

HISTORIA DEL RASCACIELOS

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Francisco Mújica Díez de Bonilla

Este libro forma parte de las ediciones que realiza el
Grupo KALAM, coordinadas por Fernando Vela Cossío,
para promover y difundir nuestro Patrimonio.

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HISTORIA DEL RASCACIELOS

Francisco Mújica Díez de Bonilla

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PRESENTACIÓN

En KALAM, como editores y participes en la redacción, desde el conocimiento de nuestro equipo propio -licenciados en Historia del Arte, Bellas Artes y técnicos especialistas- y con la colaboración directa de prestigiosos estudiosos del patrimonio, publicamos periódicamente ediciones especiales para divulgar temas relevantes y de interés para gestores, arquitectos y otros profesionales del sector, convencidos de la aportación que supone la experiencia adquirida en la restauración de edificios y monumentos con gran valor arquitectónico y contenido artístico.

En un proceso mantenido de nuestra internacionalización, queremos llegar con más facilidad y eficacia a otros lugares, siendo especialmente oportuno este año por las dificultades que ocasiona la problemática de los suministros. Con esta nueva edición, en formato digital, nos alegra poder llegar a todos los que se han interesado por nuestras publicaciones. Aprovechamos esta ocasión para lanzar al completo, en el mismo formato, la colección «Patrimonio Iberoamericano», que tenemos en marcha desde hace nueve años.

La edición facsimilar de un libro de difícil acceso como es *History of the Skyscraper* ha sido un proyecto de cierta complejidad técnica que felizmente ha llegado a buen puerto. Enfrentamos su digitalización, desde un ejemplar original de 1929 en buen estado, con un formato de «gran folio» (42,5 x 32 cm) y el necesario cuidado que se debe tener en su manipulación. Procesamos las imágenes, obtenidas por un sistema de escaneado fotográfico vertical, con un pormenorizado tratamiento de todas las páginas para conseguir la mejor calidad posible en la edición. Queremos agradecer al arquitecto Ramón Gutiérrez tanto su contribución escrita como el haber prestado el ejemplar original de su biblioteca personal. De igual forma expresamos nuestro agradecimiento al resto de investigadores que han realizado la revisión crítica que prologa y cierra el libro, los historiadores María Blanco Conde, Rodrigo Gutiérrez Viñuales y Fernando Vela Cossío, coordinador de la colección, y al arquitecto Daniel Schávelzon, por sus valiosas aportaciones, que contribuyen a enriquecer la publicación.

Deseamos que este nuevo título llegue en su versión digital al mayor número de interesados en patrimonio e historia de la arquitectura. Desde nuestras sedes y centros operativos en España, Portugal, Francia, Chile y Estados Unidos, nos encargaremos de difundirla ampliamente entre los profesionales con los que trabajamos en estos mercados, y desde ellos globalmente, centrándonos especialmente en Europa y América.

Ramón Mayo
presidente@kalam.es

ESTUDIO CRÍTICO

HISTORY OF THE SKYSCRAPER. NOTAS PARA UNA EDICIÓN

Fernando Vela Cossío

Catedrático de Historia de la Arquitectura y el Urbanismo
Escuela Técnica Superior de Arquitectura de la Universidad Politécnica de Madrid
Coordinador de la colección «Patrimonio Iberoamericano»

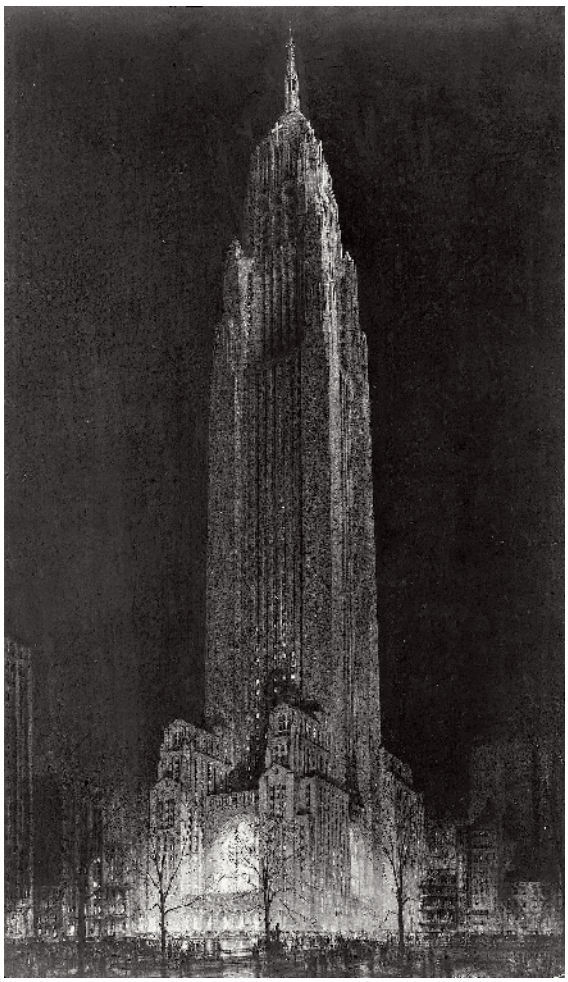
Nacido en el siglo XIX pero desarrollado de forma decisiva a lo largo del XX, el Rascacielos se mantiene como uno de los grandes tipos arquitectónicos de nuestro tiempo. Los importantes desafíos tecnológicos que supone su construcción, especialmente en el actual contexto de cambio de paradigma que está produciendo la crisis climática, las consideraciones sociales y económicas de su empleo en nuestras ciudades y las interpretaciones estéticas del diseño de los propios edificios siguen concitando en el momento presente mucha atención e interés por parte de arquitectos, ingenieros y críticos de arquitectura.

A lo largo de más de un siglo, desde la publicación por Louis H. Sullivan (1856-1924) del ensayo «The Tall Office Building Artistically Considerated» (*Lippincott's Magazine*, marzo de 1896), han sido muchos y muy destacados los críticos y los historiadores que se han acercado al análisis del rascacielos y al papel fundamental que ha tenido en la configuración de la ciudad contemporánea.

Hace más de ocho décadas, en su libro *Espacio, Tiempo y Arquitectura*[1], Sigfried Giedion (1888-1968) destacaba la gran capacidad expresiva de las nuevas técnicas de construcción empleadas por los arquitectos de la Escuela de Chicago y su gran influencia para el posterior desarrollo de la arquitectura moderna. Profundizando en esta interpretación, William Curtis (n.1948) señalaba como «el Chicago de finales del siglo XIX puso de manifiesto con una crudeza diagramática las fuerzas fundamentales y los componentes típicos de la ciudad capitalista en la era del vapor y del acero; también planteó los problemas genéricos y las contradicciones culturales del rascacielos como tipo, e identificó varias soluciones posibles. En realidad, el rascacielos era parte de un sistema más amplio que incluía los ferrocarriles a cierta distancia y la periferia suburbana (*suburb*) más cerca (…) Chicago fue terreno abonado para una nueva síntesis de la tecnología y la forma (…) Enfrentándose cara a cara con las realidades industriales y reflexionando sobre la esencia de su arte, los arquitectos de Chicago pusieron los cimientos fundamentales para un ideal más universal: el de una arquitectura moderna.»[2]

Para el italiano Leonardo Benevolo (1923-2017) el rascacielos constituía «otra aplicación típica del procedimiento de abstracción propio de la cultura norteamericana. Es juzgado siem-

1 Giedion, Sigfried (1941): *Space, Time and Architecture. The Growth of a New Tradition*. Cambridge (Mass.): Harvard University Press.
2 Curtis, William J.R. (2006): *La arquitectura moderna desde 1900*. Nueva York: Phaidon, pág 51. Tercera edición en español, revisada, actualizada y ampliada, de la edición en inglés: *The Modern Architecture since 1900*. New York: Phaidon Press, 1982.



Entre los dibujos de Hugh Ferriss (1889-1962) que forman parte del libro *The Metropolis of Tomorrow* (New York: Ives Washburn Publisher, 1929) se encuentra este, correspondiente al proyecto de Bertram Grosvenor Goodhue (1869-1924) para la *Convocation Tower* de Nueva York (1921). Fuente: Cooper Hewitt, Smithsonian Design Museum (chndm_1964-5-13).

pre con rigor cuando se le considera desde el punto de vista de la perspectiva porque es un dispositivo indefinido, carente de proporciones y de unidad»[3]. Recordaba, sin embargo, como durante el largo periodo de prosperidad que se extiende hasta la crisis de 1929 la producción de esta clase de edificios resultó fundamental y produjo un cambio radical en la apariencia de las grandes urbes norteamericanas, en especial de Nueva York. En Manhattan, los importantes progresos tecnológicos de la construcción en altura habían permitido levantar un conjunto de hitos extraordinarios que partiendo del Flatiron bldg. (Daniel H. Burnham, 1903) se prolongarían en una serie de obras excepcionales entre las que pueden ser destacadas el Woolworth bldg. (Cass Gilbert, 1913), el Chrysler bldg. (William van Halen, 1929), el Empire State bldg. (Shreve, Lamb & Harmon, 1931) y el Rockefeller Center (Raymond Hood, 1939).

Kenneth Frampton (n.1930) ha subrayado el papel que estas singulares construcciones en altura jugaron en la extensión de la arquitectura moderna en los Estados Unidos, en un proceso evolutivo que nos conduce desde los modelos eclécticos del Flatiron o la decidida preferencia del gótico en el Woolworth, hasta su culminación en esa síntesis con el Art Déco que constituye el Rockefeller Center, un conjunto extraordinario formado por ocho manzanas y catorce edificios en cuyo eje central se situaban la escultura de bronce dorado que representa a Prometeo, obra de Paul Manship (1885-1966), y el desaparecido mural «El hombre en la encrucijada», de Diego Rivera (1886-1957), pintado por el mexicano por encargo de los promotores en el año 1934. Para Frampton, «este contradictorio gesto *New Deal* con un monopolio del capital que encarga conscientemente una obra emblemática a un artista comunista, parece hoy, casi medio siglo más tarde, tan remoto y ficticio como la visión de Hugh Ferriss de un Manhattan transformado en interminable repetición de Ziggurats rascacielos en su libro de 1929, *The Metropolis of Tomorrow*»[4]. Este libro de Hugh Ferriss (1889-1962) constituye el registro de ese Manhattan Art Déco en plena construcción, en palabras de Frampton «una ciudad de torres tan escenográfica y teatral como el propio estilo, una nueva Babilonia nacida de la euforia, de los valores del terreno y de los perfiles de retallo impuestos por el código de zonificación de la ciudad de Nueva York en 1916».

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3 Benevolo, Leonardo (1963): *Historia de la Arquitectura Moderna.* Madrid: Taurus, volumen I, pág. 276. Traducción de la edición original en italiano: *Storia dell'architettura moderna*. Bari: editori Laterza, 1960.

4 Frampton, Kenneth (1981): *Historia crítica de la Arquitectura Moderna*. Barcelona: Gustavo Gili, pág. 223. Traducción de la edición original en inglés: *Modern Architecture: A Critical History*. London: Thames & Hudson, 1980.

Ada Louise Huxtable (1921-2013)[5] afirmaba en su libro *El Rascacielos. La búsqueda de un estilo*[6] como «en términos de tamaño, estructura y función, de escala y simbolismo y, sobre todo, de efecto sobre los hombres y las ciudades, sigue siendo el problema de diseño más desafiante de nuestra época. El otro gran reto arquitectónico de nuestro tiempo, la vivienda, seguirá sin gozar de mecenazgo y prioridad, pues responde a necesidades sociales no empresariales. La respuesta más duradera y característica que ofrece el arquitecto del siglo XX a su tiempo es la torre comercial sin techo (…) ¿Cómo vestir el nuevo esqueleto desnudo? ¿Cómo adaptar este gigante sojuzgado a las convenciones arquitectónicas del momento? ¿Cómo relacionarlo con un entorno que es completamente ajeno a su escala, a su estructura y a su utilidad? Las respuestas, antes como ahora, proceden en la misma medida del temperamento y del arte».

Hablar, por tanto, de la historia del Rascacielos es acercarse a uno de los episodios más importantes y seguramente más sugestivos de la propia historia de la arquitectura contemporánea.



Cañonero Querétaro. El arquitecto Mújica al lado de la ametralladora (1937). Fuente: Agencia Española de Cooperación Internacional para el Desarrollo. Biblioteca (signatura IP-3F-3786).

La *Historia del Rascacielos* de Francisco Mújica Díez de Bonilla

La obra que hemos elegido en este año 2022 para sumarse como séptimo volumen a la colección «Patrimonio Iberoamericano» constituye una singularísima aportación a la historia de este tipo arquitectónico.

El libro, que se desarrolla a lo largo de 72 páginas de texto e incluye ilustraciones y 134 láminas, se organiza en seis capítulos, precedidos por un prefacio y una breve introducción en la cual el autor nos proporciona algunas reflexiones en el campo de la teoría del Arte y de la Arquitectura, sobre el arte americano antes y después de la Conquista y con relación al papel de ese legado en la propia arquitectura de su tiempo. En su cuerpo principal de contenidos se ocupa del origen y el concepto de "Rascacielos", de los aspectos tecnológicos relacionados con la invención y la evolución del ascensor, la construcción de estructuras metálicas y de acero (capítulo I), el nacimiento del tipo, los primeros

5 Ada Louise Landman, casada con el diseñador industrial L. Garth Huxtable en 1942, puede ser considerada una de las pioneras del periodismo de arquitectura y urbanismo en los Estados Unidos. Formada como historiadora de la arquitectura en el Hunter College y en el Institute of Fine Arts de la Universidad de Nueva York, trabajó en el Museo de Arte Moderno (MoMA) hasta 1950. Ejerció como crítico de arquitectura en el *New York Times* (1963-1982) y en *The Wall Street Journal* (1997-2012). Su brillante labor la hizo acreedora del Premio Pulitzer en 1970 e impulsó su nombramiento como *fellow* de la Academia Americana de las Artes y las Ciencias en 1974.

6 Huxtable, Ada Louise (1988): *El Rascacielos. La búsqueda de un estilo. Madrid:* Nerea. Traducción de la edición original en inglés: *The Tall Building Artistically Reconsidered.* New York: Pantheon Books, 1982.

rascacielos y su desarrollo en Nueva York (capítulo II), la arquitectura del Rascacielos y su evolución en los llamados estilos clásico, gótico y moderno (capítulo III), la relación con el entramado urbano y el planeamiento (capítulo IV), cerrándose con una serie de consideraciones finales (¿Debería prohibirse la construcción de rascacielos, alentarse o simplemente guiarse y controlarse?) así como de una serie de opiniones autorizadas: Thomas Hastings, Henry Curran, Harvey Willey Corbett y John Sloan (capítulo V). El capítulo VI comprende, por último, los datos técnicos y estadísticos de los edificios que se reproducen en el libro.

El prólogo al libro es de John Sloan (1878-1962), arquitecto formado en la Universidad de Nueva York, quien había trabajado para el Departamento de Guerra de los Estados Unidos en distintos proyectos en Filipinas y en Europa hasta 1920. Su primer encargo importante en Manhattan fue el Pershing Square Building, realizado con York & Sawyer, un edificio de oficinas de 24 pisos en la calle 42. Asociado con Thomas Markoe Robertson (1879-1962) en el año 1924, la firma se especializó en el desarrollo de importantes proyectos comerciales. Antes de 1930 ya habían diseñado varias torres de oficinas en Manhattan, entre las que puede destacarse el edificio Wadsworth (1925-26, demolido), el edificio Fred F. French (con H. Douglas Ives, 1926-27, un hito de la ciudad de Nueva York), el edificio Chanin (con Irwin Chanin, 1927-29), el Maritime Exchange Building (1931) y el número 29 de Broadway (1931), así como otros edificios de apartamentos en el número 1 de Beekman Place (1929) y en el 895 de Park Avenue (1929)[7]. Su obra más importante es, probablemente, el Graybar bldg., terminado en Nueva York en 1927, y del que Mújica incluye en su libro tres láminas (LXXVII, LXXVIII y LXXIX).

La obra de Mújica constituye un original punto de encuentro entre el tipo arquitectónico norteamericano por antonomasia, el Rascacielos, con algunos aspectos y episodios de nuestra propia cultura arquitectónica. El interés que tiene el propio repertorio de los edificios elegidos justificaría sobradamente la reedición del libro, pero el valor de una buena parte del material gráfico que nos ofrece explica perfectamente la oportunidad de la elección. Encontrará el lector un atractivo recorrido fotográfico por la historia del Rascacielos que, partiendo de los primeros edificios de esta clase en Chicago, el Home Insurance Building (William Le Baron Jenney, 1884) y el Tacoma Building (William Holabird y Martin Roche, 1888), alcanza algunos de los mejores ejemplos de los grandes edificios de oficinas del Art Déco norteamericano.

Publicado en París en el año 1929 por la firma editorial «Archaeology and Architecture Press», bajo la cual se oculta con toda seguridad una edición del propio autor, el libro está escrito en inglés. Se imprimió en formato "gran folio" (42,5 x 32 cm) sobre papel de alto gramaje, con una cuidada encuadernación de media piel, a la holandesa con puntas. La escasez de la obra en nuestras bibliotecas, los contenidos que incluye y la propia singularidad de la edición, hacen de *History of the Skyscraper* un "libro raro" que deseamos dar a conocer y difundir a través de nuestra colección «Patrimonio Iberoamericano».

La edición que ahora presentamos es resultado de un esmerado trabajo de digitalización a partir de un ejemplar que forma parte de la biblioteca del arquitecto Ramón Gutiérrez, a quien deseamos agradecer muy especialmente su cortesía. Acompañan a la reproducción del libro una serie de trabajos que nos permiten contextualizar convenientemente la obra y a su autor. El extraordinario equipo de especialistas con los que hemos contado para desarrollar esta edición crítica está integrado por los arquitectos Ramón Gutiérrez (Buenos Aires, 1939) y Daniel Shávelzon (Buenos Aires, 1950) y por los historiadores del Arte Rodrigo Gutiérrez Viñuales (Resistencia, 1967) y María Blanco Conde (Ourense, 1964).

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7 Véase Landmarks Preservation Commission (2016): *The Graybar Building*. November 22, 2016. Designation List 490, LP-2554. New York.

No resulta fácil sintetizar en unas pocas líneas la trayectoria vital del arquitecto Ramón Gutiérrez, uno de los historiadores y críticos de la arquitectura iberoamericanos más importantes de nuestro tiempo. Arquitecto por la Universidad de Buenos Aires, ha dedicado su vida al estudio de la historia de la arquitectura y de la ciudad en Latinoamérica y a la difusión y la defensa de su patrimonio edificado. Investigador Superior del Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina), es miembro de número de las Academias Nacionales de la Historia y de las Bellas Artes de Argentina, y correspondiente de distintas Academias en España y América. Primer director de la revista DANA (Documentos de Arquitectura Nacional y Americana) ha impartido su enseñanza en importantes universidades americanas y de Italia, Portugal y España, en donde ha sido profesor invitado de la Universidad Pablo de Olavide (Sevilla), donde puso en pie el Doctorado de Historia del Arte y Gestión Cultural del Mundo Hispánico y de la que ha recibido el nombramiento de *doctor honoris causa* en el año 2014. Profesor Honorario de la Universidad de Chile, la Universidad Nacional de Ingeniería, la Universidad Ricardo Palma y la Universidad Nacional de San Agustín de Arequipa (Perú) y de la Universidad Nacional de Mar del Plata (Argentina), es autor de una imponente producción científica y fundador y director del Centro de Documentación de Arquitectura Latinoamericana (CEDODAL), referencia internacional ineludible para cuantos hemos trabajado en el campo del patrimonio cultural iberoamericano. El profesor Gutiérrez nos proporciona un acercamiento biográfico a Francisco Mújica y una brillante interpretación del libro en su dimensión propiamente arquitectónica, ofreciéndonos adicionalmente el testimonio de la relación entre el arquitecto mexicano y Martín Noel (1888-1963), destacadísimo historiador del arte y de la arquitectura hispanoamericana y señalado impulsor de las corrientes neocoloniales.

Daniel Shávelzon, por su parte, se ocupa del estudio de la dispersión del archivo y de las colecciones de Francisco Mújica. Shávelzon, arquitecto por la Universidad de Buenos Aires (1975), obtuvo una Maestría en Restauración de Monumentos en la Universidad Nacional Autónoma de México (1981), doctorándose en la misma en el año 1984. Ha fundado y dirigido el Centro de Arqueología Urbana de la Facultad de Arquitectura y Urbanismo de la Universidad de Buenos Aires desde 1991, el Área de Arqueología Urbana en el Gobierno de la Ciudad de Buenos Aires desde 1996 (actualmente dependiente de la Dirección General de Patrimonio) y el Área Fundacional de Mendoza desde 1988. Ha impulsado la formación de grupos de trabajo en investigación en Argentina y en América Latina. Sus principales campos de estudio e interés se han centrado en la arqueología histórica de las áreas urbanas, habiendo trabajado especialmente en la ciudad de Buenos Aires, sobre la que ha publicado trabajos de referencia muy importantes. Trabaja en temas de conservación del patrimonio cultural, políticas culturales y tráfico ilegal de obras de arte. Ha recibido premios y becas internacionales, como la beca Guggenheim (New York 1994); National Gallery of Art-CASVA (Washington, 1995), Graham Foundation for the Arts de Chicago (1984), Getty Grant Program (1991), Dumbarton Oaks (1996) junto a Sonia Berjman, DAAD Berlín (1988), Center for Latin-American Studies de la University of Pittsburgh (2002), FAMSI, Florida (1995), Centro de Antropología Comparada de la Universidad de Bonn (1998), así como otros premios nacionales a la producción científica y a su trabajo en el ámbito de la defensa del patrimonio nacional. Vocal de la Comisión Nacional de Museos y Monumentos Históricos, asesora y actúa como evaluador de diversas universidades y organismos nacionales y municipales.

Rodrigo Gutiérrez Viñuales nos ofrece un interesantísimo recorrido por las fuentes precolombinas que se están manejando desde finales del siglo XIX en los ámbitos artísticos latinoamericanos, especialmente en México, y describe la trayectoria de Mújica Díez de Bonilla en este campo. Doctor en Historia del Arte, Rodrigo Gutiérrez Viñuales es Catedrático de Historia del Arte en la Universidad de Granada. Miembro correspondiente de la Academia Nacional de la Historia (Argentina), se

ha centrado en la investigación del Arte Contemporáneo en Latinoamérica, un tema sobre el cual ha publicado más de doscientos trabajos. Entre las obras que ha dado a la imprenta en los últimos años pueden destacarse: *Libros argentinos. Ilustración y modernidad (1910-1936)* (Buenos Aires, CEDODAL, 2014), *Rómulo Rozo. Tallando la Patria* (Bogotá, Editorial La Silueta, 2015), *Alhambras. Arquitectura neoárabe en Latinoamérica* (Granada, Editorial Almed, 2016), *Manuel Ángeles Ortiz. Memoria de la Argentina* (Granada, Diputación de Granada, 2017), *Memorias de Fernando Álvarez de Sotomayor. Fomento y apreciación de las artes* (Santiago de Compostela, Editorial Universidad de Santiago de Compostela, 2017), *Patrimonio y Modernidad en Latinoamérica. Revistas de Arte y Arquitectura (1940-1960)* (Bogotá, Ministerio de Cultura-Instituto Caro y Cuervo, 2017) y *Canarias y América. Puentes artísticos en el siglo XX* (Gáldar, Cabildo Insular de Gran Canaria-Museo Antonio Padrón, 2018). Se encuentra trabajando en una gran exposición sobre este universo artístico neo-precolombino que se celebrará en la Fundación Juan March (Madrid) el año próximo.

Finalmente, María Blanco Conde se ocupa del análisis del fallido proyecto elaborado por Francisco Mújica para el «Templo a la gloria de América y de la gesta colombina», sobre el que ofrecemos material documental inédito que se conserva en el archivo del antiguo Instituto de Cultura Hispánica, en Madrid, hoy Agencia Española de Cooperación Internacional para el Desarrollo (AECID), organismo al que agradecemos las facilidades para la publicación de algunos de los documentos que acompañan esta edición crítica. Licenciada en Geografía e Historia por la Universidad Complutense de Madrid y doctoranda en Historia del Arte Contemporáneo en la misma universidad, María Blanco es la conservadora de la Colección Artística de la Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Entre sus publicaciones hay que destacar el *Catálogo de la Colección Artística de la AECID* (Madrid: AECID, 2005 y 2016) y el libro *Lago Rivera* (A Coruña: Diputación Provincial, 2004). Es, igualmente, coautora del catálogo *Manufactura del Buen Retiro* (Madrid: Museo Arqueológico Nacional, 1999) y del catálogo *Julián de la Herrería. Su Obra. Colección Museo Julián de la Herrería* (Asunción: AECID, 2020). Entre sus últimos trabajos hay que destacar el proyecto museográfico de la «Colección Julián de la Herrería» para su exposición en el Centro Cultural de España Juan de Salazar de Asunción, inaugurado por S.M. la reina Doña Letizia en noviembre de 2021 durante su visita de cooperación al Paraguay. Ha sido, además, comisaria de la exposición retrospectiva *Julián de la Herrería. Entre dioses y hombres* y autora de su catálogo (Asunción: CCEJS, 2022).

Los textos de estos cuatro especialistas nos proporciona un acercamiento integral y transversal al libro elegido y a su autor, el mexicano Francisco Mújica Díez de Bonilla (1899-1979), aportándonos algunas claves indispensables que van a permitir al lector situar la obra en su preciso contexto histórico y disfrutar de los muchos valores y elementos que ésta contiene, en una modesta pero original contribución a esta historia del Patrimonio Iberoamericano que continuamos construyendo gracias al generoso patronazgo del Grupo Kalam y de su Fundación Ekaba.

MÚJICA DÍEZ DE BONILLA. DATOS PARA UNA BIOGRAFÍA

Ramón Gutiérrez

Arquitecto. Director del Centro de Documentación de Arquitectura Latinoamericana (CEDODAL)

Francisco José Luis Mújica Díez de Bonilla nació en México el 29 de junio de 1899 y falleció en Alameda (California) en1979. Era hijo de Adolfo Ángel Mújica y Sayago Navarrete (1860- 1916) y de Guadalupe Gregoria Luz Soledad Rosa Díez de Bonilla y Valenzuela (1859- 1944). Estuvo casado con María de la Luz Acereto Icaza (1907-1986), con quien tuvo una hija a la que llamaron María de la Luz Mújica.

Signado por la carrera diplomática de su padre, Francisco realizó sus estudios primarios en el Colegio de los Jesuitas en Amberes y su bachillerato en el Colegio La Salle de Buenos Aires, donde su padre era Embajador de México en 1910. Luego regresó a México donde se recibió de Arquitecto en la Universidad Nacional Autónoma de México (UNAM). Su temprano interés arqueológico se vislumbra no solamente por sus primeros trabajos en México sino también por el viaje a Perú en 1917 y su visita a Machu Picchu.[8]

Radicado en Chile fue presidente del Centro de Estudiantes de Arquitectura y se graduó de Arquitecto en 1920 en la Universidad de Chile. Ese mismo año participó en el I Congreso Panamericano de Arquitectos realizado en Montevideo, donde obtuvo un Gran Premio con medalla de oro por sus trabajos. También ganó una medalla de oro en el II Congreso Panamericano realizado en Santiago de Chile en 1923.[9] Ese mismo año había presentado un proyecto de Plaza hundida en México. Estuvo posteriormente en la Ecole des Beaux Arts y en la Sorbona en París por tres años, estudiando urbanismo y sociología.[10] Allí fue laureado en el Salón Oficial de París y en la Academia del Ministerio de Educación de Francia.

En Francia editó en 1929 su libro sobre "Historia del Rascacielos" que configuró un punto de referencia donde Mújica intentó, con el apoyo de universidades de Estados Unidos y Francia articular su pasión por el pasado prehispánico con la arquitectura de punta contemporánea.

El éxito del libro, tomado como texto oficial en diversos centros universitarios, lo llevaron en ese mismo año a dictar en Francia una serie de conferencias en la Escuela Nacional de Bellas Artes, bajo el patrocinio del Ministerio de Instrucción Pública de Francia. Es probable que en ese año conociera a Martín Noel quien estaba en España construyendo el pabellón argentino para la Exposición Iberoamericana de Sevilla. Con certeza Mújica debió conocer el pabellón mexicano que realizaba su colega Manuel Amábilis dentro de los lineamientos del neoprehispanismo. En 1926 Mújica presentó sus dibujos en Exposiciones realizadas en el Museo Nacional de Washington y en el American Mu-

8 Chohfi, Reinaldo. "Machu Picchu ciudad solar de los Incas". *Suplemento de El Comercio,* Lima, 2 de marzo de 1980.

9 San Martín, Iván; Lee, Gabriela. *Permanencias y devenires en la arquitectura moderna de México*. México, Docomomo, 2018.

10 *Guía quincenal de la actividad intelectual y artística de la Argentina*. núm. 14. Buenos Aires, Comisión de Cultura, noviembre de 1947.

seum of Natural History de New York. En esos años estaba empeñado en desarrollar el proyecto de un Gran Monumento Público con forma de Museo que era considerado en Estados Unidos como "un templo a la gloria del arte americano antiguo". Bajo esta denominación habría de presentarlo también en Francia, donde Albert Mayeux, Arquitecto en Jefe de Monumentos Históricos de Francia lo ponderaba: «Su templo a la gloria del arte americano es realmente muy interesante y demuestra la posibilidad de obtener, sin la ayuda de ningún elemento europeo, un efecto monumental muy impresionante. La idea del Sr. Mújica de devolver a América su arte autóctono, únicamente inspirado en la estética americana, es digna de interesar a todos los que buscan la originalidad y la sinceridad de la inspiración. Es un noble sentimiento de patriotismo y de piedad ancestral que lo guía; no se puede sino felicitarlo por esta obra de renovación de una fuente de arte tronchada prematuramente». El dibujo que integra a su *Historia del Rascacielos* nos muestra similitud con los planteos monumentalistas del estilo "neoperuano" que venía desarrollando Manuel Piqueras Cotolí en Lima para el Santuario de Santa Rosa que luego habrá de culminar Héctor Velarde11. Unos interiores divididos no por vanos trapezoidales incaicos sino por una rara mezcla de arcos y trapecios, mostrando una sobrecarga de relieves y una cierta diafanidad espacial que contrasta con los reducidos y oscuros interiores prehispánicos.

Por la calidad de sus dibujos y acuarelas Mújica fue galardonado en los Salones de Artistas Franceses de París en los años 1929 y 1930. La opinión autorizada de Paul Rivet, Director entonces de la Sociedad de Americanistas de París ayuda a entender la visión que se tuvo del material presentado por Mújica. «Visitando la Exposición del Sr. Mújica, todos hemos admirado el talento del arqueólogo y el gusto del arquitecto que aparecen en cada una de sus obras. Hasta ahora conocíamos todos, poco más o menos, las ruinas maravillosas de México; pero ahora, merced a él, las comprendemos mejor. El vínculo que pretende hacer revivir entre el pasado grandioso y el presente es necesario. Si fuera americano, mi divisa sería ni indio ni español; la verdadera originalidad del hombre de América Latina, es precisamente la de reunir en su mentalidad, en sus aptitudes y en sus anhelos, algo de la raza indígena y algo de la raza castellana. El señor Mújica lo ha comprendido mejor que nadie» [12].

Evidentemente, bajo los influjos de la Exposición de Arts Décoratifs realizada en París en 1925, las propuestas ornamentalistas de Mújica Díez de Mújica concretadas en sus 125 dibujos impactaron vivamente en sus exposiciones y conferencias. *L'Art Vivant*, símbolo del vanguardismo francés reconocía en el proyecto del que llama "prodigioso Museo" *un* «testimonio del pasado y que sería la síntesis de todos los elementos arquitectónicos, de todos los motivos decorativos de un arte de construir que empezamos a conocer y admiramos».

De regreso a su país Mújica fue profesor de la Universidad Nacional Autónoma y en el Museo Nacional de Arqueología, Historia y Etnografía. También se desempeñaría como Arquitecto del Departamento de Monumentos Prehispánicos de la Secretaría de Educación Pública de México trabajando en el conjunto de Tula en 1933. Esta Secretaría lo comisionó, por invitación de la Institución Carnegie de Washington, a cooperar con los trabajos que se realizaban en el conjunto de Chichen Itzá en la península de Yucatán. También avanzó en la línea de propuestas urbanísticas., con planes reguladores para México, Cuernavaca y Nuevo Laredo, y de anteproyectos para dibujos sobre el tesoro artístico e histórico de México en todas sus épocas y ensoñando una ciudad "neoamericana" con Puebla, Monterrey, San Luis Potosí, Torreón y Saltillo.[13]

Participó hacia 1940 en una Exposición de sus trabajos efectuada en Buenos Aires bajo el auspicio de Los Amigos del Arte, dictando conferencias públicas en la Facultad de Filosofía y Letras de la

11 Gutiérrez, Ramón. *Héctor Velarde*. Lima, Ed. Epígrafe, 2002.
12 Archivo CEDODAL, Buenos Aires. "Crítica francesa sobre la obra de Mújica Díez de Bonilla (años 1927 y 1929)". Mecanografiado.
13 OJEDA BRUNO; María Lucía. *La arquitectura regionalista en las Palmas de Gran Canaria. 1929-1955.* file:///C:/Users/Usuario/Downloads/0628781_00000_0000.pdf

Universidad de Buenos Aires, el Museo Etnográfico (donde hoy se conservan parte de sus dibujos), la Sociedad de Amigos del Arte y la Sociedad Central de Arquitectos.

En el año 1942 realizó exposiciones y disertaciones en el Perú. Su presencia en Lima fue ponderada, no solamente por sus dibujos sino también por sus propuestas urbanísticas «por su manera de encarar los problemas urbanos, en la que impera la tendencia de adaptar los sistemas y métodos modernos a cada ambiente de acuerdo con sus características espaciales» según señalaba Alberto Alexander, Director de Obras Públicas de la Municipalidad de Lima[14]. En 1944 participó activamente en Estados Unidos en la Exposición sobre arte latinoamericano. En la misma escribieron textos Pal Kelemen, José Gabriel Navarro, Enrique Finot y otros destacados americanistas[15].

El 6 de noviembre de 1947, Mújica daba una conferencia en Buenos Aires con el auspicio del Presidente Juan Domingo Perón con el título "Los tesoros artísticos de la América precolombina". Con amplio respaldo institucional Mújica fue presentado por el Interventor de la Universidad de Buenos Aires, arquitecto Julio V. Otaola y el presidente de la Comisión de Cultura doctor Antonio Castro Allí, abordaba el tema de la "vibración semilla" y la evolución de un elemento precolombino a partir de esa teoría. Planteaba también la propuesta de la ciudad neo-americana del futuro.[16] Mújica recordó que había en México identificadas 1700 ciudades arqueológicas hasta ese momento y que las más relevantes eran las Toltecas y Mayas. Las Aztecas configuraban un simple período de las Toltecas.

Al referirse a la arquitectura moderna americana Mújica entendía que no podía ni debía reproducir formas precolombinas, salvo en casos particulares como los monumentos, las esculturas funerarias y en decoraciones interiores «que requieren un aspecto original y festivo como es el caso de las salas destinadas a espectáculos». Indicaba que el artista americano debía bucear en las fuentes del arte continental para poder formar la esencia de su propio temperamento. Incluyó en la publicación de la Comisión de Cultura, un dibujo suyo del Templo de Quetzalcoatl en Teotihuacán.

Con los vínculos oficiales Mújica vendió en esta oportunidad una serie de dibujos, mapas, planos y diseños sobre yacimientos arqueológicos de Mesoamérica. Este material ingresó al Museo Etnográfico, dependiente de la Universidad de Buenos Aires de tres modos diferentes. El primero fue en 1948 cuando la Universidad, a través del gobierno, «adquirió los trabajos de este investigador vinculados a estudios americanistas». Luego en 1952, Mújica investigó para la Facultad de Filosofía y Letras y produjo un grupo de mapas y diseños. [17]

Luego de su desempeño en el Museo Etnográfico de Buenos Aires, a partir de 1952 se radicó un tiempo en Estados Unidos. En 1956 concurrió nuevamente a Buenos Aires para realizar una Exposición de sus dibujos que fue presentada por Martín Noel y tuvo gran repercusión pública.[18]

En la Bancroft Library de Berkeley se conservan sus papeles entre 1956 y 1979 y la correspondencia que tuvo con entidades norteamericanas con la finalidad de vender copias de sus dibujos, muchos de ellos seguramente similares a los que vendió en Buenos Aires.[19] Otra serie de sus dibujos, posiblemente de data anterior, se encuentran en el Fondo reservado de la Biblioteca Nacional de México, bajo la catalogación de "Colección especial Francisco Mújica Díez y Bonilla".[20]

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14 Archivo CEDODAL, Buenos Aires. "Crítica peruana sobre la obra de Mújica Díez de Bonilla (1942)" Mimeografiado.

15 AA.VV.. *The Art of Latin America*. Washington, Panamerican Union, 1944.

16 *Guía quincenal de la actividad intelectual y artística de la Argentina*. núm. 15. Buenos Aires, Comisión de Cultura, noviembre de 1947

17 AA.VV, Diagnóstico y perspectiva sobre la situación de la documentación histórica argentina. Buenos Aires, CONICET-CEHIPE-FUNDACION BUNGE Y BORN. Disponible en red: **https://www.argentina.gob.ar/sites/default/files/documentacion_historica.pdf**

18 Noel, Martín. *Exposición de arte mexicano prehispánico, colonial, moderno, dibujos originales y archivos gráficos: obras y colecciones de Francisco Mújica Díez de Bonilla*. Galería Velázquez. Buenos Aires, Ministerio de Educación y Justicia, Comisión Nacional de Cultura, 1956.

19 The Bancroft Library, Berkeley. BANC MSS 44/89 m.

20 Abraham Delgado, Aurelio. *Francisco Mújica Díez de Bonilla: un catálogo del Fondo de las Colecciones Especiales de la Biblioteca Nacional de México*. Disponible en red: **https://redmifa.blog/wp-content/uploads/2019/08/10.-grados.pdf**

Es interesante ver como la idea de Mújica que hoy nos puede parecer estrafalaria de incorporar los elementos prehispánicos a los rascacielos norteamericanos despertaba interés en diversos profesionales y críticos de la década de los 20. Por ejemplo, John Sloan, arquitecto estadounidense, decía que «El señor Mújica nos sugiere además la interesante idea de aplicar la arquitectura de los pueblos primitivos de América al rascacielo. Afortunadamente, el estilo de las pirámides americanas escalonadas en terrazas, se amolda de manera sorprendente a la reglamentación de masas derivada de la ley de zonificación»[21]. Sloan, socio de Robertson en la construcción del rascacielo Graybar Building de Nueva York en 1927, prologó el libro de Mújica considerando una veta potencial esta recreación del estilo arquitectónico "neoamericano" para aplicarla a los rascacielos[22].

La crítica arquitectónica sobre el libro fue en general laudatoria y la revista *Architectural Forum* decía que «el señor Mújica, eminente arquitecto mexicano, ha producido una monumental historia del rascacielo. Muy interesantes dibujos muestran destalles y restauraciones de antiguos edificios hechos por el señor Mújica». Mientras tanto *Architecture* también de Nueva York evaluaba su libro como «un récord de trabajo y esfuerzo que por su propio peso sabrá sobrevivir». El conocido arquitecto André Pascal, escribía en *L'Architecture d'Aujourd'hui* que «sus estudios referentes al rascacielos se prestan maravillosamente a las exigencias del confort moderno y a las del eje del espíritu». El propio Pierre Lavedan, maestro del urbanismo francés escribía «Sus rascacielos son una bella silueta y sus poderosas masas (que ostentan una ligera decoración en relieve precolombino) valen mucho más que el recargo pastelero que debilita tantos rascacielos neoyorquinos».

Es interesante advertir el emparentamiento de las propuestas de Mújica con otras iniciativas estrictamente contemporáneas, como fueron algunos de los proyectos presentados al concurso para el Faro a la memoria de Cristóbal Colón convocado en 1927 en Santo Domingo. En el mismo confluyeron varios proyectos con referencias ornamentales de raíz prehispánica, como los presentados por Francisco Javier Herrero y Husía (Madrid) –presidido por una enorme figura de Coatlicue–, Flavio de Rezende Carvalho (São Paulo) –con sala de fiestas adornada con figuras toltecas–, Kilham, Hopkins & Greeley (Boston), Wulffleff y Verrey (París), y Manuel Torres Armengol (Buenos Aires). Entre todos ellos nos interesa destacar a este último por su planteamiento verticalista, expresado a través de la construcción de una gran pirámide escalonada de reminiscencias mayas, coronada por la figura de una Victoria alada. Casi podríamos afirmar que se proponía hacer un verdadero "faro-rascacielos" americanista[23].

Recientemente otro trabajo sobre la persistencia del prehispanismo centrado en los edificios de altura en textos del arquitecto argentino Ángel Guido mencionaba que «aparentemente, la estética indigenista y nacionalista de Guido era lo suficientemente compatible con la ideología de Blut y Boden. Otro caso de la nueva metodología tripartita de Guido es su *Catedrales y rascacielos* (1936), una reinterpretación americanista del rascacielos inspirada en *History of the Skyscraper* (1929) de Francisco Mújica, *The Metropolis of Tomorrow* (1929) de Hugh Ferris y *El rascacielos* (1934)».[24] Weddigen reflexionaba que "La recuperación del pasado precolombino fue clave para el modernismo posre-

21 Archivo CEDODAL, Buenos Aires. "Crítica estadounidense sobre la obra de Mújica Díez de Bonilla. (años 1926, 1928 y 1930)". Mecanografiado.

22 Mújica, Francisco. *History of the* Skyscraper. París, Archaelogy & Architecture, 1929.

23 Kelsey, Albert. *Programa y reglas de la segunda etapa del concurso para la selección del arquitecto que construirá el Faro Monumental que las naciones del mundo erigirán en la República Dominicana a la memoria de Cristóbal Colón*. Nueva York, Unión Panamericana, 1931, p. 112.

24 Los libros mencionados son Ferris, Hugh. *The Metropolis of Tomorrow*. Nueva York, Ives Washburn, 1929; y Weiss, Joaquín. *El rascacielos: Su génesis, evolución y significación en la arquitectura contemporánea*. La Habana, 1934.

volucionario y su construcción de una identidad nacional mexicana y, por lo tanto, se convirtió en la base de la narrativa del arte y la arquitectura mexicanos modernos. En 1929, el arquitecto mexicano Francisco Mújica explicó el "estilo mixto" estadounidense como un combinación de «la idea europea de la construcción con el sentido americano de la ornamentación» y vio el modelo para el rascacielos moderno en los templos mayas; para él, la «destrucción del arte estadounidense» colonial había interrumpido su evolución natural, un resultado que ahora exigía una "reacción necesaria" contra el dominio de los estilos europeos en la arquitectura estadounidense contemporánea para crear una futura arquitectura "renacentista y neoamericana".[25]

Retornando las miradas sobre el libro de Mújica sobre la historia del rascacielo, el autor desplegó, a la mejor manera de los utopistas urbanos de aquellos años, un proyecto de ciudad de 100 pisos. El mismo era considerado por el *Brooklyn Daily Eagle* como un proyecto «importante, por comprender planos y sugestiones eminentemente prácticas que han sido motivo de estudio para la Comisión del Municipio de Nueva York encargada de la planificación de la ciudad». La ciudad de Mújica, erizada de rascacielos era considerada «fascinadora y grandiosa» por el periodista que lo veía como un «entusiasta soñador».

Mújica logró, curiosamente un interesante eco sobre su tarea de articular pasado y futuro de una manera casi lineal. El *New York Herald* se refería a sus dibujos de Teotihuacán ponderando su calidad de reconstrucción, pero a la vez señalaba: «En teorías ya famosas en América, el señor Mújica ha demostrado cómo este arte debe ser una fuente de inspiración para los americanos y ha propuesto para la arquitectura civil del continente formas muy interesantes deducidas del estilo histórico. Este americanismo predicado por el ejemplo es seductor y su obra tal como aparece en el conjunto de sus estudios, es la de un gran erudito, de un hombre de gusto y de gran sentido lógico». Notable reflexión por cierto....

History of the Skyscraper ubicó a Mújica como «el exégeta de la arquitectura americana» según la Secretaría de Bellas Artes de Francia. Creemos que es importante considerar que Mújica integra en primer lugar en esta obra una serie de sus dibujos de relevamiento en Tikal, Huatusco, Papantla, Palenque, Copan y Chichen Itzá. También en una serie de propuestas de "restauraciones" que son más que nada reconstituciones de dibujos que toman ejemplos de Uxmal, Mitla y Chichén Itzá.

A partir de ello su propuesta se mueve en dos planos. Por una parte, el de los nuevos diseños neoprehispánicos que abarcan dos alternativas, la ya mencionada del "Templo de la Gloria del Arte Americano" y por otra de una Escuela para 360 alumnos, seguramente vinculada a la política de expansión escolar que fomentaba José Vasconcelos, autor de "Indología", desde el Ministerio de Educación en México. Es interesante constatar que Mújica llama a su propuesta "American Reinassance Style", el mismo "Renacimiento colonial" que bautizara Héctor Greslebin en Buenos Aires un lustro antes[26].

La segunda faceta es la que atañe específicamente a los rascacielos. Allí su proyecto se verifica en un diseño en "Neo-American style" que incluye elementos decorativos de origen prehispánico a los cuales trabaja con un sentido escultórico volumétrico para cualificar el remate del rascacielos que según una lectura formalista de alguna manera definía el "estilo" del edificio. Luego de este ejercicio, esta pieza arquitectónica era insertada en la ciudad de rascacielos que asumían el carácter modelístico en una visión futurista de calles peatonales a gran altura y autopistas urbanas. Mújica nos retrotrae a algunos dibujos corbusieranos en cuanto a la densidad urbana y el espesor de la utopía, aunque también a los diseños que, bajo el título de "Buenos Aires en el año 2010", había publicado

25 Weddigen, Tristán. *Wölfflin in the Hipanic world*. Zurich, University of Zurich, 2020. Disponible en red: https://www.zora.uzh.ch/id/eprint/188941/1/fm_weddigen_reduced.pdf

26 Greslebin, Héctor. "El estilo renacimiento colonial". *Revista de Arquitectura*, Buenos Aires, 1924.

Arturo Eusevi en 1910 en la revista *PBT* de la capital argentina, en los cuales imaginaba una ciudad con edificios de más de 50 pisos, anchas vías conectando los edificios entre sí a gran altura, además de "plataformas automóviles" que conducirían a los viandantes a gran velocidad a través de la urbe. Finalmente, lo prehispánico es un elemento cualificante de la futura ciudad americana en una vuelta circular a la historia que Mújica sueña con la libertad que da la inexistencia de compromisos con realidad alguna y la fácil disponibilidad de ciertos círculos "cultos" para tolerar el exotismo ritual de los latinoamericanos.

El libro finalmente se ha convertido en una pieza rara de encontrar y particularmente estimado por los bibliófilos. Recientemente en una muestra del Getty Research Institute sobre "La Metrópolis en América Latina, 1830-1930" fue presentada la obra de Mújica con su idea de la "ciudad del futuro".

Su amistad con Martín Noel

Es evidente que Mújica tuvo una relación directa con Martín Noel, quien venía desarrollando una prédica americanista desde 1914 y cuya influencia en el medio cultural argentino era notoria por sus vinculaciones familiares y políticas. Noel fue el impulsor del movimiento "neocolonial" aunque en una línea más hispanista que indigenista como sin duda propiciaba Mújica Díez de Bonilla. Curioso es que no aparece un contacto con el otro historiador de la arquitectura, Ángel Guido que había realizado su libro sobre los rascacielos en 1936 luego de viajar a Estados Unidos con una beca Guggenheim.[27]

Lo cierto es que siendo Martín Noel diputado por el radicalismo en el año 1941, presentó en la sesión del 18 de septiembre de ese año un proyecto para que el Gobierno argentino adquiriese cuatro grupos de dibujos de ruinas que había realizado Francisco Mújica Díez de Bonilla. Esta compra se destinaría al Instituto del Museo de la Universidad Nacional de La Plata.

Sabemos que poco antes, en el mes de junio, el mencionado Instituto había realizado una evaluación a través del Jefe del Departamento de Arqueología y Etnografía, Dr. Fernando Márquez Miranda de «la serie de dibujos de ruinas, monumentos y piezas arqueológicas de origen tolteca, de origen maya y azteca» realizados por Mújica. Según las autoridades platenses «Estos trabajos aunan el criterio artístico, estético, con la preocupación detallista del arqueólogo. Por lo tanto, son un documento de gran valor no sólo para el interesado en las cosas del arte, sino para el hombre de ciencia que escudriña nuestro pasado americano. Por ello, la incorporación de tal conjunto gráfico sería sumamente interesante en nuestro Instituto». [28] Las autoridades advertían al ofertante sus carencias de recursos para atender a la mencionada compra y de allí se deduce que Martín Noel encaminó el trámite hacia el poder legislativo.

Martín Noel al fundamentar su apoyo a la adquisición de los dibujos señala que los mismos «representan un esfuerzo de veinticuatro años- toda una vida consagrada- y constituyen el estudio más importante realizado hasta la fecha, de los principales restos existentes en las ruinas mayas, toltecas, tonacas, mixteco-zapotecas y aztecas»[29]. La aseveración de Noel ubica entonces a los primeros trabajos de Mújica Díez de Bonilla en el año 1917, lo que se ratifica luego al realizar la descripción de los dibujos que integraban la colección en ese momento. En efecto, al referirse al segundo grupo correspondiente al período Tolteca, el acápite 7 se refiere a dibujos de las "Excavaciones hechas en el año 1917" correspondientes al "Estudio de la Ciudad Sagrada de Teotihuacán".

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27 Guido Ángel. *Catedrales y Rascacielos*. Buenos Aires, Colegio Libre de Estudios Superiores, 1936.

28 Archivo CEDODAL, Buenos Aires. Nota del Director del Museo de la Plata a Francisco Mújica Díez de Bonilla. La Plata, 18 de junio de 1941.

29 *Diario de Sesiones. Cámara de Diputados*. Buenos Aires, 18 de septiembre de 1941. Proyecto de Ley, Págs. 3675 y 3676.

Los cuatro grupos de dibujos que ofrecía Mújica estaban integrados de la siguiente manera: Grupo 1: "Estudios de un Templo de Teotihuacán (en dos épocas sucesivas)" incluyendo el templo de Quetzalcoatl y la Ciudadela, con un total de 79 dibujos de diverso tipo. El Grupo 2 abarcaba como se ha dicho el conjunto arqueológico de Teotihuacán con la Pirámide del Sol y la de la Luna, el templo de la Agricultura, conjuntos de edificios superpuestos y los frescos de San Sebastián ubicados cercanos a la zona arqueológica. Eran en total 75 dibujos. El tercer Grupo comprendía un "Estudio comparativo de los elementos encontrados en la zona arqueológica de Tula, antigua capital del imperio Tolteca" y eran 57 dibujos. El cuarto Grupo se refería a "Ruinas de los principales monumentos prehispánicos de México, Guatemala y Honduras" con reconstrucciones en perspectiva y 300 fotografías y reproducciones. Abarcaba un amplio universo que integraba a los conjuntos de Tikal, Quirigua, Copán, Palenque, Ocosingo, Uxmal, Chichén Itzá, Papantla, Mitla, Huatusco y Teopantepec, incluyendo también reproducciones de piezas que se encontraban en el Museo Nacional de México con un total de 31 dibujos.

El objetivo de la adquisición era precisado por Noel, seguramente con acuerdo de las autoridades del Museo de La Plata acordando poner a disposición de este material a «investigadores americanistas, especialmente los profesores del Museo», formar una sala de exhibiciones permanentes anexo a las de arqueología, publicar los dibujos en el Anuario y finalmente realizar estudios comparativos con las culturas sudamericanas "uno de los más fascinantes trabajos que reserva el futuro de las investigaciones americanistas".

Aunque el proyecto fue remitido a las Comisiones de Instrucción Pública y de Presupuesto y Hacienda sin objeciones, probablemente murió en ellas la iniciativa sin lograr concretar este propósito, que hubiera permitido la conservación pública en la Argentina de un patrimonio original y único, testimonio esencial de una época singular del pensamiento americanista.

Finalmente, bajo un gobierno de distinto signo político, el peronismo compraría un conjunto importante de dibujos de Mújica de Díaz de Bonilla y otra colección fue ofrecida y adquirida en España y se conserva en la Biblioteca Hispánica, como se narra en otro artículo de este libro. Allí también se conserva una grabación de una conferencia que realizó Mújica en Madrid el 20 de febrero de 1973 sobre "La obra de España en México".

LA DISPERSIÓN DE LAS COLECCIONES DE FRANCISCO MÚJICA

Daniel Schávelzon

Director del Centro de Arqueología Urbana
Universidad de Buenos Aires

El archivo y las colecciones de Francisco Mújica tienen una dispersión notable, no sólo producto de su fallecimiento sino que él mismo lo propició a lo largo de su vida, aunque guardaba copias para formar un archivo monumental. América Latina padece problemas en relación con sus archivos, pero eso se complejiza cuando los que los generan tendieron, por voluntad propia o por necesidad, a dispersarlos, como en este caso. Es cierta la falta de políticas de ingreso de colecciones de manera sostenida en el tiempo y si bien hay ejemplos de archivos cuyo funcionamiento es excelente, no siempre se mantuvieron los esfuerzos. O porque los cambios políticos y económicos impidieron acciones, o por las dificultades para tener inventarios completos de lo que se posee y hacerlos accesibles. De allí que la búsqueda de un conjunto que fue amplio y que a su vez quedó en diversos países, se haya tornado en una quimera que se agranda cada día.

La producción gráfica y el armado de colecciones por Francisco Mújica fue de escala formidable, a veces difícil de imaginar debido a la citada dispersión de sus dibujos, fotografías (propias y de otros autores), planos, documentos, cartas y papeles particulares, cosas a veces duplicadas o triplicadas. A eso se le suman sus escritos académicos, mapas, relevamientos, cartas, poesías, postales, diversos conjuntos de recortes de periódicos e incluso calcos de yeso de esculturas y relieves; y obviamente sus papeles personales y familiares. Y como de gran parte de su producción hubo varias copias hechas por él mismo, tanto de originales como de lo que llamaba "fotoestáticas", no resulta raro que en su viaje a España –que él consideraba como el final de su vida, en 1972-, haya llevado consigo 117 bultos que pesaban 18 toneladas. Según él, su pasaje fue pagado por Ernesto de la Torre Villar que era el director del Instituto de Investigaciones Bibliográficas de la UNAM en México, incluyendo su traslado hasta el barco en Veracruz. En México dejó una gran parte de su archivo –es más completo en lo que atañe a su vida personal-, además de 150 libros



Francisco Mújica Díez de Bonilla, posiblemente en Lima (Gentileza de Felipe Borja Mújica).

diversos. Imaginamos sus constantes traslados de ciudad en ciudad por diversos países, con esos conjuntos de papeles, los que vendía, donaba y rehacía él solo, ya que su familia residía en Chile, era soltero y que sepamos jamás tuvo un ayudante. El citado archivo de México es una estantería de ocho metros de largo por dos de alto aun por continuar explorando.

Esa acumulación más la de otros archivos, se debió a varios motivos. El primero de índole personal y de compleja interpretación en una personalidad que se nota retraída, conflictiva, omnipotente, conservadora y huraña. Otro motivo debió ser el haber vivido y trabajado en varios países (México, Chile, Perú y Argentina en América Latina, y algunas residencias en Estados Unidos, España y Francia), países a quienes, tanto les vendió colecciones de sus obras como las donó a diferentes archivos o museos, o quedaron allí porque fueron parte de su trabajo, incluyendo el copiarlas una y otra vez.

Lógicamente no le faltaron las necesidades económicas ya que si bien logró hacer al menos dos buenas ventas en Argentina (según él, Juan D. Perón le pagó 71.400 dólares en 1948) y en Perú (según sus datos la venta equivalía a 50.000 dólares en 1955) datos que figuran en un documento sin fecha dejado por él en la Biblioteca Nacional de México. En España la intención era la de vender su colección en dos millones de pesetas de 1974, lo que según sus palabras, eran 120.000 dólares "que la obra reclama para su culminación". Antes de partir a España «la Biblioteca Nacional me compró un ejemplar de *History of the Skyscraper* en 25 mil pesos mexicanos (dos mil dólares). Fue una ayuda caída del cielo», según indica otro documento en ese mismo archivo. En otros papeles indica que con los 120.000 dólares compró una casa de Chile para su familia, la que después intentó vender para construir su *Templo* en España, pero no lo logró. No queda muy claro ya que las fechas en su vida parecen superponerse y a veces se mezclan intenciones con concreciones.

Finalmente, la dispersión también se debió porque a medida en que avanzaba con la edad, y si bien siempre se sentía mexicano y toda su obra es sobre ese país o tiene relación él, decía en sus anotaciones tardías que "su espíritu estaba en España". Fue el país en donde decidió morir y a donde llevó todo lo que pudo de su archivo, pero al no lograr su objetivo final de que eso quedara en Madrid, con sus condiciones y con la construcción de su *Templo* cuyo proyecto tenía mucho más de medio siglo, siguió dispersando sus papeles hasta su muerte en 1979.

En este caso resulta extraño que haya dejado en México el archivo más completo en cuanto a lo personal, como una solución tardía tomada antes de viajar a España a donde buena parte de lo llevado fueron duplicados. Incluso son los dos únicos lugares en que dejó enormes colecciones de fotografías navales, denominadas *Archivo gráfico de la Marina de Guerra Mexicana*, que donó también al Museo Naval de Madrid en 1974. Al parecer la conexión náutica estaba dada por uno de sus hermanos quien estaba en la marina y quizás para él, o gracias a él, tomó cientos de fotografías de barcos y su personal a bordo.

Como individuo era tan obsesivo que en el archivo de México hay un expediente titulado "Instrucciones si yo muero" hecho hacia 1969, poco antes de ser operado de una enfermedad que no conocemos. Se trata de un listado de indicaciones que entre otras cosas determina el destino de cada uno de los objetos de su armario (camisas, corbatas, pañuelos, camisetas, medicinas, zapatos y tanto más) e incluye un croquis de ubicación. Lo mismo hizo con los objetos de su escritorio y lo que contiene cada uno de los estantes de su casa.

Conocemos tres colecciones importantes de su obra –al menos por su volumen- , las que están respectivamente en México, España y Argentina. Además hay varios conjuntos de papeles y cartas en Estados Unidos, España y Alemania. Seguramente lo que pudiera haber en Chile y Perú (producto de la venta citada), y que debe ser mucho, surja en algún momento. Quizás haya más aunque de menores dimensiones y han pasado desapercibidas. Pero ya con eso, la dimensión se torna insólita, producto de una obsesión meticulosa por su trabajo y sus ideas.

Biblioteca Nacional de México

El conjunto bibliográfico y archivo que lleva su nombre está en el Fondo Reservado de la Biblioteca Nacional. Consta de libros, documentos, álbumes con fotografías de familia y de barcos, fotografías en papel de arquitectura y sitios arqueológicos, y negativos en vidrio y en celuloide. Este material fue donado en 1970 a través de De la Torre Villar quien fue su amigo. Es posible que en ese año, en el que tuvo una intervención quirúrgica que él índica como "grave", fue cuando decidió entregar todas sus cosas personales a México antes de irse a España, lo que era su deseo ferviente, incluyendo sobres con la indicación de que fueran abiertos y/o destruidos tras su muerte.

En su donación de libros hay unos 150 ejemplares incluyendo un ejemplar de la *History of the Skyscraper* que le fue comprado, dedicado «para Lola con todo cariño, Pancho, París, noviembre de 1929». Entre los libros se incluyen tres tomos de un texto escrito por él al que llamó *Exposiciones objetivas del Plan Sexenal a cargo de Francisco Mújica,* y tres ejemplares de otro escrito que tituló *Archivo Adolfo Mújica y Sáyago del Tesoro artístico de México* que era el nombre de su padre. Se adjunta a él un pequeño lote de los folletos y catálogos de sus exposiciones.

Mújica utilizaba en su juventud una especie de Ex-libris o símbolo propio, una figura imitando algo prehispánico en dos círculos concéntricos y un dibujo interior, con su nombre escrito con el tipo de letras que usaba en la década de 1920 para firmar sus planos. En la encuadernación de su *History of the Skyscraper* lo utilizó para la cubierta y en los tomos de las *Exposiciones objetivas del Plan Sexenal* volvió a usarlo. En este caso se trata de hojas encuadernadas en las que pegó copias heliográficas de las obras públicas que se realizaron en todos los rubros durante el gobierno del presidente Lázaro Cárdenas (informes, cuadros sinópticos, presupuestos, trabajos ejecutados). En ellos figura Mújica como "Oficial Mayor del Comité de Vigilancia de Cumplimiento del Plan Sexenal". En el tomo II aparece siendo el Jefe de la Comisión de Exposiciones, dependiente del Departamento de Prensa y Publicidad de la Secretaría de Comunicaciones y Obras Públicas, SCOP. Del *Archivo del Tesoro Artístico de México* hay tres ejemplares, fotocopias del trabajo escrito a mano por él y que encuadernó. En la primera página indica que existen 122 dibujos y reconstrucciones, 19.282 documentos y 3.508 duplicaciones.

El conjunto de material documental está resguardado en treinta cajas que contienen cartas, recortes periodísticos, revistas, anotaciones, su currículum, borradores y textos tanto manuscritos como mecanoescritos, sobres y documentos varios. Hay notas publicadas sobre sus conferencias, exposiciones, varios dibujos cuyos originales son de otros autores pero que los firma él ya que son copias de los originales –actitud habitual de Mújica de no citar sus fuentes-, y una descripción del *Archivo gráfico* que intentaba que quedara en España. Para eso redactó un documento proponiendo la constitución de un patronato formado, supuestamente por sugerencia de Alfredo Sánchez Bella, antiguo Ministro de Información y Turismo de España, sobre lo que insistiría por años. Incluye una relación de la obra que donaría bajo el nombre de *Archivo Gráfico del Tesoro Artístico de México, prehispánico, hispánico, independiente, paisajes, tipos, trajes y costumbres, cartografía* e *historia anexos*. Este consistiría en 1) Estudios gráficos y reconstrucciones de monumentos arqueológicos de México. Cantidad aproximada: 110; Archivo básico. Fotografías blanco y negro y color: 7.322; Archivo museográfico: 3.000; Fototeca: 1.500 negativos; 2) *Tentativas de creación de un estilo Neoamericano*: unos cien dibujos del "Templo a la gloria de América y España", dibujos murales y fotografías de elementos prehispánicos de uso en la composición arquitectónica del templo y 19 *Ensayos de estilo Neo Americano*; 3) Planos reguladores de México: 31 dibujos murales; Plano regulador de Cuernavaca, 20 dibujos, y 8 del Plano regulador de Nuevo Laredo. En total indica que se donarían 12.128 piezas de archivo. Y aclara que también donaba "un edificio de su propiedad ubicada en Santiago de Chile, en la esquina de las Ave-

nidas Bilbao y El Bosque", que suponemos que era la de su familia que había comprado poco antes. Otro documento sin fecha dice:

> «De no haberse producido hace poco más de dos años la actual crisis económica de Chile, la propiedad que el Arq. Mújica posee en la capital de ese país y en la que invirtió los 120.000 dólares que le fueron pagados en Argentina y Perú por algunas de sus obras (71.400 dólares en la Argentina y 50.000 en el Perú), habría sido suficiente para que él hubiese podido donar a España no sólo su obra, sino también un fondo de ese monto destinado a su publicación mediante la creación de un Fondo Editorial, como lo dispone en su testamento, hecho varios años antes de producirse la actual situación chilena, testamento en el que lega a España su obra y sus bienes, disponiendo se forme un patronato español para la administración de ese fondo. La ya vieja decisión del arq. Mújica de venir a España era para dar no para pedir. Lamentablemente la larga postergación de su viaje, por causas ajenas a su voluntad, no le permite disponer de esos 120.000 dólares que la obra reclama para su culminación. Ojalá que para subsanar esa fatalidad del destino fuera posible la formación de un Patronato para la creación del Fondo, semejante al que en el año 1955 se formó en Lima con el fin de adquirir, por suscripción nacional, algunas de sus obras para el Museo Nacional de Antropología de Perú. Existe otro antecedente de un caso similar: la adquisición directa en el año 1948 por decreto del Excmo. Sr. Presidente de la República Argentina de un grupo de sus obras destinado al Museo Etnográfico de la Universidad Nacional de Buenos Aires».

Existe en ese archivo otro documento sobre la donación a España: *Memorándum Donación de mi obra a España*:

> «El año 1955 marca una fecha importante en la trayectoria de mi obra. El Excmo. Sr. Don Alfredo Sánchez Bella me hizo el honor de invitarme a venir a España, y decidí hacer un archivo gemelo del que entonces estaba formando sobre el *Tesoro Artístico de México* para donarlo a España el día que mi obra estuviese terminada. En él figura un gran número de dibujos originales cuyo valor artístico está avalado por las medallas que obtuvieron en Congresos Internacionales de Arquitectura y en el Salón Oficial de París" (…) "A fines de los años 50 hice gestiones con el entonces Consejero de Asuntos Culturales de la Embajada de España en Buenos Aires, Excmo. Sr. Don José Pérez del Arco, para ver si era posible actualizar la invitación del Sr. Sánchez Bella; iguales gestiones realicé en 1961 y de 1967 a 1972 en Washington" (…) "En el año 1969, antes de someterme a una doble y delicada intervención quirúrgica, resolví hacer mi testamento en el que dispongo que mi obra sea entregada al Instituto de Cultura Hispánica con destino al Museo de América».

Hay una carta al Ministro de Asuntos Exteriores de España fechada el 21 de junio de 1972:

> «En mi testamento público hecho en la ciudad de México D. F. ante el Notario Licenciado Don Rodolfo Charles, dejo como herederas de mi obra a mis hermanas Concepción y María Elena Mújica Díez de Bonilla, pero en testamento privado hecho ante Dios, que ellas tienen en su poder, dejo mi obra a España ya que ellas son herederas únicamente para poder servir como intermediarias en la entrega de mi obra a España».

Hay un testamento curioso que se titula *Mi último testamento*, fechado el 22 de abril de 1969. En él manifiesta ser soltero y tener su domicilio en la calle de Durango n° 108, departamento 402 de la Colonia Roma, México, y en el cual lega a sus hermanas Concepción y María Elena, con derecho a

> «acrecer todos sus trabajos profesionales, su colección fotográfica y recuerdos diversos... Que se venda lo necesario de sus bienes para completar el costo de un departamento en Santiago, en el que se instale un taller de costura que se entregará a la Srita. Violeta Andrade en usufructo vitalicio. Al morir las hermanas o Violeta, los bienes pasarán al Instituto de Cultura Hispánica de Madrid para que éste lo destine a la creación del Fondo Editorial Adolfo Mújica y Sáyago».

Desconocemos quién era esa señorita costurera y la forma en que sus hermanas entregarían

la propiedad y otros bienes a una institución de otro país. Acompañan este conjunto documentos de identidad, otros sobre su estadía en Buenos Aires, las ya citadas "Instrucciones si yo muero" y otro conjunto similar titulado "Material para mis memorias. Escritos varios míos. Quemar por favor cuando yo muera sin abrir". Este último, que sí fue abierto, contiene una larga descripción de los archivos fotográficos que usó en su vida y papeles sueltos escritos a mano. No sabemos qué lo llevó a tratar de borrar ese tema de la propiedad de las fotografías aunque es un tema recurrente en su trabajo, lo que describe minuciosamente. Sabemos que nunca citaba sus fuentes, ni de los dibujos ni de las fotografías, pero esto pone en evidencia quiénes fueron los autores, quiénes intermediaron para conseguirlas e incluso da la lista de algunos pedidos prestados recientes.

Otro documento a destruir aclara algunas dudas que presenté en una publicación previa acerca de si realmente estuvo o no en las excavaciones de Teotihuacán en la década de 1920, y qué hizo en ellas, al menos en cuanto a las fotografías que le sirvieron de base para sus dibujos. Él incluso habló de su "amigo" Manuel Gamio, director de esas excavaciones, de quien hemos visto que ni siquiera estaba en México en ese entonces. Figura como "Testimonio de Antonio Caso. Romper cuando yo muera" y contiene una carta que le dirigiera Caso, rector de la UNAM en ese momento, fechada el 22 de mayo de 1926. Trata sobre las fotos que la Universidad tomó para su estudio sobre la Ciudadela de Teotihuacán por acuerdo verbal del Rector del 10 de enero de 1922, que incluyó negativos e impresiones fotográficas «sacadas por el fotógrafo de la Facultad de Altos Estudios que fue puesto a las órdenes de usted para colaborar en su trabajo». Resulta interesante el tema de arrastrar hasta el día de su muerte los temas de su juventud.

Otro documento manuscrito describe sus intentos de lograr, en diciembre de 1971, ser contratado por la UNAM como investigador, el que le fue negado cuatro meses más tarde, y las acciones de De la Torre Villar para ayudarlo en su viaje a España al año siguiente,

> «y me pagó los gastos de fotografía de mis últimos estudios sobre Tula y Cholula. Un camión que pagó la Biblioteca Nacional me llevó a Veracruz con mis bultos. El personal se acercó con el camión al muelle para subir los bultos».

¿Seguía dibujando sobre esos sitios a esa edad, sin ir nunca a ellos? Hay que recordar que su estudio de Tula lo había hecho en la década de 1930. Asimismo, hay un conjunto de material fotográfico que consiste en rollos de películas, una foto de su hermano marino, veinte álbumes de su familia y de barcos que formaban el archivo de la Marina de Guerra del que ya hablamos. Hay 36 cajas de distintos tamaños con fotografías sueltas, principalmente de arquitectura prehispánica y colonial las que al reverso tienen un sello: "Archivo gráfico formado por el Arq. F. Mújica Díez de Bonilla", sin indicar quién las tomó. Acompañan el conjunto unos noventa sobres con fotografías y negativos, tanto en vidrio como en acetato, de dibujos conocidos así como de las publicaciones de Alfred P. Maudslay, Frederick Catherwood y otros autores que le sirvieron de base a sus dibujos. Hay fotos que reproducen documentos personales como su título de arquitecto y fotos de la casa de sus padres en Barcelona y de personas no identificadas.

Un texto inédito e insólito es el titulado *Arte precortesiano de México. Trabajo totalmente hecho en Madrid*, de tres páginas, en donde dice que «Bajo mi dirección se organizó la *Societé des Americanistes* que pronto rebasó fronteras del país para coordinar la investigación americanista en numerosos países europeos y americanos, así como efectuar congresos internacionales». La sociedad, más que conocida, había sido fundada en 1895 y si bien hubo congresos a los que pudo haber asistido y hasta colaborado, no se entiende lo que quiso decir.

Fototeca Nacional de México

En esa colección existe un conjunto de 17 dibujos, de una almena de Teotihuacán, de las ruinas de Uxmal y de Chichén Itzá, similar a lo ya conocido y característico de su pluma, además de la fotografía de una estela de Tula, todo fechado entre 1940 y 1945. Es posible, aunque aun no son accesibles esas láminas y fotografías, que haya alguna foto de él mismo tomada hacia 1924 y con otra de su familia en 1935, pero al estar confundidas con su homónimo, el general revolucionario Francisco José Múgica, es por ahora imposible identificarlas. Igualmente sucede con una fotografía de 1924 con un grupo de "gauchos argentinos".

Archivo Histórico de la UNAM, México

Lo que existe en ese archivo de la Universidad Nacional Autónoma de México, son referencias a Mújica, a su padre y a los estudios de ambos. A Francisco se lo identifica como hijo de Adolfo Mújica y Sáyago y de Guadalupe Díez de Bonilla, quien en 1909 vivía en Tacubaya con su madre mientras que el padre vivía en Amberes, Bélgica, con su cargo en la embajada. Su certificado de la Escuela Nacional Preparatoria dice que procedía del Instituto General y Técnico de Barcelona, España, en donde había comenzado sus estudios. Cursó la enseñanza primaria en el D. F. y después en España, debido a un nuevo cambio de residencia de su padre.

Museo Amparo, México

El museo de la herencia Amparo posee una única litografía de Mújica. Se trata de la gran perspectiva que incluyó en su libro sobre los rascacielos editado en 1929, que mide 47 por 718 cm, lámina que está en exhibición pública.

Archivo del Museo Etnográfico de la Universidad de Buenos Aires, Argentina

Mújica vivió cerca de cinco años en Buenos Aires. Primero con su padre como cónsul de México en 1910 (entrada: 4 de julio, estudió en el colegio La Salle), luego en 1920 (entrada en marzo) y nuevamente en 1921 (entrada en noviembre), aunque no sabemos cuánto permaneció cada vez ya que son datos de una hoja en la Biblioteca Nacional de México. Como el padre tenía un cargo consular para toda la región sur de América Latina sus traslados eran constantes y más aun que su familia residió siempre en Santiago de Chile. Ya de adulto ingresó nuevamente al país en agosto de 1940, viajó a Chile en mayo de 1941 donde permaneció hasta julio de 1947 (año en que se tramitó la compra de su archivo), regresó en marzo de 1948 (la compra de su archivo fue concretada el 29 de junio y publicada oficialmente el 7 de agosto), y en febrero y marzo de 1949 (¿dos ingresos consecuentes?), aunque fijó su residencia en Chile en junio de ese año hasta enero del siguiente. Dentro de los "Papeles Universidad de Buenos Aires" indica que fue Profesor Extraordinario desde marzo 1949 a octubre de 1952.

Existe un inventario del material entregado a la Universidad de Buenos Aires en función del decreto Presidencial 28.452 del 29 de junio de 1948, por la compra del archivo en $ 300.000, para la Facultad de Filosofía y Letras. Ese material se encuentra, aunque no completo, en el Museo Etnográ-

fico de la Facultad de Filosofía y Letras de la Universidad de Buenos Aires. Constaba de diez dibujos de arquitectura *neo-americana*, 269 láminas dibujadas y originales, cerca de mil fotografías, unos 50 "documentos gráficos", seis láminas sobre lo que llamaba la "vibración-semilla", cinco textos de 264 páginas, cerca de 1600 fotografías de arquitectura colonial mexicana y unas 1700 de arte popular, etnografía y costumbres de México. Se indica que el total era de 4569 fotografías. A eso debemos sumarle una donación hecha en 1949 de «seis reproducciones en yeso de diferentes esculturas y relieves arqueológicos, un dibujo original, ciento ochenta y cuatro negativos fotográficos y mil ciento cincuenta y nueve postales y reproducciones fotográficas». Después de su retiro del trabajo que llevaba a cabo en el Museo Etnográfico en 1952, como prueba de su labor quedó un conjunto que redunda con lo anterior y al que sólo se le agregó una serie de planos que le habían encargado de manera específica. Es de lamentar que no todo se conservó, o seguramente esos objetos estén en diferentes repositorios.

El conjunto dejado en Buenos Aires, haya sido o no duplicado o en alguna medida semejante a lo que quedó en Lima, es de escala monumental sin contar lo que ya no está, porque cada dibujo hecho con la técnica del punteado fino implicó muchas horas de dedicación y son de gran calidad técnica. Igualmente, los dibujos a lápiz son de una finura pocas veces lograda en este tipo de trabajos. Las fotografías formaban un conjunto importante porque había copias de fotógrafos como Kahlo, Brehme, al igual que de otros del INAH, la UNAM y particulares.

Archivo en la Biblioteca Hispánica de la Agencia Española de Cooperación Internacional para el Desarrollo (AECID), Madrid, España

Durante el año 1955 Mújica se puso en contacto con Alfredo Sánchez Bella quien dirigía el Instituto de Cultura Hispánica en Madrid. Suponemos que en ese momento residía en Lima, de lo que no tenemos datos, aunque es la época en que logró la compra de su archivo para el Museo Nacional de Antropología. Su intención era que en España quedara el grueso de sus archivos, lo que nunca logró en forma completa ya que implicaba más que una donación, un pago de doscientas mil pesetas y la construcción de un enorme monumento, el *Templo a la gloria de América y de la gesta colombina*, sobre lo que venía trabajando desde que lo exhibió por primera vez en Chile en 1920. Por lo visto la experiencia se frustró con la salida del cargo de Sánchez Bella al año siguiente.

Mújica retomó la iniciativa entre 1972 a 1975, una y otra vez, insistiendo en la donación incluso de su casa en Chile, sus fotografías y láminas, aunque el conjunto ya no tenía la envergadura que se suponía, y en gran parte eran reproducciones. En esos años su *Templo a la Gloria* se amplió para incluir a Colón y propuso construirlo con el dinero que le pagarían. En 1974 entregó su colección de fotografías navales al Museo Naval de Madrid donde se encuentran archivadas. A esa frustración se debe que finalmente dejó un conjunto importante de papeles y en especial los personales, en la Biblioteca de México.

Resulta interesante que a la fecha es la única colección de láminas de arte colonial e histórico de México hechas por él, ya que las de Buenos Aires han desaparecido. Es cierto que son reproducciones de grabados anteriores como Pedro Gualdi, Casimiro Castro y otros conocidos dibujantes y grabadores. También hay fotografías de Guillermo Kahlo, postales y fotografías no identificadas por autor. De la arquitectura moderna hay postales y fotografías y finalmente está el gran conjunto del *Templo* que ya hemos citado y sobre el que trabajó durante cincuenta años.

Resulta abrumador pensar que intentaba que se construyera ese enorme conjunto de escala urbana, típico de la década de 1920, cuando España entraba en un fuerte proceso de modernización.

Este archivo, salvo por esto último y lo de la marina mexicana, adolece de los valores de los otros, ya que son básicamente reproducciones de lo que fue dejando en el camino.

Alemania

La colección de su obra que quedó en el Instituto Iberoamericano de Berlín es probablemente el resultado de la intención de hacer una exposición de sus dibujos en el año 1974, cuando veía la imposibilidad de hacerlo en España. Quedaron allí un currículum, ocho dibujos, varios recortes de prensa sobre su obra y quince fotografías. En ese año escribió a diversas instituciones alemanas desde Berkeley.

Estados Unidos

Las cartas que quedaron en Estados Unidos están en la Biblioteca Bancroft de la Universidad de California, en Berkeley. Se trata de dos cajas que reúnen 39 cartas de entrada y salida a y de Mújica. Están fechadas entre 1956 y 1979; las de salida entre 1961 y 1979, y las de entrada entre 1977 y 1979. Por lo que sabemos él estuvo en Estados Unidos pero las fechas son difusas. Podría haber estado en 1926 por primera vez pero no hay pruebas salvo sus sesgadas referencias en relación a dos exposiciones, una en Washington y otra en Nueva York. Sí hay referencias concretas a haber viajado desde Barcelona a Berkeley en 1974-75. Lo concreto es que esas cartas existen, que en varias solicitó material fotográfico o consultaba a personas que excavaron en México tiempo antes, y en otras propone hacer la exposición de su material. Esa correspondencia debe ser el último conjunto en su vida porque las hay fechadas hasta poco antes de su muerte en 1979. Por algún motivo en el repositorio de la biblioteca Bancroft se indica "Donación de su patrimonio ¿1981?". Por lo que figura allí no hubo interés en adquirir y o exhibir el conjunto.

Conclusiones

Mújica, como cualquier otra persona que genera arte y conocimiento, tiene interés en que su obra se conserve para el futuro. Es un deseo loable que resulta significativo para el patrimonio de la cultura. Pero no es algo sencillo ya que los avatares del mundo que a cada uno le toca vivir y de la propia individualidad, lo complejizan. Mújica fue un hombre atado al pasado, trabajando y creando sobre él a la vez que se enquistaba en el suyo propio, en su trabajo de épocas juveniles, en su proyecto de crear un enorme archivo de la cultura mexicana hecho con características propias, el que lo envolvió y a la vez lo paralizó.

Desarrolló dos vetas: una fue la de dibujar a su modo todo el legado prehispánico, detalle a detalle, con un preciosismo riguroso, pero que al negarse a hacer obras de arte perdió valor porque era posible reemplazarlo con las fotografías que él mismo usaba como fuentes para sus dibujos. Eso le quitó interés a los ojos de terceros ya que no aportaba al conocimiento del pasado, reproducía de manera sistemática y sin contexto el trabajo de investigadores a los que jamás citaba. Esas fotos y postales que usó, miles de ellas, eran un archivo en sí mismas que sólo necesitaban un aparato explicativo al igual que sus dibujos, lo que nunca hizo. Quizás por eso su sorda pelea con Ignacio Marquina en México, quien desde 1928 usaba los mismos dibujos para ilustrar sus libros sobre arquitectura

precolombina, y con José Imbelloni en Argentina, que más allá de quién era como individuo le exigía que su trabajo tuviera una función académica, lo que terminó en su salida del país. Fue una enorme tarea, titánica, repetida una y otra vez, cuyo valor terminó siendo estético y no científico, pero sí él lo hubiera visto así las cosas seguramente le hubieran sido diferentes. Para las instituciones de arqueología o de historia de la arquitectura era una ímproba tarea solitaria que no aportaba al sistema científico, en cambio el arte, que hubiera sido su gran salida, siempre la rechazó.

Fue parte en su juventud de un movimiento de la arquitectura que buscó en el pasado para construir la modernidad sin despegarse de sus raíces. Pero sin un aparato teórico fue solo un Neo más, aunque americano y no europeo. Pero ni se sumó a una corriente existente y que lo precedía, ni trabajó con sus contemporáneos. Ese estilo fue una digna pelea americana que se inició a finales del siglo XIX y llegó hasta los inicios del siglo XX, pero que para 1930 estaba perimido. Mújica siguió con eso, insistió hasta su muerte en su *Templo*, una obra magnífica como dibujo y como proyecto –aunque no única en su tiempo–, aunque sí seguramente la más monumental. Pero como todas las demás era inviable. Medio siglo después seguía tratando de que se construyera en Madrid y no tuvo cabida. Su libro sobre los rascacielos de 1929 fue monumental en la presentación y en los dibujos, pero no aportó a una nueva arquitectura porque ya existía incluso en Estados Unidos que era su modelo. Sus dibujos son excepcionales, pero la poca difusión que tuvo su edición privada, y lo parco de su estudio aferrado a los modelos ornamentales, le quitó la trascendencia que pudo haber tenido.

Para poder financiar esas tareas vendió colecciones de sus dibujos, lo que lo llevaba a tener que volver a dibujar una y otra vez lo mismo para mantener el conjunto completo, lo que era imposible, y como la arqueología avanzaba necesitaba nuevas fotos de cada hallazgo, lo que nunca dejó de pedir hasta poco antes de su muerte, finalmente era algo imposible de lograr. Ya con su libro de los rascacielos tuvo problemas económicos: de los 500 ejemplares solo pudo disponer de 150 por falta de pago, por lo que los otros se perdieron parecería que durante la guerra.

Todo archivo tiene que cerrar en un momento pero Mújica no pudo detenerse. Vivió disperso por todas partes, pidiendo, ofreciendo, siempre necesitaba espacio para exhibir y dinero para una obra interminable, importante al inicio pero a la que ya a pocos le interesaba medio siglo después. E importaba menos en su propio país, México, ya que no era parte de la estructura institucional ni de la artística. Tampoco lo fue en su "patria espiritual", la aun entonces conservadora y católica España. Una obra que de haberse mantenido entera, en una única versión, sería un excelente ejemplo de su tiempo y una colección monumental, un museo en sí mismo. Pudo haber sido un gran artista pero no quiso serlo, pudo haber sido un buen arqueólogo o trabajar con ellos con una mirada detallista poco habitual, pero no pudo o no quiso, pudo formar la mayor colección fotográfica de su tiempo reuniendo obras propias y de terceros, pero sólo le eran instrumentos para sus dibujos salvo en el caso de los barcos de guerra.

Hoy y gracias a los nuevos medios, es posible reunir al menos una buena parte de ese fárrago documental y apreciar en su integridad la magnífica obra de una personalidad poco habitual en el continente.

ARQUITECTURA NEOPREOCOLOMBINA. UN CONTEXTO PARA FRANCISCO MÚJICA DÍEZ DE BONILLA[30]

Rodrigo Gutiérrez Viñuales

Catedrático de Historia del Arte de la Universidad de Granada

La recuperación del pasado en el presente ha sido, a lo largo de la historia y en cuestiones artísticas, una de las características más salientes en el arte americano, en especial en la edad contemporánea, y a partir de los años de la emancipación. En dicho espectro, las representaciones contemporáneas centradas en el periodo precolombino, en lo que toca a la pintura de historia, serán muy frecuentes sobre todo en México, siendo un aspecto repetitivo en sus salones de arte del XIX, recreándose leyendas indígenas o reconstruyéndose imaginarios a partir de testimonios conservados a lo largo del tiempo. Los artistas, amparados por una marcada libertad en la "invención" de escenificaciones, se centraron en mostrar la vida cotidiana de las antiguas civilizaciones americanas, sus actividades, rituales, arquitecturas, generalmente a través de una mirada no en exceso conflictiva, alejándose, por caso, de la idea de mostrar las luchas entre tribus previas a la llegada de los españoles. En otros países encontraremos también testimonios de relevancia en este sentido.

De este momento podríamos mencionar cuadros como *Los funerales de Atahualpa* que el peruano Luis Montero pintó en Florencia entre 1864 y 1867[31] o *Un episodio de la conquista* (1877), del mexicano Félix Parra. Ambas composiciones, como otras del periodo que interpretan episodios del pasado precolombino, el descubrimiento y la conquista, se esmeran por reconstruir arquitectónicamente los espacios donde se desarrollan las escenas, siguiendo las pautas estructurales y ornamentales de los conjuntos arqueológicos conservados y conocidos, bien de manera directa, aunque más a menudo a través de grabados y fotografías.

En todas estas obras, la imaginación y la "invención" jugaron un papel determinante, supliendo la falta de testimonios fidedignos que permitiera recreaciones más certeras de aquellos tiempos pretéritos. Para entonces, los restos arqueológicos, de los mayas fundamentalmente, habían sido reseñados con frecuencia en la obra de los viajeros europeos[32], como son los casos, entre muchos otros, del conde austríaco Jean Frédéric Waldeck en 1838[33] o del inglés Frederick Catherwood, que entre finales de 1839 y mediados del año siguiente, acompañando al viajero John Lloyd Stephens, representaría

30 Parte de los contenidos de este escrito han sido publicados en artículos previos, destacando en especial: Gutiérrez Viñuales, Rodrigo. "Arquitectura historicista de raíces prehispánicas". *Goya*, Madrid, Nº 289-290, julio-octubre de 2002, pp. 267-286.

31 Ver: Amigo, Roberto. *Tras un inca*. Los Funerales de Atahualpa *de Luis Montero en Buenos Aires*. Buenos Aires, FIAAR, 2001.

32 Ver: Bernal, Ignacio. "La arqueología de México: historiadores y viajeros entre 1825 y 1880". En: Schávelzon, Daniel (comp.). *La polémica del arte nacional en México, 1850-1910*. México, Fondo de Cultura Económica, 1988, pp. 88-108.

33 Quien publicó en París, en 1838, su libro *Voyage pittoresque et archéologique dans la province de Yucatan*.

lugares como Copán, Chichén Itzá, Kabah, Labná o el castillo de Tulum, siendo publicadas estas obras en el libro de Stephens titulado *Incidents of Travel in Central America, Chiapas and Yucatan* (1841)[34].

Pasado el meridiano de la centuria, serán determinantes nuevas y numerosas expediciones hacia regiones arqueológicas mexicanas, compuestas por historiadores y dibujantes especializados, con la finalidad de estudiar, tomar apuntes y fotografiar los testimonios conservados, el urbanismo, la arquitectura y el repertorio simbólico. Estos itinerarios se complementaron con la posterior publicación de libros y manuales tendentes a difundir los "descubrimientos". Asimismo, y en cuestiones artísticas, se posibilitaría, a partir de las láminas reproducidas, el acceso a una amplia recopilación de elementos ornamentales plausibles de ser aplicados por arquitectos, escultores y pintores en sus obras.

Esta última característica fue moneda corriente en las exposiciones universales, que tuvieron su comienzo con la de Londres en 1851. En el caso de los países latinoamericanos, sus alusiones y participaciones fueron bastante tardías, destacando la maqueta a escala natural del templo de Quetzalcóatl, en Xochicalco, realizada por Léon Mehedin para la Exposición de París de 1867, o la comparecencia de Perú en la exposición de París de 1878, con un pabellón neoprehispanista a cargo del francés Alfred Lambert Vaudoyer. En estos primeros ejemplos ya se advertía la utilización de fotografías y grabados de los restos arqueológicos previamente circulados a través de libros y revistas ilustrados. La fascinación por estas representaciones alcanzaría otras cotas de relevancia, como puede apreciarse en uno de los proyectos que el escultor francés Frédéric Bartholdi realizó para su obra cumbre, la Estatua de la Libertad de Nueva York, que se inauguraría en 1886 habiéndose descartado una posibilidad cierta de que la misma fuera colocada sobre un pedestal inspirado en una pirámide maya[35].

Estas tipologías neoprehispánicas que se contemplaban con asiduidad en el exterior comenzaron de forma paulatina a plantearse en los lugares de origen, aunque este fenómeno llegó algo tardíamente respecto de aquellos. Fue el monumento conmemorativo el que se anticiparía, no solamente el de tinte indigenista como lo supusieron las tempranas estatuas de Cuauhtémoc (1869) en el Paseo de la Viga, en México[36], o del inca Pachacutec en la plaza a la que daría su nombre en el Cuzco (hacia 1880), sino aquellos en cuyos pedestales se dejó constancia de los lenguajes del arte precolombino, como sucedió con el paradigmático Monumento a Cuauhtémoc en el Paseo de la Reforma que fue inaugurado en 1887, dentro del período en el que el presidente Porfirio Díaz, tras retornar al poder en 1884, fomentó lo prehispánico como política cultural nacionalista[37]. Esta obra fue realizada por el Ing. Francisco M. Jiménez, siendo la estatua principal del escultor Miguel Noreña.

En 1889, con motivo de la Exposición Universal de París[38], tanto el pabellón ecuatoriano como el mexicano recurrirían a las referencias prehispánicas para dejar establecida su imagen representativa. El primero, proyectado por Georges Chedanne, construido por M. Paquin y con relieves escultóricos a cargo de René Fugière, reproducía un templo solar incaico. En cuanto al segundo, quedó a cargo del historiador Antonio Peñafiel[39] y el arquitecto Antonio Anza, con la colaboración escultórica de Jesús F. Contreras, resumiendo en sus muros elementos diversos de las culturas azteca y maya que los propios autores confesaron haber tomado de los libros de los viajeros como lord Kingsborough,

34 Ver: Bourbon, Fabio. *Las ciudades perdidas de los mayas. Vida, arte y descubrimientos de Frederick Catherwood*. Barcelona, Ediciones Folio, 1999.

35 AA.VV. *Liberty. The French-American Statue in Art and History*. New York, The New York Public Library, 1986.

36 Trasladada en 1922 al atrio de la Catedral Metropolitana.

37 Ramírez, Fausto. "Vertientes nacionalistas en el modernismo". En: *El Nacionalismo y el Arte Mexicano, IX Coloquio de Historia del Arte*. México, UNAM, 1986.

38 En una de las atracciones de la misma, la "Historia de la habitación humana", ubicada junto a la Torre Eiffel, Charles Garnier haría construir una "casa de los aztecas" y una "casa de los incas", señal del interés que esta arquitectura venía despertando en este tipo de eventos.

39 Peñafiel, Antonio. *Explication de L'Edifice Mexicain à L'Exposition Internationale de Paris*. Barcelona, Editorial Espasa y Cía, 1889. Al año siguiente publicaría *Monumentos del arte mexicano antiguo*. Berlín, A. Asher and Co., 1890. 3 vols.

Waldeck, Dupaix, Charnay y Chavero[40]. En 1894, en Oaxaca, el monumento a Benito Juárez sería colocado sobre un gran pedestal neoprehispánico, con la clara intención de ligar a una figura del pasado inmediato como era Juárez, de sangre indígena, con el pasado precolombino[41]. Siguiendo dictámenes de Peñafiel, este monumento fue ejecutado por los arquitectos Carlos Herrera y Agustín Amezcua, junto al escultor Eduardo Concha[42].

Las obras señaladas en el párrafo anterior, y otras que fueron emplazadas en los años finales del XIX marcan un interés palpable por la recuperación del pasado precolombino en el arte y la arquitectura de entonces. En lo que atañe a la arquitectura neoprehispánica, si bien fue México el país americano donde se concentraron la mayor parte de los ejemplos conocidos antes de que el XIX tocara a su fin, existen hechos singulares como la construcción de un panteón neoazteca en Santiago de Chile, realizado en 1893, para la familia de Nazario Elguin, por el arquitecto italiano Tebaldo Brugnoli. En ese mismo año, en la World's Columbian Exposition en Chicago, el director de la sección arqueológica Frederick Putnam propició que el Anthropology Building presentara decoraciones extraídas de ruinas mayas, las que llevó a cabo Edward Thompson, cónsul estadounidense en Mérida y quien había realizado varias exploraciones y participado en excavaciones. Así quedaba sentado otro antecedente para una fascinación que, como bien recogerían Marjorie Ingle[43] y Ruth Anne Phillips[44], multiplicaría los ejemplos neoprehispánicos en Estados Unidos durante la primera mitad del XX, en estrecha vinculación con escenografías cinematográficas de Hollywood con las que se influyeron mutuamente, como ocurrió también con las arquitecturas egipcias, islámicas o de raíz española. Arquitectos de la modernidad como el propio Frank Lloyd Wright infundirán a varias de sus obras significativas de esos años la impronta de los restos arqueológicos[45], como puede apreciarse en la Hollyhock House (1920) en Hollywood, inspirada claramente en el templo de Palenque[46].

Para este entonces, la arquitectura neoprehispánica estaba asistiendo a una segunda juventud en los países latinoamericanos, luego de producido un declive coyuntural. En efecto, la fortuna alcanzada desde finales del XIX declinaría hasta producirse un corte en torno a 1910, año no solamente del Centenario para México, sino de la Revolución. Con respecto al tema que nos ocupa, se había instaurado un vivo debate acerca de la conveniencia o no de construir edificios contemporáneos siguiendo las pautas de la arquitectura precolombina. La palabra de algunos detractores impondría en parte su ley, pugnando por que se abandonasen estas iniciativas, sosteniendo que las necesidades del momento no podían someterse a una tipología arquitectónica del pasado, aunque se aceptaba la posibilidad de que se destinase la ornamentación prehispánica a ciertos edificios no utilitarios como podían ser los monumentos conmemorativos[47].

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40 De la Maza, Francisco. "La arquitectura nacional". En: *Del neoclasicismo al art nouveau*. México, Sepsetentas, 1965.

41 Ver: Gutiérrez Viñuales, Rodrigo. "Arquitectura historicista de raíces prehispánicas", ob. cit.

42 Villalobos Audiffred, Hiram. "Intenciones del monumento a Benito Juárez (1894-1897): entre estilos académicos y neoprehispánicos, imperios y monarquías, discursos liberales y conflictos religiosos". *Potestas*, Castellón de la Plana, Universitat Jaume I, N.º 21, julio de 2022, p. 82.

43 Ingle, Marjorie. *The Mayan revival style. Art Deco mayan fantasy*. Salt Lake City, Peregrine Smith Books, 1984.

44 . Phillips, Ruth Anne. "*Pre-Columbian Revival": Defining and Exploring a U.S. Architectural Style, 1910-1940*. Tesis Doctoral. Nueva York, The City University of New York, 2007.

45 Para ese entonces Frank Lloyd Wright había construido ya la Kehl Dance Academy en Madison, Wisconsin (1912), utilizando motivos precolombinos; su obra más importante en esta línea habría de ser el complejo residencial de Aline Barnsdall en Hollywood, California, para cuya realización se basa en el libro de Herbert Spinden "A study of Maya Art" publicado en 1913 por el Peabody Museum of American Archaeology and Ethnologie de la Universidad de Harvard. Tras regresar del Japón, Wright realiza en los años veinte otras residencias en California basadas en motivos precolombinos. En 1925 proyecta el Gordon Strong Planetarium, en Sugar Loaf Mountain, Maryland, inspirado en el Observatorio de Chichén Itzá.

46 Braun, Barbara. *Pre-columbian art and the post-columbian world. Ancient american sources of modern art*. New York, Harry N. Abrams Inc., 2000, pp. 151-167.

47 Tepoztecaconetzin Calquetzani. "Bellas Artes. Arquitectura, Arqueología y Arquitectura Mexicanas". En: *El Arte y la Ciencia*, 1899. Repr:: Rodríguez Prampolini, Ida. *La crítica de arte en México en el siglo XIX*, 2ª ed.. México, UNAM, 1997, tomo III, pp. 377-380.

