabins, writes on the problems of site, type, materials, plans, and details such as windows, fireplaces and furniture.

CARPENTER, FREDERIC V.

A sketch book of New York. Pelham, New York:

Bridgman, 1927. 62 p. illus. 8°. \$1.00. 720.84

Sketches of typical New York buildings and vistas, with a brief descriptive text.

CHRISTOFFEL, ULRICH.

Augsburg. Leipzig: E. A. Seemann, 1927. 182 p. front., illus. 12°. (Berühmte Kunststätten. Bd. 79.) 7 marks. 709.43

Bibliography, p. 179.

A study of the cathedral and of the local architecture and art of this German city.

ESCHER, KONRAD

Die beiden Zürcher Münster. Frauenfeld: Huber & Co., 1928. 109 p. diags., illus., plans, 64 plates. 8°. (Die Schweiz im deutschen Geistesleben. Bd. 10.) 8.50 francs (Swiss). 726.6

Bibliography, p. 95-98.

A chronological history of these two Swiss ecclesiastical buildings.

FLETCHER, SIR BANISTER FLIGHT.

A history of architecture on the comparative method, for students, craftsmen, and amateurs. New York: C. Scribner's Sons, 1928. xxxvi, 929 p. incl. diags., front., plans, plates. illus. (incl. maps). 8 ed., rev. and enl. 8°. \$12.00. 720.9

Includes bibliographies.

A new edition of a standard single volume history.

HALSTEAD, FRANK.

The orders of architecture. New York: J. Wiley & Sons, Inc.; London: Chapman & Hall, Limited, 1927. vii, 139 p. 45 pl. 4°. \$3.00. 729.323

"The present volume includes a discussion of classic moldings, column construction and the Orders of Architecture." Preface.

HORST, CARL.

Die Architektur der deutschen Renaissance. Berlin: Propyläen-Verlag, 1928. 326 p. illus. (incl. plans). 16 pl. 4°. 28 marks. 724.131

German Renaissance architecture studied from the point of view of type. Excellently illustrated and well indexed.

HUMANN, GEORG.

Die Beziehungen der Handschriftornamentik zur romanischen Baukunst. Strassburg: J. H. E. Heitz,

1927. 89 p. plates. 2 ed., enl. 8°. (Studien zur deutschen Kunstgeschichte. Heft. 86.) 20 marks. 729

Bibliographical footnotes.

A study of the relationship between illumination and Romanesque architecture and sculptured ornament.

MELANI, ALFREDO.

L'ornamento nell'architettura: ornamento scolpito, ornamento nei suoi assieme. Milano: F. Vallardi, 1927. 3v. diags., illus., plates (part col'd). sq. 4°. 310 lire. 729

Each volume accompanied by portfolio of plates.

Bibliographical footnotes.

A chronological record of architectural ornament from ancient to modern times, illustrated by colored plates and line drawings. Full index of artists and of places and individual buildings.

MIZNER, ADDISON.

Florida architecture of Addison Mizner; introduction by Ida M. Tarbell. New York: William Helburn, Inc., 1928. 36 p. front., 184 pl. f°. \$20.00. 724.973

A volume of large folio plates illustrating the work of this American architect. Miss Tarbell's introduction is both a biography and an appreciation of Mizner.

PERLEBERG, HANS CARL.

Spanish plastic decorative details in historical styles. New York: H. C. Perleberg, 1927. 1 l. 65 plates. 4°. \$18.00. 729

Photographs illustrating architectural ornament and detail from the Gothic through the Baroque.

SMALL, TUNSTALL & C. WOODBRIDGE.

Houses of the Wren and early Georgian periods; with an introduction by William G. Newton. London: The Architectural Press; New York: William Helburn, Inc., 1928. viii, 139 p. front., illus., plans. f°. \$10.00. £1.5s. 728

The plates illustrate 44 typical but not too familiar examples of English "houses gently bred." The illustrations show many interior details and exterior views.

STATHAM, HENRY HEATHCOTE.

