ORTHODONTIC OFFICE DESIGN

A Frank Lloyd Wright-Inspired Orthodontic Office

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Frank Lloyd Wright is widely regarded as the greatest American architect of the 20th century.[1] Contemporary architects routinely apply Wright's design concepts and principles in their work, and many current homes and offices reveal his influence, both inside and outside.

Born in Wisconsin, Wright learned the rudiments of civil engineering and draftsmanship at the state university. Before graduating, however, he left for Chicago, where his outstanding talent was recognized by the well-known architect Louis Sullivan. After working for Sullivan's firm, Wright eventually opened his own office in Oak Park, Illinois. His fame quickly spread, and by 1911 his firm had built 96 homes in and around Chicago and designed about 70 more. Many of these have been designated National Historic Landmarks by the American Institute of Architects.[2,3]

A Wright-Style Orthodontic Office

Dr. Barry Booth, a native Chicagoan, became a great admirer of Frank Lloyd Wright's architecture in his area. When Dr. Booth embarked on the construction of an orthodontic office building, he sought to emulate the traditional Wright style, believing that such a building would be appreciated by patients in Homer Glen, the Chicago suburb where he had purchased land.

The finished office building is unmistakably inspired by the early style of Frank Lloyd Wright (Fig. 1). It incorporates many features of a 1906 Wright building that became known as the Robie House, now a National Historic Landmark owned by the University of Chicago (Fig. 2). Although many contemporary orthodontic office buildings show evidence of Wright's influence, Dr. Booth's building truly captures the original Wright look as embodied by the Robie House.

The exterior of Dr. Booth's building shows an adaptation of Wright's typical low, gradually sloping roofline (Fig. 3). The building's low-hip roof design with projecting eaves creates a strong horizontal line and imparts a sheltered feeling. The extended building profile helps ground the edifice and relate it to its surroundings, epitomizing Wright's concept of "organic architecture".

Another major structural feature often used by Wright is a clerestory, a secondary roof structure built above the main roofline (Fig. 4). This feature lends interest to the building's exterior, while also serving important esthetic and environmental functions on the inside. Dr. Booth's clerestory follows the gentle pitch of the main roofline, with a proportional extension of the eaves. A band of windows permits an abundant flow of natural light into the rooms below. The clerestory also expands the volume of the interior by increasing the height of certain areas. For example, the central hallway is only 5' wide, but seems wider because the overhead area is extended to the height of what would normally be the second-floor ceiling (Fig. 5). Any

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Fig. 1 Frank Lloyd Wright-inspired office building of Dr. Barry Booth, Homer Glen, IL.

Fig. 2 Wright's Robie House in Chicago. (Photograph by Jeffery Howe.)

Fig. 3 Dr. Booth's gradually sloping roofline.

Fig. 4 Side view of clerestory.

Fig. 5 Central hallway with clerestory above.

Fig. 6 Rear building extension adjacent to drop-off lane in parking area.

design that places windows at ceiling height would have a similar effect.

A Porte-Cochere Effect

A familiar addition to Wright homes, and one that he regarded as indispensable to elegant living, the porte-cochere is a protected extension from the building into the parking area. Functionally, it allows a comfortable entrance regardless of weather conditions; esthetically, it complements the building's architecture by increasing the horizontal width of the structure and expanding its overall profile. Dr. Booth's original plan called for a porte-cochere that would welcome patients and shield them from Chicago's frequently inclement weather. Unfortunately, parking requirements made a true porte-cochere impossible. A reasonable alternative was designed, however, in the form of a building extension, adjacent to a drop-off lane in the rear parking area, that leads to a large interior air lock for the reception area (Fig. 6). Although not a full porte-cochere, it still provides a sheltered entrance from the parking lot.

Two sturdy columns, prominent in this rear building extension, establish a strong horizontal line that is continued around the entire building in a columnar wall treatment, ending in columns at the facade (Fig. 7). This interesting visual feature echoes the significant horizontal component of Wright's designs. It worked extremely well on Dr. Booth's site, which slopes down from the back parking lot to the street level in front. The building actually has three stories: a basement, a main floor, and the second-floor clerestory. On a flat lot, it would appear tall and narrow, but the line of columns, combined with the downward-sloping site, visually lowers the building's profile. Landscaping also helps minimize the vertical dimension of a building so close to the street.

An Effective Floor Plan

The maximum square footage and final configuration of a building, especially on a smaller parcel of land, are heavily influenced by required boundary setbacks and parking facilities. In Dr. Booth's case, these factors resulted in a long, rectangular building. Developing an efficient and interesting floor plan for such an awkwardly shaped structure is always a challenge, but several of Wright's concepts were applied in Dr. Booth's office to help create smooth traffic-flow patterns (Fig. 8). The floor plan exemplifies Wright's rejection of boxy rooms in favor of more interesting geometrical arrangements, dispensing with unnecessary

Fig. 7 Columnar treatment establishes horizontal line that continues around building to facade.