Un nuevo golpe lo asestaría en 1900 el trascendental libro *Las ruinas de Mitla y la arquitectura nacional* de Manuel F. Álvarez, quien no dudaba en atacar directamente el ornamentalismo, adelantándose visionariamente a las polémicas de los años veinte:

> «Últimamente hemos visto aparecer letras aztecas, como si los indios hubieran conocido el alfabeto y no hubieran existido en la edad media letras con adornos semejantes a los nuestros, como se puede ver en la gramática del ornato de Jones. También hemos visto un piano zapoteca, como si en aquella época hubiera sido conocido el piano, y en el que, prescindiendo de la forma propia, conveniente y elegante, se ha hecho un mueble tosco y pesado con unas grecas grabadas en los frentes, como si pudiéramos llamarnos aztecas por llevar un dije azteca en la cadena del reloj. No será difícil que veamos aparecer un vagón eléctrico azteca, porque en la caja se pinten unas grecas indias. Basta de empleos impropios y hasta ridículos, y dediquémonos mejor a vulgarizar el arte del dibujo, para conocer y apreciar la belleza de una obra de arte, para tratar con acierto y procurar el desarrollo del arte, y alcanzar con éxito el ideal de lo útil, lo verdadero y lo bello, esa trinidad del arte»[48].

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La réplica a este proceso de detracción llegaría unos años después desde Yucatán. Ya sea por la influencia llegada desde el norte a través de las revistas de arquitectura, o por estar en el epicentro de la cultura maya, el arquitecto Manuel Amábilis estaba haciendo renacer la arquitectura neomaya en aquella región, y específicamente en su capital, Mérida. Después del prolongado paréntesis determinado por la Revolución, el neoestilo viviría un renacer en edificios como la fachada de una logia masónica (c.1915-1920) en el antiguo templo de "Dulce nombre de Jesús" o de "Jesús María", o el Sanatorio Rendón Peniche (1919). En aquel ya se introducía como elemento saliente la representación de las serpientes emplumadas tomadas de la arquitectura maya (como las del templo de los guerreros de Chichén Itzá), y que sería emblemática en muchos de los edificios neomayas a partir de entonces, allí, en Estados Unidos y en otras latitudes. De todos ellos, sobresalen la Casa del Pueblo, en Mérida, obra realizada en 1928 por Ángel Bachini, que muestra un amplísimo repertorio de elementos indígenas tanto en el exterior como en el interior, aprovechando hasta los propios mosaicos del hall de entrada decorados con geometrizadas máscaras, y al año siguiente el pabellón mexicano en la Exposición Iberoamericana de Sevilla, de "estilo tolteca", según palabras de su autor, el citado Amábilis.

Al otro extremo del continente, y en el marco del Primer Congreso Panamericano de Arquitectos, celebrado en Montevideo, Francisco Mújica Díez de Bonilla obtenía medalla de oro por un Estudio Arqueológico que incluía un proyecto de Museo Azteca[49]. En Argentina, proyectos como el *Mausoleo americano* (1920) de Héctor Greslebin y Ángel Pascual[50] —presentado también en el citado Congreso de Montevideo—, y sobre todo los de este último acerca de una *mansión neo-azteca* (1921) y un *dormitorio neo-azteca* (1922) -curiosamente diseñado con mayoría de elementos mayas-[51], reflejan la obsesión por continuar en estas sendas.

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48 Cfr:: Álvarez, Manuel F.. "Creación de una arquitectura nacional". En: *Las ruinas de Mitla y la arquitectura nacional*. México, 1900, pp. 273-282.

49 Schávelzon, Daniel; Tomasi, Jorge. *La imagen de América. Los dibujos de arqueología americana de Francisco Mújica Díez de Bonilla*. Buenos Aires, Ediciones Fundación Ceppa, 2005, p. 14.

50 Este proyecto singular y ecléctico combinaba elementos provenientes de México, Yucatán y Tiahuanaco, convirtiéndose quizá en el primer ejemplo de aculturación de extracción prehispánica, entre lo azteca, maya e inca, que aspiraba a crear un "Renacimiento Americano" al decir de sus autores. *"La elección del asunto recayó sobre un motivo funerario, 'un mausoleo', por ser este el tema tratado con más profusión en la bibliografía usada… El mausoleo no debía tampoco de ser ni una chulpa ni una huaca, sino un enterratorio moderno, situado en un recinto cuyas líneas fueran concordantes con las suyas y así la uniformidad de los monumentos que le rodeasen haría, a lo lejos, resaltar su característica silueta"*. Greslebin, Héctor, y Pascual, Ángel. "Mausoleo americano. Primer Premio. X Salón de Bellas Artes". *El Arquitecto*, Buenos Aires, vol. I, N° 12, noviembre de 1920, p. 236.

51 Realizado junto a E. Schmidt-Klugkist, y que recibió Diploma de Honor en el Salón de Decoración de Buenos Aires de ese año.

Poco después, en Perú, se aprobaba el proyecto de Monumento a Manco Capac que realizaría, con pedestal neoprehispánico, el escultor David Lozano, inaugurándose en 1926, habiendo sido donado por la colonia japonesa residente en el país, con motivo del centenario de la Independencia peruana. Arquitectos como Manuel Piqueras Cotolí, Ricardo de Jaxa Malachowski, Héctor Velarde, Emilio Harth-Terré o Enrique Seoane Ros serán también conspicuos representantes de esa tendencia. Asimismo en Bolivia tenemos obras notables como el pabellón boliviano en la exposición de Gante (1913), o el Museo Tiawanaku de La Paz (c.1920), en estilo neotiahuanaco, obra del arquitecto Arturo Posnansky. Figura esencial será Emilio Villanueva, autor en 1928 del Estadio Hernando Siles, con estructura arquitectónica que respondía a su formación académica pero con un repertorio decorativo basado en motivos de la "Puerta del Sol" de Tiahuanaco, los signos escalonados y los frisos de formas quebradas[52].

* * * * *

A finales de los años 20, coincidiendo con el crack de la bolsa de Nueva York y, como consecuencia de ello, el inicio de la crisis económica a nivel internacional, convergerían tres sucesos de gran relevancia para este relato neoprecolombinista y monumentalista: el concurso para el Faro de Colón en Santo Domingo (1927-1931), la Exposición Iberoamericana de Sevilla (1929) y la publicación, por parte de Francisco Mújica Díez de Bonilla, de su único libro, *History of the Skyscraper* (1929).

En lo que atañe al monumento Faro de Colón, la idea inicial había sido lanzada en 1852 por el escritor dominicano Antonio del Monte y Tejada, quien planteó la realización de un monumento con características de faro. Sería retomada en 1914 por el norteamericano William Ellis Pulliam, aunque la idea cristalizó recién en 1923, al celebrarse en Santiago de Chile la V Conferencia Internacional de los pueblos americanos. En 1927 la Unión Panamericana convocó el concurso internacional al que fueron presentados 452 proyectos. El jurado estaría integrado por cuatro arquitectos, Albert Kelsey (quien había construido el edificio de la Unión Panamericana en Washington), Raymond Hood (por Estados Unidos), Eliel Saarinen (por Europa) y el uruguayo Horacio Acosta y Lara (por América Latina). Curiosamente, ni entre los diez finalistas ni entre los diez a los que se otorgó mención honorífica figuraron proyectos presentados por latinoamericanos, siendo que conocidos profesionales como el brasileño Flávio de Rezende Carvalho o el argentino Manuel Torres Armengol, ambos basándose en diseños prehispánicos, el mexicano Carlos Obregón Santacilia o el peruano Héctor Velarde, habían presentado, entre otros, interesantes proyectos. También reputados europeos quedaron al margen de los honores, por caso el francés Tony Garnier. Entre los diez finalistas figuraban los españoles Joaquín Vaquero Palacios y Luis Moya Blanco, que, a la postre, quedarían clasificados en tercer lugar.

Varias de las propuestas recurrieron a detalles precolombinistas, las que podemos conocer gracias a la edición del programa y reglas de la segunda etapa del concurso (1931) en la cual Albert Kelsey analiza varias de las obras presentadas a concurso, a modo de 84 "destellos", independientemente de que hubieran sido premiadas o no. Entre los españoles, además del de Vaquero Palacios y Luis Moya, debemos mencionar el proyecto de Francisco Javier Ferrero y Husía (Madrid), que planteaba "un gigantesco cacto órgano" delante del cual ubicaba una gigantesca Coatlicue a la que Kelsey caracterizaba como "la reproducción de uno de los más famosos y horripilantes monumentos

52 Querejazu, Pedro. "El arte. Bolivia en pos de sí misma y del encuentro con el mundo". En: AA.VV. *Bolivia en el siglo XX. La formación de la Bolivia Contemporánea*. La Paz, Ed. Harvard Club de Bolivia, 1999, pp. 553-583.

de la antigüedad aborigen"[53], concluyendo que Ferrero "ha logrado producir… una representación muy clara de lo que era la cultura americana antes de la llegada de los hombres blancos y de lo que podría ser hoy, mejorada por éstos"[54]. Asimismo, el presentado por Agustín Ballesteros (Madrid) incluía como basamento una construcción inspirada claramente en las pirámides mayas, sobre la cual se erguía una columna-faro[55]. En tal sentido, no hay que olvidar que una de las bases indicaba que el monumento "deberá llevar a lo menos una gran linterna"; "no se deberá exceder de 600 pies de altura total… además de la instalación del aparato luminoso que enviará sus poderosos rayos a gran distancia, deberán aprovecharse todos los recursos del arte de iluminación moderna para conseguir un efecto que haga al Faro de Colón tan interesante de noche como de día"[56].

Las reinterpretaciones de pirámides mayas, en la línea que señalamos para Ballesteros, era un recurso que venía a resolver un doble propósito, constructivo y simbólico. Ya había estado presente, durante el XIX, en proyectos que mencionamos antes como la Estatua de la Libertad en Nueva York. En el concurso para el Faro de Colón recurrieron a ello arquitectos como Manuel de Tapia Ruano, Luis Varela y Manuel Copado (La Habana), o Frederick Hodgdon (Chicago), entre otros. Pocos años después, en 1933 y en Buenos Aires, el escultor Pablo Tosto realizaría una exposición en la que incluiría 29 bocetos diferentes pensados como proyectos de monumentos al Soldado Desconocido, entre los que descollaría uno de dimensiones descomunales, rozando lo utópico, caracterizado por una gran pirámide neomaya escalonada[57]. En ese mismo año, en la ciudad de México, se iniciaba el proceso de construcción del Monumento a la Raza, con forma de pirámide, a cargo del arquitecto Luis Lelo de Larrea a partir de proyecto del ingeniero Francisco Borbolla; dicha obra se inauguraría en 1940.

Retornando nuestra mirada sobre el concurso para el Faro a Colón, y dentro de esa oleada de *neomexicanismos*, el proyecto de Arnold Perreton (Durham, New Hampshire, Estados Unidos) integraba como motivo ladero a las columnas las paradigmáticas serpientes de Chichén Itzá, completamente estilizadas, aprovechándose del carácter vertical del monumento[58]. El mismo conjunto arqueológico yucateco aparecía en el horizonte creativo del chileno Rodolfo A. Oyarzún Philippi, quien aludía en su proyecto a El Caracol[59].

La mayor parte de los proyectos se destacaban por la verticalidad, dado su carácter de faros. Pero, curiosamente, en el dictamen final dado en Río de Janeiro en 1931, resultó vencedora una propuesta mas bien planista, la del arquitecto inglés, de sólo 21 años de edad, Joseph Lea Gleave. El arquitecto peruano Emilio Harth-Terré no vacilaría en criticar el carácter horizontal tan acentuado del monumento, afirmando que "el símbolo quedará tan cerca del suelo, tan pegado a esta mísera costra que sólo nos llevará a pensar que allí se levanta otra de las tantas construcciones que el genio sajón pone en el mundo como hitos de su poderío"[60]. La construcción del proyecto ganador se retrasaría casi seis décadas, ya que se construyó en el marco de las conmemoraciones del quinto centenario del llamado "Descubrimiento de América"; Roberto Segre sentenciaría: "Lo que fue retrógrado en 1929, lo es aún más en 1992"[61].

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53 . Kelsey, Albert. *Programa y reglas de la segunda etapa del Concurso para la selección del arquitecto que construirá el Faro Monumental que las naciones del mundo erigirán en la República Dominicana a la memoria de Cristóbal Colón.* Washington, Unión Panamericana, 1931, p. 61.

54 Ibídem., p. 62.

55 Ibídem., p. 79.

56 Kelsey, Albert. *Programa y reglamento del Concurso para la selección de un arquitecto para el Faro Monumental que las naciones del mundo erigirán en la República Dominicana a la memoria de Cristóbal Colón.* Washington, Unión Panamericana, 1928, p. 18.

57 . Tosto, Pablo. *Antografía escultórica, 1914-1964*. Buenos Aires, Librería Hachette, 1966, pp. 125-142 y 171.

58 Kelsey, Albert, ob. cit., 1931, p. 79.

59 Ibidem., p. 131.

60 . Harth-Terré, Emilio. "El Faro a la Memoria de Cristóbal Colón". *Arte y Decoración*, La Habana, año I, Nº 5, diciembre de 1931, pp. 48-49.

61 . Segre, Roberto. *Arquitectura antillana del siglo XX*. Bogotá, Editorial Arte y Literatura, Universidad Nacional de Colombia, 2003. p. 145.

En lo que respecta a la Exposición Iberoamericana de Sevilla, se constituyó en uno de los mayores muestrarios de arquitectura historicista española y americana, conservándose en la actualidad la mayor parte de los pabellones de los países de aquel continente. El escultor y arquitecto lucense Manuel Piqueras Cotolí diseñó el de Perú en estilo neoperuano, integrando neoprecolombino con neocolonial, lo mismo que se aprecia en el de Colombia, a cargo del arquitecto sevillano José Granados de la Vega, quien se inspiró en la arquitectura religiosa de ese país, limitándose lo "indígena" a lo puramente decorativo, a través de una profusa iconografía de raíz chibcha ideada por el escultor bogotano Rómulo Rozo. Granados de la Vega se encargaría asimismo de pergeñar el pabellón de Guatemala, valiéndose de revestimientos cerámicos de la hispalense Fábrica de Ramos Rejano que fabricó un estupendo conjunto de azulejos con modernos ornamentos neomayas. El meridano Manuel Amábilis, como ya hemos señalado oportunamente, diseñó mel pabellón mexicano en estilo "tolteca".

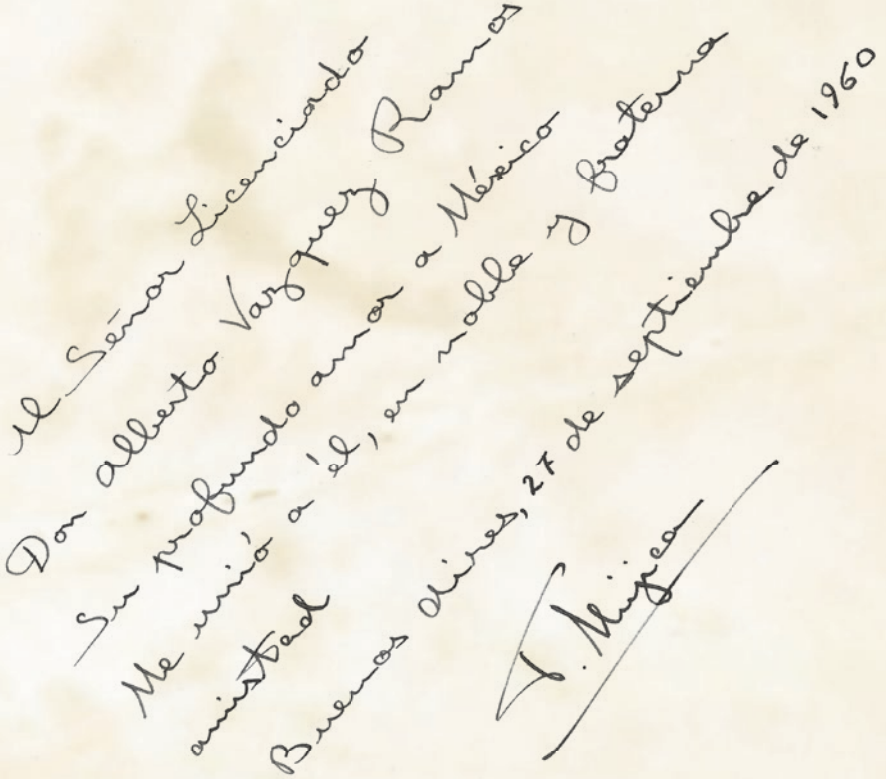
En medio de todo este proceso, Francisco Mújica Díez de Bonilla, tras la obtención de la medalla de oro en el Primer Congreso Panamericano de Arquitectos (Montevideo, 1920), había repetido galardón en el 2ª Congreso (Santiago de Chile, 1923) con un "monumento público en forma de museo", posiblemente la génesis de lo que después sería su *Templo para la gloria del arte americano*, proyecto incluido en *History of the Skyscraper* (1929), el cual, previamente había presentado en diferentes exposiciones a ambos lados del Atlántico[62]. Se trataba de una propuesta monumentalista en la línea de las que, como vimos, caracterizaron a un amplísimo número de propuestas neoprecolombinas a finales de la década. Pero en su libro, Mújica Díez de Bonilla iba aún mas allá, proponiendo la aplicación de la arquitectura *primitiva* de América y sus ornamentaciones al rascacielo[63], mediante el uso del hormigón armado.

Francisco Mújica Díez de Bonilla no llegaría a ver construido ninguno de sus fantásticos proyectos. Reformularía el primero de los citados, para reconvertirlo en *Templo a la gloria de América y de la gesta colombina*, intentando en vano, y hasta entrados los años 70, convencer a las autoridades españolas para construirlo, usando como estrategia el horizonte del Quinto Centenario. Pero, de los proyectos conmemorativos que vivieron tantas vicisitudes como el suyo a lo largo de décadas, solamente el Faro de Colón vería erguirse en esa fecha señalada.

62 Schávelzon, Daniel; Tomasi, Jorge, ob. cit., pp. 18-19.

63 Al respecto del tema de los rascacielos con reminiscencias precolombinas, ver: Carranza, Luis E.. "La arquitectura prehispánica en el imaginario moderno". *Arquine: revista internacional de arquitectura*, México, Nº 38, 2006, pp. 78-91.

HISTORY OF THE SKYSCRAPER



TO MY PARENTS

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HOMAGE

TO THE

PIONEERS OF THE SKYSCRAPER

W. L. B. JENNEY

GEO. B. POST

FREDERICK BAUMANN

HOLABIRD & ROCHE

L. S. BUFFINGTON

BURNHAM & ROOT

VERY IMPORTANT :

In the present text the terms " America " and " American "
do not refer solely to the United States of America, but to the entire American continent.

HISTORY OF THE SKYSCRAPER

BY

FRANCISCO MUJICA

ARCHITECT (*UNIVERSITY OF CHILE*)

MEDALLIST OF THE SALON DES ARTISTES FRANÇAIS

FORMERLY PROFESSOR OF THE FACULTY OF ADVANCED STUDIES,
NATIONAL UNIVERSITY OF MEXICO

AWARDED GRAND PRIZE WITH GOLD MEDAL AT FIRST PAN AMERICAN
CONGRESS OF ARCHITECTS AND GOLD MEDAL AT SECOND PAN AMERICAN
CONGRESS OF ARCHITECTS FOR WORKS ON AMERICAN ARCHITECTURE

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—

1929

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FOREWORD

To contribute a word on the very sincere and able efforts of Dr. Mujica is indeed a privilege. When he outlined to me the results of his years of research, among the ruins of Mexico and Central America, I was deeply impressed by his very profound and scholarly approach to this pioneering effort in American Archaeology and his interesting theories of application. These theories have been originally conceived in 1917 and he has since devoted all of his energies to their development.

His enthusiasm has been contagious, and my office and myself have watched with keen interest the laborious growth of this volume on the history of the skyscraper. This is a type of architectural expression more characteristically American than any other structural form. In our complex scheme of existence, economic pressure compels us to concentrate allied social and commercial interests within limited land areas. The growth upward is the course of least resistance and is inevitable.

Yet, despite the peculiarly American individuality of the skyscraper, America has been compelled to borrow alien architectural styles for the design of its tall structures. It is obviously illogical to design a tall building by superimposing a series of classic temples one upon the other. Among the early plates shown in this volume, such designs are in evidence; but also in rare cases we find the elements of the design of tomorrow, wherein the designer senses the solution to the problem through handling of masses if not of details.

Dr. Mujica presents the interesting suggestion that we apply the work of the primitive peoples on the American continent to this product which is purely American. He seeks to re-create an architectural style truly American in spirit and distinguishable from those native to other lands. Happily the bold, rugged and virile beauty of these ancient monuments is strikingly adaptable. The temples and palaces are rich in archaeological material. The ancient "setbacked" and terraced monuments are by coincidence strangely appropriate to the zoning restrictions which so control the bulk and mass in our American cities.

In the recent past, the artists of America have very properly been guided by the alien art that has developed to its present state of perfection, but the younger school of American artists is now conscious, whether as a result of the War or because of the country's gradual economic growth, or both, of the fact that an American art must perforce express those phases of American life that have been expressed more fluently through economic processes. A commercial Renaissance in America is now in progress, and an art must develop to accompany it.

The publication of Dr. Mujica's work at this time, when America is groping to express itself in all forms of artistic endeavor, is most opportune. His work indicates great scholarship and research, and merits the attention of the student of American artistic progress.

JOHN SLOAN.

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Note. — In the special number of *La Revue Latine,* Paris, of May 1927, a French translation of the present introduction appeared. Several important errors occurred therein as a consequence of the haste with which the number was printed ; moreover, the translators interpreted various ideas which they should simply have limited themselves to translating.

INTRODUCTION

I

Architecture.

This century of industrialization and materialism has ventured to state that architecture is the science of good building, forgetting that without the creative genius of the artist architecture could not exist.

Vitrubio has defined architecture as a *science composed of many doctrines that enables one to form an exact and complete judgment, of all arts* : which teaches us that during the Roman period architecture was the synthesis of art. Sculpture, painting, decorative arts, had no independent life but were simply elements of architecture.

But if we hark back to prehistoric ages we realize that Vitrubio's definition does not, after all, suffice to cover architecture completely.

The first inhabitants of the earth found themselves face to face with a virgin world, nature pure and simple, as yet unchanged by the work of man.

Later on, confronted with the imperious needs that sprung up during his march towards civilization, man was obliged to avail himself of natural elements in order to cover these needs.

Cold, and wild beasts waylaid him: he observed, thought, and decided to take refuge in natural caves.

If necessity obliged him to live in regions where there were no caves, he made them artificially in the hillside.

If he was forced to live in regions devoid of mountains and ridges, he again observed and meditated, and conceived the idea of transporting the material which nature offered him to the plain to construct a new refuge, thus erecting the first known buildings.

Later on his restless soul, in quest of beauty, and not able to content itself with simply solving the material problems, imprinted some of his emotions in his work, applying to it an equal measure of science and love, thus combining the useful with the beautiful in one harmonious form.

What was man doing in those moments ?

Supplementing nature's work with his own: Exactly the same thing as he is doing today, with the difference that the enormous masses of complementary human work that have now accumulated fascinate our eye and cause us to hold a false and incomplete idea of architecture accepting as such the complementary work of man.

In fact, nowadays the idea of architecture calls forth in our minds an endless procession of pyramids obelisks, temples and palaces, amphitheatres and triumphal arches, avenues and skyscrapers, a crushing procession which make us define unconsciously as architecture the mass of buildings which humanity has erected at various periods in the world's history.

However, when we consider in retrospective those primitive periods we understand clearly that nature is the permanent and limitless source which gives life to and nourishes man's artistic works in all ages.

The entire objective world is architecture

The entire sum of sensations produced by form and color

In one word: the visual cone in its numberless points of view

The work of man is the architectural complement to nature.

This is why God has been called the Great Builder of the Universe, for his work is the supreme synthesis of architecture in its true and complete sense.

II

Factors in Producing a Work of Art. Process of the Artistic Conception.

Having defined architecture, as I see it, let us study the various factors that go to produce a work of art and the process attendant upon it.

In their theories of aestheticism all schools of philosophy agree about the enumeration, so to say, of the

different factors that contribute to the production of a work of art : nature, the artist's genius, and elements of expression.

But the theories of aestheticism are completely divergent in regard to the account of the process of artistic conception and in regard to the more or less preponderant value they assign to the two factors : nature and the artist's genius.

Since the early days of philosophy, from Plato and Aristotle up to Bergson, Nietzche, Kant and Schopenhauer, and in between them the entire infinite gamut of aesthetic theories we meet a number of heterogeneous tendencies, more or less outspoken, clear-sighted or contradictory, which strive laboriously to express the truth inherent in the creative mystery of a work of art.

Taking these doctrines as a whole, they may be summarized in three principal tendencies.

The first tendency assigns the greatest importance in the process to nature, considering her as the sole source of all beauty, defining the artist as a being endowed with a more developed power of perception than his fellow-men, capable of *seeing* the natural beauty hidden to the eyes of most others ; expressing in his work only what he sees, i.e., imitating and emphasizing it so as to make it perceptible to others.

The second tendency ascribes, on the contrary, the essential value to the creative genius of the artist, severing it from nature, regarding it as the source of beauty and seeing the veritable origin of the work of art in the psychical process.

The third tendency, without swooning away at the infinite harmony of nature in all its grandeur, nor getting spell-bound by the marvellous mechanism of the process which takes place in the privileged mind of the artist, accepts both theories at their essential value and establishes certain laws of co-operation between them.

We share the view expressed in the third tendency. It is our sincere conviction that the creation of a work of art is a function of nature and a function of genius combined.

In my opinion all art production is the outcome of a perfectly distinct process of generation.

The natural world, with its forms, colors, sounds and movements, impresses the artist ; that is to say, external factors work on his temperament, a new phase is produced in his mind and under the influence of this new feeling a work of art is conceived and subsequently exteriorized through the mediums furnished by nature too.

In brief : the artist *interprets* his natural environment in accordance with his temperament, modifying it according to his personal feeling and conception.

Such is the origin of all true beauty.

III

Regional and Evolutionary Theory of Architecture.

Having enumerated the elements which enter as raw materials into the elaboration of a work of art and the process which we believe is attendant upon the unfolding of the artistic conception, let us go on to consider the special case of architecture.

We have seen that the artistic production is composed of various factors : environment, the emotivity of the artist, and elements of expression.

Let us determine what these factors are as regards architecture.

Environment : This consists of the fauna, flora, regional scenery, climate and prevailing customs, entailing material and spiritual needs which the work of the architect must cover.

All these factors in conjunction, each in its own manner and degree, impress and inspire the architect.

Temperament of the artist : At the outset, temperament obeys laws of heredity ; later it is modified through the special rhythm of the environment in which the artist lives.

Elements of expression : The elements of expression of architecture are the building materials which, with their different colors, forms, dimensions, consistency and resistance, furnish the architect with endless resources for attaining the aesthetic effect he desires to express through his work.

It is evident from the preceding account that, although modern civilization tends towards cosmopolitism, the predomination of a sole type of architecture will be impossible from every point of view, and architecture will always strive to express itself more or less in characteristic lines proper to the different regions of the earth, whose natural elements are different, as are also the souls of their inhabitants.

But it is not enough just to establish this great truth as an axiom. Let us proceed to study the factors which participate in the production of the architectural work, defining clearly the circumstances upon which they depend, and the conditions that characterize them, so that we can establish firmly the basic principle on which I wish to build up the most important part of my theory that bears upon the logical paths and sources of inspiration of architecture in this Continent.

Although civilization advances, is perfected and spread, the fauna, flora and landscape of the various regions of the earth will always remain sensibly different, and make their own special impression on the artists inhabiting them.

Although distances are reduced by the facility and

the cheapness of transportation it will always remain logical, from a sentimental as well as from an economic point of view, that each people uses the materials proper to its own region. These materials are right at hand, and therefore cheaper than others, they are familiar, and figure in the artistic traditions of the region, the inhabitants have devised and practised procedures appropriate to the handling of them, and are used to them.

Modern universal civilization will never be able to efface the differences of climate in the various regions of the earth and therefore architecture will always acquire its special character dependent upon temperatures and external factors, so widely divergent in the different regions of our planet.

Moreover, customs very strongly rooted in a people, the manifestations of which are dominated by a thousand factors, some external and others inherent in the individual or the race, necessarily tend to create special regional styles of architecture.

If, besides all these elements of environment, we also consider the temperament of the artist we realize that it too will receive its special imprint by the region.

As exterior elements are not subject to violent changes, but to slow evolution, they will impress the artists from one generation to another rather similarly, thus creating a sort of atavism in the people inhabiting the region ; and this will grow to be the sentimental peculiarity of the people, setting a certain standard, and endowing its artists with a common " flair " for perceiving, absorbing and interpreting the elements of the outer regional world, with a certain predilection and love and also with a certain clarity of vision.

***

The above analysis of the various elements of architectural work demonstrates sufficiently that art is not, and never can be, a caprice.

If art is in evolution it is because the sentiments and perception of the artist, as well as his sources of inspiration, are changing, without, however, losing continuity.

We have already seen that architecture harks back to the earliest ages of the world and it continues from day to day to solve the new needs of humanity, seeing them through the multiform crystal of human nature.

Out of one need other needs are born with an indestructible bond uniting them.

The artistic conceptions of humanity vary from day to day, yet never forgetting the past.

All this gives art a fundamental base : evolution.

IV

American Architecture before the Conquest.

Having established our criterion within the foregoing principles, let us consider what have been the conditions of architecture in America before and after the Conquest.

What was the origin of the civilizations that existed in America at the time of its discovery and how were they connected with the ancient civilizations from which European civilization has sprung ?

This question has been asked all over the world for four long centuries, but hitherto no light of history has penetrated its dark mystery.

Eminent professors have endeavored to elucidate this problem, governments and men of fortune have spent considerable sums on it, but as yet ignorance prevails.

There is no dearth of theories, as is ever the case when problems confront the human intelligence.

Eagerly scanning the illimitable field of imagination there are some who have arrived, if not at the truth, at least at something which fills the void of ignorance, by stating that the cradle of our planet's civilization stood in the Continent discovered by Columbus !

The opposite theory has not been lacking either, voiced by various learned men, to the effect that American civilization is comparatively new.

The theories advanced up to now in this respect suffer from being mutually contradictory, and many of them only contribute to make the general obscurity still denser.

But no matter how difficult it may be to determine the birth-process of the American civilizations, one fact can not be gainsaid, namely that they have a certain connection with the civilizations of the borders of the Nile.

The surprising similarity between many elements of Egyptian and related architectures, and elements of primitive American architecture go to prove that these civilizations were not mutually alien.

The winged disc of Ocosingo can not deny its relationship with the classical element of Egyptian architecture, nor can the pyramid of Teopantepec convince us that its soul is completely alien to that incarnated in the Assyrian pyramids.

On careful study of the Pre-Columbian American architecture one is lead to admit that in the far-off days of the world's childhood, land that has now disappeared, offered the possibility of intercourse between the American and the Asiatic and African peoples ; for it is not possible to accept the hypothesis, seeing the poor vessels of those days, that the ocean could have served as a link between them.

However, no matter what the origin of the American peoples and their relations with the Egyptians, Assyrians and some of the other Asiatic peoples may be, what interests us is the fact that when America was discovered independent civilizations flourished there using an architecture that was completely different from that prevailing in Europe and which met the material and spiritual needs of the American peoples with admirable sincerity.

These civilizations covered our entire Continent, from the plains of the United States where we meet the first exponents of architecture in the picturesque constructions called " pueblos ", in the deserts of Arizona and in the exuberant valleys of New Mexico, down to South America where the Incas worshipped the Sun in their hard stone temples.

As is known, the most important of these civilizations were the Maya, which was the greatest, Toltec, Zapotec, Totonac, Aztec, Quechua, Aymará, etc.

V

Evolution Which American Architecture Ought to Follow. Destruction of American Art by the Conquest.

Primitive architecture of America with its admirably conceived lines and proportions and above all with its rich decorative themes — which make it one of the most splendid in human history — constitutes a well-defined entity, stamped with regional character which offers a basis of inestimable value for evolution; such an evolution might have made rapid strides forward under the influence of European culture.

If the Spanish conquerors had understood this great truth and if the warriors had not been possessed of a religious fanatism that goaded them to destroy everything, a period of great splendor would have arisen in the history of American art by the amalgamation of the monumental lines of native architecture, its geometrical decorations and symbolic reliefs, with the modern technical procedures and the European spirit.

Native pagan architecture would have been converted to Christianity.

From the blood-stained *teocallis*, from their stones impregnated with symbolism, would have arisen temples to the glory of Christ who came from the Old World to let His light shine on the New.

The miracle which the Christians, liberated from the mystic darkness of the catacombs, worked by changing the physiognomy of the pagan basilicas in ancient Rome; the miracle worked by the genius of Christian artists in the temples of Greece and Rome, adapting their styles to the religious sentiment inspired by Christ, would also have been effected in the ancient magnificent temples of Native America.

Art is love, unselfishness, elevation. Art is in itself the prayer which approaches most closely to God. For in all the yearnings of a soul who is seeking beauty, there is an unconscious striving to approach the Creator of all harmony.

But if art in itself brings us nearer to God, religious art, no matter what faith prompts it, places us on a plane that is still closer to Him.

Through creation of religious art man ascends by special paths towards the same goal; a certain common spirit dwells in this sort of architecture, evoking a sense of abstraction from the world, a desire for meditation and seeking to find out the why and wherefore of life's deep mystery which brings home to us our own littleness and makes us feel the infinite harmony of faith in something far above our miseries.

This is why the pagan basilicas became Christian and the temples built in honor of the deities of Acropolis learned to render tribute to Christ, and for this reason too the same transmutation would have happened to the *teocallis* of America, adapting its lines to the ideas and rites of the new religion; for in the basilicas of Rome, in the temples of Greece and in the *teocallis* of America, in their stones, built up with love, and often with blood, lives the soul of the artist striving towards God!

But unfortunately the Spanish conquerors, prompted by their religious fanaticism, destroyed an art which should have been our starting-point, brusquely arresting its natural evolution.

VI

American Architecture after the Conquest.

What happened then? What were the consequences of the disappearance of the art cultivated in America?

After having used force to destroy, force was employed to impose the new paths to be followed, and in this artificial way Spanish art was installed in America.

However, during the first period of Spanish domination there was no individual who was adequately prepared to control the new guiding principles.

The consequence hereof was, that the native artisan, deprived of using his own lines, could imprint on the new buildings the stamp of his American soul, applying Spanish decorative motives in the same manner as applied on the native monuments.

This gave origin to a mixed style which combined the European idea of construction with the American sense of ornamentation.

Unfortunately this period was of short duration.

Famous architects of Spain elaborated plans of buildings subsequently to be constructed in America ; others, not less notable, came to establish themselves on the soil of the Continent and the sudden death of this budding American art is due to their severe and tyrannical censure.

European architecture was established in America.

And the years went by.

After the emancipation of the different nations of America a few of them ventured to build on Pre-Columbian lines, but these attempts were very timid and did not pretend to embody any theory.

Some of them have nevertheless produced very beautiful works as for instance the monument at Cuauhtémoc in the City of Mexico, and certain details of the Pan American Union Building in Washington, D. C.

The only effort really worth noting is that of modern architecture in Arizona and especially in New Mexico, and to a certain degree in Colorado.

Outside of the above cited experiments nothing serious has been done in America to find a specifically American style of architecture.

VII

Necessary Reaction. Postulates.

Taking into consideration the ideas embodied in the present introduction I felt deeply disillusioned when in 1917 I was still a student of architecture. At the beginning of 1918 I decided to devote all my efforts to the study and endeavor to solve the problem of a reaction towards my theory which the history of architecture in America made me feel as a much needed adjustment.

After more than one year of study I was able to sketch the solution of the problem in its general lines.

The two following postulates summarize the synthesis of my conviction on this subject :

First : If we wish our architecture to embody the theory of regions and evolution which we have advanced, wish it to be sincere and to harmonize with the general atmosphere of our Continent ; if we, moreover, wish our spirit to have a refuge where it recognizes something peculiar to ourselves only, it is the American landscape with its flora and fauna, within Divine creation, and the last remains of native art, within man's creation, that we must chose as the centre from which our future paths must radiate.

Second : If a reaction in the direction we point to would be opportune at any time, the present conditions in American architecture make it exceptionally propitious. The reason herefor is the problems that are to be solved as to the structural lines of reinforced concrete and the architecture of the skyscraper, both of which problems present a surprising analogy with those solved by primitive American architecture.

Let us analyze each of these postulates separately.

VIII

First Postulate.

In the foregoing we have defined architecture, we have seen how it interpreted and used for decorative purposes the fauna, flora and regional landscape and how it developed in grand lines the harmonious and forceful outline of its building materials : We have observed the creative process of a work of art and studied the elements necessary to its birth, and, finally, we have considered two facts, arrived at two conclusions : The regionalistic and the evolutionary tendency of architecture.

The criterion set by those facts is in itself enough to bear out the truth of my first postulate, namely, that in order to create sincere architecture we must seek our sources of inspiration in the American environment, both directly in nature and in the art history of the Continent.

Some narrow spirits have imagined that my theory was retrogressive, believing that my idea was either to go back to the last phases of a dead art, or to hitch on to our present civilization from the far-off recesses of primitive America some mummified archaeological remains incapable of expressing our modern time.

Neither of these interpretations is correct.

What I propose is simply this (See plate No. 1) : Without taking a single step back, to move about freely in the circle of the century in which we live, take up our stand on the radius of my theory and from this point, while applying modern standards, observe the sources of inspiration with which both nature and the art history of America furnish us ; then assimilate all the elements peculiar to ourselves, and finally direct all our efforts towards filling in the gaps produced by our former inaction.

IX

Second Postulate. Reinforced Concrete.

Let us now, begin the analysis of my second postulate, treating its two component parts separately : Reinforced concrete, and the Skyscraper.

Reinforced Concrete.

The lines of reinforced concrete defy most architectonic members and familiar decorative devices, and it has not been possible to line it up within any of the prevalent styles.

The efforts hitherto made to solve the problem of finding the honest and rational line of reinforced concrete, have already succeeded in sketching roughly the characteristics of its architecture, drawing up its general outlines, with big surfaces decorated by applying simple materials like glazed tiles, porcelain, mosaic, polychrome stone or carved bas-reliefs.

All that calls to mind Pre-Columbian America with its architecture of large surfaces decorated with greatly-varied bas-reliefs, all expressing with great sincerity and beauty the American flora and fauna.

X

Second Postulate. The Skyscraper.

Let us look back upon the history of the evolution of the skyscraper in its two most interesting aspects : 1) that which comprises the different structural forms through which it has passed, and, 2) that which comprises the various styles wherein it has been endeavored to express its peculiar spirit.

Structural Form.

The evolution of the structural form may be summarized in three principal types :

1) Simple prisms (Regular or irregular).

2) Isolated towers ; (These are practically of the same form as the former with the addition of a top structure which imitates a tower of great proportions.)

3) Set-backed pyramids.

During late years skyscrapers were built more and more disproportionately tall in relation to the width of streets and squares. Civic architecture therefore undertook the task of regulating their height in order to ensure the access of the necessary light and air.

As skyscrapers went up higher and higher and yet at the same time had to keep the air and light regulations, it was necessary to adopt the structural form of a " set-backed " pyramid. This seems to have set the definitive rule for future construction, for not only does this form solve the various practical problems, but from an aesthetic point of view it communicates to the towering masses of the skyscraper an impression of stability which is aptly sensed and expressed.

This result offers a striking resemblance with many of our American pyramids, and not only does it confirm the truth of my second postulate, but it demonstrates that the structural form which the skyscraper has arrived at on its own, and found adequate, is in complete harmony with my theories and the aim I pursue.

In my journeys across the United States of America I have been able to observe some surprising examples of this :

In the City of New York, near the corner of Broadway and Columbus Circle, stands an enormous skyscraper of red brick (Fisk Building). At nightfall when only its general outlines are visible one has a feeling of being in Papantla contemplating the ruins there. So striking is the likeness !

The Paramount Building in New York is another example which needs no comments.

The New Bell Telephone Building at St. Louis, Missouri, is another example which reminds us so powerfully of primitive American architecture, that one can not but believe its architect got his inspiration there.

The French Building in New York and many other skyscrapers likewise bear witness that notwithstanding their builders' preconceived idea of taking their inspiration from foreign architectural styles, such is the force of destiny, that the structural form the skyscraper has come to adopt is next of kin to our Indian pyramids.

We have pretended to scoff at the immutable laws of architecture, seeking out eagerly all that was not ours ! But truth has made its way through our spasmodic and self-contradictory efforts proclaiming the glory of her undying power.

Style.

We shall now consider the styles through which the skyscraper has tried to express its architecture.

The work which has been done show three principal tendencies :

1) The tendency which applies the architectural members of classical and neo-classical styles.

2) The tendency which seeks the solution of the problem of unity in the elements of the gothic style.

3) The tendency which strives to express spontaneously a rational and sincere decoration through the structure itself employing for this purpose the most modern lines.

Let us analyze each of these apart :

First : That which employs the architectural members of classical and neo-classical styles.

Confronted with the insuperable difficulty of providing columns, cornices, and other classical elements adequate to the new height, this first tendency tries to solve the problem by superimposing, as it were,

one structure upon the other, until the desired height is attained.

The result suffers from a total lack of *unity* to such a degree that its component parts could easily be pulled down and each by itself form a building of less height.

Second : The tendency which seeks the solution of the problem of unity in the Gothic style.

As a consequence of the failure of the first tendency to solve the question of unity some sky-scraper architects began searching in the history of architecture for a style which had formerly solved problems of great height, and they found it in the Gothic style.

This new experiment succeeded in solving only the problem of unity.

Third : In these latter days a new tendency has appeared that does not accept the preconceived patterns of the classical and the Gothic styles, but strives to express spontaneously a rational and sincere decoration of the structure employing for this purpose the most modern lines.

This last school has frankly undertaken the study of the laws which this new style of architecture must obey. This study has resulted in the finding of new lines and proportions which have been applied with great success to many of the skyscrapers built in the United States during recent years.

The characteristic qualities of these new lines and proportions present great resemblance with the elements of primitive American architecture.

As to cornices, it has not been possible to apply to skyscrapers any of the hitherto known proportions.

The new architecture has had to find an element which only marked the limit of the wall-surface.

By this quality and by the fact that its principal decorative elements are brought out in large surfaces, the new style strikingly recalls the Pre-Columbian architecture with its palaces and pyramids with small cornices, and magnificent decorations carved in big dominating surfaces.

XI

Application of our Postulates. Revelation.

In order to realize in practise our program of Americanization certain categories of ground-work must be gone through, of which the principal ones are the following :

Revelation, American Renaissance and Neo-American architecture

Revelation.

By trying to apply in practice the foregoing postulates the first difficulty we encounter is the lack of adequate handbooks for the study of American monuments. This causes us to have to go through the groundwork of getting to know them.

The work of revelation should consist in a detailed and essentially graphical study of each of the most important monuments and archaeological centres, carried on at the foot of the ruins by an architect.

Up to now the American monuments have practically been the exclusive dominion of archaeologists, anthropologists, and historians, while the logical idea is that they are of just as much interest to architects.

All over our immense Continent are marvellous ruins of its primitive civilizations, time-worn and undermined by vegetation, often mutilated by blasphemous hands.

I have spent about four years in Mexico studying the ruins, sketching their varied and interesting outlines that are latent with stirring power, and amid the silent harmony of the country-side, those old walls revealed to me that their mission is not yet over. Let us hope that a merciful hand will save them from forgetfulness, and revive all the splendor of their original beauty.

As sincere artists of America, why are we not aware that a modern American style may arise from the study of these mountains of stone built and carved with such ardor.

XII

American Renaissance.

The buildings created by modern architecture in America may be divided into two groups :

1) Buildings constructed on the principle of the same or analogous needs as those felt by primitive Americans ;

2) Buildings which solve complex modern problems, alien to primitive America.

Let us consider the first case.

In buildings which are constructed on the principle of the same or analogous needs as those felt by primitive American peoples, it is possible to resuscitate the primitive lines and re-adapt them to modern usage.

The large proportions of the primitive monuments of America constitute one of their most notable characteristics ; therefore, structures of a monumental character lend themselves best to the idea of a Renaissance.

Structures like a Museum, a Memorial, a National Pantheon, etc. could be built in this style.

On account of its very rich decorative qualities the Renaissance could also be applied to furniture, tapestry utensils, garments, etc.

In the opinion of many people this renaissance appears impossible.

However, according as the revelation goes on and forms its own environment, adequate for judging just exactly how valuable the primitive architectural styles are, these same diffident spirits will realize that only complete ignorance of this architecture explains the fact that American architects, confronted with monumental tasks, have had recourse to Egyptian and other stone styles instead of calling at the doors of our splendid primitive architecture.

Structures like the Liberty Memorial at Kansas City, George Washington National Masonic Memorial near Alexandria, Virginia, the Lincoln Memorial at Washington, D. C., various masonic temples and many other monumental buildings, erected in the United States, are examples here of. It can not but fill one with profound bitterness to see the thoroughly American spirit, that radiates from their lines and proportions, imprisoned within foreign forms.

XIII

Neo-American Architecture.

The conditions which have prevailed since the Conquest have caused to spring up within the architecture of America a great number of buildings that respond to modern needs completely alien to primitive times.

After a profound study of the ruins it is possible to conceive a *new* line in which only the sentiment of the American forms subsists.

It appears to me correct to call this new type of architecture Neo-American.

The difference between the Renaissance and the Neo-American architecture is fundamental :

The Renaissance works with a model before it.

The Neo-American architecture is a new creative work which requires profound study of the primitive American architecture and of the geometrical and mechanical elements of the regional nature.

When all the forms peculiar to us have germinated in our minds and can follow the summons of our imagination we will be prepared to create this new architecture and to produce designs and plans embodying reminiscences of their primitive origin, but at the same time revealing their modern character clearly and powerfully.

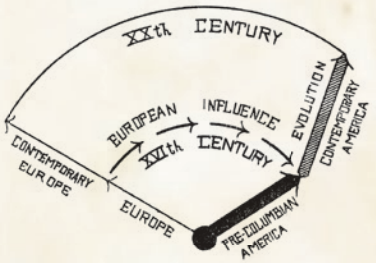
I

AMERICAN PRE-CONQUEST ARCHITECTURE



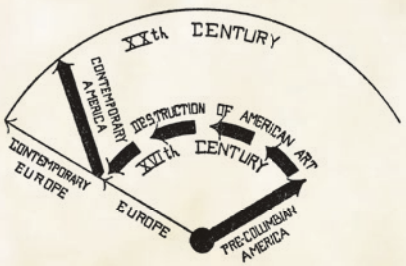
II

OBLIGATORY EVOLUTION OF AMERICAN ARCHITECTURE



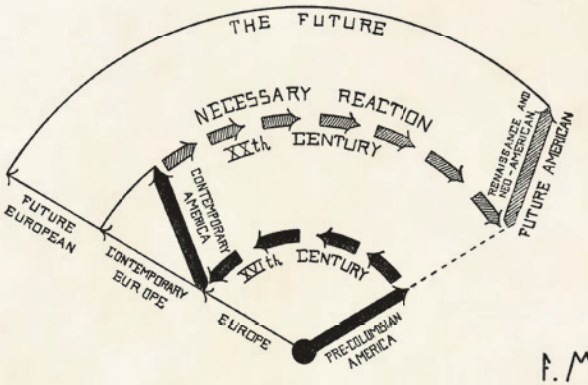
III

DESTRUCTION OF AMERICAN ART BY THE CONQUEST
POST CONQUEST AMERICAN ARCHITECTURE



IV

NECESSARY REACTION



F. MUJICA

THEORIES OF THE AUTHOR.



Merris Rosenfeld, Photo.

Simple Prisms.



Wurts Bros, Photo.

STRUCTURAL FORMS

Isolated Towers.



Wurts Bros, Photo.

Setback Pyramids.

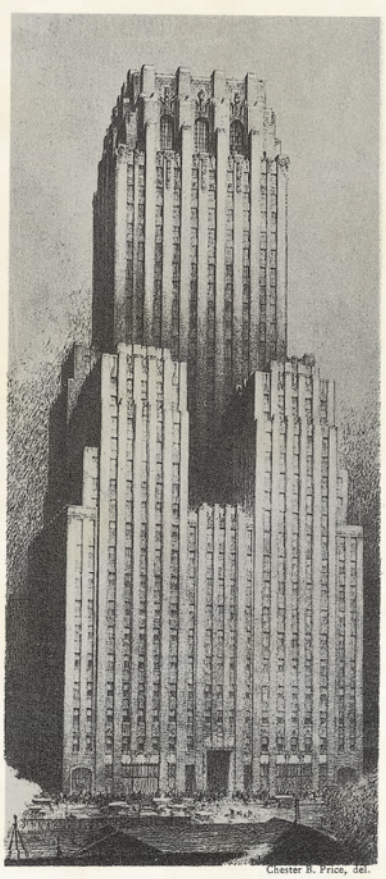


Classic and Neo-Classic.



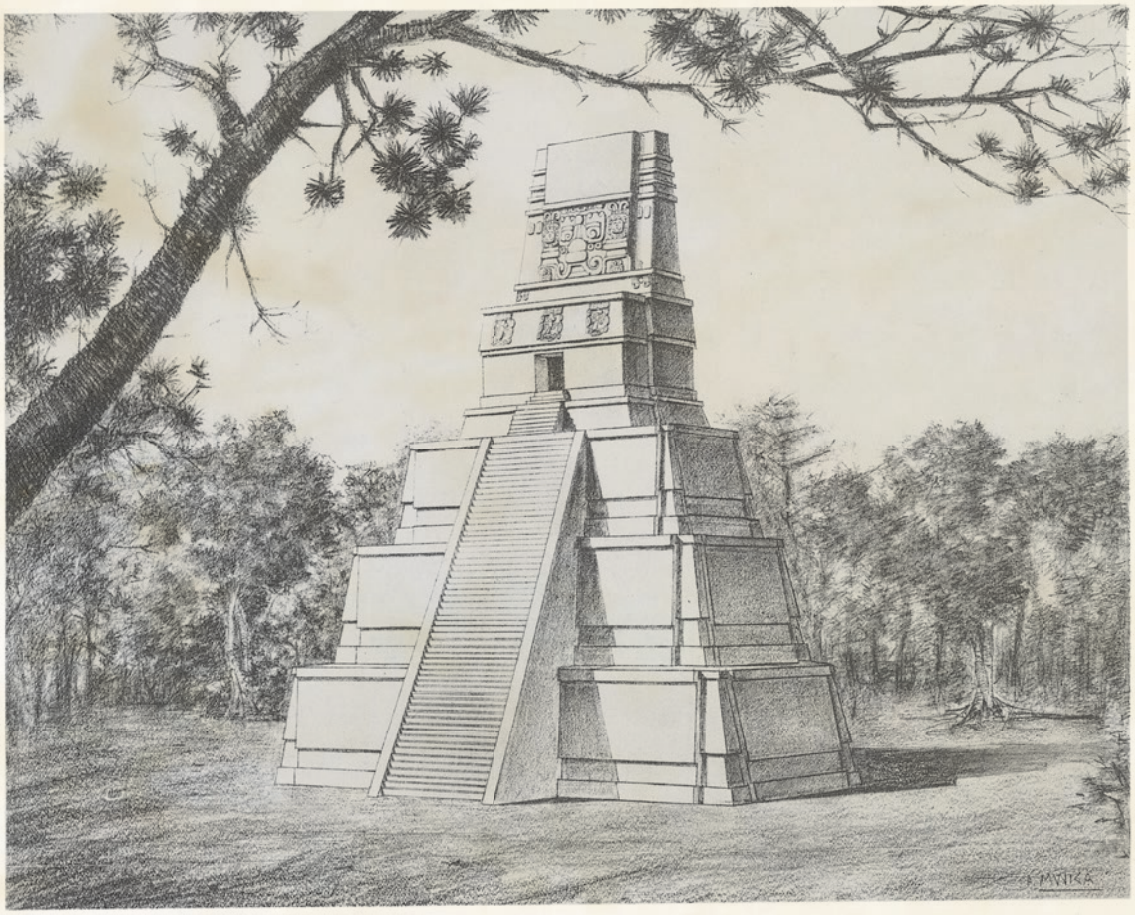
STYLE

Gothic.

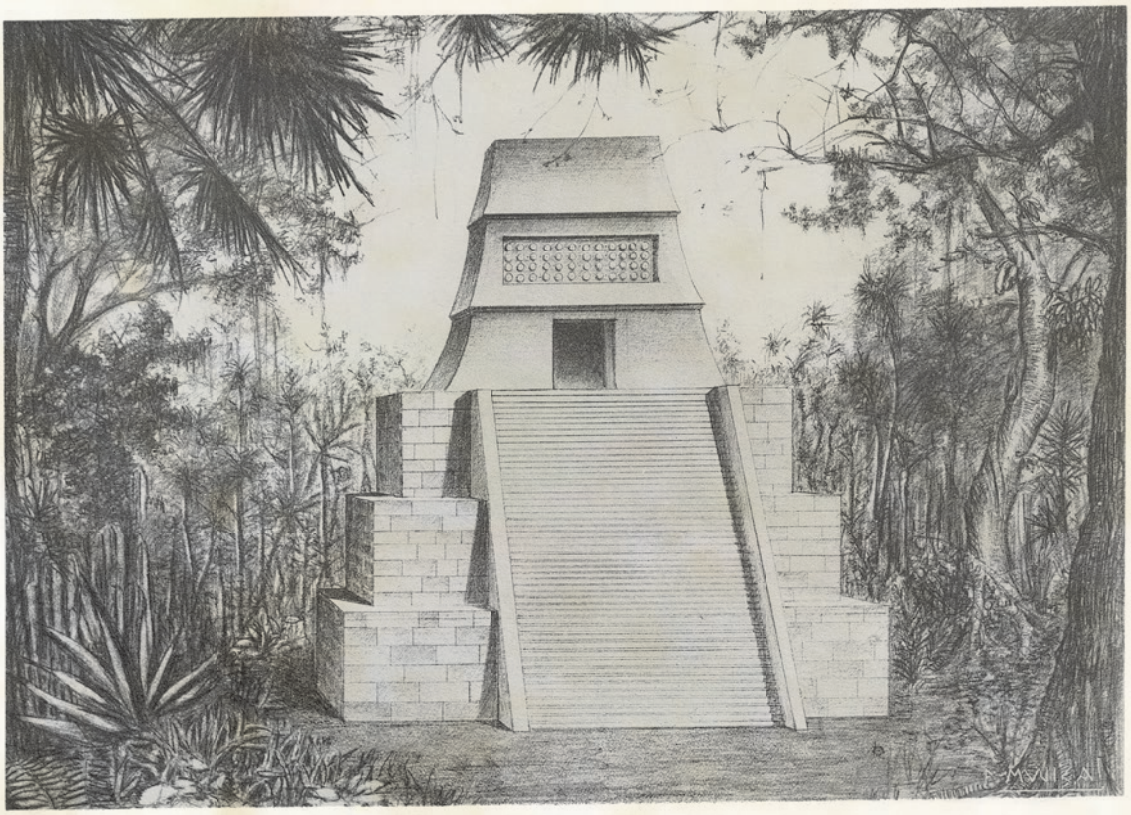


Chester B. Price, del.

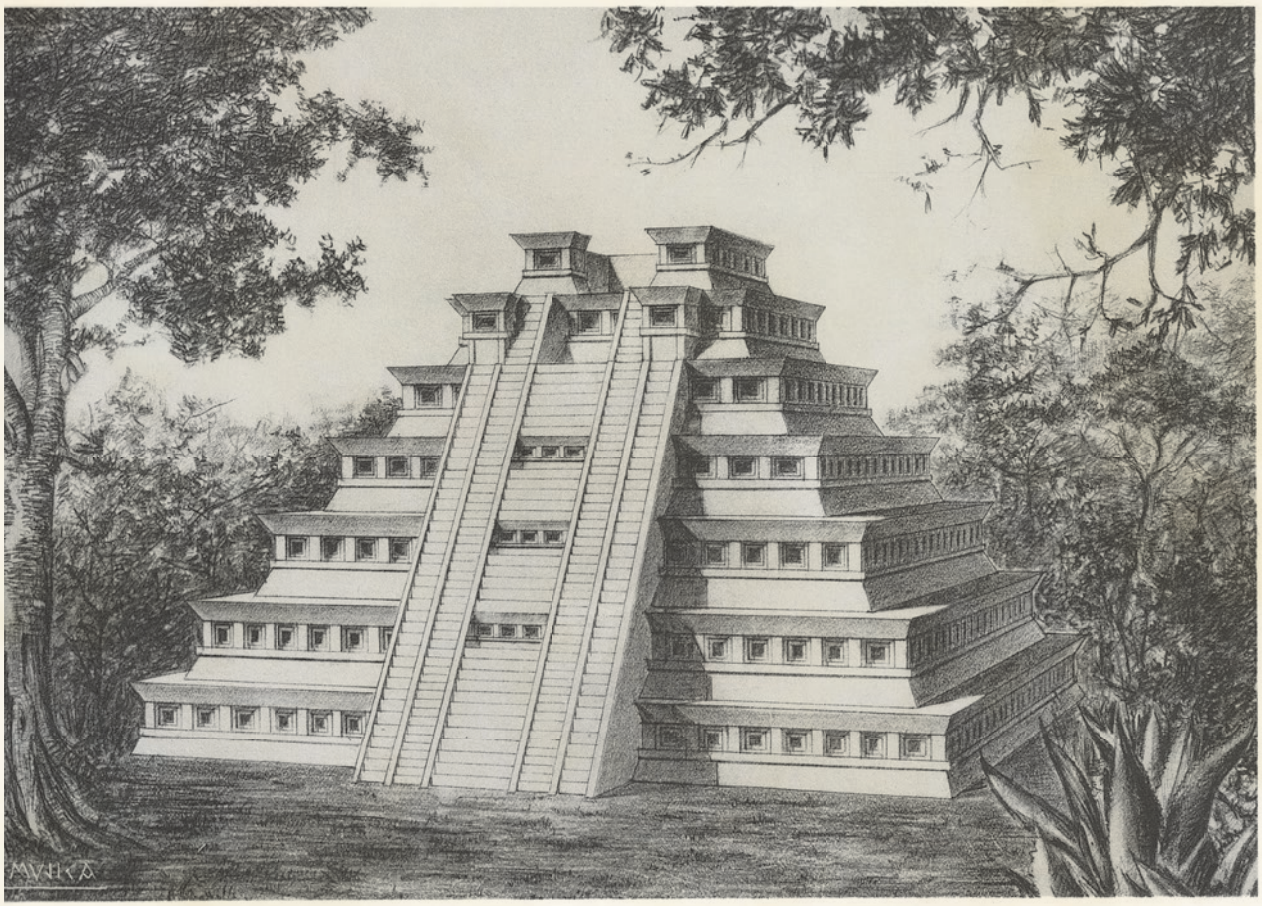
Modern.



Restoration of the Pyramid of Tikal, Guatemala.
By Francisco Mujica.



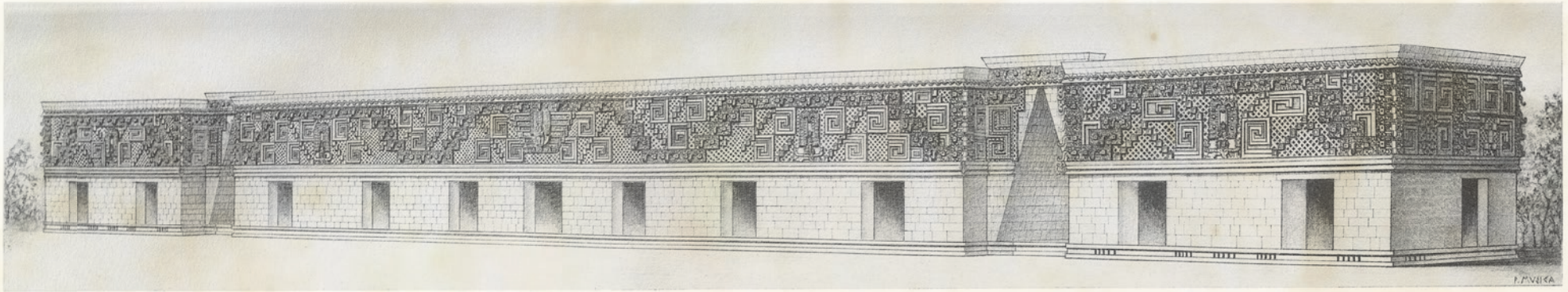
Restoration of the Pyramid of Huatusco, Mexico.
By Francisco Mujica.



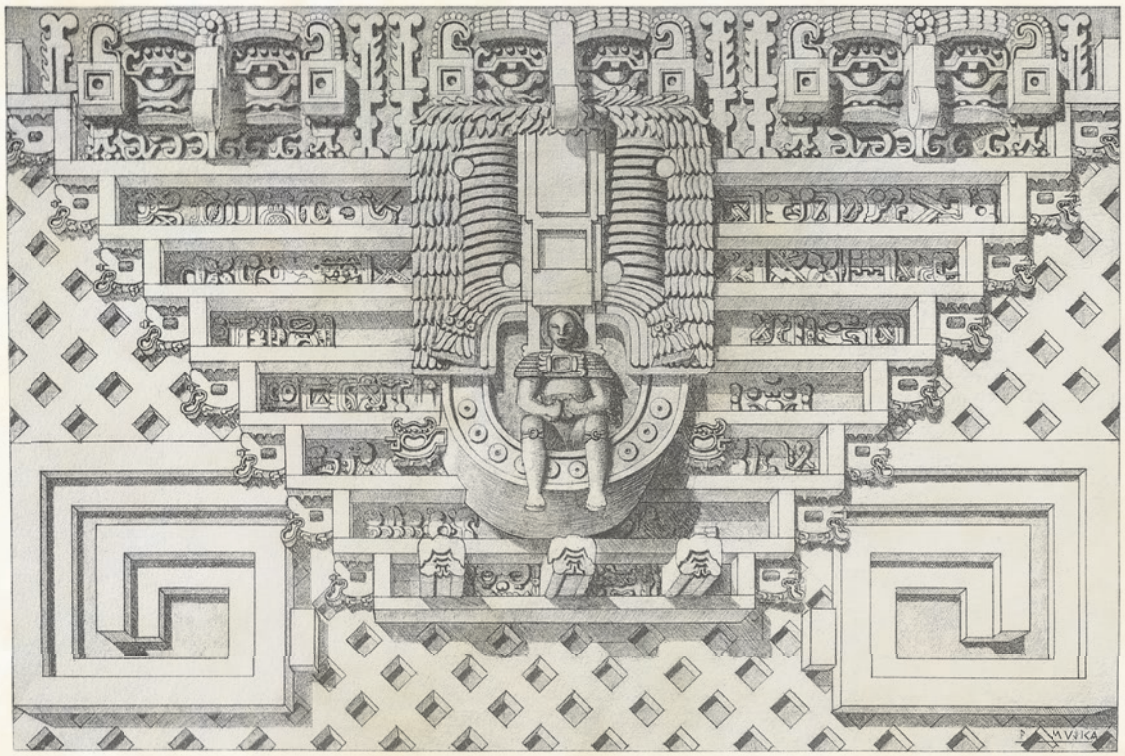
Restoration of the Pyramid of Papantla, Mexico.
By Francisco Mujica.



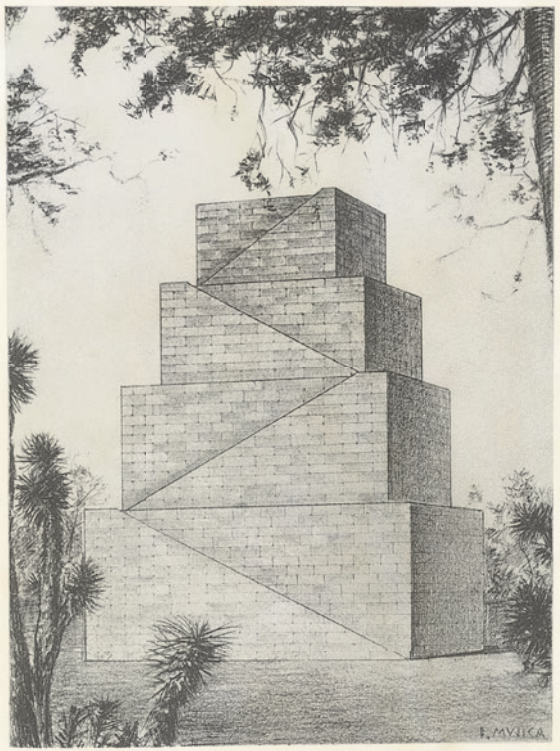
Restoration of the Pyramid Called "The Castle", Chichen Itza, Mexico.
By Francisco Mujica.



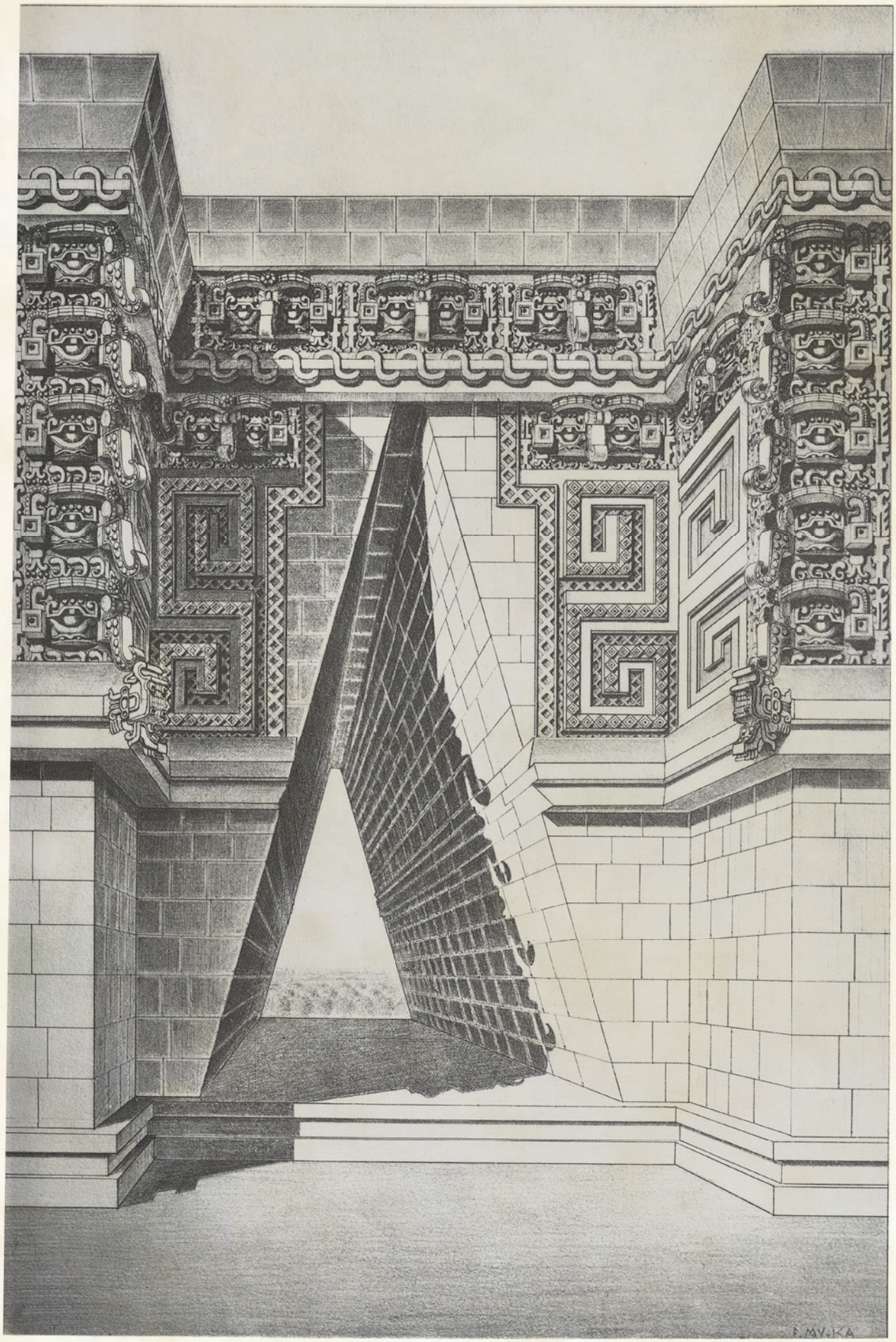
Restoration of the "House of the Governor", Uxmal, Mexico.
By Francisco Mujica.



Restoration of the "House of the Governor", Uxmal, México. Detail of the Principal Front.
By Francisco Mujica.



Restoration of the Pyramid of Teopantepec, Mexico.
By Francisco Mujica.



Restoration of the "House of the Governor", Uxmal, Mexico. Detail of the Principal Front.
By Francisco Mujica.
(The passage which appears in the sketch was later closed by a wall with a small door).



Sculptured Maya Head.
Drawn by Francisco Mujica.



"Totec". Head of Diorita.
Drawn by Francisco Mujica.

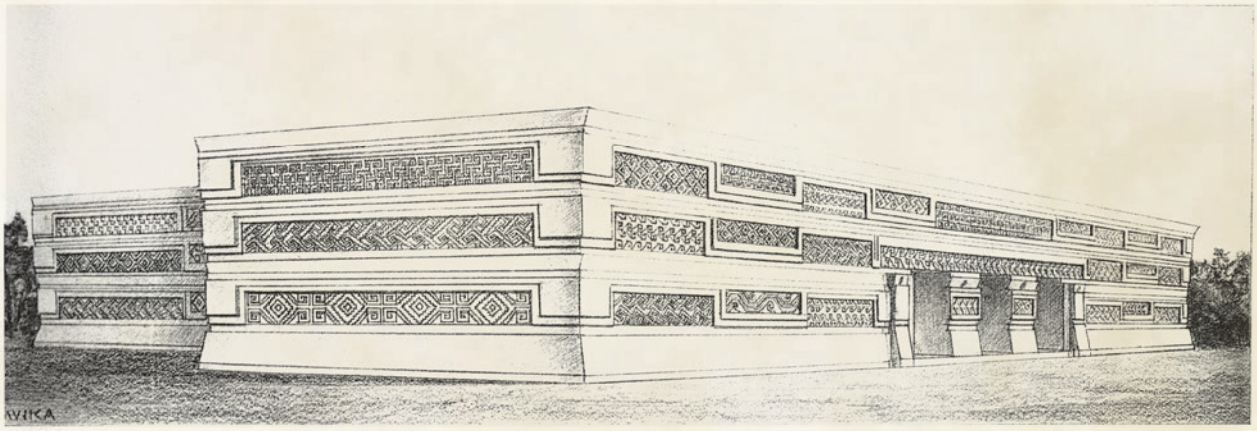


Aztec God.
Drawn by Francisco Mujica.

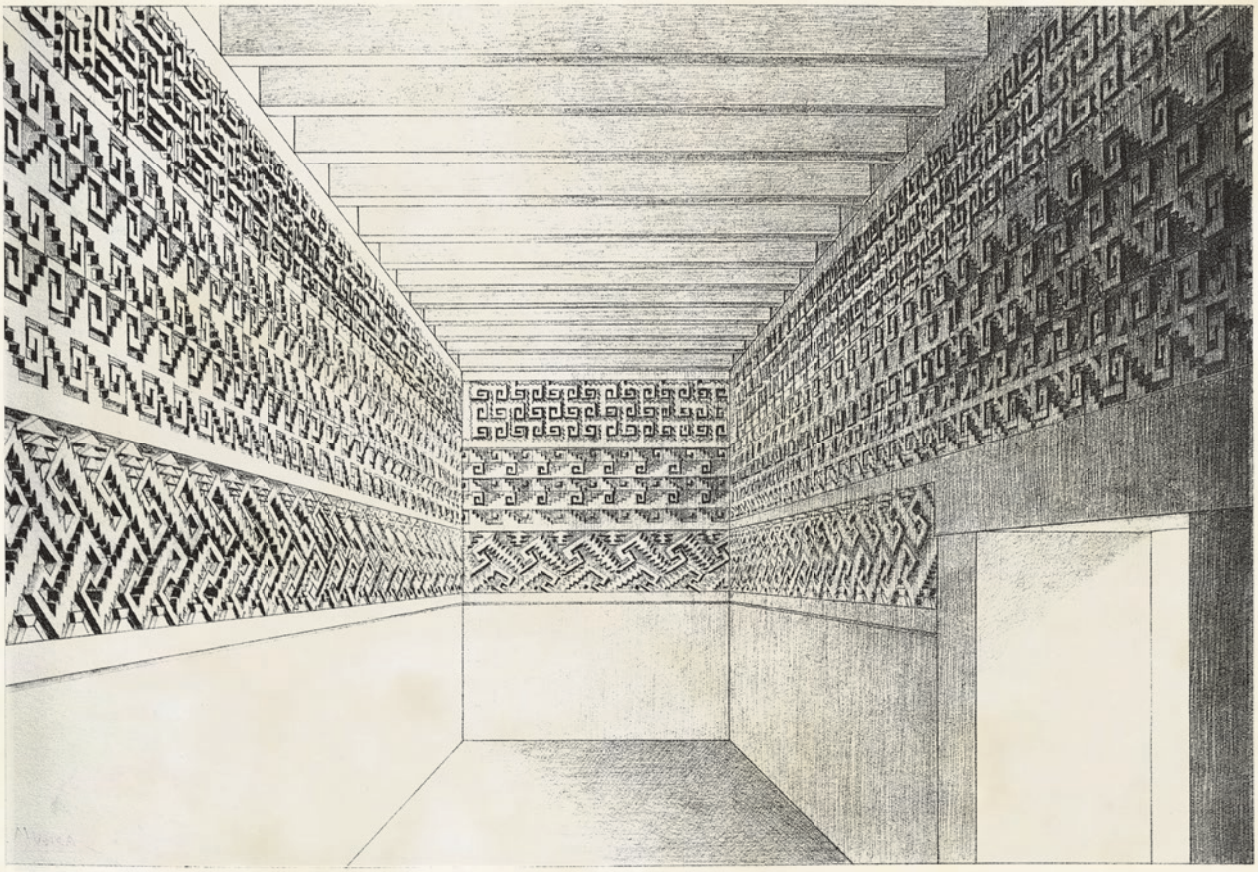


Atlante of the Maya-Toltec Period.
Drawn by Francisco Mujica.

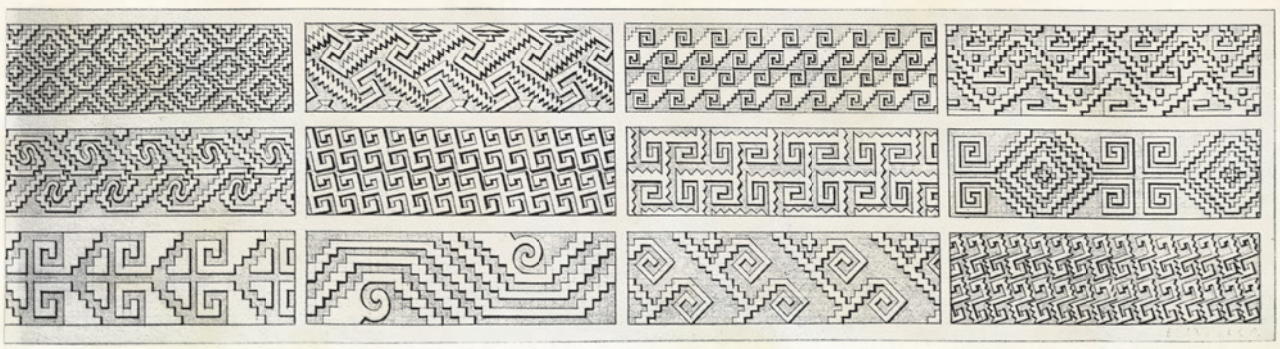
TREASURES OF THE NATIONAL MUSEUM OF MEXICO.



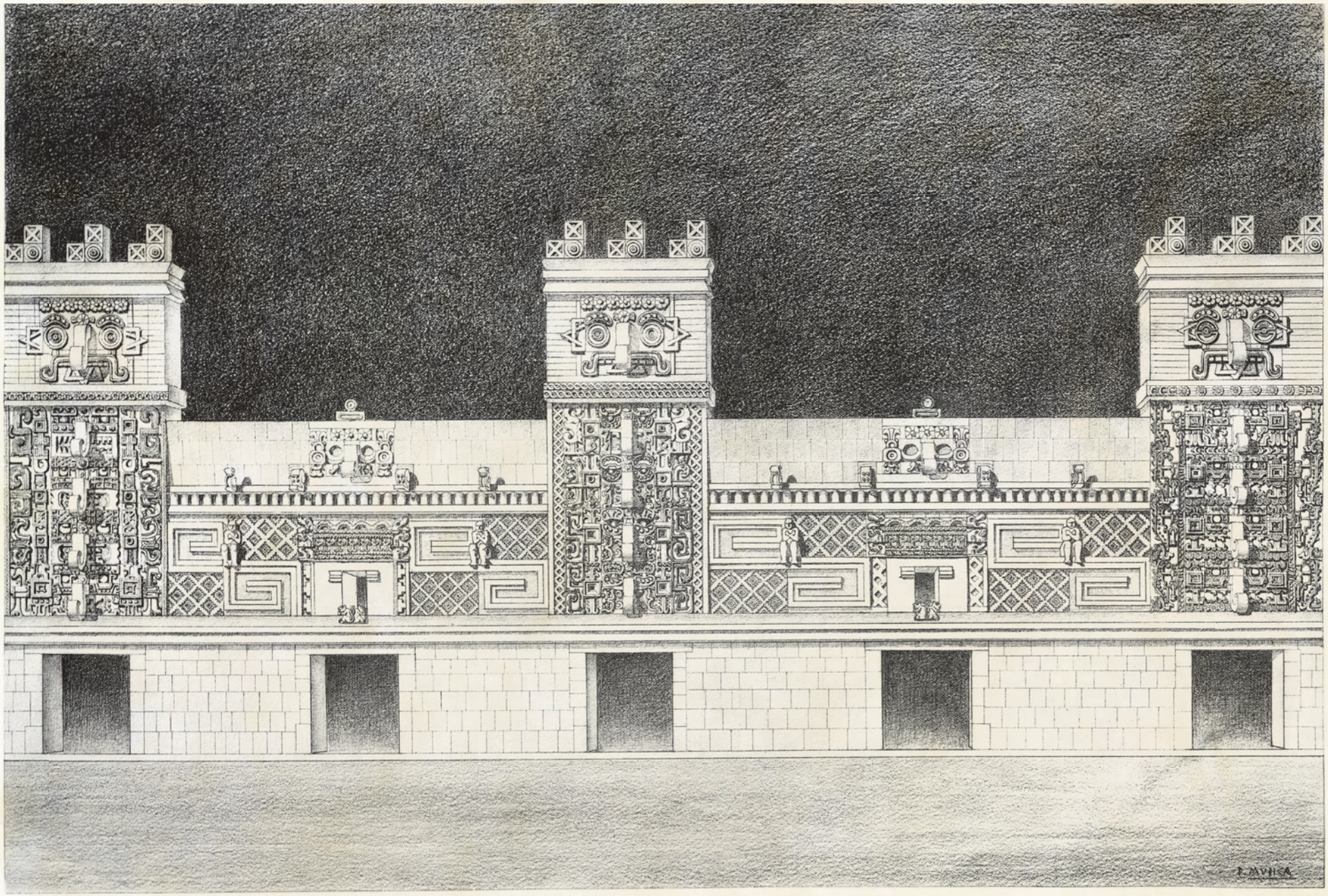
Restoration of One of the Palaces of Mitla, Mexico.
By Francisco Mujica.



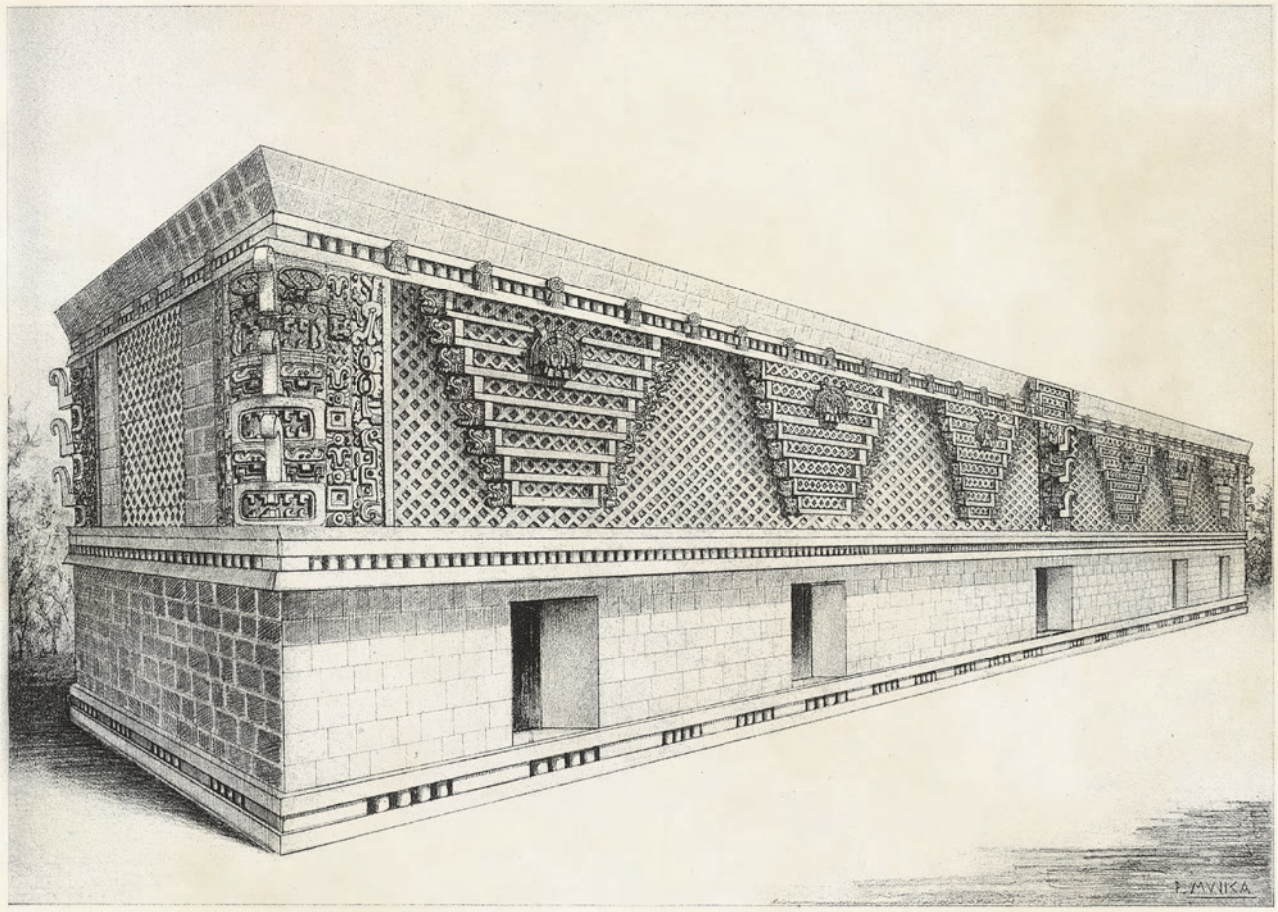
Restoration of One of the Palaces of Mitla, Mexico. Interior Gallery.
By Francisco Mujica.



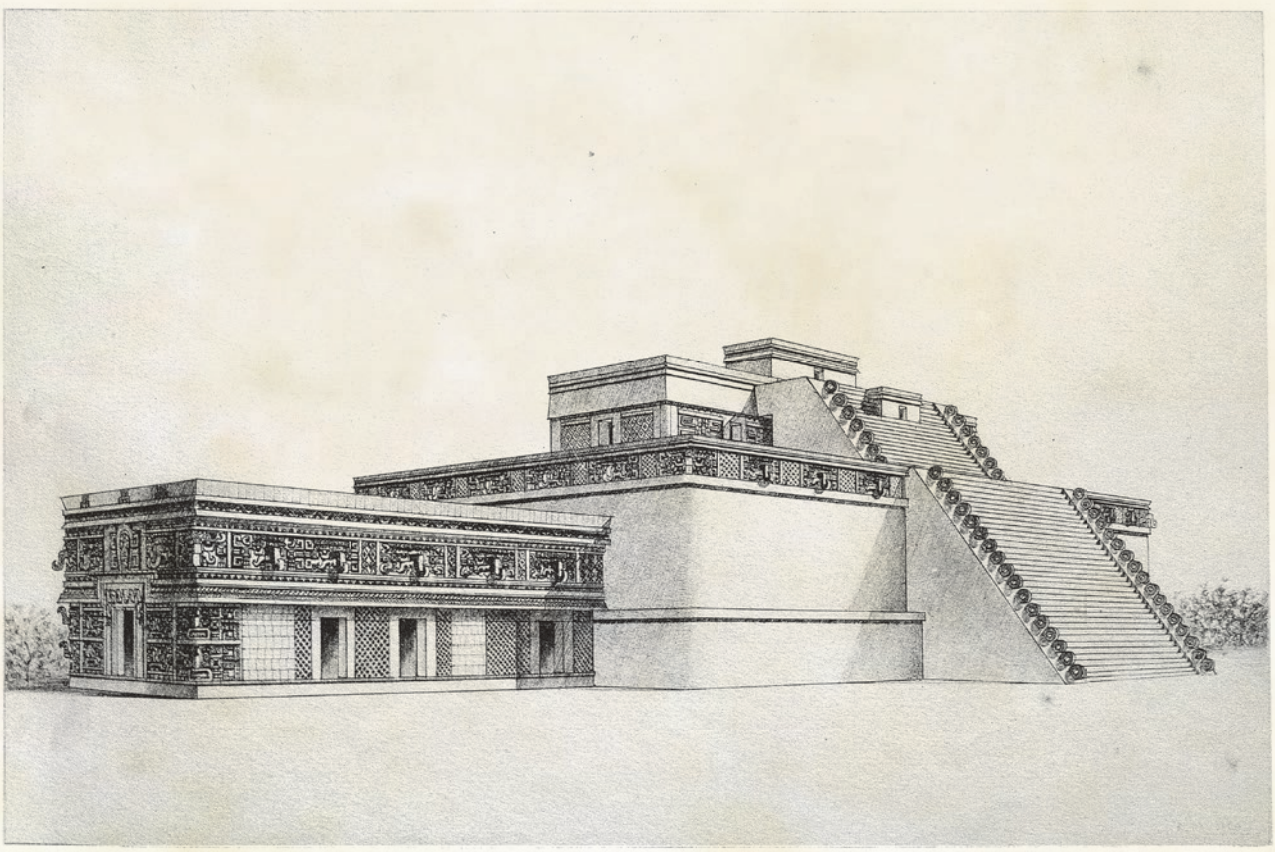
Details of the Decorations of the Palaces of Mitla, Mexico.
By Francisco Mujica.



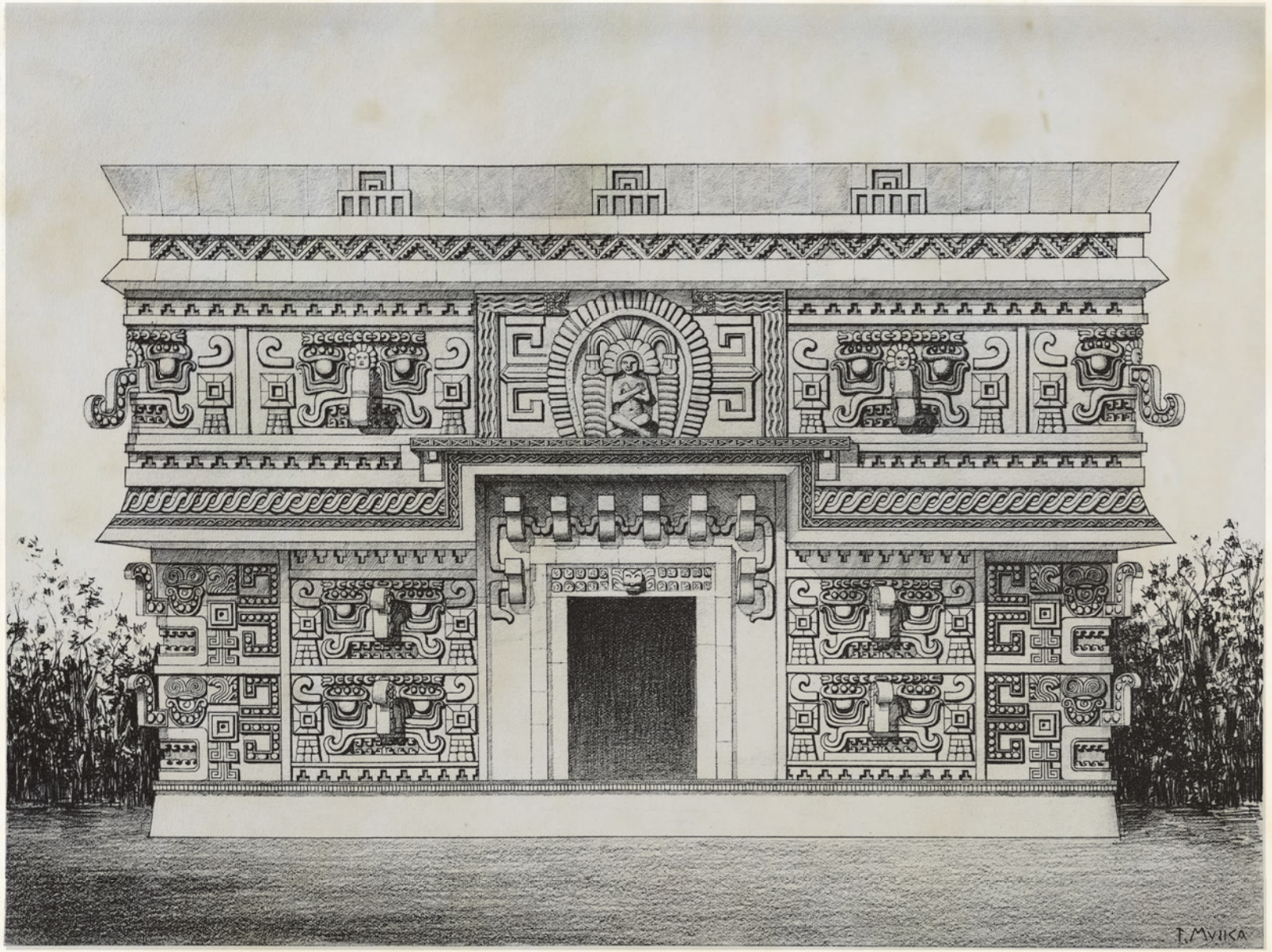
Restoration of the "House of the Nuns", Uxmal, Mexico. Building of the Masks.
By Francisco Mujica.



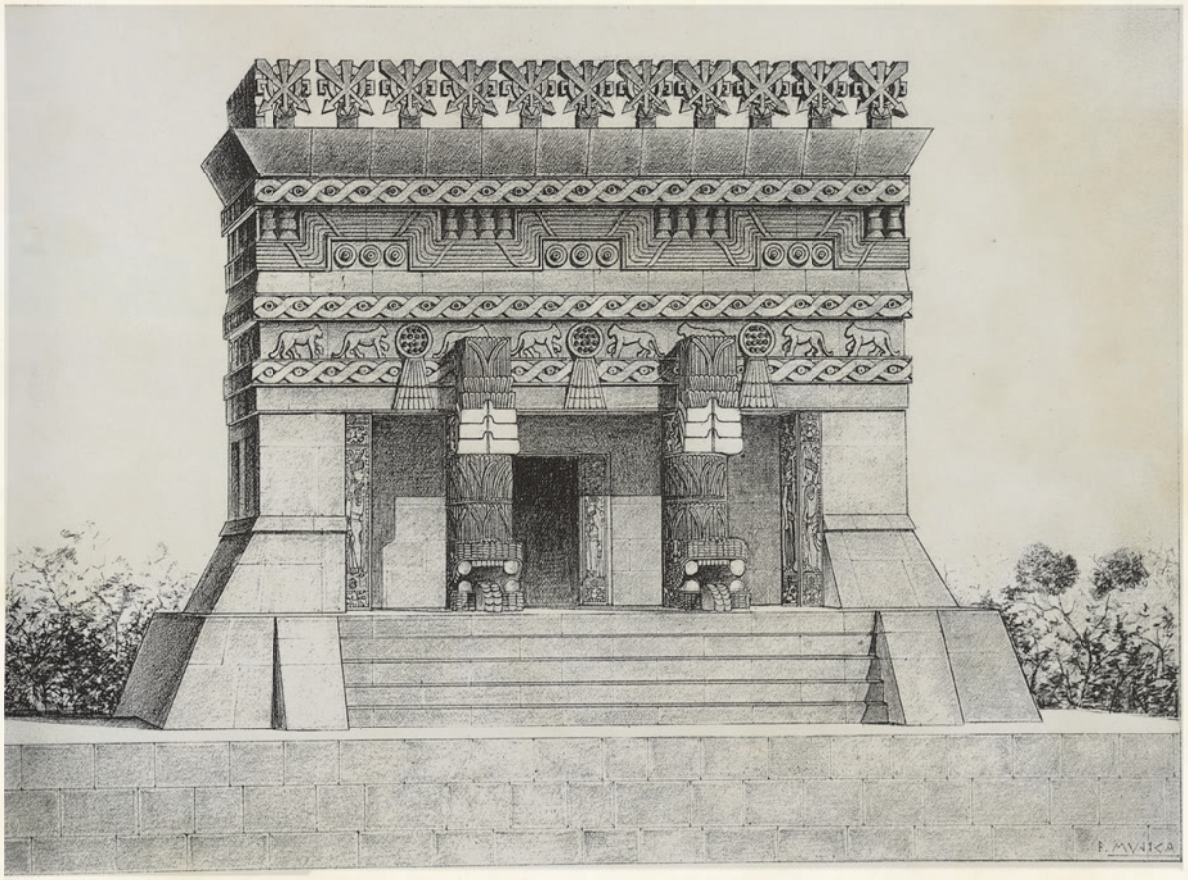
Restoration of the "House of the Nuns", Uxmal, Mexico. Building of the Lintels.
By Francisco Mujica.



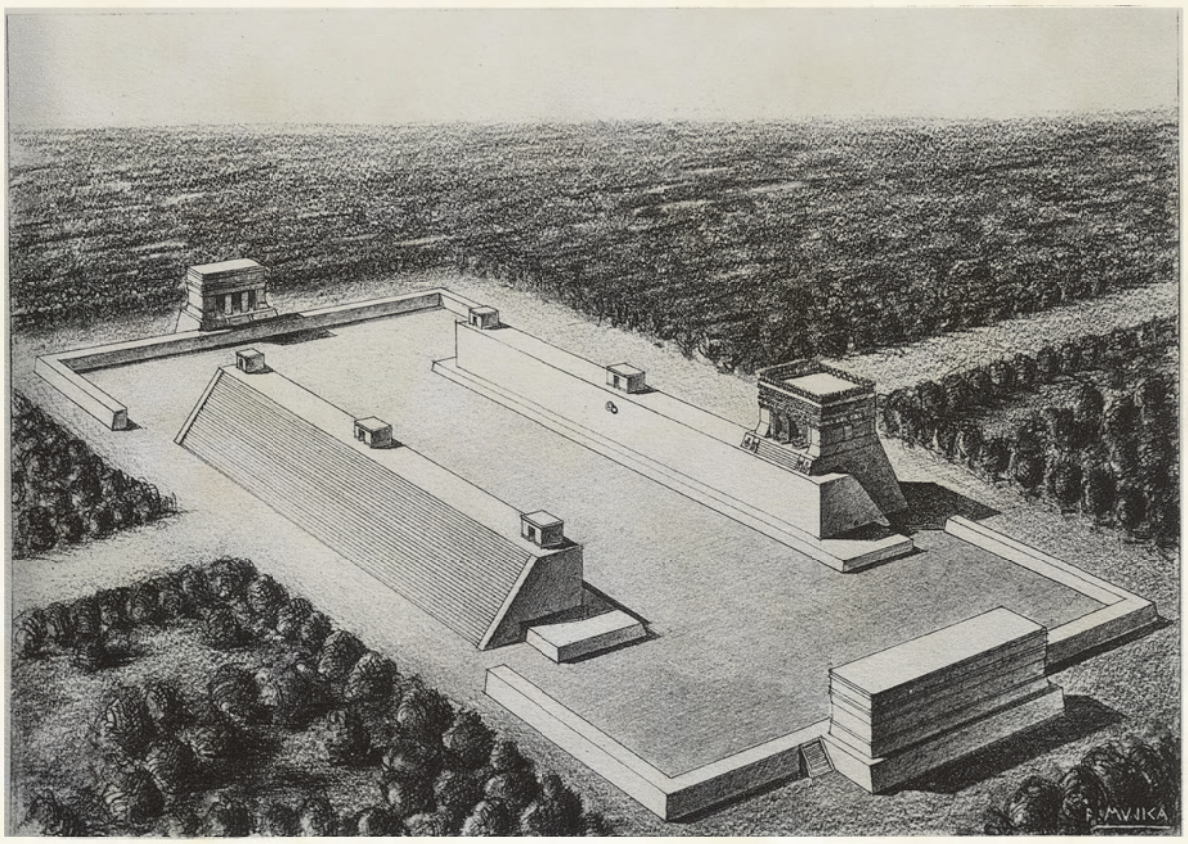
Restoration of the "House of the Nuns" Chichen Itza, Mexico.
By Francisco Mujica.



Restoration of the "House of the Nuns" Chichen Itza, Mexico. Detail of the Lateral Elevation.
By Francisco Mujica.