A short critical history of architecture. 2nd ed., rev. and enl. edited by G. Maxwell Aylwin. New York: C. Scribner's Sons, 1927. xvi, 563 p., illus., plans, plates. 8°. \$5.50. 720.9

A new edition of a good single volume history, provided with glossary, index and chronological appendices.

STOEHR, FRANZ.

Alt - Strassburger Treppenkunst, baugewerbliche Bilder dekorativer Treppen, Treppenhäuser und Geländer des XVIII. Jahrhunderts. Freiburg im

Breisgau: Urban-Verlag, 1927. 31 p. 53 pl. on 50 l. 8°. 6.50 marks. 729.39

The fifty plates show stairways, stairheads, balustrades and newel posts of the Baroque, Rococo, Louis XVI, Empire and Transition periods.

VACQUIER, J.

Les anciens châteaux de France. La Touraine; Amboise-Chenonceau-Ussé. Notices historiques. Paris: F. Contet, 1928. 444 p. illus. (incl. plans), 39 pl. (1 col'd). f°. 160 francs. 728.82

These three French châteaux are studied historically and in relation to their early plans. The plates are large and clear in detail. This volume is the ninth in a uniform series dealing with French châteaux.

WEBER, EDWARD JOSEPH.

Catholic church buildings, their planning and furnishing; with an introduction by the Right Rev. John J. Swint; containing upwards of 250 full page and text illustrations. New York: Joseph F. Wagner, inc.; London: B. Herder, 1927. xxi, 337 p. illus., plans, plates. 4°. \$15.00. 726.51

Bibliography, p. 377.

Glossary, p. 353-376.

This volume contains individual chapters on the grouping of parish buildings; on the small and large church; on the cathedral; on the altar and pulpit; on church decoration; symbolism, lighting, etc.

ALLIED ARTS

ANGLO-BELGIAN UNION.

Catalogue of the Loan Exhibition of Flemish and Belgian Art, Burlington House, London, 1927; a memorial volume, edited by Sir Martin Conway. London: Country Life, 1927. xxii, 260 p. front., 126 plates (partly col'd). f°. £5.5s. 709.49

A de luxe catalogue of this important exhibition which included, as well as the paintings of old masters, sections devoted to sculpture, tapestry, drawings, engravings and illuminations. Well indexed by artist, contributor and subject.

CHANDA, RAMAPRASAD.

The beginnings of art in eastern India, with special reference to sculptures in the Indian Museum, Calcutta. Calcutta: Government of India Central Publication Branch, 1927. vii, 54 p. 7 plates. f°. (India. Archaeological Survey Memoirs. No. 30.) 5s.9d. 709.34

A discussion of the relation of art and religion, with many translations from documentary sources. The catalogue portion is a running commentary on the works of sculpture in this Calcutta Museum.

DYER, WALTER ALDEN.

The rocking-chair, an American institution, by Walter A. Dyer and Esther Stevens Fraser. New York and London: The Century Co., 1928. xiv, 127 p. front., plates. 8°. \$2.50. 749

A history, so far as it can be reconstructed, of this type of chair, and a study of its many forms and variants; illustrated by about 50 plates.

An encyclopaedia of textiles from the earliest times to the beginning of the 19th century; with an introduction by Ernst Flemming. London: E. Benn Ltd., 1928. xxxviii p. illus., 328 pl. (8 col'd). f°. 45s. 745

American edition published by Weyhe at \$15.00.

A digest of textile history from ancient times through the 18th century is followed by a large collection of plates illustrating design types of various periods and countries.

EVANS, SIR ARTHUR JOHN.

The palace of Minos; a comparative account of the successive stages of the early Cretan civilization as illustrated by the discoveries at Knossos. London: Macmillan and Co., 1921-28. 3 vol. in 2. col'd front., illus., maps, plans, plates (part col'd). 4°. vol. 1, \$35. vol. 2, \$45. 722.8

English price, vol. 1, £6.6s. vol. 2, £7.7s.

Bibliographical footnotes.

Contents: v.1. The Neolithic and early and middle Minoan ages.

v.2. Fresh lights on origins and external relations.

v.2. Town-houses in Knossos of the new era and restored west palace section.

