

This book was written to inform dental students, recent dental graduates, and practicing dentists about the complex processes needed to properly plan, design and build a dental facility.

**DENTAL OFFICE CONCEPTS:
A COMPREHENSIVE GUIDE TO BUILDING AND DEVELOPING
AN EXCEPTIONAL DENTAL OFFICE**
By Chris Carrington and Robert Murphy

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DENTAL OFFICE CONCEPTS:

A COMPREHENSIVE GUIDE TO BUILDING
AND DEVELOPING AN EXCEPTIONAL DENTAL OFFICE



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This book provides content related to dental designs, construction and management topics. As such, use of this book implies your acceptance of this disclaimer.

BIOGRAPHY: About the Authors

Dr. Chris W. Carrington graduated from the UCLA School of Dentistry in 1984 and went to the UConn School of Dental Medicine for three years, where he received a Certificate in Endodontics and a master's degree. Afterwards, Dr. Carrington taught at UConn for three years before going into private practice in 1990. For the next four years, he was an associate in four dental offices in Connecticut. It was in those offices that he began to formulate opinions as to what he liked and disliked about the design of each of the offices. In 1994, he started his own dental practice in Hartford, CT, using a major dealer of dental supplies and equipment for office planning. Dr. Carrington believed it was a positive experience for him except that he had very little input in the design and construction process. As Dr. Carrington puts it:

"I really didn't understand what I was getting into at that time. I just wanted to have my office built so that I could practice dentistry in my own place. As a result of my impatience and lack of knowledge about dental office designs, there were things done that I would do differently, knowing what I know today. I did not fully grasp what I needed to prepare for before, during, and after the dental office was constructed. Now I realize how imperative it is that your dental operatories and supporting spaces be designed exactly to your specific wants and needs, providing you with a stress-free living space. If you are going to live in a dental operator for up to eight hours a day, you should be as comfortable as possible."

In Dr. Carrington's first dental practice, he spent thirteen years in a two-operator office that was only seven hundred square feet. At that time, he knew that he would someday want a larger space to work more efficiently and live more comfortably. He also wanted to improve upon some of the minor drawbacks that were present in his first office.

When Dr. Carrington's associate became a partner in 2004, they began to look for a larger space to share. First, they bought an old house to convert into a dental office that was around the corner from their first location. Then they hired a dental design consultant, Bob Murphy, to help them begin planning for a new office. Originally, the doctors discussed with him their intentions of placing dental operatories on the first floor of their worn-down three-story house, modifying the rest of the interior, and renovating the exterior. They hoped to quickly set up a dental office and start working in less than a year so they would not need to renew the lease for their existing office space. Bob inspected the new building and reported that it was not structurally sound and would require overwhelming reconstruction, and that the ambitious duo would be better off tearing down the old house—built in 1905—and starting over. Upon hearing the news, Dr. Carrington went into emotional, anaphylactic shock!

The bottom-line was that Dr. Carrington paid \$300,000 for a house and foundation that needed to be demolished in favor of creating a new building from scratch. It also meant that he would have to inform the commercial mortgage lender of his change of plans. After considerable recalculations, the estimated budget went from the mid-six figures to the low seven figures, and the bank holding the mortgage was not interested in taking a greater risk on the lofty new project. Dr. Carrington was offended that the bank would not want to help him, because he had reasoned that he was a well-established specialist who should be able to

expand his busy practice successfully. In retrospect, Dr. Carrington wished he had hired Bob *before* purchasing the commercial building, not after. He confessed, *“I didn’t realize how much work would be required during the next three years to produce a dream office.”*

Dr. Carrington hopes that providing this book, and describing the dental office creation in great detail, will allow his colleagues—dentists, both young and old—to avoid some of the same mistakes and drawbacks he encountered when planning and building a new dental office.

Bob Murphy has owned and operated *Designs From Space LLC*, a dental office design and consulting company, since 1986. His father was Jim Murphy, the pioneering dental office designer credited with advancing the concept of the bungalow dental office, wherein a dentist could practice in his own building instead of a walk-up office above the corner pharmacy. Bob graduated from Boston University, served in the U.S. Army, and has spent decades carrying-on Jim Murphy’s ideas. In the process of learning the essentials of dental office completion, he was a dental equipment sales specialist, dental dealer branch manager, dental cabinetry manufacturer, health-care projects loan originator, manager of an information technology company, designer of dental facilities, and coordinator of dental facility construction projects. As Bob puts it:

“Sometimes I wondered whether I was perfecting my skills or was simply incapable of holding a job, but it all contributed to the successful completion of scores of exceptional dental offices. Along the way, I concluded that there had to be better ways to design and build dental facilities than the way most of them were handled. To me, the process seemed haphazard because there were many critical functions left to chance. Most projects appeared to run behind schedule and beyond budget. In fact, it seemed that nobody routinely budgeted projects correctly and dentists, more often than not, were misinformed about how much money was required to build the office of their dreams. They wound-up spending significantly more than they expected or planned.