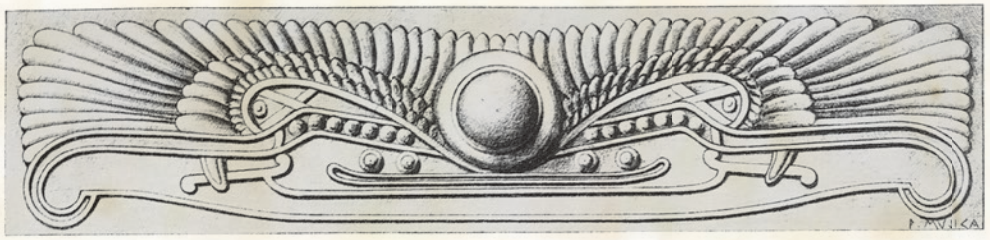
RESTORATION OF THE BALL GAME, CHICHEN ITZA, MEXICO. TEMPLE OF THE TIGERS
BY FRANCISCO MUJICA.



RESTORATION OF THE BALL GAME, CHICHEN ITZA, MEXICO.
BY FRANCISCO MUJICA.



Stela, Copan, Honduras.
Drawn by Francisco Mujica.



The Winged Disc of Ocosingo, Mexico.
Drawn by Francisco Mujica.



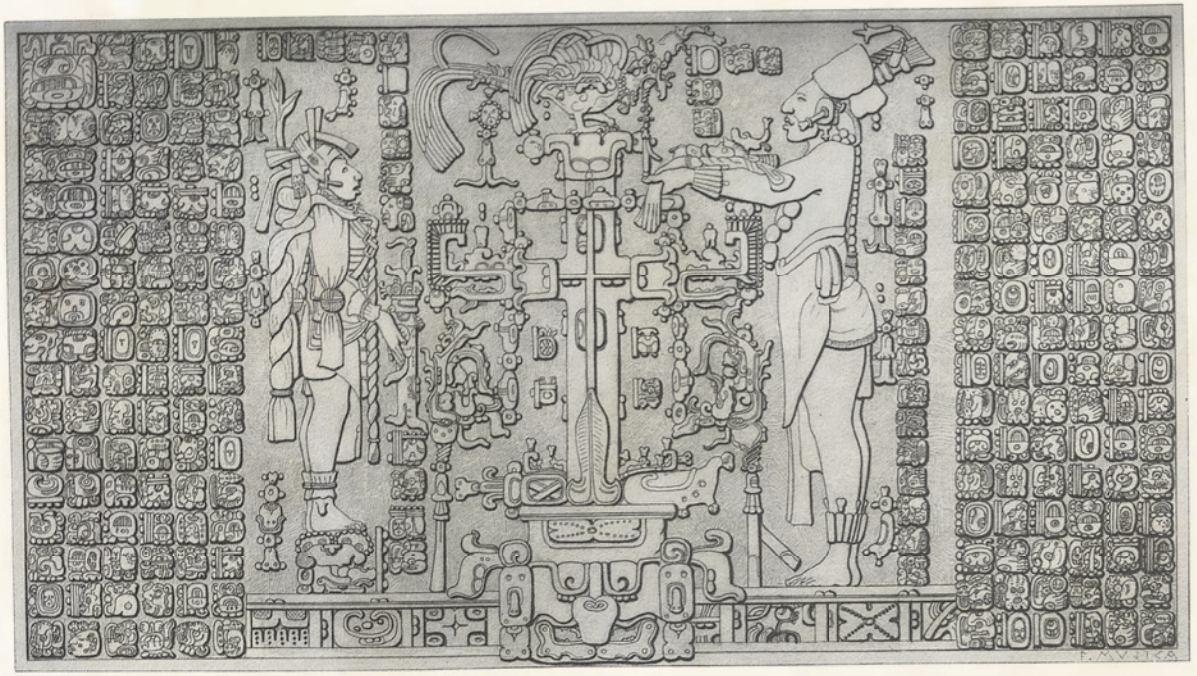
Detail of a Jaguar, Chichen Itza, Mexico.
Drawn by Francisco Mujica.



Stela, Quirigua, Guatemala.
Drawn by Francisco Mujica.



Relief at the Entrance of the Sanctuary. Temple of the Cross, Palenque, Mexico. Drawn by Francisco Mujica.



Bas-Relief in the Sanctuary of the Temple of the Cross, Palenque, Mexico. Drawn by Francisco Mujica.



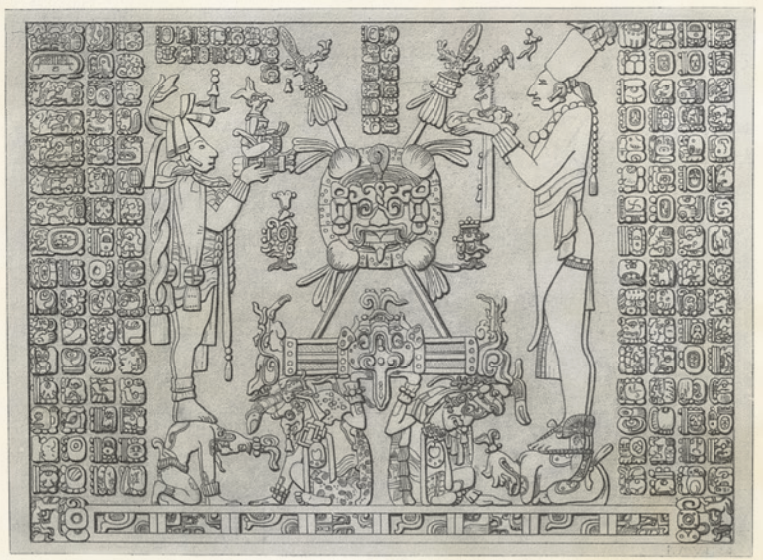
Relief at the Entrance of the Sanctuary. Temple of the Cross, Palenque, Mexico. Drawn by Francisco Mujica.



Stela, Copan, Honduras. Drawn by Francisco Mujica.



Stela, Copan, Honduras. Drawn by Francisco Mujica.



Bas-Relief in the Sanctuary of the Temple of the Sun, Palenque, Mexico. Drawn by Francisco Mujica.



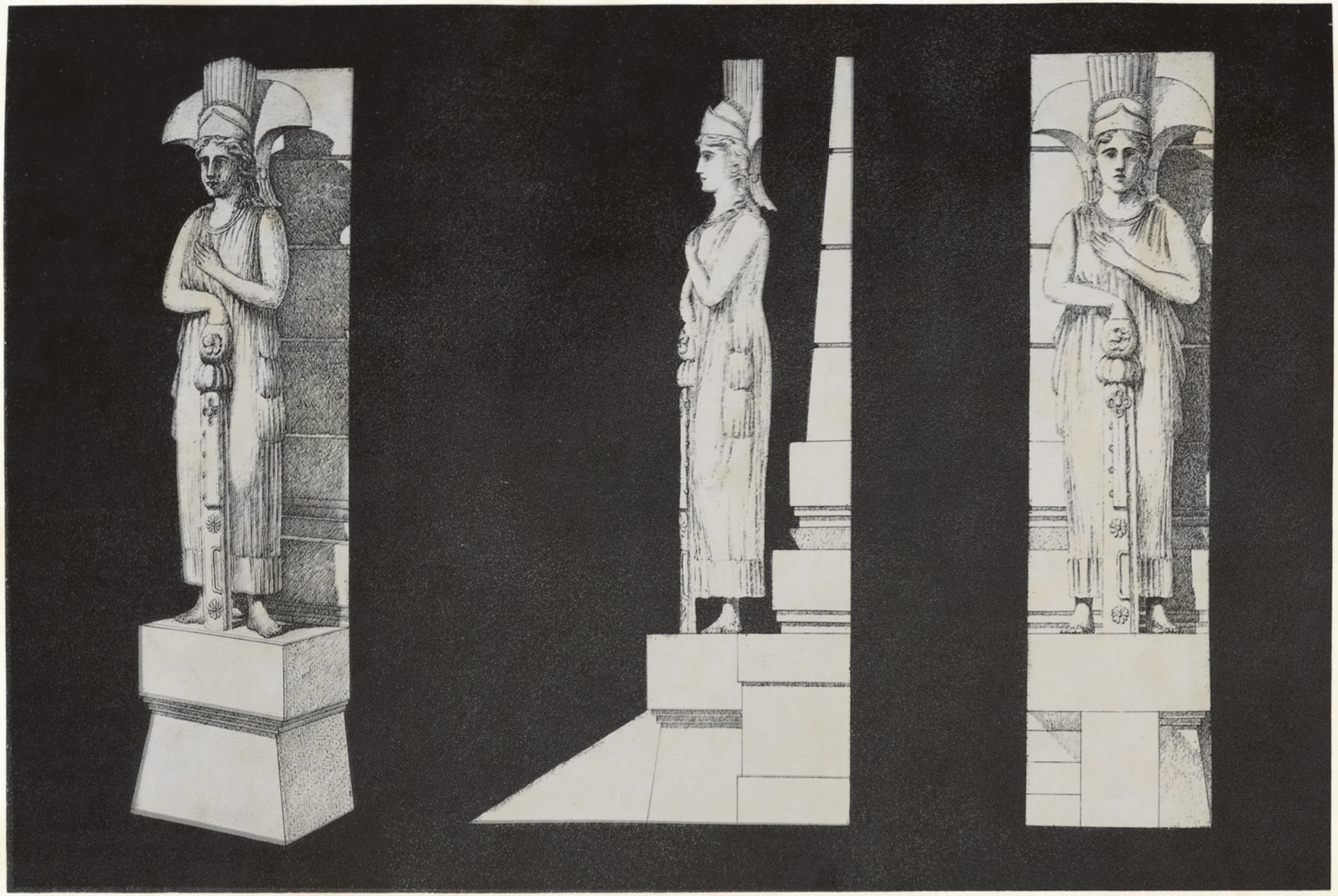
Statue Found at the Foot of the Temple of the Cross, Palenque, Mexico. Drawn by Francisco Mujica.



An Example of the Adaptation of Members of the Pre-Columbian Architecture to the American Renaissance Style :
Adaptation of the Statue of the Temple of the Cross at Palenque. By Francisco Mujica.



Example of Composition in American Renaissance Style : Perspective of a Proposed Temple to the Glory of American Art.
Francisco Mujica, Architect.



An Example of the Creation of Architectural Members in Neo-American Style : Neo-American Statue Reminiscent of that of the Temple of the Cross at Palenque. By Francisco Mujica.
To better Understand this Example see Plate no CXXXII.



Example of Composition in Neo-American Style : a School for 360 Pupils.
This Design for a Light and Airy School with Modern Lines Treated in Glazed Tile or Mosaic has Nothing in Common
With the Ancient Indian Pyramids Except the Artistic Spirit of its American Environment. Francisco Mujica, Architect.

HISTORY OF THE SKYSCRAPER

CHAPTER I

ORIGIN OF THE SKYSCRAPER

A

ORIGIN AND DEFINITION OF THE SKYSCRAPER

It has come to be accepted as a dogma that steel skeleton construction is the initial cause of the skyscraper.

In reality it is the elevator that is the initial cause of the skyscraper. Steel skeleton construction is a *consequence* of the elevator.

Before elevators appeared five or six stories was the maximum height of masonry buildings.

This was not because masonry buildings could not be constructed higher; the sole reason was that the fatigue and loss of time caused by stairs reduced the commercial value of the higher stories enormously.

As soon as passenger elevators appeared masonry buildings went up twice as high. I find it appropriate to call this type of building the pre-skyscraper.

A pre-skyscraper may be defined as a tall masonry building provided with passenger elevators.

10 or 12 stories mark the maximum height of pre-skyscrapers. Beyond that the bulkiness of walls in lower stories becomes so excessive that the rentable space assumes anti-economic dimensions.

From the desire to build higher and higher, and yet avoid the aforesaid inconvenience, arise, first, the " cage construction " and later on the " skeleton construction ".

It would not have occurred to any one to devise these building systems if the elevator had not caused the pre-skyscraper to appear and made it a financial success.

18 to 20 stories mark the maximum height of steel skeleton skyscrapers provided with hydraulic elevators. To build higher than that would be entirely uneconomic, due to the slowness of elevators and the excessive space occupied by them and their voluminous machinery.

Finally electricity appears.

With high speed electric elevators skyscraper height may be considered technically unlimited.

As one builds higher and higher the cost increases proportionately. The economic height is that above which each added story constitutes a bad investment of the capital required for its construction.

Skyscrapers will continue to increase in height according to the rate of economic height, which in turn will get higher proportionately with the growing necessity of concentration and ground prices.

The modern skyscraper thus rests on three fundamental inventions: passenger elevators, steel skeleton construction and electricity, and may be defined as *a building of great height constructed on a steel skeleton and provided with high speed electric elevators.*

B

INVENTION AND EVOLUTION OF THE ELEVATOR

The history of the skyscraper is to a great degree the history of the elevator, for the elevator was the initial cause of tall buildings, because it made high stories a commercial success and even made the higher stories more desirable than the lower ones due to better light and air conditions. It was, moreover, the elevator which, by making tall buildings practical, revealed the need of replacing masonry by other less voluminous material. Thus it gave birth to the idea of skeleton construction, the most notable of all modern building inventions.

The entire history of skyscrapers contains a homage to the inventors and pioneers of the elevator.

And when the modern type of city, built with a view to skyscraper requirements appears, monuments will be raised in its squares bristling with soaring towers, glorifying the anonymous inventor of the elevator, the inventors of the passenger elevator, the elevator provided with safety devices, the rapid elevator, and the electric elevator.

Who was the inventor of the first elevator ?

The echo of our query is lost in far-distant centuries.

All primitive civilizations knew the principle of the elevator, using muscular power as driving force by making a group of men pull at a cord.

The pyramids of Egypt, palaces of Babylon and temples of Mexico and Guatemala piled up their grandiose masses, putting stone upon stone by this rudimentary elevator system worked by the muscular force of slaves.

The first important phase in the evolution of the elevator must be ascribed to Henry Waterman when he invented his platform freight elevator in 1850.

To a son of the United States of America belongs the honor of having invented the passenger elevator, and his name should take a prominent place in skyscraper-history : Elisha Graves Otis.

He began his work in 1852 in Yonkers, N. Y. In 1853 he invented the first safety device, and in 1854 he completed the first hydraulic elevator.

This elevator was formed by a rack which supported the principal platform. The rack was moved by water pressure.

Thanks to the co-operation of the Otis Elevator Company I have been able to ascertain a fundamental date in elevator-history : the date of the installation of the first passenger elevator. This took place in 1857 in a building situated on the corner of Broadway and Broome Street, New York, property of Mr. E. V. Houghwout.

In 1859 the first steam power passenger elevator was installed in the Fifth Avenue Hotel, New York City. This elevator system driven by steam and known under the name of *vertical screw railway* was the invention of Otis Tufts.

The year 1871 marks a memorable date : the installation of the first passenger elevator in an Office Building.

Up to that date elevators had been scarce and used practically only in hotels. There was even a discussion as to whether elevators were a success or not, and the accidents that happened were spread among the public in grossly exaggerated form. To make the elevator popular was a serious problem.

To Architect Geo. B. Post, by Daniel Burnham aptly called " The father of the tall building in New York " belongs the honor of having installed the first passenger elevators in an office building, the First Equitable Building on Broadway, which was completed April 19, 1871. The cost of elevators in this building amounted to $ 29,657.

The success of that installation was the first real publicity enjoyed by the elevator : three years later pre-skyscrapers appeared as an immediate consequence thereof.

After the death of Elisha Graves Otis, in 1861, the first really important stride forward in elevator-history is the invention of the vertical hydraulic elevator by Cyrus W. Baldwin, who took out his patent in 1872. This was of fundamental importance, since it permitted greater speed, which in turn led to higher building, without increasing the number of elevators.

In 1887 the first electric elevator was installed. Unfortunately, the speed-limit of the electric elevator (ca. 400 feet per minute) arrested its development for many years and left a free field to the hydraulic elevator.

In 1890 appeared the direct lift hydraulic elevator, capable of yet greater speed.

Finally, in 1904, the first gearless traction elevator, the perfected product of the primitive electric elevator, was installed in the Majestic Theatre Building, Chicago.

Having attained a speed of 600 feet per minute the electric elevator had to solve the problem of avoiding jerkiness at the quick speed-changes. The multi-voltage system did that in 1919.

If we finally mention the variable voltage elevator control used for the first time in 1921, the historical outline of elevator evolution will be complete.

The most recent high speed electric elevator is provided with a special small box with a button for each story served by the elevator. On starting the operator presses the buttons that correspond to the stories at which passengers wish to get off, whereupon the elevator ascends to the first stop, and its doors open and close. Then it continues to the next stop without the operator having had to perform any further manœuvre. The stories that are being passed by are indicated by a luminous sign.

Many eulogies have been made of this miraculous elevator proclaiming its nearly human qualities.

If to this perfection of mechanical operating which reduces human errors to a minimum, we add that the electric elevator in tests has attained a speed of 1100 feet per minute, thus solving the equation of time and speed, and finally mention the improvements obtained by safety devices, it is clear that the elevator to-day presents no obstacle to the construction of taller and ever taller skyscrapers.

According to the Annual Report of the Bureau of Buildings of the Borough of Manhattan, there were in January 1928, 26,599 elevators in that Borough, of which 16,077 passenger elevators, exclusive of passenger elevators in private dwellings. The estimated

number of passengers carried daily by these elevators was 10,500,000 and the estimated number of miles travelled by the cars, 78,250.

Elevator accidents in the Borough of Manhattan during the year 1927 amounted to 113, or an average of one accident per year in a group of 235 elevators, or 1 accident for every 32,800,000 passengers. Of the 113 accidents, only 26 were fatal.

There is, therefore, no reason to attack elevators for lack of safety any more than railways, electric cars, automobiles, or any other mechanical means of transportation used in daily life.

The passenger elevator has attained a striking climax during its 75 years of vertiginous development : It was the initial cause of the skyscraper, and to-day the latest elevator-improvements continue to drive it on to yet greater heights which proves that the brilliant chapter of the elevator in skyscraper-history is not yet closed.

C

CAST IRON. — STEEL. — SKELETON CONSTRUCTION

When, due to elevators, masonry pre-skyscrapers surpassed a certain height the walls of the lower stories became so voluminous that they occupied the greater floor space, reduced window space disproportionately and impeded access of light and air.

In order to obtain sufficient window-space architects began to use cast iron in the masonry. This type of pre-skyscraper attained important heights, as for instance, The Tribune, Mills, Times, and World Buildings in New York, and the Old Womens Temple Building in Chicago, as seen in plate No. 22.

Responding to the imperious demand for greater height, first " cage construction " appeared and later " skeleton construction ".

The fundamental difference between the two types is that in the first the metallic frame only supports the weight of the floors the masonry walls being self-supporting, while, in the second, the walls rest on the metallic framework story by story.

The date of the invention of skeleton construction coincides with the date on which Bessemer steel began to be used in the United States.

The introduction of steel at commercially acceptable prices marks the dawn of a new era in building science.

With steel building heights may be considered technically unlimited. Steel eliminated the need of columns and made it possible to construct large covered spaces as never before and to add daring projectures and saliences.

Steel made it possible to build bank-halls, railway stations, theatres and all sorts of halls of enormous dimensions without intermediate columns.

No other material possesses as many special qualities, as it adds to the advantage of limited volume, uniform consistency, absence of hidden vices, easy amalgamation with other materials, and resistence to tensible, compressive and shearing stress ten times greater than the best wood.

No sooner had the Bessemer process been adopted in the United States than the qualities of steel became generally appreciated with the result that only few skyscrapers contain iron parts in their framework. The general adoption of *skeleton construction* coincided with *steel skeleton construction.*

Steel skeleton construction requires a number of steel columns whose sections diminish from story to story, joined by girders, beams and trusses that are assembled by riveting.

This framework is covered with an isolating material which rests on the steel framework story by story and forms a veritable screen. The only purpose of this screen is to separate the interior from the exterior and protect the steel frame from changes in temperature and possible fires.

Steel skeleton construction and reinforced concrete doubtless represent the most important building process invented for centuries and they give modern architecture its special character.

The general adoption of steel skeleton construction was nearly instantaneous. The reason for this was its unique qualities which not only permitted the attainment of very great heights — made practical by elevators — but caused a fundamental change in building economy.

Steel sketelon construction meant an immediate saving of 15 % on the normal building cost.

The reduced dimensions and the uniformity of the material employed determined a saving on the cost of material and labor as well.

Most of the work is performed at the foundries. The parts arrive on the building ground ready for assembling. This greatly accelerates the framework erection and saves much time.

Moreover, as the walls rest story by story on the steel framework it is possible to begin the construction of them at different levels simultaneously.

The work can continue all the year round, which adds four months to the ordinary building season.

Apertures may go right up to the line of the steel columns without impairing the resistance of walls.

The adaptability of metal construction is another of its advantages. There are eloquent examples of this. It was curious at the last Sesqui-Centennial Exhibition at Philadelphia to see a steel frame structure sold in order to be taken apart and sent to Sandusky

Ohio, where it was erected again to serve a different purpose.

As to the durability of the structural frame so widely discussed in the beginning we may cite the example of the American Surety Company Building in New York. When a modern annex had to be built the steel structure was found to be entirely intact. And there are cases of skyscrapers demolished after more than thirty years in which all parts were in a perfect state of preservation.

CHAPTER II

EVOLUTION OF THE SKELETON SKYSCRAPER

A

INVENTION OF SKELETON CONSTRUCTION. THE FIRST SKYSCRAPERS

There is a veritable confusion as to who invented the skeleton construction.

Even in studies of undeniable merit, as for instance the very notable work of Architect Harvey Wiley Corbett, this point has not been sufficiently elucidated.

The fact is that the historian who wishes to ascertain the truth meets difficulties which at first seem insurmountable.

We state, for instance, that in 1899 a tablet was placed on the Tower Building (50 Broadway, New York) declaring that it was the first skeleton construction. We add that the same tablet later gave rise to a violent discussion among well-known architects and engineers of the period. We further add that nobody could elucidate this extensive and bitter debate. And it will be realized how difficult it is now to clear up this fundamental, delicate, and very complicated chapter of the " History of the Skyscraper ".

The claims that exist in this respect are numerous: W. L. B. Jenney, Geo. B. Post, Frederick Baumann and L. S. Buffington.

The elucidation of this fundamental question caused me a great deal of research and thought, and I now believe I have formed a clear and unbiassed judgment of it.

My opinion is based on the material found in public libraries, in daily papers, and technical publications of the epoch, which I have gone over in detail. Moreover, on the very valuable documentation in the libraries of certain architects of the time, as for instance in the very notable and unique library of the office of Geo. B. Post & Sons. And finally on letters received from the Architects William B. Mundie (former associate of W. L. B. Jenney) and L. S. Buffington, to which must be added the kind collaboration of the American Institute of Steel Construction that placed a photostat copy of Frederick Baumann's pamphlet at my disposal.

This is the conclusion I have been able to reach :

Like every real innovation in the history of art the skyscraper is the result of an evolution.

The first building in the world whose general characteristics justify its being called the first skyscraper is the Home Insurance Building erected in Chicago during 1883 and 1884.

This is an embryo skyscraper, it is true, but its idea and its metallic framework make it nevertheless a skyscraper.

It has often been asserted that this building is the work of the firm Jenney & Mundie of Chicago. In this respect I particularly wish to refer to a letter I received from Architect William B. Mundie, which impressed me greatly by its noble and chevaleresque spirit of loyalty which does the writer honor.

The relevant paragraph of Mr. Mundie's letter is copied here :

" I entered Mr. Jenney's office as a draughtsman April 1, 1884, and my first work was on the plans for this building. I did not become Mr. Jenney's partner until February 1, 1891. The building should be credited to Mr. W. L. B. Jenney as architect."

Further along he states that when this building is to be demolished, if an arrangement could be made with the wreckers, the exterior walls (except the party walls on the north and east), the walls of the interior court, the interior partitions, the roof and the tile floor arches can be removed and the iron and steel supporting frame will remain as the pioneer " skeleton skyscraper ".

In January 1924 an exterior column of the fifth story was uncovered and the construction studied.

According to the " Financial and Commercial Times " of August 26, 1899, the Bessemer Steamship Company wishing to honor the inventor of the skeleton construction skyscraper undertook an extensive investigation to discover the name which deserved

the honor, and the Company chose to baptize one of its ships with Mr. Jenney's name.

In a statement read before the American Institute of Architects in 1891 Mr. Jenney explained his system in the following terms :

" The condition of a very compressible soil carrying only a light weight per square foot necessitated a different method of construction from those in general use. The piers must be narrow in order that proper space might be left for windows, the walls must not be as heavy as in the old construction, or there would not be sufficient space on the ground for the foundations. A column in each pier was the natural solution of the problem. Lintels between columns, forming heads of windows, carried the street walls story by story, the brick work was reduced to the thickness necessary to hold the window frames or to fireproof the metal columns and lintels."

***

Architect Geo. B. Post used to say that the erection of the Home Insurance Building in Chicago was simultaneous with the construction of the Produce Exchange Building in New York in which the principle of metallic framework was partly used.

Thus, in the Engineering Record of June 15, 1895, we come across the account of the dinner of the Architectural League of New York, celebrated on June 5, 1895, at which Mr. Post, amongst other things mentioned that he had been incidentally connected with the solution of the problem which prepared the way for tall buildings. First, he had introduced passenger elevators in the First Equitable Building completed in 1871, which inaugurated their use for commercial purposes. Then followed metal-cage construction with the framework carrying the panels of the outer walls. In designing the Produce Exchange Building in New York City in 1880 he had supported the four heavy fireproof stories of the interior court on girders of from 40 to 60 feet span, thus first adopting the metal cage for exterior wall construction, and these two features had made the development of very tall buildings possible.

If Mr. Post applied the above mentioned principle only to the walls of the interior court it is due to the fact that the laws of those days did not permit construction in New York of that category of exterior walls. The cost of iron used in the Produce Exchange Building was $ 675,000.

A detailed investigation brought me to the conclusion that in reality the construction of the Home Insurance Building in Chicago could not have exercised any influence on the building system adopted by Mr. Post for the Produce Exchange Building.

The following dates sufficiently bear out my assertion :

I have seen a letter of January 29, 1881, in which the New York Produce Exchange notified Architect Post that his plans had been accepted as worthy of competing for the construction of its new building which proves that these plans were elaborated in the course of 1880.

On the first of July 1881 the demolition of the building which then occupied the ground where the Produce Exchange Building was going to be erected was begun, and the latter was finished in the beginning of 1884 simultaneously with the Home Insurance Building of Chicago.

It is also a fact that the rules and regulations at that time did not permit Mr. Post to construct the exterior walls of the building on a metallic framework.

The foregoing confirmed statements testify that in reality Mr. Post deserves to share, in a certain measure, the honor of having invented the system simultaneously with Mr. Jenney. However, in order to remain an impartial historian I must point out a fundamental difference between their respective works.

First : The metallic structure of the Home Insurance Building was conceived, in general, in the spirit of the framework of modern skyscrapers.

The metallic framework of the Produce Exchange Building was not planned in order to obtain a tall building nor to obtain a foundation adequate for a tall building, but simply to support four heavy fireproof stories.

Second : The Home Insurance Building, by reason of its height, general arrangement, etc., has the characteristics of a skyscraper.

The Produce Exchange Building on the contrary does not, either by its height or its principal features, express any characteristics which in the least justify its being called a skyscraper.

The logical consequence hereof is, that the Produce Exchange Building deserves indisputable merit in the history of building. But the merit due to the Home Insurance Building is that, in its synthesis, it can justly be considered the first skyscraper.

The following phase in the History of the Skyscraper is marked by a pamphlet published in Chicago in December 1884 by Architect Frederick Baumann. This document constitutes the first complete vision of the skeleton construction skyscraper.

To the interest which Mr. F. H. Frankland, Engineer of the Technical Service of the American Institute of Steel Construction, showed my work, I owe the possession of a photostat copy of Mr. Baumann's document, the contents of which is published below :

IMPROVEMENT IN THE CONSTRUCTION OF TALL BUILDINGS

a) There is in life no exception from the laws of competition. It is proper, therefore, to view the matter of building in this light.

b) Occupants seek convenience, secureness and light ; all this, of course, combined with a shine elegance.

c) The highest success in a happy combination of these four points will lead to the highest possible and most permanent rental.

d) Structures wholly composed of iron would in this light be the most preferable, were it possible to clothe them with proper elegance, and were they proof against neighboring fires.

HENCE MY CONCEALED IRON CONSTRUCTION OF TALL BUILDINGS

1. The design is to erect on foundations a firm and rigid skeleton or hull of iron, and cover the same at once with a proper roof.

2. During the time of erecting such iron structure, or hull, from within, the enclosure — be it stone, terra cotta or brick, or any combination of these materials — may be erected from without.

3. But the within work would proceed much faster than the without work. While the hull may be roofed within two months, the enclosure might not have proceeded beyond the fourth story

4. No delay will be caused by this to a steady progress. Derricks may be set on the roof, for finishing the outward enclosure in an easy and convenient way. Large, unwieldy and dangerous tall derricks are discarded.

5. During and at the same time, the interior work would be pushed and brought to an end. The erection of partitions, fire places, vaults, arching of ceilings and lining of exterior walls, would be accomplished.

6. Thus all interior work would be done and made ready for plastering, during the time required for accomplishing the exterior parts.

7. This process would make the work far more independent of weather than is the usual process. The erection of the iron hull is, in its nature, a rapid process.

8. The practicability of erecting buildings on Chicago soil, twelve and more stories high, becomes a fact.

9. Light, the most indispensable desideratum with a building is procured even in the lowest, most valuable, stories, where otherwise the necessarily broad piers would be a hinderment.

10. The piers may not only be made narrow, but shallow also — 27 inches at the most — and this, again, is a saving of light.

11. The iron uprights are to be provided with a series of projecting brackets for the purpose of anchoring and supporting the parts forming the exterior enclosure.

12. These supporting brackets to be so arranged as to allow an independent taking out of any part or portion of the exterior lining, which might have been damaged by fire or otherwise.

13. The iron floor girders are securely fastened to the outward posts at both ends. This imparts firmness to the structure. And more, it enhances the bearing strength of the girders to at least one and a half times their usual strength.

14. The iron floor beams are fastened to the sides of the girders, and will gain thereby at least 20 per cent to their strength.

15. Vaults, partitions, and fire-places may therefore be placed upon the girders without increase to the dimensions of the same, and floor beams may be made lighter than usually.

16. This will enable the expert to save, on the substance of the necessary iron, enough to pay for the extra labor of riveting all parts.

17. A vault 4 feet × 5 feet within, built of porous fire bricks, with walls 9 inches thick, without special (unnecessary) arching, but having light steel plates in its concrete floor and ceiling, will not weigh to exceed four tons.

18. A fire-place built against a partition of light hollow tiles, and with flues specially made of same (fire-clay) material, will not weigh to exceed one ton.

19. Both vault and fire-place may therefore be built at any place, and in any story, upon a girder, without requiring even as much additional strength to iron girders as is gained by the riveting at both ends.

20. The extra cost of iron posts required in exterior walls will be, in an eight-story building, about offset by what is saved on masonry.

21. Buildings with more than eight stories would be — circumstances being equal — the cheapest with my new construction.

The above twenty-one points plead in favor of my *Concealed Iron Construction*, and show it to be a saving in the four most important items in the construction of buildings, which are : Light, Convenience, Space, Time.

Respectfully submitted,

FREDERICK BAUMANN.

The document which was given me by Mr. Frank-

land bore a note written by Mr. Baumann in October 1914, partly reproduced here :

" My first work on the idea was a sketch for a building 50'×200' S. W. cor. Clark & Jackson in 1883, but it was an idle task ; lot was sold and J. W. Root built in 1884 the very neatest building in our city but *not* of iron construction. Frederick Baumann. Oct . 1914."

***

The Tacoma Building constructed in Chicago during 1887 and 1888 by architects Messrs. Holabird & Roche may historically be considered as the second skyscraper, with the difference that the Home Insurance Building is as yet an embryo skyscraper, while the Tacoma Building partly improves the system.

The exterior walls of this building are the first ones in which brickwork was reduced all over to a simple screening of the framework. For the first time in the history of building the brick work of the exterior walls was begun simultaneously at different levels.

In 1888 Architect L. S. Buffington published his project for a 28-story building which holds the double merit of being the first design of an all steel frame building and of a skyscraper of really important height.

This plan was not designed for execution, but that does not deprive it of its merit in the History of the Skyscraper.

Mr. Buffington valiently bore the adverse criticism of the press and the public who in those days were far from realizing the quick success that awaited the skyscraper. He was frequently called a " crank " by the press, and critics emphasized that the expansion and contraction of iron would cause a building to fall into ruins if it were constructed according to his plans, and though iron was all right in its place, it was no good for constructing entire buildings.

***

Finally in 1889 Messrs. Burham & Root finished the construction in Chicago of the Rand McNally Building, which is the first all-steel frame skyscraper built in the world.

Therefore the honor of having invented the skyscraper must be divided.

To Jenney and Post falls the honor of having invented and executed the first metal frames ; Jenney has the honor of having built the first embryo skyscraper ; Holabird & Roche have somewhat improved this embryo skyscraper ; Baumann has the honor of having had the first complete vision of the skeleton skyscraper. Buffington has designed the first building with all-steel frame and the first skyscraper of great height. Burnham & Root have the honor of having constructed the first all-steel frame skyscraper and the honor which falls to all of them together as inventors and initiators of the steel skeleton skyscraper, belongs to the United States of America.

B

THE SKELETON SKYSCRAPER IN NEW YORK. — ITS EVOLUTION

From what I have just stated it will be seen that the skyscraper, contrary to the general belief, was not born in New York but in Chicago.

New York being subject to the building code restrictions, skyscrapers might never have appeared there, or at least not till many years later, when iron and steel had been sufficiently experimented with, in other building circles.

Even after the experiments in Chicago the adoption of the skyscraper encountered serious obstacles in New York on account of the building code restrictions.

The first skyscraper built in New York, the Tower Building (50 Broadway), was completed in 1889.

In the *Times* of August 19, 1899, Mr. Bradford L. Gilbert, architect of the Tower Building said that the lot at 50 Broadway, which scarcely measured 20 feet front, was acquired with the hope of purchasing also the adjacent lot. As, however, the owner had been frustrated in his attempts to buy this second lot, the only alternative left was to build a very high building, or sell the lot with a loss of $ 100,000. The problem being put to Mr. Gilbert, he resorted to skeleton construction in order to build on so limited ground a very tall building which at the same time had thin walls. In this indirect manner the skyscraper came to New York.

The New York Building Law which was in force when the Tower Building was erected prescribed that :

" When any iron or steel column or columns are used to support a wall or part thereof, whether same be an exterior or interior wall, excepting a wall fronting on a street and columns located below the level of the sidewalk which are used to support exterior walls or arches over vaults, the said columns shall be either constructed double, that is, an outer and an inner column, the inner column alone to be of sufficient strength to sustain safely the weight to be imposed thereon, or such other iron or steel column of sufficient strength and so constructed as to secure resistance to fire, may be used, as may be approved by the Superintendent of Buildings."

One can well imagine what difficulties Mr. Gilbert

had to surmount before he obtained authorization to realize his plan.

In 1899 the Society of Architectural Iron Manufacturers of New York placed a tablet in the Tower Building declaring it to be the earliest example of what is now known as " skeleton construction ".

With every reason architects and builders in Chicago protested. Some New York architects contributed to increase the general confusion by pretending that they had built iron skeleton constructions before the Chicago architects. Such statements only refer to cast iron columns inserted in masonry. But in spite of general protests the tablet remained in its place until the Tower Building was scrapped.

The height of the skyscrapers I have just mentioned did not exceed that attained in masonry building mingled with cast iron.

The Old Masonic Temple Building of Chicago constructed in 1892 by Burnham & Root is the first really important skeleton construction skyscraper. Twenty stories high, it was proclaimed the tallest building in the world. Its erection was commented on by the press all over the world as the most notable achievement of modern building science.

The Masonic Temple Building really represents the end of the experimental period. After that, skyscrapers rapidly began to be built all over the country.

Under the stimulus of the elevator, the only reason of pre-skyscrapers and, later on, of skyscrapers lay socially and financially in the desire of owners to obtain a greater revenue from their lots.

However, if this is the historical root of the matter, it is certainly not the reason why the skyscraper has undergone as formidable a development as it has.

The desire of owners to obtain better revenue was the original cause of the first tall skyscrapers. But these forerunners demonstrated the usefulness and saving of time and money in a city's commercial life, obtained by concentrating business within a limited area, thus increasing frequent and rapid contact between business men, as the distinguished Architect Harvey Wiley Corbett so aptly observed.

In Chicago the convenience of concentrating business in the " loop " was stressed. And in New York skyscrapers found a still more favorable field, as business tended to concentrate in the lower part of Manhattan Island : around the port.

In 1892 New York law for the first time made provisions for skeleton buildings, and from that date on skyscrapers rapidly invaded Manhattan.

Skyscrapers of 12 to 21 stories, like Havemeyer, Manhattan Life Insurance, American Surety, New York Life Insurance, Commercial Cable, Gillender, Bowling Green and other buildings, mark the building craze of this first period (1892-98) during which New York began to follow the example of Chicago.

1899 marks an important date in skyscraper history : The St. Paul Building in New York was finished as the tallest building in the world, exceeding the Masonic Temple Building in Chicago.

From that day on the skyscraper, born in Chicago, was definitely " acclimatized " in Manhattan Island. That is where its stupendous evolution takes place, making New York the most typical skyscraper-city in the world.

St. Paul Building having been completed in the beginning of 1899, Park Row Building was finished about the end of the same year. Thus the title of " the tallest building in the world " continued to change rapidly among the towering masses of Manhattan, and it keeps on doing so.

In 1902 the Flat Iron Building attracted the attention of the entire world on account of its audacious construction on a narrow lot. The Times, Singer, and Metropolitan Towers in 1904, 1908, and 1909 mark new height achievements. Finally in 1913 the Woolworth Building was erected with its bold tower pointing heavenwards. This remains the highest pinnacle among buildings raised by man.

In 1915 the Equitable Building with its 1,200,000 square feet of rentable space put up the most grandiose mass in New York's skyline.

In 1916 the Building Zone Resolution, which gave us pyramid-like masses of phantastic proportions, was approved.

The skyscraper was adopted all over the country. In Philadelphia, Cincinnati, Detroit, Cleveland, St. Louis to far-off California : San Francisco and Los Angeles, down to the Southern frontiers in Texas : Houston, El Paso, etc. bold skylines were created.

In New York the erection of a 67-story building has been undertaken and the construction of a 75-story building in Chicago is imminent. And probably buildings of 81 and 110 stories will be erected in respectively Detroit and New York. The latter is destined to soar above all structures erected by man, surpassing the Eiffel Tower.

The modern skyscraper is the complex product of numerous factors, as follows :

Elevators and skeleton construction ;

Electricity which offers adequate lighting ; installation of electric fire alarms; protective alarm systems; ventilating, cleaning and pumping apparatus, interfloor telephones, etc.;

Improved heating plants with their enormous boilers and their thousands of radiators ;

Introduction of terra cotta; development of concrete ; the evolution of foundation systems since 1894 in which year pneumatic caissons were for the first time employed in building foundations.

Finally the skyscraper is the product of the very organization of work in our age which, as never before

in history, has succeeded in disciplining human activities.

In 1927 the number of skyscrapers in Manhattan Island was estimated at 2,000.

According to the Annual Report of the Bureau of Buildings of the Borough of Manhattan, dated December 31, 1927, plans were filed during that year for 65 buildings of more than 12 stories, exclusive of tenement houses. The tallest was a 52-story office building. The total estimated cost of construction during the same year was estimated at $ 290,320,563 covering 714 new and 3,118 altered buildings.

How difficult it would be for a New Yorker who had been absent for forty years to find any feature of the old city panorama which has disappeared under the most formidable constructive force ever recorded!

Buildings which at that time were considered dominating seem to be crushed in by the Babylonic masses of the new city. This represents the highest efforts of man, the greatest achievement of architecture in our century, and the climax of constancy and order, which by coordinating the efforts of poor pygmies has made it possible to build the most stupendous city on earth.

CHAPTER III

ARCHITECTURE OF THE SKYSCRAPER

The history of skyscraper architecture is but a chapter in the architectural history of the United States of America, which in turn is only a chapter in the architectural history of the American Continent.

In the United States of America, as well as in the Latin American countries, architecture of the first period of European domination was a simple — and bad — copy of what was done in Europe in those days.

In the later epochs of European domination a purifying and well-guided reaction takes place, which by adapting styles in fashion in Europe created the so-called " colonial style " of which such beautiful models are left.

In the present territory of the United States of America the colonial style comprises, moreover, the Georgian Colonial, of English origin, the Dutch Colonial, of Dutch origin, and the Mexican Colonial style of Spanish origin.

After the independence had been attained, the country was not only deprived of the direct influence of English architecture, but it expressly repelled every English influence.

This brusque scission of the development, which architecture had been undergoing during colonial days gave origin to a period of marked decadence which lasted about a century.

Inconsistent and confused architecture filled this long period, during which only very few buildings expressed in full the qualities requisite in real architectonic composition.

The Cathedral of St. Patrick in New York, begun in 1856, and a few other churches are exceptions to the rule.

Shortly after 1870 the necessity of a reaction against this chaos began to be felt.

The merit of the architects who undertook the work of purification is great, and their names ought to figure in a place of honor as those who reclaimed architecture in the United States.

With his French palaces in Fifth Avenue, his Tribune Building, one of the first pre-skyscrapers, and his other notable buildings, Richard Morris Hunt contributed in no little measure to re-establishing real architecture in the country.

It was the strong personality of H. H. Richardson who, as the first after the independence, gave the architecture of the country a frank impetus towards a determined style. This is seen in his beautiful and original adaptations of the Romanesque Style, among which the Trinity Church of Boston is preëminently masterly.

Richardson had several followers and the Romanesque Style, which developed over a great part of the country, is not alien to the first years of the skyscraper. Various skyscrapers of Chicago and the Old Times Building of New York offer examples of that style.

During this same epoch in which the Romanesque style was adopted so successfully all over the country arose the personality of Charles F. McKim who, with his adaptations of the Renaissance Style, opened up a new path to the architectonic resurrection of those days.

It is due to the work of these and other inspired architects that the architecture of the United States of America has come to occupy the place which it ought to have taken in the development of the country directly after the civil war was ended.

Hunt and Richardson studied architecture in Paris. The architectonic resurrection brought about the foundation of the first school of architecture in the United States in connection with the Massachusetts Institute of Technology.

The birth of the skyscraper then takes place during a period in which Richardson's romanesque and

McKim's classical style waged a bitter feud in the country.

Traces of both styles are therefore found in the early skyscrapers.

However, the battle was not long ; the World Fair marked the definitive triumph of the classical style over the romanesque.

From then on architecture all over the country developed frankly on classical lines.

The defeat of the romanesque style is due to the fact that its spirit is completely alien to the American Continent.

The renaissance of classical forms indicated at bottom a great desire of finding an appropriate architectural expression.

At this historical pass, as in the beginning of the colonial period, it was unfortunately forgotten that a means of expression was already at hand in the architecture of the primitive races of America. Instead it was chosen to resort to the classical style which indirectly resumed the interrupted development of colonial architecture : the only architectural form in contemporary history of the American Continent which was at least intelligently adapted.

And thus it was as if the soul of the colonial days and the renaissance spirit of Sir Christopher Wren were reincarnated in a new and strong classical tendency which continued to prevail for years in the United States and even now competes with the modern forms which are advancing in full force.

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CLASSICAL ARCHITECTURE OF THE SKYSCRAPER

The influence of the romanesque style in skyscraper architecture was so slight, (being apparent only in a few early skyscrapers) that skyscraper history — architecturally speaking — may be considered as practically starting with the classical style.

The history of classical style in skyscraper architecture may be divided into two quite distinct periods : The first covers the embryonic period of the skyscraper, between 1884 and 1913.

The second covers the period of the development of the skyscraper, or from 1913 to 1926.

The characteristic type of the first period is known under the name of " shaft ", inspired by the column and the type of superpositions which aesthetically group a number of classical structures one on top of the other until the desired height is attained.

Examples of both types are quite evident among the plates of this book.

It is very easy to criticise this historical period now, emphasize the causes of its breakdown and indicate which of its fundamental errors were corrected by introduction of the Gothic style. But for this criticism to be complete it must also emphasize the nearly insurmountable obstacles confronting skyscraper-architecture at that time ; the striving and endeavors of architects of those days must also be related. And it must be acknowledged without bias that if they did not succeed in solving the problem, they certainly have the very great merit of having located, and clearly pointed out, the problems that needed attention and of having indicated new guiding principles and possible paths.

The solution of an architectural problem is hardly ever final until a number of possibilities have been presented, discussed and rejected. But all of these are mutually linked by an indestructible bond and although the first ones are rejected and do not serve as a final solution they often open up new horizons.

The efforts spent in the first experiments to solve a new problem are the most thankless and least compensated in the sight of the world, but that does not always mean they are not of great value.

The struggle in the dark demands huge efforts, and when at last light is found the finder often forgets that to have attained it he has ascended on the pedestal of the unknown sacrifices of others that went before him.

I do not wish that the criticism of this historical period — a criticism which is but the rational explanation of the following periods — should in any sense be construed to express a desire, however slight, to deprive the very notable architects, who worked at that critical moment, of the undeniable and great merit due to them professionally as the first pioneers who opened the new path which is now a just source of pride to the United States : skyscraper-architecture.

In this early classical period the first competitions for construction of skyscrapers took place.

Thus in 1892 the Manhattan Life Insurance Company called a competition for the construction of its building on Broadway, and the American Surety Company repeated the experiment on its part in 1894.

These competitions provoked the first discussions on the new architectural styles between architects, once more demonstrating the disconcerting difficulties that sprang up everywhere.

In the *Tribune* of December 30, 1894, I find the opinions of several of the architects who participated in these competitions.

Architect Bruce Price, who with every justification won the contest of the American Surety Co. Building, declares that, in his opinion, when a skyscraper can be constructed in a square lot and it is possible to have four fronts it might be a fine addition to the city, and he thinks that construction of this sort of skyscraper should be encouraged.

The distinguished and well-known architect,

Mr. Thomas Hastings, expresses the following opinion in the same periodical :

" From the artistic point, it is admitted by almost every one who has tried to solve the problem that the limitations are almost insurmountable. The extreme height, tending to the treatment of every building as a tower, on the one hand ; the exaggerated demand for light, which destroys all possibility of wall surfaces, which are requisite to the design of a beautiful tower, and the impossibility, owing to fire laws and other regulations, of using even the structural features of the building to accentuate the design, have resolved the problem into vain attempts resulting either in absolute monotony, expressive only by its size, or absolute decoration of wall surfaces."

"A tower has always been intended as an isolated feature. The grouping together, side by side, of towers on both sides of a street cannot possibly produce under any circumstances an artistic result. "

In reality the application of the classical style in this first period was expressed in a false interpretation of stone architecture, with heavy hewn stone and cornices which covered the metallic structure, completely masking its spirit. But the fundamental error of this first phase lay, (as I have already indicated in the introduction to this book where I speak of the skyscraper) in the lack of *unity*, so essential to architectonic composition, and it was this fundamental defect which caused the introduction of the Gothic style.

With the construction of the Woolworth Building 1913 marks the end of the embryonic period of the skyscraper, and the beginning of its period of frank development. This building in which the Gothic style, as evidenced in former experiments, had been disciplined and corrected, was the first example of a perfect solution of unity and verticality.

From then on the classical style was strongly, although indirectly, influenced by the Gothic style. A type of composition became more and more frequent, indicated already in certain buildings of the first period, like the Bankers Trust Building of New York ; its characteristic feature was an upper structure ending in a sort of small temple, with columns, pillars, or simple pilasters.

During this second period the classical style limits its cornices more and more and simplifies its elements in order to emphasize the lines.

This period produced buildings of great beauty and noble proportions, like the Cunard (New York), Standard Oil (New York), and other buildings which mark the climax of the classical style in skyscraper architecture.

Finally, in 1926 the construction of the New York Telephone Building proclaims the triumph of the modern school, which already had made a few tentative attempts.

Nowadays the Gothic style in skyscraper architecture tends to disappear, and the battle stands between the modern forms which are strongly advancing and the classical which has numerous and powerful supporters.

Among the partisans of the classical school the personality of my learned friend, Architect Thomas Hastings, is without doubt one of the most impressive, wherefore I feel that his opinion can be cited as one of the most representative of the classical tendency at present.

In his very interesting study entitled :

Modern Architecture Mr. Hastings among other things expresses the following ideas :

" Surely modern architecture should not be the deplorable creations of the would-be style inventors, the socialists who have penetrated the world of art farther than they have the world of politics, who are more concerned in promulgating an innovation than in establishing a real improvement — so-called Futurists, New Thinkers, Cubists, " art nouveau " followers, all unrelated to the past without thought of traditions. No more should modern architecture be the work of the illogical architect, living in one age and choosing a style from another, without rhyme or reason, to suit his own fancy or that of his client."

" Only the most radical changes in the history of civilization, such as, for example, the dawn of the Christian era and of the Reformation and the revival of learning, have brought with them correspondingly radical changes in architectural style."

" *We are still living today in the period of the Renaissance.* With the revival of learning, with the new conceptions of philosophy and religion, with the great discoveries and inventions, with the altered political systems, with the fall of the Eastern Empire, with the birth of modern science and literature, and with other manifold changes all over Europe, came the dawn of the modern world ; and with this modern world there was evolved what we should now recognize as the modern architecture, the Renaissance, which pervaded all arts and which has since engrossed the thought and labor of the first masters in art. This Renaissance is a distinctive style in itself, which, with natural variations of character, has been evolving for almost four hundred years."

" Therefore whatever we now build, whether church or dwelling, the law of historic development requires that it be Renaissance, and if we encourage the true principles of composition it will involuntarily be a modern Renaissance, and with a view to continuity we should take the eighteenth century as our starting-point, because here practically ended the historic progression and entered the modern confusion. "

GOTHIC ARCHITECTURE OF THE SKYSCRAPER

Unjust criticism has often been made of the Gothic influence on skyscraper-architecture, accusing it of pursuing as its essential aim the introduction of its forms into the United States.

Such criticism, besides being biased, appears to me to be entirely void of historical truth.

The Gothic style was not introduced in skyscraper architecture with the object of imposing a foreign style upon the country.

Such an idea would have been puerile after having witnessed the defeat of Richardson's school in his effort to introduce the Romanesque Style.

The appearance of the Gothic Style in skyscraper architecture was due to a supreme effort to solve the problem of unity and verticality.

It is necessary to view any criticism of that period from this standpoint establishing firmly that the Gothic style was not an *aim* in skyscraper architecture, but simply and essentially a *means* to arrive at an end.

The first important attempt in this style is seen in the West Street Building of New York, constructed by architect Cass Gilbert in 1905. From that date the Gothic spirit germinated in Mr. Gilbert's mind and culminated in the construction of the Woolworth Building in 1913 which marked the triumph of the Gothic style.

In a conversation I once had with Mr. Cass Gilbert he explained his idea to me in the following terms :

" The Gothic style " he said, " does not solve the problem of verticality alone. To me a skyscraper, by its height which makes its upper parts appear lost in the clouds, is a monument whose masses must become more and more inspired the higher it rises. The Gothic style gave us the possibility of expressing the greatest degree of aspiration." In order to illustrate his idea he began to sketch the outline of an enormous tower with a nearly square base. " You see " he said, " the Gothic style follows the structural line and at the same time gives an inspired effect to its great bulk. It makes its principal body, with its thousands of windows framed in the pillars, proper to the style, (which so frankly gave predomination to the vertical line) rest on a base proportionate to its total height. Finally the upper structure ends by pointing its summit into the vault of the sky. This pinnacle is not isolated but is accompanied by other secondary points surrounding it and imparting a sense of the ultimate rhythm, of the ultimate note of the mass gradually gaining in spirituality the higher it mounts."

" To me," he added, " A Gothic skyscraper is like a musical harmony like Stabat Mater, whose final notes give us the highest pitch of emotion before they are lost in the silence."

In the history of the Gothic style special mention should be made of two plans by architects Messrs. Howells & Stokes which, though they were not carried out, have the merit of having presented valuable solutions about this same year : 1913. The first plan is a competition drawing presented at the contest for the New Municipal Building of New York, the second, a plan for construction of the Trinity Tower in the same city. The latter, moreover, holds the merit of having been one of the first studies tending to simplify the Gothic style.

During the following years the Gothic style was adopted all over the country.

Finally the construction of the Tribune Tower in Chicago in 1925 marks the apogee of this period.

The contest held for the construction of that building represented the most important effort ever made in skyscraper architecture.

Its world echo, the number, variety and quality of works presented, the competence of the jury entrusted with the decision were precious factors for accelerating the evolution of the skyscraper.

In his statement as Chairman of the Jury, architect Alfred Granger made the following comments which really formulate an exact historic truth :

" One gratifying result of this world competition has been to establish the superiority of American design . Only one foreign design stands out as possessing surpassing merit, and this truly wonderful design did not come from France, Italy or England, the recognized centers of European culture, but from the little northern nation of Finland. The two Finnish designs express a unity of composition, a grasping of the problem as a whole, which was not achieved by any of the other foreign competitors nor by any of the American designers, but this unity of composition and truthful expression of the plan have been qualities which have brought about the unanimous decision of the Jury."

According to what my distinguished friend, architect Mr. John Mead Howells declared to me, the plan which obtained the prize, executed by him together with architect Raymond M. Hood, holds a certain inspiration from the Butter Tower of Rouen and the Tower of Malines.

In the declaration which both architects published in *The Architectural Forum* of October, 1925, the assertion which I made at the beginning of the study of this period is confirmed. Here are the words of the architects of the Tribune Tower :

" Our desire has been not so much to secure an archaeological expression of any particular style as to express in the exterior the essentially American problem of skycraper construction, with its continued vertical lines and its inserted horizontals. It is only carrying forward to a final expression what many of

us architects have tried already under more or less hampering conditions in various cities. We have wished to make this landmark the study of a beautiful and vigorous form, not of an extraordinary form."

The most sincere confirmation of the foregoing declaration consists in the conversion of both architects to modern forms after they had obtained such a resounding and merited triumph through the Gothic style.

The longer architects applied the Gothic style the more convinced they became that it was possible to exploit the spirit of its vertical lines without therefore being obliged to accept all its decorative forms.

The foregoing evidence implies a simplification of the Gothic style from which interesting adaptations have been made.

The tendency towards simplicity took place exactly at the time when the modern school made its first appearance in the United States.

MODERN ARCHITECTURE OF THE SKYSCRAPER

The classical style fell through because its stone architecture had no relation to the material employed in the construction of the skyscraper, because its cornices were no longer useful at the new heights, because its columns were inadaptable to these new heights, and its proportions obliged to aesthetical superposing of a number of structures breaking all unity of composition, and finally because its principles apply to a horizontal architecture, and what the skyscraper needed was above all a vertical architecture.

The Gothic style only served as a model for verticality and unity and for keeping projectures within proper proportions. As soon as these problems were solved, skyscraper architecture regained self-reliance.

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The modernistic movement appeared as a logical reaction against the ballast of traditional forms which made us but clever copy-masters of the past.

We are traversing a critical period such as always follows momentarily upon any sudden reaction. But out of all the individual tendencies a moderate school begins to crystallize. This sees the necessity of breaking away from the consecrated forms it wants to create a new path, but without forgetting experiences and traditions of the past.

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Let our architecture be modern, let us stress the tendency to simplify which so perfectly suits the spirit of speed and utility of our century. Let us interpret the new building systems and materials and express the soul of our age in decorative art. But in so doing let us not cease to contemplate our environment, nor forget the history of our architecture which we must not copy slavishly but penetrate into with the ardor and love due our heritage. Thus our work will bear the clear and unequivocal imprint of a period of evolution, and not of a capricious and decadent period.

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The skyscraper would not have found itself so quickly if modern architecture had not intervened.

The skyscraper being an entirely new problem it is only logical that its architecture seeks entirely new paths.

Modern art gave the skyscraper an opportunity to get away from forms which would certainly have arrested its evolution.

The design awarded second price in the contest for the construction of the Chicago Tribune Tower was the first important achievement of the modern school.

The very beautiful Telephone Building in San Francisco marks, in 1925, the end of the preliminary stage.

And the erection of the New York Telephone Building in 1926 is the first work expressing skyscraper-architecture in a spontaneous, sincere and modern manner.

Thus in scarcely over two years very notable buildings have been constructed and planned like the Graybar (New York) ; Harriman (New York) ; 2 Park Avenue (New York) ; 333 North Michigan Avenue (Chicago) ; Title Insurance (Los Angeles) ; Pennsylvania Power & Light (Allentown) ; Union Trust (Detroit) ; New Jersey Bell Telephone (Newark) ; R. J. Reynolds Tobacco (Winston Salem) ; Palmolive (Chicago) ; Chicago Daily News (Chicago) ; New Yorker Hotel (New York) ; News (New York) ; Chicago Tower (Chicago) ; American Exchange (New York) and many other buildings all of which by their harmonious masses eloquently proclaim the triumph of the modern school.

In the history of architecture in the United States there have been three opportunities for a renaissance by developing primitive architectural styles of America : the first vanished with the beginning of colonization ; the second was just after the period of decadence following American independence ; and the third is the present which is more propitious than any preceding period.

Primitive American architecture has approached us miraculously through modern skyscrapers, because architects are seeking inspiration in alien styles of architecture closely resembling our primitive style.

Below are cited the interesting observations of Mr.

H. D. Ives, in *The Voice* of February 1927, concerning the architecture of the French Building :

" Color has always played an important part in the architecture and decoration of the East and Far East, so it was natural that we should turn to the early work in these countries for our guidance. As the likeness of the mass of the French Building recalled strongly the form of the Assyrian Ziggurats, or observation towers, such as the Tower of the Seven Planets at Babylon, the walls of each terrace of which were built entirely of enameled brick in various colors, we felt we might safely adapt these Assyrian or Chaldean forms of ornament, which are peculiarly suitable to large flat surfaces, rather than the Byzantine and Greek forms in which arches and columns are the dominating motifs."

Does not this statement amply prove that the present moment is propitious for a renaissance of primitive American architecture which offers the same characteristics as the Assyrian and Chaldean with the added advantage of being peculiar to our Continent ?

And the same question may be repeated on contemplating the beautiful reliefs of the Graybar Building in New York, or the Building at 333 North Michigan Avenue, Chicago, the Title Insurance Building, Los Angeles, or the extremely fine decorations of 2 Park Avenue Building in New York, for they all unconsciously recall the forms peculiar to our Continent.

We just need to take one small final step to have created an art that reflects modern American life, and not only modern cosmopolitan life.

CHAPTER IV

SKYSCRAPERS IN RELATION TO CITY PLANNING

A

Anarchical development of skyscrapers. History of the New York Building Zone Resolution.

The development of the skyscraper in its first period was completely anarchical.

The New York Building Zone Resolution, adopted July 25, 1916, is really the first serious and important set of regulations in respect of skyscrapers.

Prior to that various American cities applied absolute height regulations, as for instance :

Washington : In a business street the maximum height must not surpass the width of the widest abutting street increased by 20 feet in no case 130 feet.

In a residential street the maximum height is 85 feet.

Boston (since 1904) : Business section : 125 feet. Residential section : 80 feet.

Los Angeles : 13 stories, or ca. 150 feet.

Baltimore : 175 feet.

Indianapolis : 200 feet.

Thanks to the kind co-operation of Mr. Geo. B. Ford, Consultant Architect of the Commission on Building Districts and Restrictions of the City of New York, I have been able to obtain the necessary documentation on the history of the Building Zone Resolution.

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On February 27, 1913, the Board of Estimate and Apportionment authorized the nomination of a " Heights of Buildings Committee " on the grounds that the " time has come when effort should be made to regulate the height, size, and arrangement of buildings erected within the limits of the City of New York, in order to arrest the seriously increasing evil of the shutting off of light and air from other buildings and from the public streets, to prevent unwholesome and dangerous congestion both in living conditions and in street and transit traffic and to reduce the hazards of fire and peril to life."

The Mayor then appointed this Committee which in turn appointed an Advisory Commission. This Commission presented its report on December 23 of the same year.

The report was based on detailed investigation of the conditions existing in New York and other American and foreign cities. The urbanization of the German cities was greatly stressed as an example in point. Moreover, the Commission was in contact with experts representing all social, professional and commercial activities of the city.

In the report the harmfulness to cities of the existing general chaos was pointed out, and recommendation was made for district division, making special regulations for each district in accordance with its main use. The report concluded by declaring that reasonable and appropriate regulations were constitutional under the general police powers of the State.

On May 22, 1914, the Board of Estimate and Apportionment, in virtue of the law approved by the Governor April 20 of the same year, authorized the appointment of the Commission on Building Districts and Restrictions.

This Commission continued the work commenced by the Heights of Buildings Committee.

It studied distribution of population, transit facilities, distribution of factory employees, and land values throughout the city. Maps were made of each borough showing lines of communications and building development at various periods and marking the special use of the buildings, whether residential, business, or industrial.

The Commission first drafted a " tentative report " with the object of sounding public opinion.

This report was widely distributed among the interested elements in the city, and accompanied by maps and illustrative documents.

Public opinion proved favorable to the plan in which a few insignificant modifications were introduced in accordance with suggestions which seemed justified.

Finally, on June 2, 1916, the Commission presented its Final Report which is a historical and technical document of great interest. Unfortunately it is too voluminous to be reproduced integrally, but I wish to cite some parts of it :

It begins by asserting that " City planning is a prime need of our city. It is plain common sense to have a plan before starting to build. City building is no exception to the rule. Haphazard city building without a comprehensive plan is ruinous."

Later on it adds : " As has been stated by the Committee on the City Plan of the Board of Estimate : " With or without a comprehensive city plan, the city will probably spend hundred of millions of dollars on public improvements during the next thirty years. In addition, during this same period, property owners will spend some billions of dollars in the improvement of their holdings. To lay down the general lines of city development so that these expenditures when made will in the greatest possible measure contribute to the solid and permanent upbuilding of a great and ever greater city — strong commercially, industrially and in the comfort and health of its people — furnishes the opportunity and the inspiration for city planning."

" No plan for the development of public facilities can be complete and effective unless there goes with it a comprehensive plan for the control of building development on private property."

In the chapter referring to the " Appropriate Intensity of the Use of Land " it says : " The maximum beneficial use of any given block or area is dependent on a certain measure of uniformity in its development as regards height, yards, and open spaces. Such use would, in general, be enhanced if the property owners could enter into an agreement uniformly restricting the height of buildings and fixing the minimum area of courts and yards. The size of courts and yards is in most cases of as much benefit to a man's neighbors as to himself. It is therefore appropriate that each should contribute in substantial equality to the common stock of light and air. There can be no maintenance of healthful conditions of light and air and no stability of values if each individual owner is at liberty to build to any height and over any proportion of his lot without regard to his appropriate and reasonable contribution to the light and air of the block."

In the chapter referring to " Height Districts " the report defines the criterion that is being applied in the following terms :

" The Commission has modified the strict application of the multiple of street width rule byproviding that for the purpose of computing the limiting height on the multiple of the street width basis a street less than 50 feet wide shall be considered to be 50 feet wide, and a street more than 100 feet wide shall be considered to be but 100 feet wide. In other words, the multiple of street width rule is not applied to very narrow streets, nor is it applied to streets of more than a prescribed width. There is for each district a minimum height that will be permitted and a maximum height that may not be exceeded, regardless of the width of the street. This modification is customary in building height regulations based in general upon street width. It is clear that a general multiple if applied to all narrow streets in the business center might seriously interfere with an appropriate and reasonable use of the land. On the other hand, if the general street width multiple were applied without limit to very wide streets and open spaces, it would result in an excessive and inappropriate height for a few buildings that would be a serious injury to the light of the neighbors on the sides and in the rear. Moreover, in the interest of safety in case of fire and of the prevention of street congestion in the side streets, it is appropriate that a maximum height at the street line be established for each district."

B

Text of the New York Building Zone Resolution.

Certain points of the New York Building Zone Resolution were later amended.

Below are cited the most important parts of the said Zone Resolution as in force when this book goes to press, that is, copied from the Building Code of January 1, 1926.

Article II.

USE DISTRICTS

Paragraph 2. *Use Districts.* — For the purpose of regulating and restricting the location of trades and industries and the location of buildings designed for specific uses, the City of New York is hereby divided into three classes of districts : 1) residence districts, 2) business districts and 3) unrestricted districts ; as shown on the amendment use district map which accompanies this resolution and is hereby declared to be part hereof.

Paragraph 3. *Residence Districts.* In a residence district no building shall be erected other than a building, with its usual accessories, arranged, intended or designed exclusively for one or more of the following specified uses :

1) Dwellings, which shall include dwellings for one or more families and boarding houses and also hotels which have thirty or more sleeping rooms.

2) Clubs, excepting clubs the chief activity of which is a service customarily carried on as a business

3) Churches.

4) Schools, libraries or public museums.

5) Philanthropic or eleemosynary uses or institutions, other than correctional institutions.

6) Hospitals and sanitariums.

7) Railroad passenger stations.

8) Farming, truck gardening, nurseries or greenhouses.

Paragraph 5. *Unrestricted Districts.* — The term " unrestricted district " is used to designate the districts for which no regulations or restrictions are provided by this article.

Article III.

HEIGHT DISTRICTS

Paragraph 8. *Height Districts.* — For the purpose of regulating and limiting the height and bulk of buildings hereafter erected, the City of New York is hereby divided into eight classes of districts : *a*) one-quarter times districts ; *b*) one-half times districts ; *c*) three-quarter times districts ; *d*) one times districts ; *e*) one and one-quarter times districts ; *f*) one and one-half times districts ; *g*) two times districts ; *h*) two and one-half times districts ; as shown on the amended height district map which accompanies this resolution and is hereby declared to be part hereof.

a) In a one-quarter times district no building shall be erected to a height in excess of one-quarter times the width of the street, but for each two feet that the building or portion of it sets back from the street line one foot shall be added to the height limit of such building or such portion thereof.

b) In a one-half times district no building shall be erected to a height in excess of one-half times the width of the street, but for each one foot that the building or a portion of it sets back from the street line one foot shall be added to the height limit of such building or such portion thereof.

c) In a three-quarter times district no building shall be erected to a height in excess of three-quarter times the width of the street, but for each one foot that the building or a portion of it sets back from the street line one foot shall be added to the height limit of such building or such portion thereof.

d) In a one times district no building shall be erected to a height in excess of the width of the street: but for each one foot that the building or a portion of it sets back from the street line two feet shall be added to the height limit of such building or such portion thereof.

e) In a one and one-quarter times district no building shall be erected to a height in excess of one and one-quarter times the width of the street, but for each one foot that the building or a portion of it sets back from the street line two and one-half feet shall be added to the height limit of such building or such portion thereof.

f) In a one and one-half times district no building shall be erected to a height in excess of one and one-half times the width of the street, but for each one foot that the building or a portion of it sets back from the street line three feet shall be added to the height limit of such building or such portion thereof.

g) In a two times district no building shall be erected to a height in excess of twice the width of the street, but for each one foot that the building or a portion of it sets back from the street line four feet shall be added to the height limit of such building or such portion thereof.

h) In a two and one-half times district no building shall be erected to a height in excess of two and one-half times the width of the street, but for each one foot that the building or a portion of it sets back from the street line five feet shall be added to the height limit of such building or such portion thereof.

Paragraph 9. *Height District Exceptions.* — *a*) On streets less than 50 feet in width the same height regulations shall be applied as on streets 50 feet in width and, except for the purposes of paragraph *d* of this section, on streets more than 100 feet in width the same height regulations shall be applied as on streets 100 feet in width.

b) Along a narrower street near its intersection with a wider street, any building or any part of any building fronting on the narrower street within 100 feet, measured at right angles to the side of the wider street, shall be governed by the height regulations provided for the wider street. A corner building on such intersecting streets shall be governed by the height regulations provided for the wider street for 150 feet from the side of such wider street, measured along such narrower street.

c) Above the height limit at any level for any part of a building a dormer, elevator bulkhead or other structure may be erected provided its frontage length on any given street be not greater than 60 per cent

of the length of such street frontage of such part of the building. Such frontage length of such structure at any given level shall be decreased by an amount equal to one per cent of such street frontage of such part of the building for every foot such level is above such height limit. If there are more than one such structure, their aggregate frontage shall not exceed the frontage length above permitted at any given level.

d) If the area of the building is reduced so that above a given level it covers in the aggregate not more than 25 per cent of the area of the lot, the building above such level shall be excepted from the foregoing provisions of this article. Such portion of the building may be erected to any height, provided that the distance which it sets back from the street line on each street on which it faces, plus half of the width of the street, equals at least 75 feet. But for each one per cent of the width of the lot on the street line that such street wall is less in length than such width of the lot, such wall may be erected four inches nearer to the street line.

e) When at the time plans are filed for the erection of a building there are buildings in excess of the height limits herein provided within 50 feet of either end of the street frontage of the proposed building or directly opposite such building across the street, the height to which the street wall of the proposed building may rise shall be increased by an amount not greater than the average excess height of the walls on the street line within 50 feet of either end of the street frontage of the proposed building and at right angles to the street frontage of the proposed building on the opposite side of the street. The average amount of such excess height shall be computed by adding together the excess heights above the prescribed height limit for the street frontage in question of all of the walls on the street line of the buildings and parts of buildings within the above defined frontage and dividing the sum by the total number of buildings and vacant plots within such frontage.

f) Nothing in this article shall prevent the projection of a cornice beyond the street wall to an extent not exceeding five per cent of the width of the street nor more than five feet in any case. Nothing in this article shall prevent the erection above the height limit of a parapet wall or cornice solely for ornament and without windows extending above such height limit not more than five per cent of such height limit, but such parapet wall or cornice may in any case be at least five and one-half feet high above such height limit.

g) The provisions of this article shall not apply to the erection of church spires, belfries, chimneys, flues or gas holders.

h) Where not more than 50 feet of a street frontage would otherwise be subjected to a height limit lower than that allowed immediately beyond both ends of such frontage, the height limit on such frontage shall be equal to the lesser of such greater height limits.

i) If an additional story or stories are added to a building existing at the time of the passage of this resolution, the existing walls of which are in excess of the height limits prescribed in this article, the height limits for such additional story or stories shall be computed from the top of the existing walls as though the latter were not in excess of the prescribed height limits and the carrying up of existing elevator and stair enclosures shall be exempted from the provisions of this article.

Article IV.

AREA DISTRICTS

Paragraph 10. *Area Districts.* — For the purpose of regulating and determining the area of yards, courts and other open spaces for buildings hereafter erected, the City of New York is hereby divided into six classes of area districts : A, B, C, D, E, and F ; as shown on the amended area district map which accompanies this resolution and is hereby declared to be part hereof.

Paragraph 24. *Amendments, Alterations, and Changes in District Lines.* — The Board of Estimate and Apportionment may from time to time on its own motion or on petition, after public notice and hearing, amend, supplement, or change the regulations and districts herein established. Whenever the owners of 50 per cent or more of the frontage in any district or part thereof shall present a petition duly signed and acknowledged to the Board of Estimate and Apportionment requesting an amendment, supplement, change or repeal of the regulations prescribed for such district or part thereof, it shall be the duty of the Board to vote upon said petition within 90 days after the filing of the same by the petitioners with the secretary of the Board. If, however, a protest against such amendment, supplement or change be presented, duly signed and acknowledged by the owners of 20 per cent or more of any frontage proposed to be altered, or by the owners of 20 per cent of the frontage immediately in the rear thereof, or by the owners of 20 per cent of the frontage directly opposite the frontage proposed to be altered, such amendment shall not be passed except by the unanimous vote of the Board.

C

IMITATION OF THE INITIATIVE OF NEW YORK THROUGHOUT THE COUNTRY. CITIES THAT HAVE FOLLOWED ITS EXAMPLE. STUDIES AND PROJECTS OF THE U. S. DEPARTMENT OF COMMERCE. STANDARD CITY PLANNING ENABLING ACT.

The New York Building Zone Resolution deserves great praise on all points. However, taken as a whole, the just criticism has been advanced that the regulations did not go far enough.

It does reveal a certain spirit of timidity : The " unrestricted districts " seem to be exceedingly numerous, and, in respect of " residence " and " business" districts I believe it will be right to stress the restrictions more, so as to exercise a more beneficial control over the city's future development and solve the already urgent problems created by the agglomeration of skyscrapers in certain zones.

The practical effect of the New York Building Zone Resolution was so favorable and prompt that cities all over the country took up the idea.

Thus, in September 1921, 48 cities and towns representing a population of 11,000,000 had adopted zoning ordinances.

In January 1923, 159 municipalities already benefited from the advantages of zoning.

This number increased to 221 in January 1924, and to 320 in January 1925, representing a population of 24,000,000.

Finally, in July 1927, 553 cities, towns and villages representing 30,000,000 inhabitants had adopted zoning ordinances.

From the Report on Zoning Laws and Ordinances by the Division of Building and Housing, dated July 1, 1927, I cite the following paragraph :

" Zoning ordinances have been adopted by cities, towns and villages of all sizes. Of the sixty-eight largest cities having over 100,000 population each, 52 of that number, headed by New York, Chicago, St. Louis, Boston, Baltimore, Pittsburgh and Los Angeles, have zoning ordinances in effect. The city of Cleveland, Ohio, adopted an interim zoning ordinance late in 1926, and is now preparing a comprehensive ordinance regulating the use, height and area of buildings. New Orleans, La., while it has a piece-meal zoning ordinance now in effect, is preparing a comprehensive ordinance. Louisville, Ky., is actively engaged in preparing a comprehensive ordinance. Philadelphia Pa., and Detroit, Mich., the two largest unzoned cities, are now making zoning studies ; and there are many other cities, towns and villages having zoning authority that are now seriously studying the subject.

Grouped according to population the 553 zoned municipalities are classified as follows :

52 municipalities having over 100,000 population

46 municipalities having from 50,000 to 100,000 population

75 municipalities having from 25,000 to 50,000 population

96 municipalities having from 10,000 to 25,000 population

97 municipalities having from 5,000 to 10,000 population

138 municipalities having from 1,000 to 5,000 population

49 municipalities having less than 1,000 population.

While Mr. Herbert Hoover was Secretary of Commerce he had the splendid idea of appointing an Advisory Committee on Zoning to study in detail this problem which was of such vital importance to the development of the country.

I have in my possession all the studies which the said Committee has produced. They all appear to me to be of very considerable interest, timely, and reveal great common sense.

I specially wish to refer to two, which I consider the most important, and select from them the parts that most directly relate to skyscrapers.

The first study is entitled : " A Brief Comparison of the Use and Height Regulations in Sixteen Cities." It appeared in two parts, the first published in 1924, the second in 1925.

Referring to the Use Districts the study in question says :

" The sixteen cities chosen for comparison have from three to eight classes of *use* districts in which certain uses are permitted or prohibited. All but one of the cities have residential, business and industrial districts, and some add unrestricted districts.

" Many cities have one class of *residence districts* ; some have two classes ; and a few three. More than half the cities have only one class of *business districts* rather than two or more ; while more than half have at least two classes of industrial districts. The unrestricted district does not occur in any of the cities which have more than one class of industrial districts."

I also wish to cite the entire chapter referring to Height Districts :

" Height limits in zoning ordinances are prescribed in terms of feet, or stories, or in relation to the width of the street on which the buildings abuts. Many of the cities have four height districts, although three and five are not uncommon. New York has six height districts, and none of the sixteen cities has less than three. In most cases the height districts are established apart from use and area districts, and separate height districts maps are prepared in most cases, but in a few of the cities height regulations are applicable to designated use districts previously established.

Methods of Limiting Heights.

All but one of the cities limit height of buildings in terms of feet. A few regulate height also in terms of number of stories, and some in terms of multiples of street width.

In one city " height " is not regulated directly but under the regulations controlling " bulk " which usually include considerations of area.

Height limits in the most restricted height districts vary from 35 feet in some cities to 75 in others, although 35 and 40 feet are common height limits in such districts. Maximum height limits in least restricted height districts vary from 80 to 185 feet excepting New York City.

In those cases where heights are limited in terms of stories, the limit in the most restricted districts is 2-1/2 or 3 stories, and in the least restricted districts 6 to 12 stories.

Where multiples of street width are used the maximum height limit never exceeds two and one-half times the width of the street. A building at the intersection of two streets usually has its height determined in relation to the width of the wider street.

For summary of height limitations and methods, see Table III, Height Regulations.

a) *Set-Backs.*

A number of the cities permit certain buildings or those in specified districts to exceed the height limit if set back from street or lot lines. Several allow an increased height for each one foot the building is set back. Two cities have complete series of such set-backs applying to all height districts. Another city permits certain public and semi-public buildings to exceed the height limit under certain conditions of set-back.

One means of limiting the excess height is in terms of street width. Buildings on streets 70 feet or more in width, in two of the cities, may exceed the height limit if set-back from street lines a certain prescribed distance.

b) *Towers.*

Towers are usually permitted to be built to any height, but the area of such tower is limited to 25 % of the area of the lot. One city limits the area of a tower to 15 % and another to 2 % of the lot area, and some to a percentage of the frontage. Two cities limit the height of towers in feet ; one to 125, and the other to 225 feet.

A number of the cities limit the aggregate area of towers to a percentage of the roof area, usually 25 %.

c) *Cornices and Parapets.*

Cornices and parapets are excepted from height regulations in more than half of the sixteen cities. Five feet in height or in projection is the usual maximum excess, although a few cities limit the excess height or projection to 3 or 4 feet.

d) *Miscellaneous Exceptions.*

Chimneys, flues, grain elevators, gas holders, and tanks not on roofs ; bulkheads, elevator inclosures, towers, monitors, pent houses, sky lights and water tanks occupying in the aggregate less than a stated percentage of the area of the roof (varying from 10 % to 25 %) ; and monuments, towers, spires, church roofs, domes, cupolas and belfries, for ornamental purposes are commonly excepted from height regulations. Churches are exempted from height regulations in Washington.

e) *Excess Height for Certain Structures.*

Ten feet may be added to the height limit for buildings used for business only in a local business district and 40-foot height district in Milwaukee, and 5 feet may be added to the limit for single family residences in a 40-foot height district provided there are two side yards each 40 feet in width.

Washington permits a 10-foot increase in the height of one-family dwellings in the 40-foot district provided there are two side yards of 15 feet each, and in a 40-and 55- foot district buildings may reach 85 feet if set back from all lot lines a distance equal to one-half the height of the building.

f) *Increased Heights for Buildings Adjacent.*

A provision for excess height in the neighborhood of buildings which exceed the height limit is included in the ordinances for New York, St. Louis and Washington. In an industrial district of St. Louis in any city block an existing building which exceeds the height limit is made the height limit for that block.

Table III on the next page is an annex to the foregoing study

In part two of the said study, published in 1925, the following paragraph appears :

" Density of Population."

Six of the cities under consideration limit the density of population in some or all of their districts. Four of these cities state the limits in terms of the number of families per acre, and two in terms of square feet per family. In the most restricted districts the maximum number of families per acre for the six cities are as follows : 8, 9, 10, 11, 20, and 25 respectively. For the least restricted districts in the two cities that limit density of population in such districts the maximum number of families per acre is 110 and 140."

TABLE III

MUNICIPAL ZONING ORDINANCES

HEIGHT REGULATIONS

CITY	LIMIT IN FEET FOR EACH DISTRICT					LIMIT IN STORIES FOR EACH DISTRICT					LIMIT IN MULTIPLES OF STREET WIDTH FOR EACH DISTRICT					
	1 st	2 nd	3 rd	4 th	5 th	1	2	3	4	5	1	2	3	4	5	6
Altanta	50	100	150													
Brockton	40	60	80			2 1/2	4	6	xx				2			
Elizabeth	40		85			3	4	6								
Hoboken	75	125	150	185									2 1/2	2 1/2		
Milwaukee	40	60	85	125		2 1/2	4	6	8	xx						
Omaha	35	60	125	175												
St-Paul	40	75	100	130												
Washington	40	55	85	110		3										
Yonkers	35	60	75	100												
Akron	35	50	75	105	136	2 1/2										
Long Beach	35	40	70	104	150	2 1/2	3	5	8	12						
Newark	35	50	85	125	150										2	
Paterson	35	40	50	80	125									1 1/2	1 1/2	
St-Louis	45	60	80	120	150											
New York											3/4	1	1 1/4	1 1/2	2	2 1/2
Jersey City x																

x. Requirements of New Jersey Board of Tenement House Supervision and Jersey City Building Code govern.
xx. Buildings used in any part for residence purposes, or for more than one family in the most restricted district.

***

The other notable study produced by the Advisory Committee on Zoning of the Department of Commerce is that which refers to *A Standard City Planning Enabling Act*, intended to help city officials and civic organizations to prepare zoning ordinances.

I cite below some of the most important paragraphs of the said document :

" This act covers the four general subjects which experience has shown to be a necessary part of planning legislation, namely 1) the making of the city plan and the organization and powers of the city planning commission ; 2) control of subdivisions ; 3) control of buildings in mapped streets ; and 4) regional plan and planning commission."

" Consequently, though this standard act has been prepared after careful study of the legal and administrative problems that arise in planning, it is not meant to be slavishly followed in every word, sentence or section, but rather to be used as a model and to be followed but with such adjustments as may be dictated by local constitutional and statutory law and legislative customs and traditions."

" *Section* 6. *General Powers and Duties.* — It shall be the function and duty of the commission to make and adopt a master plan for the physical development of the municipality, including any areas outside of its boundaries which, in the commission's judgment, bear relation to the planning of such municipality. Such plan, with the accompanying maps, plans charts, and descriptive matter, shall show the commission's recommendations for the development of said territory, including, among other things, the general location, character and extent of streets, viaducts, subways, bridges, waterways, waterfronts, boulevards, parkways, playgrounds, squares, parks, aviation field and other public ways, grounds and open spaces, the general location of public buildings and other public property, and the general location and extent of public utilities and terminals, whether publicly or privately owned or operated, for water, light, sanitation, transportation, communication, power, and other purposes ; also the removal, relocation, widening, narrowing, vacating, abandonment, change of use or extension of any of the foregoing ways, grounds, open spaces, buildings, property, utilities or terminals ; as well as a zoning plan for the control of

the height, area, bulk, location, and use of buildings and premises. The commission may from time to time adopt and publish a part of the plan covering one or more major sections or divisions of the municipality or one or more of the aforesaid or other subject matter. The commission may from time to time amend, extend or add to the plan.

Section 7. Purposes in View. — In the preparation of such plan, the commission shall make careful and comprehensive surveys and studies of present conditions and future growth of the municipality and with due regard to its relation to neighboring territory. The plan shall be made with the general purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the municipality and its environs which will, in accordance with present and future needs best promote health, safety, morals, order, convenience, prosperity, and general welfare, as well as efficiency and economy in the process of development; including among other things, adequate provision for traffic, the promotion of safety from fire, and other dangers, adequate provision for light and air, the promotion of the distribution of population, the promotion of good civic design and arrangement, wise and efficient expenditure of public funds, and the adequate provision of public utilities and other public requirements. "

"*Section 26. Creation of Commission.* — The planning commission of any municipality or the county commissioners of any county or any 100 citizens, by signed petition, may apply to the governor for the establishment of a region for planning purposes and the appointment of a regional planning commission for such region. "

The success of the Standard City Planning Enabling Act is evident from its application in many of the Federal States.

CHAPTER V

SHOULD CONSTRUCTION OF SKYSCRAPERS BE PROHIBITED, ENCOURAGED, OR SIMPLY GUIDED AND CONTROLLED ?

The discussion about skyscrapers which now vividly interests public opinion as something new is, in reality, rather an old subject.

Before discussing the problem as it stands to-day we must put on record that the first skyscrapers made their appearance amid a storm of bitter opposition. And we must evoke the experiences of the road covered under such difficulties, in order to draw the logical conclusions thereof, and thus place the present judgment on a true and firm foundation.

Not only public opinion and municipal authorities were opposed to skyscrapers at the outset ; even architects, with Mr. Geo. B. Post as leader, promoted this opposition.

The general opposition manifest for years was seriously formulated for the first time at the meeting of the Architectural League of New York on August 1, 1894, at which the President Mr. Geo. B. Post presented a plan advocating the passage of a law against erection of skyscrapers which, he said, made the streets the hotbed of malaria and in themselves were eyesores.

His ideas were warmly applauded and the nomination of a committee to draft a bill was authorized.

All New York papers reported this meeting in favorable terms, and, as a consequence, a series of articles against skyscrapers followed.

The Brooklyn and the Buffalo Chapters of the American Institute of Architects, the City Club of New York and many art societies worked hard towards the same aim.

Recording these events of the year 1894 Architect Post used the following terms in the *Record and Guide*, June 4, 1904 :

" Finally, we had the matter in such shape that both the Senate and the Assembly were pledged to the passing of the necessary bill, and it was understood that the Governor would sign it ; but on the last day of the session our bill was left lying in the speaker's basket. Various business men were against us. Before the new legislative session so many skyscraper projects were approved that further efforts were fruitless."

As the Committee of the Architectural League of New York had failed in its aim it was dissolved.

In the *Tribune* of December 30, 1894, Mr. Post declared that the massing of skyscrapers would destroy the beauty of cities, deprive them of light and air and render them unhealthy. He believes that skyscraper height will regulate itself when owners discover that the lower stories of their buildings will not be rented when they are hedged in by other skyscrapers. A skyscraper, he adds, is comparable to a number of houses one on top of the other. It, therefore, contributes to obstruct traffic which in Chicago at certain hours and in certain districts is already impossible.

Architect Thomas Hastings declares in the same number :

" There is no excuse for the erection of skyscrapers except the possibility of increased revenue from the additional floor space." He believes moreover, that the steel skeleton would not last very long, and that inspection and replacing of the pieces of the framework will be very difficult.

Architect Francis H. Kimball says in the same number : " They should be limited to two and one half times the width of the street on which they front."

In 1902 another vain attempt was made to limit the height of the buildings in New York below 23rd Street.

In 1903 Architect Post resumed his attacks, depicting the possible consequences of a fire in a skyscraper. At the same time Mr. Charles D. Purroy, Acting Fire Chief of New York, demanded that building heights be regulated by law, as he asserted that buildings of

fire-proof material also may burn, citing as an example a fire that had recently occurred.

The foregoing declarations found an echo all over the world and we find them reprinted in many foreign periodicals, which present the problem as a really formidable one.

In 1904 there was question of doing something to give a uniform aspect to Fifth Avenue at least in its vital points.

In the number of June 4, 1904, of *Record and Guide* Architect Hastings proposes planting of trees, moving the obelisk of New York to Madison Square and erecting, opposite the library, buildings harmonizing with it. And finally, he again proposes height restriction. At last in 1916 the first really serious study on skyscrapers resulting in the New York Building Zone Resolution was undertaken.

Enemies and friends of the skyscraper alike took this opportunity to express their advice freely.

Here are some opinions taken from the Final Report of the Commission on Building Districts and Restrictions of June 2, 1916, which directly or indirectly contain a criticism of the skyscraper.

" A street layout planned for a five-story city may be wholly inadequate for a ten-story city. Street capacity adapted to the convenient movement of traffic of all kinds is of supreme importance to the prosperity of the city. Street congestion means loss of economic efficiency and is a menace to public safety and order. We cannot hope to plan an adequate street system unless some limit is placed on the height and character of the buildings that the street system is to serve."

" Congestion of traffic and population and haphazard building make the city's fire fighting problem increasingly serious."

" In case of general panic or catastrophe causing the occupants of all offices in all buildings in the high building district to seek the streets at once, a serious situation would present itself. It would be impossible for all the occupants of all the buildings abutting on certain streets to move in the street at one time, even though the street were cleared of all other traffic, pedestrian, vehicular and surface car, and absolutely free from all obstructions so that the entire width of the street might be used. The minimum space required by a crowd moving in one direction is five square feet per person. Computed in this manner, Broadway could hold but 96. 3 per cent of its occupants; Trinity Place and Church Street 86. 6 per cent ; Nassau Street 69. 3 per cent ; New Street 44. 5 per cent, and Exchange Place only 37.5 per cent. This being the situation to-day, the question arises as to what might happen in case of a general panic should the entire district be solidly built up with buildings of the present extreme heights. "

" A number of streets in the high building district are already so congested that pedestrian and vehicular traffic is greatly impeded. Assuming that pedestrians will use sidewalk space only and will move in one direction only, there is room on Trinity Place and Church Street for but 56 per cent of the occupants of the buildings located on those streets ; on Broadway, 50 per cent ; on Nassau Street, 32 per cent, and on New Street, but 19 per cent. If these same streets should be uniformly built up to an average height of 30 stories, the above percentages would be reduced to 26 per cent on Broadway ; 20 per cent on Trinity Place and Church Street ; 11.9 per cent on Nassau Street ; 8.9 per cent on New Street, and 8.4 per cent on Exchange Place. It is quite clear that under such conditions the street capacity would be entirely inadequate to take care of the morning, afternoon and noon hour crowds."

" Chief Engineer Lewis in his testimony before the Commission spoke of the possible fatal consequences from panic in congested lower Manhattan. Mr. Lewis said : " It is obvious to anyone that in certain portions of the city, notably in lower Manhattan, the enormous day population of the office buidings, most of whom come to their work in the morning and leave in the afternoon within a very limited time, now overtaxes the public streets and, while we are reasonably free from earthquake shocks, or even tremors, you will recall that in 1884 and again in 1886 there were violent vibrations which caused a very panicky feeling. You may remember the explosion in the Tarrant Building, perhaps twenty years ago, which created a great panic in the neighborhood. It is easy to see what would happen if, in the office building district downtown, a violent explosion or earthquake tremor were to occur, which would result in a mad rush from office buildings to the streets. The panic in the streets would be almost inconceivable, and would, under existing conditions, be about as serious and fatal in its results as those which occur when people try to leave a theatre in case of an alarm of fire."

Nowadays discussion about skyscrapers is one of the most up-to-date subjects due to the enormous development which has taken place in post-war years.

Public opinion and technical opinion are however far from being united. For this reason it is interesting to cite the opinions of the most representative personalities of the two tendencies : that which wishes to obstruct and that which wishes to further skyscraper evolution.

Opinion of architect Thomas Hastings.

The opinion of Mr. Hastings on the subject is particularly interesting because it rests on a sincerity that has stood its test during many years of oppo-

sition, and on the experience which he has obtained from being a witness and a participant in the long fight which the skyscraper has had to stand in New York.

I had various conversations with Mr. Hastings on this point as I wish to cite his opinion as faithfully as possible.

Above all he asserts that the fact that Manhattan is an Island does in no way justify the presence of skyscrapers.

He bases this assertion on various arguments.

According to a study he made in 1918 with the aim of proving his thesis all skyscrapers of Manhattan could have been scrapped and a uniform city of 8 story buildings constructed which would have held twice the population. This proves that the present density of population is no real excuse for building skyscrapers.

But yet admitting — he added, that Manhattan already had a uniform 8-story height there would not be any excuse for skyscrapers in view of the bridges and tunnels on all sides of the island which might very well increase in number as an absolute height regulation would entail improvement of the transit system.

Mr. Hastings is firmly convinced that skyscrapers contribute to congest traffic. " If skyscrapers are spread, traffic will spread " he said to me with conviction.

He recalled that his partner Mr. Carrere had suggested putting a tax on all buildings above 8 stories, to increase proportionally with each added story. Thus it would become economically prohibitive to exceed a certain height.

He finally said to me : " That elevators save time in human activities is not after all an argument to justify skyscrapers as rapid systems of horizontal communication similar to the elevator could be introduced in great buildings.

Opinion of Major Henry Curran.

The active leader of the present opposition against skyscrapers is without doubt Major Henry Curran. I copy below some paragraphs of the interesting speech he made at the annual meeting 1927 of the Civic Development Department of the Chamber of Commerce of the United States :

" Lack of control of the skyscraper allows the beautiful Chicago Tribune Tower to be spoiled over night by that building on the other side of the Rush Street bridge. The vista is gone forever. The Woolworth Building in New York, a beautiful tower, now has a new building alongside of it. That has spoiled the Woolworth Building forever. The Singer Tower was snuffed out over night by an office building alongside of it."

" Then you have a thing like the Equitable Building in New York, which throws a shadow that covers 7-1/2 acres at noon on the 21st of December."

" When one says it is the automobile that makes streets congested, not the skyscraper, how about the subways in New York ? Are they congested by automobiles ? How about the sidewalks ? Are they covered with congesting automobiles ?

What packs our subways and sidewalks is the presence of a huge bunch of skyscrapers in the middle of things, with everybody going into that center in the morning and having to get out again in the evening. Could anything be simpler ?

If the average height of that bunch of skyscrapers is ten stories, hatt brings about a certain amount of morning and evening rush-hour human traffic, but if the average height is twenty stories, do not those buildings hold, as a matter of fact, twice as many people as if the average were ten stories ? '

" With regard to the communy end, we have this business of allowing one million people, who do not ive on the island of Manhattan, to come in there to. work every day, and go out again to go home in the evening. Two million live there, one million more come in and go out every day. Most of them work in these same skyscrapers..... We are planning for a new subway system. As fast as we build a new subway, we put up more skyscrapers, because we think there will be a little more room on the " flying rings ". No sooner will the subway be finished than we will have a new crop of workaday population up in the air. Where then is the relief to the present congestion ? We are left just where we were, and we shall have spent $700,000,000 on a ditch that is no good, because we let skyscrapers cluster at the terminus, in the middle of Manhattan."

" Is it good sense not to have a dollar for any other city need, to pour it all into more traffic facilities to take care of a coagulated bunch of skyscrapers, is that sense ? Is that city planning ? Is that good business ? Is it good for your individual business ? That is where we are headed."

Opinion of architect Harvey Wiley Corbett.

The architects who defend skyscrapers are to-day more numerous than those who oppose them. Among the first group is Mr. Corbett one of those who has studied the question most profoundly. I copy below some of his opinions as expressed in various articles which he has been kind enough to give me.

" The tall building, like every other honest architectural form, is the result of fundamental human needs."

" Business has become national and international; it requires headquarters, large buildings with splendid facilities, in all important cities. Further, the more

business put on a given area of land, the more business is done, for in the last analysis all deals are closed by personal contact. Business efficiency is in direct proportion to the density of the business population."

" Skyscrapers in concentrated masses, grouped as in New York for centralized and specialized business (finance, law, garments, building interests, theatres, automobiles, etc., each in its own locality) mean co-ordinated business, facilitated commerce, saved time."

" Although New York has skyscrapers, it is not a whole city of skyscrapers. Its skyscrapers are very close and compact in certain centres, and they have developed that way, not because of real estate exploitation, but because the skyscraper fills a definite function in American business life. That function is efficiency. The business area is condensed and time is saved. The skyscraper is one of the modern inventions — a steel speed machine — that has proved beyond question its efficiency as a factor in American business."

" Take the district in which I have my office in New York. All the building world is within two or three squares of my office, on 42nd street. I can call on the telephone any architect, building supply material man, or any other man in the building field, and in 15 minutes time, on foot, I can be in his office, or he can be in mine.

Now, let us imagine that we took that district around 42nd street and flattened it out, to seven or eight stories. What would it mean? It would mean that that quantity of business had been spread out over a mile or a mile and a half; that the possibilities of business contacts would be limited by just that increased distance, and that the length of time required to do the business which we can do in one day would spread out to a week or more.

" You only have to go to London and see just exactly what I mean by that illustration. In the City of London, which is probably a four story average over the city, and in which there are no skyscrapers and no concentrated business zones, if you attempt to make three business appointments in a day, you will do very well, because they will be scattered over every portion of the city, and you will add to the congestion of the street by attempting to take a taxi or a bus or a motor or the subway in order to carry on your business affairs."

" The opponents of the skyscraper contend, that the skyscraper is the cause of street congestion. I contend, on the other hand, that it is not the cause of street congestion, but an actual relief of street congestion.

Of course I do not mean to say that when you add more buildings and more skyscrapers you do not increase the quantity of people and the quantity of motors in the streets — not for a minute. But I do say that if you took New York today and spread its skyscrapers, without adding to or detracting from the quantity of space that they contain, you would enormously increase the congestion in the streets."

" I want to make sure that we separate these two things, the high buildings and congestion in the streets.

It is a matter of mathematics really, this street congestion. A man on foot, walking, occupies but ten square feet of street surface. An automobile standing still occupies a hundred square feet. When that automobile starts to move it occupies two hundred square feet and when it moves at any rate at all, it occupies four hundred square feet. You can just take the number of automobiles in any given town, divide it into the number of square feet of street surface, and you can see very readily where the street congestion comes from."

" Now chiefly occupied in cities, the architect has to consider and help solve problems for which his work is more or less responsible. These have been chiefly two : traffic and the separation of residence from business."

" We can improve our present cities by intelligently dividing traffic. Streets with arcaded sidewalks one story up, and within the building line, have been designed. They raise pedestrians above the level of the motor traffic. They give the space now occupied by sidewalks to vehicles. They increase six times the capacity of a street sixty feet wide. Such sidewalks are at once an inherent part of a building's design, and they make a block its basic unit, the end towards which even now it reaches. These sidewalks, decoratively vaulted, would shield pedestrians from sun and rain and snow, while below them would be visible the shiny tops of streams of motor cars like giant beetles. Traffic would be divided naturally. Movement would be free."