A most minutely detailed and documented reconstruction of Minoan civilization from archaeological evidences.

FRANKL, PAUL T.

New dimensions; the decorative arts of today in words and pictures. New York: Payson & Clarke, Ltd., 1928. 79 p. front., 44 plates, f°. \$6.00. 740

A discussion of modernism in decoration, its principles, and its forms of expression in fabrics, furniture and lighting. A group of 122 plates illustrate examples of the movement both here and abroad.

HARADA, JIRO.

The gardens of Japan. London: 1928. viii, 180 p., incl. plates (part col'd). 4°. (The Studio. Special number, 1928.) 10s. 6d. 710

The author briefly outlines the history of the garden art of Japan, its styles and its accessories. The illustrations are drawn from Japanese art and from photographs of modern gardens. Indexed by the designer and owner.

JAMBON, J.

Les beaux meubles rustiques du vieux pays de Rennes. Rennes: Plihon et Hommay, 1927. 100 p. incl. map, geneal. table. 64 pl. sq. 4°. 75 fr. 749

At head of title: Le mobilier paysan de Haute-Bretagne. Historical study of the Breton furniture craftsmen of the late 17th, entire 18th, and early 19th centuries; and of the furniture production of this period and locality. Very clear plates.

KERNOT, C. F.

British public schools war memorials. London: Roberts & Newton, 1927. 324 p. col'd front., illus. First ed. 4°. 42s. 729

The record of memorials is alphabetical by the name of the school. Illustrations in half-tone show many types of memorial, including buildings, crosses, panelling, tablets, windows, screens, gateways, and chapel details.

LANGLOTZ, ERNST.

Frühgriechische Bildhauerschulen. Nuernberg: E. Frommann & Sohn, 1927. 2 vol. plates. 8°. 75 marks. 733

A complete record of early Greek sculpture, and of individual works of this period. There is a list of museums in which examples are to be found.

RANDALL-MACIVER, DAVID.

The Etruscans. Oxford: Clarendon Press, 1927. 152 p. front., illus., map, plates, table. 12°. 6s. 709.3

American price, \$2.00.

A general study of Etruscan civilization, but with a special emphasis upon the art and antiquities.

FOREIGN PERIODICALS

Reviewed by Henry-Russell Hitchcock, Jr.

IT IS PERHAPS desirable to mention especially the French quarterly, *L'Architecture Vivante*, which is remarkable for the quality of its plates and the completeness with which it presents those architects in whose work it interests itself. It has been notable in the last five years for its publication, far more adequately than his own books have done, of the work of Le Corbusier. It has also devoted much space to the correspondingly important work of J. J. P. Oud. The Stuttgart work of these men, already reproduced here from other periodicals, is in the present number more fully covered than elsewhere. There is also the work of Mart Stam of Rotterdam and Mies van der Rohe of Berlin which alone, except for that of Gropius, compared at Stuttgart with that of Le Corbusier and Oud.

The French and English periodicals this month make it evident that definitely modern work is expanding beyond Paris and London, and that France and England will shortly have as general a modern style as Germany already has. This provincial work is less interesting than that of the capitals but it is doubtless historically of greater significance.

CZECHOSLOVAKIA:

Architekt Sia. June, 1928. Comparison of wooden and concrete skeleton construction. A garage by M. Vaněček.

ENGLAND:

The Architect and Building News. June 29. The New Royal Horticultural Hall by Easton and Robertson. The End House, East Sheen, by Basil Oliver. Interiors at the Paris Salon des Artistes-Decorateurs.

The New Croydon Air Station.

The Journal of the Royal Institute of British Architects. June 23. The work of E. Guy Dawber.

The Architect's Journal. June 27. House at Baylins, Beaconsfield, by Edward Maufe.*

July 4. Hampstead Garden Suburb.

