

BENCO DENTAL | WHITE PAPER

Office Design Fundamentals: Understanding the Three Functional Zones of a Dental Office

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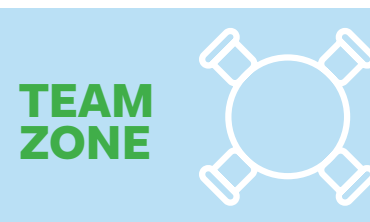
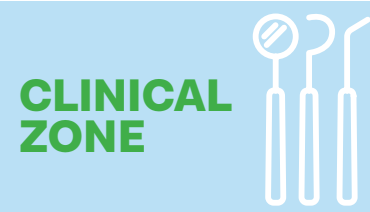


01 Abstract

A DENTAL PATIENT FORMS THEIR FIRST IMPRESSION IN A FRACTION OF A SECOND, SETTING THE TONE FOR THEIR EXPERIENCE WITH THE PRACTICE. And design can make or break that first impression: get it right, and the patient feels safe, comfortable, and open to a complex treatment plan; get it wrong, and the patient can lose faith in the office's quality of care.

Likewise, design is the foundation of a dental office's productivity and operation. Done well, the practice can operate smoothly and achieve top-10 percent productivity; done poorly, the team will feel like fish swimming upstream, struggling to achieve their goals and create an outstanding patient experience.

Great dental design starts with an understanding of the three functional zones of a dental practice: public, clinical, and team. This paper examines the 'zone approach' to design planning for dental practices, critical components of the process, and best practices for dental office design.

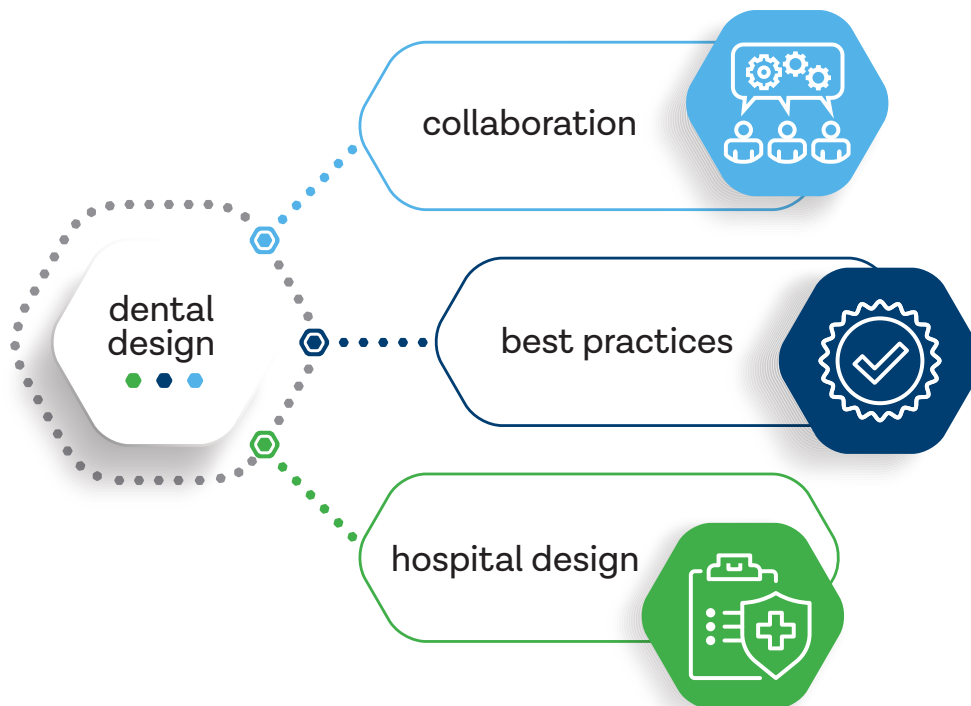


02 How Dental Design Is Unique

HOSPITALS AND OTHER HEALTHCARE FACILITIES have well-established guidelines dictating facility design, ensuring that best practices are widely followed. In dentistry, however, there is no central governing authority on the requirements for the design of a dental practice.

Someday, the regulatory agencies that govern hospital and medical facility design may develop dental guidelines. In the absence of a central governing authority, and written rules, the Benco Design team has applied best practices from decades of experience in hospital design to the design of a dental space.