" A building occupying a block could contain a community within itself. It could have a constant cornice line at the first set-back, and this cornice could become an upper sidewalk. Below this point could be business ; above it, with promenades and terraces in fresh air and sunshine, could be residences. With small shops in the upper section, people could move about conveniently on their errands. When a man left his office, he could take an elevator to his home. The centres of the buildings could contain elevators and such forms of indoor recreation as theatres, gymnasiums, and swimming pools, for which artificial light suffices. The most congested traffic would be reduced, and people could get the full benefit of the light and air available at the top of our cities. "

OPINION OF ARCHITECT JOHN SLOAN.

My distinguished friend Architect Sloan is another enthusiastic supporter of the skyscraper. Here are some of his interesting statements in this respect :

" Failure of the European mind to grasp the American idea of time and efficiency is really the cause for the criticism by European architects of American skyscrapers.

The criticisms are based on an erroneous theory that the modern steel structure will not outlast a half century. This is far from true. It is a fact, of course, that buildings might be constructed to last somewhat longer. An ordinary wagon can be built to outlast an automobile. But it is not as useful.

The American architect is faced with a set of problems, including space, convenience, time and expense.

The best solution so far for these problems is the steel framed skyscraper enclosed with some adaptable facing material, such as terra cotta or other suitable fireproofing masonry.

Although we do not yet know for sure it is possible that these steel skeletons may " wear out " in 100 years. Perhaps some type of building other than the skyscraper might outlast it.

But the ease and speed with which the steel and terra cotta skyscraper may be erected, and its usefulness and financial returns make it far preferable to any smaller, clumsier structure of possibly — but not proven — greater permanence.

Long before the modern skyscraper is ready to be scrapped, it will have more than repaid its builder. Another type of building, with its theoretically longer life, might result in a financial loss in every year of its existence.

The American Builder's creed is long life, with efficient, profitable service from the start to finish."

CONCLUSIONS

Any discussion or problem has a much greater chance of solution when its various integral elements have been pointed out, separated and coordinated.

Let us adopt this maxim in the discussion about skyscrapers.

The criticism up to now has been twofold :

First : Criticism of the skyscraper *qua* skyscraper,

Second : Criticism of the skyscraper in relation to city planning.

CRITICISM OF THE SKYSCRAPER QUA SKYSCRAPER.

This comprises :

1) Alleged short duration of the metallic framework and possible difficult inspection and replacing of parts.

2) Fire risk.

Let us examine whether these objections are justified.

1) The probable short duration of the metallic framework might be a serious argument for condemning skyscrapers in their early years when the duration of the steel or the economic returns had not yet been tested.

To-day, after having verified the perfect state of preservation of metallic framework more than 30 years old and having been convinced too that a skyscraper during the same period has returned with interest the capital investment it represented, there is no reason for attacking skyscrapers on account of the probable short duration of the steel. Moreover, it might give us the surprise of resisting for 90 or 100 years in good condition.

2) Fire risks might also be an argument for considering prohibition of skyscrapers before having made the test of experience.

To safeguard skyscrapers against fire is only a problem of foresight and vigilance. The higher skyscrapers went up the greater precautions were taken against fire risks so that the danger in this respect is now reduced to the same rate as in ordinary buildings.

Thus, for instance, it is now required in New York that buildings surpassing 20 to 75 feet in height (varying according to their use) must be fireproof.

The New York Board of Fire was kind enough to place at my disposal reports concerning the greatest fires that had occurred up to the present in skyscrapers.

The three most important fires were in Park Row Building, February 27, 1926, in Sherry-Netherlands Apartment Hotel, April 13, 1927, and in Hotel Commodore, November 2, 1927.

Park Row Building and Hotel Commodore were inhabited at the time the fire broke out, while Sherry-Netherlands Apartment Hotel was under construction.

Park Row Building was insured for $4,234,000 and the total losses sustained amounted to only $ 24,000.

Hotel Commodore had a building insurance of $ 5,700,000, while its furnishings were insured for $ 910,000. Total losses were estimated at $ 27,000-30,000.

Sherry-Netherlands Apartment Hotel was insured for $ 2,000,000. The losses were estimated at about $ 200,000.

The insignificant losses of Park Row Building and Hotel Commodore prove that the precautions and vigilance in inhabited skyscrapers are sufficient. The fire in the Sherry-Netherlands Apartment Hotel demonstrates that the precautions and particularly the

vigilance in skyscrapers under construction must be stricter.

This last fire made a great impression on public opinion. It began in the scaffolding at the 38th floor and spread rapidly throughout all of the scaffolding surrounding the tower.

On account of this the New York Board of Fire demanded that in the future scaffoldings around high stories be built of incombustible material, at least the vital parts of them, and that they be protected by suitable fire extinguishing equipment. At the same time it recommended applying more diligence to placing of suitable temporary fireproofing material around the steel columns during the period of construction.

Precautions are being increased day by day as skyscrapers grow up and as lessons are learned from former fires. This procedure is logical in the development of any new thing.

No *insurmountable* obstacle has appeared in connection with fire protection of skyscrapers. Here is the opinion in this respect of Mr. John Kenlon, Chief of the Fire Department of New York :

" We never attempt to fight fires from the street level in very high buildings, except where the fire occurs between the curb and the sixth floor. Such buildings must have the means of controlling fires from within ; that is, they must be furnished with standpipes, pumps, hose, and all other auxiliary fire appliances necessary to combat a fire. From the side-walk we can not combat a fire at a greater height than 100 feet. The Fire Department is better equipped to fight fires in the heart of the city than in the outlying sections. We have provided more powerful apparatus and stronger equipment there. But I would not use that as an argument for limiting the height of buildings. We can change our equipment to meet changing conditions, the difference being in the cost. High buildings, if constructed along safe lines, have no terrors for me ; subdivide floor areas with horizontal fire-proof partitions, equip the building with an up-to-date automatic sprinkler equipment and put in smokeproof fire towers. Do that, and I care not how high you go."

It has frequently been said that as no great fire has occurred in any skyscraper up to the present we do not know to what extent they are protected.

An assertion like that is indeed strange.

The protection of a skyscraper does not only lie in its watertanks and its fireproof construction, but lies just as fundamentally in its system of vigilance.

Why has no big fire broken out during the forty-five years skyscrapers have now existed ?

Precisely because the protection offered by their guard-service is effective.

Criticism of the skyscraper in relation to city planning.

The criticism of the skyscraper in its relation to city planning comprises the following points :

1) That skyscrapers deprive streets of light and air and render cities unhealthy.

2) Congest traffic.

3) Might cause a catastrophe on account of the incapacity of present streets, in the event of a general panic, to hold all occupants of the skyscrapers of a given area if they were vacated simultaneously.

4) Destroy the aesthetic aspect of cities by grouping one tower beside the other.

Let us analyze each of these arguments separately :

1) That skyscrapers deprive streets of light and air and make cities unhealthy was the most serious and convincing criticism formulated up to 1916.

Now after the New York Building Zone Resolution has been adopted — there is no longer any reason for the aforesaid criticism and I am very surprised that Major Henry Curran seizes upon the case of the Equitable Building as an argument against skyscrapers in 1927 when buildings like that have been condemned since 1916.

When the set-back principle is applied skyscrapers can not render cities unhealthy since air and light have free access.

2, 3 and 4) That skyscrapers contribute to congestion of traffic and that catastrophes may occur owing to the insufficient capacity of the present streets to hold simultaneously all the occupants of the skyscrapers of a certain area, and that by grouping them they ruin the aesthetic aspect of a city, in my opinion goes to prove the necessity of remodelling our cities to meet the new traffic requirements and the new vertical architecture.

The traffic problem is a very complex one. To put the entire responsibility on the skyscraper is just as fundamentally erroneous as the idea that the automobile be solely at fault.

In all logic automobiles do not block sidewalks or subways of New York any more than skyscrapers congest the street-traffic of Paris or London, or, to remain in the United States, of Los Angeles, which city follows a system of definite height regulations.

Major Curran thinks that a million persons who do not live in Manhattan go there daily to work because of the presence of skyscrapers, and he holds them responsible for the fact that New York's municipal funds are constantly being swallowed up by subway construction.

According to the Final Report of the Commission on Building Districts and Restrictions dated June 2, 1916, the average building height in the Borough of Manhattan on that date was 4.8 stories.

Ninety per cent of the buildings do not exceed 6 stories. The buildings over 10 stories in height constitute only a little over one per cent of the total.

On the same date, out of a total of 92,749 buildings, only 1,048 buildings were over 10 stories high, 90 buildings over 17 stories, 51 buildings over 20 stories and only 9 buildings over 30 stories.

I regret that similar statistics for 1928 are not available. Let us suppose that the average building height of Manhattan has increased to 6 or 7 stories. What would happen if a uniform height regulation for 10 or 12 stories was adopted to-day in Manhattan ? Would the number of persons who every day come to work on the island cease to increase on that account ? and would the congestion caused in subways by this increasing population cease ?

No. Simply this would happen : Instead of constructing skyscrapers of 30 and more stories in Lower Manhattan and in 42nd street a greater number of buildings of 10 or 12 stories would be erected in less densely exploited districts and the human wave which daily surges over the island would continue to grow in any event.

This would take several years.

And after that ? Does Mr. Curran think that the wave will not continue to swell ?

What would happen then would be that the residential buildings now occupying important districts of New York would gradually be transformed into commercial centers. The metamorphosis of Fifth Avenue would be repeated in Riverside Drive and Park Avenue, and thus Manhattan Island would finally become the commercial district of " Greater New York " with residential sections occupying other boroughs. And not until the last edifice in Manhattan had become a business building 10 or 12 stories high would the current which daily floods the island from the outside cease to grow.

This increasing traffic can not, as Major Curran thinks, be ascribed to the existence of skyscrapers, but to the tendency of all big cities to concentrate their activities in a privileged center that has come to be called the " Heart of the City ". With skyscrapers the area of this heart will be reduced ; without them, the area will expand on a proportionately greater scale, for the tendency to arrive from outside the city, from the districts where the businessman sleeps, to the office center, exists in every city all over the world.

With or without skyscrapers the wave which daily breaks over Manhattan will continue to swell for many years.

Moreover, the effect of skyscrapers on the traffic is not identical at different hours of the day. It is indisputable that elevators partly absorb traffic that otherwise would have to pass by the streets, and it is indisputable that a number of offices spread over a larger area would necessitate more extended use of vehicles since longer distances can not be covered on foot as is possible in concentrated zones.

A horizontal communication system in the great buildings could never equal the rapidity of vertical communication as the height of a story is always less than its horizontal dimensions.

During the *busy hours* skyscrapers help to relieve the traffic, as the necessity of using vehicles is partly eliminated. On the other hand they contribute to the congestion of streets at the hours of opening and closing offices.

The problem of traffic can never be solved if it is viewed with the eye of a Cyclops, ascribing it to the skyscraper or the automobile. The skyscraper is but a factor in this important and fundamental problem, a factor of no more significance than the automobile.

It is demanded that skyscrapers be condemned because the capacity of streets is insufficient. Why not claim, on the same grounds, the abolition of automobiles ?

To be hostile to skyscrapers because they constitute a problem to present-day cities is to oppose all progress that necessitates changes in these cities.

Why claim a veto against skyscrapers which contribute to congest street traffic instead of claiming expansion of street area ?

Why state that skyscrapers confront us with insoluble problems when we are able to construct streets at different levels whereby the hygienic and practical advantages which they involve are multiplied ?

The city of to-day clamors to be remodelled. The vertical city needs new systems and regulations.

There is no reason to regard skyscrapers with a hostile eye when one has seen the imposing collection of plans presented by the International Congress of City Planning at its meeting in New York in 1925. There is no reason for opposing skyscrapers after one has admired the masterly city plans of Le Corbusier.

Give the Commission on Building Districts and Restrictions power not only to supervise the development of the future city, but also to remodel gradually the present city ; then the skyscraper problem will cease to exist.

In this connection I believe it would be practical to establish a tax on construction and exploitation of skyscrapers according to height.

Not a " prohibitive " tax such as Mr. Carrere suggested but a moderate one which would not prevent building high.

The revenue flowing from this tax should be applied integrally to contributing to the expenses involved in city remodelling.

A tax like that would be just for several reasons :

In the first place from a principle of justice : a building which goes up high multiplies the revenue,

that will be derived from the lot it occupies, in proportion with its number of stories. At the same time the presence of a new skyscraper creates a municipal problem.

Is it not just that an owner profiting thus should participate in defraying the expense incumbent on the city because of his building, by paying a special, but very moderate tax ? This means at the same time that the sum levied on the proprietor will return to him with interest through the increase in price of his building, due to the city remodelling work.

There is yet another reason of an economic and social character :

It has frequently been claimed — even by skyscraper partisans — that skyscrapers should be prohibited in sparsely populated cities where concentration is not necessary.

On one of my journeys across the United States from California to Washington, D. C. I stopped in all smaller cities having tall buildings, with the object of studying the psychology of these agglomerations. I was able to note that a man with sufficient money will often build a skyscraper in a town that has no need of it, even in a town from whose main street green fields may be seen at both ends and close at hand. Such men cause grave disturbance in the local real estate business, as the tenants of smaller buildings abandon their premises yearning to settle in " the tallest building of the town ".

Nevertheless, it seems to me that skyscrapers ought not to be prohibited anywhere. In a small town may exist a powerful company which requires the concentration provided by a skyscraper for the proper functioning of its business.

A tax like the one I propose would serve to solve this problem.

The tax might be higher in small towns forcing proprietors not to abuse skyscrapers in places that have no need of them, but leaving an open door for enterprises that really need them.

A study of the conditions of each city should determine the amount of the tax, making it heavier in small towns and more moderate in big cities, where concentration is the watchword of the future.

The skyscraper is to-day an integral and fundamental part of the enormous commercial progress attained by the United States.

Those who advocate its abolition will certainly have no success.

Behind the skyscraper stand the leading parts of the nation : Businessmen, great trusts, that of necessity require huge premises concentrated in one place ; hotel owners who thanks to the skyscraper have been able to produce the miracle of offering thousands of guests air and sun in the restricted area of a block ; municipalities who have located their offices in tall buildings ; hospitals having erected in the very heart of the city gigantic aid shelters where floods of sunshine may pour in ; and finally, technical experts who see a conquest in the new architecture which satisfies them intimately. And, later on, those who hold that skyscrapers destroy the aesthetic aspect of a city will join in when they have rendered themselves to the evidence that beauty may dwell in arcades of elevated sidewalks, in streets at the height of the first setback, and in residential towers erected on the upper terraces.

Moreover, the skyscraper is rapidly gaining ground all over the world. In Havana, Buenos Aires, Santiago (Chile) skyscrapers are being erected, and in Paris — sanctuary of tradition — there are already voices who advocate reservation of ground for skyscrapers in the new residential districts under construction on the line of the old fortifications, proffering arguments of hygiene and general convenience.

The city of the future will consist of rhythmic masses of platforms, towers, and pyramids making the blue dome of the sky appear framed in gigantic rectilinear outlines,

Why deny the new forms the right to be beautiful ?

Why imagine that the beauty of our cities must remain stationery ?

The embryo city created by the new vertical aestheticism is beginning to develop.

There is still a long way to go, but the vision which is the goal of the American cities can be perceived faintly on the horizon as something great and fine.

The skyscraper has had to conquer practically insurmountable obstacles in order to solve its own architecture. Now remains the other part : solving the architectural problem of the city that is about to be created, that is in its formative stage, the vertical city, that will bring about a maximum of economy in this century of speed, and at the same time offer the best possible hygienic conditions.

Le Corbusier's plans of residential skyscrapers will be the cradle of to-morrow's strong race, formed under the caress of the sun and in the perfume of flowers.

All through history the city has been a force in constant movement, one of the most manysided forces created by man.

Let us not check its progress by subjecting it to obsolete rules, nor allow its torrents to overflow into anarchy.

Let us meet the future halfway, be modern — without breaking with the past — let us be practical, yet setting aside a few moments each day for dreaming... and thus work for the development of the modern city, giving it fully the mechanical and practical stamp of our century, yet not forgetting in our plan-

ning that each part of this gigantic human machine has a heart capable of soaring high and loving...

It has often been said that New York has no soul.

The soul of Manhattan is a new, but a great soul !

See it at nightfall when the moon sheds her silver-light on its rectilinear masses, when thousands of lights scintillate in numberless windowpanes and the waters of the bay, in restless waves, lap against its shores voluptuously, while boats carry messages of the hopes of men...

At such moments the soul of Manhattan seems to emerge from the very depths of this fantastic conglomeration of enormous masses and, exhorting the city with a caress, cry : *Forwards* !



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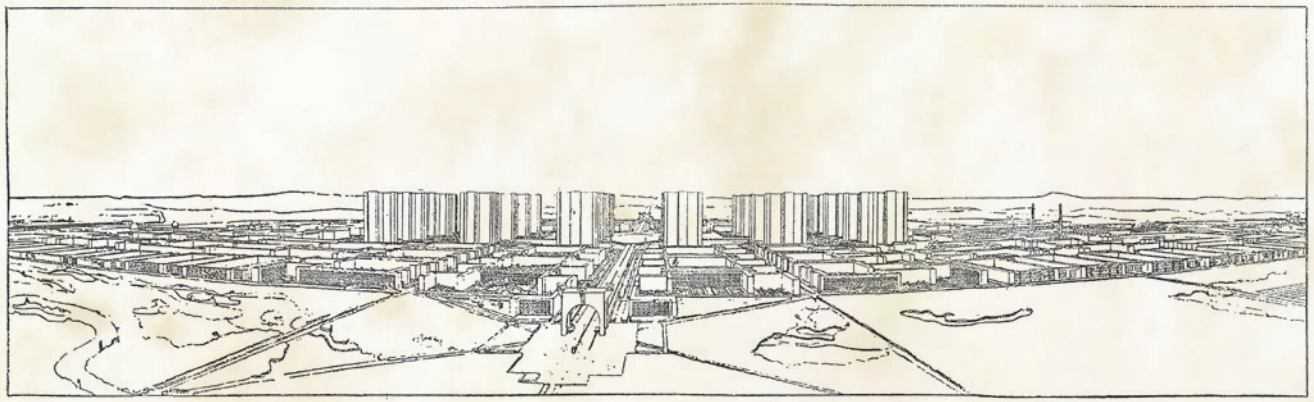


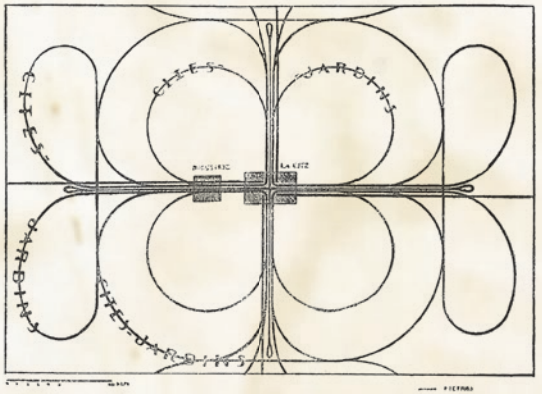
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INFLUENCE OF FRENCH GENIUS IN SKYSCRAPER DEVELOPMENT

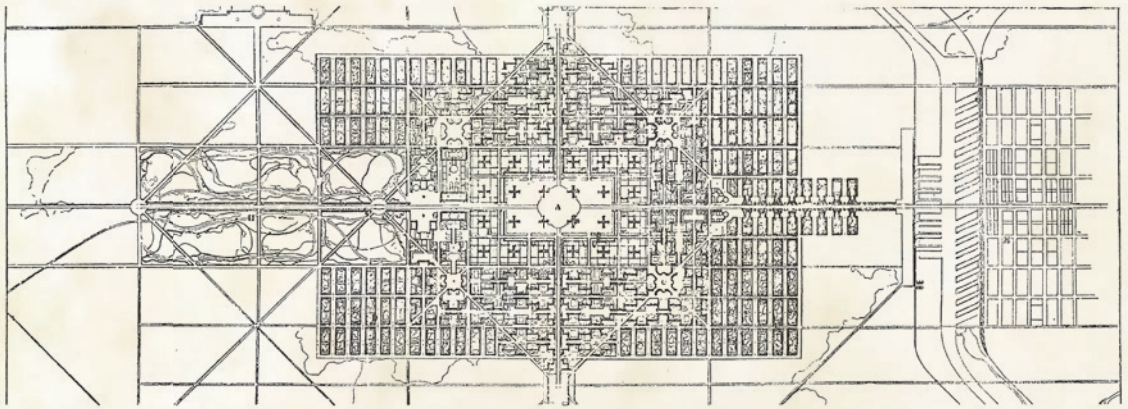
THE EIFFEL TOWER.—IN THE DISCUSSIONS RAISED DURING THE EARLY YEARS OF THE SKYSCRAPER, THE EIFFEL TOWER WAS OFTEN CITED AS A POINT OF SUPPORT FOR DEMONSTRATING THE POSSIBILITIES OF METAL STRUCTURES AND THE TRUST THEY MERITED.

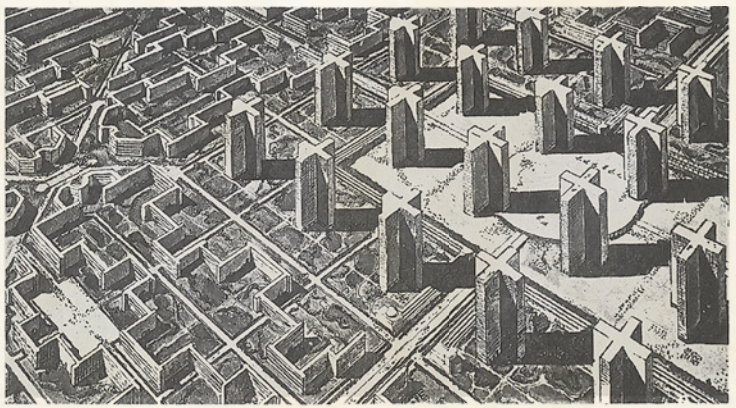
BUTTER TOWER, ROUEN. WHICH PARTLY INSPIRED THE TRIBUNE TOWER OF CHICAGO.





The City of the Future. Le Corbusier, Architect.

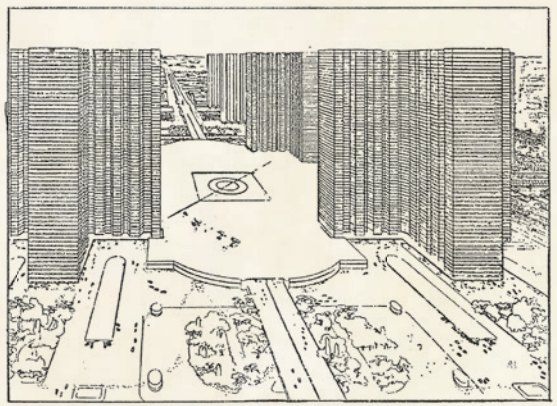


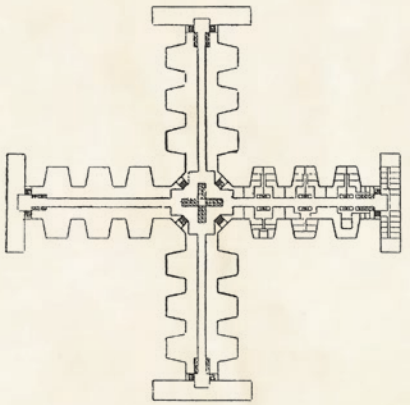


The City of the Future. Le Corbusier, Architect.



A Residencial Skyscraper. Michel Dupré, Architect.





The City of the Future. Le Corbusier. Architect.

INFLUENCE OF FRENCH GENIUS IN SKYSCRAPER DEVELOPMENT.

CHAPTER VI

BRIEF TECHNICAL AND STATISTICAL DATA ON SKYSCRAPERS WHICH APPEAR IN THE ILLUSTRATIONS OF THIS BOOK

Home Insurance Building, Chicago.
(See plate no. XXIII.)

Considered to be the first skyscraper. Constructed during 1883 and 1884. Consisted originally of 10 stories to which 2 stories were added later. Has an iron and steel supporting frame on account of which it is considered the pioneer " skeleton skyscraper ". This iron and steel supporting frame comprises the entire exterior walls (excepting the party walls on the north and east) and also the interior court walls. The iron and steel supporting frame goes down to the granite base line above the first story. In January 1924 an exterior column in the fifth story was uncovered and the construction studied.

Tacoma Building, Chicago.
(See plate no. XXIII.)

Considered the second skyscraper. Constructed 1887-1888. Thirteen stories high. Structural frame of cast iron columns and steel beams. Its exterior walls are simple screens. For the first time in history, building of walls was commenced simultaneously on different levels. Some of the walls are masonry and self-supporting. 120 tons of steel went into the foundations of this building.

Design of a 28-story skyscraper.
(See plate no. XXIV.)

Has the merit of being the first design of a very tall skyscraper and the first that plans an all-steel frame. Project published in 1888 was sharply criticized by the press generally.

Rand McNally Building, Chicago.
(See plate no. XXIV.)

Considered the first all-steel frame skyscraper. Built in 1889. Rolled steel beams were employed in the construction.

Tower Building, New York.
(See plate no. XXIV.)

First skyscraper built in the City of New York. Begun June 27, 1888 ; completed September 27, 1889. Scrapped in 1914. 11 stories high. Constructed on a narrow lot of twenty foot frontage. Mr. William H. Birkmire, Architect and Engineer in charge of the construction department of the Jackson Architectural Iron Works when the Tower Building was under erection, describes the construction of its frame work thus : " The inner column was made of cast iron 12 by 14 inches ; then an air space of 2 inches and another cast iron shell 1/4 inch thick. The side walls of the building were supported upon two 9 inch steel beams, which in turn rested upon cast iron brackets, cast with the column, and further secured by bolts. The floor beams were rigidly bolted to the above wall beams and to the columns. Great heavy iron braces extending from foundation to the roof were placed in some of the partitions to add additional stiffness, which from later experience in other buildings of the same class has proved to be unnecessary."

Old Masonic Temple Building (Capital Building,) Chicago.
(See plate no. XXV.)

Built in 1892. With its 20 stories this was the first

really important skyscraper in history. Designs and photographs of this building were reproduced in all countries of the world announcing that the birth of the skyscraper had taken place. The Masonic Temple was the world's tallest building until St. Paul Building went up in New York in 1898-99.

Havemeyer Building, New York.
(See plate no. XXVI.)

Commenced May 1, 1891 ; completed end of 1892. Fourteen stories high. The masonry of this building is but an outside shell which only supports its own weight. The floors are entirely supported on iron columns placed behind the masonry. For the foundations the ground was excavated to a depth of 28 feet and 2,500 piles were driven in. Six passenger elevators of the latest improved hydraulic pattern were originally installed in this building. Two of the elevators were express not stopping below the seventh floor. The building must, generally speaking, be considered as belonging to the " shaft " type inspired by the column. It, moreover, presents a certain idea of superposition. Its principal merit consists in a timid attempt at verticality in the pillars of the arches, which group windows over seven stories. One of the first examples of that kind of grouping windows under the same arch is seen in the Produce Exchange Building of New York.

Manhattan Life Insurance Co. Building, New York.
(See plate no. XXVI.)

The construction of this building was the object of a competition in 1892. It was begun in the spring 1893 and completed in 1894. Seventeen stories plus the dome.

American Surety Company Building, New York.
(See plate no. XXVI.)

The competition for the construction of this building took place in 1894 and was participated in by the most notable architects of the day : Bruce Price, McKim, Mead & White, Geo. B. Post, Carrere & Hastings, N. Le Brun & Sons, R. W. Gibson, W. Wheeler Smith, George Martin Huss, and John R. Thomas. Mr. Bruce Price won the contest. Originally there were twenty stories 312 feet high. Built on a lot of 84'6" × 85'6" employing Maine granite and a steel framework. For the foundation work caissons were sunk to bed rock seventy-two feet below the street and filled with concrete and brick masonry, which meant adopting the same system hitherto generally used in the foundation work of a river bridge pier. The style of the building is neo-classical. On account of the nearly entirely square plot, and as at that time it was not considered probable that the skyscraper would spread rapidly, the architect decorated the four fronts so as to obtain a more perfect impression of a column to which buildings of the " shaft " type tended. This caused a protest from the owners of the adjacent plots, and the courts pronounced in favor of them arguing that " an owner had no right to build out over his neighbor, no matter how high up in the air the trespass occurred." The American Surety Company was obliged to settle the matter with its quarrelsome neighbor by law.

Park Building, Pittsburgh.
(See plate no. XXVI.)

In 1896 skyscrapers began to invade cities throughout the country. In the general lines of its front the Park Building (" shaft " type) is an adaptation of the Havemeyer Building in New York and is built by the same architect.

New York Life Insurance Co. Building, New York.
(See plate no. XXVII.)

Twelve stories and 288 feet 3 inches high. Weight of steel and iron employed in its construction : 6700 tons. Floor space : 325,000 square feet. Passenger elevators : 13. Freight elevators : 5.

Commercial Cable Building, New York.
(See plate no. XXVII.)

Twenty-one stories high. Steel framework building.

Gillender Building, New York.
(See plate no. XXVII.)

Completed in 1897 and scrapped in 1910 to give place to the Bankers Trust Building. The Gillender Building was a skyscraper of nineteen stories (plus its small dome) built with all modern improvements of 1897, and yet it only existed for 13 years. The returns of capital invested in skyscrapers are rapid. This guarantees the economic success of steel construction although its duration is not definitely known.

Bowling Green Building, New York.
(See plate no. XXVII.)

This building originally had sixteen stories, 235 feet high. Steel construction. Granite, terra cotta, and white brick front. Originally 9 elevators. Its front has a certain significance because it is among the first to express with some success the verticality of its dominating elements.

St. Paul Building, New York.
(See plates no. XXVIII & XXIX.)

This building conferred upon New York the title of possessing the highest building in the world, which up to then had been the Masonic Temple Building, Chicago. St. Paul Building has twenty-five stories, 310 feet high. The principal characteristic of its steel skeleton is that the columns are placed beyond the inner lines of the walls, and the masonry walls are supported, story by story, by brackets formed by the floor beams which extend beyond the columns. The placing of the columns beyond the inner lines of the walls had several purposes : to facilitate inspecting the steel framework after a certain number of years and repairing the pieces which might be found to be in a bad state, to avoid the danger that the masonry, which is porous, transmits humidity to the steel-framework corroding it ; to keep heat produced by an eventual neigboring fire as far away as possible from the steel-framework. The weight of the building is approximately 19,859 tons, on a surface of 5,778 square feet. The building rests on a flat foundation on sand. The excavations for the foundation work extended to a depth of 31 feet 6 inches below the curb. On a layer of concrete 12 inches thick a concrete and iron grillage foundation was constructed. In April 1896 a discussion arose in the press concerning the foundation of this building in which Mr. Post was unjustly attacked and false and fantastic descriptions of the foundation works were published.

Park Row Building, New York.
(See plate no. XXIX.)

Thirty stories and 383 feet high. To its construction went 8,000 tons of steel and 8,000,000 bricks. Approximate weight of the building : 50,000 tons. Area of foundations 15,000 square feet. Piles supporting the building : 4,000. Had originally 8 passenger elevators and one freight elevator. Its architecture is not completely liberated from superposition nor from neo-classical models, but its spirit expresses a certain tendency towards modern forms.

Fuller Building (Flat Iron Building), New York.
(See plate no. XXX.)

Twenty-one stories high. Built on a small triangular lot, this edifice was one of the first great triumphs of steel skeleton construction and among those most popular abroad. There is no doubt but that it marks a phase in the development of the skyscraper.

Times Building, New York.
(See plate no. XXX.)

Besides its height, construction and plan (cleverly evolved on a small triangular plot) this building has the merit of being the first important skyscraper whose basement served as entrance to a subway station. Doors and passages intelligently placed serve as means of communication between the streets and the great Times Square Station. The shops on the ground floor and in the basement thus benefit from the incessant stream of passengers and the neighboring streets can dispense with a few stations.

Trinity Building, New York.
(See plate no. XXXI.)

Twenty-one stories high. Its architecture outlines the budding tendency to throw off the classical style.

West Street Building, New York.
(See plate no. XXXI.)

Building of artistic merit and historical interest. It may be considered as the " father of the Woolworth Building ", as it is by the same architect and also strives to solve the unity of composition and the verticality of its dominating elements through the Gothic style.

Singer Tower, New York.
(See plate no. XXXI.)

In 1908 the marvel of New York with its forty-one stories (612 feet), which made it the highest building in the world. Its metallic framework specially braced to withstand the greatest pressure of the dominating winds offers details of great interest and is doubtless one of the most notable triumphs of steel skeleton construction. It has 16 improved electric elevators. Floor space : 11 acres, 900 offices, housing 5,000 people.

Metropolitan Life Insurance Co. Tower, New York.
(See plate no. XXXII.)

Fifty stories and 700 feet high. 1,053 steps from ground floor to top of tower. Base : 75×85. 556,000 cubic feet of white marble in exterior facing. 40,000 barrels of cement in tower. Elevators : 30 hydraulic, 8 electric. Freight elevators (hydraulic) : 10. 30,000 electric lights. One of the most typical examples of an isolated tower in skyscraper history, as it is one of the few skyscrapers in which the tower appears frankly from the base.

Bankers Trust Building, New York.
(See plate no. XXXII.)

Thirty-one stories high. 8 additional stories concealed in the pyramidal stone roof. Ground area : 94×97 feet. For the foundation work caissons were sunk to bed rock, sixty-five feet below the curb and about forty feet below water-level. A huge waterproof concrete box was constructed so as to leave space around the caissons for inspection purposes. The steel work exceeds 8,000 tons. The entire exterior is of light gray granite. Over 150,000 cubic feet of stone were used. Besides the special elevators of the company there are eleven elevators : five express, five local and one emergency. The expresses run through a blind shaft to the sixteenth floor. The vault of the Bankers Trust Company is placed in the basement. Its weight is said to be 1,550 tons. The inside dimensions are 29.9×29.10×22.7 high ; the side walls are constructed of 4- inch drill-proof steel lining and two feet of solid concrete, embedding steel rails. There are two entrances with doors three feet thick and constructed of steel cast with cavities which have been filled with a combination of carborundum and cement. The building and equipment, exclusive of the land, represent an expenditure of approximately $ 4,000,000. It is one of the first skyscrapers which adopted as top structure the sort of " small temple " with pyramid-shaped roof which later became more and more frequent in skyscrapers.

New Municipal Building, New York.
(See plate no. XXXIII.)

Forty stories and 580 feet high. Excavations for foundation : 140,000 cubic yards. Foundation : 68 concrete piles. 32 elevators. The erection of this building was the object of a great competition to which notable suggestions and designs were sent. Among them we may mention the design of Messrs. Howells & Stokes which presented a Gothic suggestion of interest at that moment when skyscraper architecture began to look to that style for solving its problem of verticality.

Woolworth Building, New York.
(See plate no. XXXIV.)

As this work goes to press Woolworth is the tallest building in the world. 792 feet and fifty-eight stories high. The weight of the building is approximately 223,000 tons resting on concrete piers sunk to bed rock by the procedure of pneumatic caissons. One of the problems which required a solution of the greatest interest is the elevator system, the number of tenants and employees being 14,000, to which must be added 20,000 persons who daily pass through the different offices located in the building. The problem was solved by 29 high speed electric elevators, two of which are express with direct service to the fifty-fourth floor which is the first stop. Their speed is 700 feet a minute. The maximum weight of an elevator with passengers is 6,000 pounds. It suffices to explain the importance of safety devices when such a weight rapidly descends from a height of 700 feet without stopping. Besides the usual safety systems all the elevators have air cushions. In order to experiment the air cushions an elevator charged with 7,000 pounds was sped off from the forty-fifth floor without cables or any sort of safety devices, and it could be stated that with air cushions only the elevator reached the ground floor in so perfect a state that even a glass of water placed in it remained intact. The building is completely fireproof and has moreover a fire-pump in the sub-basement, capable of sending 500 gallons of water per minute to the highest stories in case of fire. The heating of the building is produced by six boilers with a capacity of 2,500 H. P. The building has its own plant with a capacity of 1,500 kilowatts to produce the electricity necessary for its mechanical services and lighting. 2800 telephones are installed in the building. The floor space is approximately 30 acres. The building is completely lightning-proof as the copper roof of its tower is connected with the steel framework which goes straight down to the ground. It is also hurricane-proof as its structure is calculated to resist hurricanes of 200 miles an hour. It has nine entrances. Needless to say that there is direct connection with the neighboring subway station. The above data show that the scientific importance of this building has not up to now been exceeded in any other building. We wish moreover to add the enhancement of its architecture. It is the first building that presents a perfect solution of unity and verticality and must be considered the definitive triumph of the Gothic style.

PERSPECTIVE OF THE TRINITY TOWER, NEW YORK.
(See plate no. XXXV.)

The plan accepted for construction in 1913 by the New York Department of Buildings was unfortunately not carried out. It bears the same relation to the Gothic style as Park Row Building (New York) does to the classic style : it is one of the first attempts to *correct* something which has been accepted temporarily pending a final solution. Its lines are indeed Gothic, but with a tendency to simplicity which is its principal merit.

UNION CENTRAL LIFE BUILDING, CINCINNATI.
(See plate no. XXXV.)

An example of the stupendous spreading of the skyscraper all over the country in 1913. In the presence of the Gothic, the classical style was somewhat influenced. It abandoned the " shaft " went on limiting cornices, simplified ornamentation leaving the lines to predominate and adopted a sort of upper temple structure with columns which so vividly recalls that on the top platform of primitive American pyramids.

ADAMS EXPRESS BUILDING, NEW YORK.
(See plate no. XXXV.)

One of the most dominating buildings on lower Broadway. A most typical example of a simple prism building with its smooth surface perforated by uniform windows making it resemble an immense dove cot.

UNITED STATES CUSTOM HOUSE, BOSTON.
(See plate no. XXXVI.)

Is the only skyscraper custom-house. Constructed on the former two-story building occupied by the old Boston customs. The old building had material as well as historical and sentimental value. Moreover, the location seemed ideal for a Custom House. As it was desirable to retain the old building and at the same time necessary to expand, an addition in the form of a tower was suggested. The Tower proper is about 65×75 feet and has a batter of 13" on each face of the shaft. The total height above the grade is within a few inches of 500 feet. The entire exterior is faced with granite. On account of the great weight of the structure it was found necessary to sink caissons 100 feet below the street level. During the whole operation the old wings were kept shored and they still rest on the original oak piles, varying from 12 to 15 feet in length, which were found to be in excellent condition. Particular attention was paid to the wind bracing of the steel frame. The weight of the structure itself suffices to balance the overturning moment due to wind pressure. The building is fire-proof with hollow metal doors and trim.

EQUITABLE BUILDING NEW YORK.
(See plate no XXXVII.)

Thirty seven stories high. Built on area of 50,000 square feet. This colossal building was erected just before the Building Zone Resolution was approved. Its rentable space is 1,200,000 square feet. The principal interest of this building lies in its intelligent interior arrangement and the central location of its fifty elevators. This arrangement has been imitated in many later cases.

BUSH TERMINAL INTERNATIONAL EXHIBIT BUILDING, NEW YORK.
(See plate no. XL.)

The interesting feature about it is that it is built on a narrow plot (50×200 feet). The front of the building which rises thirty stories above the curb measures 50×90 feet horizontally. Its steel framework has an interesting wind-bracing. Total weight of the building 18,400 tons. It is one of the first skyscrapers in which two-colored bricks are used in the side walls to obtain an economic decorative effect.

PERSPECTIVE OF THE SELLES MIRÓ BUILDING, BARCELONA, SPAIN.
(See plate no. XL.)

In 1918 the world began to be interested generally in skyscrapers, particularly those in Gothic style which proved for the first time the possibility of solving the problem of unity in the architectural composition. Señor Selles Miró entrusted Architects John Mead Howells & James Gamble Rogers with making a design for a 27-story building to occupy a corner of Plaza de Cataluña in Barcelona. Sr. Selles Miró's enthusiasm urged him to believe that this premature effort would be successful and even believed that he could make the King of Spain personally interested in the plan. Although the building was never erected, the design remains one of the most important of this category abroad.

FISK RUBBER CO. BUILDING, NEW YORK.
(See plate no. XLI.)

Belongs to the classical type of the second period, that is, with smaller cornices, simplified decoration and top structure in the form of a " small temple " with columns or pilasters. It must be added that it is one of the first skyscrapers of the second classic type on which bricks are employed visibly on nearly the entire front. The classic skyscrapers with " small temple " like the Bankers Trust of New York and the Union Central Life of Cincinnati represent the first step towards the primitive pyramids of America. The Fisk Building is probably the first building to take the second step, as, besides the upper " small temple " it shows the features of set-back, decorative elements framed in great dominating surfaces, cornices still further limited, and many right angles in the outline. Before the erection of the General Motors Building (which has now partly hidden the front of the Fisk Building) the aspect of the latter was really impressive when seen at twilight from Columbus Circle giving a perfect impression of an adaptation of the Indian pyramids of America.

PERSPECTIVE OF A 34-STORY SKYSCRAPER INSPIRED BY THE PYRAMID OF HUATUSCO.
(See plate no. XLI.)

A plan sketched only for demonstrative purposes, to show the similarity between the second classic type of skyscraper (" small temple " type) and the native pyramids of America. The general distribution of its mass was inspired by the Pyramid of Huatusco, the principal entrance by the Governor's House and the House of the Nuns at Uxmal, the decoration of the first story (except the principal entrance) by the Palaces of Mitla, and the upper " small temple " by the temples of Palenque.

WRIGLEY BUILDING, CHICAGO. (See plate no. XLII.)

The skyscraper, born in Chicago, developed in New York. In 1921 a new skyscraper-period was inaugurated in Chicago with the erection of a number of enormous buildings which rivalled with New York. The Wrigley Building was one of the first constructed during this period of resurrection.

CUNARD BUILDING, NEW YORK. (See plate no. XLII.)

One of the most intelligent and beautiful examples of classic style in skyscrapers. Severe front of very pure proportions. In its general lines it belongs to the second classic type (" small temple ") although many of its features are entirely original. Its interior has the imposing proportions of a real temple, as grandiose as the exterior, but more richly decorated. Bronze floor inserts by Gregory and frescoes by Ezra Winter.

GENERAL MOTORS BUILDING, DETROIT.
(See plate no. XLIII.)

Noteworthy by its interior arrangement and its tremendous proportions of which the plan and the following statistical data give an idea : Fifteen stories and 220 feet high ; ground area of building : 162,288 square feet ; floor area : 1,321,202 square feet (30 acres) ; rentable area : 1,035,992 square feet ; cubic contents ; 20,411,000 cubic feet ; total weight of building : 230,000 tons; 130,100 cubic yards of excavation; 15,000 tons of structural steel ; 1,478 tons of reinforcing steel ; 450,000 cubic feet of Bedford limestone facing ; 8,790,000 bricks; 100,000 barrels of cement; 5,148 windows; population capacity : 6,000; 1,800 typical offices ; 27 passenger elevators ; 4 freight elevators ; 4 boilers, 500 H. P. each ; 5,000 radiators ; 7,916 electric light fixtures.

LONDON GUARANTEE & ACCIDENT CO. BUILDING, CHICAGO. (See plates no. XLIII & XLIV.)

Twenty-one stories high. Steel frame covered with great slabs of Indiana limestone. Eight multi-voltage type elevators with micro leveling device. Original adaptation of the " small temple " classic type on an irregular corner lot.

NEW YORK STOCK EXCHANGE BUILDING, New York.
(See plate no. XLIV.)

Constructed in two stages. Original part consisting only of nine stories built in 1903. Classic type of very pure proportions. Its tympanum is very fine and the entire front, which is extremely well conceived, is white marble. Without any doubt it is one of the aristocrats of Lower Manhattan. The second part, also of white marble, was constructed in 1922. Twenty-two stories high. The architecture (of the " small temple " type) is slight enough to fit the frontispiece of the original building.

PERSHING SQUARE BUILDING, NEW YORK.
(See plate no. XLV.)

Twenty-three stories high. Built on a plot of

125'8" × 197'6". It is one of the first skyscrapers in which bricks that cover the front are used for decorative purposes, forming various designs, either through saliences or in the surface itself by varying disposition of the bricks.

Biltmore Hotel, Los Angeles.
(See plate no. XLV.)

Example of application of the Height Regulation in Los Angeles which imposes a maximum of thirteen stories. California, especially Los Angeles has wanted to give its architecture a certain local and traditional stamp inspired by the Spanish renaissance and baroque and the Mexican colonial style. Directly or indirectly in the exterior or interior, reminiscences of this influence are nearly always evident, as partly in the lobby of the Biltmore Hotel.

Straus Building, Chicago.
(See plate no. XLVI.)

Skyscraper resurrection begun in 1921 in Chicago advances from day to day. The classic type, particularly the " small temple " type, of which Straus Building is a very characteristic example, is favored. The roof of the " small temple " in the top structure is pyramidal its outline resembling the pyramid of Papantla.

Fraternity Clubs Building, New York.
(See plate no. XLVI.)

Eighteen stories and 196 feet 9 inches high. Built on a plot of 12,343 square feet. Steel frame with cinder concrete floor, arches and gypsum block and terra cotta partitions. The architecture shows the building material in decorations, particularly bricks, which by saliences and profiles form the principal front decoration. It has four passenger elevators. The building was planned to house sixteen fraternity clubs and the Cornell Club. From the third to the eleventh floor, the building takes the form of an H and is occupied by single rooms. There are 560 bed-rooms.

Shelton Hotel, New York.
(See plate no XLVII.)

The Shelton Hotel has many architectonic merits : Its admirable interior arrangement ; the powerful rankness wherewith its planning shows in the front ; the intelligent use of brick for front decoration. The wo first floors are intended for social and administrative uses ; after that there are bedrooms up to the sixteenth floor. The sixteenth floor is occupied by drawing and dining rooms, a roof garden and terraces. In the stories above there are again bedrooms and on top a gymnasium.

American Radiator Building, New York.
(See plate no. XLVIII.)

This building is an example of the first effort of the Gothic style towards simplicity. It shows a frank tendency to substitute Gothic columns and pilasters by vertical bands. It was desired to express the general idea of heat wherefore a black material was adopted for the front with gilt crenellations in the upper structure, contrasting with the general mass of black.

Apartment House, Park Avenue & 79th Street, New York.
(See plate no. XLVIII.)

Fine example of combination of an important and attractive entrance motive with smooth walls in a brick skyscraper.

Allerton House, Chicago.
(See plate no. XLIX.)

Twenty-five stories high. The three first stories which form the base are of limestone. From the fourth story up the building is H-shaped. The first two floors are reserved for social uses. Upwards to the twenty-second floor are bedrooms. The twenty-third floor is reserved for a solarium, lounges and game rooms. On the twenty-fourth floor are roof gardens. The principal purpose of the building was to achieve an all-round economic arrangement providing the comforts of a residential club at reasonable prices. It contains 1010 bedrooms.

Detroit Free Press Building, Detroit.
(See plate no. XLIX.)

Fourteen stories high, built on an area of 212 × 130 feet. Entire Indiana limestone front. In the basement and sub-basement are the printing presses. On the first floor circulation and advertising departments and stores for rental. The second and third floors are occupied by editorial and administrative offices and the remaining floors are for rent. It may be regarded as one of the most fortunate attempts hitherto made

to simplify decorations and to adapt the Gothic verticality to more sincere and modern forms.

Tribune Tower, Chicago.
(See plates no. L, LI & LII.)

The world competition for the construction of this building is without doubt one of the memorable dates in Skyscraper History. In June 1922 architects from all over the world were convoked to design a skyscraper featuring the greatest beauty possible in an office building. The principal importance of this competition did neither lie in the size of the building, nor in the excellent prizes offered, but in the fact that beauty was considered the essential requirement. The jury met in December 1922 and had to pass on plans coming from twenty-three different countries. The competition demonstrated the false ideas many foreign countries had about the nature of skyscrapers. There were some quite grotesque designs, for instance, one of an enormous column perforated with windows like a dove cot. Two plans stood out among a dozen of great merit : the first in Gothic style and the second in modern style, awarded first and second prize respectively. The victorious architects, Messrs. John Mead Howells & Raymond M. Hood described their building in October 1925 in the following terms for *The Architectural Forum* :

" The design is, before everything else, an expression of The Tribune. The structure is carried to its full height as a square on the Michigan Avenue front only, thus always giving the same impression from wherever seen, and showing the same from all points as the Tribune landmark. We feel that in this design we have produced a unit. It is not a tower or top, placed on a building, it is all one building, it climbs into the air naturally, carrying up its main structural lines, and binding them together with a high open parapet. Our disposition of the main structural piers on the exterior has been adopted to give the full utilization of the corner light in the offices, and the view up and down the Avenue." " Our desire has been not so much to secure an archaeological expression of any particular style as to express in the exterior the essentially American problem of skyscraper construction, with its continued vertical lines and its inserted horizontals. It is only carrying forward to a final expression what many of us architects have tried already under more or less hampering conditions in various cities. We have wished to make this landmark the study of a beautiful and vigorous form — not of an extraordinary form. The area of the cross section of the central motif of the top plus the area of its several supports is 3,360 square feet, and thus within the 3,600 square feet allowed, the frontage of the top on the street being also within the building law." " It is perhaps not necessary to call attention to the fact that the upper part of the building has been designed not only for its own outline and composition, but for the possibilities of night illumination."

The tower has a wing twenty stories high. The foundation consists of concrete piers extending to bed rock. The wind-effect on a structure so tall and with such a small base is without doubt an interesting point. The steel frame work has been planned to withstand a pressure of 30 lbs. per square foot. This building may be considered the climax of the Gothic style in Skyscraper History. The design which was awarded second prize is the first important crystallization of the modern tendency; formerly there were timid attempts like the Park Row Building and the design for the Trinity Tower of New York or more frank and vigorous ideas like the Detroit Free Press Building.

New Equitable Building, New York.
(See plate no. LII.)

Twenty-two stories high. The set-back of the upper stories becomes more and more marked in importance and interest in the skyscrapers built at New York during this period.

Telephone Building, San Francisco.
(See plates no. LIII, LIV, LV & LVI.)

Twenty-six stories and 435 feet high. The penthouse is 4 stories higher. There is, moreover, a basement and a sub-basement. The building has steel framework with a bracing capable of resisting wind pressure of 15 lbs. per square foot. 6,000 tons of steel were used for its construction ; 1,500 tons of reinforcing steel; 2,200,000 bricks ; 30,000 barrels of cement; 3,200 tons of clay tile partitions. The plan of the building is F-shaped. It was not definitively completed and the plan was adjusted to add a new wing which made it E-shaped. The floor space is 210,000 square feet. It has nine Otis signal control elevators; four rapid elevators which make their first stop at the twenty-second floor ; four that go direct to the twenty-sixth and another which makes the direct service to the twenty-seventh floor. The water required for emergency fire protection comes from a well 186 feet deep. Water is pumped into a tank situated in the basement. The heating is produced by two steam boilers, rotary spray oil burner type. The floodlighting is obtained by 287 flood lamps. Cost of building as it stands : $ 5,000,000 (including plot). It has

great beauty in all its lines and expresses powerfully the verticality of its elements by very original pilasters. The Telephone Building of San Francisco marks the end of the preparatory and experimental stage in skyscraper architecture.

BUHL BUILDING, DETROIT.
(See plate no. LVI.)

Twenty-six stories high. Shows the stupendous development of Detroit during the last few years.

COUNTY HALL OF JUSTICE, LOS ANGELES.
(See plate no. LVI.)

Severe front in classic style ; very interesting interior shows adaptation of the oldfashioned plan of a County Hall of Justice to a skyscraper.

FARMERS' LOAN AND TRUST COMPANY BUILDING, NEW YORK.
(See plate no. LVI.)

Belongs to the school which uses bricks as decoration of front with saliences and varying disposition of bricks.

PURE OIL BUILDING, CHICAGO.
(See plate no. LVII.)

Forty stories high. One of the dominating masses of Chicago, built during its " classical period ".

ELKS CLUB, LOS ANGELES.
(See plate no. LVII.)

A very beautiful building. Without quite doing away with columns it fearlessly eliminates cornices, stresses the dominating surfaces of its walls, abounds in bas-relief decorations and emphasizes with figures in full relief the importance of the most valuable vertical elements and the spirituality of the whole building, which strives upwards like an offering.

NEW YORK TELEPHONE BUILDING, NEW YORK.
(See plates no. LVIII, LIX, LX, LXI & LXII.)

Thirty-two stories high (building proper 17 stories and tower 15 stories). It is built on a plot of 51,000 square feet and has a volume of 17,000,000 cubic feet. The setback conforms to the New York Building Zone Resolution. The height of the tower corresponds to the economic height. Excavations for the foundation were 137,925 cubic yards. The foundation was obtained by twenty-two caissons eight feet thick and forty feet long, sunk to depths of 55 to 75 feet. The elevator service is run on a very modern and efficient plan. The population of the building can be estimated at approximately 6,500 persons, a number which tends to increase when several other offices serving Lower Manhattan will be located in the building too. 16 elevators running at 800 feet per minute serve the upper floors and 8 elevators running at 700 feet per minute take care of the lower floors. During the rush-hours an elevator departs from the first story every five seconds. Heating is produced in 4 boilers of 1,423 H. P. capacity. Fire protection is of great importance in this building, both because of the height and because it is situated in a zone of the harbor where a great percentage of the buildings are wooden. The seventeenth story forms in reality a regular basement in relation to the tower, because it provides it with all the services which are generally grouped in the basement of a building. In emergency cases those installations can also serve the lower stories. The tank capacity for standpipe use is 62,500 gallons. The installations for fire pump comprise two four-stage centrifugal fire pumps capable of delivering 750-1,000 gallons each per minute.

The Telephone Building of New York has beauty and is of historical interest. It is the first skyscraper which presents the solution that in general lines we may consider as definitive in the striving to express its architecture in a form which not only indicates relation with our century but with the structure, the materials and the whole spirit of the skyscraper.

HOLLYWOOD TERMINAL STORAGE WAREHOUSE, HOLLYWOOD.
(See plates no. LXIII & LXIV.)

On the ground floor are the offices and the loading platform. On the first floor individual storage rooms and a special storage for pianos and trunks ; up to the thirteenth story are typical floors intended for general storage, and on the top floor a café and radio broadcasting rooms. This building wanted to present a characteristic front, first by predominating of wall surface and secondly by an appropriate base to support the two enormous radio towers. The result obtained is fine and original and gives an idea of what modern architecture in California now gets from the Spanish plateresque and the Mexican colonial style.

PACIFIC NATIONAL BANK BUILDING, LOS ANGELES.
(See plates no. LXIV & LXV.)

Front of brick and terra cotta with granite base, and interesting interior arrangement, constructed on a budget of $ 1,445,000. The Banking Hall with its rich decorations is another example of the type of architecture which at present is being developed in California.

PERSPECTIVE OF THE BOOK TOWER, DETROIT.
(See plate no. LXVI.)

Plan published in July 1926. Temporary postponement of construction. 81 stories are planned for the Tower, while the main building will consist of 42 stories, each with a floor space of 30,000 square feet. From the 43rd story the tower, 120×125 feet, will rise, terminating at the 81st story with the most powerful searchlight in the world. The building will comprise 25,000,000 cubic feet. Style of architecture : modern Gothic. Construction of steel, concrete, granite, stone and marble combined with light buff colored brick.

STANDARD OIL BUILDING, NEW YORK.
(See plates no. LXVI & LXVII.)

One of the most beautiful skyscrapers produced in the classic style. It stands as a sentinel at the entrance to Broadway and forms with the Cunard Building which is just opposite a supremely grandiose and elegant gateway to the great New York thoroughfare. By its general lines it belongs to the type which we have called classic " with small temple ", but it has many individual features of great purity of line. The upper temple crowned by a pyramidal roof is well in keeping with the rest of the building. Four small obelisks cluster around it forming a pinnacle of sharp contours pointing skywards.

RITZ TOWER, NEW YORK.
(See plate no. LXVIII.)

Forty-one stories high, built on a rectangular plot. Interesting interior arrangement of a modern apartment hotel. Very slender symmetrical outline.

PARAMOUNT BUILDING, NEW YORK.
(See plate no. LXIX.)

Thirty-five stories and 455 feet high. The excavations for the foundations extended 52 feet below street level. The building contains 265,000 square feet office space. Vertical transportation is carried on by twelve high speed elevators running 700 feet per minute. The theatre in this building holds 4000 people. The five lower stories, the upper borders and front mural decorations are in Indiana limestone. The glass globe which crowns the building measures 19 feet in diameter. The cost of the building, inclusive of ground, is $16,500,000. There are few more eloquent examples to demonstrate that the setback system inaugurated by the New York Building Zone Resolution nowhere in art history meets anything that resembles it more than the primitive pyramids of America.

ST. LOUIS TELEPHONE BUILDING, ST. LOUIS.
(See plates no. LXX, LXXI & LXXII.)

Thirty-one stories and 369 feet high. The vertical transportation system consists of ten high-speed Otis signal control elevators. In a wing of the fourteenth and fifteenth floor is an auditorium that can hold 500 persons. First example of " setback " architecture in the City of St. Louis.

SEAMENS BANK FOR SAVINGS, NEW YORK.
(See plate no. LXXII.)

Fifteen stories high. The front has been designed with a view to give prominence to the fine material covering it : Plymouth granite. The general appearance is very original.

PERSPECTIVE OF THE LARKIN BUILDING, NEW YORKS.
(See plate no. LXXIII.)

In December 1926 this building was announced as going to be the highest structure erected by man The construction of it has been indefinitely postponed. Its principal features, in case it is built, would be the following : 1,208 feet high (curb to roof) ; area of plot : 47, 077 square feet ; cubic contents : 18,600,000 cubic feet ; concrete foundations : 30,000 cubic yards, structural steel : 56,000 tons ; concrete floors : 35,000 cubic yards; 1,300,000 terra cotta blocks ; 3,400,000 front brick ; 2,800,000 common brick ; 4,800 windows ; 4,200 doors ; rentable area : 1,020,000 square feet ; gross area first floor : 47,077 square feet ; gross area nineteenth floor : 11,770 square feet ; gross area 108th floor : 1,000 square feet ; 59 elevators — single deck cars — which are planned to be changed later into double deck cars ; heating is produced in ten

separate sections each section being independently controlled from the basement.

Maccabees Building, Detroit.
(See plate no. LXXIII.)

Sixteen stories and 207 feet high. 278,000 square feet floor area. Each typical floor 14,000 square feet area. Population capacity : 2,000 persons. Vertical transportation carried on by six passenger elevators and two freight elevators. 11,000 tons structural steel ; 500 tons reinforced steel ; 1,000,000 bricks and 100,000 sacks of cement were used to build it. The approximate weight of the building is 31,000 tons. Its cost : 60 c. per cubic foot.

Stevens Hotel, Chicago.
(See plate no. LXXIV.)

Is the largest hotel in the world. Occupies an entire block of 401 × 173 feet. Its interior arrangement is of notable interest. The three first stories of the building form a sort of base and are of limestone with a sub-base of pink granite. The large windows placed in this base correspond to the most important sections of the hotel for social usage : ballroom, dining room, and lounge. Then comes the main portion of the building (brick) with typical floors containing 140 rooms each. The upper structure of the building contains three stories and is of limestone like the stories at the base. There is a promenade on the roof 280 feet long, roofed in but open on the sides. The floor space of the ballroom is 14,000 square feet. This can be arranged for banquets seating 3,000 guests. The banquet check room can also hold 3,000. The table d'hôte dining room measures 65 × 80 feet.

French Building, New York.
(See plates no. LXXV & LXXVI).

Thirty-eight stories and 420 feet high. 5,000 tons of steel and 5,000,000 bricks went into its construction. It has 1,800 windows and 1,700 doors. Can hold 3,000 people. Vertical transportation : five high-riser elevators effecting service to the 35th floor and four low-riser elevators serving up to the 16th floor. Its exterior is a typical example of the application of the New York Building Zone Resolution to a plot of normal proportions. The entire front is of brick. The first designs for this building were on Romanesque and Gothic lines, but once more the inadequacy of both styles was proved.

Graybar Building, New York.
(See plates no LXXVII, LXXVIII & LXXIX.)

Thirty stories and 390 feet high. Volume of building : 16,177,000 cubic feet. The building was partly constructed on the New York Central Railway tracks and facilities. The excavations went 90 feet deep. The foundation consists of concrete piers supported on rock. An interesting feature is the vibration insulation in order to isolate the building from the vibrations caused by the trains the tracks of which pass by the basement. This was obtained by two layers of 3/8 inch asbestos, two layers of 1/8 inch sheet lead and one layer of nº 20 galvanized iron. The building has 1,350,000 square feet floor space. Vertical transportation consists of eight local passenger elevators ; eight low-rise express passenger elevators, eight intermediate express passenger elevators and eight high-rise express passenger elevators. These 32 elevators run with a speed of 800 feet per minute and are provided with automatic signal control. Moreover there are : two service elevators running at 450 feet per minute ; one railroad mail elevator ; three private elevators and three freight elevators reserved for New York Central Railroad. For the complete work 10,000,000 bricks were used. The machinery room of this building is one of the most interesting combinations which mechanics applied to skyscrapers has produced, grouping within 1,200 square feet hot-water heaters, vacuum heating pumps, fire pumps, control boards, etc. The steel work of the building which comprises 22,500 tons was completed in the short space of time from July 15 to October 8, 1926. The modern spirit of its exterior architecture deserves frank praise. Unfortunately reasons of economy imposed by the owner prevented the complete realization of the plan which provided decoration of the upper wall-borders in harmony with the material and motives used in the very fine base.

Brooklyn Chamber of Commerce Building, Brooklyn.
(See plates no. LXXX & LXXXI.)

Thirty stories and 430 feet high. Six high speed elevators serve the building. Tanks, elevator machinery and equipment occupy the peak of the building. The smoke flue passes through the cupola, which is planned for night illumination. The four lower stories are treated with limestone and granite, the upper stories being of brick and terra cotta. The style is modern Gothic. There are five setbacks above the thirteenth floor, which gives a very original and attractive effect to the front.

General Motors Building, New York.
(See plate no. LXXXI.)

On a three-story building which occupied the entire block additional stories were constructed. The original three-story building was prepared for taking on 22 more stories in U-form with a theatre in the interior. The additional stories were, however, constructed in the form of an H, wherefore it was necessary to reinforce and augment the existing columns. The General Motors Corporation occupies the thirteen upper stories of the building. Vertical transportation : sixteen elevators. Its interior arrangement is interesting. The front shows distinctly the two phases of construction.

Transportation Building, New York.
(See plate no. LXXXII.)

Forty-four stories and 542 feet high. Vertical transportation : fourteen ultra-modern elevators running at a speed of 800 feet per minute.

Montague-Court Building, Brooklyn.
(See plates no. LXXXII & LXXXIII.)

Thirty-five stories high on a plot of 12,500 square feet. Total rentable area : 300,000 square feet. Vertical transportation : five elevators running from the first to the fifteenth floor at a speed of 600 feet per minute and five elevators running from the basement to the thirty-fifth floor at a speed of 800 feet per minute. The capacity of these elevators is 2,500 pounds.

Alexander Wilson Building, New York.
(See plate no. LXXXIII.)

Interesting exterior : Original setback effect ; absolute predominance of the vertical lines.

Eaton Tower, Detroit. (See plate no. LXXXIII.)

Thirty-four stories and 371 feet high. Exterior of Indiana limestone. Architecture inspired by Italian Renaissance.

Ohio Bell Telephone Co. Building, Cleveland.
(See plate no. LXXXIV.)

Twenty-two stories and on top of them a 2-story penthouse. The building rises 360 feet above the curb. 154 1/2×145 feet at the base. Foundations : 53 feet deep. The building rests on a steel reinforced mat of concrete 5 1/2 feet thick. Population : 2,000 telephone workers. Vertical transportation : eight signal control elevators running at a speed of 800 feet per minute. The fronts contain 89,776 cubic feet of Indiana buff limestone. Cost of building : $5,000,000. The various stories are intended for the following uses : First story : commercial offices, for business relations with patrons ; from the second to the seventh story inclusive : dial telephone equipment ; from the eighth to the thirteenth floor : long lines, special switchboards and operators quarters ; from the thirteenth floor to the top, the general offices of the company. Architecture : a modern adaptation of French Gothic style.

Russ Building, San Francisco.
(See plate no. LXXXV.)

Thirty stories. The building is E-shaped with spacious, light courts between the wings. Vertical transportation : sixteen signal control, self-levelling Otis elevators. Six cars running express to the seventeenth floor ; five express to the eleventh floor ; and five for the service of the lower floors. The building contains a 400-car garage occupying the rear portion of the first floor, basement and mezzanine and, moreover, the entire second floor. Fine and interesting simplification of the Gothic style.

American Insurance Union Citadel, Columbus.
(See plates no. LXXXVI & LXXXVII.)

Forty-six stories and 555.5 feet high. The foundations rest on 44 caissons 10 feet square united by connecting concrete girders. The caissons were sunk into the ground to a depth of 112 feet. On them rest the 50,000 tons which represent the approximate weight of the building. Over 10,000 tons steel were used for the metallic construction of the building. Vertical transportation is carried on by automatically-controlled Otis elevators, running from 700-800 feet per minute. Besides the offices of the American Insurance Union Company the building holds a theatre, a hotel and stores and offices for rent. The theatre is in the east wing and can hold 4,000 persons. In the rest of the ground floor are stores and shops for rent. The 18 stories above the theatre comprise an annex to the Deshler-Wallick Hotel, adjacent to the building. The 19th and 20th floors are occupied by offices of the American Insurance Union Co. From the 20th floor to the top there are office suites for tenants. In the top there is an aerial lighthouse with five search-

lights visible from the sky at a distance of 80 or 90 miles. The front is terra cotta with colossal figures in relief : figures which measure 26 feet ; eagles of 18 feet with a wing-spread of 22 feet. The heating is produced by three 400 horsepower cross drum Heine boilers 19 feet long × 16 feet high and 12 feet in diameter. There are 2,100 radiators.

Savoy-Plaza Hotel, New York.
(See plate no. LXXXVIII.)

In the basement are: mechanical equipment, kitchen, laundry, etc. The fronts of the first floor are occupied by stores for rent. The interior of the first floor comprises the main dining room, lounge and large corridors. The second floor holds private dining rooms, tea room and the banquet hall. From the third to the thirtieth floors are bedrooms. The thirty-first floor contains the maids' rest room, valet shop, cafeteria, etc. The roof of the building functions as penthouse. The vertical transportation is carried out by eight high speed traction elevators and two more elevators for communication with the shops of the second floor. There are, moreover, service elevators.

The Barbizon, New York.
(See plates no. LXXXIX & XC.)

Intended for a residence club. A very interesting realization both as to interior arrangement and exterior architecture. It is one of the outstanding products of the school which has sought decoration of fronts by simple variants of saliences and varying distribution of the bricks covering them.

Sherry-Netherlands Apartment Hotel, New York.
(See plate no. XCI.)

Thirty-eight stories and 570 feet high. Contains 126 apartments of from one to six rooms (besides bathroom). From the 24th to the 35th floor there is only one apartment per floor. The 36th and 37th floors form a double apartment. There are a lobby and two restaurants for the use of tenants.

Harriman Building, New York.
(See plates no. XCII & XCIII.)

Thirty-eight stories high (without counting the penthouse). The exterior architecture expresses its decoration in modern lines employing the bricks covering the front. The Gothic style has lent the skyscraper not only its unity and verticality but its spirituality. The Harriman Building expresses in its masses a distinct spirituality.

2 Park Avenue Building, New York.
(See plates no. XCIV, XCV, XCVI & XCVII.)

Modern architecture based on brick with a very interesting attempt at polychrome in its upper stories. This upper part of the structure presents both in its technique and in the polychrome decoration of its fret-work a surprising likeness with the decorations and polychromes of the primitive monuments of America. This likeness is still more accentuated in the decorations of the great lobby. Its roof, mosaic panels, its clock, the building directory, prove the timeliness of seeking inspiration in the primitive architecture of America. The skyscraper and modern art have arrived at this likeness without any influence of primitive American art having been brought to bear upon it. The example of this building is a point in fact. Mr. Ely J. Kahn of the firm Buchman & Kahn asserts that the forms of primitive American art have not furnished the slightest inspiration for this building.

International Telephone Building, New York.
(See plate no. XCVIII.)

Thirty-one stories high with two additional stories in the top structure. The foundation of this building was laid on an old estuary of the harbor. Open caissons had to be sunk to a hard pan base on which concrete filled steel cores were permitted to rest. Very beautiful architecture with decorations by means of brick covering the front.

333 North Michigan Avenue Building, Chicago (See plate no. XCIX.)

Thirty-five stories and 426 feet high. Built on a plot of 60 × 200 feet. The three first stories are intended for shops. Above the fourth story practically all the building is covered by Bedford Indiana Limestone. The architecture is frankly modern with dominating surfaces and figures in bas-relief distributed with much talent.

Los Angeles City Hall, Los Angeles.
(See plates no. C & CI.)

Thirty stories. It must be remembered that in the

City of Los Angeles the maximum height of buildings is fixed at. ca. 150 feet or thirteen stories. When this building was erected a precedent was established for the case that " A municipality is not governed by its own ordinances ". The structural steel weights 8,167 tons. Vertical transportation is carried out by 11 elevators. The volume of the building is 12,000,000 cubic feet ; the floor space 20 acres ; the total weight 95,000 tons ; the cost of the building $ 5,000,000 ; cost of the ground $ 3,500,000 ; cost of equipment and furnishings $ 500,000. The lower body of the building is covered with California light gray granite ; the second part and the tower are covered with terra cotta of a quality that harmonizes completely with the granite of the lower part. Its exterior architecture is a most happy modern adaptation of the type which we have called " classic with small temple ". Its details show Greek inspiration, but they seem subordinated to the modern spirit which dominates the general composition. In the interior we meet the Romanesque influence.

TITLE INSURANCE BUILDING, LOS ANGELES.
(See plates no. CII, CIII, CIV & CV.)

192 feet high faced with terra cotta. The ground floor is occupied by shops. The company uses four stories of the building and the rest are offices for rent. A special garage which takes up nearly half of three stories offers facilities for parking automobiles of tenants and clients. It may be reckoned among the most beautiful creations of modern architecture applied to skyscrapers. The lintels of the three entrance doors, the lacework of its penthouse, its bronze doors, the decorations of its ceilings : is all that perhaps not another palpable proof of the similarity with the architecture and art of the primitive peoples of America which has come to be evident in skyscrapers and modern art ?

EQUITABLE TRUST COMPANY BUILDING, NEW YORK.
(See plate no. CVI.)

Thirty-nine stories high. One of the dominating masses of lower Manhattan. Constructed on a very irregular plot. The excavations extended to the permanent water level and concrete caissons were sunk to a depth of sixty feet below the curb. The front is covered with North Jay white granite, buff Indiana limestone, and Equitable face brick. The architecture is a simplified " small temple" type.

PENNSYLVANIA POWER & LIGHT COMPANY BUILDING, ALLENTOWN, Pa. (See plate no. CVII.)

An eloquent example of the development skyscrapers have attained in small-size cities. Interesting composition with a well-defined contrast between the stories which form the stone base and the dominating brick body of the building.

CHASE NATIONAL BANK BUILDING, NEW YORK.
(See plate no. CVII.)

Erected opposite the Equitable Building (which was constructed thirteen years before by the same firm of architects). Gives a clear idea of the hygienic and aesthetic results of the Zone Resolution. At the left in the design appears the vertical front of the Equitable Building.

MISSOURI PACIFIC LINES BUILDING, ST. LOUIS.
(See plate no. CVIII.)

Twenty-two stories and 270 feet high. Provision has been made to add 8 stories when the company will need more space later. Constructed on a ground plot of 100×192. Volume of the building : 3,618,750 cubic feet. Floor area : 230,000 square feet. Vertical transportation : Ten passenger elevators running at 600 feet per minute. Each elevator can hold 22 passengers. Heating is produced by five boilers and electricity by three electric generators. The ground floor has stores for rent ; the rest of the building is occupied by the 3,500 employees of the company.

PANHELLENIC HOUSE, NEW YORK.
(See plate no. CVIII.)

Interesting tower of modern architecture, the lines of which appear frankly from the base. The architect is one of the two partners who built the Tribune Tower of Chicago. There is no more sincere and eloquent proof that the Gothic style was not an aim in itself, but a stage on the way.

DADE COUNTY COURT HOUSE AND MIAMI CITY HALL, MIAMI.
(See plate no. CIX.)

The interior arrangement of this building is interesting as it shelters under one roof all dependencies and sections of a City Hall and a Court House. The offices which serve the public are located in the lower story ; in the following stories are the offices of the officials and the courts and, finally, the top stories are occupied by the jail which is provided with all the most modern appliances. The basement situated under the terrace which surrounds the building acts as garage for the cars of the officials. It has a special entrance for prisoners, who thus pass directly into their cells.

Fisher Building, Detroit.
(See plate no. CX.)

The Fisher Building or New Center Development Building has a total cubic contents of 14,691, 032 cubic feet, distributed as follows : 9,346, 382 cubic feet of office building ; 3,385, 134 garage and 1,959,516 theatre. The total inside area of the first story is 58,639 square feet, and of the 26th story : 5,379. The general appearance is fine and the setback very well-balanced.

Indemnity Building, New York.
(See plate no. CX.)

Twenty-six stories high. Vertical transportation : ten high speed elevators. The building is erected on a quicksand base which upon investigation proved to be part of the harbor frontage. Its foundation necessitated steel piles filled with concrete. Modern architecture of the same school as 2 Park Avenue Building.

New York Life Insurance Company Building, New York.
(See plate no. CXI.)

We have called West Street Building the " father of the Woolworth Building ". If we follow the interesting development of Cass Gilbert's work we note that the New York Life Insurance Co. Building marks the third phase. Distribution of masses very imposing, harmonious and well-balanced.

Penobscot Building, Detroit.
(See plate no. CXI.)

565 feet high. Front of limestone. The five first stories are occupied by the Guardian Detroit Bank. The forty-two remaining stories are occupied by offices for rent. The bank vaults are situated in the first and second basements.

Cleveland Terminal Tower & Cleveland Union Station, Cleveland.
(See plate no. CXII.)

Fine and slender tower with noteworthy terra cotta work. Demonstrates the possibilities in combining a station with a skyscraper in cities where the value of ground is high, placing the station centrally and conveniently without diminishing the financial returns of the plot.

Union Trust Building, Detroit.
(See plate no. CXII.)

Forty stories high, built on a plot of 80×270 feet. The basement, sub-basement and fourteen first stories are occupied by the Union Trust and its affiliated companies. The rest of the building contains offices for rent. The seven first stories are faced with Mankato stone ; the upper stories with bricks and bands in various colors of terra cotta. The top parts of the building and the tower are also of colored terra cotta. The seven lower stories forming a base in which the small apertures contrast with the dominating mass and with the majesty of the entrance doors form an interesting feature. This gives the whole building a special proportion. The top of the tower is also original. The use of color in this sort of architecture deserves praise.

10 East 40th Street Building, New York.
(See plate no. CXIII.)

Forty-four stories, the areas of which vary between 11,500 and 3,900 square feet, constructed on an elongated plot.

Stuart Building, Lincoln, Nebraska.
(See plate no. CXIII.)

Thirteen stories. Vertical transportation : four elevators of latest design. The building contains a theatre which can seat 2000 persons. This occupies a little more than half the area of the first six stories. The Lincoln University Club occupies the 11th, 12th and 13th floor which were built to suit its special requirements. Besides the theatre and the club the building has 151,000 square feet of floor space for commercial use. The architecture is an adaptation of the Gothic style.

Chanin Building, New York.
(See plates no. CXIV & CXV.)

Fifty-two stories high, on an irregular plot of 197 ×175 feet. Its steel frame has an approximate weight of 27,000,000 lbs. and its erection only took 104 working days. Its architecture is modern, brick predominating. Unfortunately in the Chanin, like in the Graybar Building, reasons of economy cut out nearly all the decorations planned for the upper part of the building and the tower.

NEW JERSEY BELL TELEPHONE BUILDING, NEWARK.
(See plates no. CXVI, CXVII & CXVIII.)

The exterior, in modern style, is a very interesting combination of brick and buff stone. The four first stories were treated in monumental manner to make them harmonize with the surrounding buildings. The interior is exceedingly original and beautiful and shows the author's modern and well-guided spirit.

NEW YORK CENTRAL BUILDING, NEW YORK.
(See plate no. CXIX.)

Thirty-five stories. The constructive problem of great interest in this building is its foundation and basement in which the tracks of the New York Central Railroad are laid. To get an idea of the difficulties which had to be surmounted it must be recalled that under this building there are railroad tracks at two different levels. The lower tracks, situated fifty feet below the street, have not the same alignment as the tracks of the upper level, which made it impossible to continue the steel columns of the building vertically to the level of the foundations. It was necessary to support the upper level columns on girders spanning the lower level tracks. These girders are in their turn supported by columns placed in points left free by the tracks of the lower level. The foundation also involves a feature of interest if we consider that over 700 trains pass daily on the tracks on the two levels. To avoid the transmission of vibration it was necessary to place the steel grillages supporting the columns on vibration mats formed of alternate layers of sheet lead and asbestos. The thickness of these mats is 3/4 of an inch. Another interesting characteristic of the building is that two public roadways pass by it. These roadways are entirely separated from the building, as far as construction is concerned, in order to avoid vibration. Vertical transportation : forty elevators including a certain number of cars providing intercommunicating service. The fronts of the building are of Texas mountain pink granite and Indiana Limestone in the lower stories and of buff brick of large size in the remaining stories.

WILLIAMSBURGH SAVINGS BANK, BROOKLYN.
(See plate no. CXX.)

512 feet high. The foundations extend to a depth of 56 feet below the sidewalk. The banking hall is really grandiose. 128 feet long, 72 feet wide and 62'9" high. It has a wide central aisle furnishing space for the public, and two side aisles intended for working space. The architecture is an adaptation of the Romanesque style with a slightly Gothic tendency. In the space covered by the 30th, 31st and 32nd floor there is a clock which measures 27 feet in diameter.

R. J. REYNOLDS TOBACCO CO. BUILDING, WINSTON SALEM, N. C.
(See plate no. CXXI.)

Twenty-two stories and 306 feet, built on a plot of 120×200 feet. Vertical transportation : six high speed elevators. The ground floor is occupied by shops and by the Employment Department and Medical Supervision of the Company. The offices of the same occupy the floors 7, 8, 9, 10, 17, 18 and 19. The rest of the building has offices for rent, but future expansion of the company's offices has been kept in view. Its fine front is in modern architectural style carried out in Indiana limestone.

PALMOLIVE BUILDING, CHICAGO,
(See plate no. CXXII.)

Constructed on a rectangular plot. Typical floors have an area of 13,582 square feet. Modern front of setback architecture with a decided spirit of verticality.

CHICAGO DAILY NEWS BUILDING, CHICAGO.
(See plates no. CXXII & CXXIII.)

The first building constructed in Chicago on " Air Rights ". A new building period has been inaugurated in the said city, as the Chicago downtown area comprises a number of open track spaces the value of which has been estimated at $ 400,000,000. The trains which pass underneath this building are not electrified, so that it was necessary to construct a great smoke chamber to collect the fumes, which are expelled by special fans. The steel frame rests on caissons carried down to bedrock. The floors and roofs are a combination of steel beams and reinforced concrete slabs. Special appliances muffle the vibration both from trains and from the printing machinery. The building contains, besides the offices of the paper, offices for rent. Its exterior architecture of modern lines combine simplicity with balance and majesty, very well in keeping with the use of the building and the century in which we live, and also with the general structure and the materials employed.

RAND TOWER, MINNEAPOLIS.
(See plate no. CXXIV.)

Constructed on a square plot. Shows clearly its character of tower from the base, which is a commend-

able quality. The style is modern, powerfully stressing verticality, suppression of cornices, and pyramidal setback. The typical floors have an area of 4,902 square feet.

FOREMAN NATIONAL BANK BUILDING, CHICAGO.
(See plate no. CXXIV.)

Thirty-eight stories high. Modern architecture with an upper structure which, in regard to roof and other characteristics, reminds of the " small temple " type.

TWENTY NORTH WACKER DRIVE BUILDING, CHICAGO.
(See plate no. CXXV.)

Contains the New Chicago Civic Opera House. Its exterior architecture expresses this important fact in its decoration.

LINCOLN BUILDING, NEW YORK.
(See plate no. CXXV.)

Fifty three stories. 18,000 tons of structural steel. Rentable floor area : 922,000 square feet. Three subway entrances. Basement arcaded for shops. The entire building (setback and tower inclusive) is designed in monumental form. The land and building represent an outlay of $ 30,000,000. The yearly income will total close to $ 4,000,000.

THE NAVARRE, NEW YORK.
(See plate no. CXXVI.)

Forty three stories, on a lot of 122×116 feet. Vertical transportation : 9 passenger elevators and 8 freight elevators. Modern exterior with a marked structural tendency. The 16 lower stories form a sort of base to the tower. This latter ends in a very original penthouse which will be provided with night illumination apparatus.

OFFICE BUILDING AT MADISON AVENUE AND 52ND STREET, NEW YORK.
(See plates no. CXXVI & CXXVII.)

Forty stories and 450 feet high, planned on a plot of 100×125 feet. Vertical transportation : eleven high-speed elevators. The three first stories will be stone, the upper stories light-colored brick. The piers will be capped with terra cotta. The vertical lines will be emphasized by the use of darker brick in patterns between the windows. Modern architecture in gradual diminution of the masses. Upper pinnacle of the tower with proportioned buttress-like setbacks.

CHRYSLER BUILDING, NEW YORK.
(See plate no. CXXVII.)

Sixty-seven stories and 808 feet high, on a plot of 37,500 square feet. Rentable space : 900,000 square feet. For the construction of its frame 17,000 tons steel will be used. The cost of this building is estimated at $ 14,000,000. The front of the first story will be of block granite, the three following stories of light French limestone and the remaining stories of white brick and terra cotta. The dome will be of steel and crystal and will be lit from the interior, at night giving the effect of a great jewelled sphere. The architecture of the building is modern with certain features which show the inspiration from temples of India, specially its top peak. The source of inspiration is seen even more clearly and powerfully in the first scheme. The architect desired to express the steel structure in the general lines of the building with the result that the fastenings of the beams and columns appeared on the front as a sort of braiding of the horizontals and verticals.

NEW YORKER HOTEL, NEW YORK.
(See plates no. CXXVIII & CXXIX.)

Thirty-six stories. With its 2,500 rooms it will be the largest hotel in New York. The ground floor will hold : lobbies, main dining room, stores, offices, etc. On the second floor : lobby, mezzanine, writing rooms, the great ball room, private dining rooms, a banquet room, etc. The third floor will hold : the ball room mezzanine, the coat room, ladies' room, etc. The typical hotel floor begins at the fourth story. Vertical transportation : 12 high speed elevators. The floors below the street level are occupied by a cafeteria, kitchen, laundry, and the mechanical equipment. There will be four high pressure boilers using pulverized coal. Modern architecture with colossal masses in setbacks. Another case similar to the 2 Park Avenue Building in which modern architecture develops decoration resembling the primitive art of America without being inspired by it. " A modern effort without any special inspiration. " declared Mr. Sugarman to me.

News BUILDING, NEW YORK.
(See plate no. CXXX.)

Building for the News Syndicate Company. Inter-

esting work by the same architects, who built the Tribune Tower of Chicago, converted to the modern school.

Chicago Tower, Chicago.
(See plate no. CXXX.)

Seventy-five stories and 880 feet high, on a plot of 400 × 400 feet. Total volume of the building 63,282,640 cubic feet. The building will be erected on air rights with foundations resting on 260 caissons. In its skeleton will go 74,000 tons of steel and 12,000 tons of steel bracing. Gross floor area : 5,097,778 square feet. Rentable area : 3,639,104 square feet. There are more than ten types of floor plans. Area of the first floor: 153,132 square feet. Area of seventy-fifth floor : 9,256 square feet. Vertical transportation : 66 passenger elevators arranged in banks and 28 freight elevators. The Chicago Tower expresses an innovation in building economics, since it will present nine different classes of tenancy. It will contain the Chicago Tower office building, the Chicago Apparel Mart, offering sales, exhibition and light manufacturing space for the men's apparel trade ; the Chicago Tower Hotel, with 440 rooms ; two clubs, two convention halls ; an automatic garage of twenty-three stories ; warehouse space, shop space, and a permanent exhibition space. The mechanical garage will be able to handle 1,026 cars. The operation will be entirely mechanical by means of stalls suspended on a chain, one above the other. The car will be driven into a stall which will be lifted by a hydraulic lift. It is calculated that by this system a car can be stored in six seconds. The time necessary for delivery of a car will be on a maximum of three and one half minutes. The Chicago Tower will have nine main entrances and will have double level streets on all four sides. A street will cross the center of the first floor. Modern exterior. The appearance of its great masses offers a setback outline which does not break the vertical lines of its distinct parts nor the vertical lines of the tower which is clearly manifest from the very base.

American Exchange Irving Trust Co, New York.
(See plate no. CXXX.)

Forty-four stories and 560 feet on a plot of 20,000 square feet. Besides the floors required by the Trust Company there will be more than 500,000 square feet of office space available for tenants. Its architecture will be the last word of the modern school, already powerfully stressed in their former works by the architects of this building.

Perspective of a 68-story Office Building in Neo-American style.
(See plates no. CXXXI & CXXXII.)

Sixty-eight stories and 800 feet high, on a plot of 200 × 800 feet.

The results obtained in the last and most perfect skyscrapers of the modern school have been embodied in this building on American lines. Is it more than a slight step which separates modern skyscraper architecture from the architecture of primitive America ?

THE END.



The New York Skyline as it Appeared at the Close of the Present Study in October 1928.
Drawn by Francisco Mujica.

PRE-SKYSCRAPERS.

CONSEQUENCE OF THE ELEVATOR MASONRY STRUCTURES ATTAINED IMPORTANT HEIGSHT



MILLS BUILDING, NEW YORK.
COMPLETED : 1881.
GEO. B. POST, ARCHITECT.



TRIBUNE BUILDING, NEW YORK.
COMPLETED : 1875.
FIRST ADDITION : 1883.
RICHARD M. HUNT, ARCHITECT.

OLD TIMES BUILDING (41 PARK ROW), NEW YORK.
COMPLETED : 1888.
GEO. B. POST, ARCHITECT.



Copyright by Irving Underhill.

WORLD BUILDING, NEW YORK. COMPLETED : NOVEMBER 24, 1890.
GEO. B. POST, ARCHITECT.



Chicago Architectural Photo.

OLD WOMEN'S TEMPLE BUILDING, CHICAGO. COMPLETED : SPRING, 1891.
BURNHAM & ROOT, ARCHITECTS.



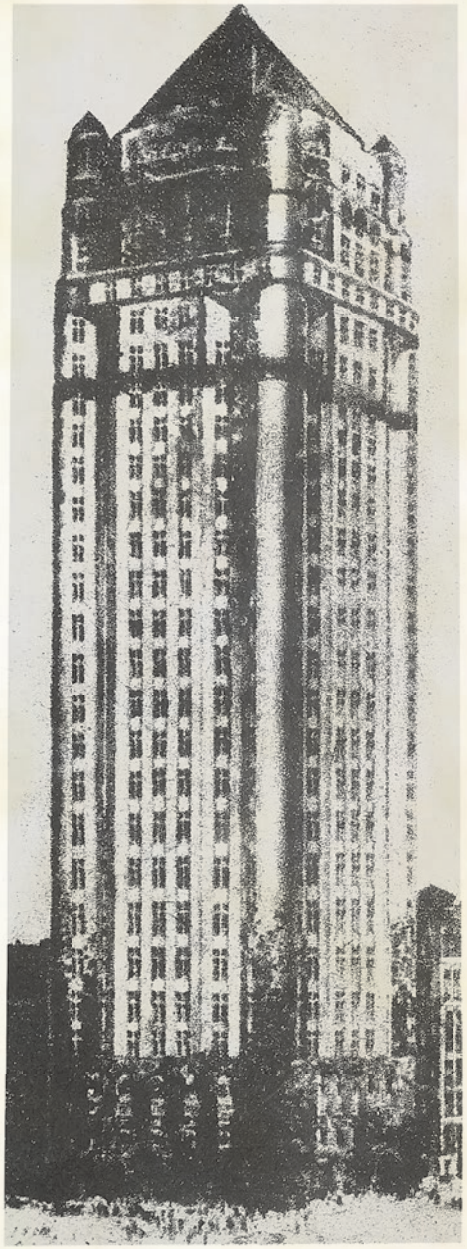
Chicago Architectural, Photo.

THE FIRST SKYSCRAPER : HOME INSURANCE BUILDING, CHICAGO. COMPLETED : 1884.
W. L. B. JENNEY, ARCHITECT.



Chicago Architectural Photo.

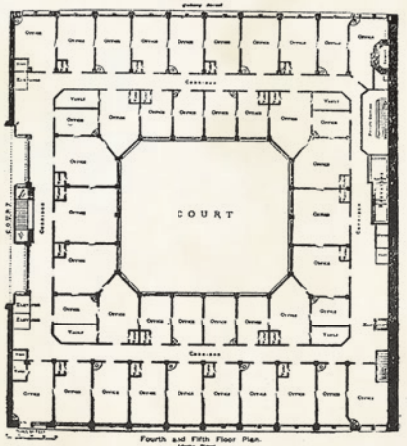
THE SECOND SKYSCRAPER : TACOMA BUILDING, CHICAGO. COMPLETED : 1888.
HOLABIRD & ROCHE, ARCHITECTS.



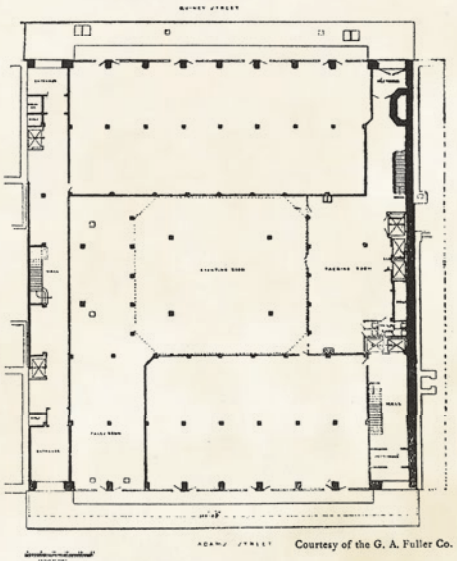
THE FIRST ALL STEEL FRAME DESIGN : A 28 STORY BUILDING.
PUBLISHED : 1888.
L. S. BUFFINGTON, ARCHITECT.



Courtesy of the G. A. Fuller Co.



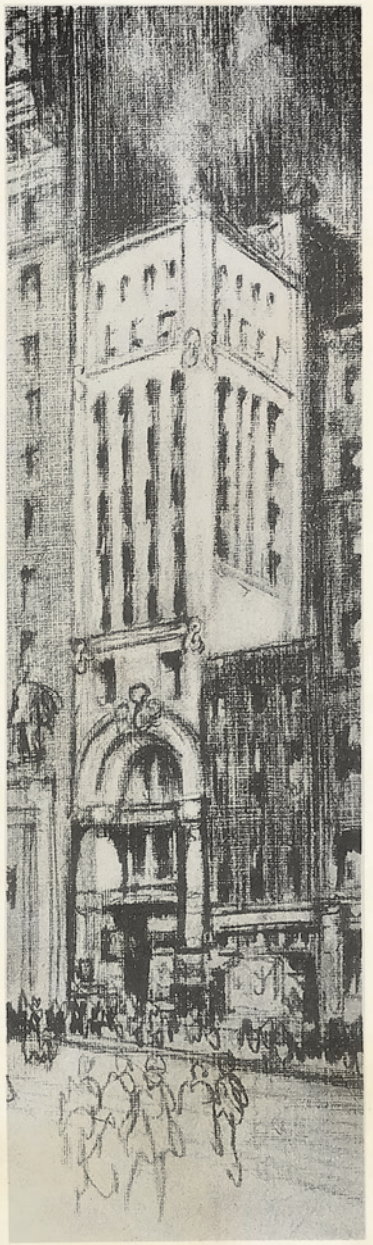
TYPICAL FLOOR PLAN.



Courtesy of the G. A. Fuller Co.

FIRST FLOOR PLAN.

THE FIRST ALL STEEL FRAME BUILDING : RAND MC NALLY BUILDING, CHICAGO.
COMPLETED : 1889.
BURNHAM & ROOT, ARCHITECTS.



Joseph Pennell, del. Courtesy of the New York Edison Co.

THE FIRST NEW YORK SKYSCRAPER :
TOWER BUILDING (50 BROADWAY).
COMPLETED : SEPTEMBER 27, 1889.
BRADFORD L. GILBERT, ARCHITECT.



Chicago Architectural Photo.

The First Skyscraper of Great Importance : Old Masonic Temple Building (Capital Building), Chicago.
Completed : 1892. — Burnham & Root, Architects.
Tallest buildind in the world at that time.



Havemeyer Building, New York. Completed Fall of 1892. Geo. B. Post, Architect.



Manhattan Life Insurance Co. Building, New York.
Completed : 1894. Kimball & Thompson, Architects.



E. Levick, Photo.

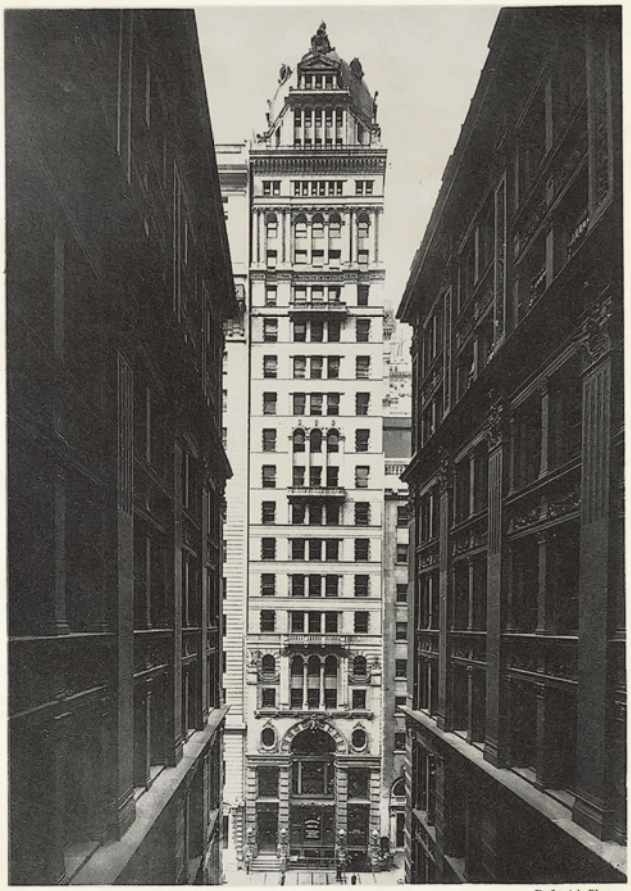
American Surety Company Building, New York.
Completed : 1895. Bruce Price, Architect.



Park Building, Pittsburgh. Completed : 1896. Geo. B. Post, Architect.

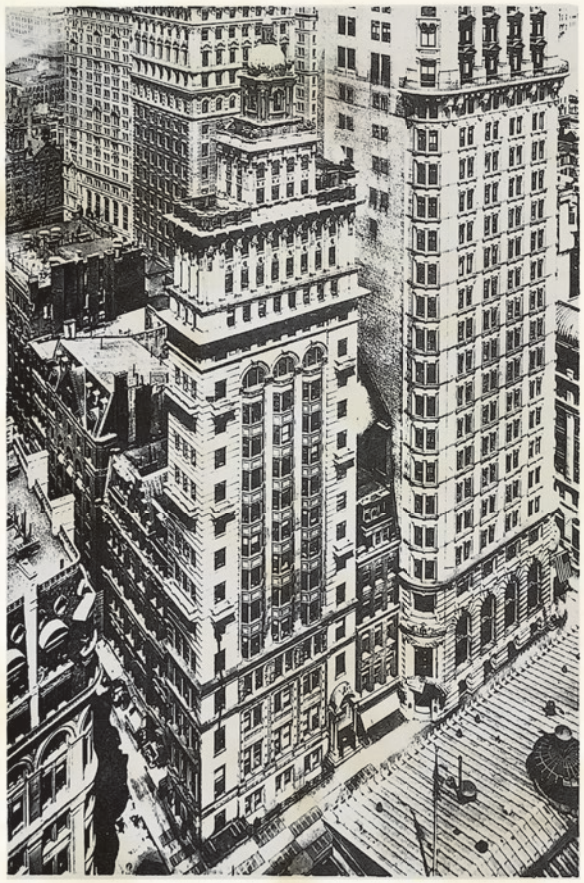


New York Life Insurance Co. Building, New York. Completed : 1896.
Mc Kim, Mead & White, Architects.



E. Levick Photo.

Commercial Cable Building, New York. Completed : May 1, 1897.
Geo. Edw. Harding & Gooch, Architects.



Gillender Building, New York. Completed : 1897. Scrapped : 1910.
The Life of a Skyscraper! Charles I. Berg., Architect.



