A well-planned dental office will have an immediate and positive impact on virtually all facets of your practice. It can improve your productivity while decreasing your stress. It will allow you to create an image or identity for your practice consistent with the type of practice you currently enjoy or wish to develop. It will communicate the quality of your services, inspire your patients' confidence and ensure their comfort.

Creating a new environment for your practice is likely the largest single investment you will make in your business. Therefore, you should allow yourself adequate time to make decisions associated with a design or redesign—so that you make the right decisions that will affect your practice positively for the rest of your professional life. From the onset of planning, be certain everything will work the way you wish it to. If it does, you may never have to build again. If it does not, your costly errors will haunt you continuously, affecting the efficiency of your practice and the morale of your entire office team.

The golden axiom “If it is not better than where you came from, why go?” holds true for both you and your patients. Successful dental office design is directly affected by the choices you make in room relationships, equipment, technology, lighting, ceiling heights, color selection and finish materials. All of these details, and others, communicate quality, encourage patients to tell their friends about you, and keep you and your staff enthusiastic, efficient and productive.

Creating a new environment for your practice is not a solo act. It requires a talented team of professionals to help you realize all that your practice can become.

**DESIGN PROGRAM**

Imagine your most complex anterior cosmetic case and the laboratory prescription it would require. Now multiply it by 1,000...
and you have an idea of the magnitude and depth of the detailed prescription that your future office will require. This prescription for your envisioned office is what architects call a design program.

The development of your design program is the single most important step in the entire planning process. It is a written plan detailing how you intend to practice, which may be very different from how you have practiced in the past. It is the basis on which all planning and design decisions will be made. It defines such factors as the functions that will be performed in your office, the breadth and relationships of these functions and the level of privacy required for each. Your design program will be unique to your practice.

**Plan for success.** If a site for a specific function, such as a consultation room, is included in your program, it should be positioned conveniently to the areas in which other related activities will occur and provide appropriate access for patients, staff members and dentist. Other functional spaces will be arranged to reflect the necessary space, access and desired adjacencies. Should your plan be developed without an adequate understanding of all the activity that is to be accommodated within your office walls, a function will have to be added after the fact—something very difficult to carry out. The domino effect occurs, creating the need for a whole new—and expensive—plan. Spend time in program development to save substantial time in redesign.

**Comprehensive construction documents.** Once your design program is established, a shopping list of all that you intend to include in your office will be created by your dental architect and consulting engineers. This shopping list is your thorough and complete set of construction documents: the drawings and specifications that will communicate to your contractor exactly what you wish to have for an office and on which your contractor will base the cost of your project. Moreover, your agreement with your contractor will require him or her to provide and install all that is shown on the drawings. These drawings become legal contracts. If at the completion of your project you discover that an item has been omitted, your contractor is bound to furnish and install it, as shown on your drawings and as specified.

If your drawings are incomplete, your contractor will have to make assumptions as to what it is you desire. More often than not, these assumptions are incorrect or inappropriate. Any changes requested by you after you have entered into an agreement with your contractor are called change orders and can add significantly to the cost of your project. Typically, your lender has appraised your project to its maximum value before the commencement of construction and is not interested in providing additional funding for these change order items. The expense of these comes out of your pocket. Therefore, your goal should be to obtain a thorough set of construction documents so that change orders will not be necessary.

The days of obtaining a building permit with a sketch of a floor plan on the back of a paper napkin are well behind us. The myriad of codes and overlapping federal legislation, such as the Americans With Disabilities Act, require a professionally prepared set of construction documents. Generally, state laws require that your construction drawings be prepared by a registered professional architect or engineer, licensed in your state.

By training, architects are versed in assisting with the development of your design program. It is the role of the architect to glean from you—as the client—all pertinent program data. Your architect will rely on you to bring him or her up to speed as to what constitutes your practice life. If your architect is not experienced in dental office planning, you may be paying to be a part of his or her learning curve. It is absolutely in your best interest to request assistance from a design professional with specific and lengthy experience in planning dental and specialty offices. Enlist the services of someone who has a complete and intimate understanding of what dentists do all day.
**Fee Structure.** Many architects base their fee on a percentage of the cost of construction. This could give rise to the perception that your architect stands to benefit from increasing the cost of the project. This perception, although it may have no basis in reality, runs counter to the team relationship that must exist to achieve a successful project. I do not recommend any contractual relationships that are open-ended in relation to costs. Regardless of how the agreement is written, once the scope of the project is established, an amount not to be exceeded should be developed.

This principle applies to your relationship with all design professionals. If your interior designer suggests an hourly rate, request that his or her fee be stated as a "not-to-exceed" amount based on the scope of your project and the services desired. In all fairness, should the scope of your project or the agreed-to services change, so should the fee.

**How Big?**

Based on our experiences in the planning of dental and specialty offices over the last 19 years, my colleagues at my architecture firm and I have developed some rules of thumb. To determine the approximate size of your new office, multiply the number of treatment chairs desired (as developed through your design program) by a factor of 475 square feet. For instance, if you desire a five-chair office: $5 \times 475 \text{ square feet} = 2,375 \text{ net square feet}$. This is the approximate total net area required for your office, whether you are improving a space or constructing a new building. It will vary based on your program. This factor decreases slightly as the number of treatment chairs increases, and the factor increases slightly as the number of treatment chairs decreases.