Benco's design recommendations align with the Facilities Guidelines Institute (FGI) Guidelines for Design and Construction, the Center for Disease Control (CDC¹), the Occupational Safety and Health Administration (OSHA), and the World Health Organization (WHO), which all contribute to the approved guidelines required by the Department of Health for hospitals.²



¹"Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (Covid-19) in Healthcare Settings," Center for Disease Control, April 13, 2020. [cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Finfection-control%2Fcontrol-recommendations.html](https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Finfection-control%2Fcontrol-recommendations.html)

²"Guidelines for design and construction of outpatient facilities," 2018. The Facilities Guidelines Institute

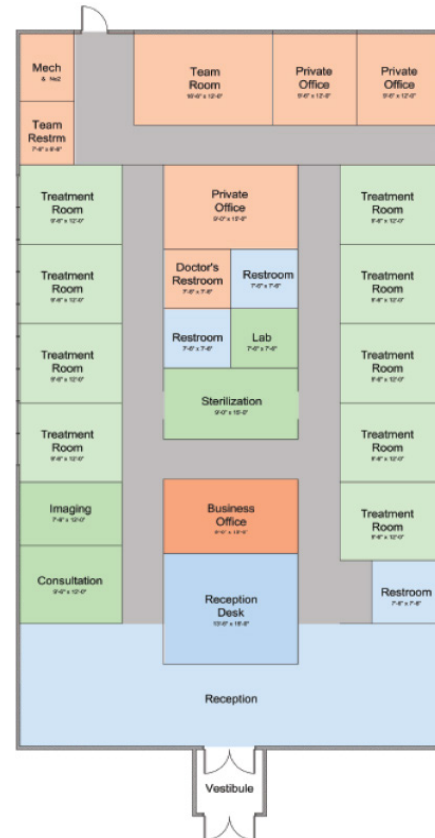
03 Achieving Flow

IN A DENTAL PRACTICE, THE DESIGN GOAL IS FLOW, a practice that is streamlined, smooth, and efficient. When flow happens, the practitioner, team, and patients all move in harmony, and the practice is more productive. On the other hand, practice facilities that are ill-designed can become chaotic, with lost energy and incremental stress due to extra steps, crisscrossing pathways, and bottlenecks.

To accomplish the harmony and flow that patients and practitioners desire, designers focus on the practice's essential functions, especially the interplay between provider and patient, and the hand offs between providers and team members. Simply walking in the footsteps of provider and patient may uncover places where flow is blocked.

As dentistry adapts to a post-pandemic environment, safety and infection control have become even more important in dental office design, forcing changes like additional separation between zones and a more thoughtful design for the high-traffic hallways used by caregivers and patients.³

Every dental design process should begin with a *zone study*, which breaks the space into three distinct zones: *public*, *clinical*, and *team*. The job of the designer is to view the space holistically, with a close eye on how one zone transitions into another. Streamlined designs have defined zones with smooth transitions. Poor designs are characterized by zones that are mis-sized, mis-shaped, or don't transition well.



³"ASHRAE Position document on airborne and infectious diseases," American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). February 5, 2020. [ashrae.org/file%20library/about/position%20documents/airborne-infectious-diseases.pdf](https://www.ashrae.org/file%20library/about/position%20documents/airborne-infectious-diseases.pdf)

04 Public Zone

OVER THREE DECADES AGO, the chairman of a now-defunct airline famously said, ‘Coffee stains on the flip down trays (in the airplane) mean (to the customers) that we do our engine maintenance wrong.’⁴

Likewise, the public zone, which includes reception, business, hallways, and restrooms, is where patient perceptions—good and bad—are created. Typically, dentists want their public zones to make patients feel safe, secure, and comfortable.

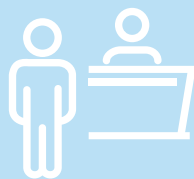


RECEPTION:

For many doctors, it’s been years since they viewed their practice through the eyes of the patient, by walking in the front door and sitting in the reception area. This small daily change in routine will uncover opportunities to improve

the patient experience. And entering during business hours also allows the practitioner to simply ask patients what they think of the practice when they walk in; not surprisingly, patients can be the leading source for great ideas to improve the customer experience.