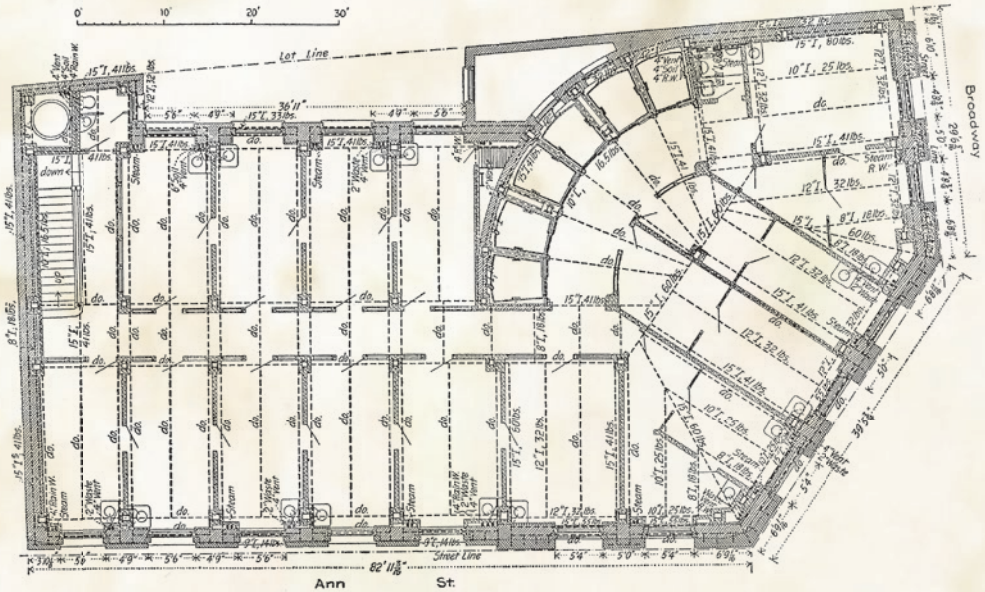
E. Levick Photo.

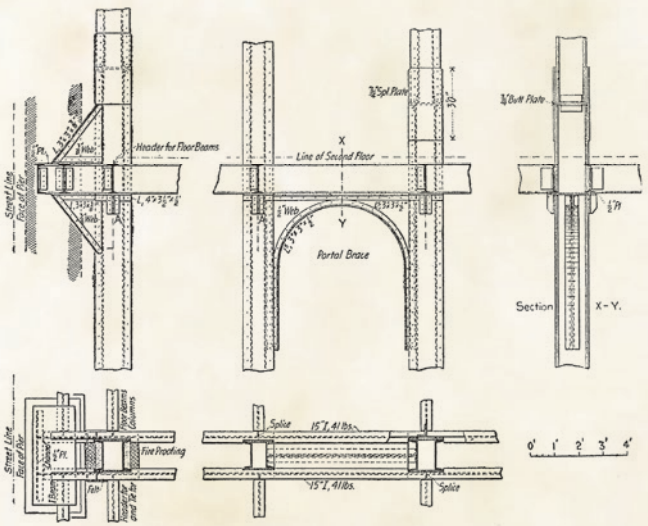
Bowling Green Building, New York. Completed : 1898.
Audsley Brothers, Architects.



St. Paul Building, New York. Completed : Early in 1899. Geo. B. Post, Architect.

St. Paul Building deprived Chicago of the title of possessing the tallest building in the world, transferring it to New York.





Courtesy Engineering News.

St. Paul Building, New York. Above : Fourth Floor Plan.
Below : Details of the structural framework.

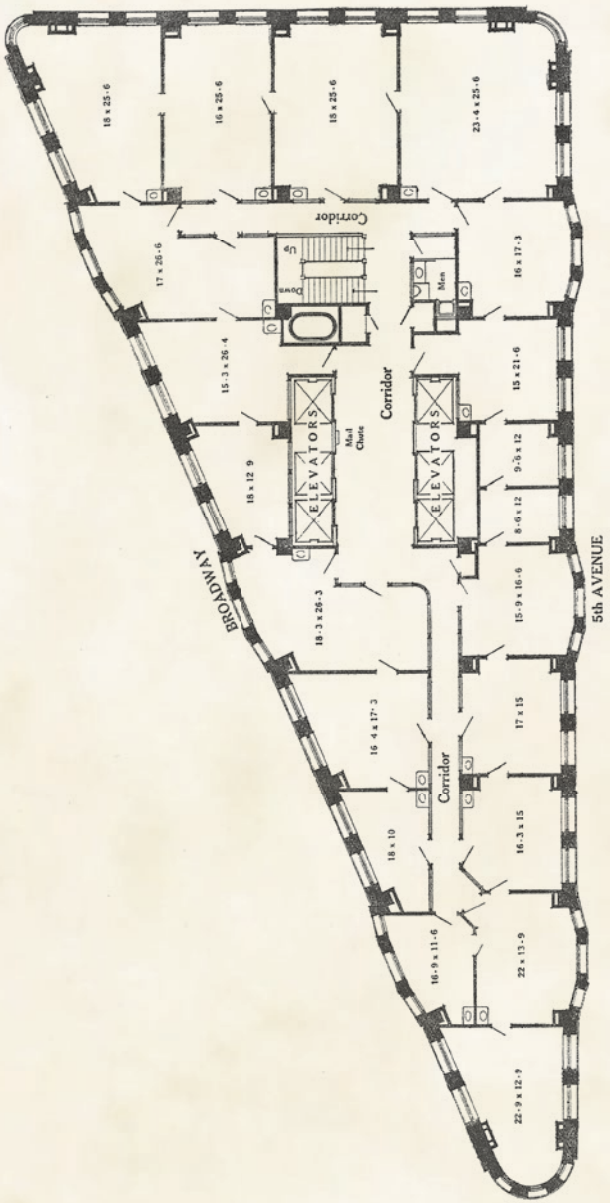


Park Row Building, New York. Completed : Fall of 1899.
R. H. Robertson, Architect.



Wurts Bros. Photo.

Fuller Building (Flat Iron Building), New York
Completed : October 1, 1902. D. H. Burnham & Co, Architects.



Fuller Building (Flat Iron Building), New York.
Typical Floor Plan.



Hugh Ferriss, del.

Times Building, New York.
Completed : November, 1904. Eidlitz & Mc Kenzie, Architects.



Wurts Bros. Photo.

Trinity Building, New York. Completed : 1905.
Francis H. Kimball, Architect.



E. Levick, Photo.

West Street Building, New York. Completed : October, 1905.
Cass Gilbert, Architect.



Singer Tower, New York. Completed : June 1, 1908.
Ernest Flagg, Architect.

Plate XXXII



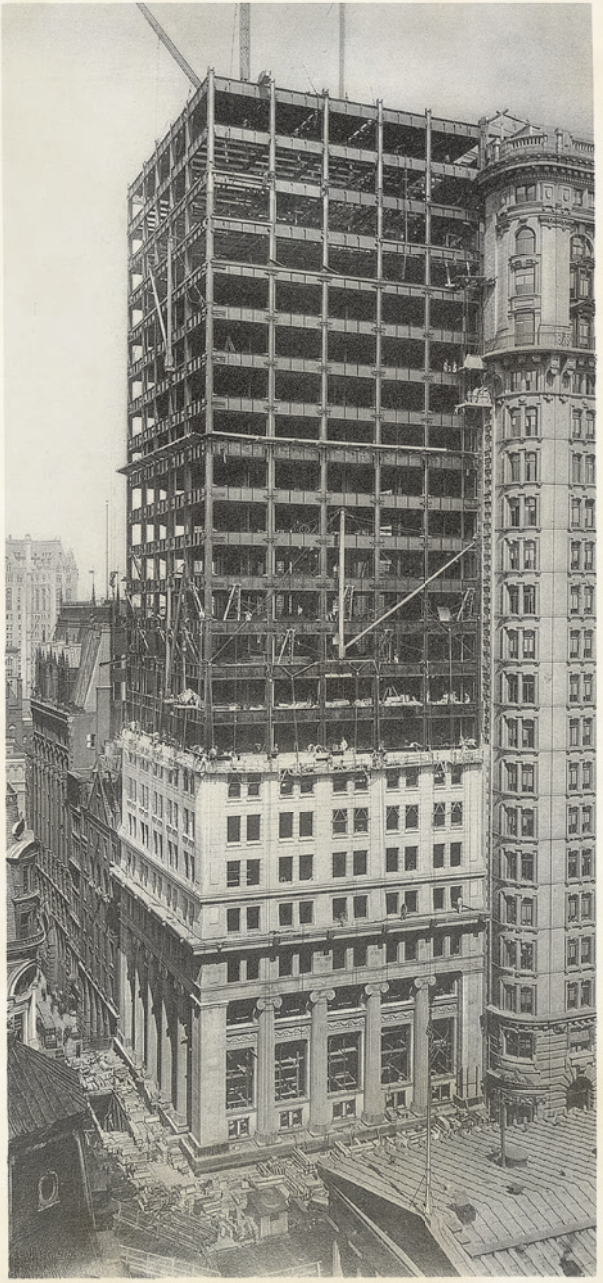
Wurts Bros, Photo.

Metropolitan Life Insurance Co. Tower. New York.
Completed : December, 1909. N. Le Brun & Sons, Architects.



Wurts Bros, Photo.

Bankers Trust Building, New York. Completed : May, 1912.
Trowbridge & Livingston, Architects.



Bankers Trust Building, New York.
Construction Work and Covering of the Metallic Frame.



New Municipal Building, New York. Completed : May, 1913 Mc Kim, Mead & White, Architects.



Competition Drawing for the New York Municipal Building. Howells & Stokes, Architects.

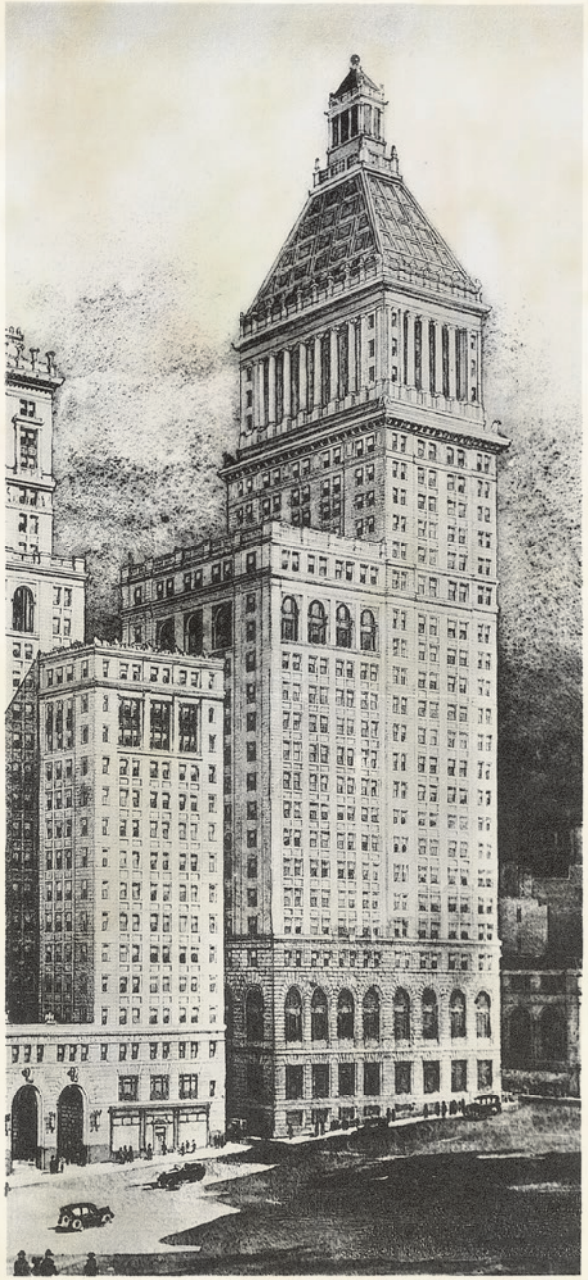


Copyright by Wurts Bros. Photo N.-Y.

Woolworth Building, New York. Completed : April 24, 1913. Gass Gilbert, Architect.
Tallest building in the world at the close of the present study.



Perspective of the Trinity Tower, New York.
Accepted by the New York Department of Buildings for Construction in 1913. Howells & Stokes, Architects.



Union Central Life Building, Cincinnati.
Completed : October, 1913.
Cass Gilbert and Garber & Woodward, Architects.

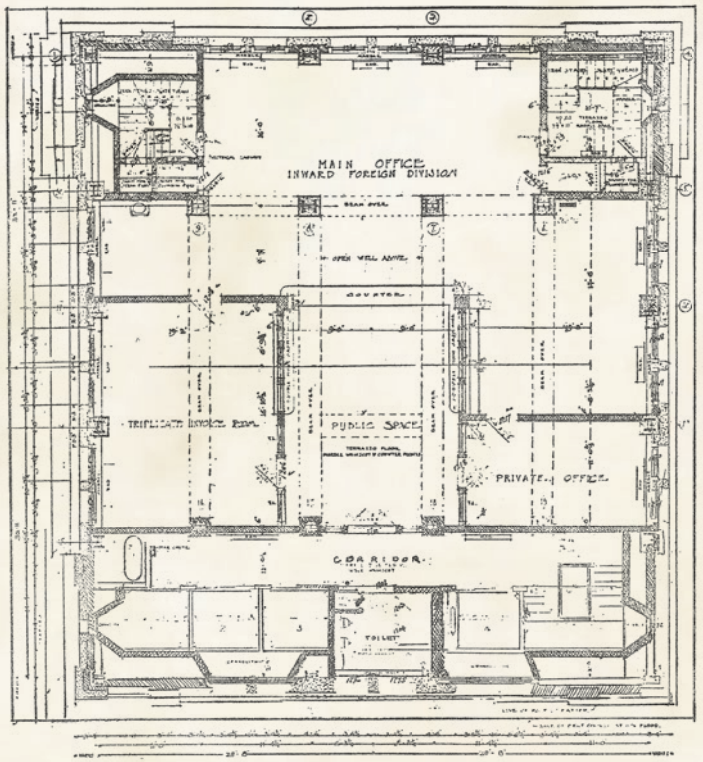


Adams Express Building, New York.
Completed : Early in 1914. Francis H. Kimball, Architect.

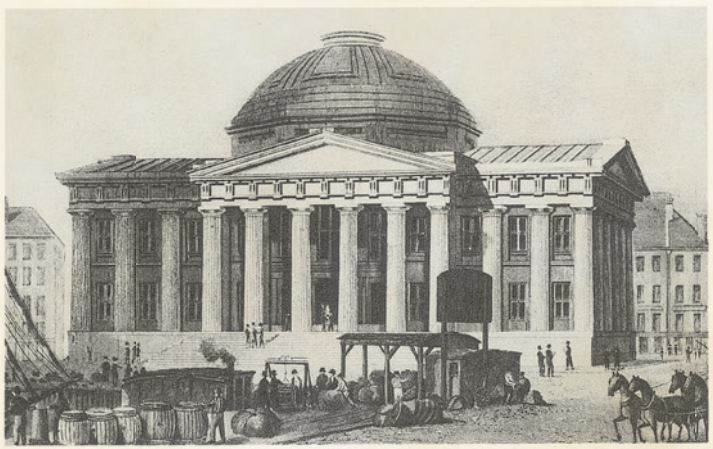


William H. Pierce, Photo.

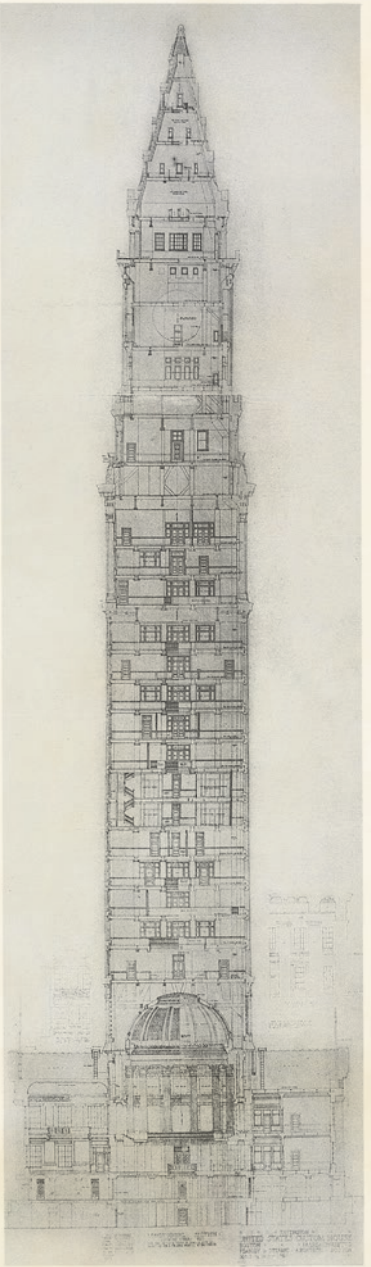
United States Custom House, Boston. Completed : April, 1915.
Peabory & Stearns, Architects.



United States Custom House, Boston. 12th Floor Plan.



United States Custom House, Boston.
The Old Building on Which the New Skyscraper was Erected.

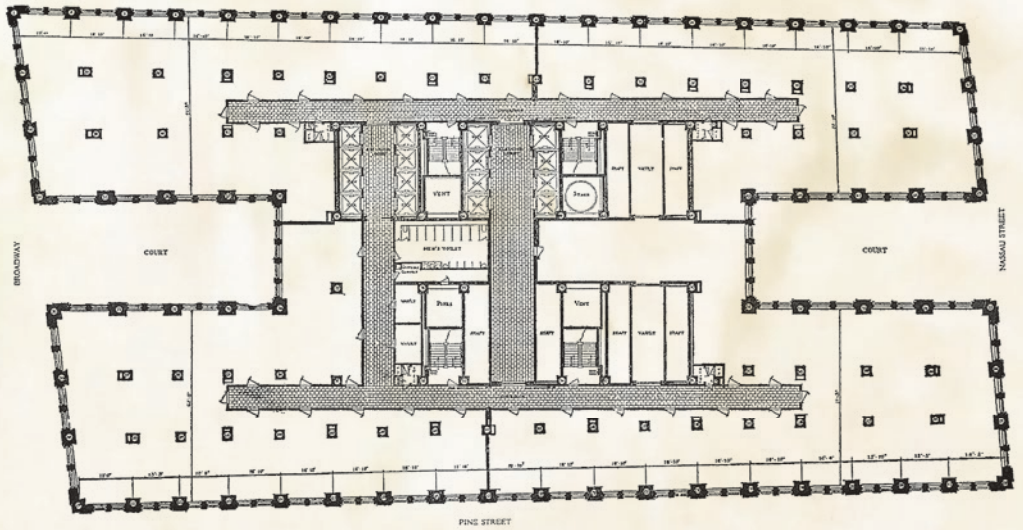


United States Custom House, Boston.
Section.

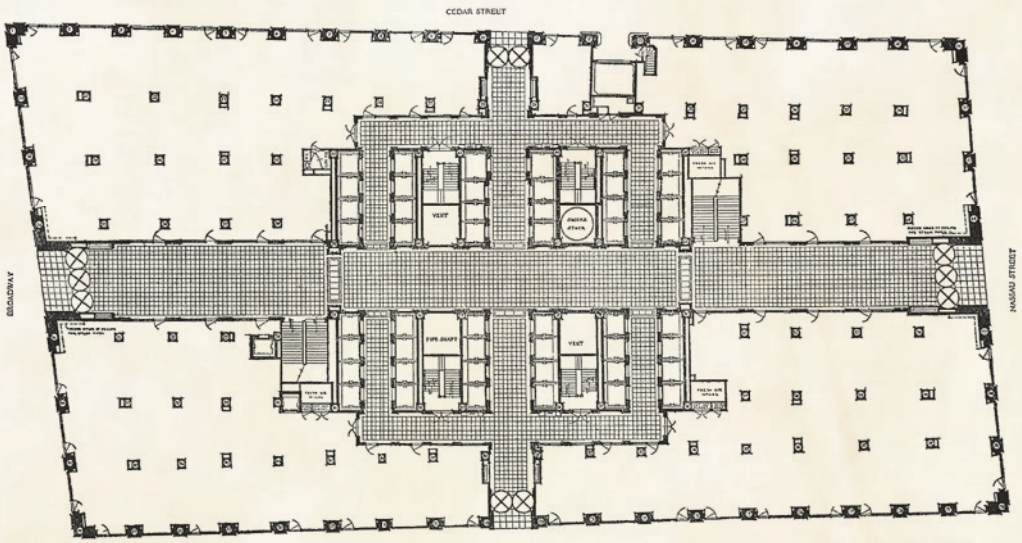


Copyright by Equitable Office Bldg. Corp.

EQUITABLE BUILDING, NEW YORK. COMPLETED : SPRING 1915. E. R. GRAHAM, ARCHITECT.



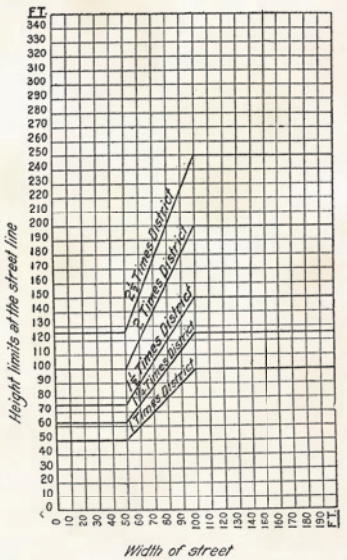
TYFICAL FLOOR. ELEVENTH TO EIGHTEENTH



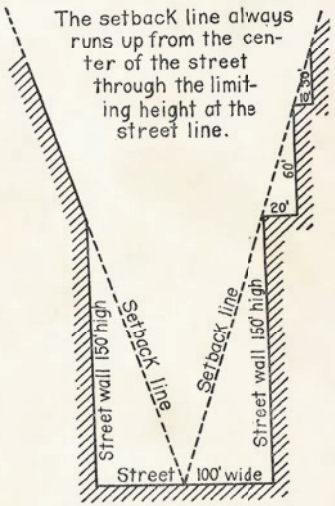
FIRST FLOOR

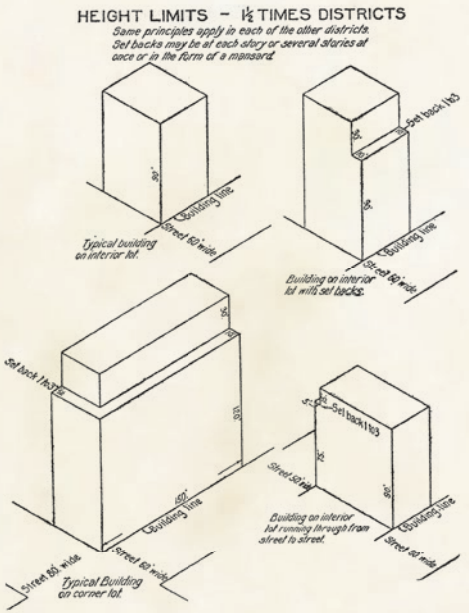
EQUITABLE BUILDING, NEW YORK. FLOOR PLANS.

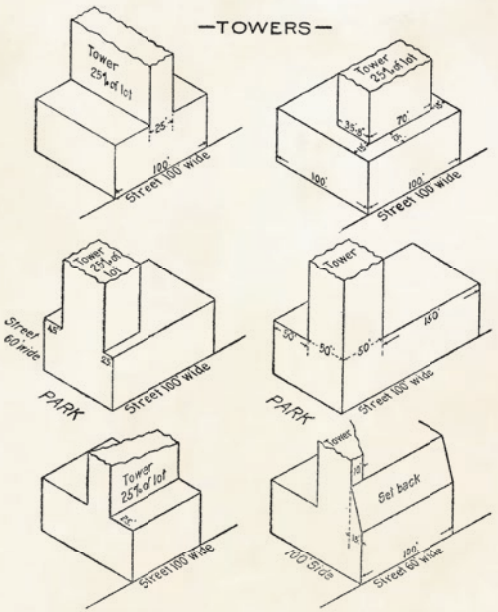
Chart showing Height Limits at the street line for all street widths in all Height Districts.



SETBACK PRINCIPLE.
TYPICAL EXAMPLE IN A 1 1/2 TIMES DISTRICT, FOR STREETS 50' TO 100' WIDE.







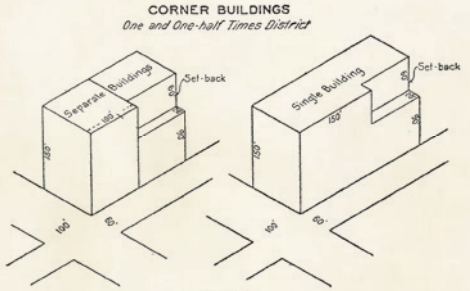
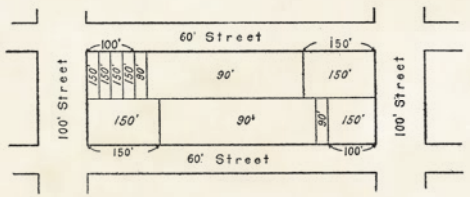
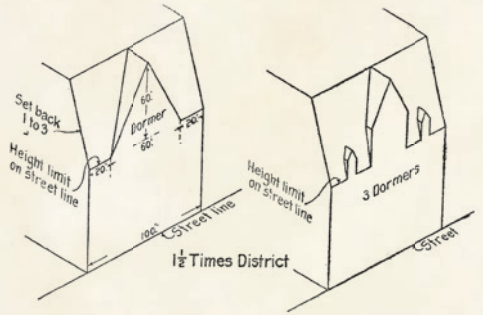


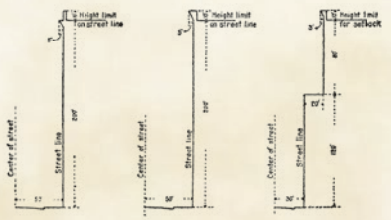
FIG. 142.



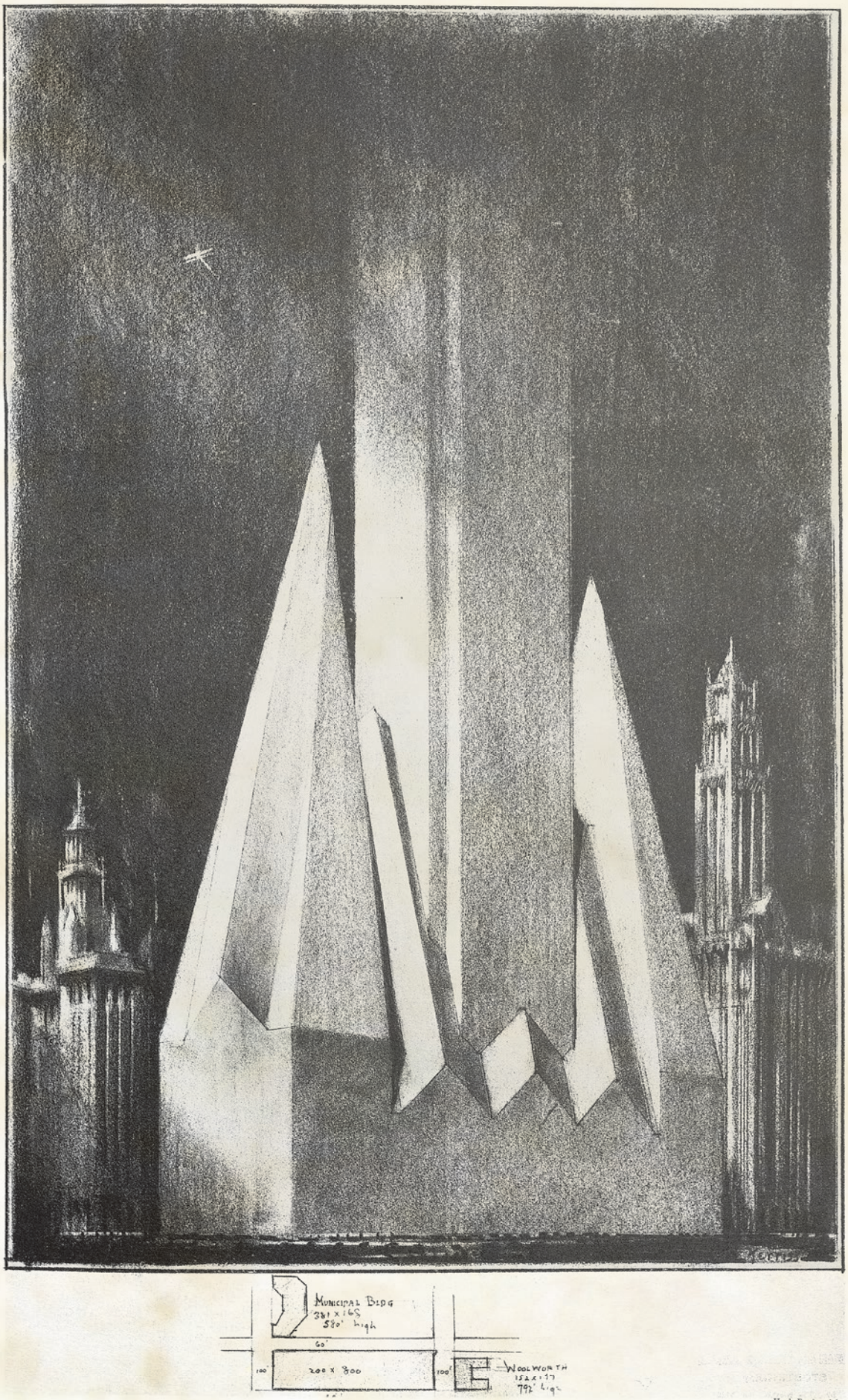
TYPICAL EXAMPLE SHOWING INFLUENCE OF WIDER STREET OF INTERSECTIONS. FIGURES IN BUILDINGS, AS "150", SHOW HEIGHT LIMIT AT THE STREET LINE, IN A 1 1/2 TIMES HEIGHT DISTRICT.



CORNICES AND PARAPETS
in a 2 times district.



EXAMPLES OF THE APPLICATION OF THE BUILDING ZONE RESOLUTION, ADOPTED JULY 25, 1916. GEO B. FORD, ARCHITECT.
CONSULTANT OF THE COMMISSION ON BUILDING DISTRICTS AND RESTRICTIONS OF THE CITY OF NEW YORK.

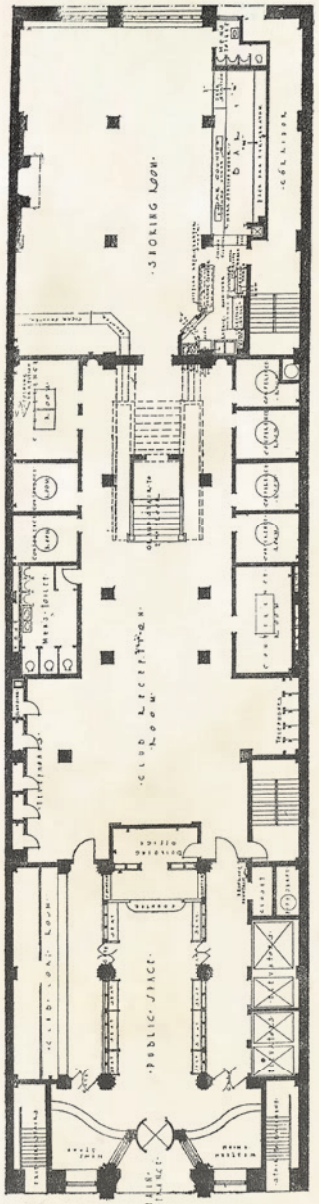


Hugh Ferriss, del.

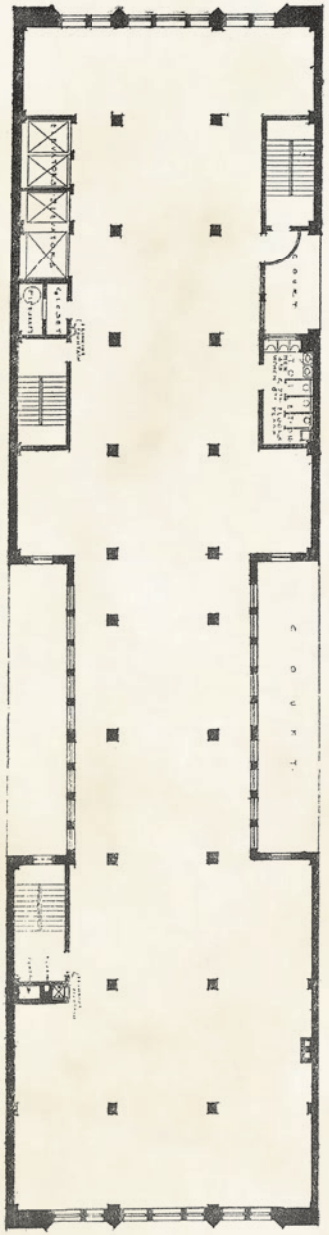
Example of the Application of the Building Zone Resolution to a Block 200' × 800'. Harvey Wiley Corbett, Architect.



Bush Terminal International Exhibit Building.
New York. Completed : Fall of 1917.
Helmle & Corbett, Architects.



First floor.



Typical floor.

Bush Terminal International Exhibit Building, New York.
Floor Plans.

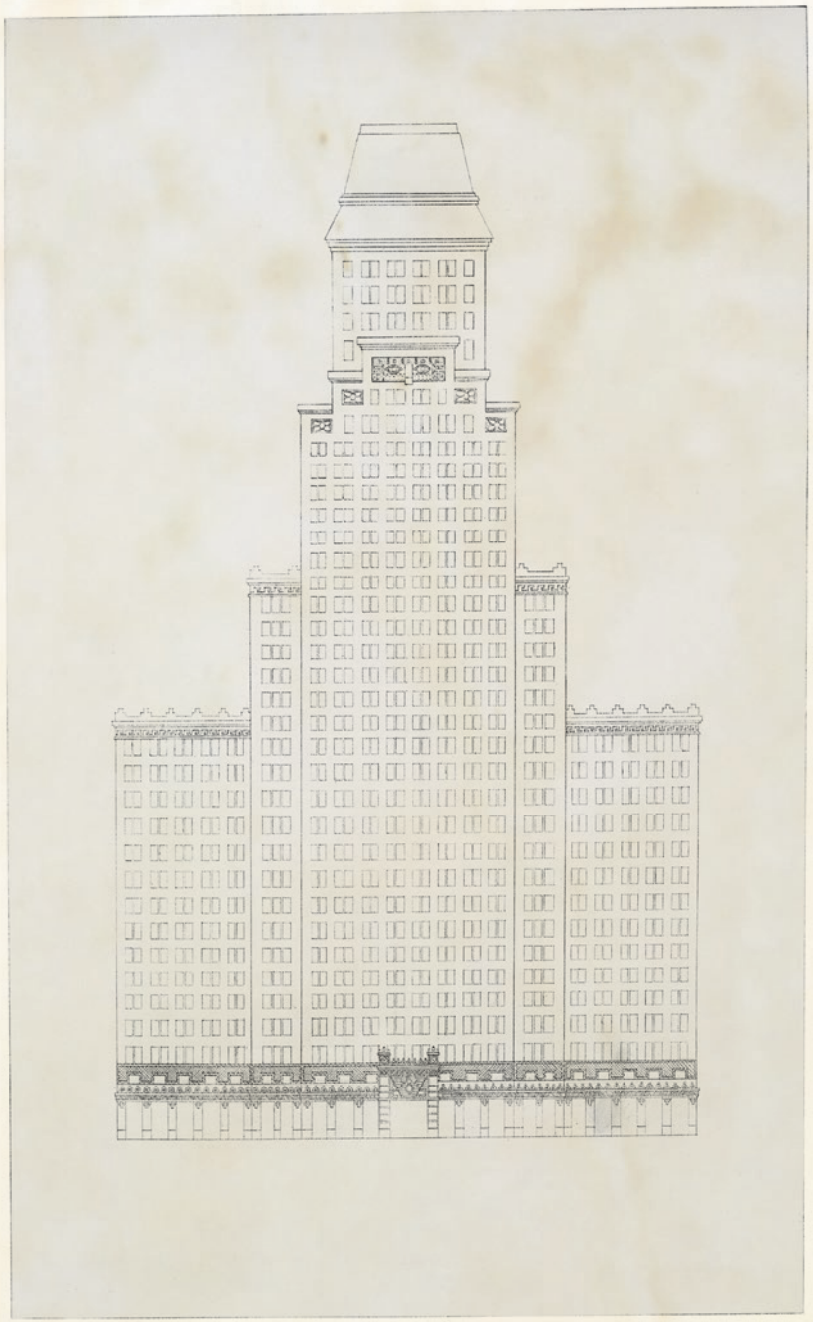


Perspective of the Selles Miró Building for Plaza de Cataluña, Barcelona-Spain.
Designed in 1918.
John Mead Howells & James Gamble Rogers, Architects.



Edwin Levick Photo.

Fisk Rubber Co. Building, New York.
Completed : January, 1919.
Carrere & Hastings, Shreve & Lamb, Architects.



Perspective of a 34 Story Skyscraper, Inspired by the Pyramid of Huatusco, Mexico.
On the 16th of October 1919 the Author Published for the First Time his Theories in Favor of a Renaissance of American Architecture.

This project does not reflect his opinion concerning solution of the skyscraper problem. He sketched it during his first visit to the City of New York with the sole object of demonstrating that it was possible to express on American lines what was being constructed in those days.



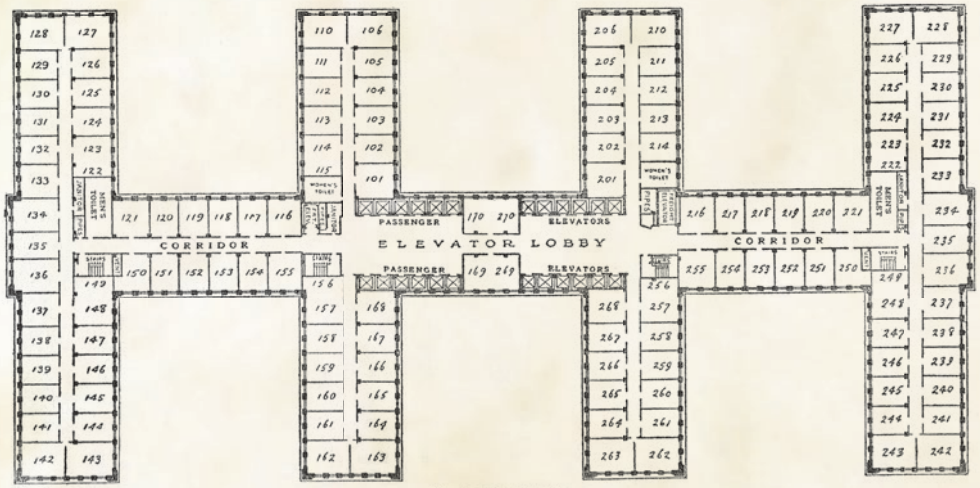
Tebbs & Knell, Photo.

Wrigley Building, Chicago.
Completed : May 1, 1921 (South Section), May 1, 1924 (North Section).
Graham, Anderson, Probst & White, Architects.



Cunard Building, New York.
Completed : May 1, 1921.
Benjamin Wistar Morris, Architect. — Carrere & Hastings, Consulting Architects.



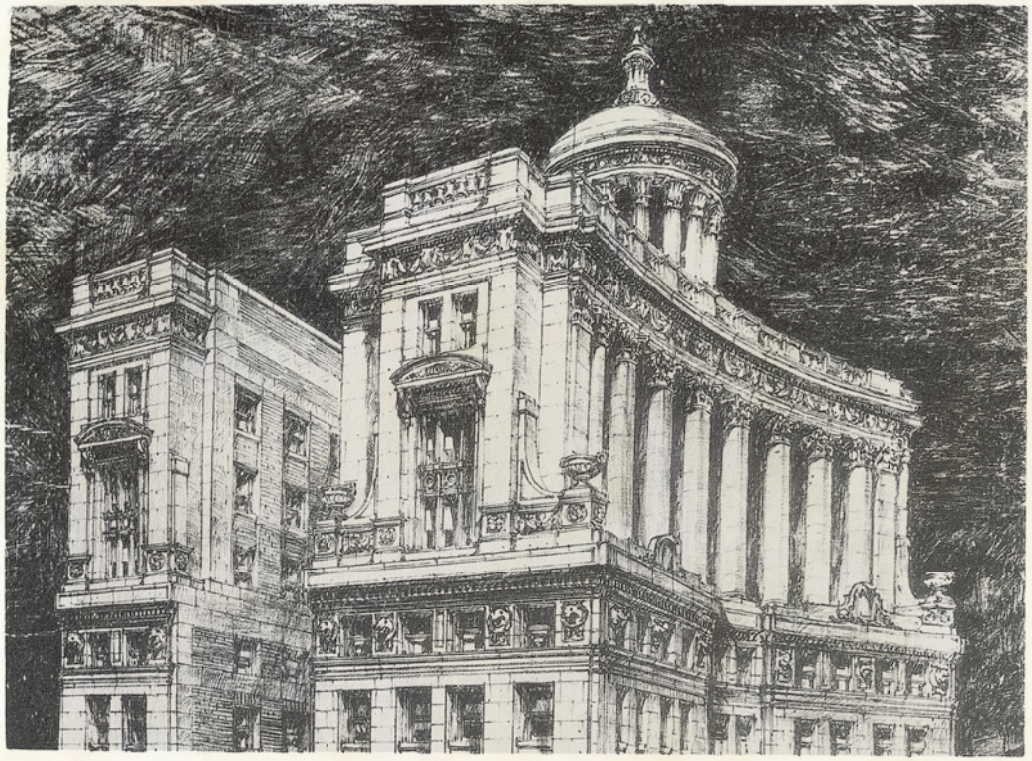


6th to 13th floor

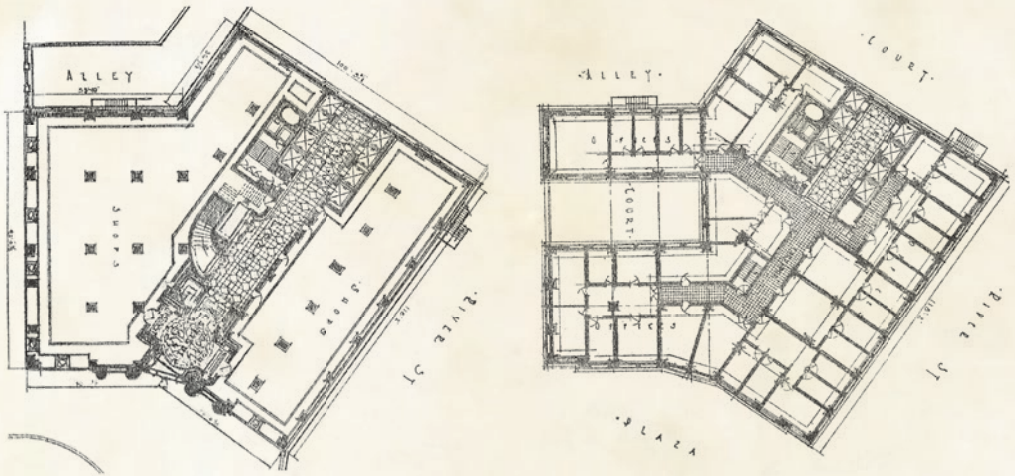
General Motors Building, Detroit. Exterior (above) and Floor Plan (below).
Completed : November 20, 1921. Albert Kahn, inc., Architects.



London Guarantee & Accident Co. Building, Chicago. Completed : June, 1922.
Alfred S. Alschuler, Architect.



London Guarantee & Accident Co. Building, Chicago. Detail of the Front.



London Guarantee & Accident Co. Building, Chicago. Floor Plans.



New York Stock Exchange Building, New York.
Completed : October, 1922 (The Corner Addition), Spring 1903 (The Original Building).
Trowbridge & Livingston, Architects of the Addition.
Geo B. Post, Architect of the Original Building.



Wurts Bros, Photo.

Pershing Square Building, New York. Completed : April, 1923.
York & Sawyer — John Sloan, Architects.



Keystone, Photo.

Biltmore Hotel, Los Angeles. Completed : October 1, 1923.
Schultze & Weaver, Architects.



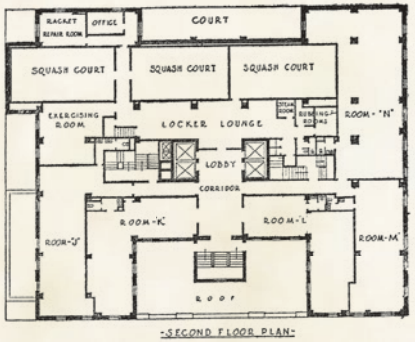
Keystone, Photo.

Biltmore Hotel, Los Angeles. Lobby.

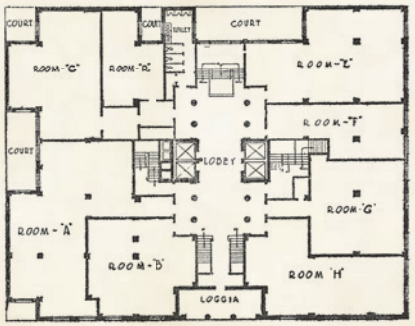


Chicago Architectural Photo.

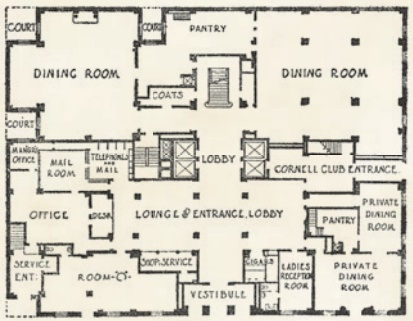
Straus Building, Chicago. Completed : 1923.
Graham, Anderson, Probst & White, Architects.



-SECOND FLOOR PLAN-



-FIRST FLOOR PLAN-



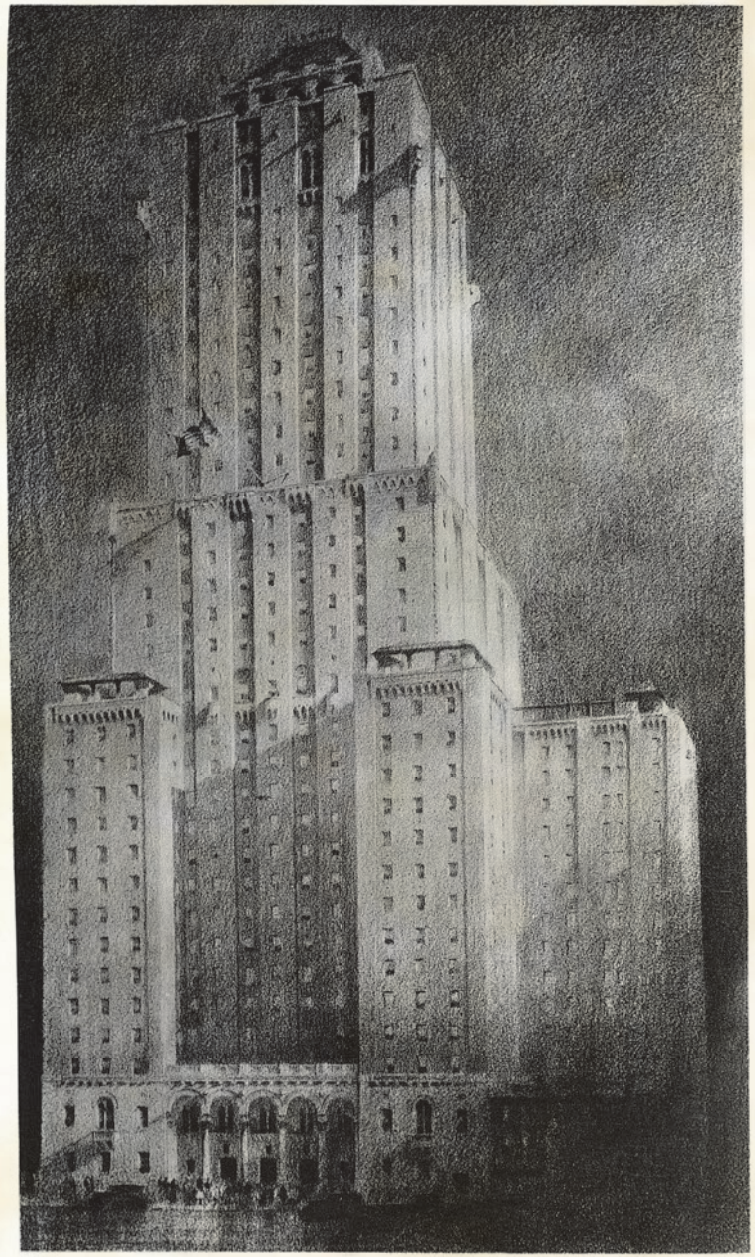
-ENTRANCE FLOOR PLAN-

Fraternity Clubs Building, New York. Floor Plans.



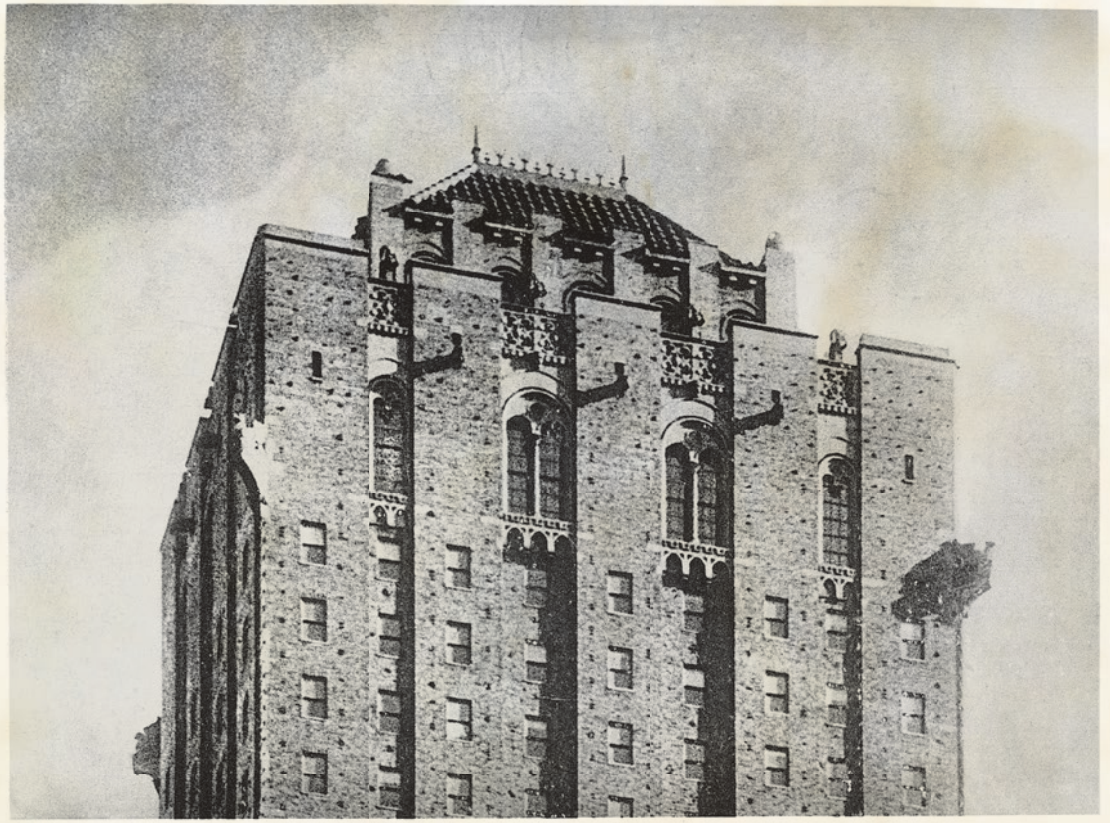
Brown Bros, Photo.

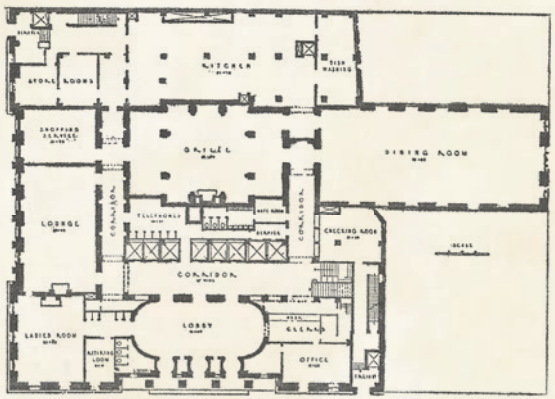
Fraternity Clubs Building, New York. Completed : November, 1923.
Murgatroyd & Ogden, Architects.



Hugh Ferriss, del.

SHELTON HOTEL, NEW YORK. COMPLETED : JANUARY, 1924.
ARTHUR LOOMIS HARMON, ARCHITECT.





FIRST FLOOR



THIRD TO FOURTEENTH FLOOR

SHELTON HOTEL, NEW YORK. DETAIL OF THE FRONT (ABOVE) AND FLOOR PLANS (BELOW).



Drawn by Harley D. Nichols. Courtesy of The New York Edison Co.

American Radiator Building, New York. Completed : May, 1924.
Raymond M. Hood, Architect.



Schuyler Carteret Lee, Photo.

Apartment House, Park Avenue & 79th St. New York. Entrance detail. Completed : May, 1924.
Sloan & Robertson, Architects.



Chicago Architectural, Photo.

Chicago Allerton House, Chicago. Completed : June, 1924.
Murgatroyd & Ogden, Architects.

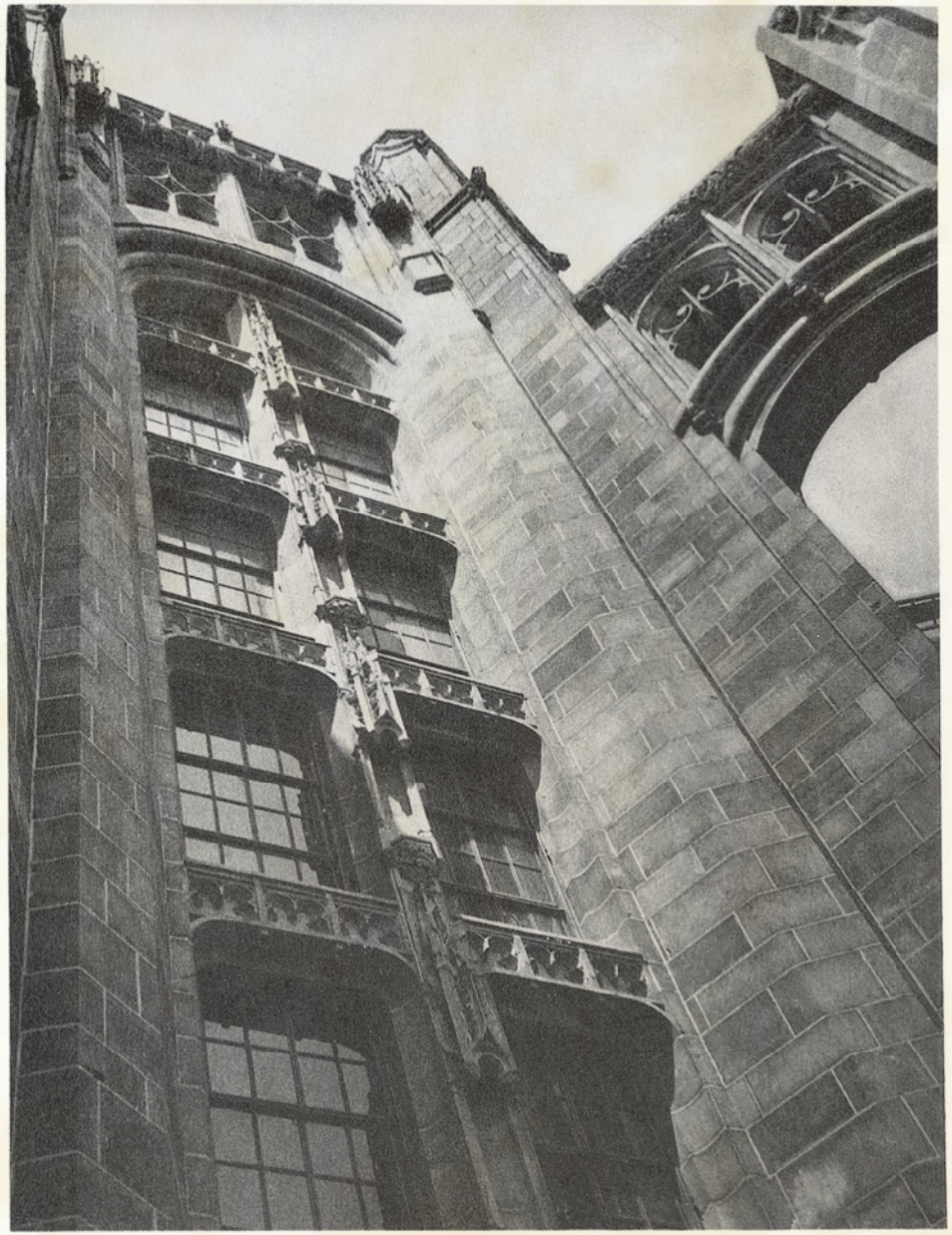


Thomas Ellison, Photo.

Detroit Free Press Building, Detroit. Comfleted : February 7, 1925.
Albert Kahn, Inc., Architects.



Tribune Tower, Chicago. Completed : Early in 1925. John Mead Howells & Raymond M. Hood, Architects.

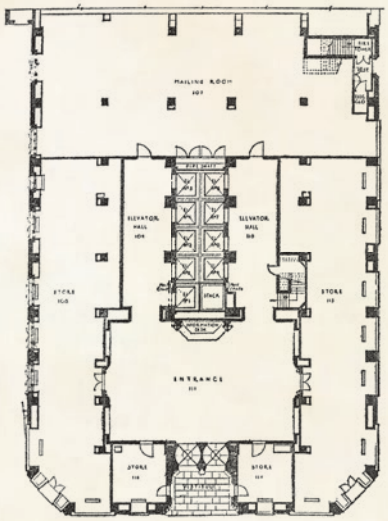




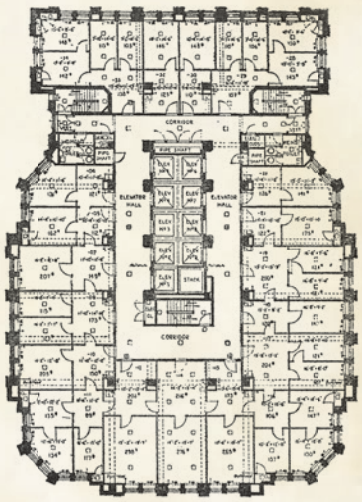
Tribune Tower, Chicago. Exterior Details.

TRIBUNE TOWER, CHICAGO.

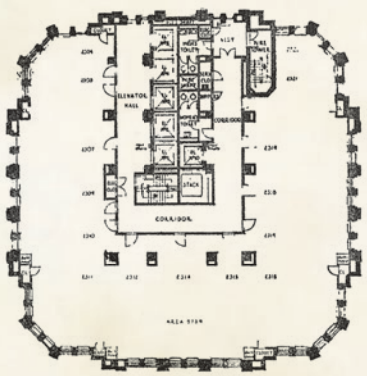
FLOOR PLANS.



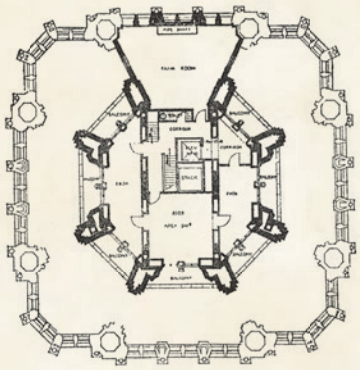
FIRST FLOOR.



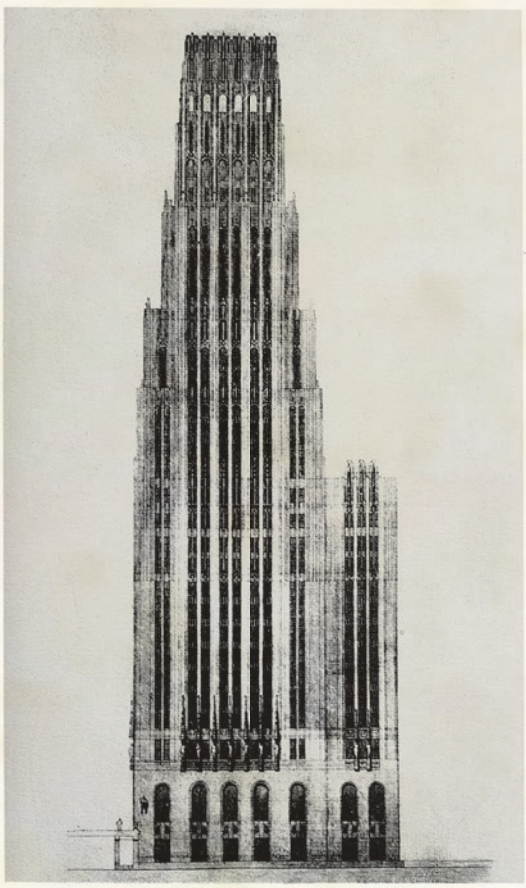
TYPICAL FLOOR.



23rd FLOOR.



26th FLOOR.



COMPETITION DRAWING FOR THE CHICAGO TRIBUNE TOWER.
ELIEL SAARINEN, ARCHITECT.
DWIGHT G. WALLACE & BELTELL GRENMAN, ASSOCIATE ARCHITECTS.

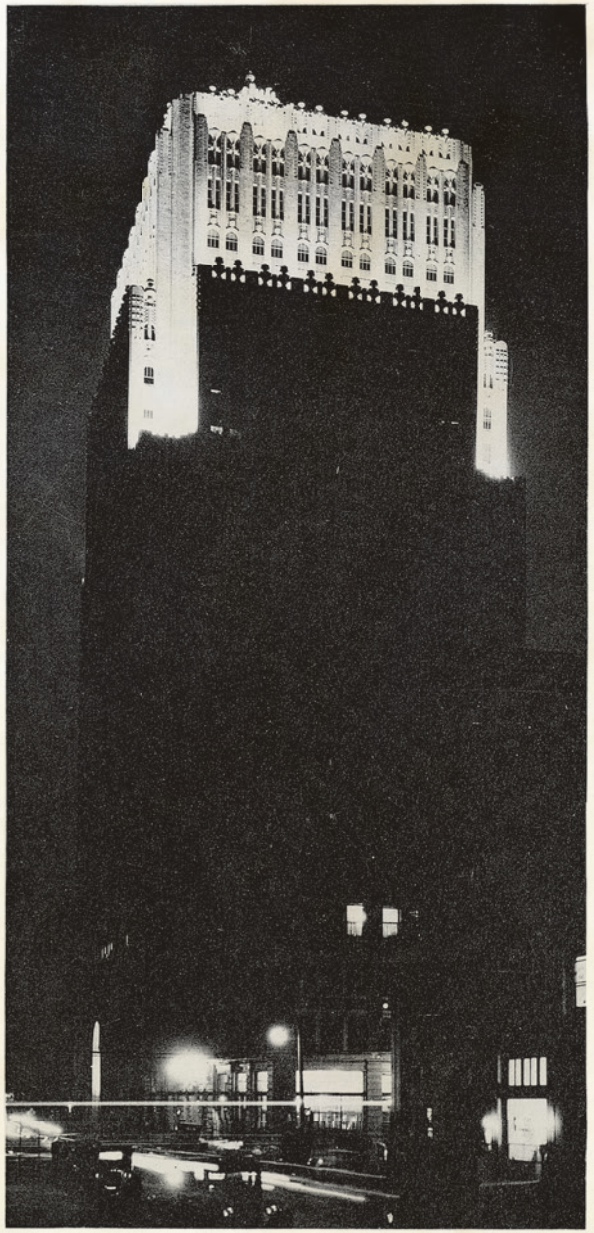


Drix Duryea Photo.

NEW EQUITABLE BUILDING, NEW YORK. COMPLETED : APRIL, 1925.
STARRETT & VAN VLECK, ARCHITECTS.

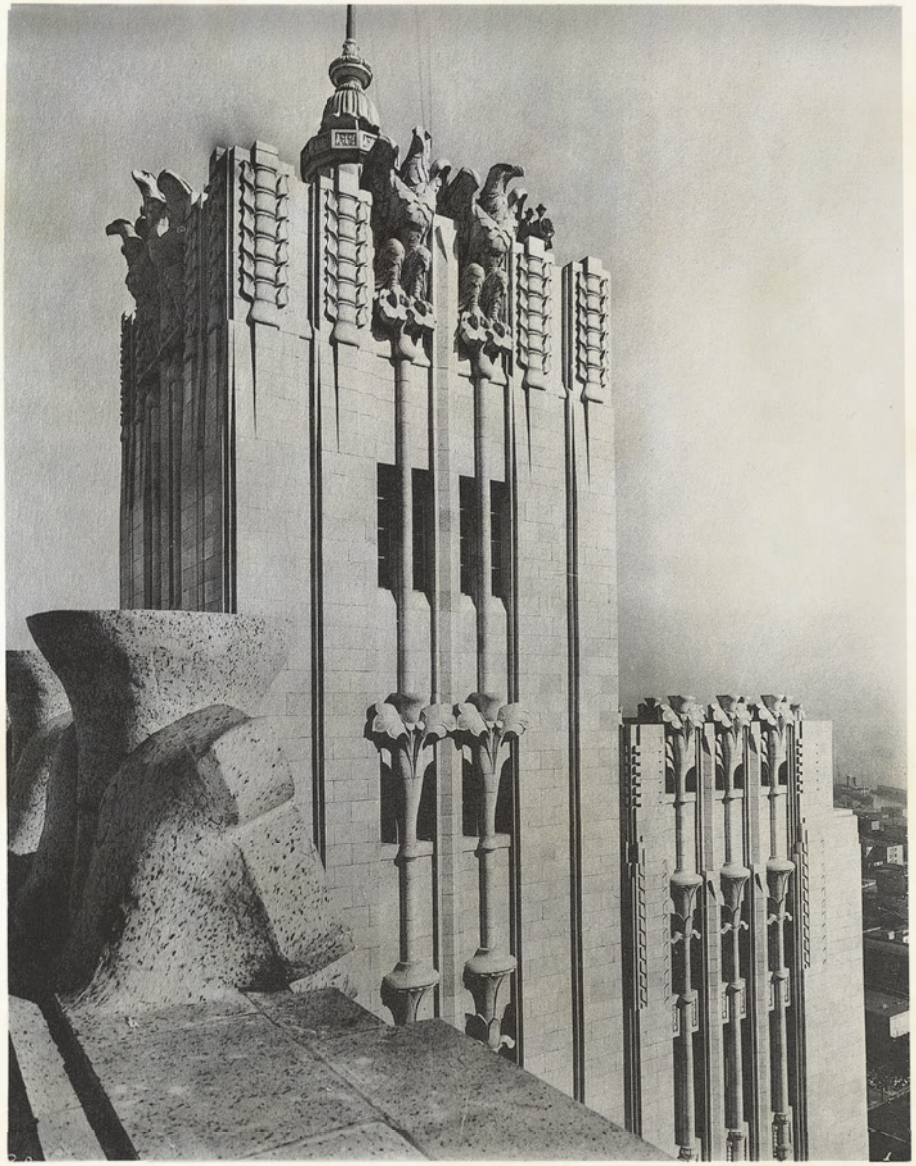






G. Moulin, Photo.

Telephone Building, San Francisco. Completed : May 30, 1925. J. R. Miller & T. L. Pflueger, Architects.





G. Moulin, Photo.

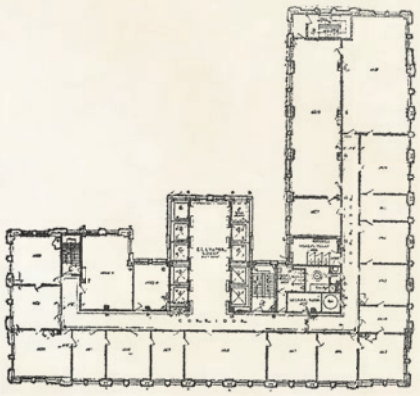
TELEPHONE BUILDING, SAN FRANCISCO.



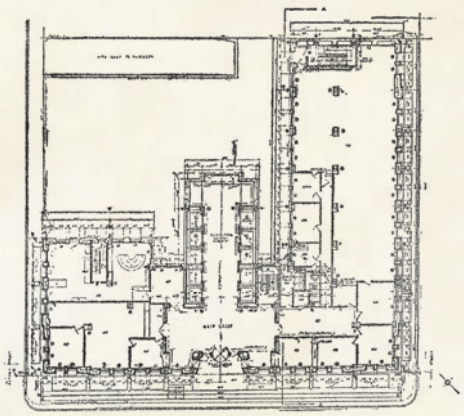


G. Moulin, Photo.

TELEPHONE BUILDING, SAN FRANCISCO.



FOURTEENTH FLOOR.



FIRST FLOOR.

TELEPHONE BUILDING, SAN FRANCISCO. FLOOR PLANS.



T. Ellison, Photo.

BUHL BUILDING, DETROIT. COMPLETED : JANUARY 1, 1926.
SMITH, HINCHMAN & GRYLLS, ARCHITECTS.



The Mott Studios, Photo.

COUNTY HALL OF JUSTICE, LOS ANGELES. COMPLETED : FEBRUARY, 1926.
ALLIED ARCHITECTS OF LOS ANGELES.



FARMERS' LOAN AND TRUST CO. BUILDING, NEW YORK.
COMPLETED : FEBRUARY, 1926. STARRETT & VAN VLECK, ARCHITECTS.



Chicago Architectural, Photo.

Pure Oil Building, Chicago.
Completed : May, 1926.
Frederick P. Dinkelberg, Architect.



Padilla Co., Photo.

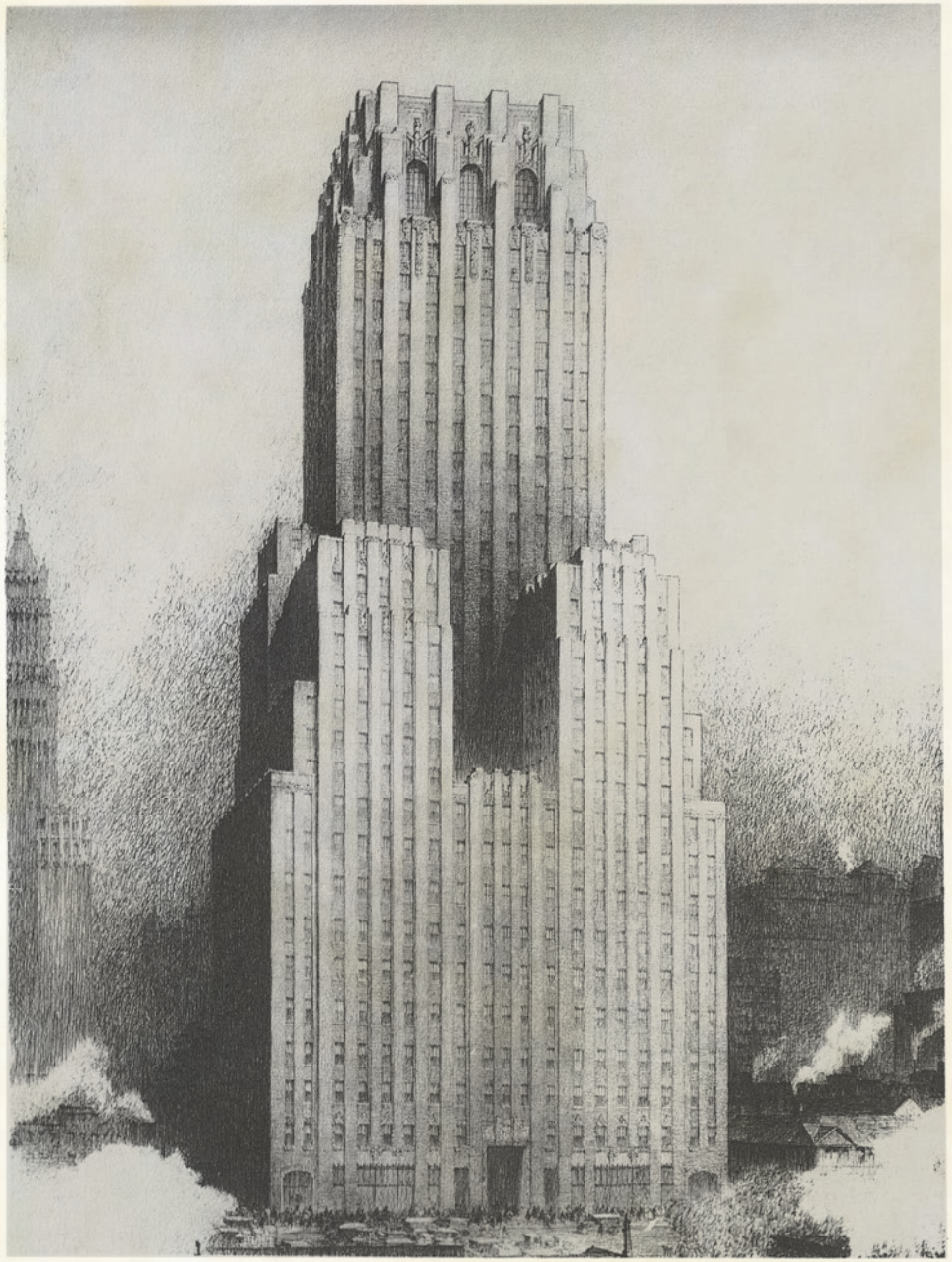
Elks Club, Los Angeles.
Completed : May 12, 1926.
Curlett & Beelman, Architects.



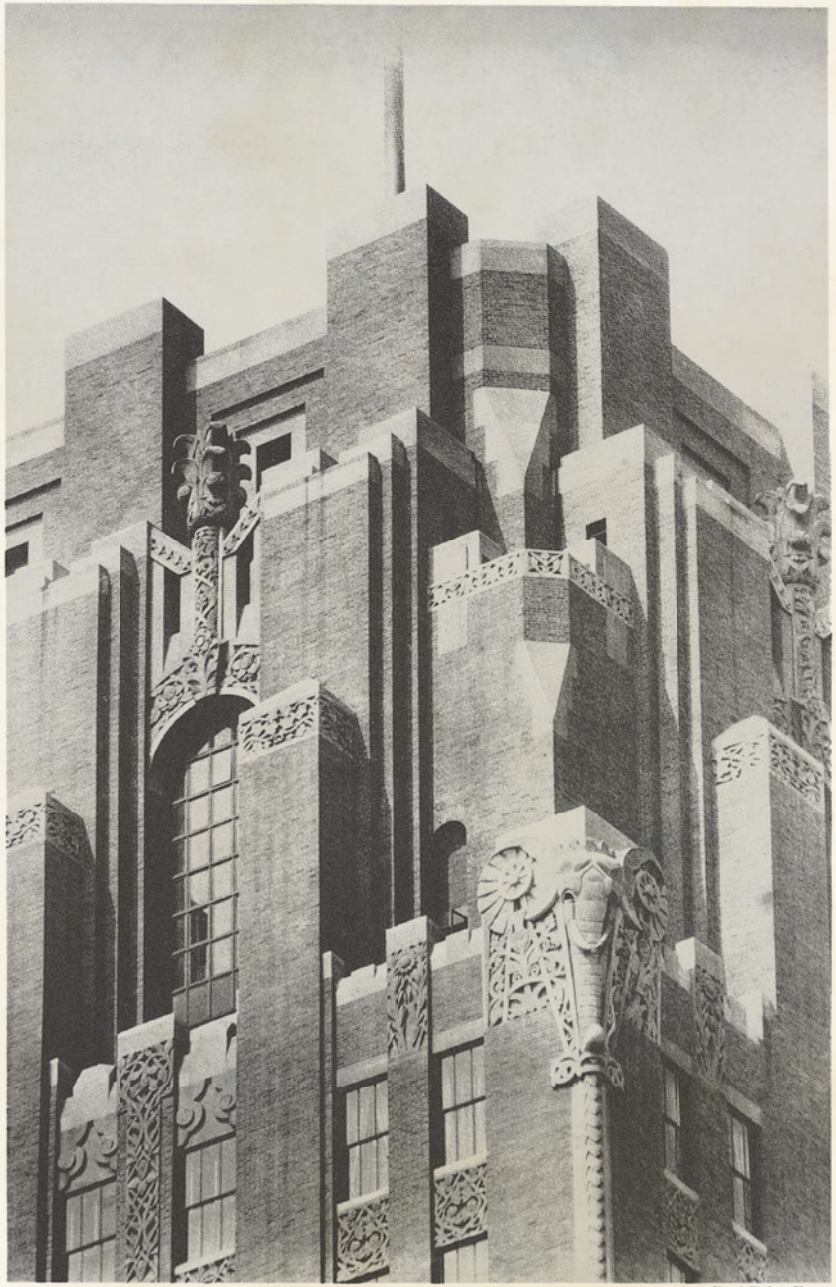


M. J. Buerger, Photo.

Elks Club, Los Angeles. Exterior Details.



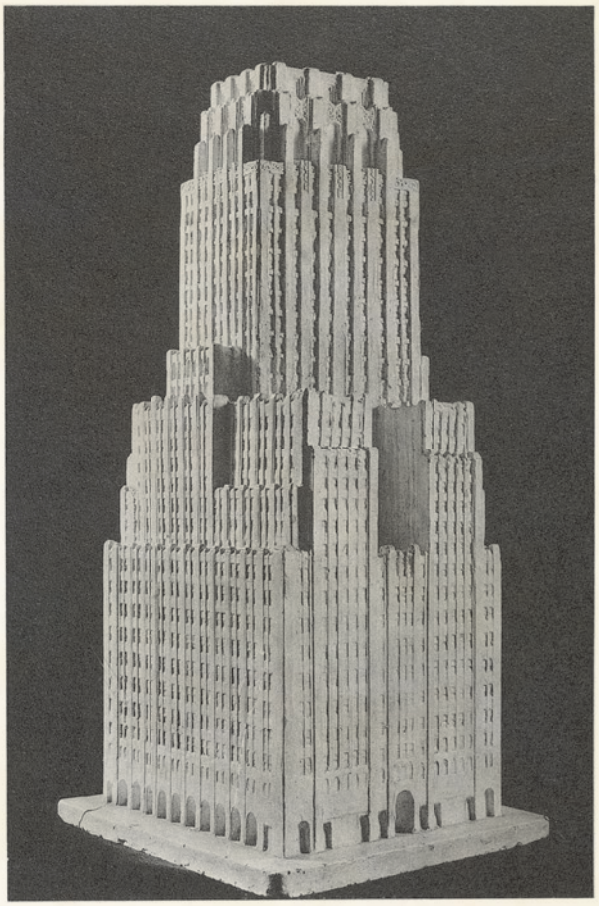
Chester B. Price, del.



Sigurd Fischer, Photo.

New York Telephone Building, New York. Completed : May, 1926. Mc Kenzie, Voorhees & Gmelin, Architects.









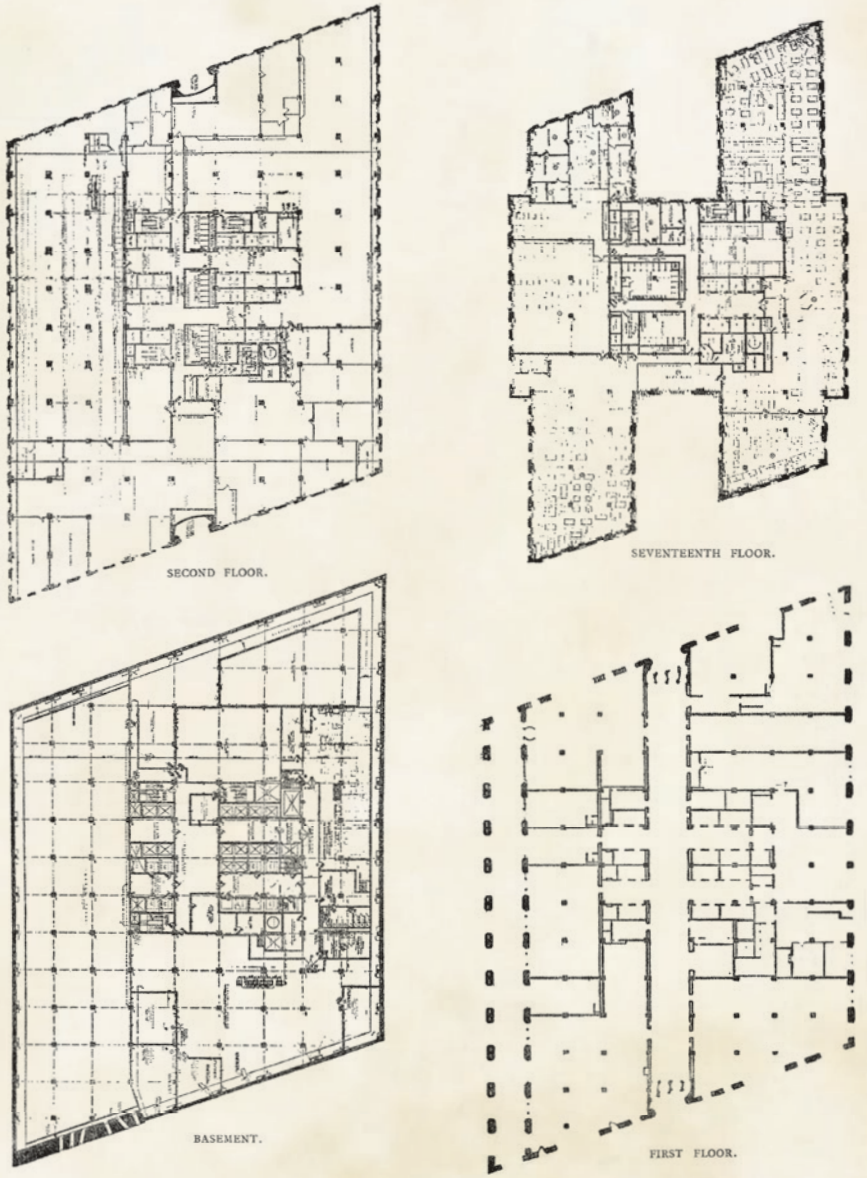
Sigurd Fischer, Photo.

New York Telephone Building, New York.



Sigurd Fischer, Photo.

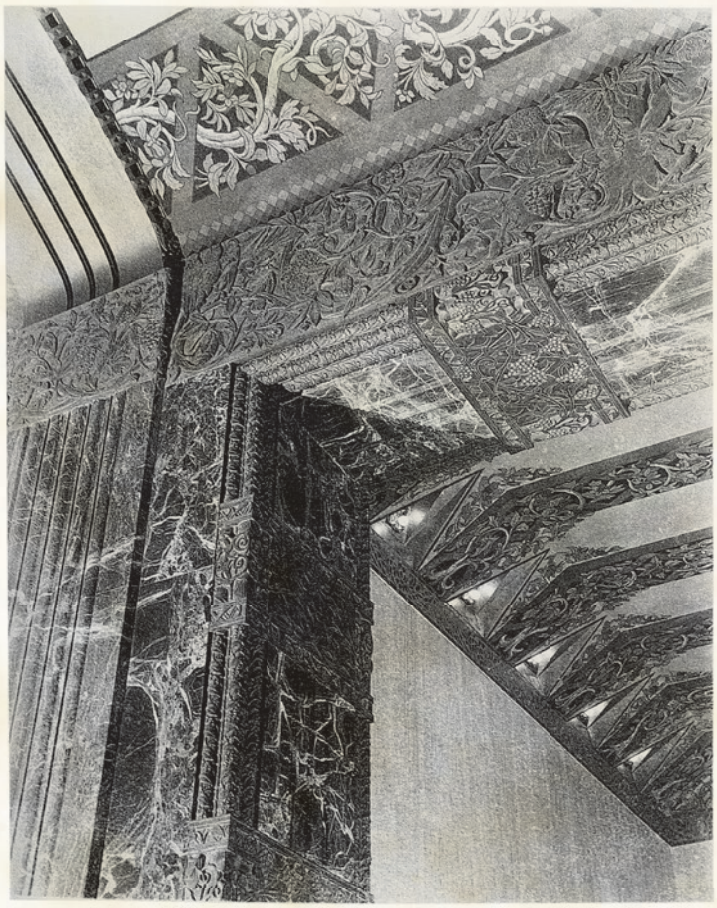
New York Telephone Building, New York. Exterior detail.



New York Telephone Building, New York. Floor Plans.



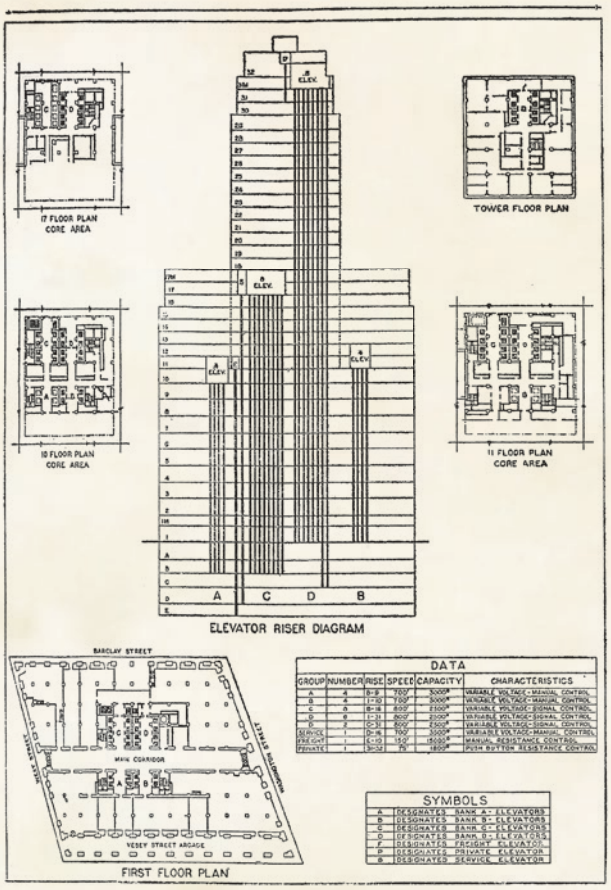




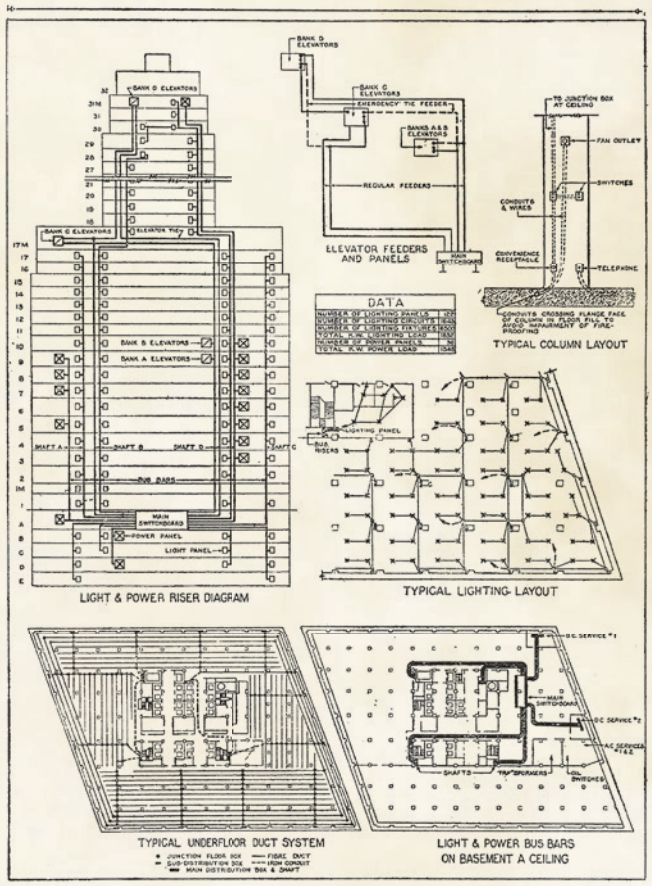


Sigurd Fischer, Photo.

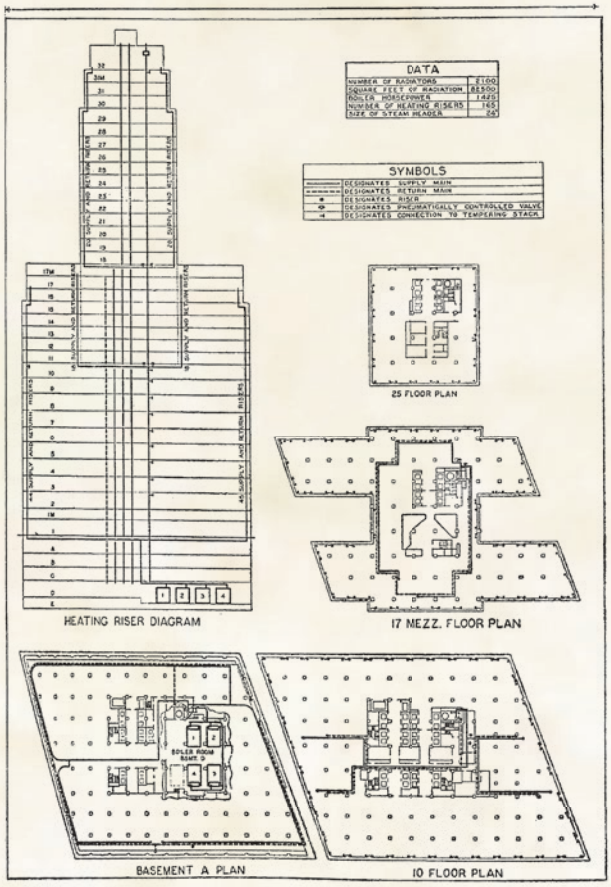
New York Telephone Building, New York. Interior details.



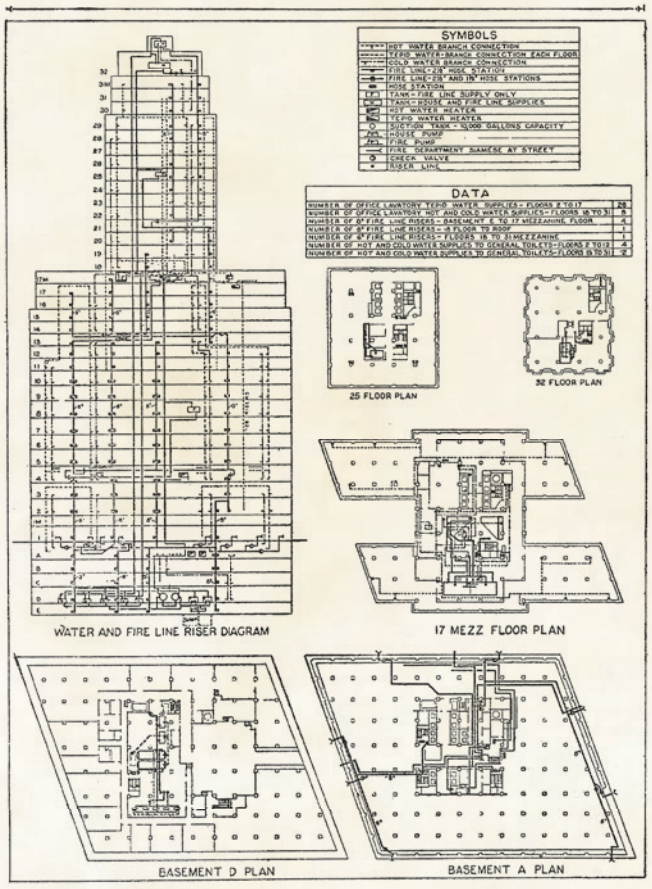
ELEVATOR SYSTEM.



ELECTRIC SYSTEM.



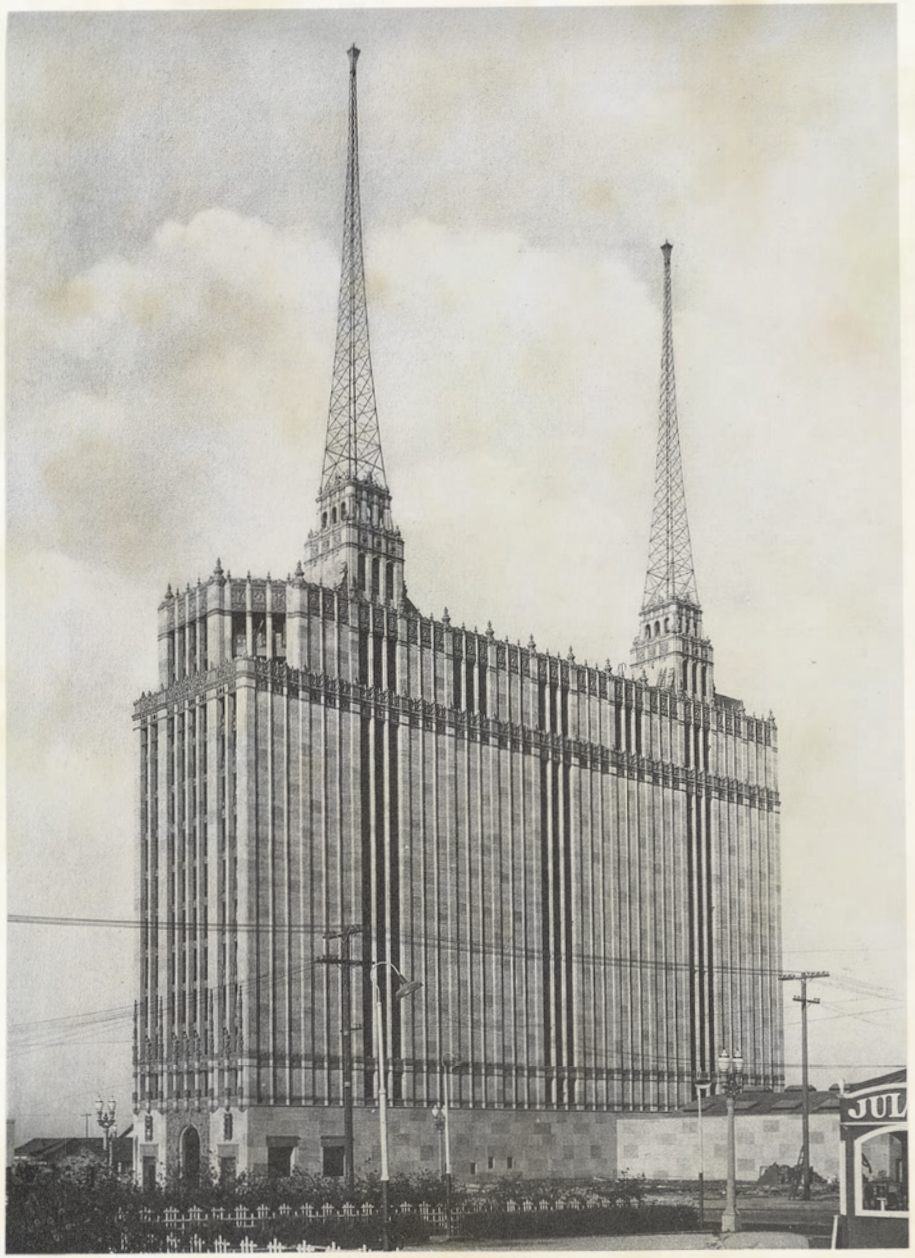
HEATING SYSTEM.

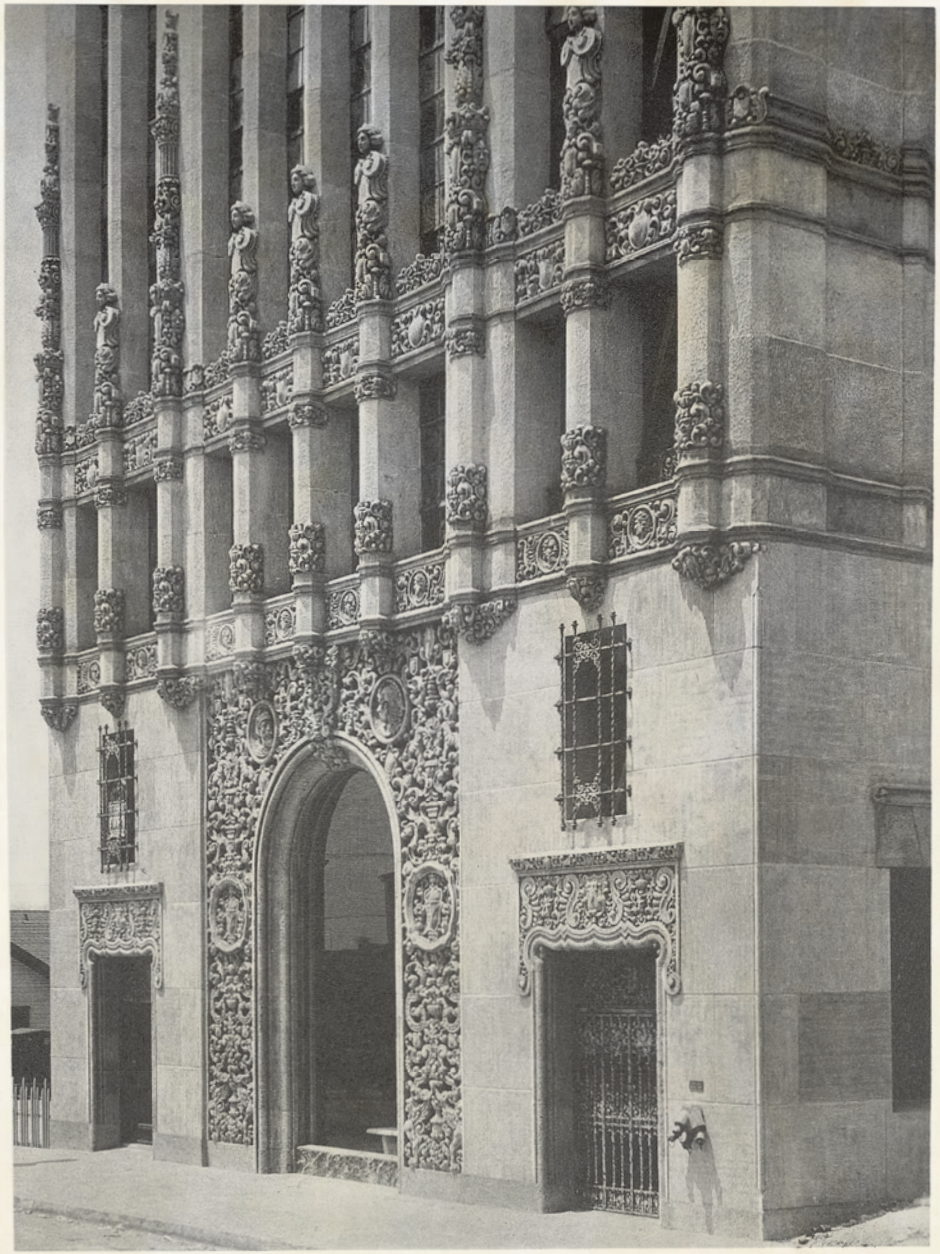


Courtesy of The American Architect.