Some dental specialties will require less area because they have fewer functional requirements—for example, the decreased laboratory needs in endodontics and periodontics. Although the space-efficient bay concept of orthodontics and pediatric dentistry would seem to require less area, space needed for other functions typically required for these specialties, such as brushing teeth before treatment, offset this savings.

When constructing a building, to determine the approximate square footage of land necessary to accommodate your building, related parking, landscaping, water retention areas and so forth, multiply the net square footage of your office determined with the previously given formula by a factor of 7. To continue with the previous example: $2,375 \text{ net square feet} \times 7 = 16,625 \text{ square feet}$. Once you have located a suitably zoned parcel of land, the buildable area of that parcel will vary based on, typically, three limiting factors: the terrain or lay of the land, building setbacks that limit how close you can build to the property line and utility easements that define the area necessary for maintenance of a utility that may border or cross your property. You should determine the feasibility of your intended use before purchasing the property.

From a planning standpoint, the most efficient shape for your office or property is a squarish rectangle. Avoid long and narrow shapes; triangular, truncated or L shapes; or any odd geometric form. Look for a suite with no columns or a minimal number of them. Odd shapes and columns may prove to be complete roadblocks to successful planning or, at the least, increase the amount of area required for your purposes.

**How Much?**

The single most important variable in construction costs is how busy the contractors in your area are. Having enjoyed such a healthy economic environment for the last several years, the construction industry is extremely busy. With this in mind, it is not unusual to spend in the range of $75 to $85 per square foot for leasehold improvements, excluding dental equipment, and $135 to $145 per square foot for a new one-story dental office building, built on a concrete slab, without a basement, excluding land and equipment. An unfinished basement will add about $15 per square foot, space for two exit stairs and potentially an elevator, depending on the local interpretation of the accessibility codes. These ranges are based on offices that are space-efficient, attractive and professional, but not opulent.

If you are the type of person who comparison-shops for big-ticket items, you are a candidate for competitive bidding among general contractors. If you are someone who can confidently place faith in the abilities of a person you deem trustworthy, you may wish to pursue a negotiated contract with a single general contractor or...
enlist a design/build firm to serve as both your architect and your contractor. The ramifications of this topic alone could fill an entire issue of JADA.

PLANNING CONSIDERATIONS

Your office design should be program-driven, meaning that design decisions should be a direct result of the information contained in your design program. Be cautious of equipment-driven decisions that are not necessarily based on any considerations other than how much dental equipment you will be buying. It costs just as much to build it wrong as it does to build it right—and over the life of your practice it will cost more, because of decreased efficiency and the resulting increased stress on you and your staff members.

As a first step in determining where to develop your new office, you should find a location that will allow for windows in every treatment room. These windows should not place your patients on public display, but should allow a view into a private landscaped area close by (if on ground level) or a vista from an upper level. When looking for a suite or property, consider the orientation to the sun. Taking into account the hundreds of British thermal units being produced by three bodies—two of whom are wearing barrier garments, gloves and masks—the copious amounts of lighting, and the heat-generating computer terminals and dental equipment, the dental treatment room does not need sunshine for warmth.

Too many dentists are working in sunny treatment rooms where they can perish of heat prostration while their patients freeze in the reception room. During normal office hours in North America, the sun does not shine on the north side of a building. So as a first choice, orient treatment areas to the north. East is second choice because the sun shines through the east windows during the coolest time of the day. A western orientation typically is unbearable, regardless of the type of glazing used.

To successfully separate your office space based on levels of privacy, with the entry side of the office considered public and the treatment side private, keep in mind that the entry is best located on the side opposite from treatment. In a perfect world, entry would be on the south and treatment on the north.

ZONING YOUR OFFICE

Think of your plan as zones based on varying needs for privacy. As patients enter your office, have your receptionist or dental concierge turn 90 degrees to welcome them and then turn back, away from reception, to face patients who are returning from treatment. This will nicely bring the welcome to a close and direct the receptionist’s voice away from the reception area. If your receptionist faces the reception area at all times, all of his or her conversations, whether on the phone or in person, will be overheard by those in the reception area. This is a breach of privacy and will greatly compromise your receptionist's effectiveness.

The area in which patients make payments or have the opportunity to discuss financial matters should be removed from the reception area, in a zone of greater privacy. The need for privacy continues to increase as you move from the office entry toward treatment, resulting in a treatment area that is not directly visible from any public area, such as the reception area. Treatment support functions near the treatment area, such as central sterilization and laboratory work, can be located in the area between the public and private zones. Dentist and staff areas are removed further, to yet a greater zone of privacy.

CONCLUSION

Once you have determined the goals for your practice and you have communicated them in your design program, with attention to size, relationships, adjacencies and zoning, you are ready to proceed with planning. Dental offices are not inexpensive facilities to build. They require a high level of interior finish materials and extensive utilities. With proper planning, your new office will prove to be an excellent investment in your future, paying significant dividends for the rest of your professional life.