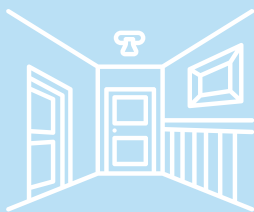
An open, well-lit and comfortable space sends a subliminal message of trust and comfort. Also, vestibules, which act as a buffer between internal and external spaces, should insulate the reception area from the weather outside.



BUSINESS AREA:

The patient check-in process, which begins in the reception area, should be seamless. Business team members should have adequate space to work without bumping into each other constantly. And the space and furniture should

be flexible enough to allow for future technology (think: computers and printers) and people needs.



HALLWAYS:

Hallways provide an easy and inexpensive opportunity to enhance the patient experience: lighting, inserts, artwork, and creative design can turn a long, ominous passage into a space that communicates the practice’s brand and values.

THE VALUE OF A FIRST IMPRESSION

It takes just one-tenth of one second to make a first impression.⁵

A new patient’s first impression is a crucial building block in their dental experience. Most practitioners want that first impression to be of competence and trustworthiness. And changing an unsatisfactory first impression takes an overwhelming amount of information and first-hand experience.⁶



Design is a crucial component in first impressions because who the dentist is and what they value is communicated in every design element. These elements, along with team and processes, contribute significantly to the patient’s experience.

Research shows that only 7% of what humans communicate is verbal.⁷ Therefore, 93% of communication—an overwhelming majority—is nonverbal, received by patients through their interaction with the office space, caregivers, and the operation of the practice.⁸

Given these factors—that the overwhelming majority of communication is nonverbal and a positive first impression is foundational to a positive patient experience, then the first thing patients encounter—the reception space—needs to convey a positive image and experience that evokes safety, trust, and competence.

⁴Tom Peters and Nancy Austin, *A Passion for Excellence*, quoted here: <https://www.washingtonpost.com/archive/entertainment/books/1985/05/26/how-to-succeed-in-business-by-really-trying/cb0e14d0-a8f9-49bf-b6e6-6c5e2e7a30aa/>; ⁵Willis, J. & Todorov, A. (2006). First impressions. Making up your mind after a 100-*Ms* exposure to a face. *Psychological Science*, 17, 592-598; ⁶Harvard Business Journal & Hamilton, Tristan W, DDS; ⁷Carnegie Institute; ⁸Thompson, Ph.D., Jeff, “Is Non-Verbal Communication a Numbers Game?” September 30, 2011, *Psychology Today*.

05 Public Zone



RESTROOMS:

Lavatories are an underestimated and overlooked opportunity. The patient restroom is best positioned on the private side of the door from the waiting room so that it can be properly monitored, have sound and

smell control, and be easily accessed by patients who are enduring longer procedures. That position saves anyone in reception room from witnessing a patient make an emergency restroom visit halfway through a full-mouth extraction.

Like the coffee stain on the airplane tray table, patients often evaluate the infection control standards of a practice based on the cleanliness of the restroom. One rule of thumb in architectural design is never allow people to view the toilet from

another room. Using the swing of the door and its orientation can be an easy way to hide the view of the toilet.

The restroom is also a good spot to incorporate a dynamic design statement. Elements such as color, architectural trim work, visually rich tile or wallcovering, appropriately scaled artwork and decorative lighting are easy ways to add visual interest and evoke a feeling of comfort. When doctors approach the design of their space with care, it carries over—and evokes a feeling of care towards the patient's health and wellbeing. Considering a restroom's relatively small footprint, the return on investment is high and bolsters the patient experience.

A separate team restroom is recommended to alleviate wait times and improve flow.

06 Clinical Zone

THE CLINICAL ZONE IS WHERE TREATMENT is delivered, so it needs to be designed with caring in mind. It's also where revenue is produced, so it needs to be designed with efficiency in mind. Balancing caring and efficiency in this busy area of the practice is how an experienced dental designer, using an effective design process, makes flow happen.

In the clinical zone, flow comes from treatment rooms that are comfortable for practitioner and patient, and a centrally located sterilization center that adroitly separates clean from dirty.

OPERATORIES: Proper configuration of the treatment room starts with time in the sandbox, a demonstration space with movable walls and equipment that allows practitioners to test different room sizes and equipment configurations. Dentistry is a very physical profession, with practitioners shifting position throughout each procedure to constantly pick up and put down instruments and equipment or improve visibility into the oral cavity. Not surprisingly, a 5'2" female might prefer a different room configuration than a 6'4" male.