WATER AND FIRE LINE SYSTEMS.

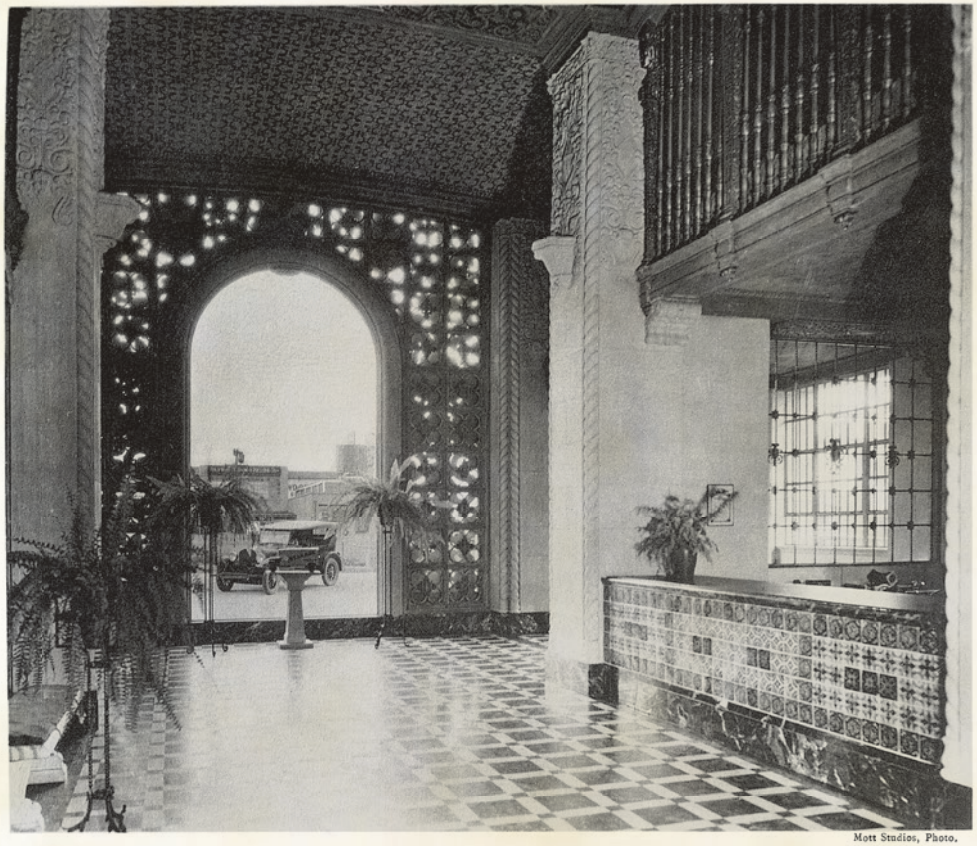
New York Telephone, Building, New York.





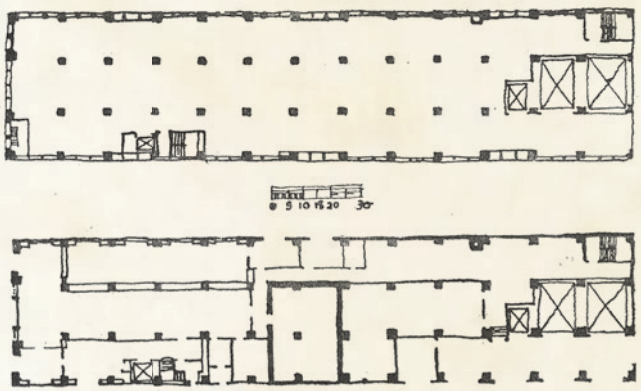
Mott Studios, Photo.

Hollywood Terminal Storage Warehouse, Hollywood. Completed : June, 1926. Morgan, Walls & Clements, Architects.



Mott Studios, Photo.

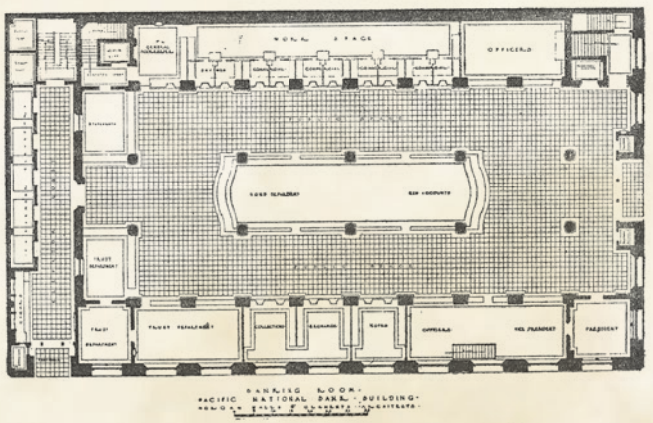
HOLLYWOOD TERMINAL STORAGE WAREHOUSE, HOLLYWOOD. INTERIOR.



HOLLYWOOD TERMINAL STORAGE WAREHOUSE, HOLLYWOOD. FLOOR PLANS.



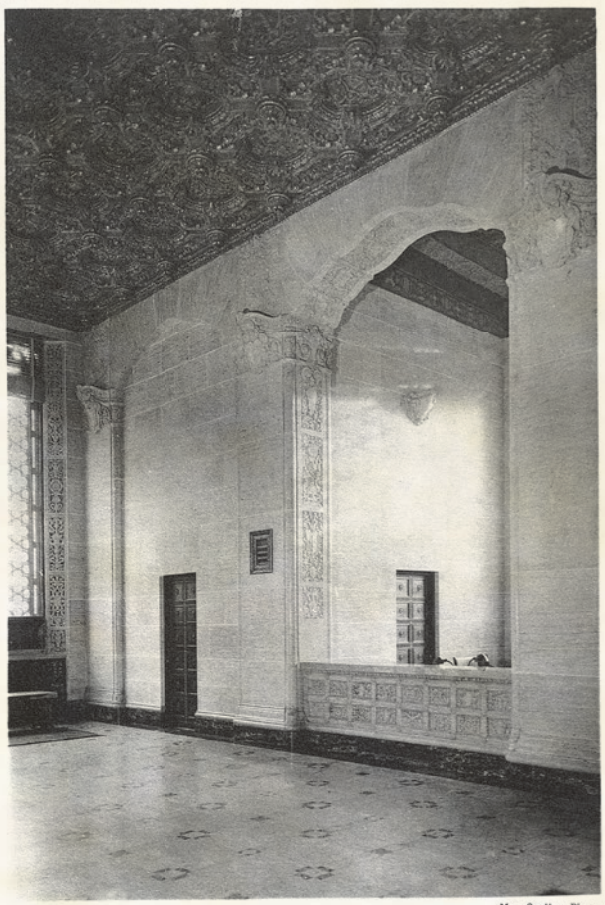
PACIFIC NATIONAL BANK BUILDING, LOS ANGELES. COMPLETED : JUNE, 1926.
MORGAN, WALLS & CLEMENTS, ARCHITECTS.



PACIFIC NATIONAL BANK BUILDING, LOS ANGELES. FLOR PLAN.

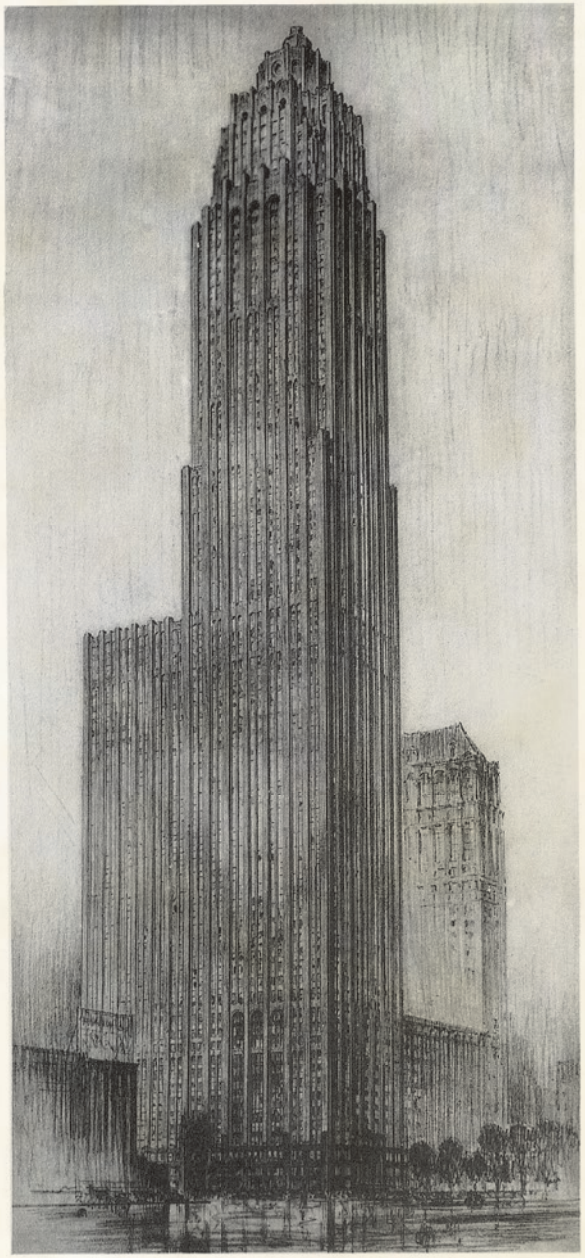






Mott Studios, Photo.

PACIFIC NATIONAL BANK BUILDING, LOS ANGELES. INTERIORS.



Perspective of the Book Tower, Detroit. Published : July, 1926.
Louis Kamper, Inc., Architects.



Standard Oil Building, New York. Completed : October, 1926.
Carrere & Hastings-Shreve & Lamb, Architects.



Irving Underhill, Photo.

Standard Oil Building, New York. Completed : October, 1926. Carrere & Hastings, Shreve & Lamb, Architects.



P. A. Nyholm, Photo.



Wurts Bros, Photo.



Central News, Photo.

Ritz Tower, New York. Completed : October, 1926. Emery Roth, Architect. Thomas Hastings, Associate Architect.



Warts Bros, Photo.

PARAMOUNT BUILDING, NEW YORK. COMPLETED : NOVEMBER 17, 1926. C. W. & GEO. L. RAPP, ARCHITECTS.



Hugh Ferriss, del.

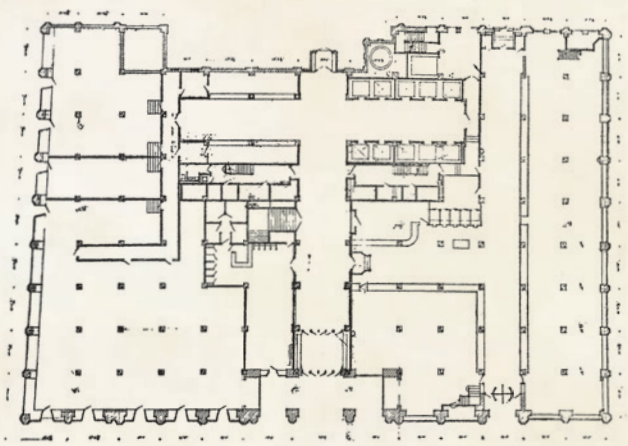
St. Louis Telephone Building, St. Louis. Completed : November, 1926.
Mauran, Russell & Crowell, Architects. — I. R. Timlin, Associate Architect.



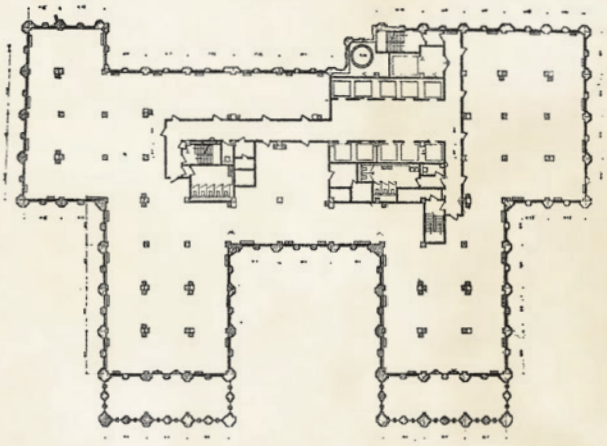


E. Taylor, Photo.

St. Louis Telephone Building, St. Louis.

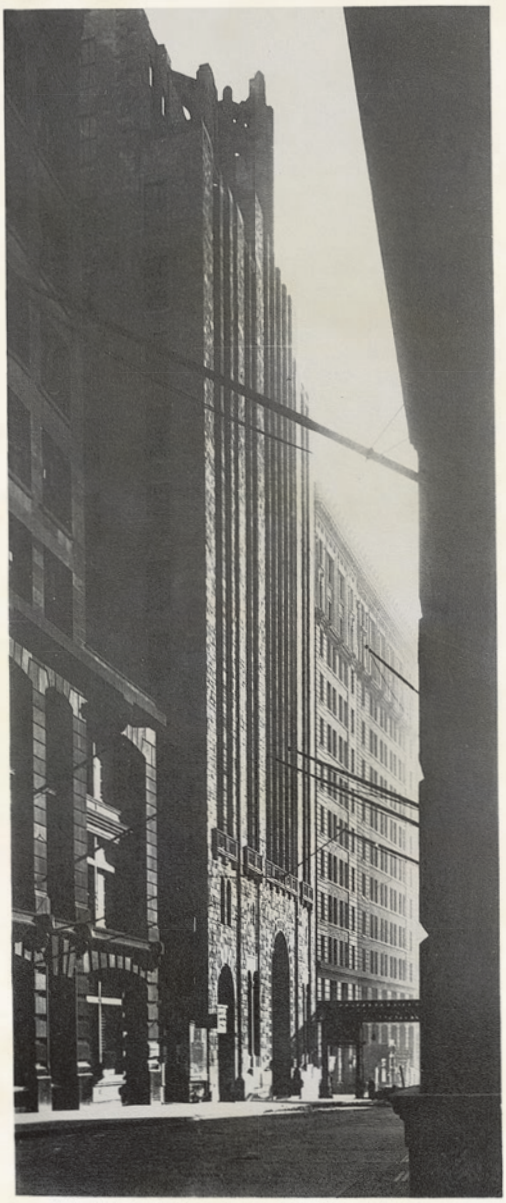


FIRST FLOOR.



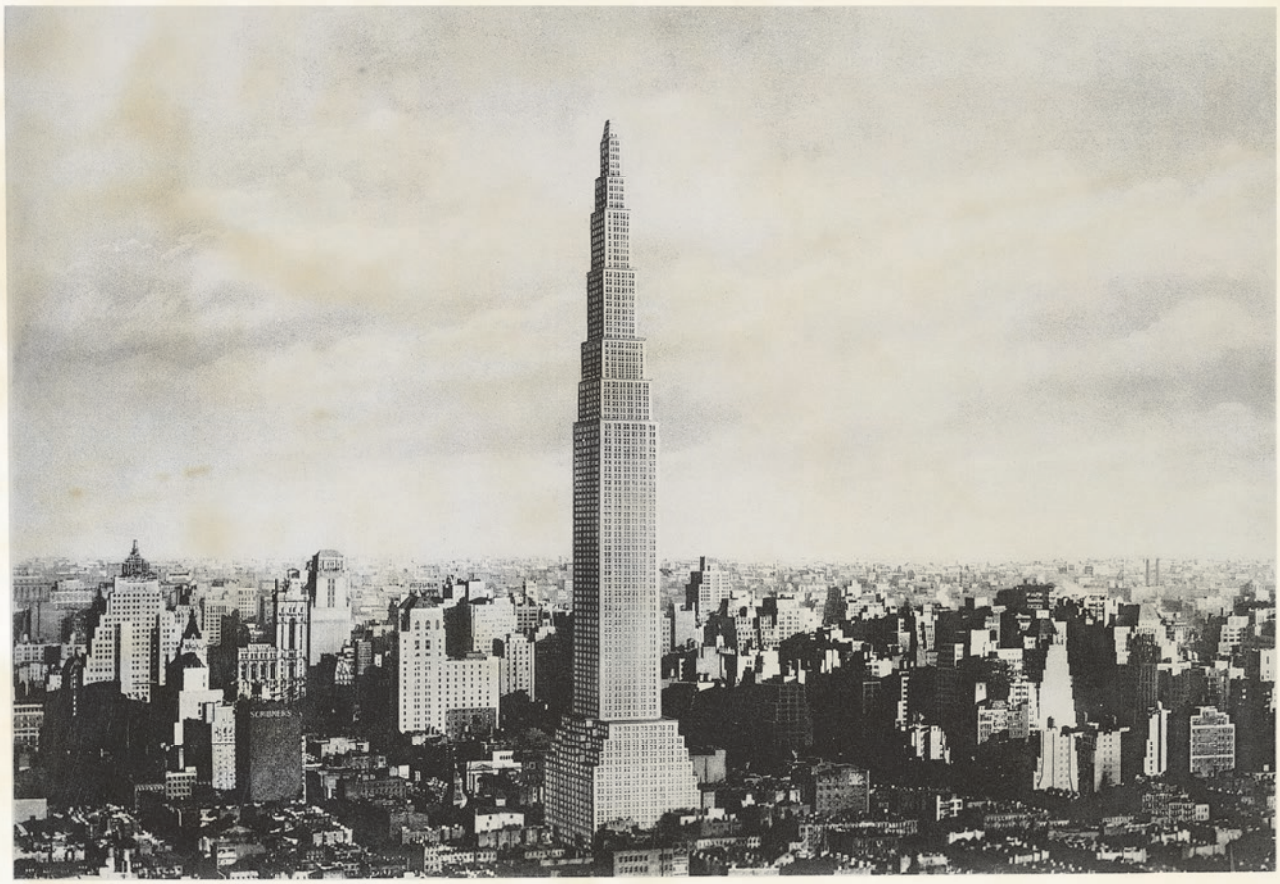
TWELFTH FLOOR.

St. Louis Telephone Building, St. Louis. Floor Plans.





Seamens Bank for Savings, New York. Completed : December 20, 1926. Benjamin Wistar Morris, Architect.

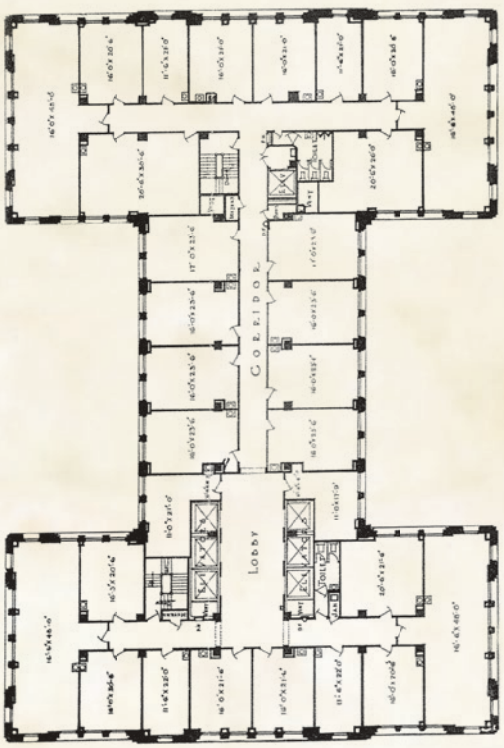


Perspective of the Larkin Building, New York. Plans Filed : December, 1926. John A. & Edward L. Larkin, Architects.



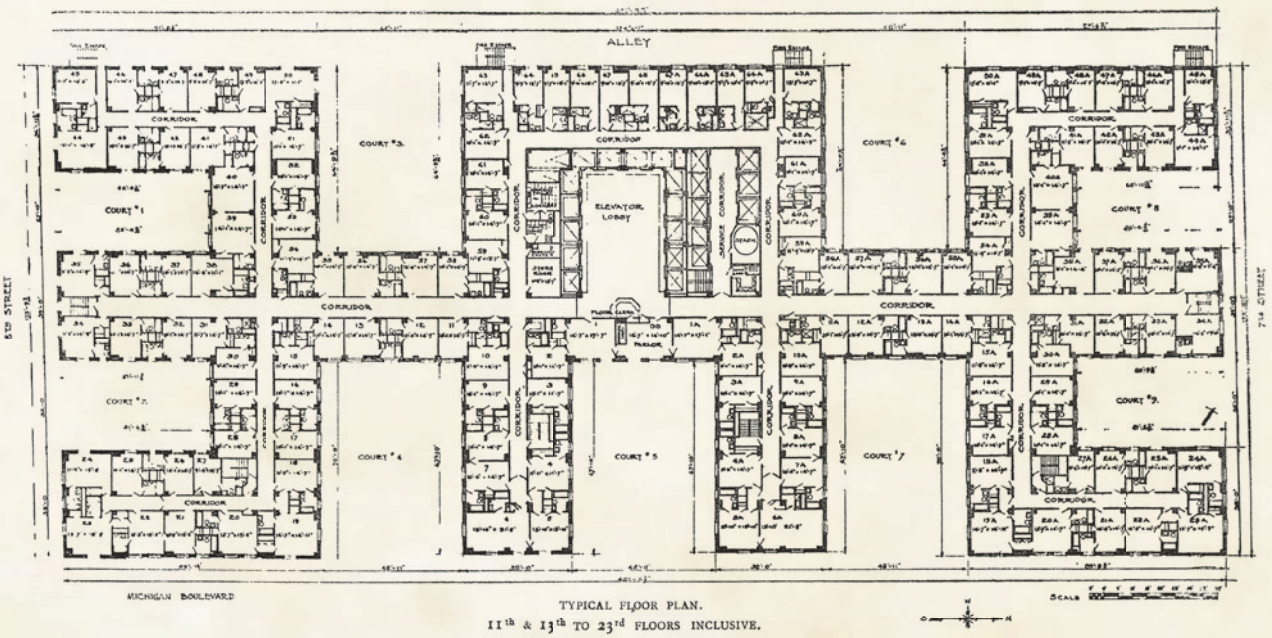
Thomas Ellison, Photo.

Maccabees Building, Detroit. Completed : January 29, 1927.
Albert Kahn Inc., Architect.

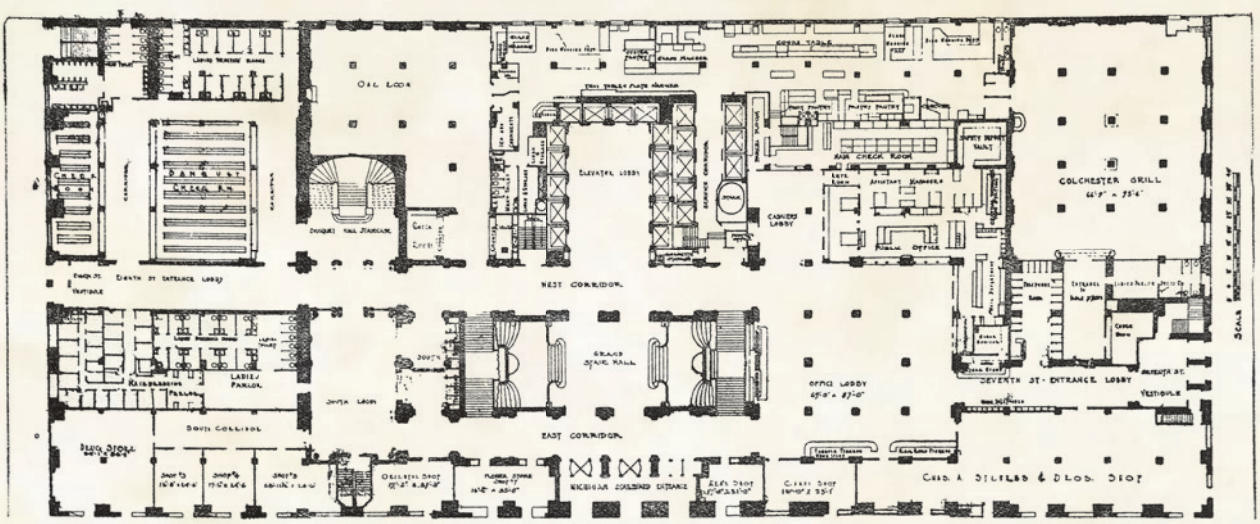


Maccabees Building, Detroit. Sixth to Tenth Floor Plan.





TYPICAL FLOOR PLAN.
11th & 13th TO 23rd FLOORS INCLUSIVE.



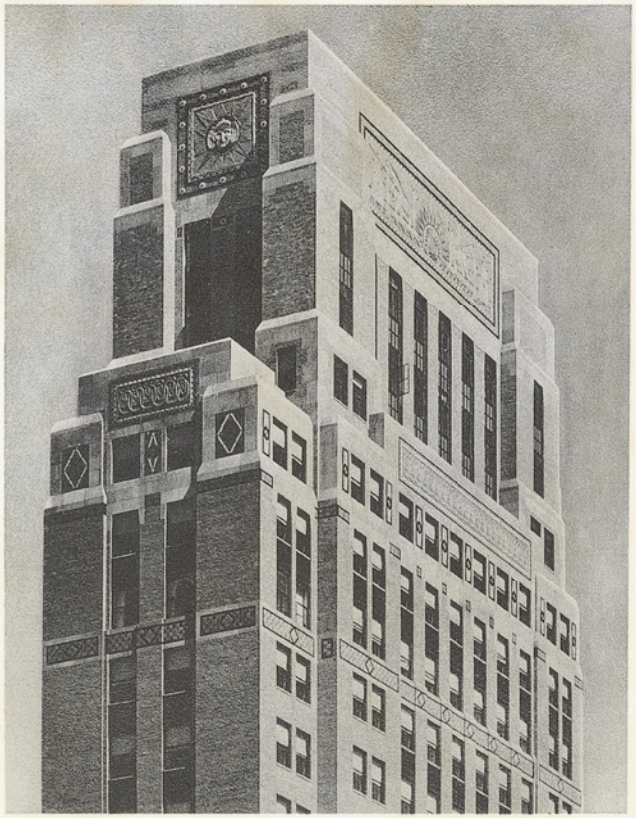
FIRST FLOOR.

STEVENS HOTEL, CHICAGO. COMPLETED : APRIL, 1927. HOLABIRD & ROCHE, ARCHITECTS.



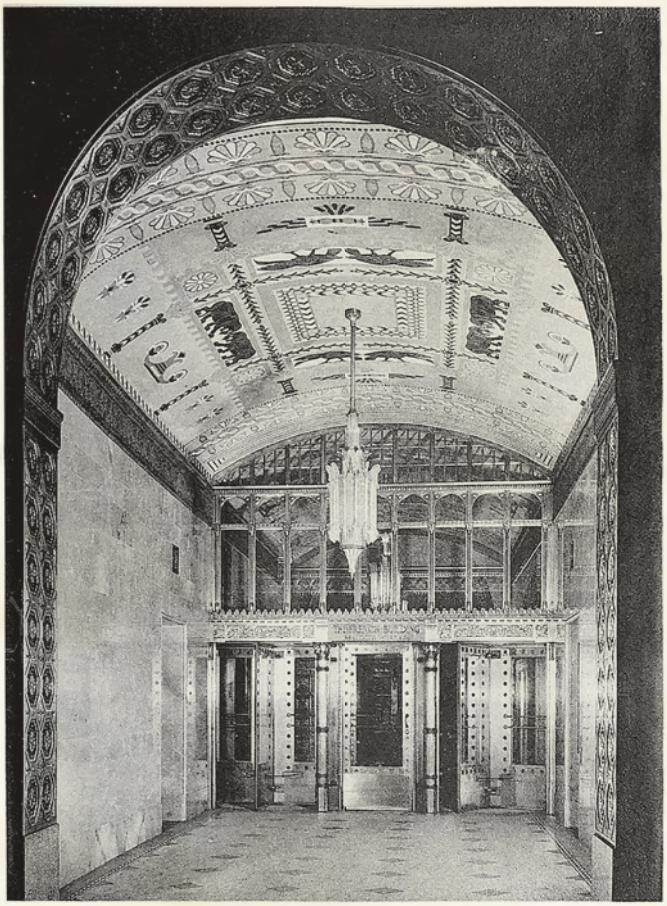
P. A. Nyholm, Photo.



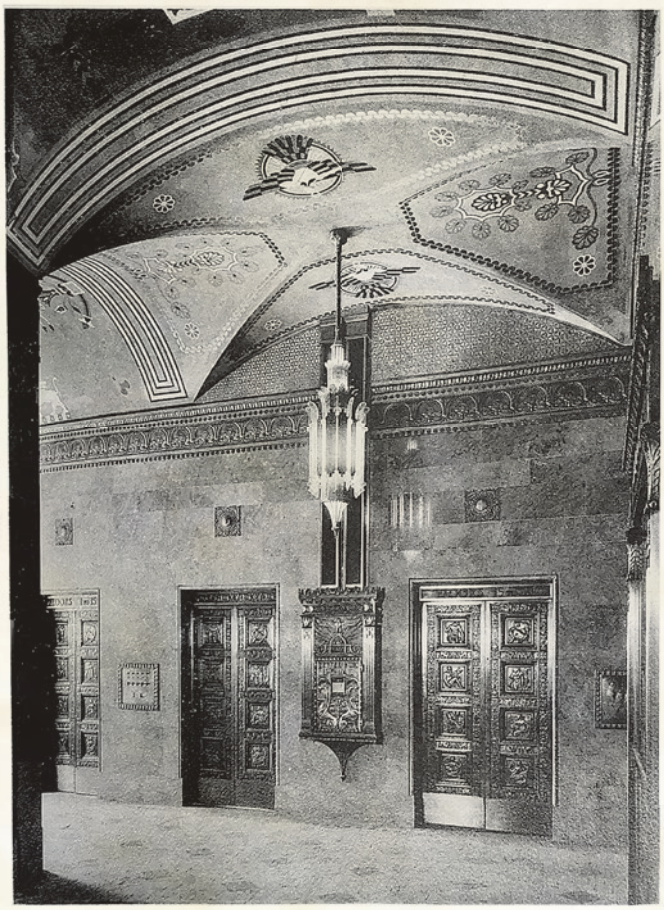


P. A. Nyholm, Photo.

French Building, New York. Completed : May 1, 1927. Fred F. French Co., Architects.
Sloan & Robertson, Consulting Architects.







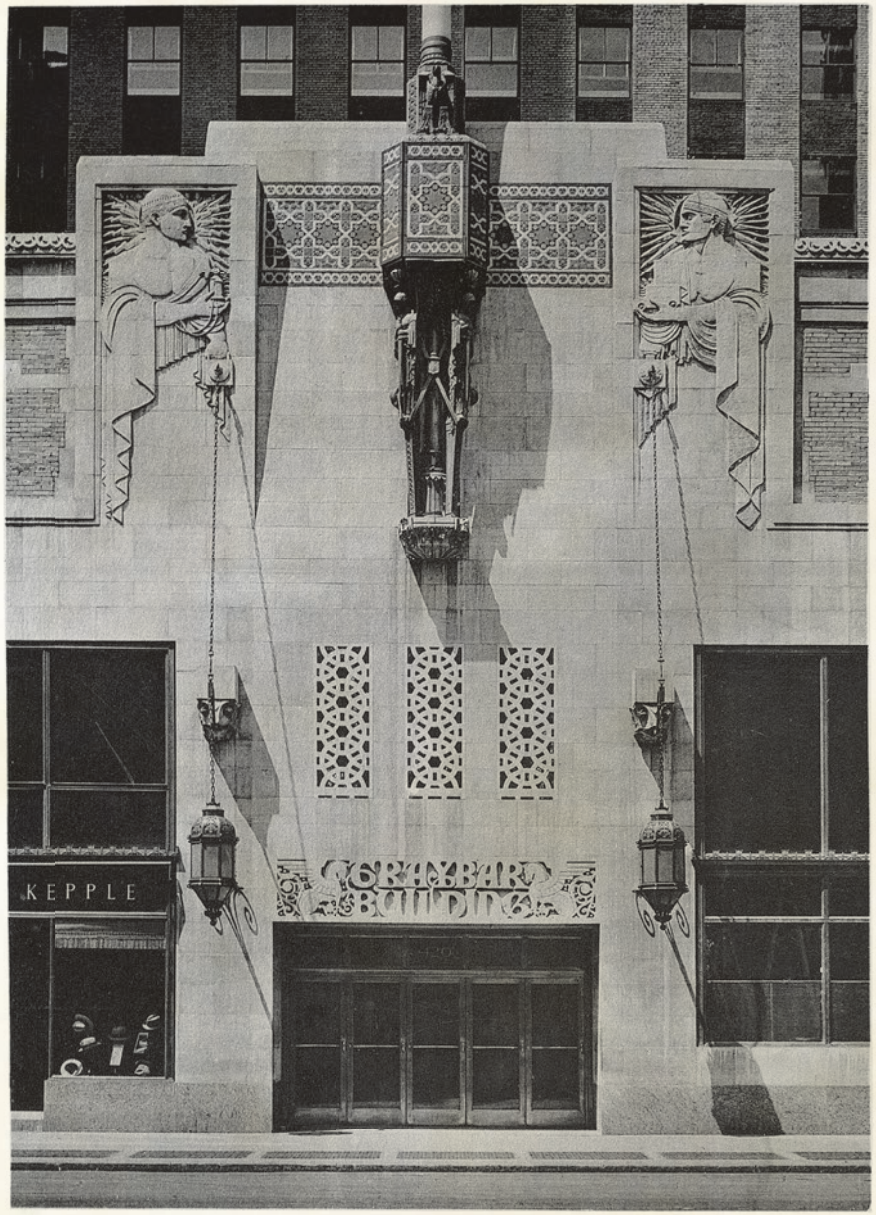


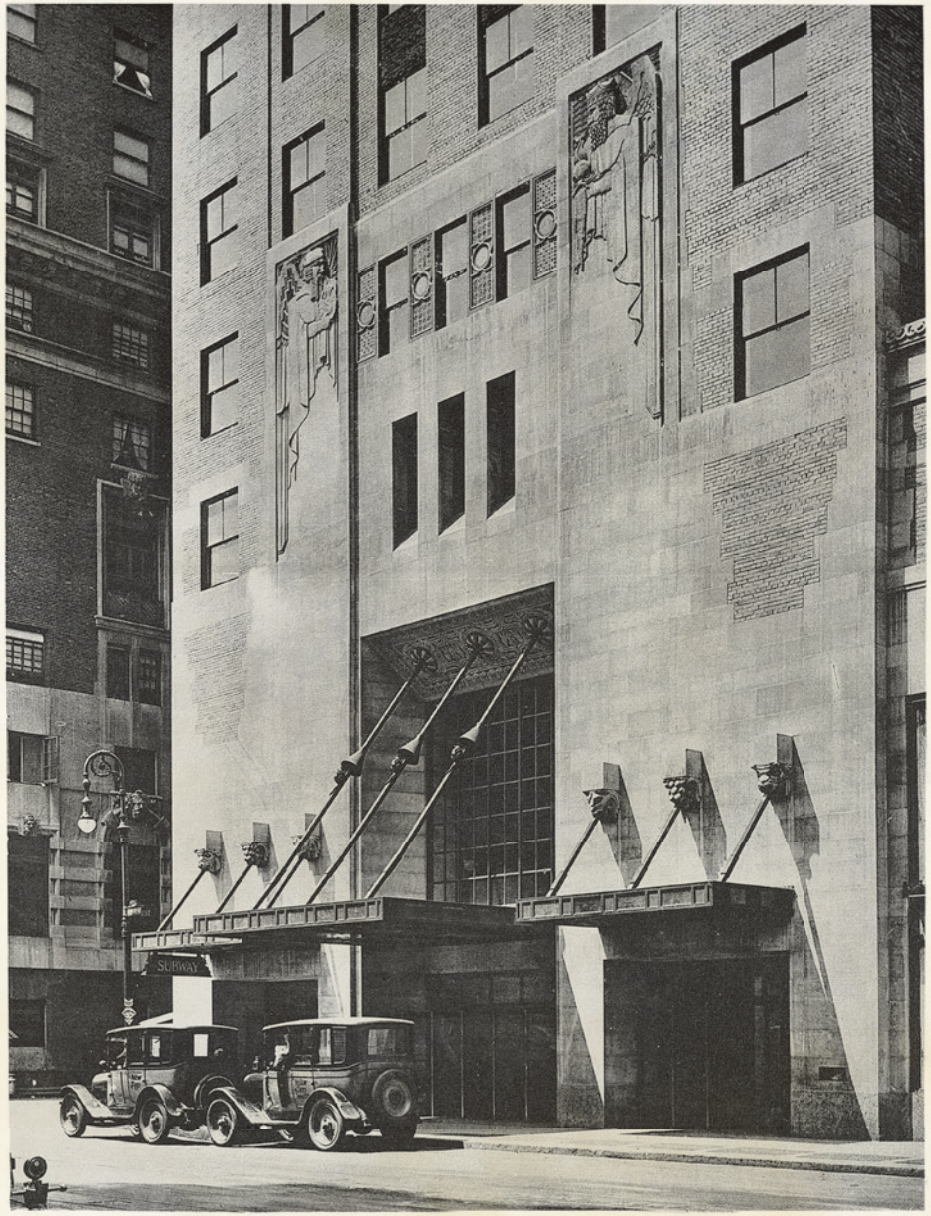
P. A. Nyholm, Photo.

French Building, New York. Interior details.



Graybar Building, New York. Completed : May, 1927. Sloan & Robertson, Architects.





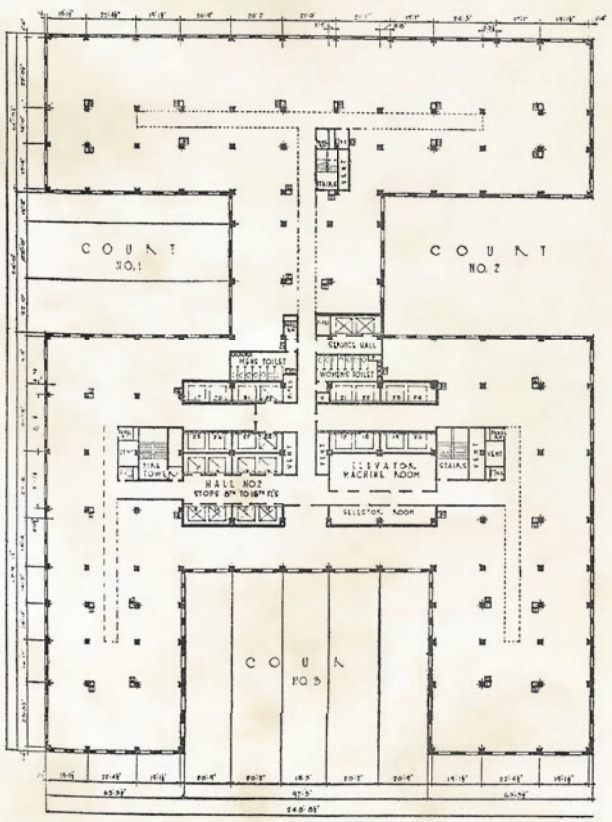
P. A. Nyholm, Photo.

GRAYBAR BUILDING, NEW YORK.

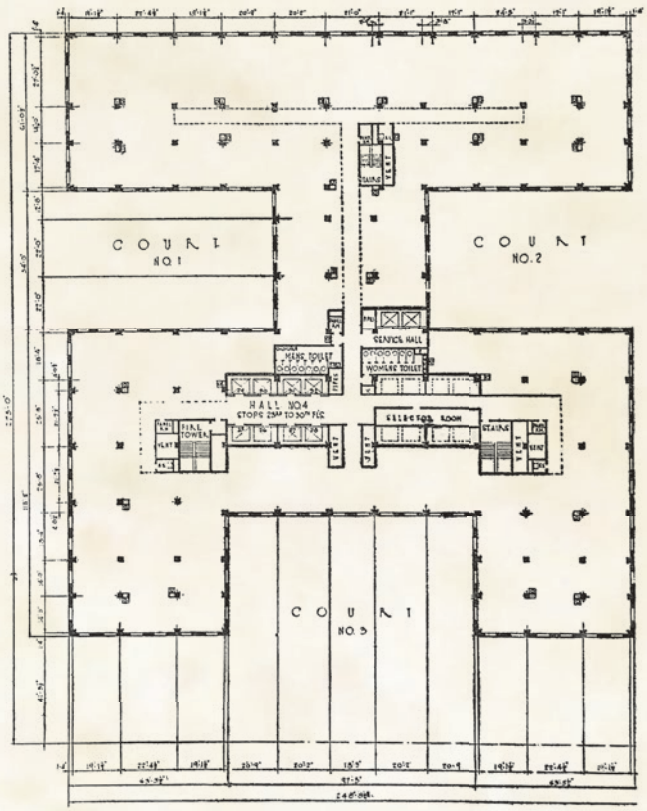


P. A. Nyholm, Photo.

GRAYBAR BUILDING, NEW YORK.



TENTH FLOOR



TWENTY-FOURTH FLOOR.

GRAYBAR BUILDING, NEW YORK. FLOOR PLANS.



Capitol Photo.



Capitol Photo.

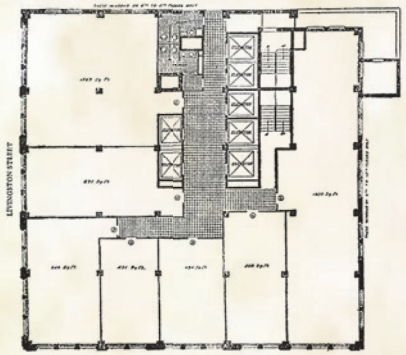


Sigurd Fischer, Photo.

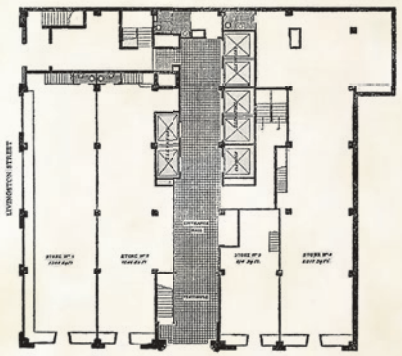
Brooklyn Chamber of Commerce Building, Brooklyn. Completed : May, 1927. A. J. Simberg, Architect.



14th AND 15th FLOORS



2nd TO 13th FLOORS



GROUND FLOOR

BROOKLYN CHAMBER OF COMMERCE BUILDING, BROOKLYN.
FLOOR PLANS.

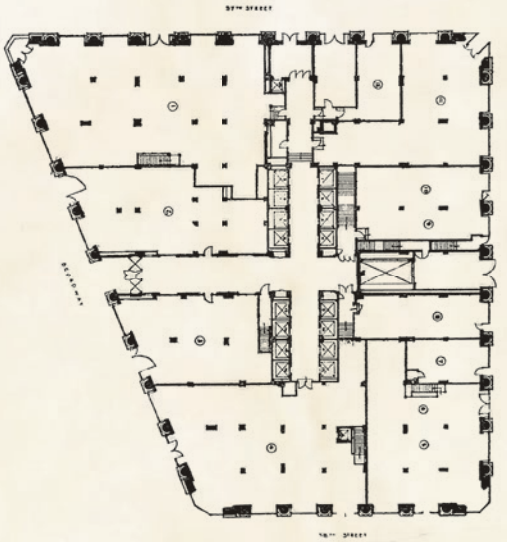


Chester B. Price, del.

GENERAL MOTORS BUILDING, NEW YORK. COMPLETED : MAY, 1927. SHREVE & LAMB, ARCHITECTS.



14th FLOOR



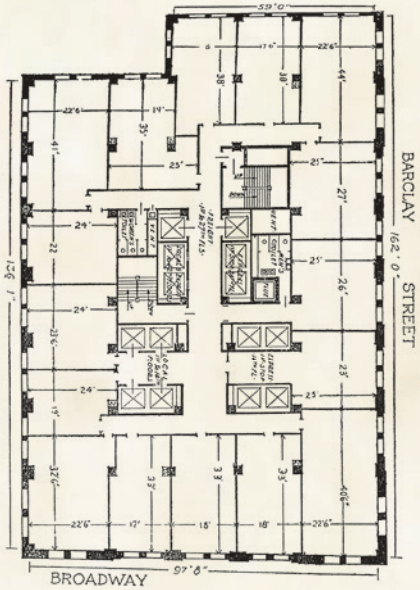
1st FLOOR

GENERAL MOTORS BUILDING, NEW YORK. FLOOR PLANS.

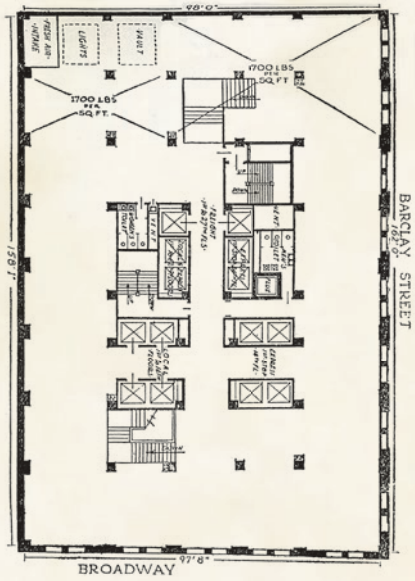


Eddowes, Photo.

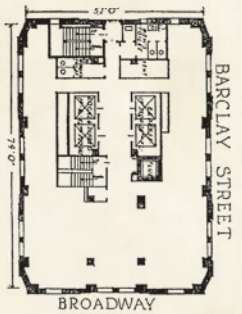
TRANSPORTATION BUILDING, NEW YORK.
COMPLETED : MAY, 1927.
YORK & SAWYER, ARCHITECTS.



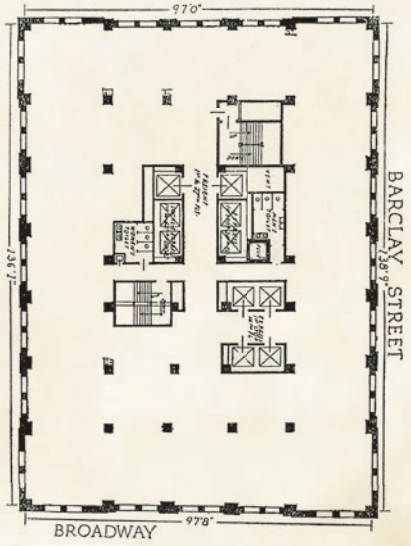
THIRD TO SIXTEENTH FLOOR.



BANKING FLOOR.



UPPER FLOORS.

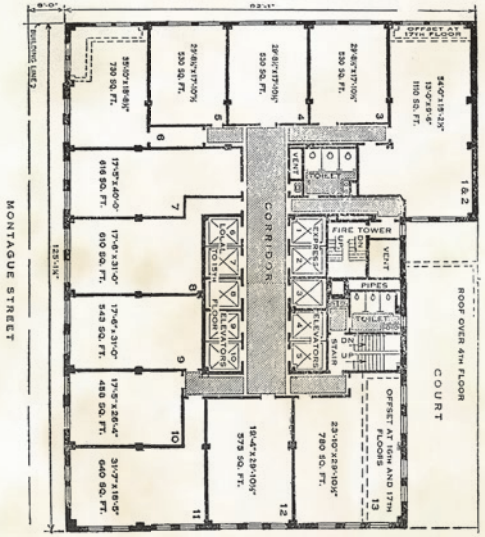


SEVENTEENTH TO TWENTY THIRD FLOOR.

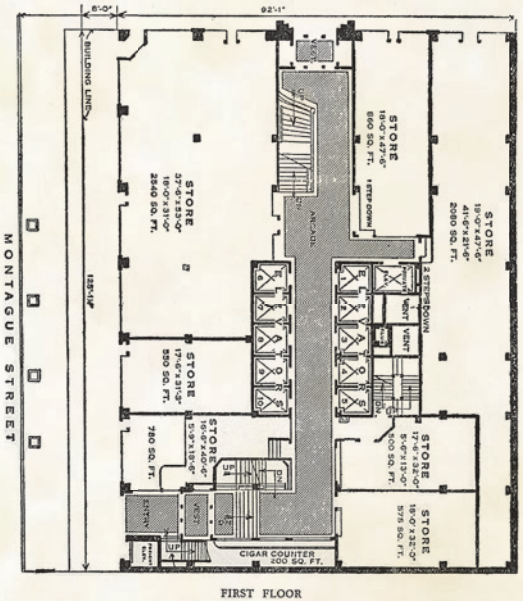
TRANSPORTATION BUILDING, NEW YORK. FLOOR PLANS.



MONTAGUE-COURT BUILDING, BROOKLYN.
COMPLETED : MAY, 1927.
H. CRAIG SEVERENCE, ARCHITECT.



7th TO 17th FLOORS



FIRST FLOOR

MONTAGUE-COURT BUILDING, BROOKLYN. FLOOR PLANS.



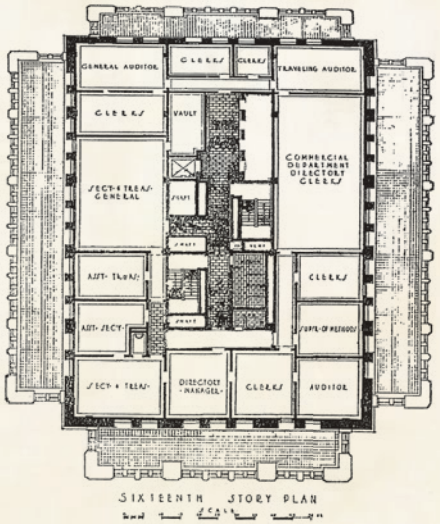
ALEXANDER WILSON BUILDING, NEW YORK.
COMPLETED : MAY, 1927. SLOAN & ROBERTSON, ARCHITECTS.



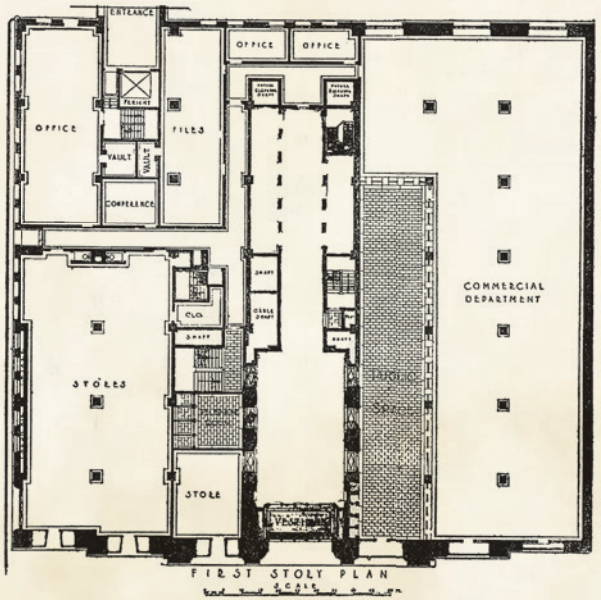
EATON TOWER, DETROIT. COMPLETED : JUNE 1, 1927.
LOUIS KAMPER INC., ARCHITECTS.







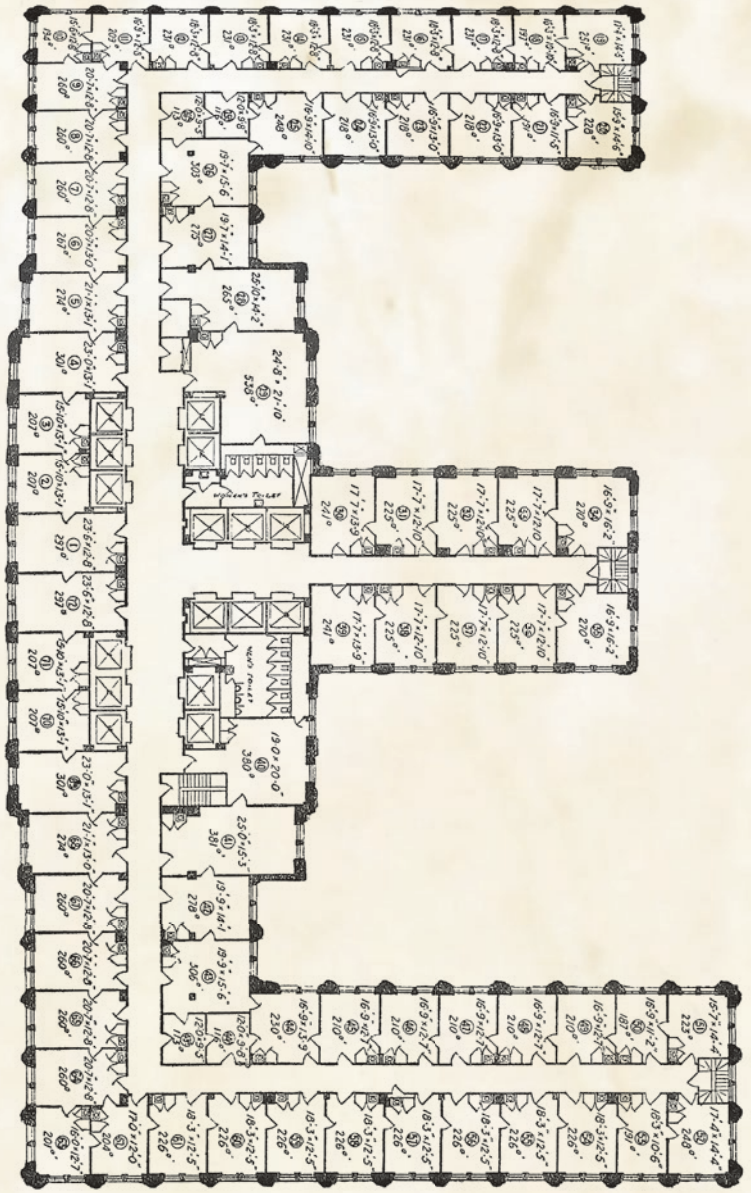
SIXTEENTH STORY PLAN



FIRST STORY PLAN

Ohio Bell Telephone Co., Building, Cleveland. Completed : June 1, 1927. Hubbell & Benes Co., Architects.





THIRD TO SIXTEENTH FLOORS.

RUSS BUILDING, SAN FRANCISCO. COMPLETED : SEPTEMBER 1, 1927. GEORGE W. KELHAM, ARCHITECT.

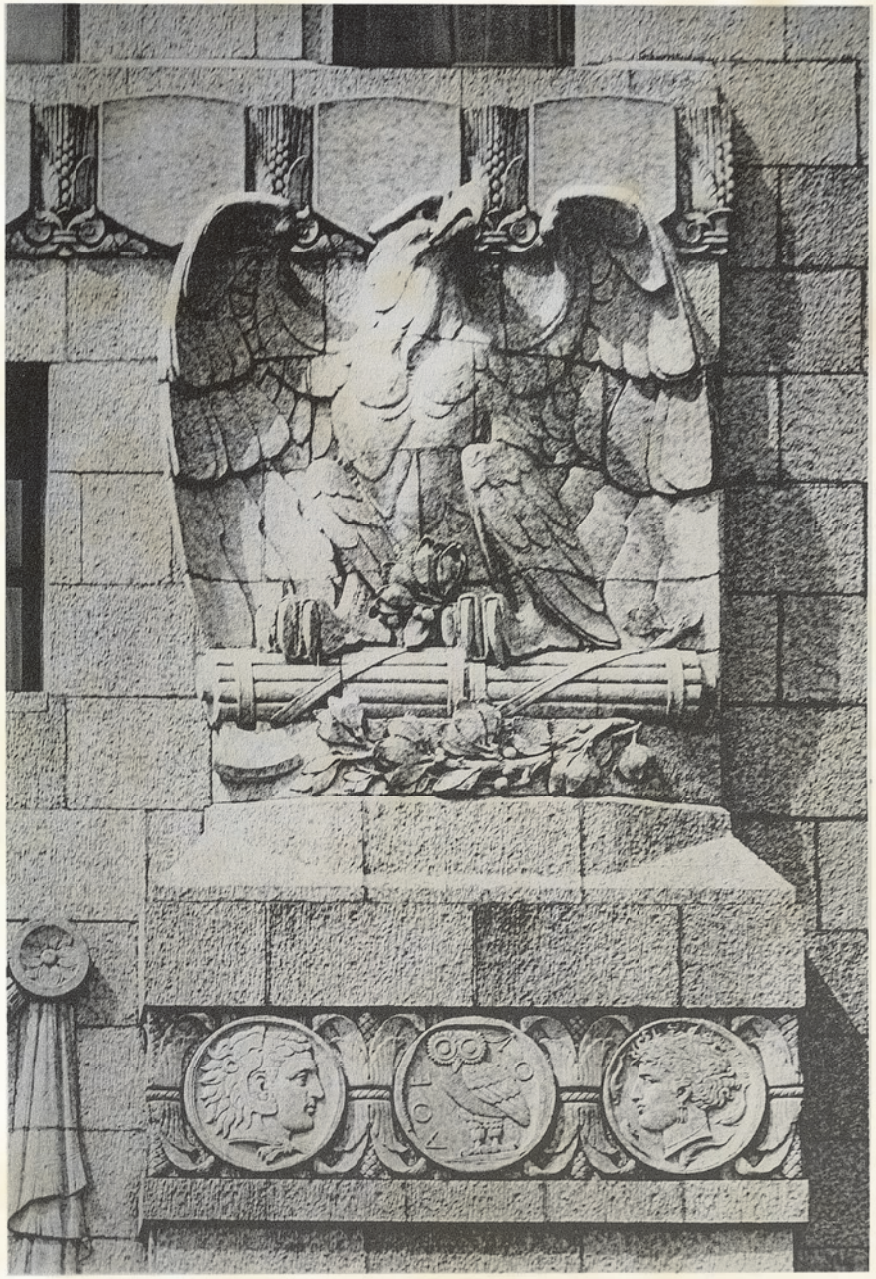


Copyright by E. L. Fowler.



Copyright by E. L. Fowler.

American Insurance Union Citadel, Columbus. Completed : September 21, 1927. C. Howard Crane, Architect.

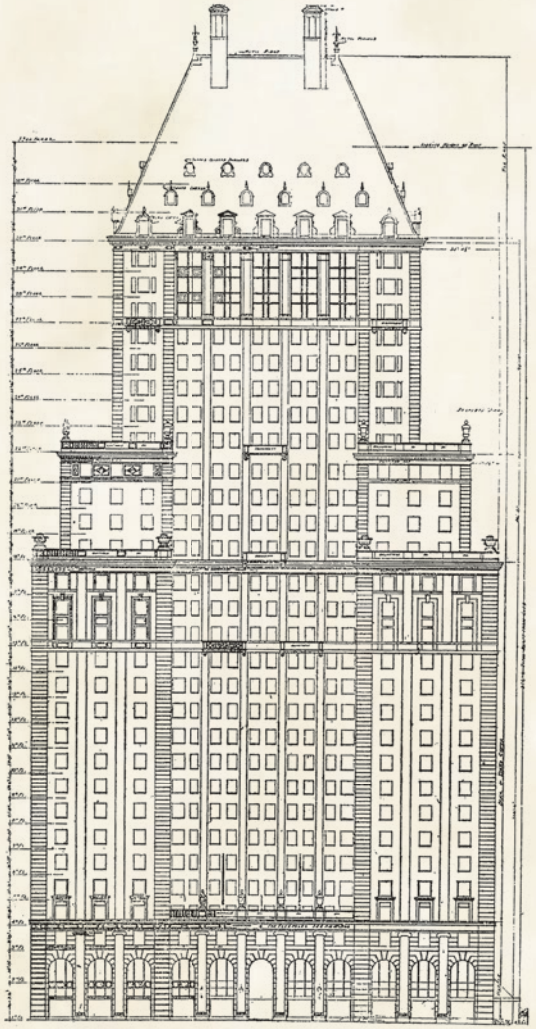


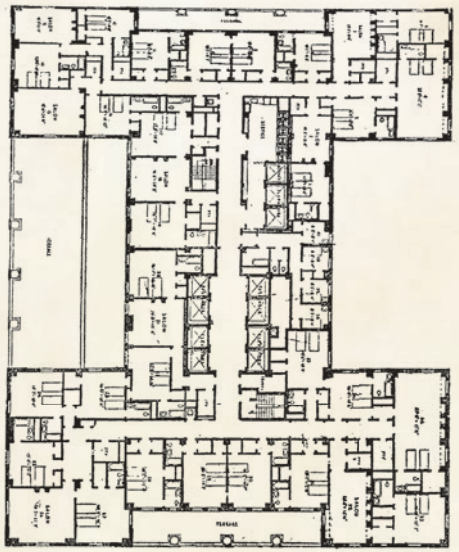


E. L. Fowler, Photo.

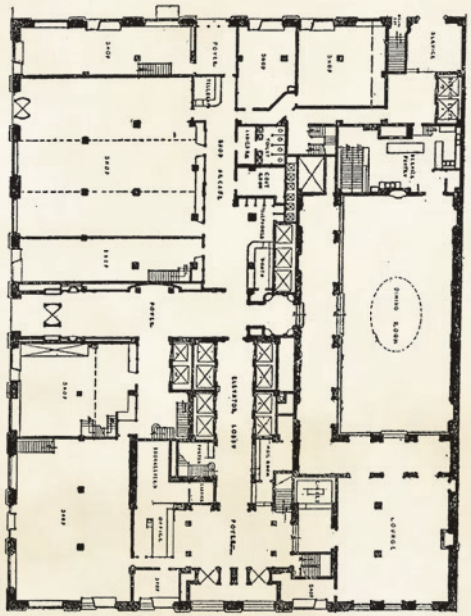
American Insurance Union Citadel, Columbus.







FOURTH TO EIGHTEENTH FLOOR

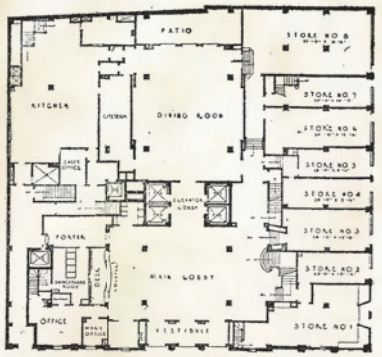


FIRST FLOOR

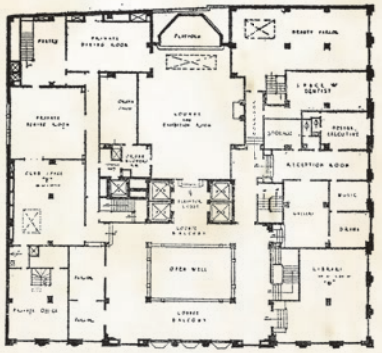
SAYOY-PLAZA HOTEL, NEW YORK. COMPLETED : OCTOBER 1, 1927. MC KIM, MEAD & WHITE, ARCHITECTS.



Samuel H. Gottscho, Photo.



FIRST FLOOR.



SECOND FLOOR.



EIGHTEENTH FLO



Samuel H.Gottscho, Photo.

THE BARBIZON, NEW YORK. COMPLETED : OCTOBER, 1927. MURGATROYD & OGDEN, ARCHITECTS.



S. H. Gottscho, Photo.

The Barbizon, New York.



Fire of the Sherry-Netherland Apartment Hotel : April 13, 1927.

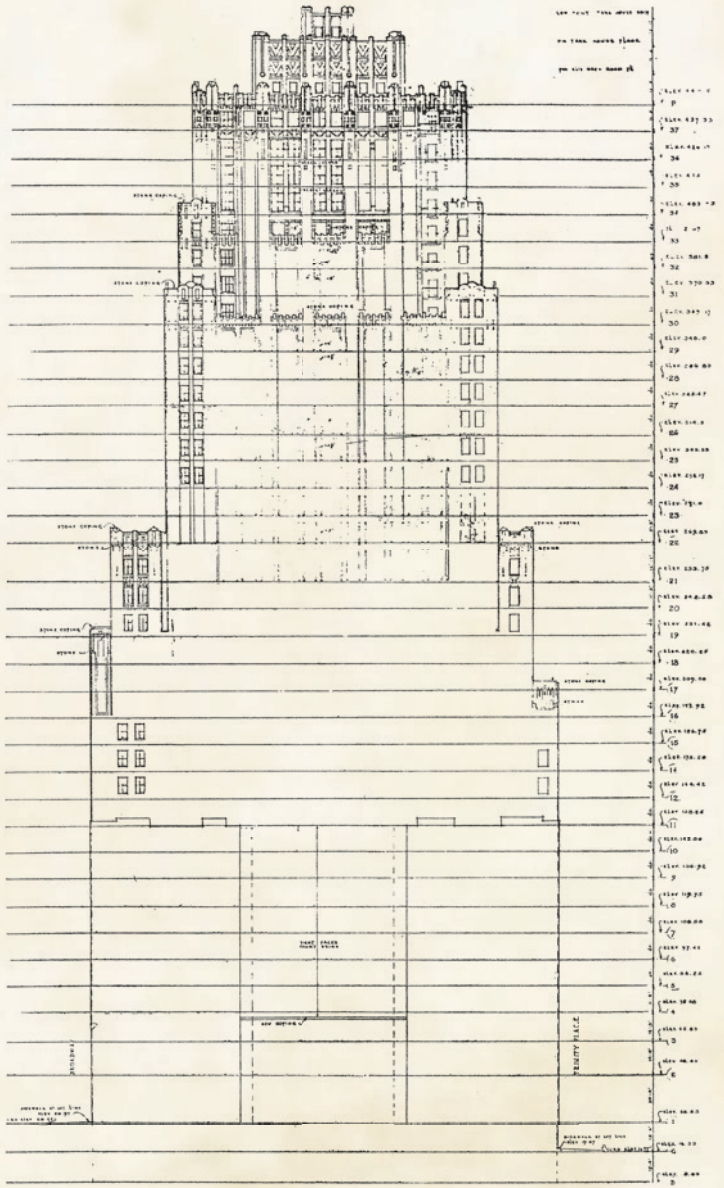


E. Galloway, Photo.

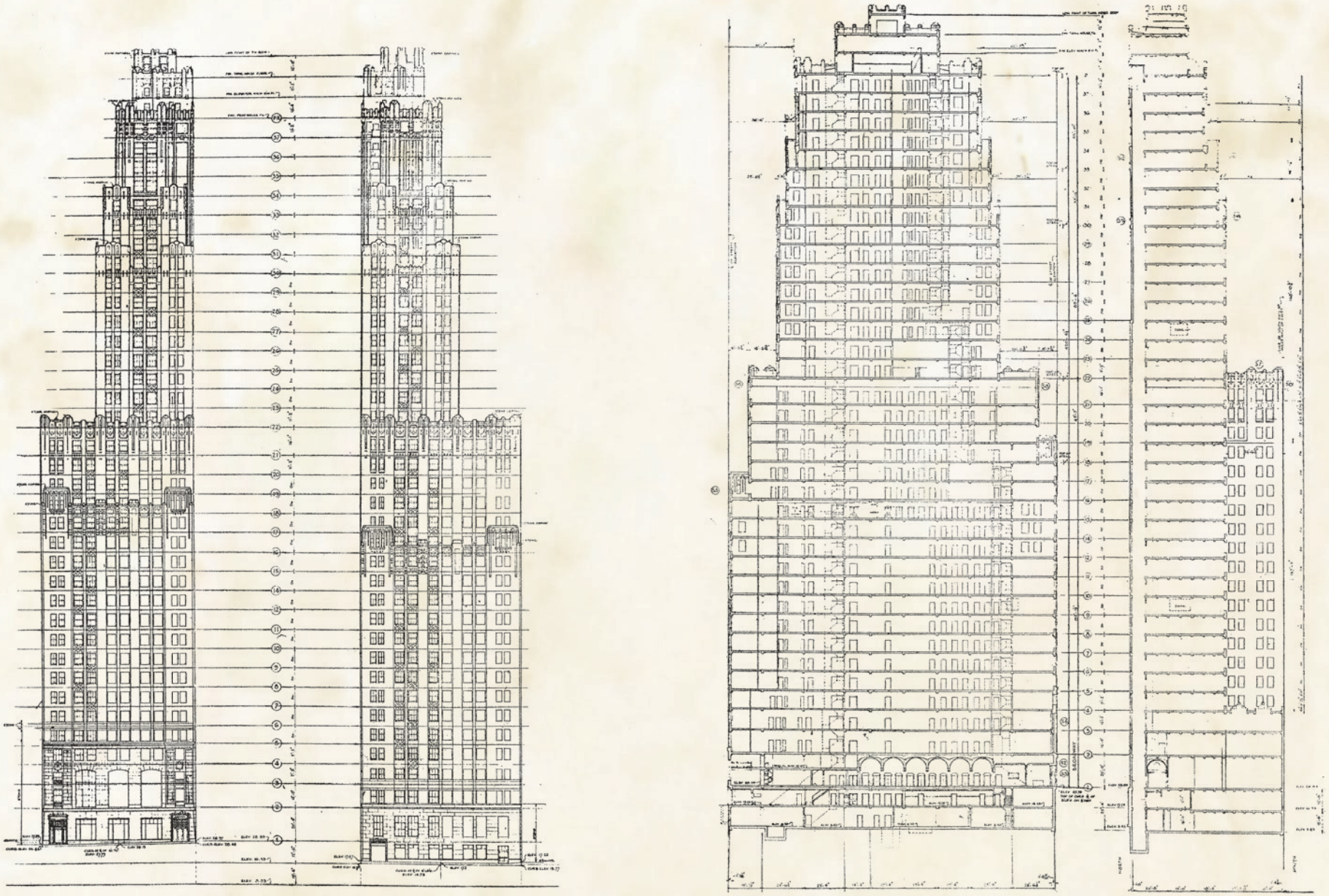
Sherry-Netherland Apartment Hotel, New York. Completed : November 3, 1927. Schultze & Weaver, Architects.



Nicolas Gvosdeff, del.



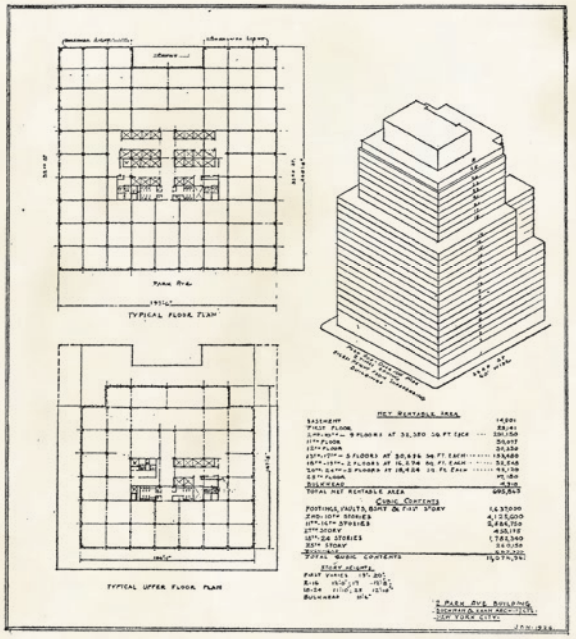
HARRIMAN BUILDING, NEW YORK. COMPLETED : JANUARY, 1928. CROSS & CROSS, ARCHITECTS.

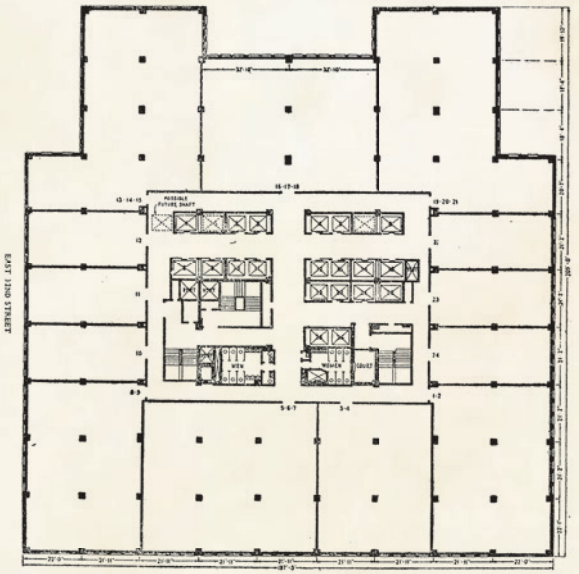


Harriman Building, New York.

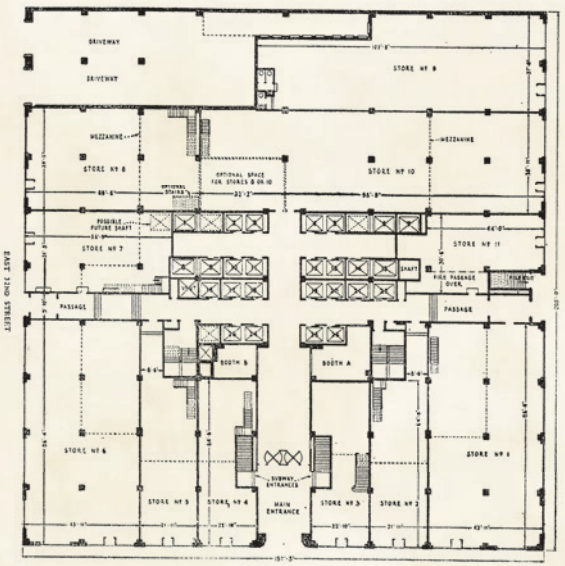


Sigurd Fischer, Photo.

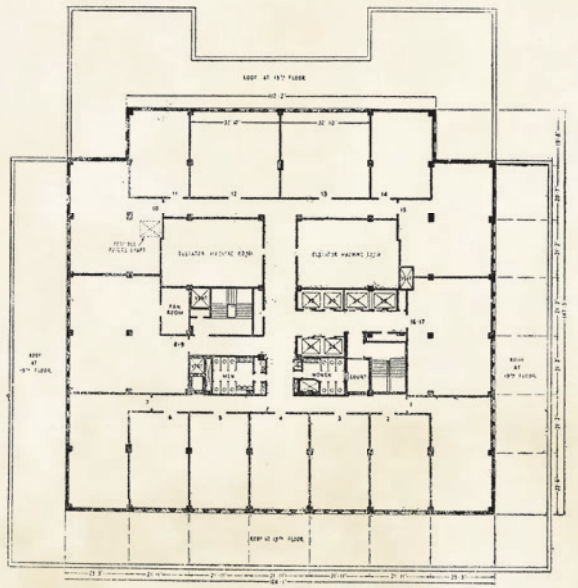




12th FLOOR



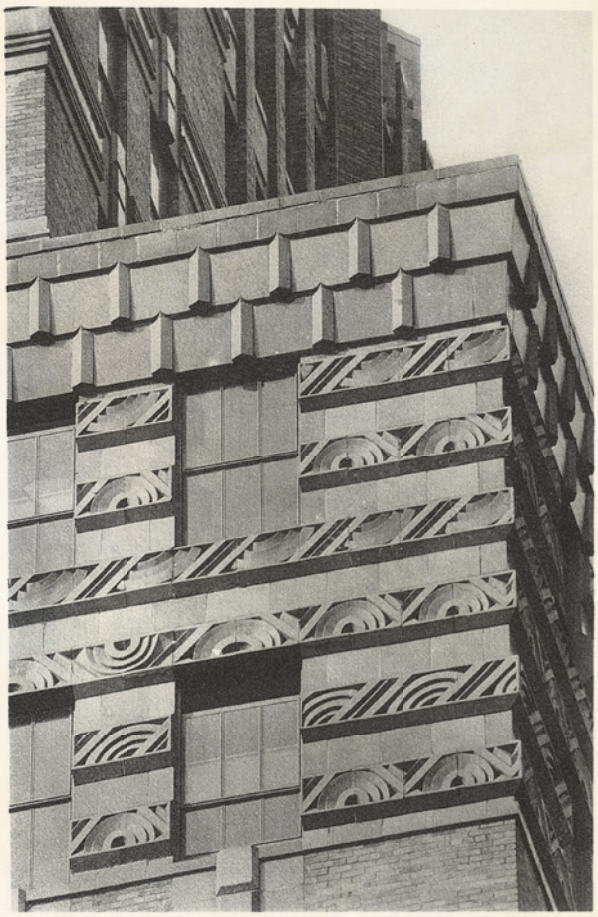
GROUND FLOOR

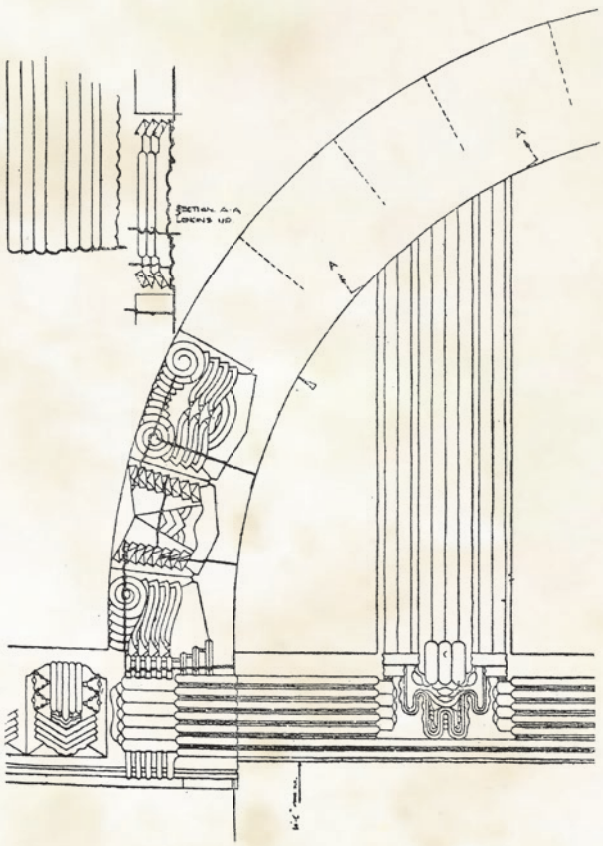


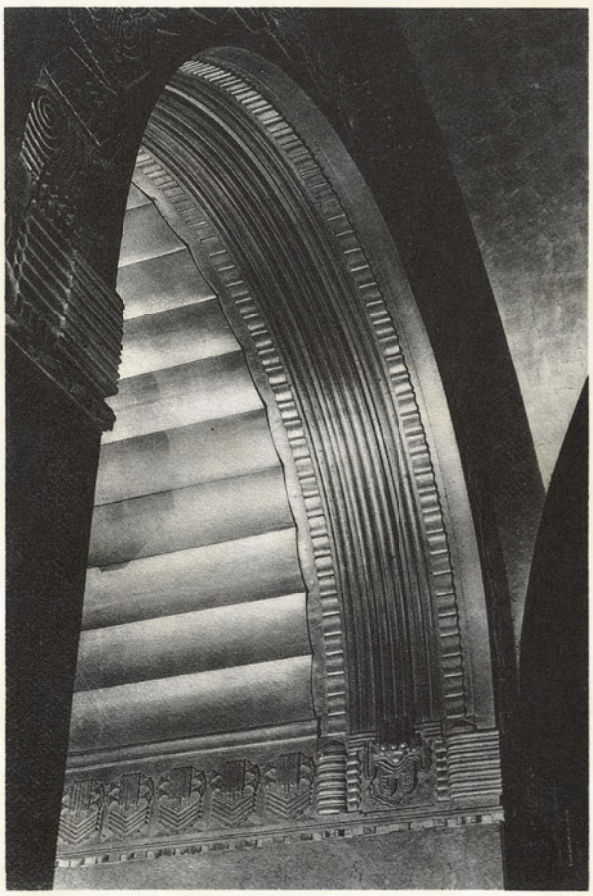
20th FLOOR

2 Park Avenue Building, New York. Completed : February, 1928. Buchman & Kahn, Architects.



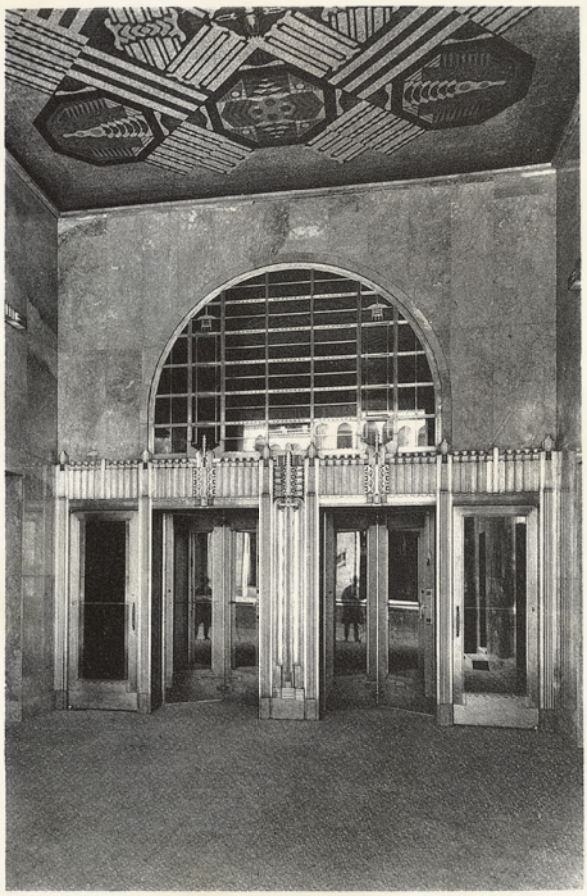


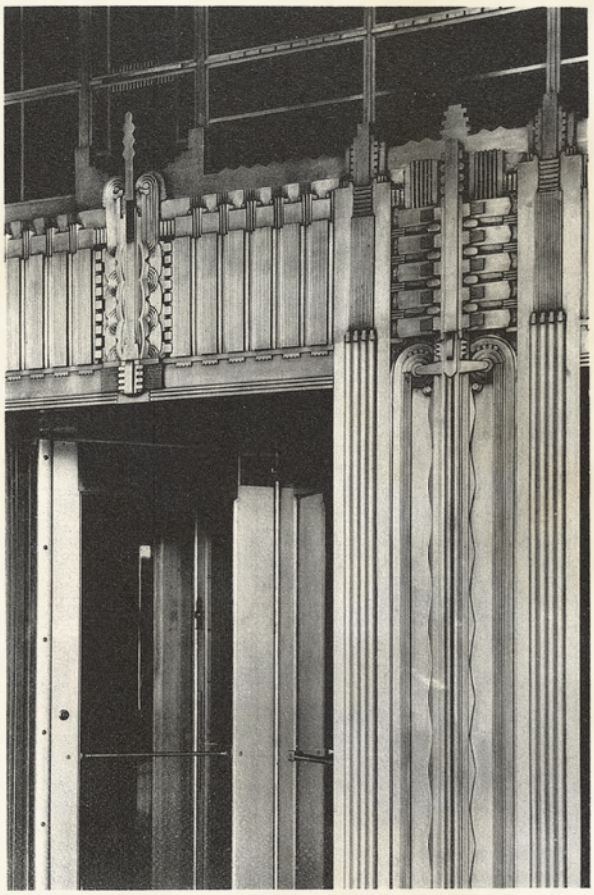


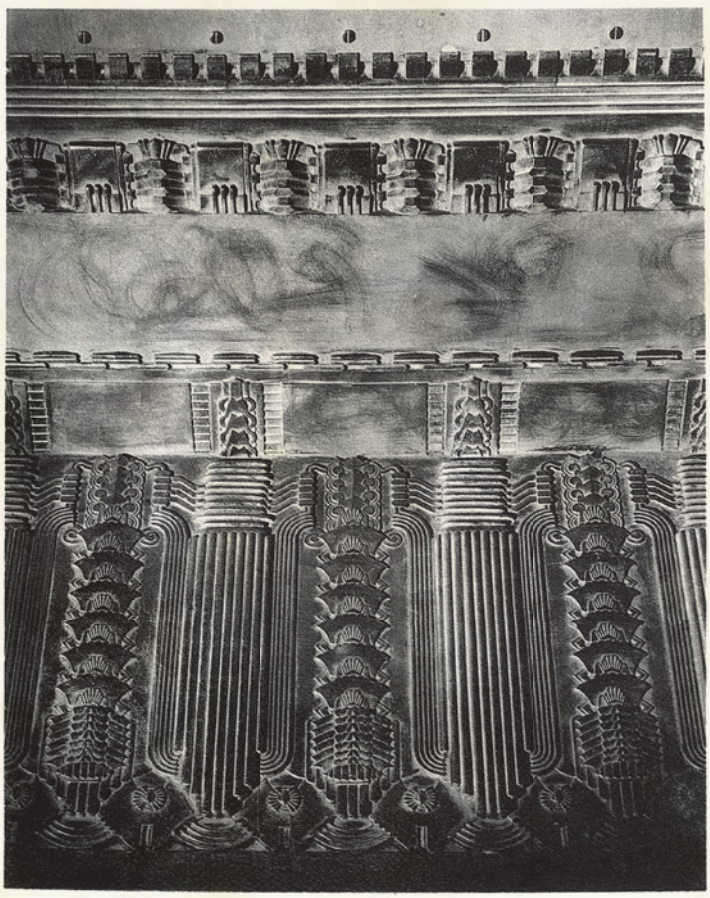


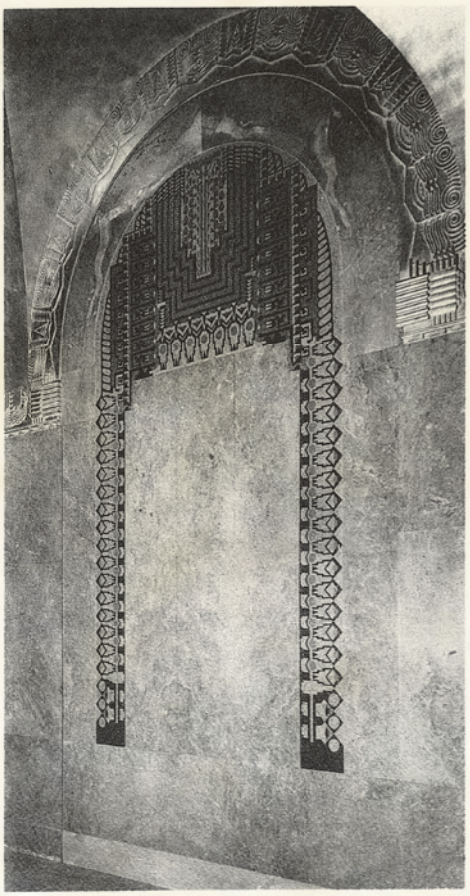
Sigurd Fischer, Photo.

2 Park Avenue Building, New York. Exterior and interior details.







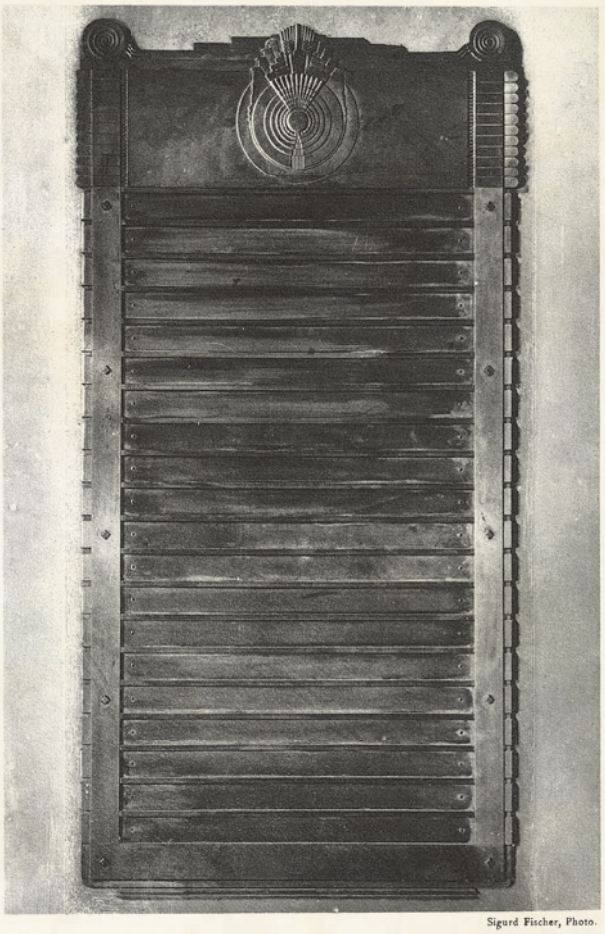


Sigurd Fischer, Photo.

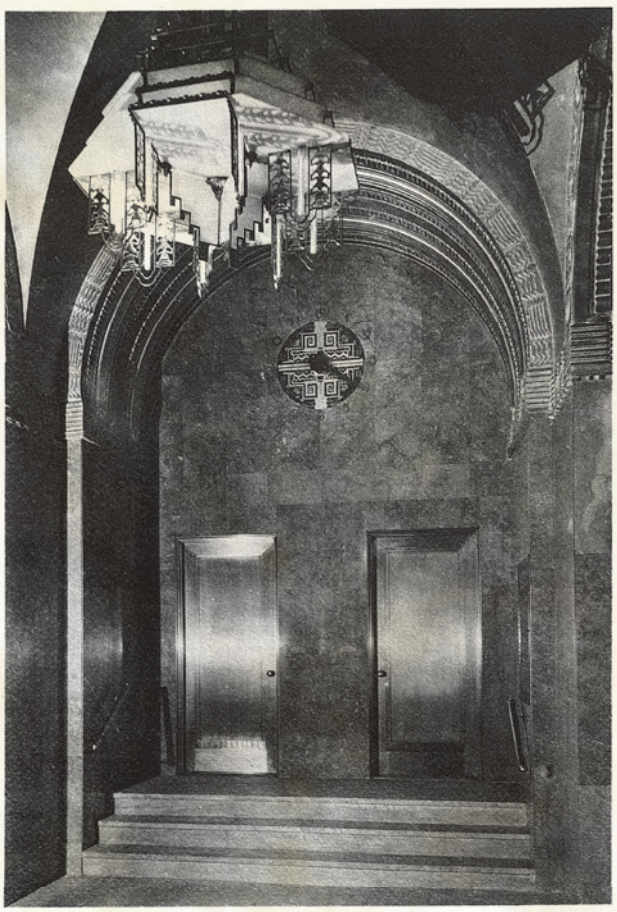
2 Park Avenue Building, New York. Interior details.



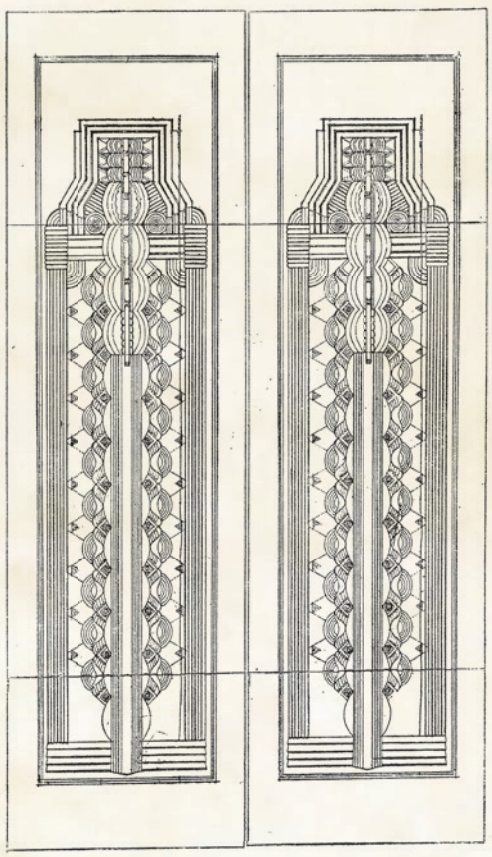
Sigurd Fischer, Photo.



Sigurd Fischer, Photo.



Sigurd Fischer, Photo.



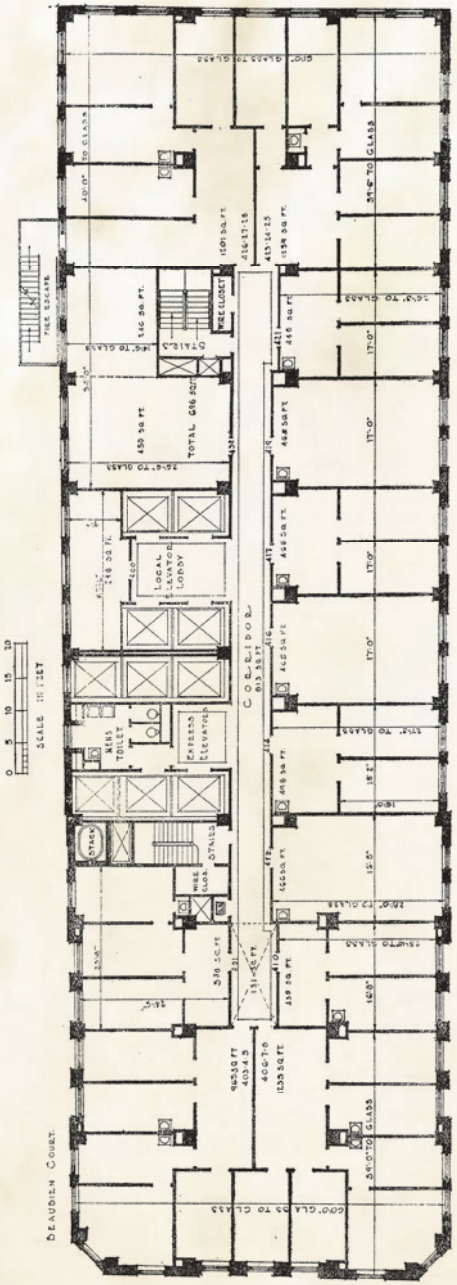
2 Park Avenue Building, New York. Interior Details.



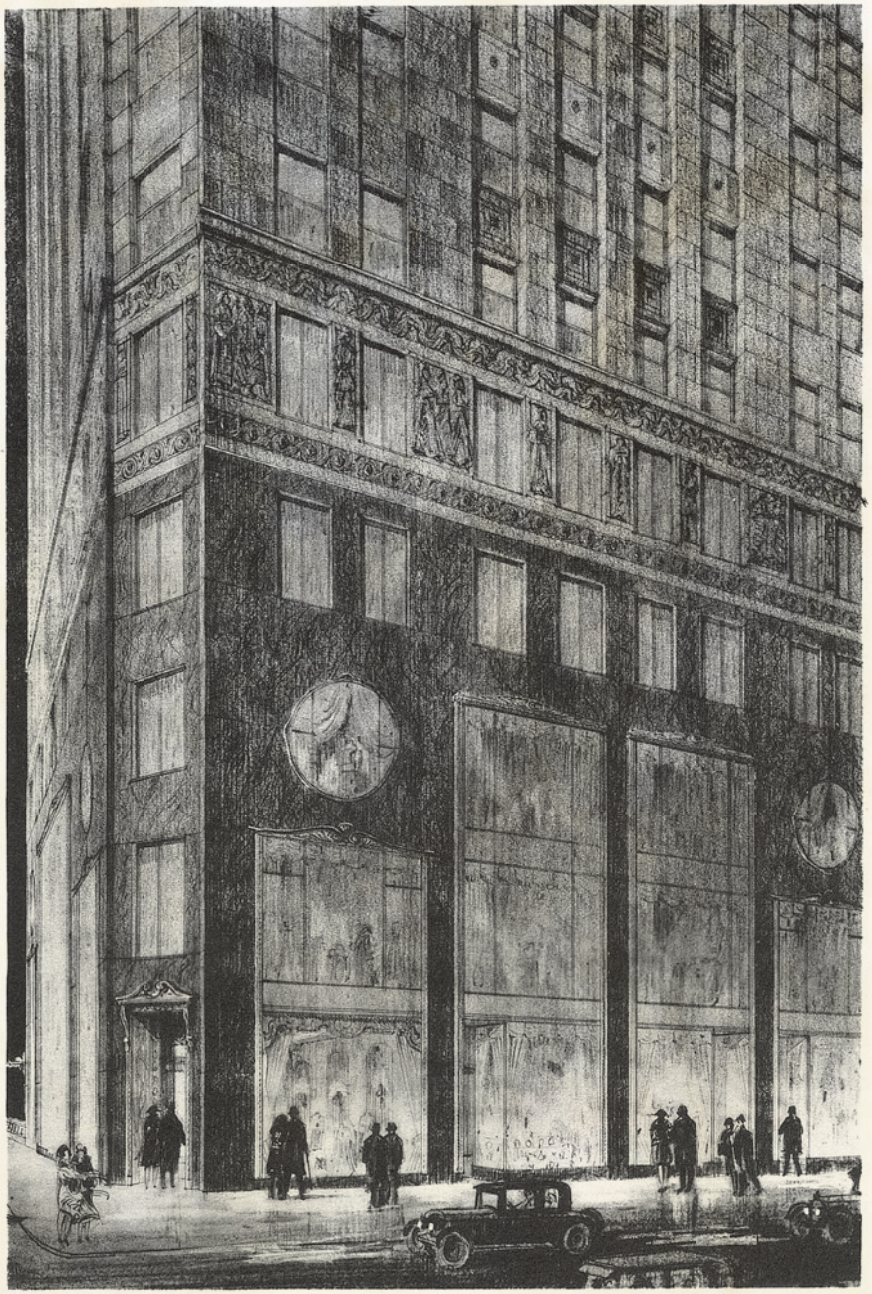


International Telephone Building, New York. Completed : March, 1928. Buchman & Kahn, Architects.