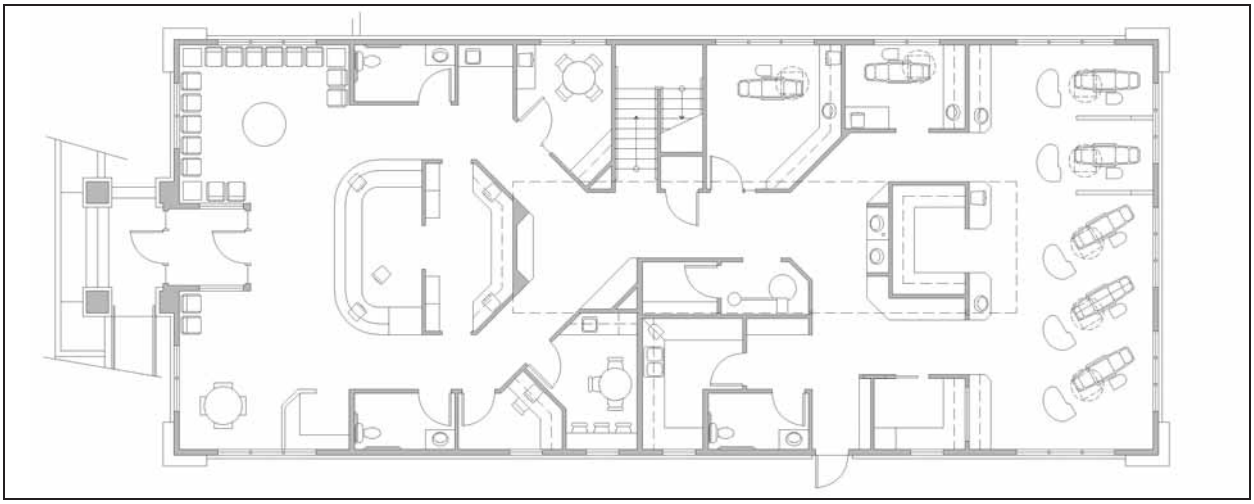

Fig. 8 Dr. Booth's floor plan, showing work spaces and traffic-flow patterns.

partitions and doorways to preserve a sense of openness.

The final plan also eliminated the long, dull hallways commonly found in narrow buildings. The short central hallway, expanded vertically by the clerestory above it, connects angular pathways leading to two large office spaces at opposite ends of the building: the spacious reception complex (Fig. 9) and an open-bay operatory (Fig. 10).

Patients entering the building immediately encounter the reception desk, where they sign in. From this central location, the receptionist has a full view of both the main adult seating area and the separate children's area containing toys and games. The well-placed fireplace in the reception room is another Wright-influenced touch, and the clock on the mantel is among the Wright replicas scattered throughout the office.

Dr. Booth worked hard to avoid a cluttered or crowded feeling in the operatory. The Wright-style banks of windows provide a beautiful view of trees in the distance and give the area a spacious feel. The windows can be opened from the bottom, permitting fresh air to circulate around the office. This is unusual in an orthodontic office, which is typically a hermetically sealed environment.

Dr. Booth increased the space around the dental chairs from the usual 6' to 7', allowing the staff to maneuver around the work area more comfortably. Also contributing to the operatory's feeling of openness was his selection of a contemporary tapered, slim-line cabinetry style instead of large, boxy dental cabinets. He chose metal overhead halide lamps, rather than ceiling-mounted dental lights, pole-mounted lamps, or gooseneck task lights, to preserve the uncluttered look.

The office's two adult chairs are separated from the teen area by partitions (Fig. 11). A utility center that can double as an air-rotor stripping station is available in each cubicle. Many adults feel uncomfortable brushing their teeth in a common area of the office and appreciate the privacy offered by the utility centers. The etched art-glass windows with simple oak window casements and other oak woodwork are typical interior details of early Wright-designed buildings that Dr. Booth employs in various locations.

Conclusion

With this unique office, Dr. Booth was able to create a modern orthodontic working environment that met his functional requirements and also satisfied his esthetic sensibilities. He developed a floor plan that accommodates the way he practices, incorporates an efficient traffic-flow pattern, and

Fig. 9 Entrance into reception complex.

Fig. 10 Open-bay operatory.

creates a comfortable and unique atmosphere for his patients and staff to enjoy. The final product is a fitting tribute to the great American architect Frank Lloyd Wright.

Fig. 11 Semiprivate adult chair in operatory.

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