FINLAND:

Arkkitehti. June, 1928. The Helsingfors Crematory by Bertel Liljequist.*

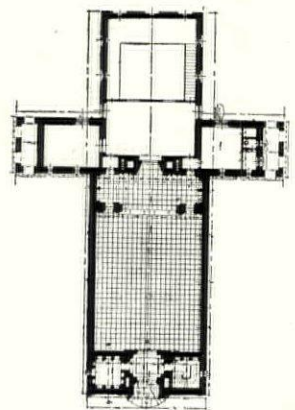
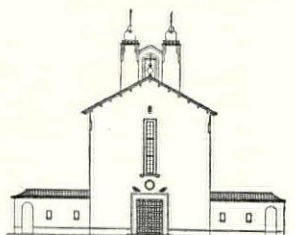
FRANCE:

L'Architecture Vivante. Spring, 1928. The Stuttgart Housing Exposition of 1927. The work of Le Corbusier, Mart Stam, Oud, and Mies van der Rohe well presented in plans, photographs, and construction details.

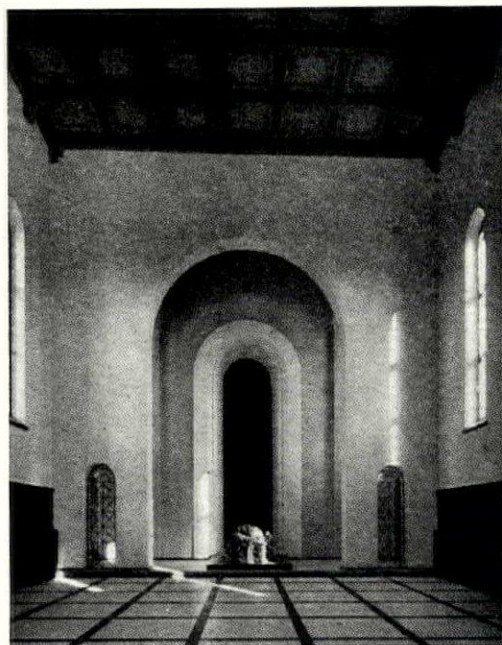
La Construction Moderne. July 8. Crèche at Nomexy, Vosges, by J. Bourgon.

L'Architecture. June, 1928. Church

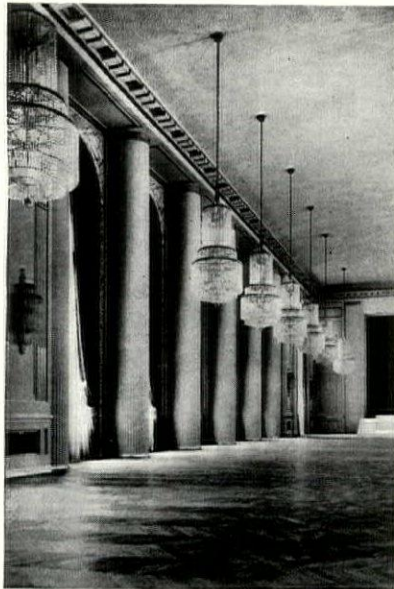
*Illustrated in these pages.