4th TO 11th FLOOR



333 North Michigan Avenue Building, Chicago. Completed : April, 1928. Holabird & Roche, Architects.

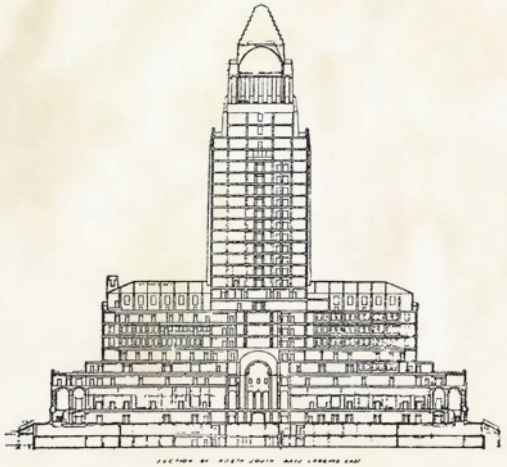


National Studios, Photo.

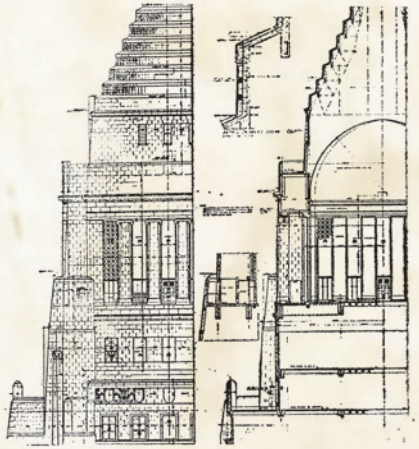
Los Angeles City Hall, Los Angeles. Completed : April 26, 1928. John C. Austin, Joen Parkinson & Albert C. Martin, Architects.



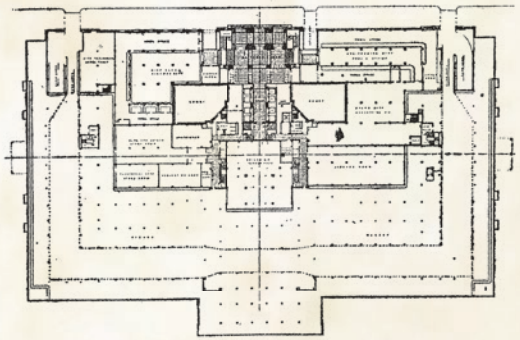
ELEVATION.



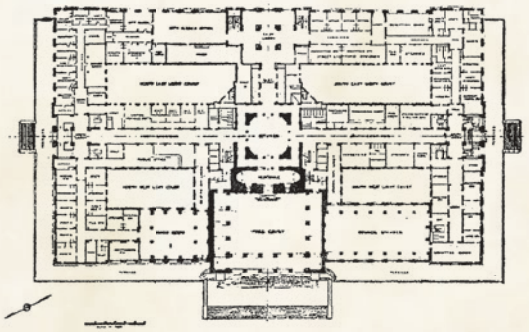
SECTION.



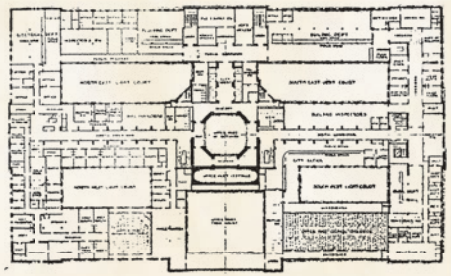
DETAILS OF TOWER.



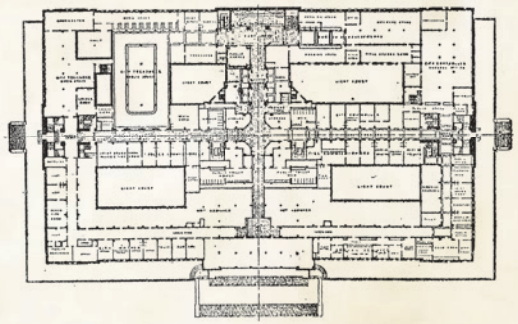
BASEMENT.



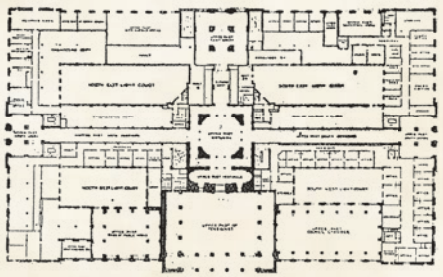
FIRST FLOOR.



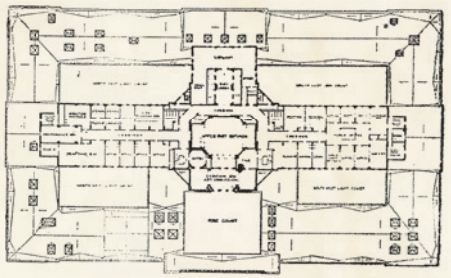
SECOND FLOOR.



GROUND FLOOR.



MEZZANINE FLOOR.



THIRD FLOOR.

Los Angeles City Hall, Los Angeles.





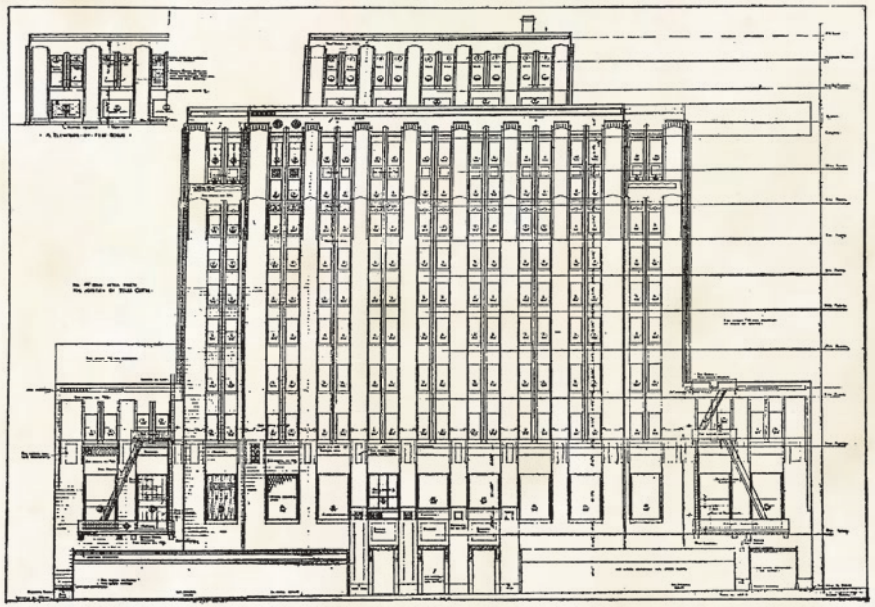
Herold Brown, Photo.

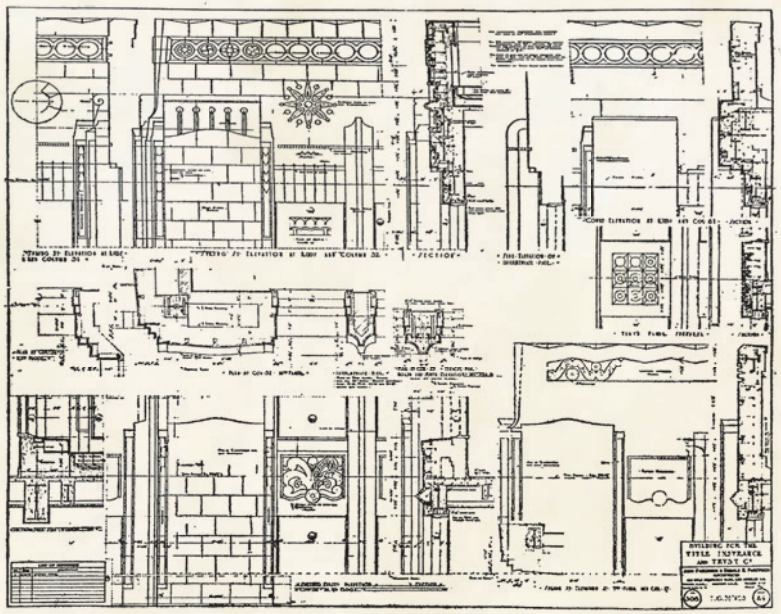
Title Insurance Building, Los Angeles. Completed : May 1, 1928. John & Donald B. Parkinson, Architects.

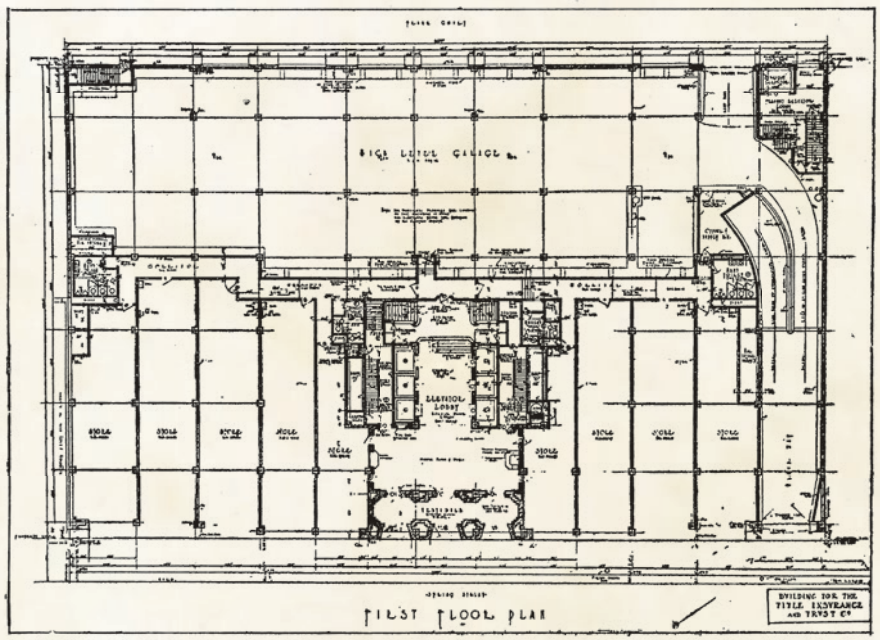


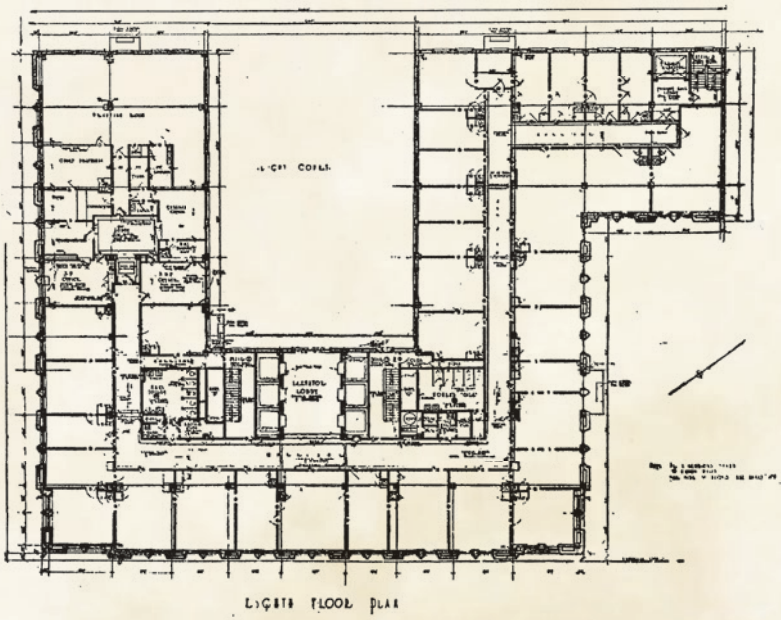


Title Insurance Building, Los Angeles.





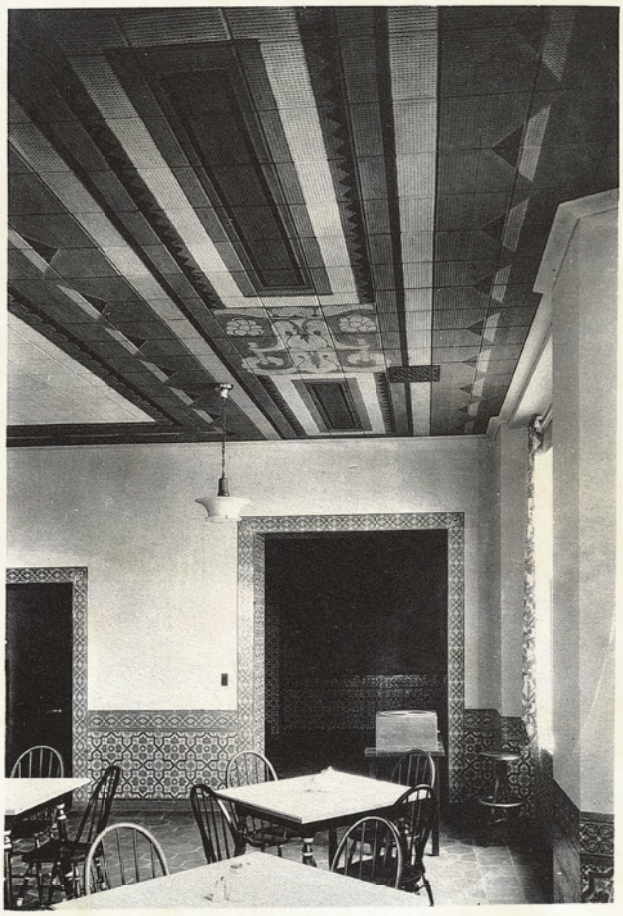




TITLE INSURANCE BUILDING, LOS ANGELES
WORKING DRAWINGS AND FLOOR PLANS.



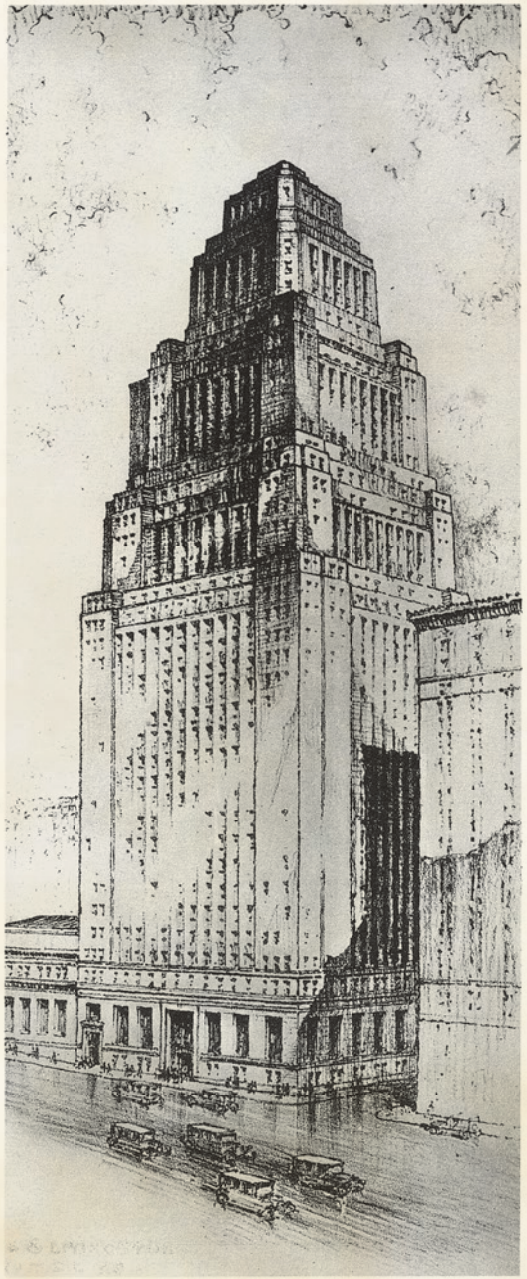




Title Insurance Building, Los Angeles. Interiors.





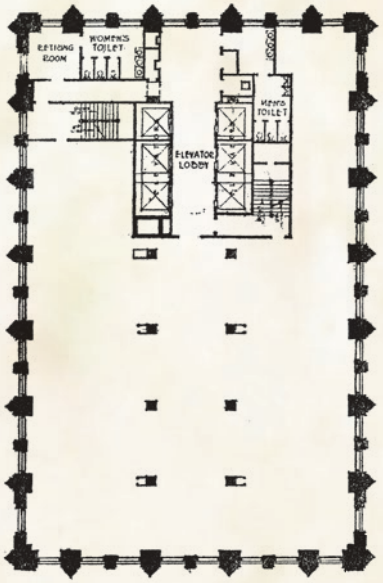


EQUITABLE TRUST CO. BUILDING, NEW YORK. COMPLETED : MAY, 1928. TROWBRIDGE & LIVINGSTON, ARCHITECTS.

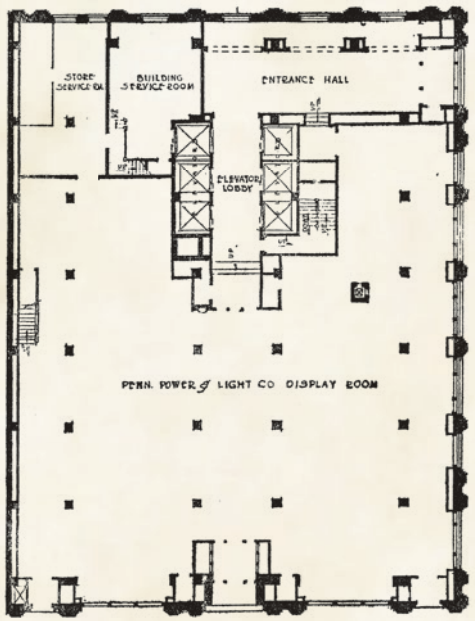


J. A. Kubil, Photo.

Pennsylvania Power & Light Co. Building. Allentown, Pa.
Completed : August, 1928. Helmle, Corbett & Harrison, Architects.

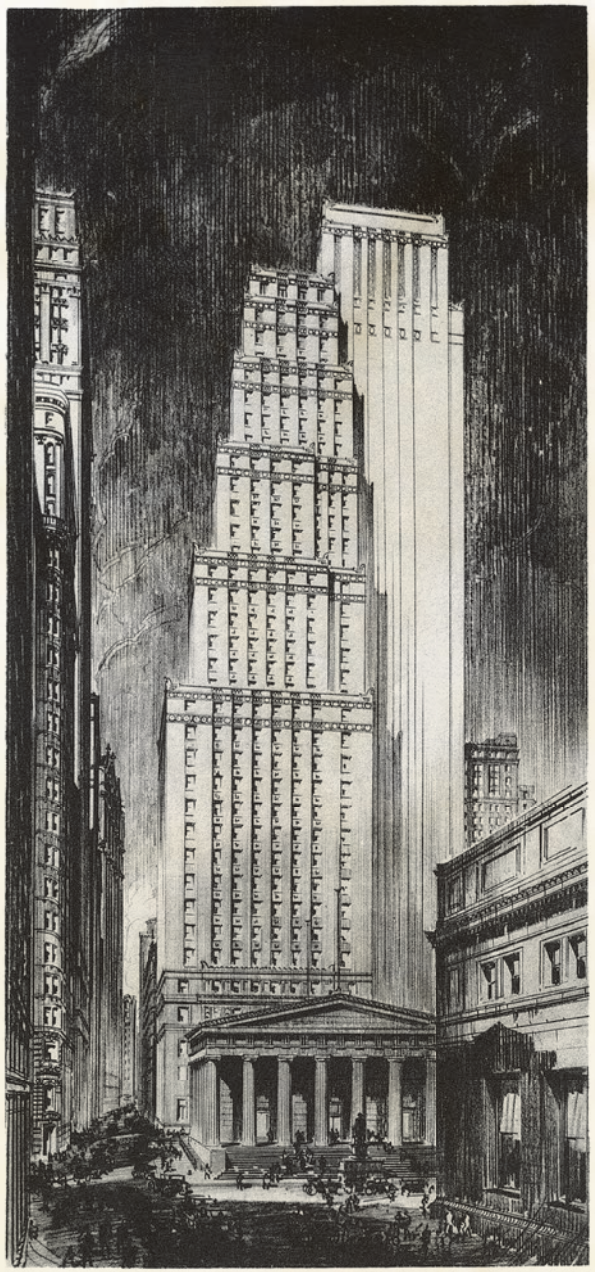


TYPICAL FLOOR



FIRST FLOOR

Pennsylvania Power & Light Co. Building.
Allentown, Pa. Floor Plans.

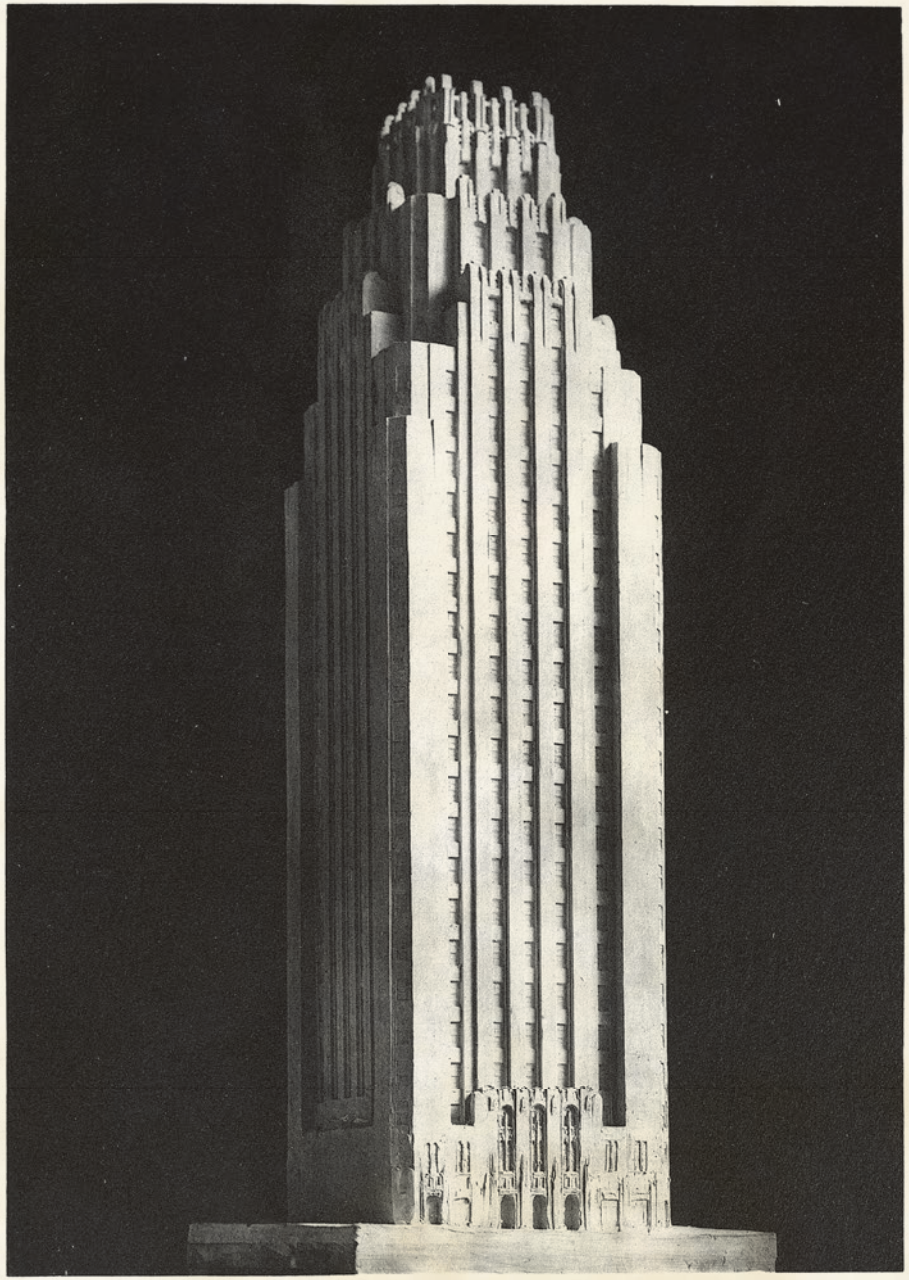


Chase National Bank Building. New York. Completed : 1928.
Graham, Anderson, Probst & White, Architects.



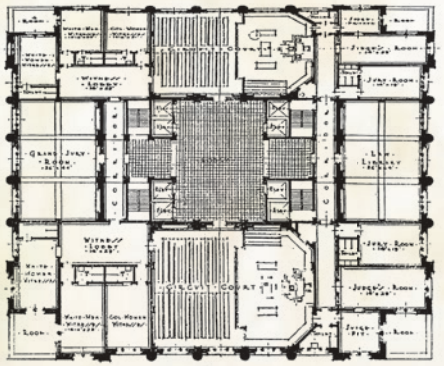
Hugh Ferriss, del.

Missouri Pacific Lines Building, St. Louis. Completed : August 2, 1928.
Mauran, Russell & Crowell, Architects.



Panhellenic House, New York. Completed : Autumn, 1928.
John Mead Howells, Architect.





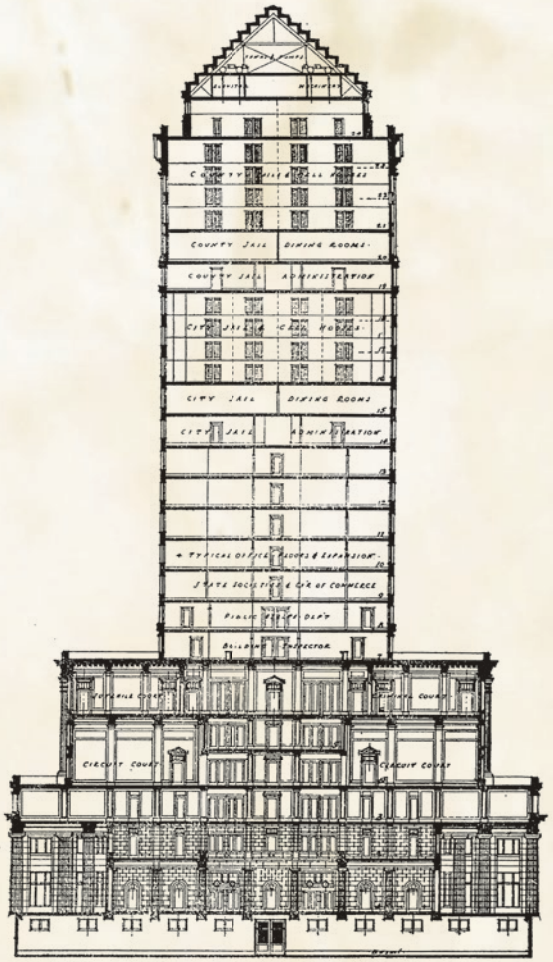
4th FLOOR.



3rd FLOOR.



MAIN FLOOR.



DADE COUNTY COURT HOUSE AND MIAMI CITY HALL, MIAMI. COMPLETED : SEPTEMBER 6, 1928. A. TEN EYCK BROWN, ARCHITECT.



Fisher Building, Detroit. Completed : September, 1928. Albert Kahn Inc., Architects.



Schell Lewis, del.

Indemnity Building, New York. Completed : October, 1928. Buchman & Kahn, Architects.



Courtesy of the New York Edison Co.

Drawn by Earl Horter.

New York Life Insurance Co. Building, New York. Completed : November 15, 1928. Cass Gilbert, Architect.



Penobscot Building, Detroit. Completed : December, 1928.
Smith, Hinchman & Grylls, Architects.

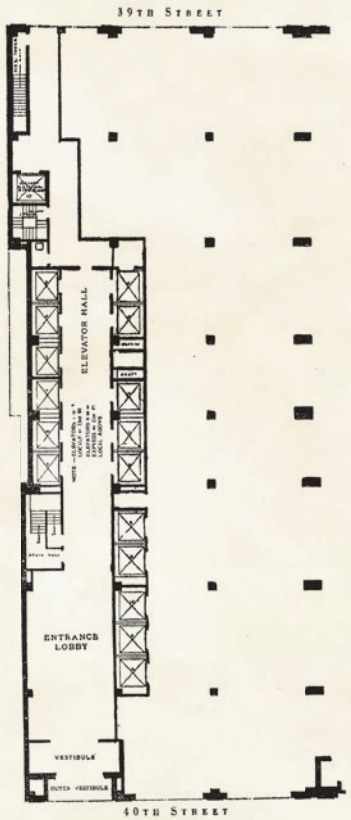


Cleveland Terminal Tower & Cleveland Union Station, Cleveland.
Completed : Tower, 1928 - Station 1929.
Graham, Anderson, Probst & White, Architects.

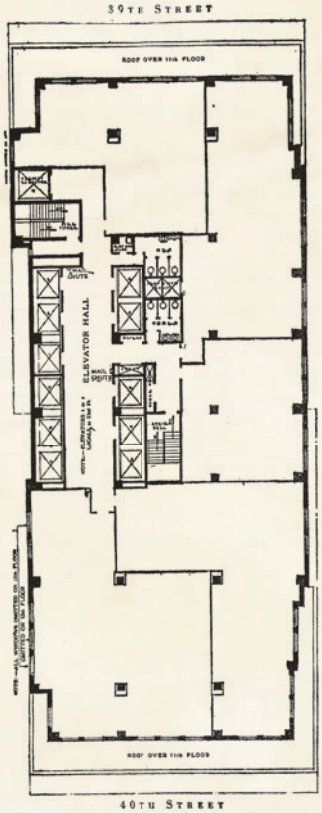


Union Trust Building, Detroit.
Completed : January, 1929.
Smith, Hinchman & Grylls, Architects.





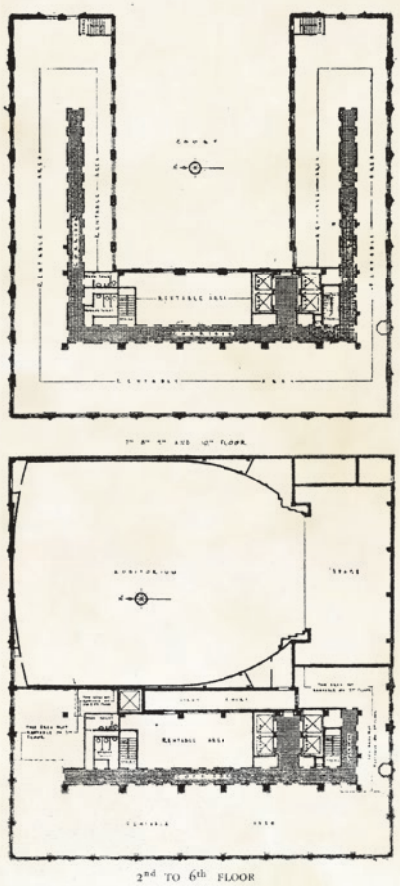
FIRST (GROUND) FLOOR



POSSIBLE DIVISION TWELFTH TO FOURTEENTH FLOORS

10 East 40th Street Building, New York. Completed : January, 1929. Ludlow & Peabody, Architects.

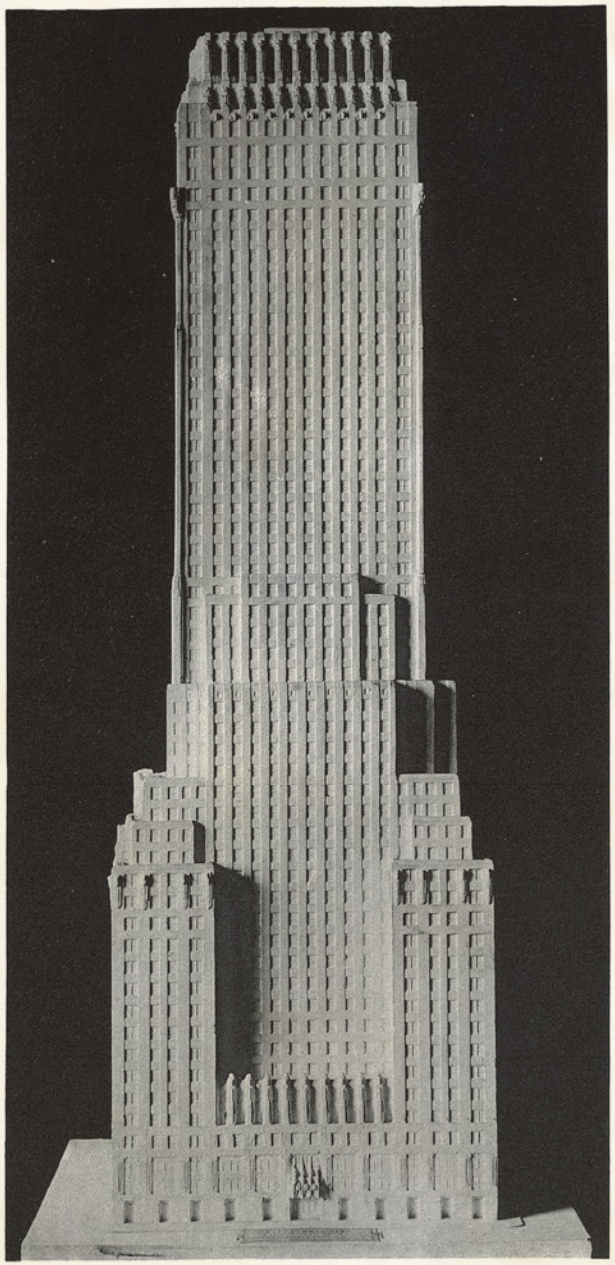


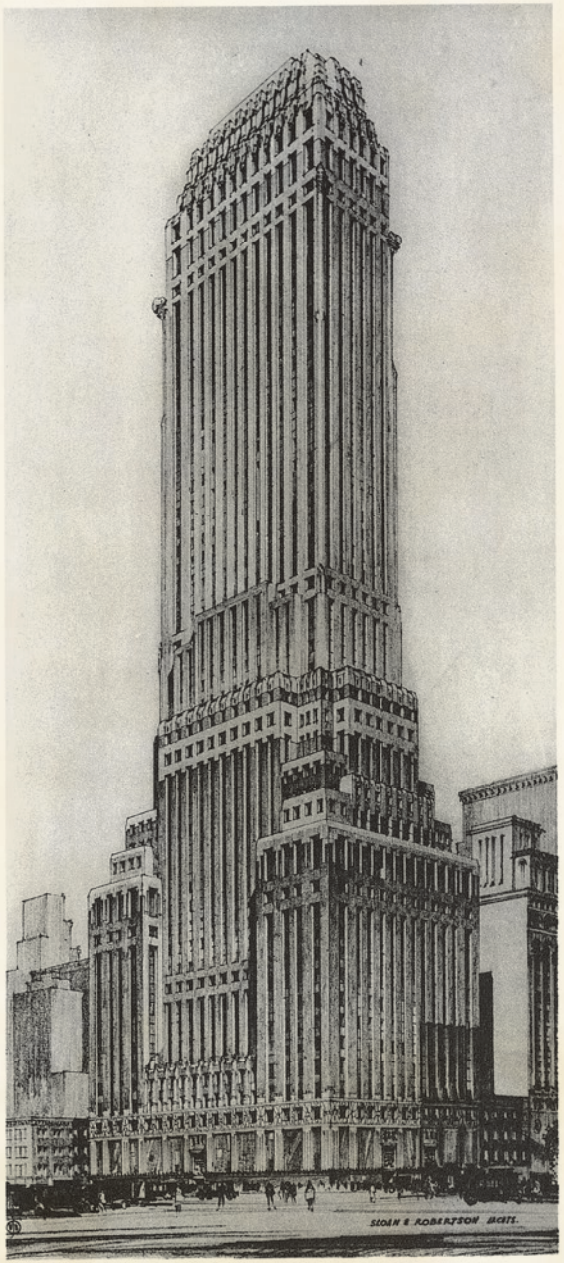


2nd to 6th floor

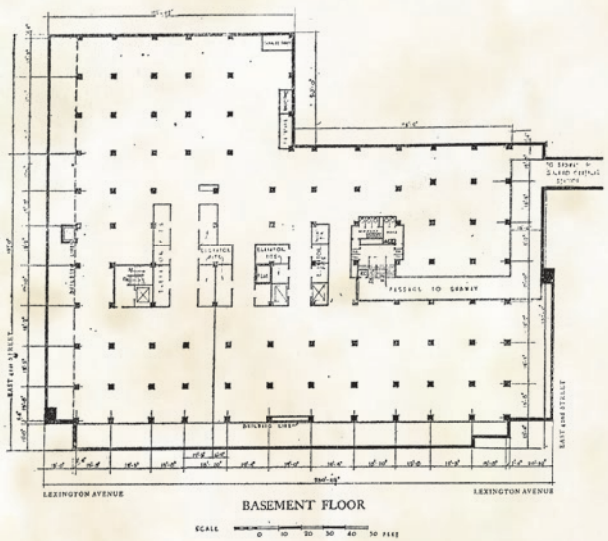
Stuart Building, Lincoln, Nebraska. Completed : January 1, 1929. Davis & Wilson, Architects.



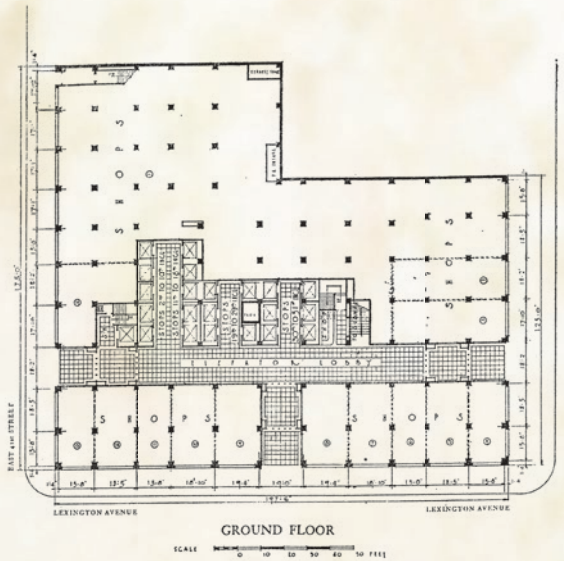




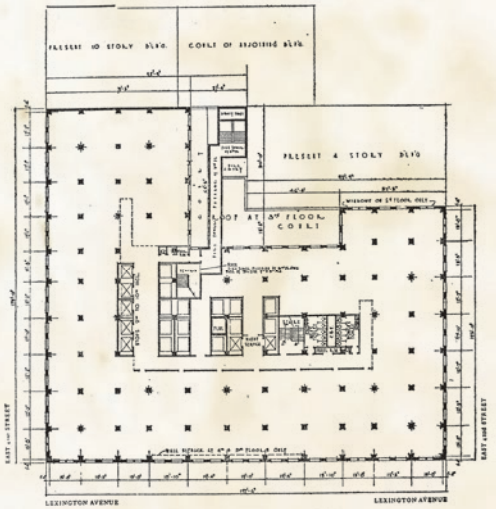
Chanin Building, New York. Completed : january, 1929. Sloan & Robertson, Architects.



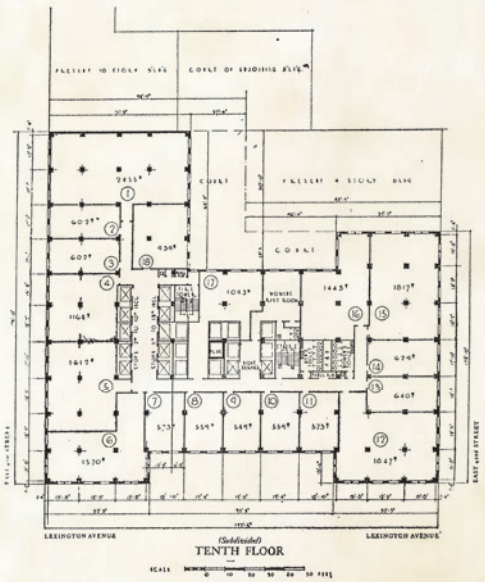
BASEMENT FLOOR



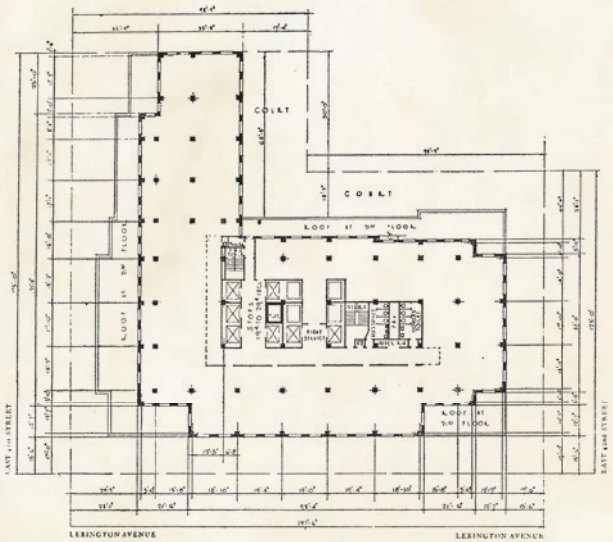
GROUND FLOOR



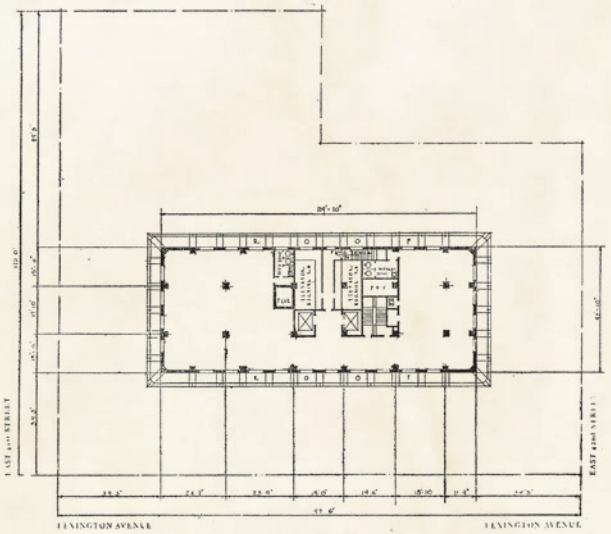
THIRD to FIFTH FLOORS, Incl.



(Subdivided)
TENTH FLOOR

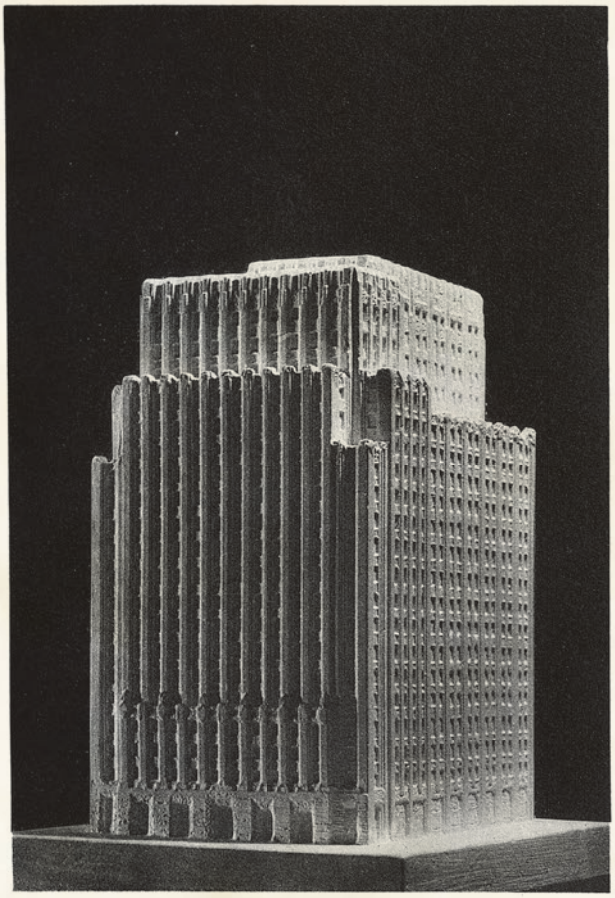


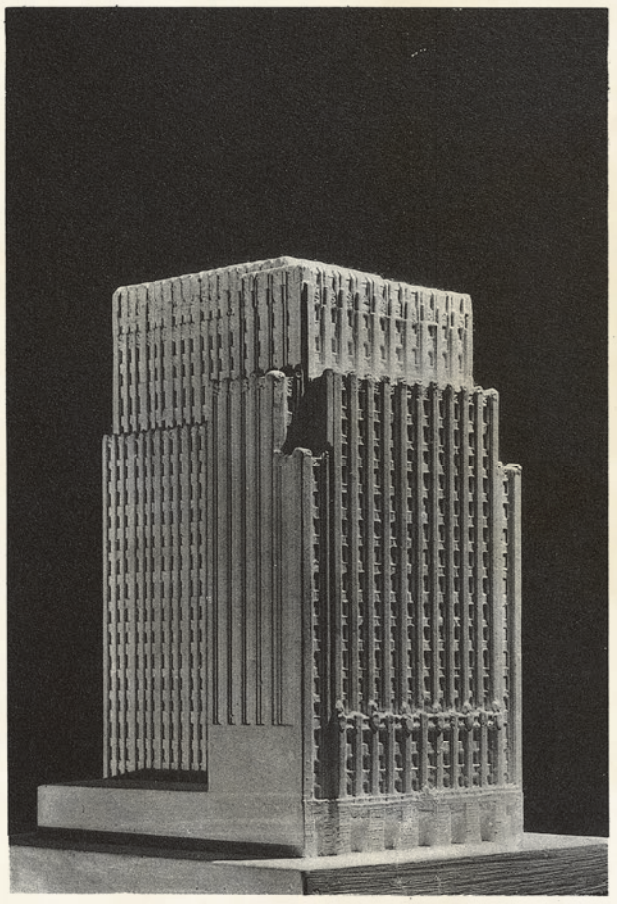
TWENTY-FIRST to TWENTY-FOURTH FLOORS, Incl.

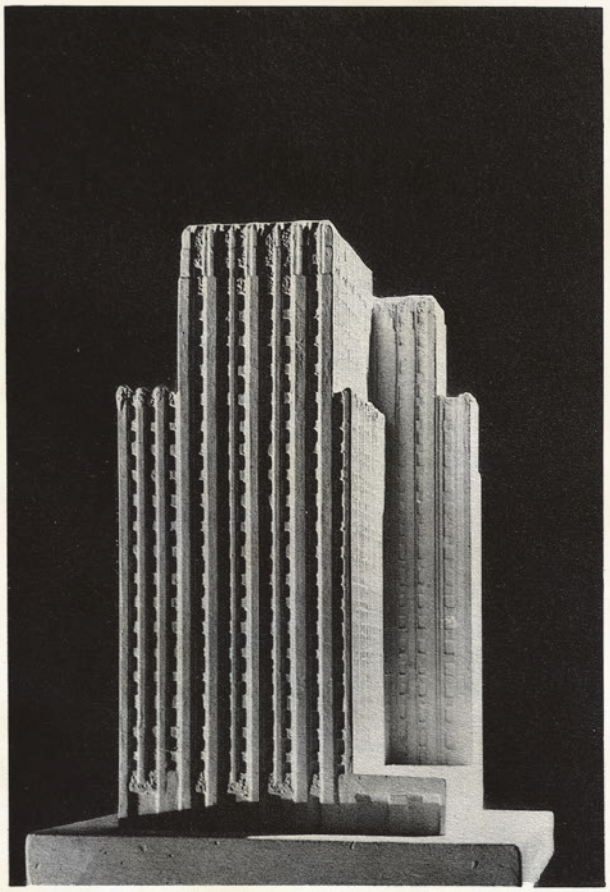


FIFTY-SECOND FLOOR

CHANIN BUILDING, NEW YORK. FLOOR PLANS.



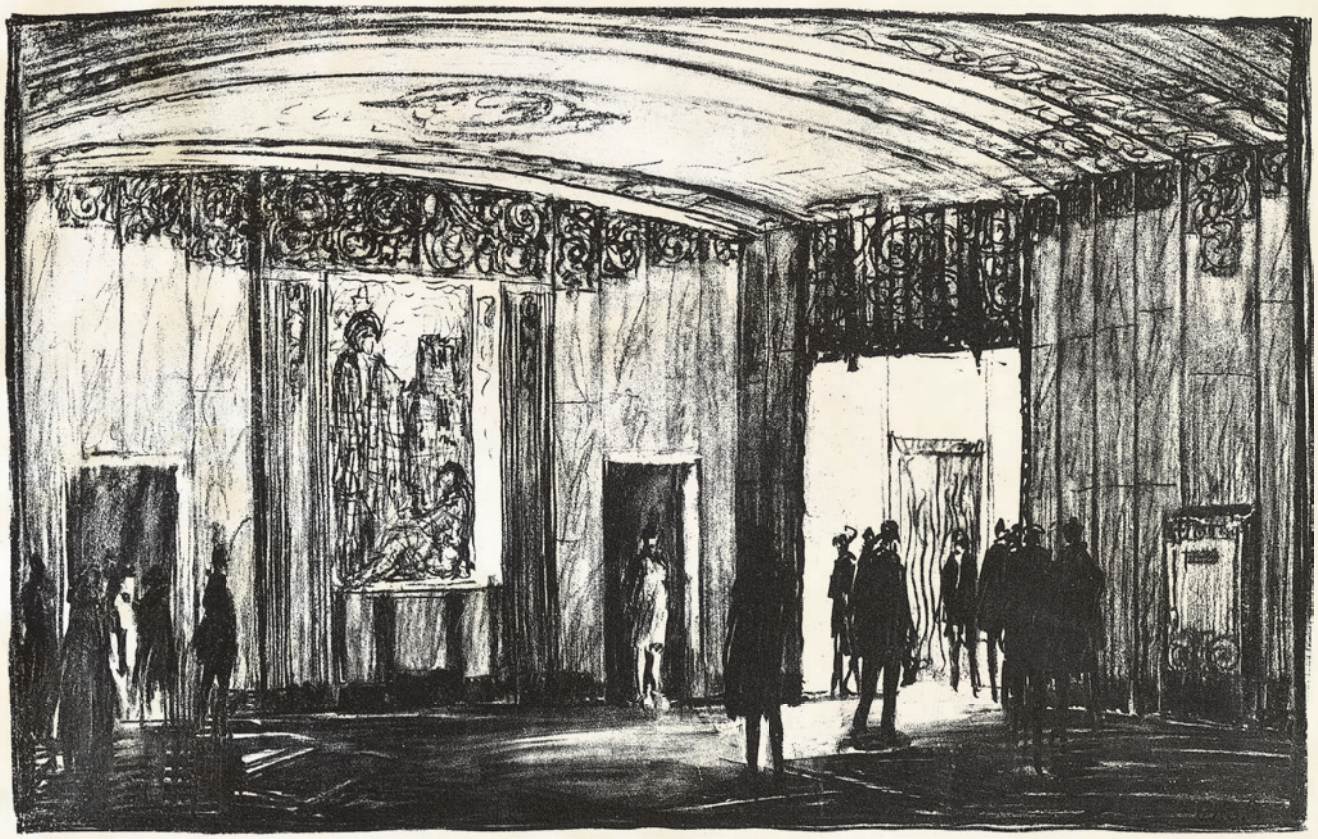


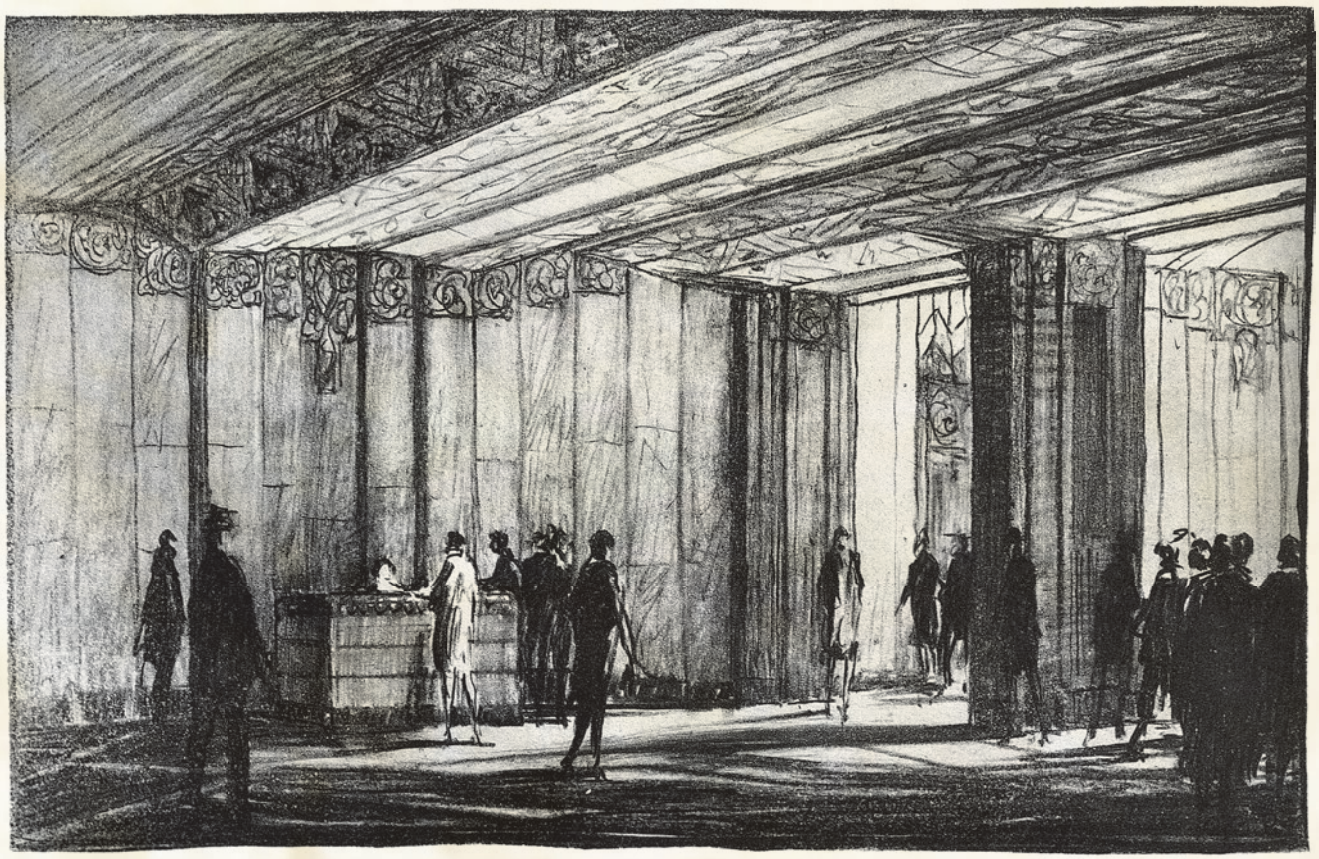




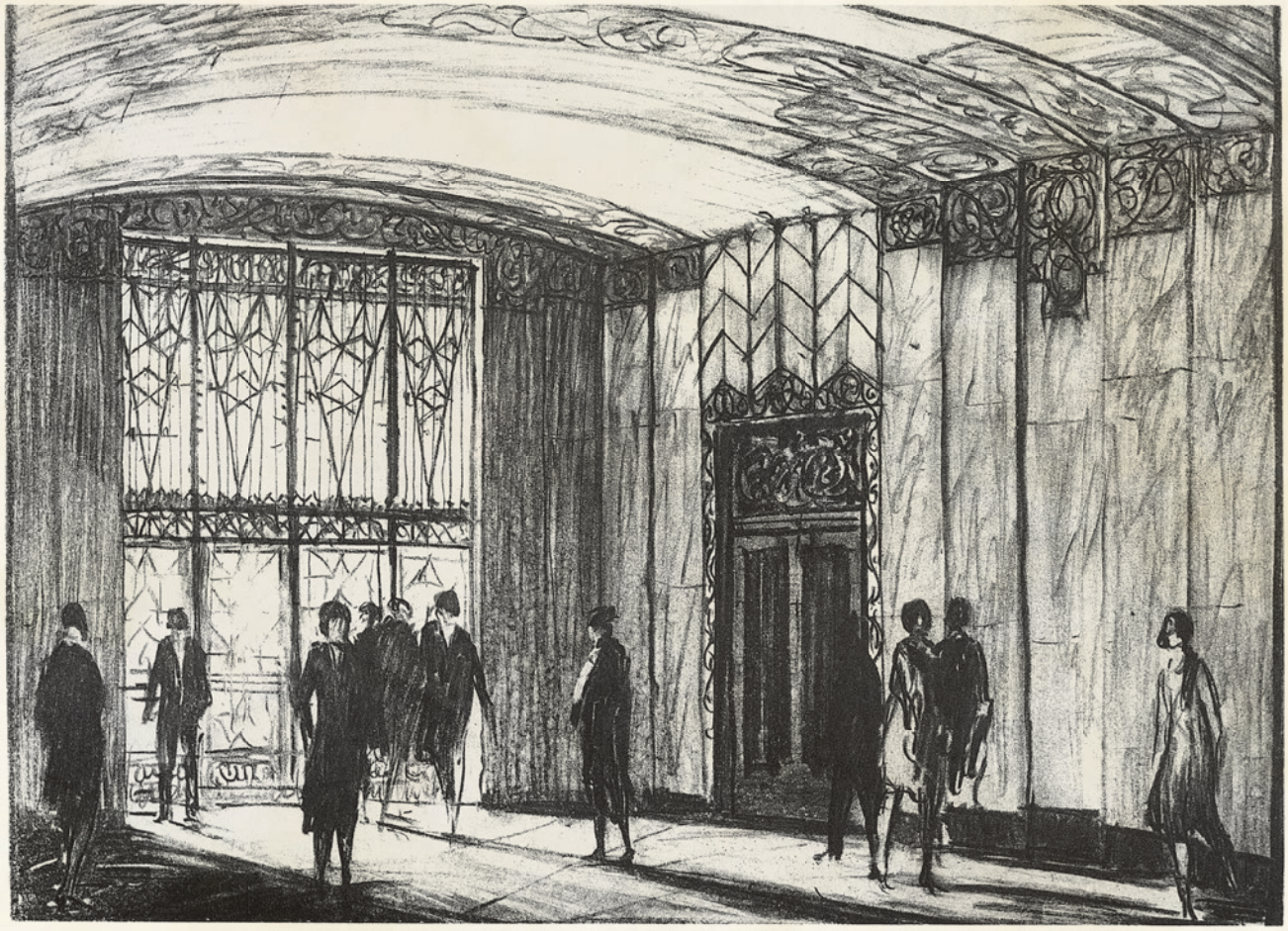
Chester B. Price, del.

New Jersey Bell Telephone Building, Newark. Completed : January, 1929. Mc Kenzie, Voorhees & Gmelin, Architects.

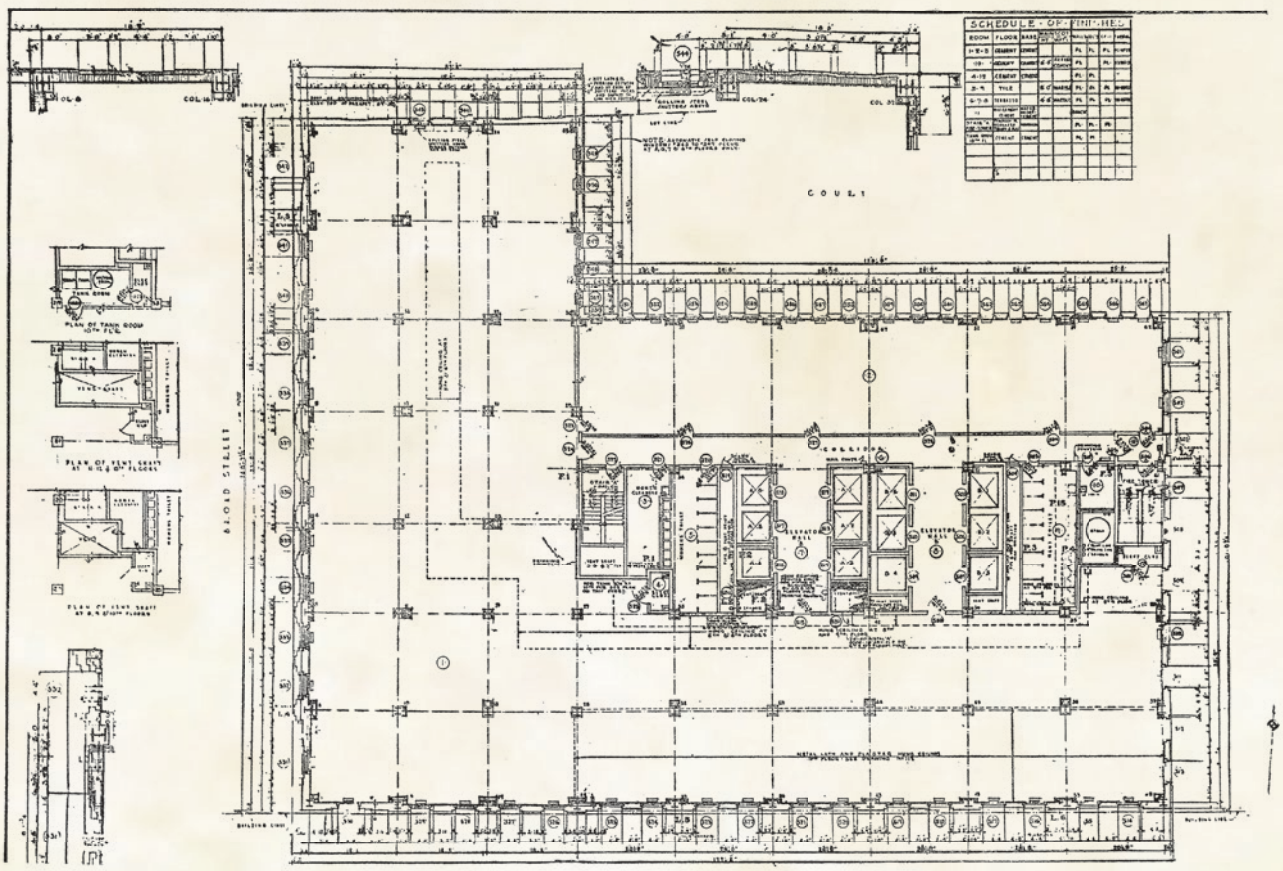




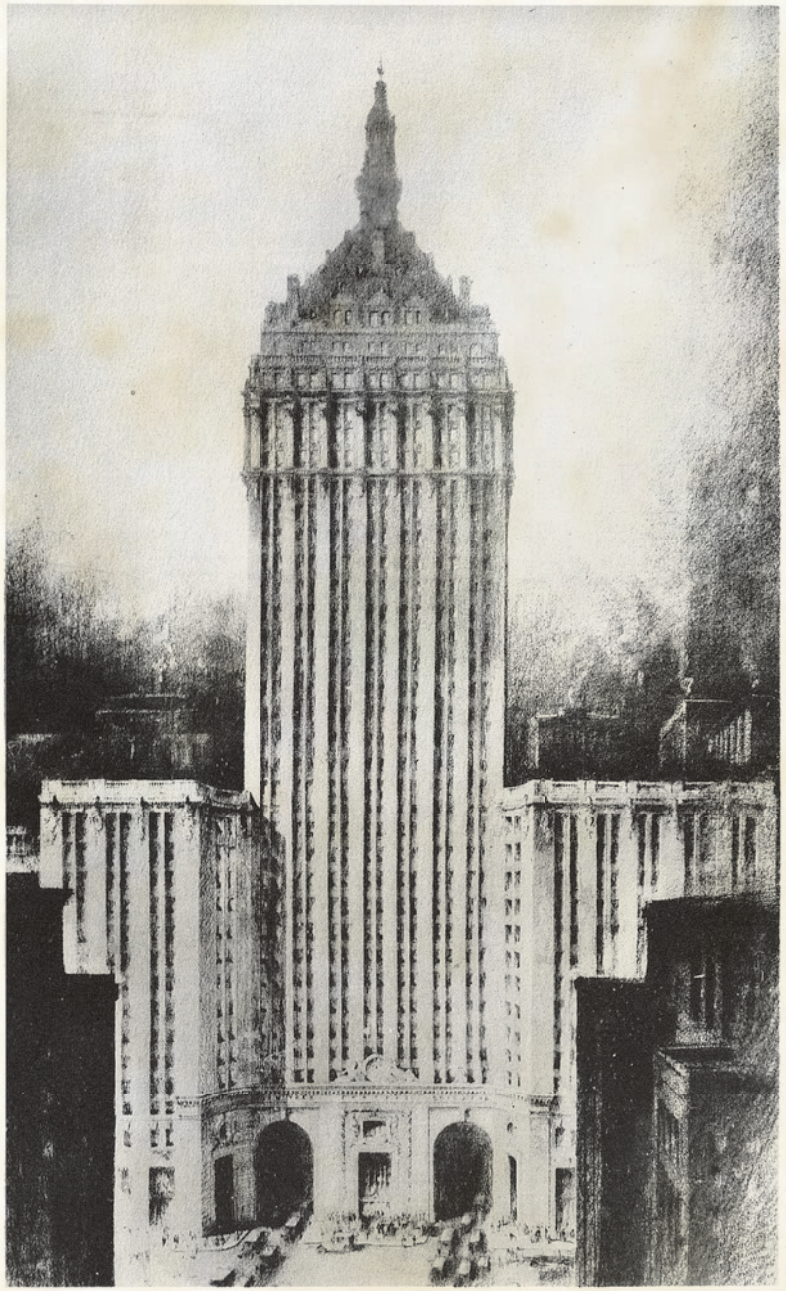
New Jersey Bell Telephone Building, Newark. Interiors.



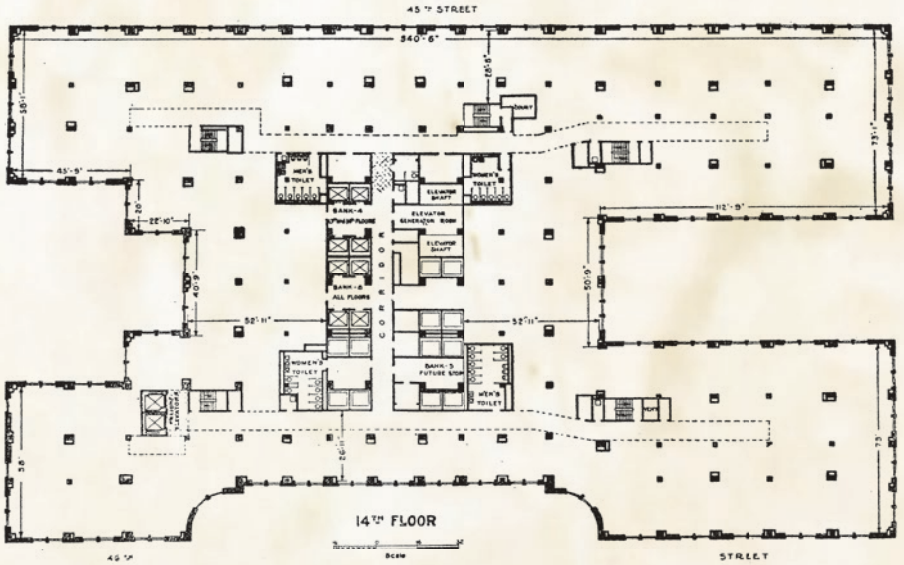
New Jersey Bell Telephone Building, Newark. Interior.

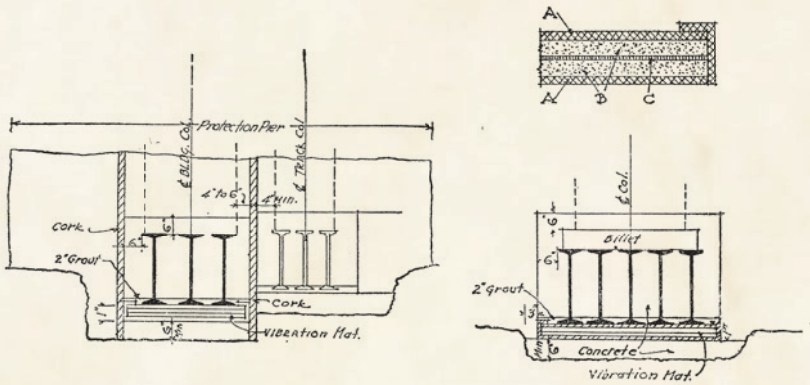


New Jersey Bell Telephone Building, Newark. 6th to 13th Floor Plan.



Hugh Ferriss, del.





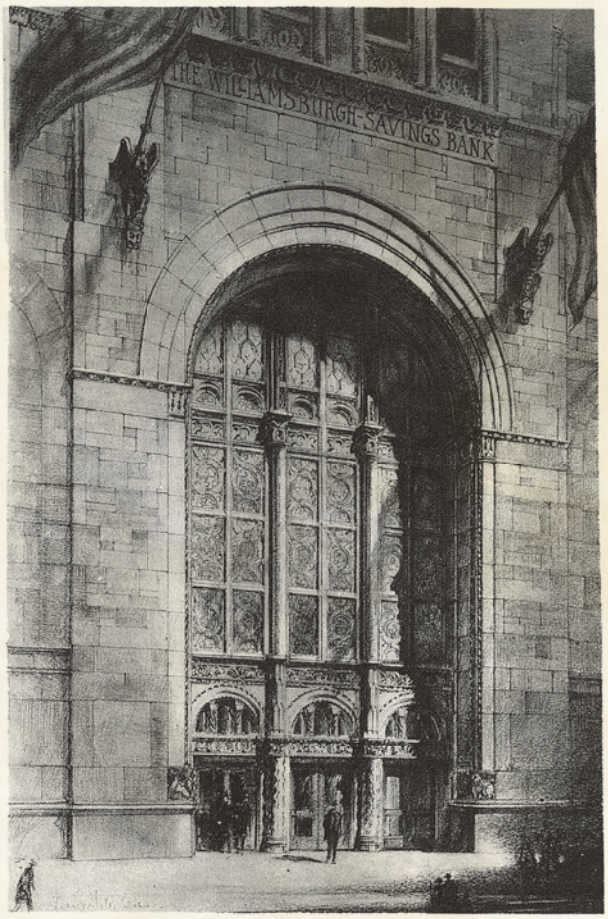
FOUNDATION

Courtesy The American Architect.

New York Central Building, New York. Completed : January, 1929. Warren & Wetmore, Architects.



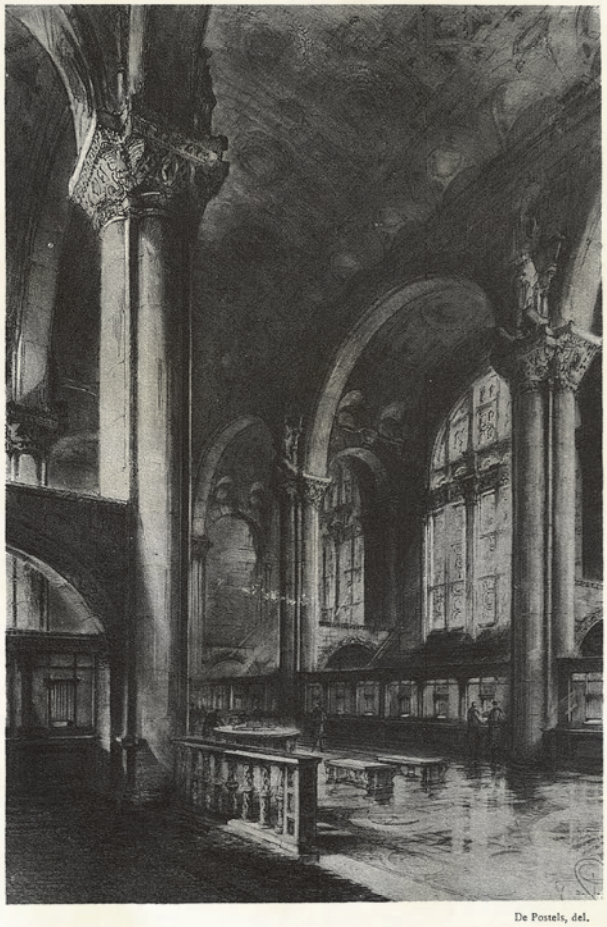
De Postels, del.



De Postels, del.

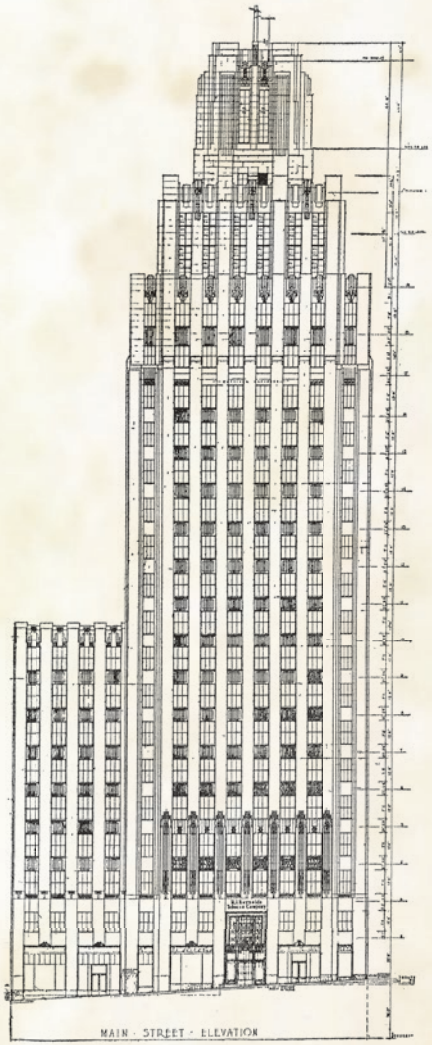


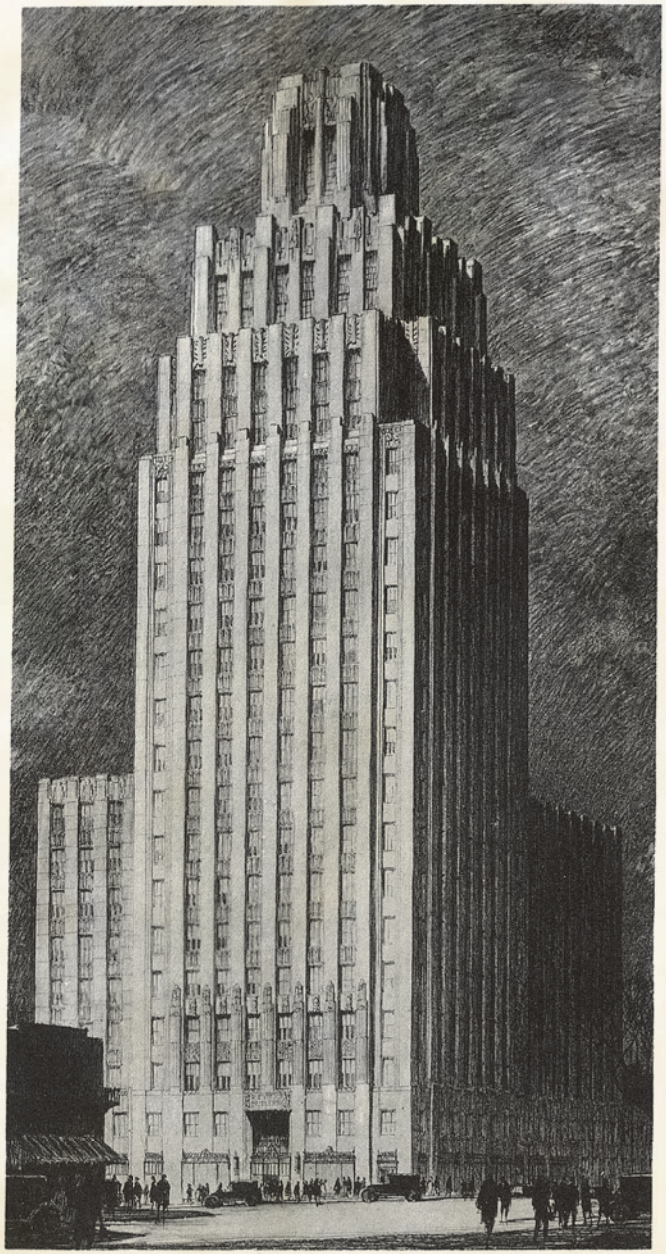
De Postels, del.



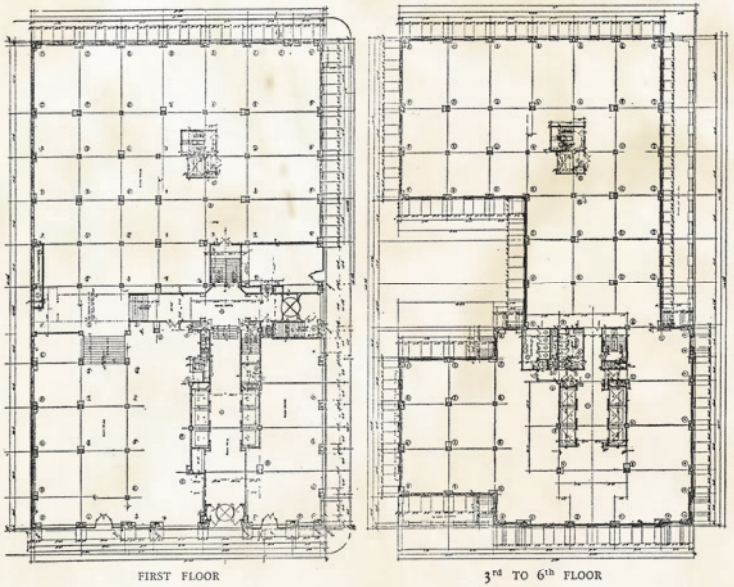
De Postels, del.

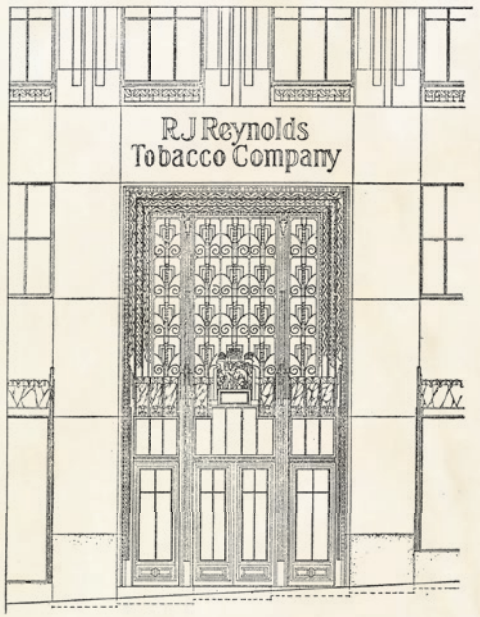
Williamsburgh Savings Bank, Brooklyn. Completed : February, 1929. Halsey, Mc Cormack & Helmer, Inc., Architects.



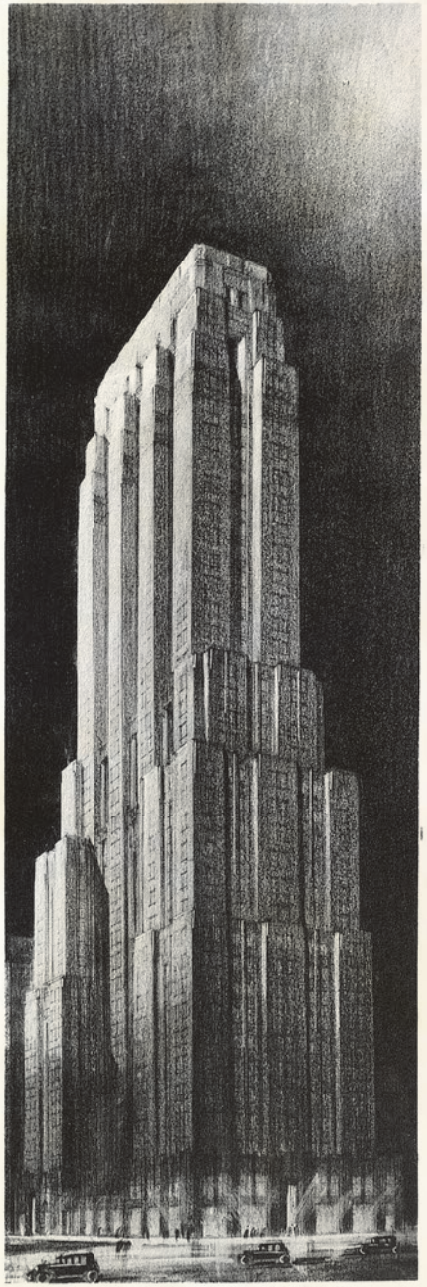


Chester B. Price, del.

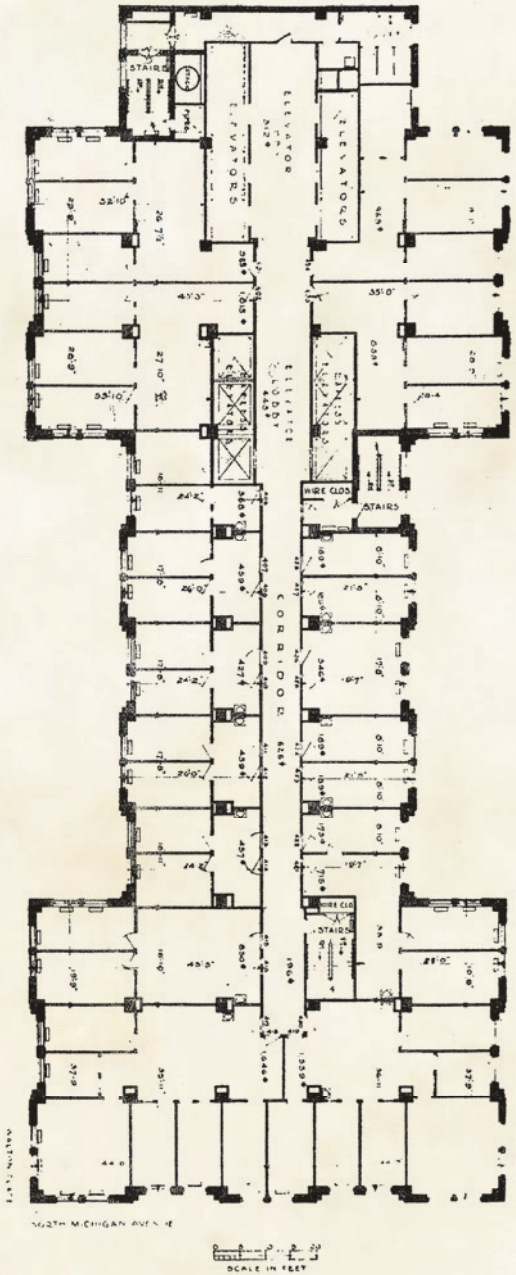




R. J. Reynolds Tobacco Co. Building, Winston Salem, N. C. Completed : April, 1929. Shreve & Lamb, Architects.

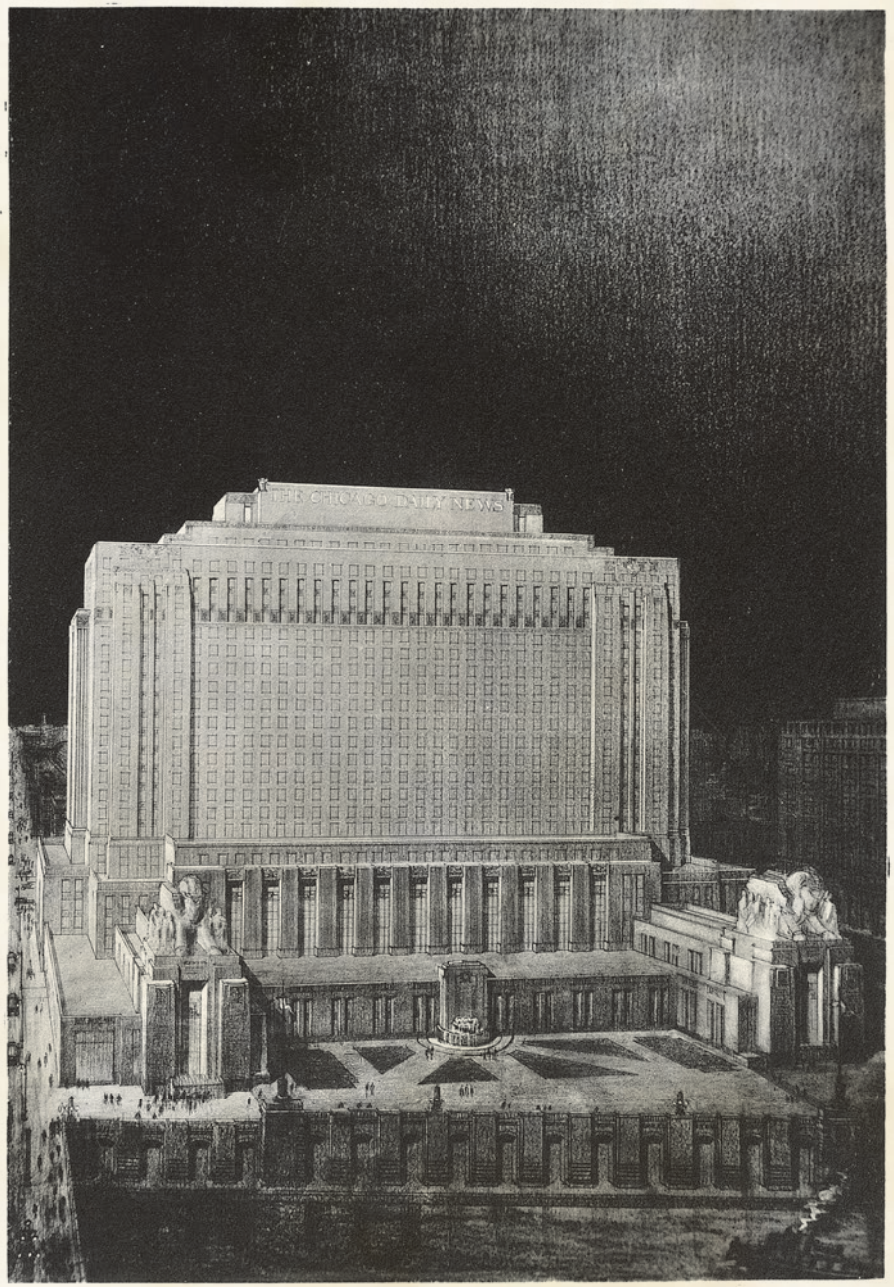


Palmolive Building, Chicago.
Completed : April, 1929.
Holabird & Root, Architects.

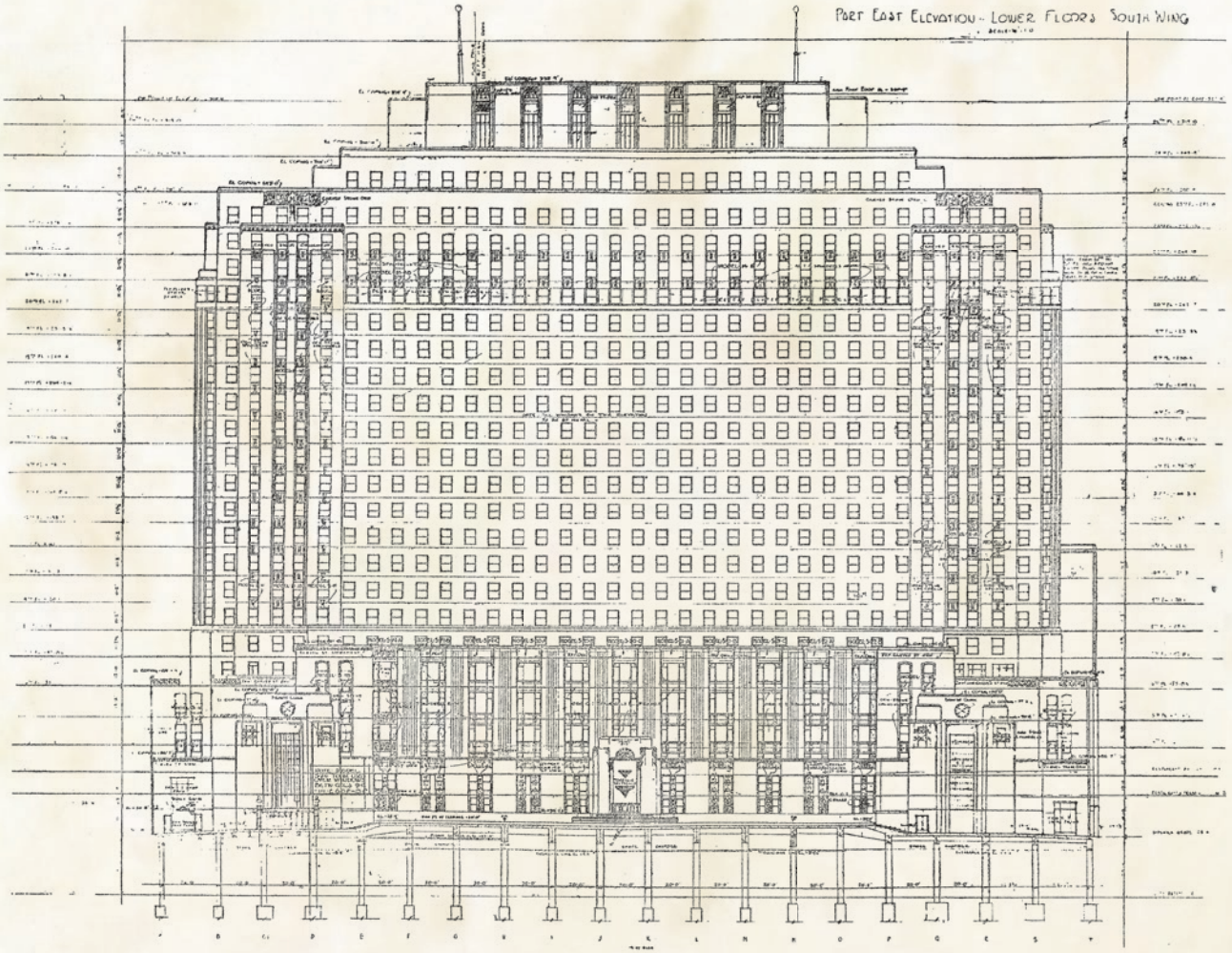


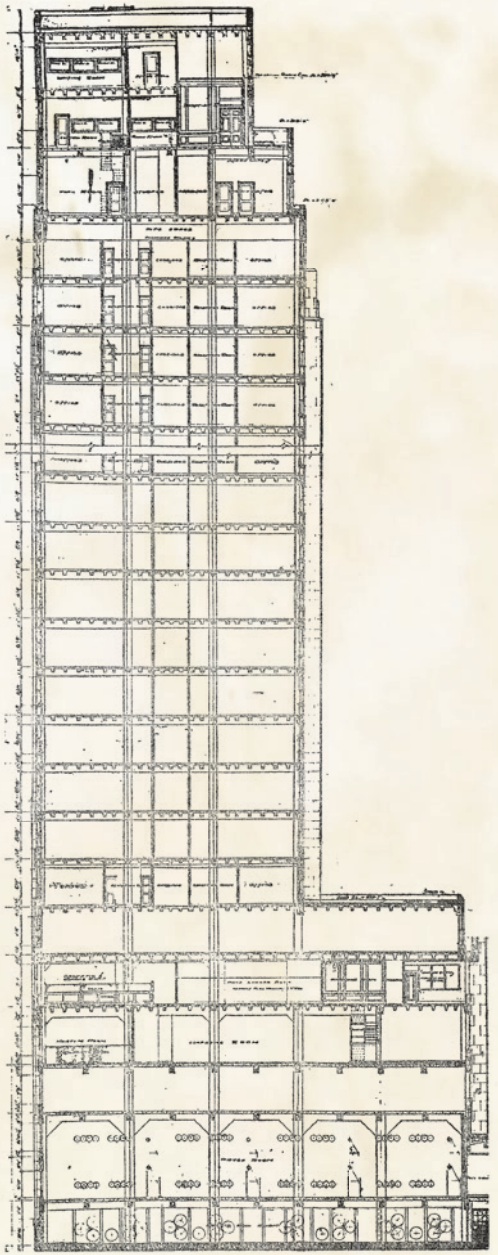
4th floor.

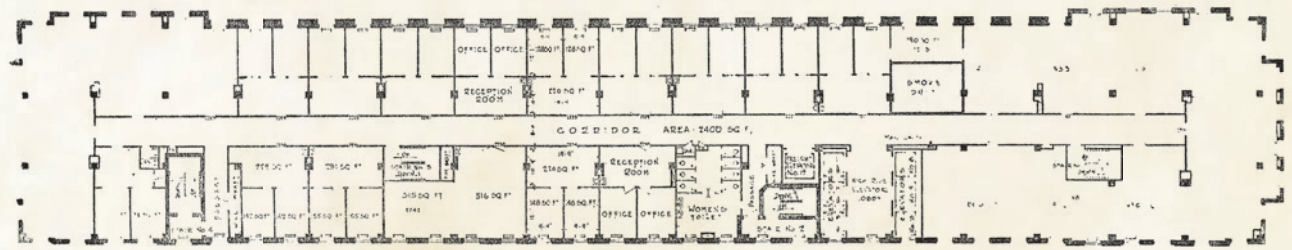
Palmolive Building, Chicago. Floor Plan.



Chicago Daily News Building, Chicago. Completed : April, 1929. Holabird & Roché, Architects.

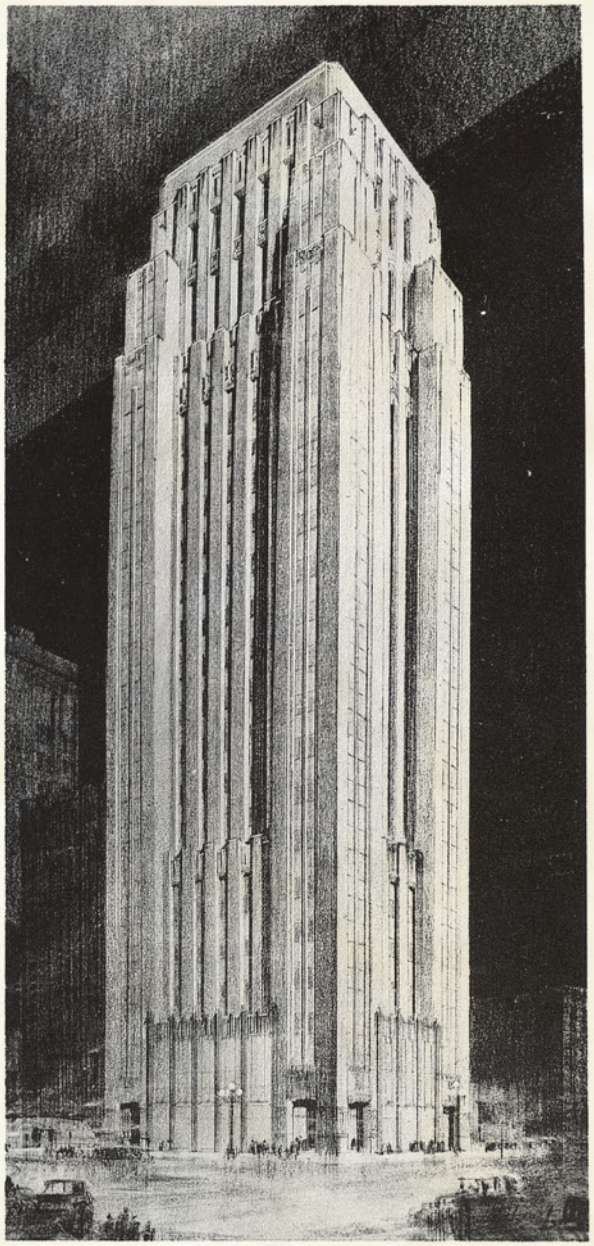




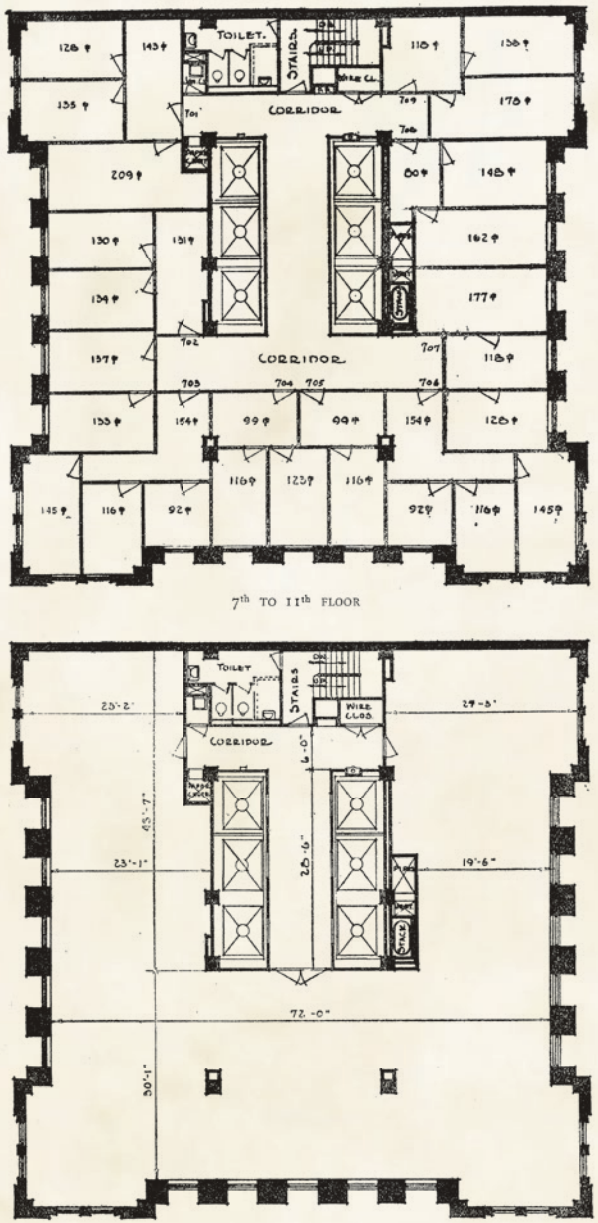


TWENTY SECOND FLOOR.

