

"INNOVATIONS" BY FRANK LLOYD WRIGHT

The following is a list of the many innovations developed by Frank Lloyd Wright over the 70 years of his career. A partial list -- written by Wright in 1953 -- follows. *"Innovations" ©1966, The Frank Lloyd Wright Foundation.*

1893

The Human Scale

New sense of scale and space (the human being) to proportion all building. The human scale as a definite basis of measurement. Horizontal and vertical unit system in planning all buildings.

Significance of Form

New sense of the significance of the form in construction or of building structure as a "form." Form arising from site and nature of the project, also of the materials and methods, always seeking organic or integral relationship of outside to inside and of both to site and circumstances within the building.

Appearance of the Open Plan

Integration of the building with site. The dwelling as a gracious feature of the landscape and woven into it.

The Machine as an Architectural Tool

Various shapes and uses of material best suited to machine-craftsmanship and to modern methods of construction instead of imitating hand-work or any of the results of ancient slave labor or skilled handicraft. The machine versus the chattel-slave.

Nature of Materials

The basic water-table striated brick and stone work, low horizontal banded walls with broad over-hanging eaves, outside and inside same--interior walls

extended outside to gardens, integrating human structures with the prairie.
Stream-lined with occasional high emphasis.

The Emphasis on Shelter

Substitution of back-band continuous strip trim for plinth and corner block.
Flush doors--swinging sash pintle hinged. The extended roof shelter with broad overhangs. The fireplace a manifest masonry mass of the building itself, instead of an applied feature of furnishing the building.

Abolition of Attic and Basement

Furniture built in and designed in keeping with the types of structure to seem part of it.

Foundations -- The dry-wall trench footing. Trench dug not more than 16" deep below grade filled with coarse stone size of fist. Bottom of trench to drain. Layer of concrete spread over stone-bed to carry wall construction above.

1896

The auger hole concrete pier or tapered punch-pile foundation on specified centers (spaced equal distances apart) carrying concrete slab on which building erected. These piles employed in extending walls around outside open spaces.

1900

Flat roofs for dwellings with projecting eaves; the reflecting soffit and the open or trellised eaves.

1894-1900

Lighting where sources of artificial light is same as daylight. Reflected light from floor to ceiling. Concealed lighting on ledges, etc, etc. Pin-point lighting from

ceilings directed on special objects and areas. Concealed sources of light.
Elimination of the visible lamp.

1900

Flush doors: special hardware for swinging sash to allow screens inside. Pintle hinging for doors and windows concealed in floors.

The carport instead of enclosed garage. The kitchen as a workspace rising above roofs to act as ventilator for whole house. The extended lantern or clerestory windows for south-lighting northern exposures. Windows from floor to ceiling. The so-called picture window. All glass door and mitred glass. Elimination of the vertical corners of the box.

1903-1905

The consistent elimination of the post- and lintel- box construction, designing the streamlined effects of plasticity throughout a building. New space concepts producing streamlined effects.

THE LARKIN BUILDING

The hanging or wall water-closet. Bowl suspended on partitions. No fixtures visible. First metal furniture, first air-conditioning, first pier and apron structure.

1911

The one-process wall: walls outside and inside same. Integral ornament. The nature of materials revealed in structure. The flat wood surface revealing grain. The machined flat wood trim strip. The designed sun pattern in building openings. Emphasis of the texture of the metals, wood, stone, plaster, concrete, in all forms of building. The open plan. The split level floor plan. The quadruple block plan for housing.

1913

Integral heat. Floors warmed by gravity-heat: forced circulation of steam or hot water in steel or copper pipes embedded in broken stone bed beneath floors either of wood or concrete. The balanced cantilever construction lightening loads by cantileverage.

MIDWAY GARDENS

First complete integration of architecture, sculpture, painting and music in America. Reinforced concrete construction.

1914

IMPERIAL HOTEL

The earthquake-proof structure. The resilient jointed structure on cushion-foundations. Tenuity as a structural principle instead of rigidity.

1921

USONIAN HOUSE

Various designs in varying types of shelter for dwellings in varying circumstances and changing climates either built by the Usonian Automatic Block construction method abolishing skilled labor entirely or in the nature of materials. All appurtenances systems prefabricated in shops and installed ready-made complete.

CONCRETE BLOCK

Walls same inside as outside. No skilled labor. Fireproof, earthquake proof, vermin-proof. Gravel, sand, cement, steel rods and common labor. Textile-block houses: first use of then gutter snipe of the 23 building industry--the concrete block now reinforced by steel-for high class building construction.

1924

The self-cleaning building. The outward inclined glass wall. Mitred glass corner-windows.

1933

BROADACRE MODELS

Decentralization. Models of Broadacre City. Plans and various models for orderly decentralization of cities. The universal four-way traffic intersection. Traffic solutions by way of designs for motor car, taxi cab, aerorotor and skidrail transport.

1912-1934

THE MODERN THEATRE

Integral sound. Visible sound-track on projection apparatus. Incorporated sound projection reflecting surfaces of building. Sound apparatus built in. The modern theatre itself as a modern machine for sound reception and projection. New elements in acoustic where dependent upon building construction. The sheet metal general purpose farmstead for northern climate. Detail of Broadacre City.

1936

The all-steel house, roofs, walls and floors.

JOHNSON BUILDING

Cold drawn mesh reinforcement for slender columns, walls or slabs in building construction sometimes expanding into cantilevered ceilings from columns or walls. Upper corner of box finally eliminated.

1940

Pool divided between indoors and outdoors.

1947

The meeting-house as an overall temple without steeple.

1953

The quadruple skyscraper on four pins with dwellings and offices vertically combined. Sheltered glass-walls. Cantilever construction. All floors cantilevered over central supports carrying floors. Building construction from within outward.

--Frank Lloyd Wright, 1953