DRAWING AND FLOOR PLAN OF THE HELSINGFORS CREMATORY

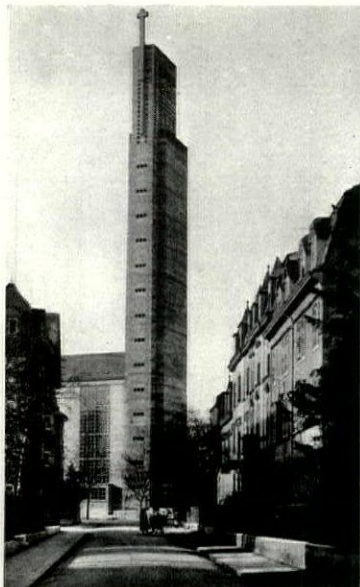


INTERIOR OF THE CREMATORY HELSINGFORS, FINLAND
BERTEL LILJEQUIST, ARCHITECT
From *Arkkitehti*



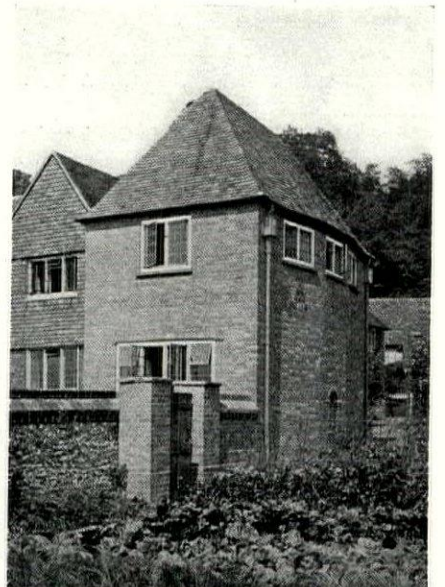
NEW CHAMBER OF COMMERCE
PARIS

J. RUHLMANN, DECORATOR
From *L'Architecte*, June, 1928



ST. ANTHONY'S CHURCH
BASLE

KARL MOSER, ARCHITECT
From *L'Architecte*, June, 1928



HOUSE AT BAYLINS, BEACONS-
FIELD, ENGLAND

EDWARD MAUFE, ARCHITECT
From *The Architects' Journal*, June 27, 1928

at Basle by Karl Moser.* New Paris Chamber of Commerce by Ruhlmann.*

GERMANY:

Wasmuths Monatshefte für Baukunst. June, 1928. Skyscraper factory in Berlin by Hans Hertlein. Apartments in Cologne by Riphahn and Grod. Josef Rings' Essen Exposition Buildings by night. New Hamburg Shopfronts. New Building in Prague.

July, 1928. New Hamburg buildings by the Brothers Gerson. English Contemporary Architecture. Buckhardt and Anker's new building in the Potsdamer Platz, Berlin.

Die Baugilde. July 10. Competition for the Thyssen Building in Düsseldorf.

August 10. Modern Steel structures—halls, garages, factories. Project for a row of houses of circular construction. Addition to the building of Rudolph Mosse, publisher, Cologne.

Die Kunst. June, 1928. Well-illustrated articles on the Spring Exhibition of the Prussian Academy of Art, Berlin; the Düsseldorf Exhibition of Interior Architecture; the Craft School in Zwiesel (glass ware).

*Illustrated in these pages.

Bauwelt. June 28. The work of Richard Doecker, Stuttgart.

July 5. Home for Students at the Sportforum by Werner March, Berlin.

July 12. Further work of Richard Doecker, Stuttgart.

August 9. Stadium in a Wood, Aix-la-Chapelle.

An eight-story office building in Berlin. Winning designs in recent competitions.

August 16. Work of Bruno Taut, architect, including Haus Berthold in Leipzig-Gautsch and suburban developments.

Moderne Bauformen. June, 1928. Work by Ernst Wiesner, Brno. Work by Josef Berger and Martin Ziegler in Vienna. Modern Austrian furniture.

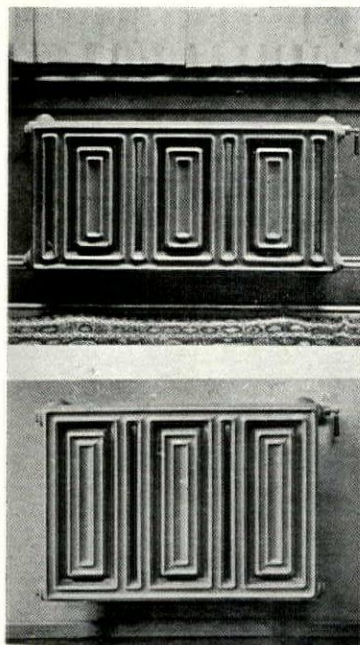
July, 1928. Apartments by Rudolf Fränkel, Berlin. Restaurants in Stuttgart and Hanover.