CHICAGO DAILY NEWS BUILDING, CHICAGO.



Rand Tower, Minneapolis. Completed : April, 1929.
Holabird & Root, Architects.



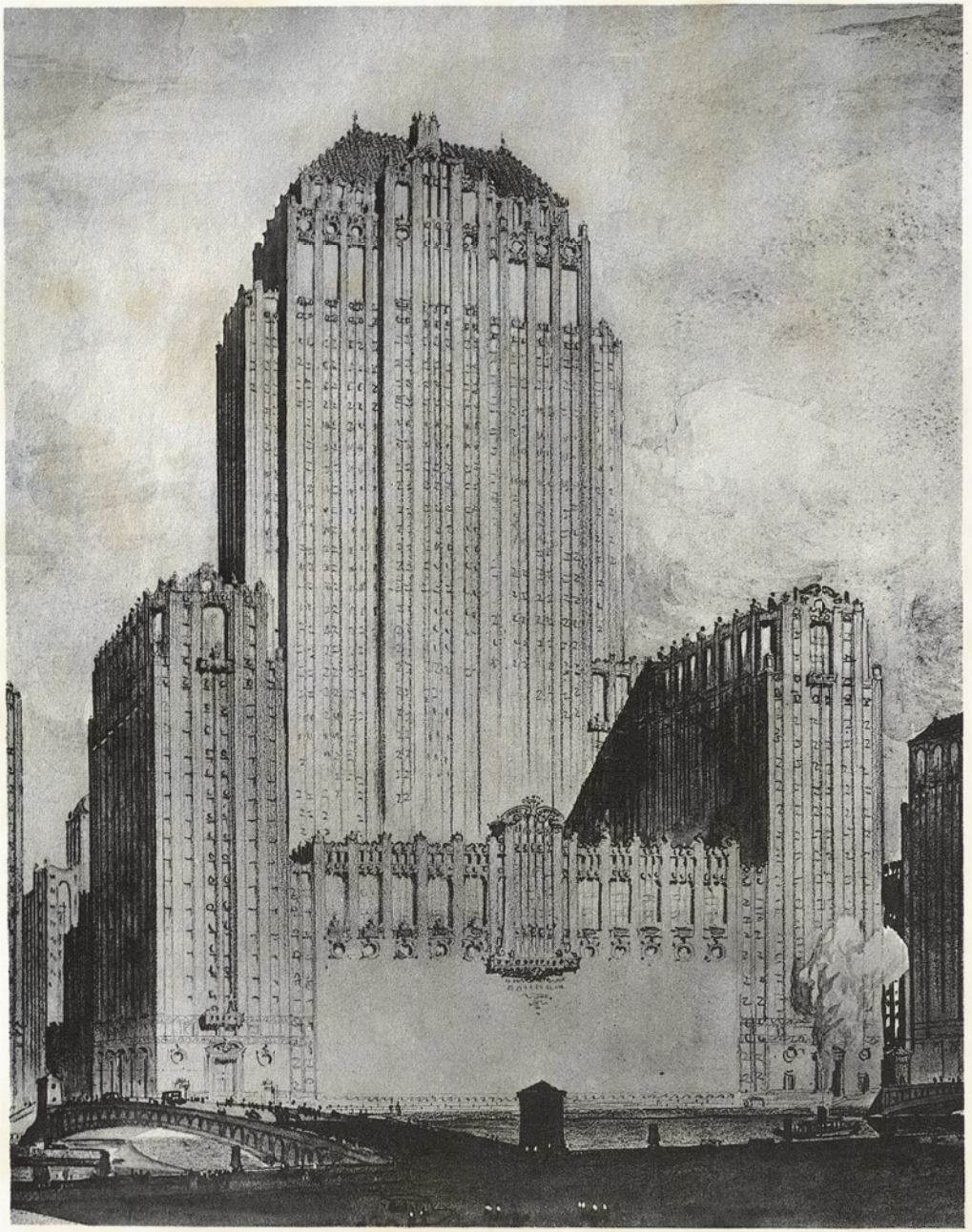
7th to 11th floor

3rd to 6th floor.

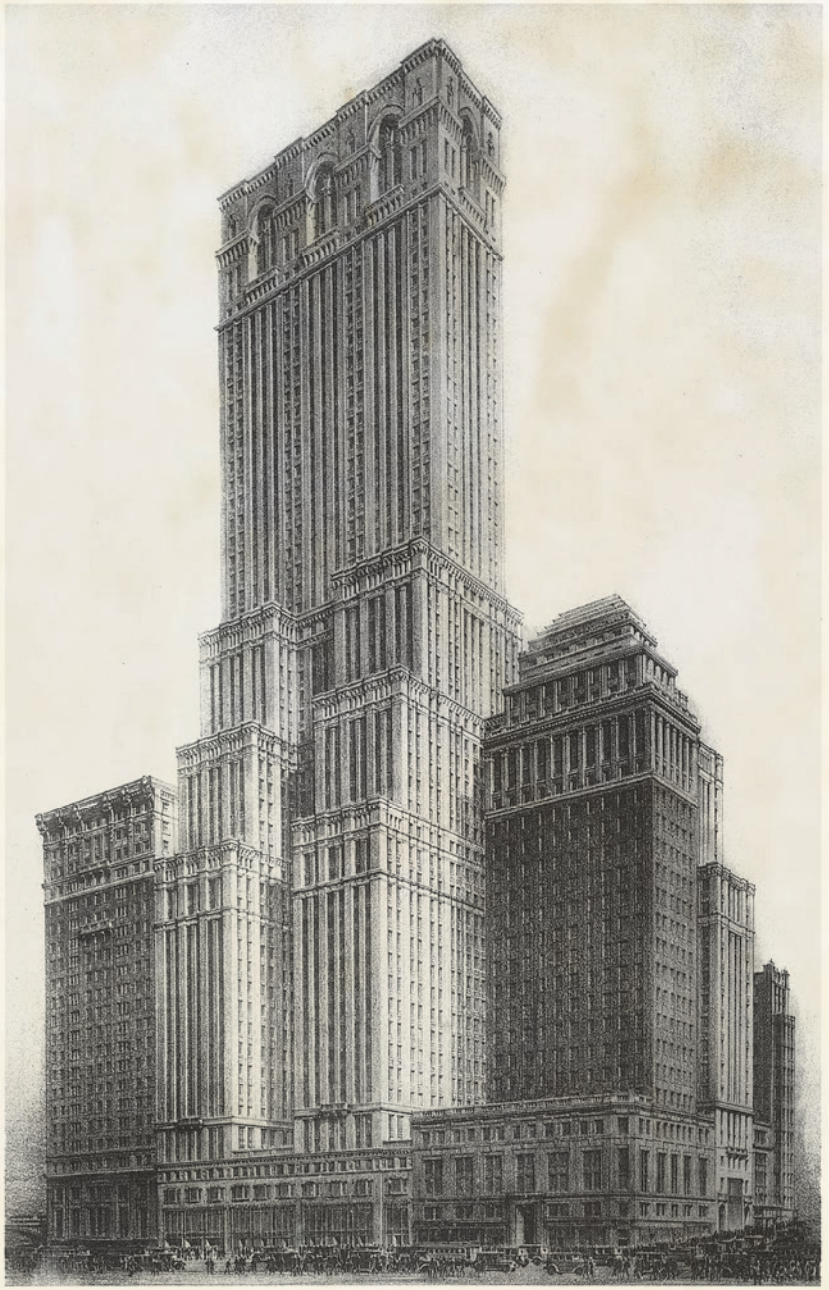
Rand Tower, Minneapolis. Floor Plans.



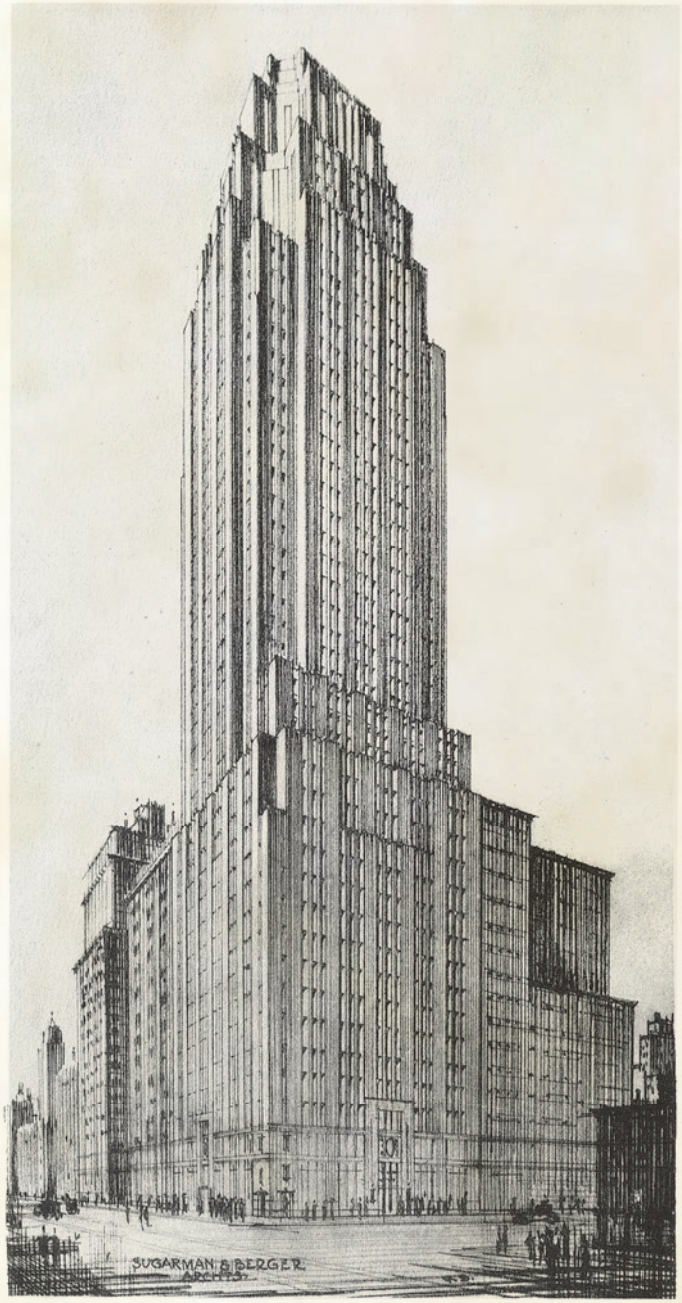
Foreman National Bank Building, Chicago. Completed : 1929.
Graham, Anderson, Probst & White, Architects.



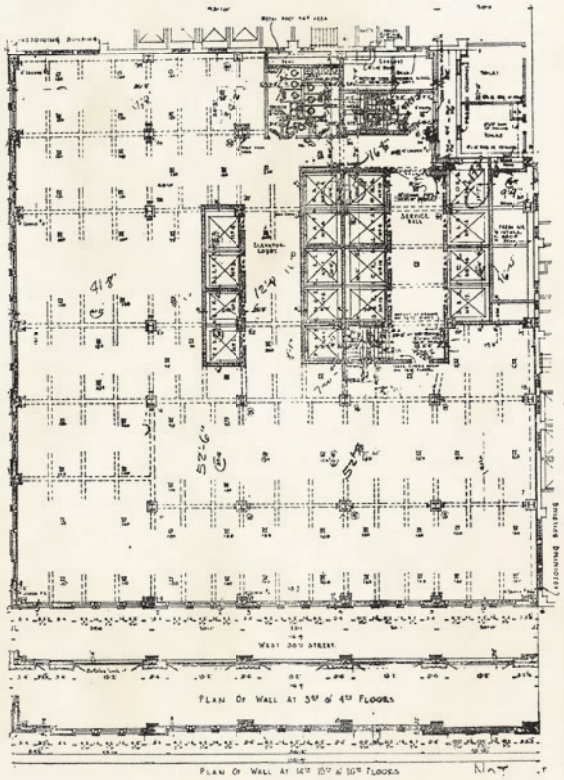
Twenty North Wacker Drive Building, Chicago. Containing the New Opera House. Completed : 1929.
Graham, Anderson, Probst & White, Architects.



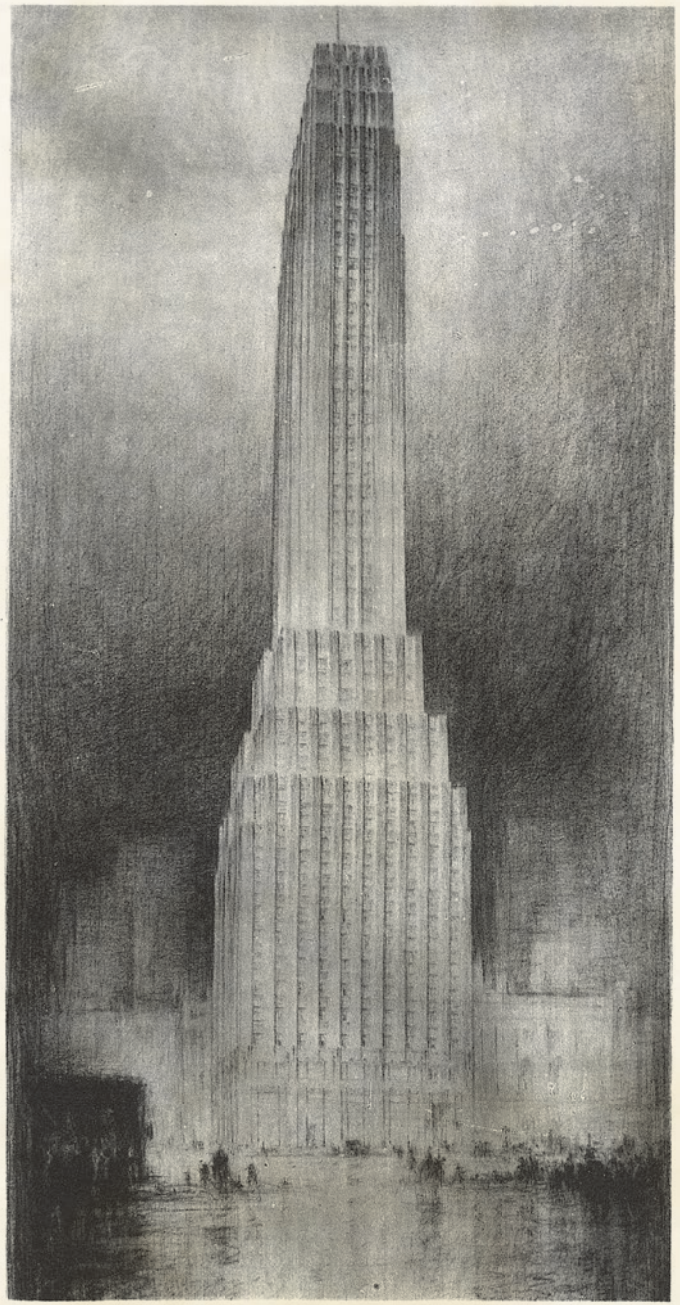
Lincoln Building, New York. To be Completed : Fall of 1929.
J. E. R. Carpenter, Architect.



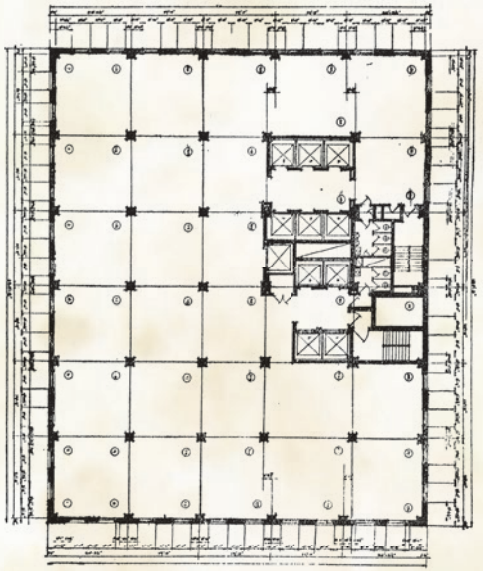
The Navarre, New York. To be Completed : December, 1929.
Sugarman & Berger, Architects.



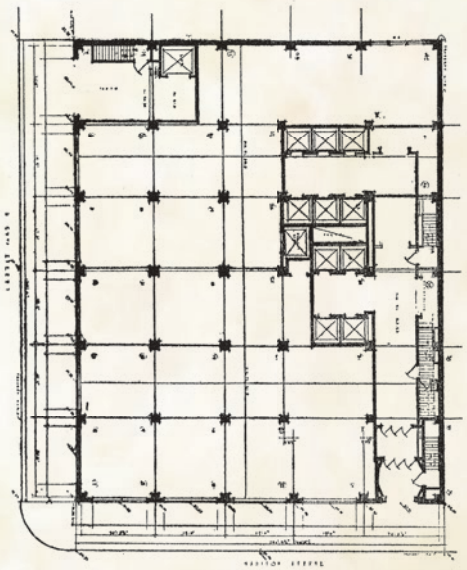
The Navarre, New York.
3rd to 16th Floors Plan.



Office Building at Madison Avenue and 52nd Street, New York.
To be Completed : Late in 1929. Shreve & Lamb, Architects.

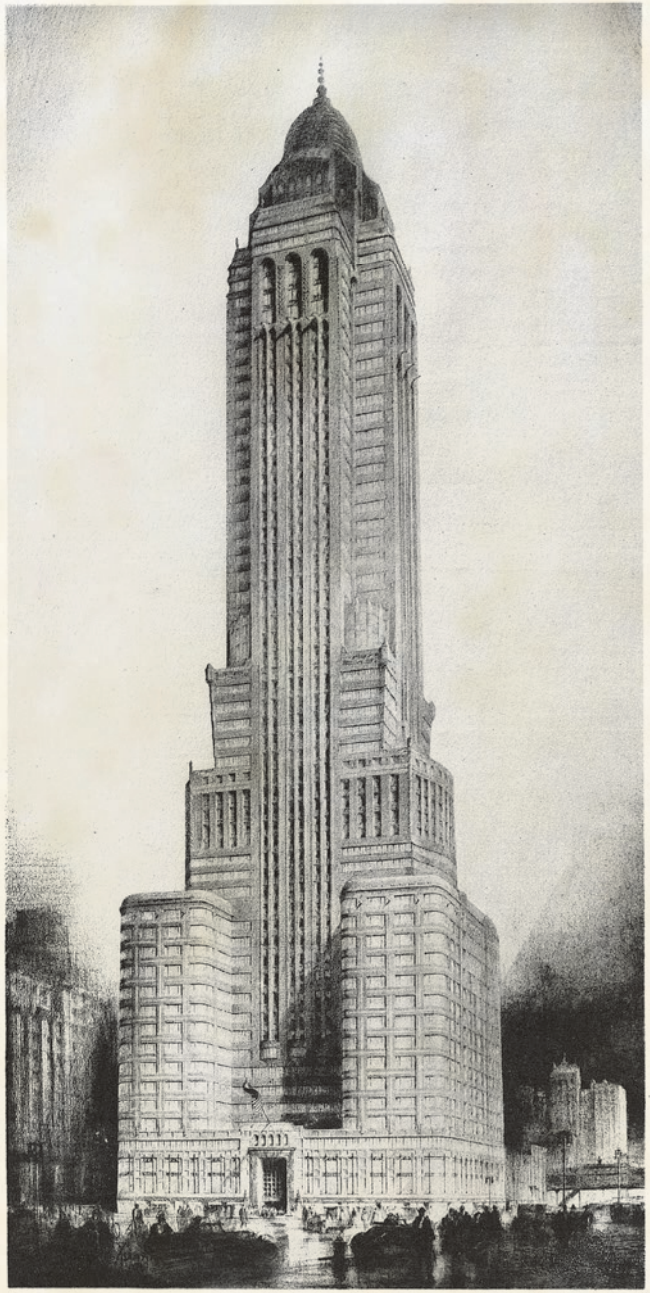


TYPICAL OFFICE FLOOR

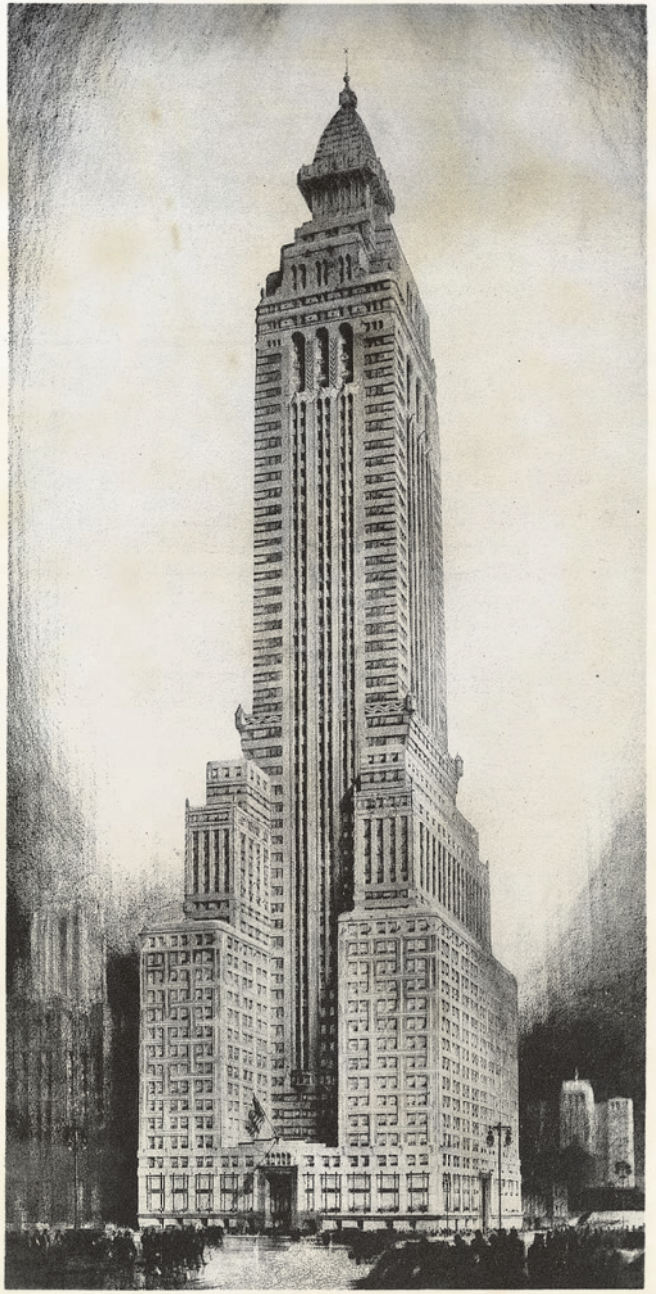


FIRST FLOOR

OFFICE BUILDING AT MADISON AVENUE AND 52nd STREET, NEW YORK.
FLOOR PLANS.

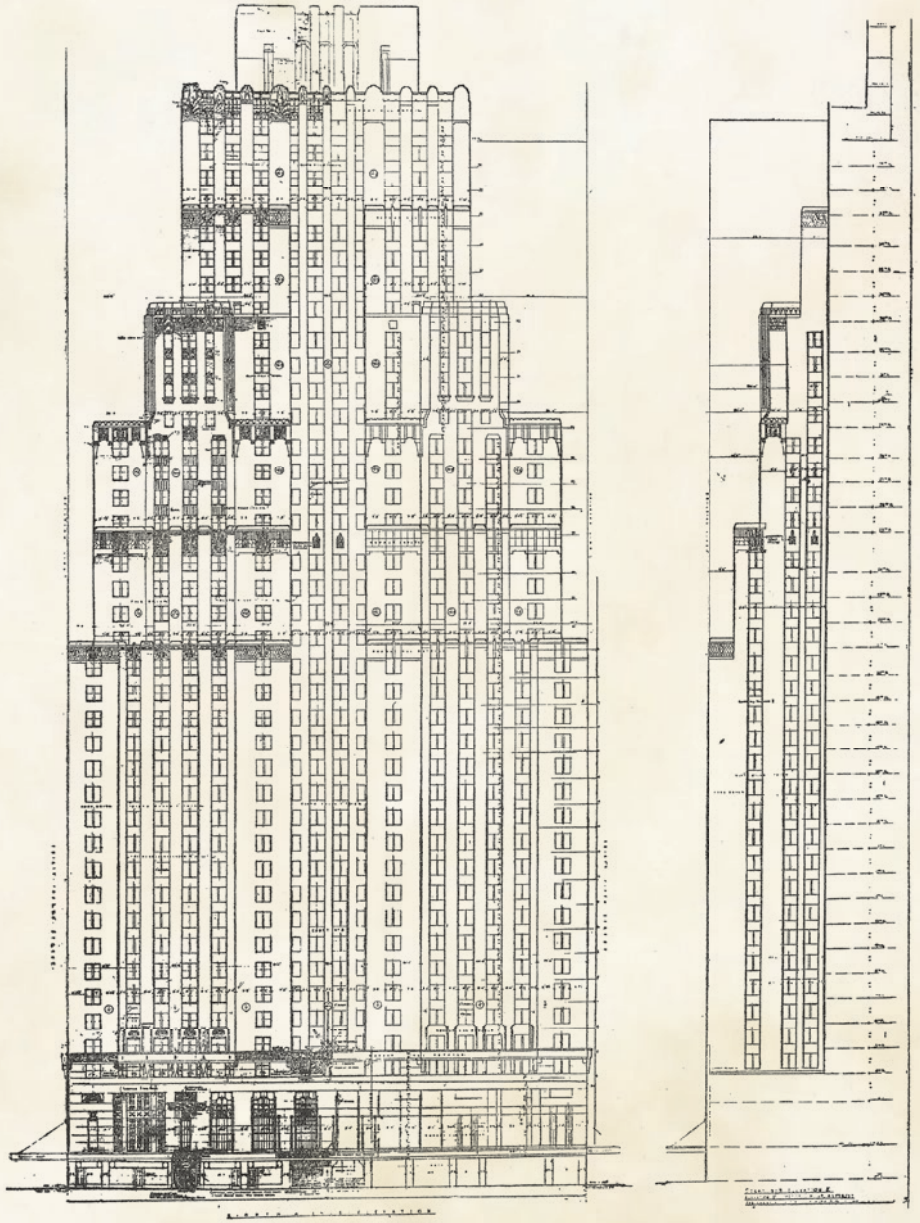


CHRYSLER BUILDING, NEW YORK. TO BE COMPLETED : END OF 1929.
WILLIAM VAN ALEN, ARCHITECT. FIRST SCHEME.

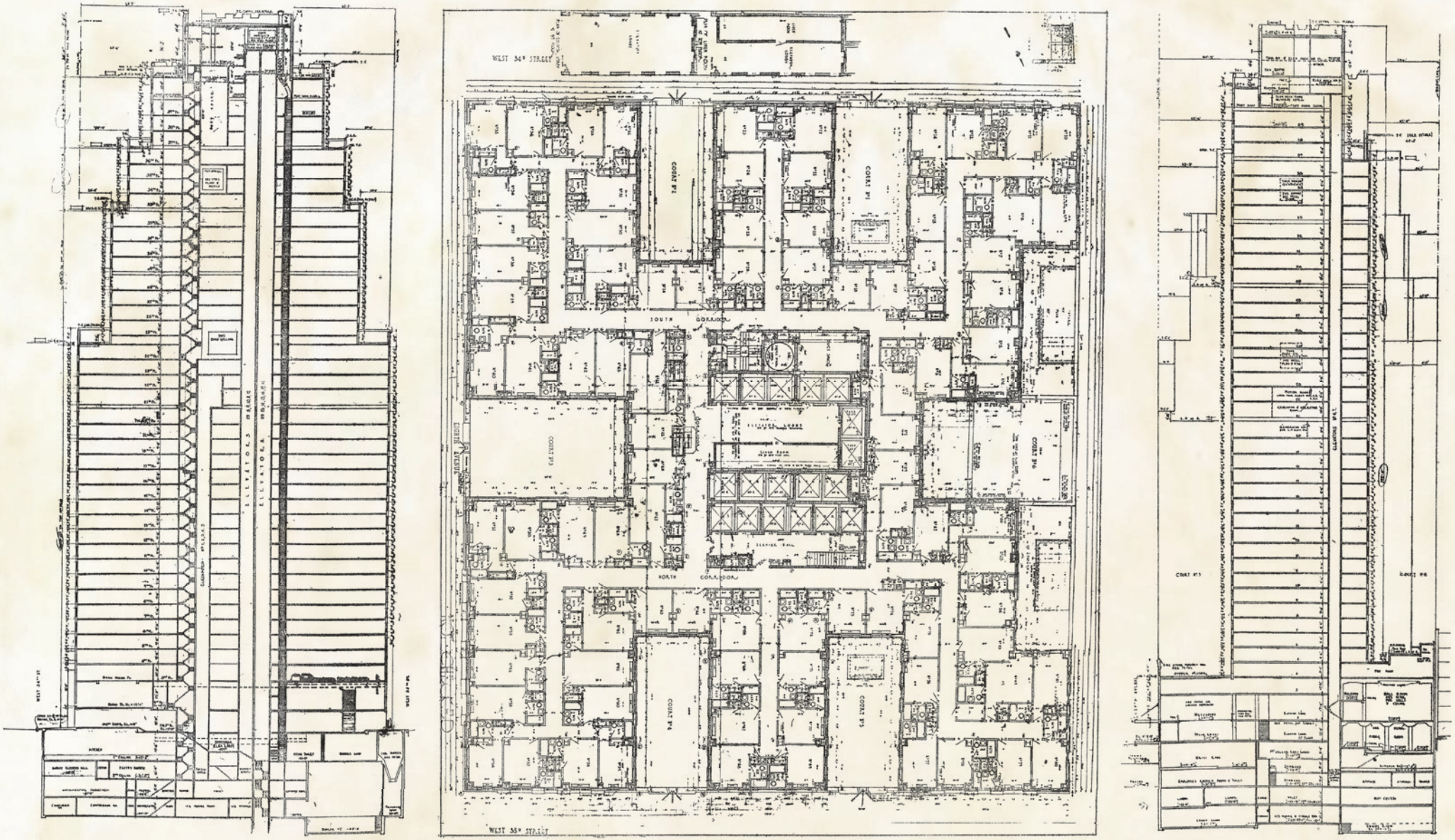


CHRYSLER BUILDING, NEW YORK. SECOND SCHEME. WITH ITS 67 STORIES,
808 FEET HIGH IT WILL BE THE TALLEST BUILDING OF NEW YORK.



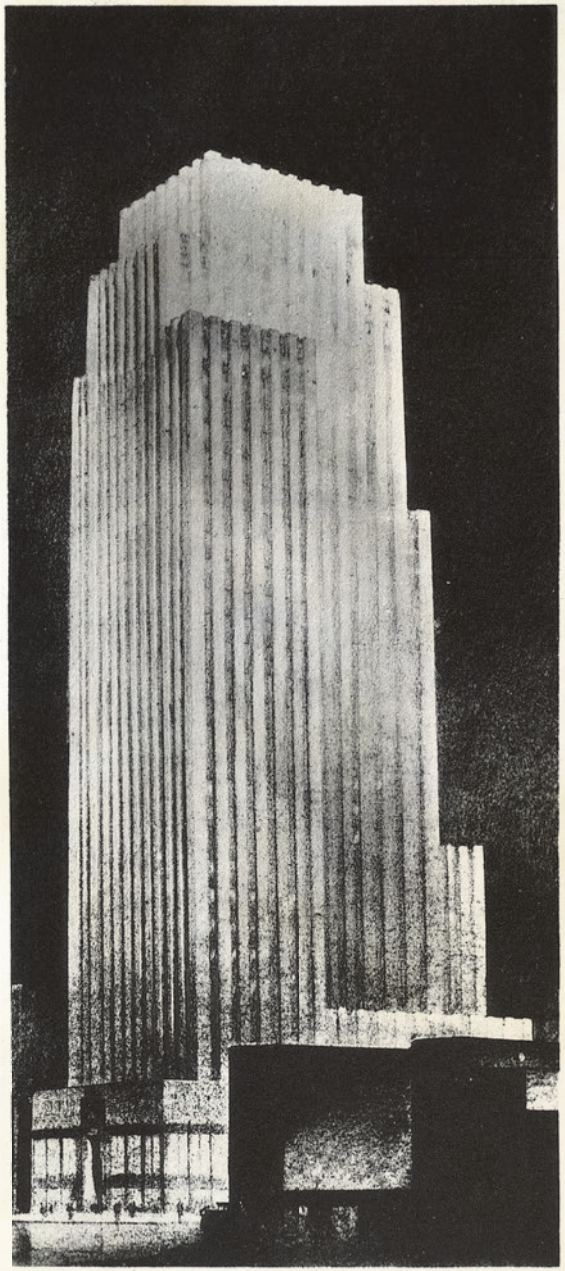


New Yorker Hotel, New York. To be Completed : February, 1930. Sugarman & Berger, Architects.



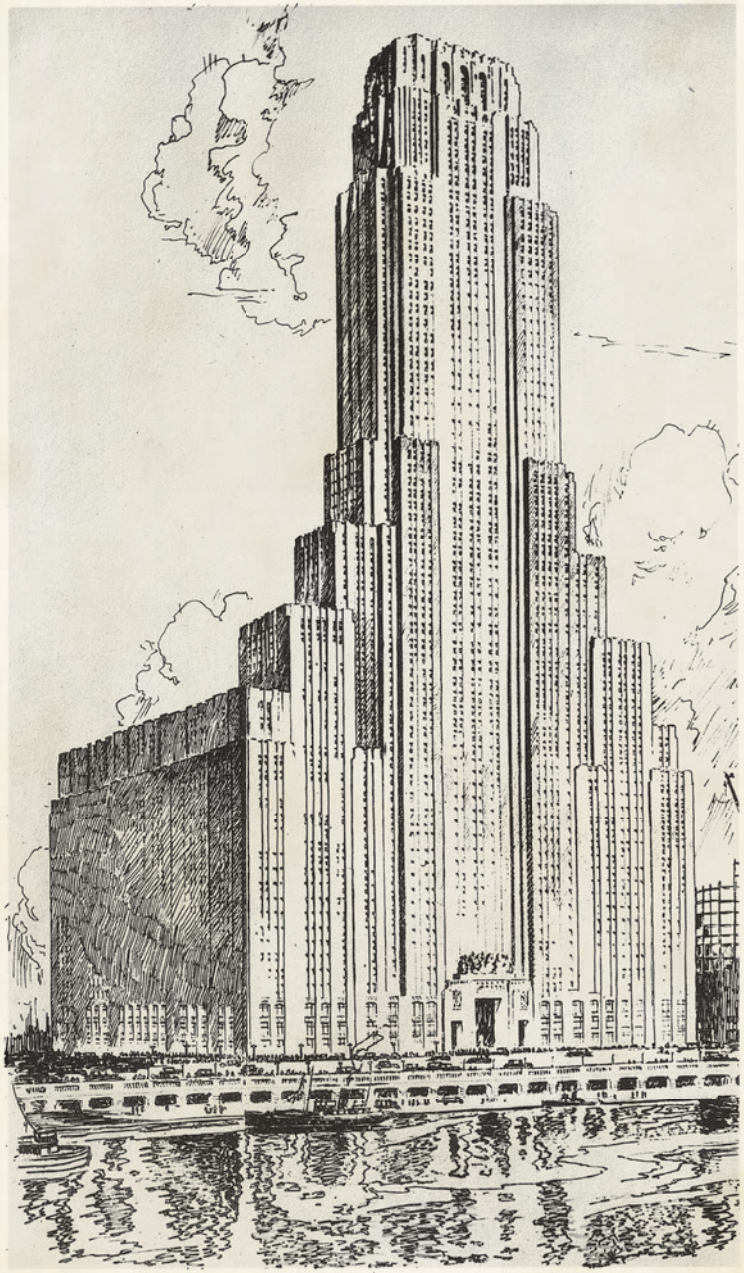
5th to 20th floors.

New Yorker Hotel, New York.

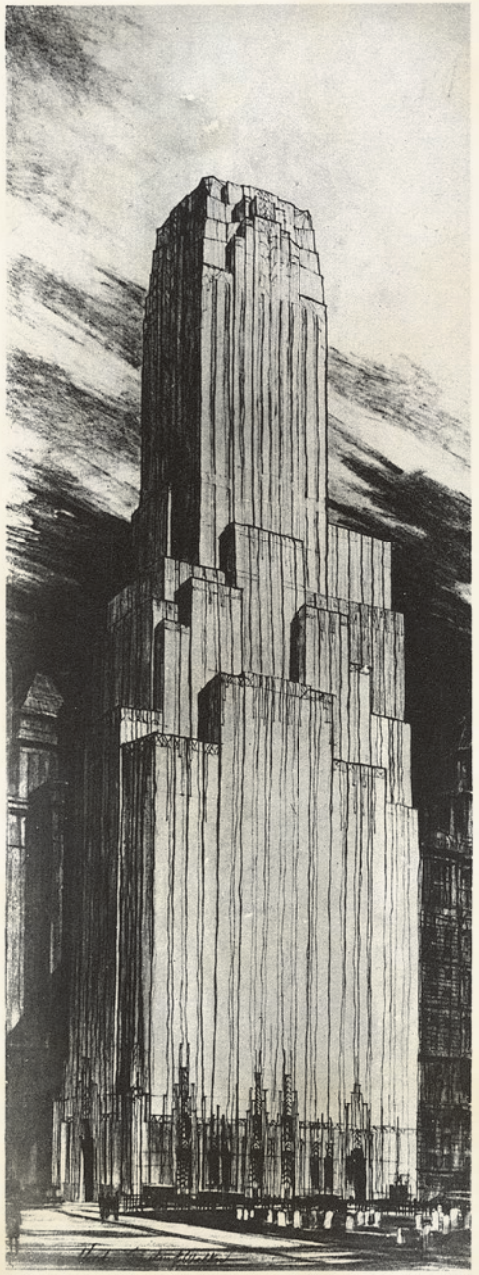


Hugh Ferriss, del.

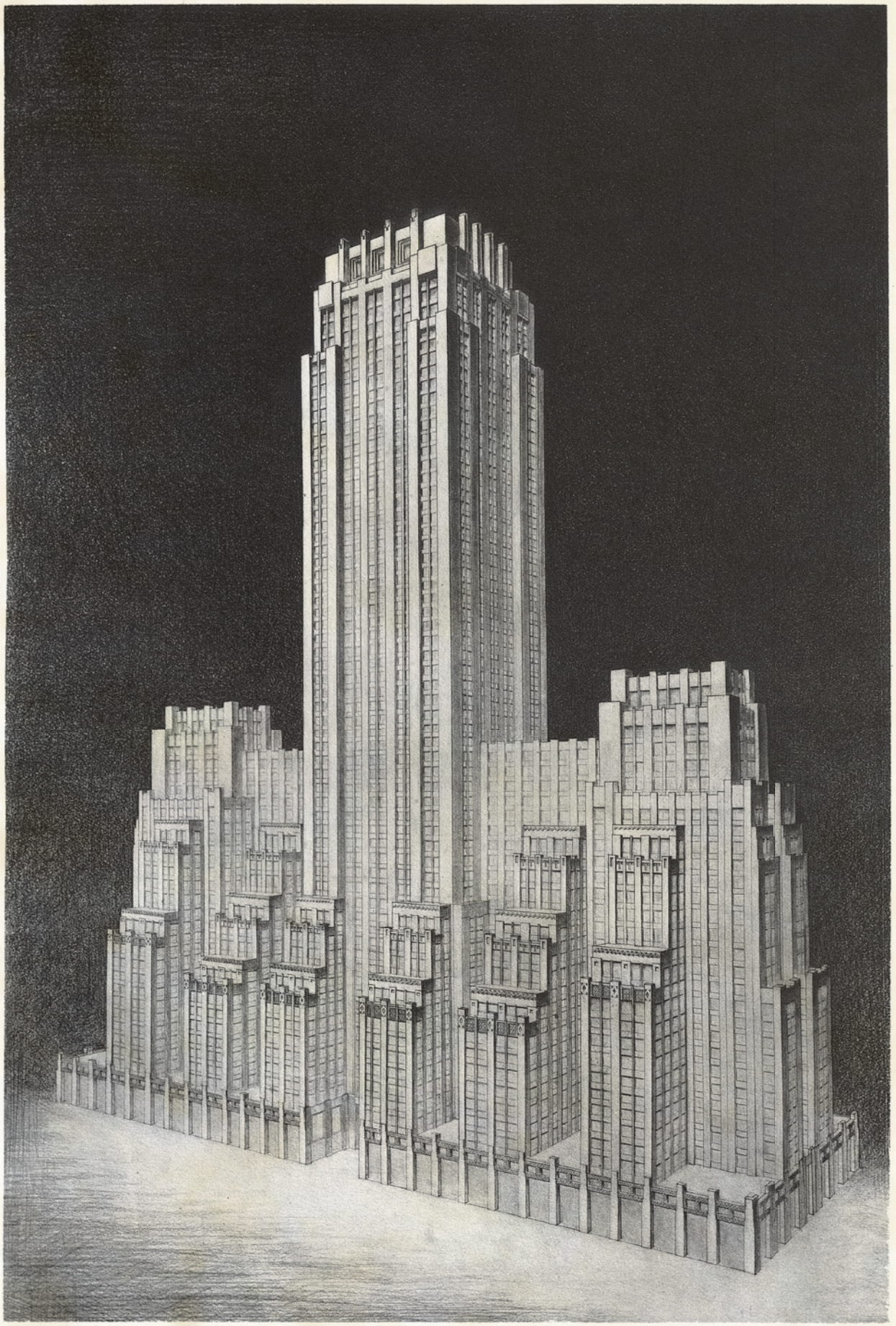
News Building, New York. To be Completed : 1930.
John Mead Howells & Raymond M. Hood, Architects.



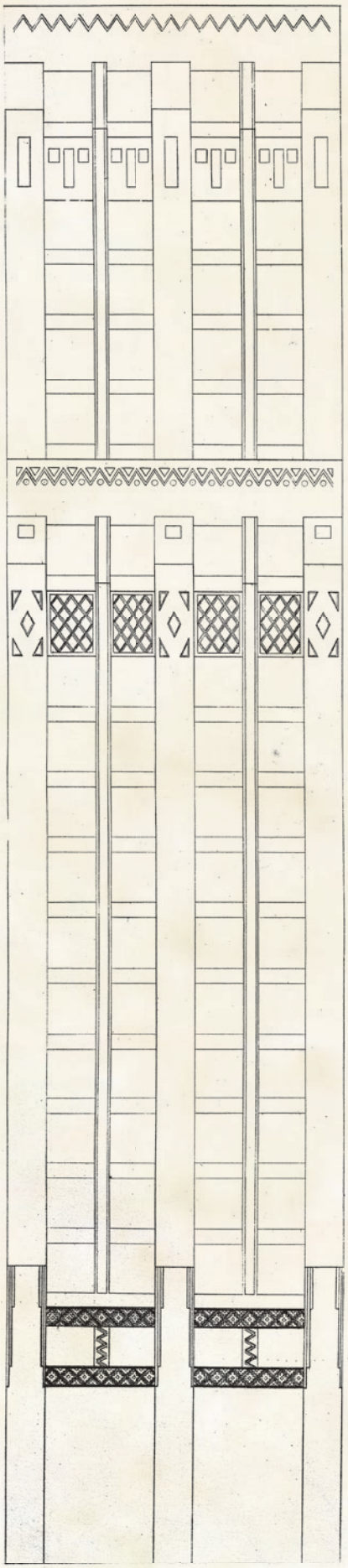
Chicago Tower, Chicago. To be Completed : September, 1930.
Walter W. Ahlschlager, Architect.



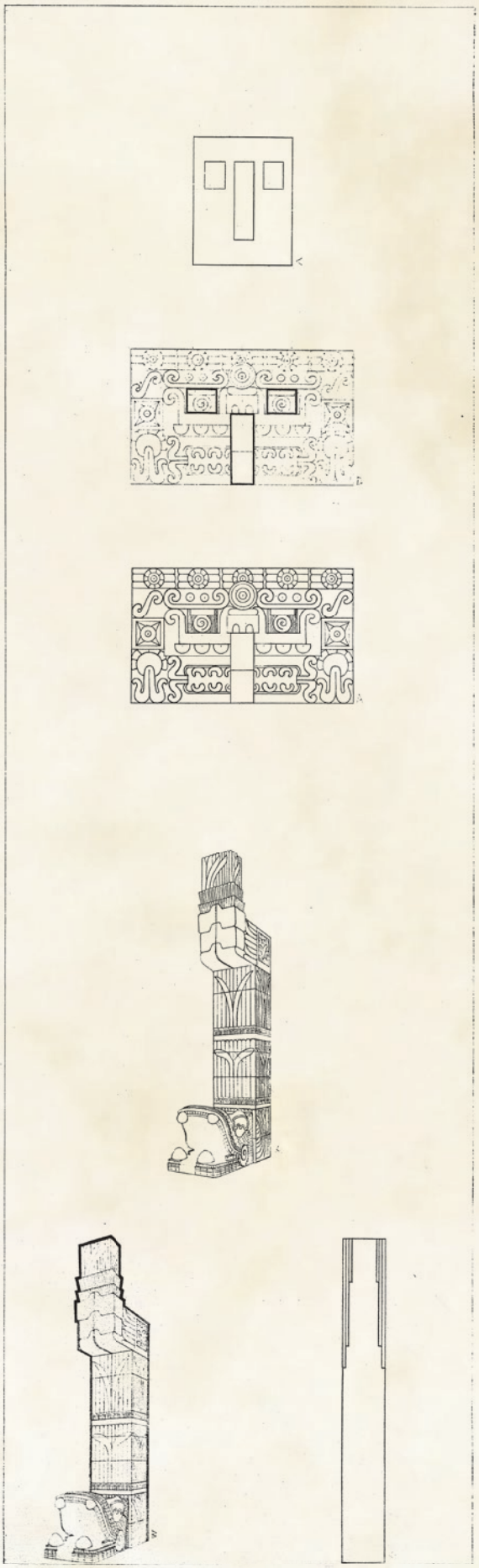
American Exchange Irving Trust Co. Building,
New York. To be Completed : Early 1931.
Voorhees, Gmelin & Walker, Architects.



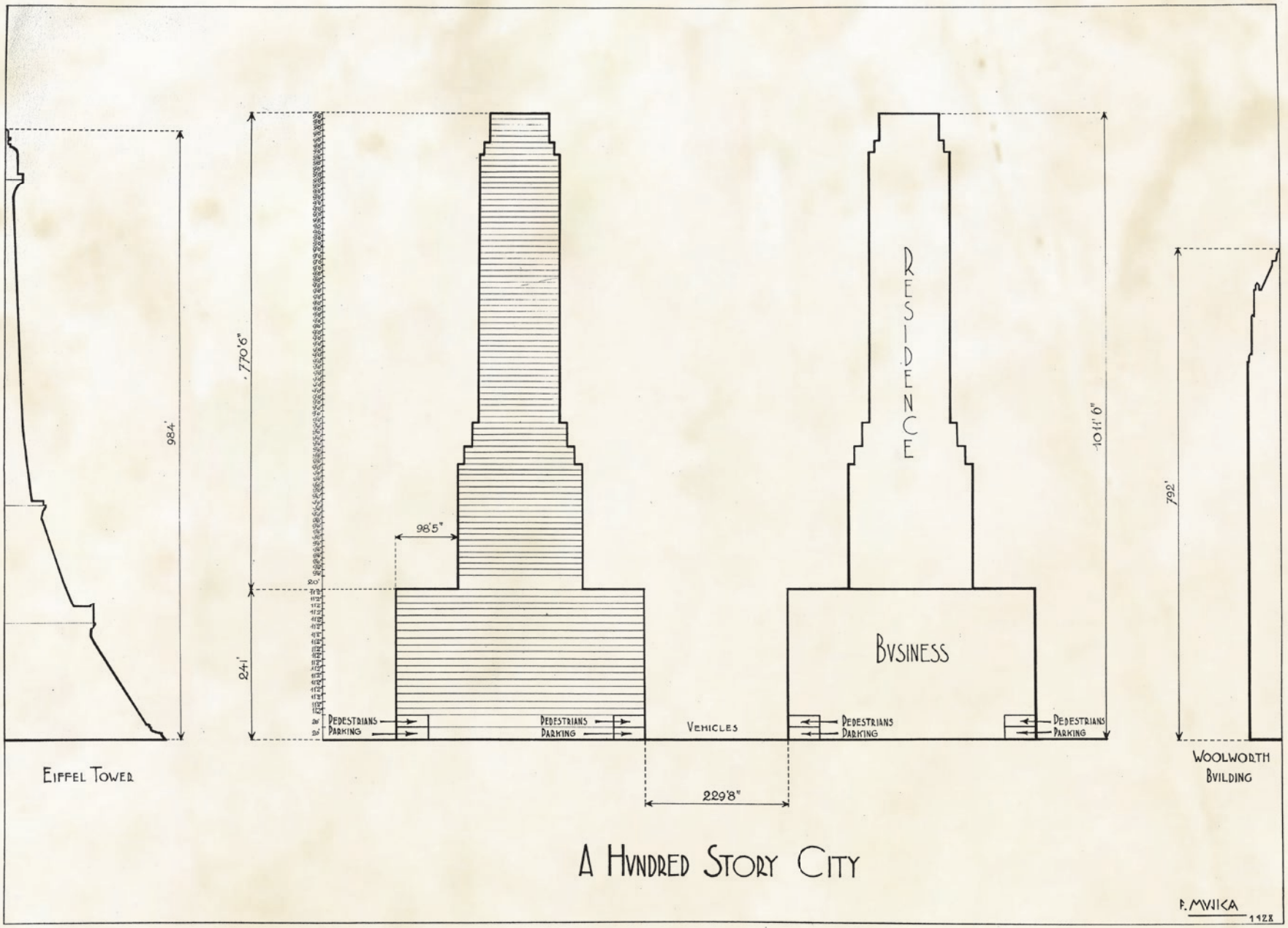
Perspective of a 68-Story Office Building in Neo-American Style.
Francisco Mujica, Architect.



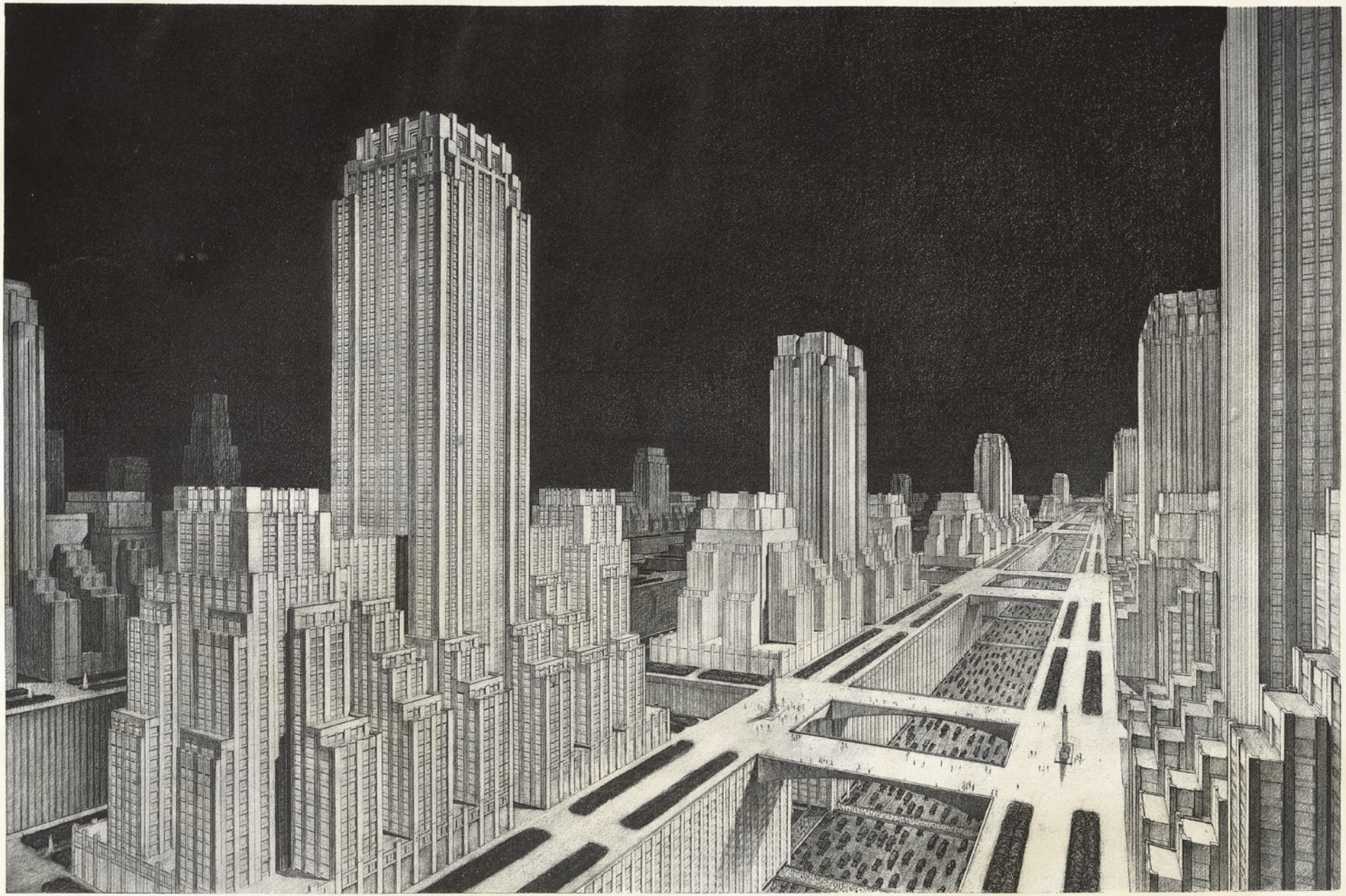
A 68-Story Office Building in Neo-American Style.
Detail of the Front.
Francisco Mujica, Architect.
The general perspective is shown in the preceding plate.



Use of Elements of Primitive American Architecture
in Creating a Neo-American Art.
a) Primitive element. — b) Impression created in the modern artist's mind.
c) Neo-American architectural member as interpreted by the artist.



THE VERTICAL CITY OF THE FUTURE.
FRANCISCO MUJICA, ARCHITECT.
The general perspective is shown in the following plate.



THE CITY OF THE FUTURE : HUNDRED STORY CITY IN NEO-AMERICAN STYLE.
FRANCISCO MUJICA, ARCHITECT.

The plate shows the principal street, with the central aerodrome at the end.

EPÍLOGO

EL «TEMPLO A LA GLORIA DE AMÉRICA Y DE LA GESTA COLOMBINA». HISTORIA PETRIFICADA DEL PROCESO FORMATIVO DEL MUNDO HISPÁNICO

María Blanco Conde

Conservadora de la colección AECID

Estos grandilocuentes titulares encabezaron el principal proyecto arquitectónico del mexicano Francisco Mújica Díez de Bonilla (1899-1979) quien, tras trece años de gestiones, iniciadas a finales de los años cincuenta en Buenos Aires, llegó a Barcelona el 30 de junio de 1972 a bordo del buque "Bibi" con 110 bultos, unas ocho toneladas de peso, con destino a Madrid[1]. En el puerto, le recibió el director de la biblioteca del Instituto de Cultura Hispánica (ICH)[2], José Ibáñez Cerdá. El arquitecto venía ilusionado y con expectativas de colocar una copia de su archivo en el Instituto, entonces bajo la dirección de Gregorio Marañón Moya. También se preocupó por mantener contacto con otros organismos próximos a sus aspiraciones como el Museo de América. La noticia que se realizaba esta donación al ICH llegó a salir en uno de los diarios más importantes pocos meses después de su llegada a España[3].

El llamado archivo "Archivo Mújica", que forma parte de los fondos de la Biblioteca Hispánica de la AECID, había permanecido inédito en los depósitos desde su ingreso, en 1974, cuando este organismo se denominaba Instituto de Cultura Hispánica hasta 2016. Más adelante y tras investigar su contenido, se publicó un artículo[4] en el que se puso de manifiesto cuales fueron sus antecedentes, los documentos que la acompañaban y los objetos que la conformaban: correspondencia, copias fotostáticas en blanco y negro, ampliación de positivos fotográficos, tarjetas postales antiguas, etc., un conjunto formado por más de un millar de elementos gráficos dividido en seis secciones por su artífice.

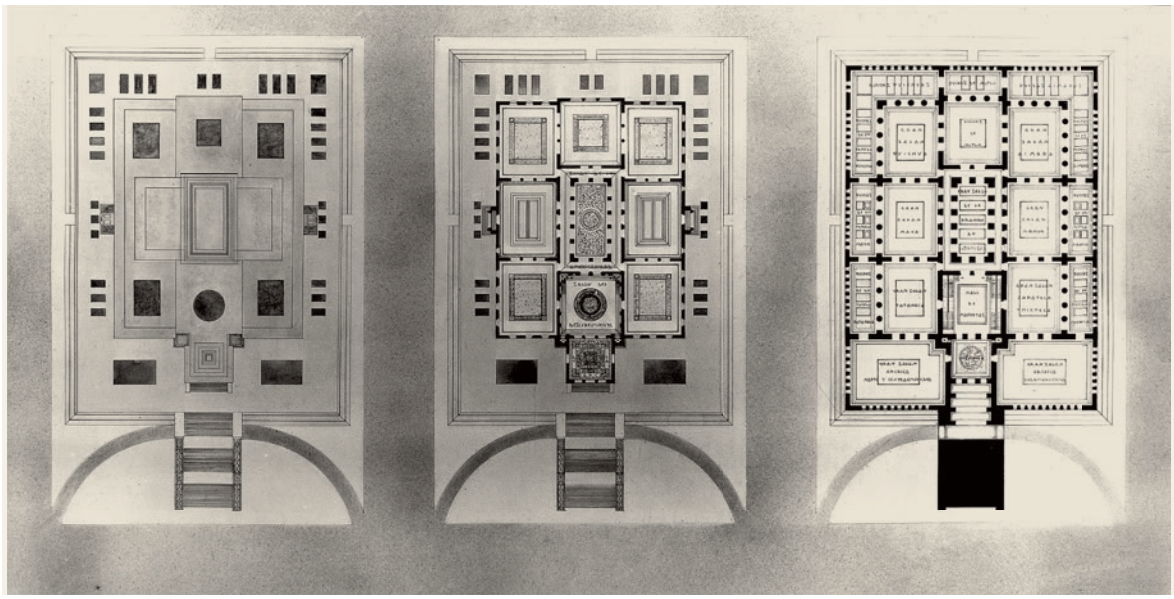
La donación de este archivo, tras sus muchas súplicas elevadas a altos cargos del ICH, la solicitó mientras residía en la Residencia de Estudiantes, desde su llegada hasta finales de diciembre de 1974. No pasó de ser realmente una intención, la desidia y la falta de interés por parte del Instituto, a pesar de que se hace cargo de algunas de sus facturas, terminó por agotar al arquitecto que, dos años después de su estancia en la capital y por falta de recursos económicos, recaló en la Universidad de Berkeley (California) tras muchas escalas en su viaje, dejando aquí parte de su cargamento. Que

1 Carta del Director del ICH al Director Gral. De Aduanas. Ministerio de Hacienda. Solicitando autorización de ingreso en la Aduana de Barcelona y exención de cargas fiscales por ser materiales culturales. Firmada el 14 de junio de 1972.

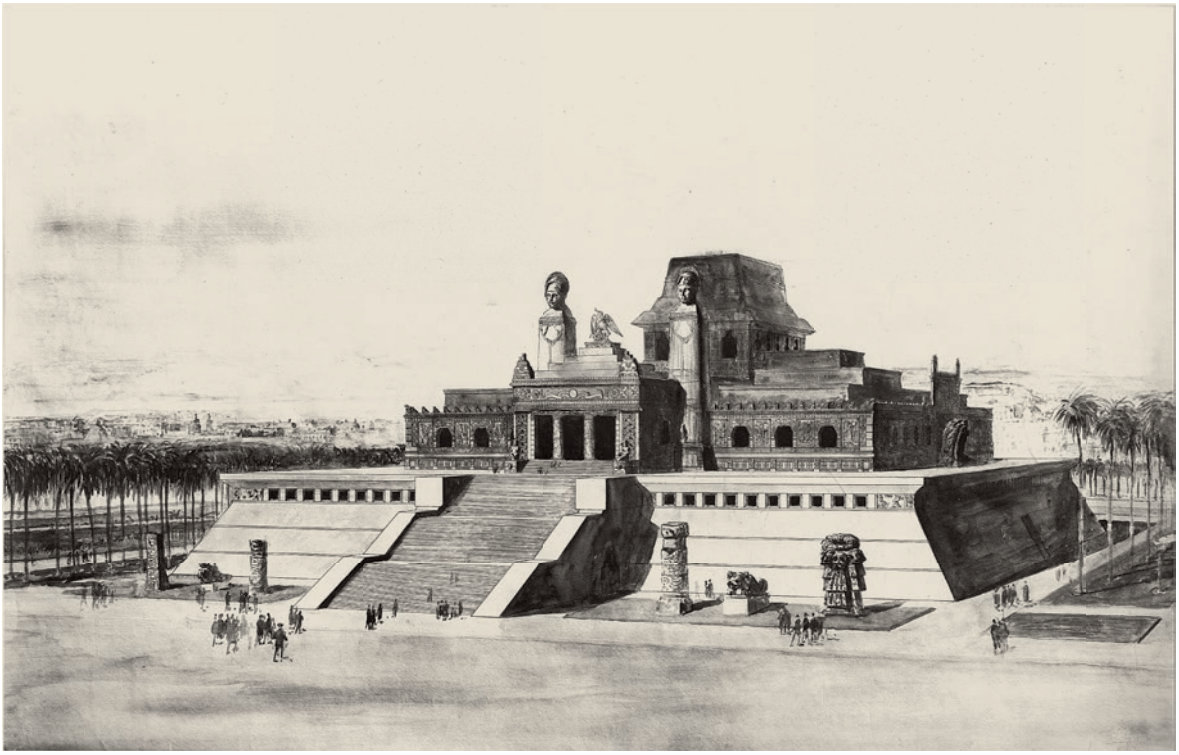
2 Desde 1947 a 1977. Por Real Decreto pasó a llamarse en 1978 Instituto de Cultura Iberoamericana (ICI) hasta 1987 en que se convirtió en la AECI.

3 De Miranda, F. "Cultura azteca en Madrid". *ABC*, Madrid, 25 de noviembre de 1972.

4 Blanco Conde, María. "El Archivo 'Mujica': Fondo gráfico de la Biblioteca Hispánica de la AECID". En: blog La Reina de los mares, hypotheses.org, 3 de abril de 2018. https://reinamares.hypotheses.org/17036



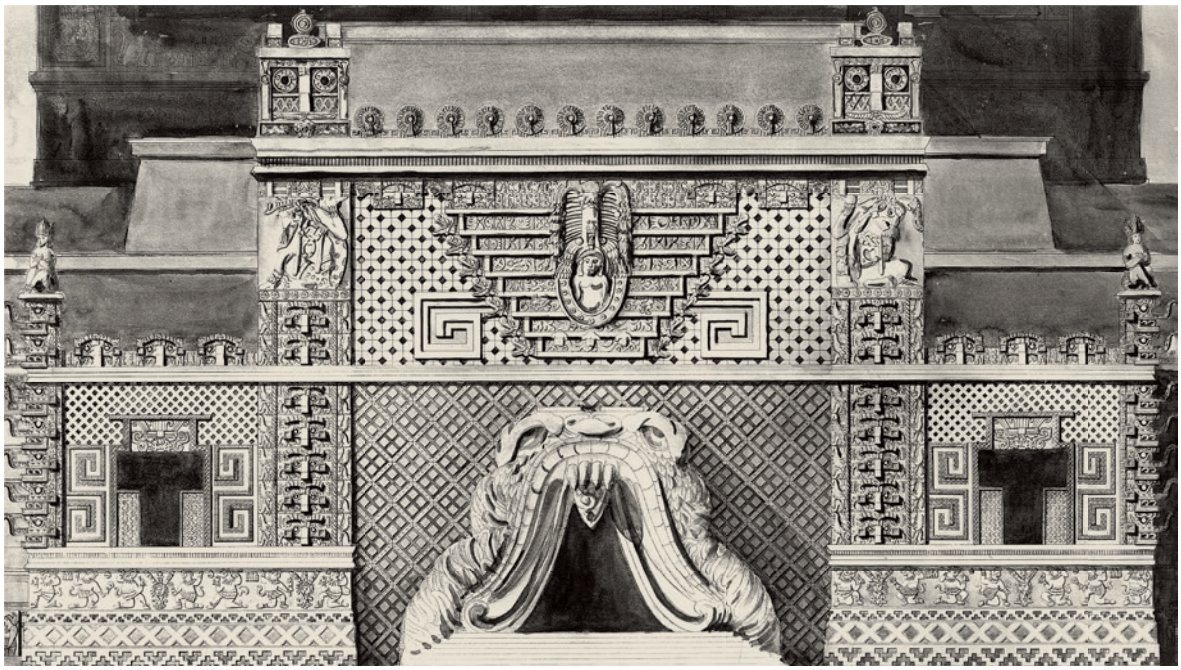
Vista del plano del Templo a la gloria de América y de la gesta colombina. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Biblioteca (signatura 1P-3F 3524).



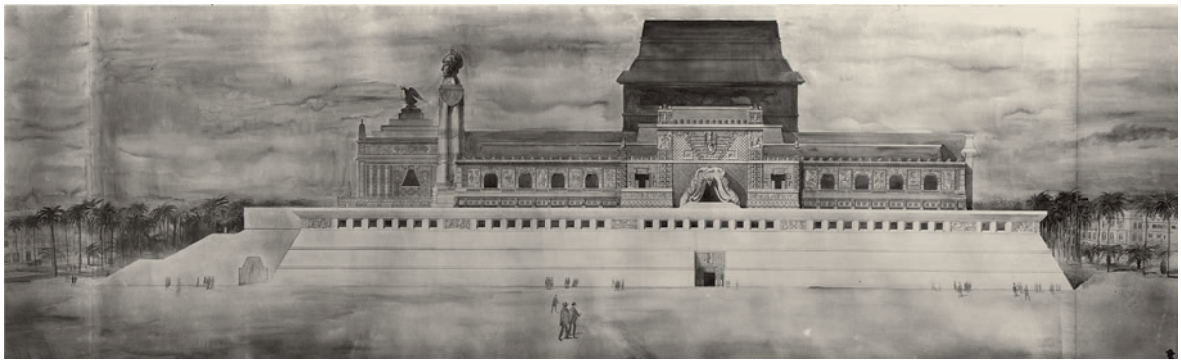
Vista exterior del Templo a la gloria de América y de la gesta colombina. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Biblioteca (signatura 1P-3F 3525).



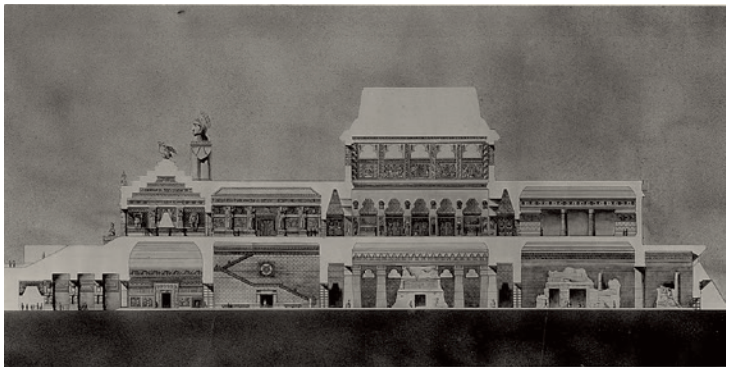
Recreación del aspecto exterior del Templo a la gloria de América y de la gesta colombina: Detalle del último templete. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Biblioteca (signatura 1P-3F 3528).



Recreación del aspecto exterior del Templo a la gloria de América y de la gesta colombina: Detalle de la parte superior con frisos inspirados en Uxmal. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Biblioteca (signatura 1P-3F 3540).



Recreación del aspecto exterior del Templo a la gloria de América y de la gesta colombina: Vista lateral del conjunto. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Biblioteca (signatura 1P-3F 3535).



Recreación del aspecto exterior del Templo a la gloria de América y de la gesta colombina: Vista axionométrica del lateral. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Biblioteca (signatura 1P-3F 3536).

conozcamos por la documentación encontrada, estas copias y otro archivo fotográfico en el Museo Naval de Madrid[5].

El principal objetivo de su estancia en España era la venta disfrazada de donación. Además del archivo, se incluía en él su gran proyecto arquitectónico: el *Templo a la gloria de América y de la gesta colombina* que, a la vista de las láminas, resultaba de todo punto inviable y, sin embargo, según sus fuertes y profundas convicciones ultraconservadoras, su ejecución lograría cumplir una gran función social y cultural. A este proyecto dedicó el tomo V del archivo[6] y contiene 47 láminas (copias fotostáticas).

Este proyecto contaba con una identidad arquitectónica de características híbridas que ya había pasado de moda. En las primeras décadas del siglo XX, en el sur de California se desarrolló una arquitectura en el llamado "estilo neomaya" y en España se conservan ejemplos de algo similar como el Pabellón peruano y el de México, realizados para la Exposición Iberoamericana de Sevilla (1929).

A pesar de ser un archivo formado por ampliaciones y copias fotográficas, constituye una fuente documental interesante para observar la relevancia que tuvo la fotografía desde finales del siglo XIX y durante el siglo XX en la arqueología e historia del arte. Muy útil, en cualquier caso, para observar el estado de conservación, los cambios producidos por el paso del tiempo, las restauraciones, etc. Su selección de los monumentos arquitectónicos mexicanos a través de la historia deja de manifiesto su gran conocimiento sobre las diferentes culturas mexicanas desde la época prehispánica hasta mediados del siglo XX.

Los elementos gráficos del proyecto arquitectónico autocalificados de "obras de arte con valor propio" estaban originalmente dibujados a tinta y pintados a la acuarela probablemente entre 1926 y 1928. Aun tratándose de copias fotostáticas, el autor ambicionaba que fuese el Museo de América el que dedicara una sala permanente a la exhibición de estos "dibujos" y para ello se reunió con el entonces director del mismo, Carlos Martínez Barbeito (1913-1997) quien al igual que Luis González Robles (1916-2003) comisario de exposiciones del ICH, rechazaron sus aspiraciones y rebatieron sus argumentos, el material era en definitiva, copias y reproducciones ya que los dibujos originales ya habían sido vendidos en Buenos Aires y Lima.

Las láminas en blanco y negro que fueron publicadas en 1928 en el libro: *History of the Skyscraper* (Historia del Rascacielos) se incluyeron también en este archivo pues se trataba del proyecto que a Mújica le hubiera gustado ver materializado, aunque fuese en alguna de sus versiones, para conmemorar el V Centenario del Descubrimiento de América (1992) aunque éste nunca llegó a construir nada como arquitecto.

John Sloan (1871-1951) colaboró con él escribiendo el prólogo del libro *History of the Skyscraper* que el propio arquitecto publicó en París. Sloan, arquitecto estadounidense, sobre este proyecto señaló:

«Un templo a la gloria del arte americano antiguo» además de recalcar que «Su proyecto ha sido dibujado con el debido respeto a su documentación histórica en materia de decoración, color, plano y forma».

Ese espaldarazo supuso, desde luego, un punto positivo en su trayectoria, sin embargo, no evitó que desde finales de la década de los veinte el arquitecto se dedicara, obsesivamente y hasta la saciedad, a la copia exhaustiva de sus dibujos arqueológicos.

Francisco Mújica, una vez más, después de residir en Argentina y en Perú, agotado económicamente y acuciado por la necesidad de sobrevivir, volvió a intentar explotar unos dibujos que ya había

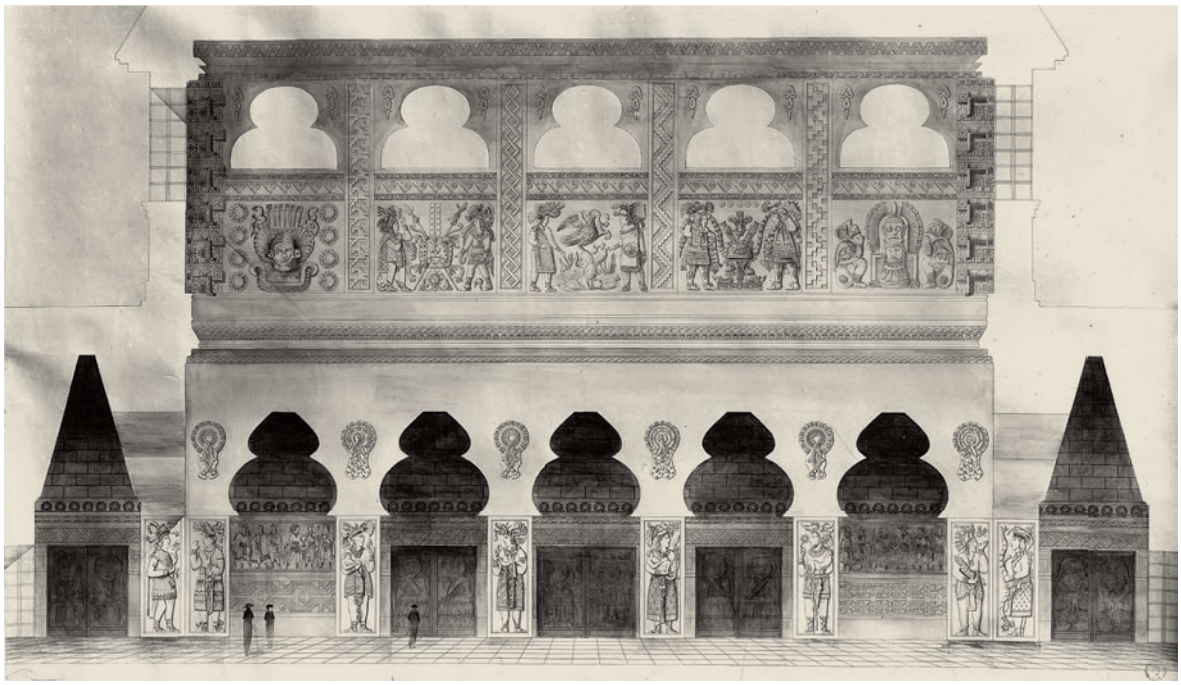
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5 Fechado el 1º de julio de 1974. Donación del Archivo Gráfico de la Marina de Guerra Mexicana, Argentina, Chile, Cuba, Perú y Uruguay firmada por él donante y el director del Museo Naval, el Capitán de Navío D. José Luis Morales Hernández.

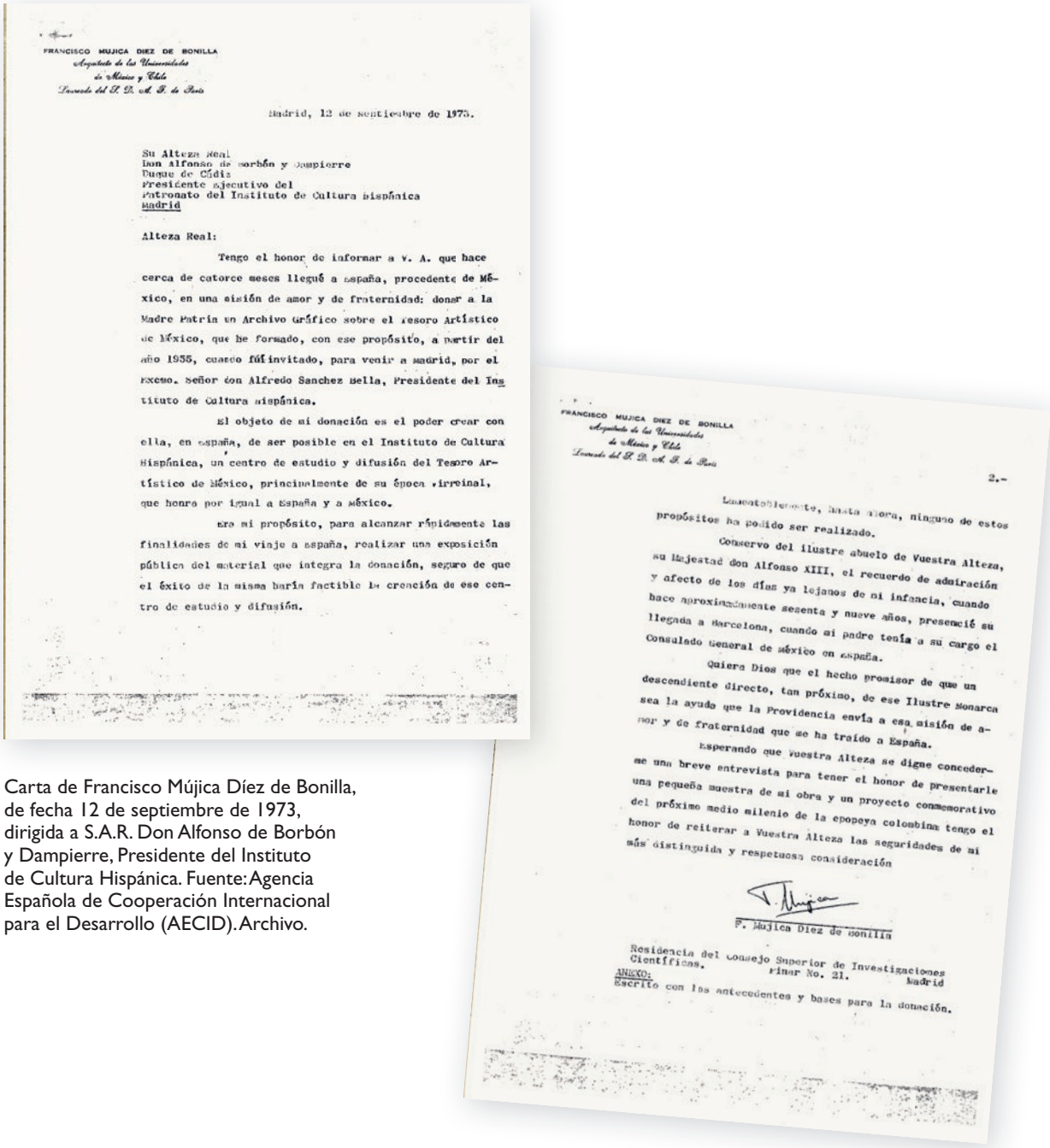
6 Dividido en seis tomos o secciones bajo el título: "*Tesoro Artístico de México*". No hay ninguno de los supuestos dibujos originales de los que habla en los antecedentes (Signaturas: 1P-3F 3000-4022).



Recreación del aspecto interior del Templo a la gloria de América y de la gesta colombina: Salón que imita al Palacio de Palenque. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Biblioteca (signatura 1P-3F 3558).



Recreación del aspecto interior del Templo a la gloria de América y de la gesta colombina: Corte axial imitando al palacio de Palenque. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Biblioteca (signatura 1P-3F 3559).



FRANCISCO MUJICA DIEZ DE BONILLA
Arquitecto de las Universidades de México y Chile
Licenciado del E. D. de A. E. de París

Madrid, 12 de septiembre de 1975.

Su Alteza Real
Don Alfonso de Borbón y Dampierre
Duque de Cádiz
Presidente Ejecutivo del
Patronato del Instituto de Cultura Hispánica
Madrid

Alteza Real:

Tengo el honor de informar a V. A. que hace cerca de catorce meses llegué a España, procedente de México, en una misión de amor y de fraternidad: donar a la Madre Patria un Archivo Gráfico sobre el Tesoro Artístico de México, que he formado, con ese propósito, a partir del año 1935, cuando fúi invitado, para venir a Madrid, por el Excmo. Señor don Alfredo Sanchez Bella, Presidente del Instituto de Cultura Hispánica.

El objeto de mi donación es el poder crear con ella, en España, de ser posible en el Instituto de Cultura Hispánica, un centro de estudio y difusión del Tesoro Artístico de México, principalmente de su época virreinal, que honra por igual a España y a México.

Era mi propósito, para alcanzar rápidamente las finalidades de mi viaje a España, realizar una exposición pública del material que integra la donación, seguro de que el éxito de la misma haría factible la creación de ese centro de estudio y difusión.

FRANCISCO MUJICA DIEZ DE BONILLA
Arquitecto de las Universidades de México y Chile
Licenciado del E. D. de A. E. de París

2.-

Lamentablemente, hasta ahora, ninguno de estos propósitos ha podido ser realizado.

Conservo del ilustre abuelo de Vuestra Alteza, su Majestad don Alfonso XIII, el recuerdo de admiración y afecto de los días ya lejanos de mi infancia, cuando hace aproximadamente sesenta y nueve años, presenció su llegada a Barcelona, cuando mi padre tenía a su cargo el Consulado General de México en España.

Quiera Dios que el hecho promisor de que un descendiente directo, tan próximo, de ese Ilustre Monarca sea la ayuda que la Providencia envía a esa misión de amor y de fraternidad que se ha traído a España.

Esperando que Vuestra Alteza se digne concederme una breve entrevista para tener el honor de presentarle una pequeña muestra de mi obra y un proyecto conmemorativo del próximo medio milenio de la epopeya colombina tengo el honor de reiterar a Vuestra Alteza las seguridades de mi más distinguida y respetuosa consideración

F. Mujica Diez de Bonilla

Residencia del Consejo Superior de Investigaciones Científicas. Pinar No. 21. Madrid

ANEXO:
Escrito con los antecedentes y bases para la donación.

Carta de Francisco Mújica Díez de Bonilla, de fecha 12 de septiembre de 1973, dirigida a S.A.R. Don Alfonso de Borbón y Dampierre, Presidente del Instituto de Cultura Hispánica. Fuente: Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Archivo.

realizado 50 años antes, por lo que se deduce que su labor como investigador se quedó completamente estancada en una época que ya había pasado y con el empleo reiterado de una bibliografía obsoleta.

Para este proyecto, el arquitecto escribió un texto dedicado al Instituto de Cultura Hispánica mecanografiado y compuesto por cinco folios en el que estableció las pautas de su ambicioso plan y cuya ejecución, a su juicio y coincidiendo con la celebración del *V Centenario del Descubrimiento,* permitiría saldar una "deuda histórica" con el pasado. Un planteamiento utópico y que, sin embargo, consideraba en sus cartas[7] a la dirección del Instituto, que resultaría muy oportuno para la ocasión.

7 El membrete de las cartas dirigidas a las más altas estancias del Instituto de Cultura Hispánica en 1973 en la que ya se le ha comunicado que no se aceptaba la donación indicaba ser *Arquitecto de las Universidades de México y Chile* cuando ya habían pasado más de 20 años de esas colaboraciones.

Para su concepción, no reparó en incluir reproducciones de monumentos y esculturas a tamaño natural, una delirante escenografía barroca cargada de simbolismos.

Respetando el orden establecido por el autor, las primeras láminas están dedicadas a los planos, las plantas se disponen en tres alturas, se recrean los detalles de los elementos arquitectónicos que tendrían en los diferentes niveles, vistas del exterior con basamento piramidal con altorrelieves, disponiendo muros en talud, y escaleras en la fachada, la entrada tendría forma de la cabeza de Quetzalcóatl, fachadas laterales con frisos inspirados en Palenque, Uxmal…en los que no faltan columnas basadas en el ídolo de Copán, también decoraciones con celosías y grecas.

En el interior, salones que imitan al Palacio de Palenque, con detalles en relieve del Templo del Sol, el Tablero de la Cruz. Les da nombre a las distintas salas con una tipografía decó: sobre una planta rectangular se disponen grandes salones-santuarios llevan por nombre: Quechua, Aimara, Maya, Nahual, Zapoteca, Mixteca además de réplicas de las ruinas de estos situadas en los muros laterales.

En definitiva, una construcción monumental de inspiración neomaya y precolombina cuya planta recuerda a la de El Escorial. Fuera de lugar en la época presentada y que había dejado atrás toda referencia a los historicismos que habían triunfado en la época de Alfonso XIII y durante la dictadura de Primo de Rivera y más adelante con Franco. A las puertas del periodo de la transición democrática en España, la política de la hispanidad ya había cumplido su objetivo.

En la contraportada incluimos intervenciones representativas de las áreas territoriales donde operamos, destacando en esta ocasión los trabajos que realizamos actualmente en monumentos de nuestro Patrimonio Mundial como el Palacio Real de Aranjuez o la Catedral de Sevilla y en los centros históricos de Toledo, Madrid, Lisboa, Santiago o Valparaíso, en rehabilitaciones integrales de recuperación de inmuebles para grupos inversores realizadas en edificios residenciales, para uso hotelero y comercial o para instituciones privadas educativas, así como algunas de las obras en ejecución en Estados Unidos y en París, en el icónico Centro Nacional de Arte y Cultura Georges Pompidou. Comprometidos en la protección y recuperación de monumentos y edificios históricos, perseveramos con renovada ilusión en la recuperación de nuestro patrimonio.

Palacio de Aranjuez, Casa del Labrador, España
Tras la monitorización de fisuras, protección de elementos y traslado de bienes culturales con posterior consolidación estructural estabilizando bóvedas, muros de fachada y forjados, se ejecuta el recalce de la cimentación mediante micropilotaje, finalizando con la reparación de instalaciones, cubiertas y pavimentos, entre otros elementos. Nuestros profesionales con experiencia en estos trabajos ejecutan con precisión esta intervención de forma compatible con la preservación de este valioso Patrimonio Mundial.

Teatro Municipal de Iquique, Chile
Tercera fase de intervención en este inmueble, posterior al inventario de bienes patrimoniales y restauración de sus fachadas. La obra actual contempla la restauración completa del teatro, incluyendo las pinturas decorativas de su cielo y la normalización de todos los sistemas que permitirán reanudar su funcionalidad.

Catedral de Sevilla, España
Conjunto de trabajos realizados en este sobresaliente conjunto perteneciente a nuestro Patrimonio Mundial que incluyen refuerzos de cimentación, adecuación de espacios interiores, consolidación de las fachadas de la Giralda, conforme a criterios de conservación consensuados por un eminente equipo de expertos que garantizan la intervención en este bellísimo monumento, y actualmente diversas fases de restauración de la Iglesia del Sagrario.

Palacio de Versalles, Francia
En este magnífico bien de nuestro Patrimonio Mundial, llevamos a cabo distintas intervenciones de recuperación de sus cubiertas incluyendo trabajos en la pizarra de Angers así como ornamentos de plomo en los que aplicamos pan de oro en bandas vegetales de cumbreras, jarrones y guirnaldas frutales, entre otros.

Castillo de Chenonceau, Francia
Restauración completa de las cubiertas de este conocido monumento perteneciente al paisaje cultural del Valle del Loira, Patrimonio Mundial, abarcando todos los oficios para la restauración de la pizarra, el campanile en cobre y los trabajos en plomo en esculturas y elementos decorativos ornamentales.

Consulado de España en Oporto, Portugal
Conjunto de trabajos de rehabilitación en esta sede institucional en el centro histórico de Oporto. Ejecutamos la rehabilitación de parte de su estructura afectada por la presencia de humedad y el ataque de xilófagos, la subsanación de esta patología, así como la renovación interior de algunos espacios y mejora de accesibilidad.

Hotel Asturias, Madrid, España
Intervención en el conjunto de fachadas pertenecientes al antiguo Hotel Asturias de Madrid, con restauración de sus paramentos de ladrillo y revoco, recuperación de volúmenes salientes, cerrajería, solados de balcones, así como de los elementos ornamentales dañados con moldeado in situ mediante un sistema de terrajas o reproducción de elementos faltantes a partir de moldes elaborados desde los originales.

Colegio Nuestra Señora del Pilar, España
En las fachadas de este emblemático centro docente con declaración de monumento, BIC, destacamos la restauración de sus paramentos revocados, de mampostería y sillería de piedra, reintegración de líneas de impostas y cornisas con varillas de fibra de vidrio, así como de elementos singulares decorativos como pináculos, balaustradas y ornamentación de portadas.

Comercial, Madrid, España
Rehabilitación integral de este inmueble del centro para su reacondicionamiento como edificio comercial. El característico sistema tradicional constructivo con entramado de madera adolecía de un acusado deterioro, con innumerables tipos y sistemas de refuerzos y apeos. La intervención comporta importantes trabajos de refuerzo estructural y de cimentación con sustitución parcial de viguetas y pies derechos de madera, la rehabilitación integral de las cubiertas y patios, así como la cuidadosa y específica restauración de fachadas de este edificio con protección singular.

Residencial en Upper East Side Historic District, Manhattan, NY, Estados Unidos
En este bello edificio protegido de Nueva York, realizamos diferentes trabajos de limpieza y restauración de la mampostería de fachada, de su cornisa metálica, en cubierta, instalación de suelo porcelánico en terraza o la conservación con repintado de ventanas.

Residencial y comercial, Lisboa, Portugal
Rehabilitación integral de edificio histórico en la conocida plaza de Rossío en Lisboa para su uso residencial y comercial. Se está ejecutando la consolidación estructural, mejora de accesibilidad, restauración de elementos históricos interiores, escalera, envolvente, actualizaciones y acabados con la utilización de materiales y técnicas tradicionales para mantener su carácter sumando el confort y estándares contemporáneos.

Alquiler residencial Madrid, España
Rehabilitación integral de este céntrico edificio para adecuarlo a viviendas de alta calidad, con delicados acabados y mejora de su accesibilidad. Una cuidada intervención manteniendo técnicas y trabajos artesanos, recuperando las estructuras de madera, los elementos característicos como las fachadas y locales protegidos o la escalera principal de acceso al inmueble.

Théâtre Benno Besson, Suiza
El teatro Benno Besson fue construido en 1898 como casino siguiendo el modelo del de Montecarlo. Un siglo más tarde fue rebautizado con el nombre del célebre actor suizo nacido en la localidad en la que se encuentra, Yverdom-les-Bains. Recuperamos las configuraciones de cubierta y elementos en plomo y cobre.

Hotel en el centro de Toledo, España
Rehabilitación integral de un conjunto de edificaciones catalogadas para cambio de uso a hotel de cuatro estrellas en el casco antiguo de Toledo, Patrimonio Mundial. Nuestro equipo interdisciplinar ejecuta diferentes fases consecutivas, actualmente terminaciones y acabados, tras otras anteriores como la relevante consolidación estructural, con trabajos en hormigón, elementos metálicos, madera laminada, etc., de todo el conjunto incluyendo su envolvente. Destaca la recuperación, catalogación y conservación de elementos históricos que están siendo incorporados en la intervención.

Residencial en Lisboa, Portugal
Rehabilitación integral de edificio residencial y comercial localizado en el barrio histórico de Graça, con una primera fase actualmente en ejecución de trabajos de consolidación estructural, demoliciones controladas, estabilización y refuerzos.

Restauración de interior de edificio en 5th Ave, New York, Estados Unidos
Realizamos un conjunto de trabajos en la escalinata principal del edificio histórico con la restauración de la piedra caliza de Caen de sus paramentos interiores, decapado de pintura, reparación de grietas, rejuntados y molduras de escayola y pintura al silicato.

Fachadas Complejo Canalejas, Madrid, España
Tras una anterior intervención en la simbólica fachada de Alcalá 14, muestra de la arquitectura monumental ecléctica del S.XIX, restauramos los más de 7.000 m2 de fachadas de los siete edificios que conforman el Centro Canalejas sede del primer Hotel Four Seasons en España, junto con viviendas de lujo y superficie comercial.

Pontificia Universidad Católica de Valparaíso y edificio anexo, Valparaíso, Chile
Gestión integral de esta intervención, desde el desarrollo del proyecto de restauración, la tramitación de permisos previos a la obra y la ejecución de las mismas con el objetivo de restaurar integralmente la envolvente y espacios interiores del inmueble.

Grupo Inversor, Madrid, España
Rehabilitación integral de dos inmuebles ubicados junto a la Iglesia de la Santa Cruz. Destaca un importante trabajo de consolidación estructural con conectores y capas de compresión en forjados, sustitución y refuerzo de elementos estructurales dañados en vigas, pilares y cubiertas, en madera y metálicos, así como la ejecución de todos los acabados interiores y dotación de instalaciones, incluyendo la ejecución de dos ascensores.

Hotel City, Santiago de Chile
Restauración de las fachadas del ex Hotel City, construido en el año 1938, primera etapa de la rehabilitación integral de este inmueble. Contempló la limpieza, restitución y puesta en valor de sus fachadas y ornamentos, de un estilo ecléctico donde destacan sus elementos del art decó y neogótico, así como un destacado trabajo de renovación de carpinterías de acero.

Palacio Pereira, Santiago de Chile
Recuperación de este monumento para convertirlo en la nueva sede de la Dirección de Bibliotecas, Archivos y Museos y del Consejo de Monumentos Nacional de Chile. A través de una propuesta de restauración y rehabilitación integral que incluye su ampliación con un volumen de obra nueva, se devuelve a la ciudadanía este icónico palacio.

Edificio residencial, Madrid, España
Intervención integral en edificio residencial ubicado en el centro histórico. Se acomete la consolidación de la estructura de madera, la rehabilitación completa de locales, zonas comunes y viviendas, así como la restauración de fachada y cubierta.

Edificio residencial en St New Canaan, CT, Estados Unidos
Trabajos en la envolvente como la limpieza y restauración de la piedra caliza y granito, la eliminación de eflorescencias con micro-abrasión, la reparación de grietas y rejuntados en fachadas y en los muros de coronación, así como la conservación de ventanas.

Biblioteca Centro Pompidou, París, Francia
Renovación y actualización de la biblioteca, en los niveles primero y segundo, del Centro Pompidou para mejorar las condiciones de acogida y potenciar el uso de sus diferentes espacios, incluyendo trabajos de remodelación, mejora de accesibilidad, señalética y equipamiento.


Palacio Real de Aranjuez
España


Teatro Municipal de Iquique
Chile


Catedral de Sevilla
España


Palacio de Versalles
Francia


Castillo de Chenonceau
Francia

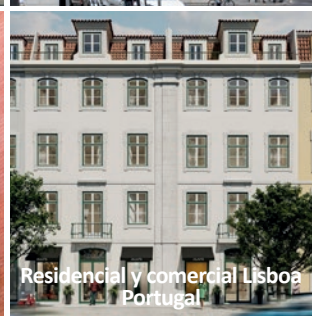

Consulado de España Oporto
Portugal

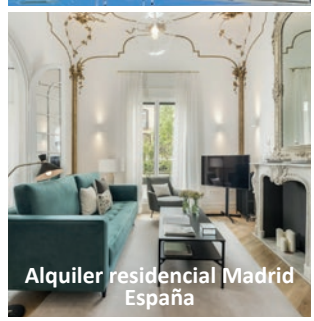

Hotel Asturias Madrid
España


Colegio del Pilar Madrid
España


Comercial Madrid
España


Residencial Nueva York
Estados Unidos

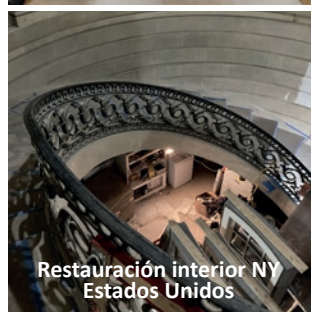

Residencial y comercial Lisboa
Portugal


Alquiler residencial Madrid
España


Teatro Benno Besson
Suiza


Hotel en Toledo
España

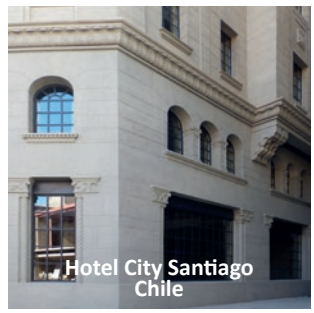

Residencial Lisboa
Portugal

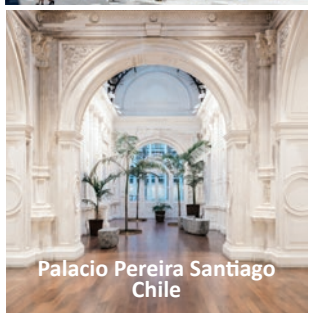

Restauración interior NY
Estados Unidos


Fachadas Complejo Canalejas
España


Universidad Católica
Chile


Grupo inversor Madrid
España


Hotel City Santiago
Chile


Palacio Pereira Santiago
Chile


Edificio residencial Madrid
España


Residencia New Canaan,CT
Estados Unidos


Biblioteca Centro Pompidou
Francia

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