A well-designed treatment room allows a practitioner to practice comfortably and efficiently for many years without physical pain; on the other hand, an incorrectly designed space causes chronic pain, repetitive motion issues, and sometimes premature retirement. Knowledge of proper dental ergonomics, assisted by an informal range-of-motion study in a dental sandbox, will make the difference.

One issue that must be addressed in the design process is whether all treatment rooms will be sized and configured identically. One school of thought holds that identical treatment rooms enable both dentists and hygienists to perform any procedure in any operatory, allowing a more flexible schedule. The other school believes that hygiene rooms can be sized smaller than dental rooms, enabling the office to have more rooms in the same square footage.

Regardless of size and configuration, operatories should be planned to have as little clutter as possible, with instrumentation easily accessible by the practitioner, and equipment that is comfortable for the patient. Consider the way light flows into the room, and the potential to add a visual point of interest to the wall at the toe of the dental chair. And, in a Covid-19 environment in which airborne pathogens can be as dangerous as bloodborne pathogens, operatories should be closed with air systems installed to ensure regular disinfection.

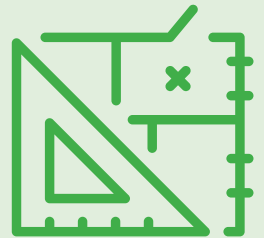
THE DESIGN REGRET

Leave Room For Success.

For most dental practices, the limit to increasing revenue isn't the hours the practice is open, or the number of active patients, or even the clinical or communication abilities of the practitioner.

It's the number of treatment rooms.

Which is too bad, because most of the items above are relatively easy to fix, with extended hours, a marketing effort, or a continuing education session. But adding treatment rooms is more difficult, and more expensive, once a facility is built.



So it's not surprising that many doctors identify 'not building enough operatories' as their #1 design regret. An extra treatment room has several benefits: it can be used for overflow or a surprise emergency case (a great way to win a new patient!), and it allows for a smoother schedule, especially in a Covid-19 environment requiring longer disinfection time between patients.

The numbers are compelling: a fully equipped operatory costs approximately \$90,000, including construction costs, or about \$1175 per month for the first five years, and \$700 per month for the second five years, but generates \$10-20K per month in incremental revenue, according to ADA averages.⁹ Looked at another way, an operatory that is utilized at least 50% of the hours the practice is open can increase practice production by more than 12%.¹⁰

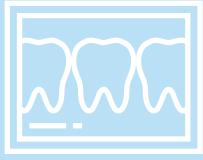
Here's a simple rule-of-thumb for calculating the right number of treatment rooms: three rooms per doctor + one room per hygienist + one emergency/overflow room. So one dentist and two hygienists should work in an office with at least six operatories.

Smart practitioners follow this mantra: design with expansion in mind. They know where and how they will add operatories, if needed, before they break ground on a project.

⁹Assumes \$25,000 in dental equipment on a 60-month loan, and \$65,000 in construction on a 10-year loan; 5.25% interest rate.

¹⁰Hamilton DDS, Tristan W., "Concepts of Dental Office Design." 2018.

07 Clinical Zone

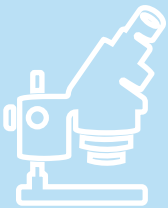


CONSULTATION: For many years, a consultation room, a private space designated for educating patients on treatment plans and financial considerations, was considered a requirement for any high-end dental office, especially important in an office with open operatories and little privacy. However, with operatories moving from open to closed due to Covid-19, and the requirement to change PPE when moving between treatment rooms, chairside consultations will become common, eliminating the need for separate consultation rooms. But it's important that operatories be equipped with well-placed screens to pull up patient images.



STERILIZATION: Dental sterilization is the kitchen island of the dentist practice, the space at the heart of the clinical zone. It's heavily used throughout the day, so it should be centrally located and designed so team members can enter and exit quickly and smoothly.

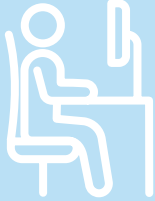
Dental designers are beginning to rethink sterilization areas for a post-pandemic world in which offices are moving from open to closed, and users are asking for more separation between clean and dirty. Sterilization areas should be contained, with designated 'dirty' spaces for processing, and sterilized, packaged instruments stored with other inventory.