SPAIN:

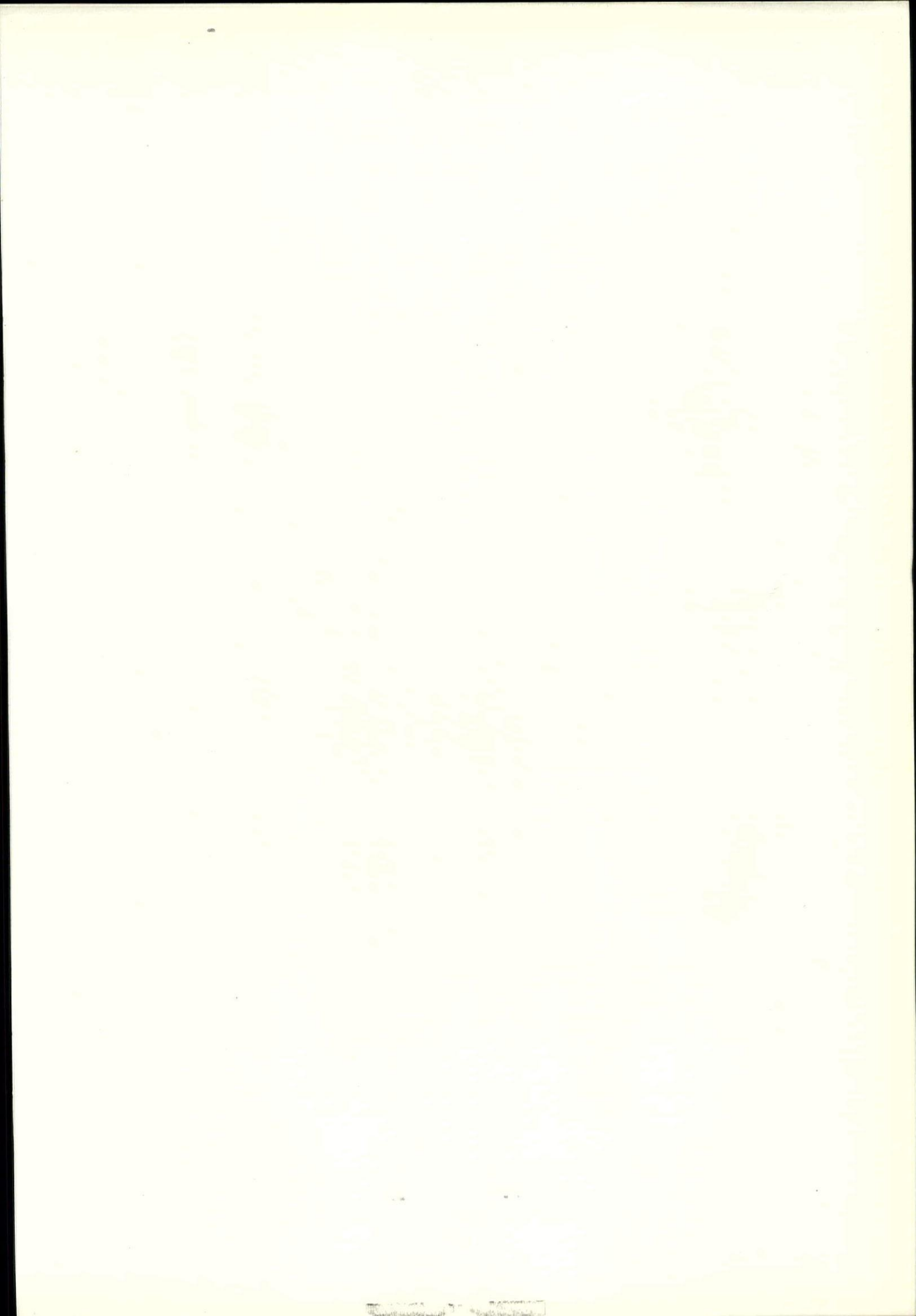
Arquitectura. July, 1928. Three designs by the Rococo architect Pedro de Ribera. Modern Dutch Architecture; text by Theo van Doesburg. Goya Gallery, Saragossa.

SWITZERLAND:

Das Werk. June, 1928. New Radiators.* Swiss Exhibit, Cologne Press Fair.



WALL RADIATORS
From *Das Werk*, June, 1928





ENTRANCE

"GARTH"; HOUSE OF ROBERT T. McCracken, Esq., GERMANTOWN, PA.
MELLOR, MEIGS & HOWE; OFFICE OF MELLOR & MEIGS, ARCHITECTS