LABORATORY: As a 'dirty' area, the in-house dental laboratory should be separated from sterilization or any team zone area.

08 Team Zone

ALTHOUGH OFTEN VIEWED AS AN AFTERTHOUGHT, the team area can make or break a facility. When designed thoughtfully, the team feels supported and has space to decompress—one of the key elements of flow. But a poorly planned team zone can make an office feel tight, and a team feel stressed and unappreciated.



DOCTOR'S OFFICE: The size and configuration of the doctor's office can range from a stool under a computer counter to a spacious desk with a couch in the corner and private restroom. In a busy practice, most dentists won't spend much time

in their office. A good location is the end of a corridor near the back of the office, so the doctor can open the door, look down the hallway, and monitor the flow of the patients and activity

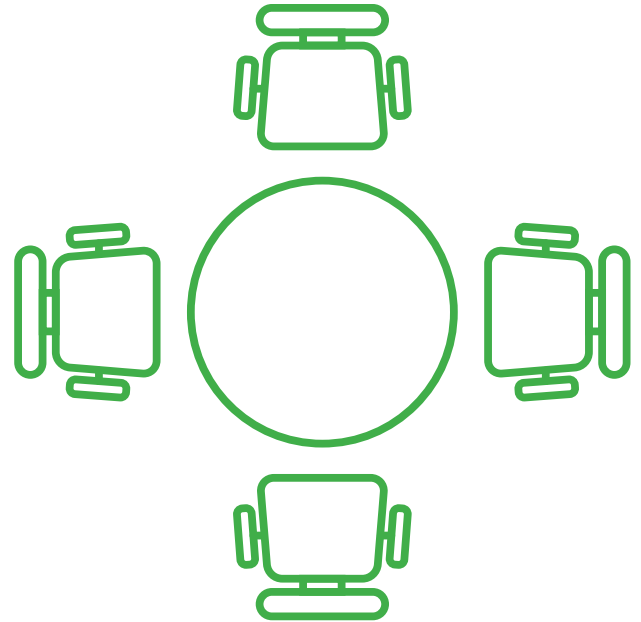
TEAM ROOM: The team room is necessary to allow the caregivers in the practice to decompress. Each team member should have a chair and a locker or personal storage space to create a sense of belonging and camaraderie among team members.

TEAM RESTROOM: Having a private team bathroom should be a priority, because it can be uncomfortable and bothersome to wait to use the facilities in between seeing patients.



STORAGE: A dental practice can never have enough storage for instruments, supplies, paperwork and lab cases. Many doctors don't put much thought into storage, but inadequate preparation leads to inefficient procedures and excess work for

team members. Consider the daily, weekly and bulk storage needs, and work with your designer to optimize organization, ease of access and efficiency.



In a post-pandemic world, it's especially important to incorporate a designated clean supply area, separate from sterilization. This allows providers to get needed tools and supplies without walking through a "dirty" sterilization space. It also allocates a designated space to store increased levels of PPE (personal protective equipment).

MEETING ROOM:

If there's enough space, many offices will include a multi-purpose room for meetings, lunches, and seminars, sometimes on a different floor from the main office.



TEAM ENTRY: A separate entrance for team members door ensures privacy, and makes it less likely that caregivers will run into patients when arriving or departing.

09 Conclusion

SOME DENTAL FACILITIES JUST WORK, and some don't. The difference is flow, and experienced dental designers know that flow isn't a matter of luck or magic; instead, it's the sum total of many small decisions about how space will be used, people will move, and patient care will be provided. It emerges when the designer works closely with the practitioner and dental team to understand the practice's goals, and then applies those goals to a blank space.

Dental practitioners may note the similarity between designing a dental facility and planning and executing a complex dental restoration: in both cases, the process starts when a practitioner applies years of experience, core design principles, and a keen eye, and sees the outcome long before the work has even begun. In dental office design, the result is a facility that is productive and comfortable, for caregivers and patients.

ABOUT BENCO DENTAL:

BENCO DENTAL IS THE LEADER in cutting edge dental practice theory, systems and design. They drive dentistry forward through their innovate solutions and caring family culture. Benco is the country's largest family-owned dental distributor with 1,400 associates across the U.S.

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