All too often, I witnessed projects being completed where the preparation for dental equipment was incorrect, where cabinetry did not fit the space, where office lighting was inappropriate and, after the fact, the dentist wished he or she had done things differently. Do not get me wrong, there were office designers who were imaginative, dental dealers that were conscientious, equipment specialists who knew their products, lenders who provided creative financing, contractors who were competent, and so on. But the major problem seemed to be that there were too many disparate parties involved in most projects, each focused on a separate piece of the puzzle. The dentist usually was forced to be the construction supervisor of the new office while practicing dentistry at his old office. I concluded that most projects needed a coordinator who was familiar enough with all of the disciplines to supervise the entire process from determining the dental office space requirement to obtaining a certificate of occupancy.”

Thanks to his diverse career experiences, Bob knew enough about designing and building a dental office that he could remove the dentist’s burden of trying to build an office by himself or herself and help to create a beautiful environment in which the dentist could practice. Bob acquired enough knowledge about how the dental industry functioned that he could, through a competitive-bidding process, complete projects at greater savings than most other people could. So, Bob Murphy bundled-up the information Jim Murphy jammed into his brain long ago, together with the information and skills that his career experiences provided and began a new venture.

Bob liked Ernest Hemingway's premise that the good things in life happen in clean, well-lighted places. He trusted Elmer Wheeler's concept about the importance of selling the sizzle instead of the steak. He accepted the psychological theory that each person's perception is his or her own reality. Finally, he trusted Jim Murphy's belief that it may take a patient five years to know if you are a good dentist but only five seconds to know if you look like one.

Bob recognized that success starts with creating the image of success. In summary, he learned the formula for creating successful dental facilities, and in the following pages of this book, he will share his experiences and recommendations with you.

INTRODUCTION:
**Pearls of Wisdom and Nuggets of Gold—
Why We Wrote This Book**

Dr. Chris Carrington's Perspective: In the good old days, all a graduating dentist needed to do, when opening a dental practice, was to take his new diploma and license to the neighborhood banker and ask for a line of credit. That was because dentists had always been good credit risks and were unlikely to default on their financial obligations. Overall, dentists still have exceptionally good credit ratings, but periodic slow growth of the economy has sometimes negatively affected commercial borrowing for the younger professional. Sometimes, graduating dentists, with no tangible assets, have seen credit availability dwindle dramatically in this country. In addition, today's young dentists are likely to be saddled with costly student loans, and there is an increasing rate of student loan defaults among recently graduated dentists. Thus, bankers are more reluctant to take a risk on a young dentist whose only asset will be the dental equipment that he or she wants to purchase. Bankers have also become more reluctant to lend money to established dentists who want to renovate their dental offices. So, what must the dentist, young and old, do to remain viable in today's economic environment? He or she needs to have readily available the most comprehensive and current information on how to start, build, or develop a dental practice. It is not hard to purchase a luxury car or a house, but it is difficult to *keep* that car or house. The same is true in establishing a dental practice. Although you might find a way to get your office built, can you afford it or sustain it? Was the office built properly so that it will last many years before you must make any major repairs or corrections? Having your dental practice started for you without a good understanding of the complicated process that will be involved will inevitably cost you money that you cannot afford to spend, or that you have already committed in acquired loan debts. It is all about value and how to get the most from your potential financial resources.

The best investment for the new dentist is himself or herself. There must be a prudent balance, because you do not want to spend too little time in setting up your dental practice and you cannot afford to spend too much in starting or running your dental practice. There have been a plethora of books and guides on how to design and build a dental practice. Most have either lacked the necessary specifics to be a good, single source of information for the dentist, or have given erroneous information in the many complex details. I have seen mistakes in dental office plans by some of the best and most experienced dental equipment vendors. And some of these errors in office designs were done by not specifically observing some of the local building codes, which resulted in the dentist having to correct or make changes in the new construction, thereby spending additional time and money to satisfy the building inspector. I believe in a logical process to achieve a successful dental office design and, within this book, will show you how to avoid common errors in dental office design and construction.

Bob Murphy's Perspective: By the time I was in high school, I probably knew as much about designing and building dental offices as most dentists who had been through the process. When he was working as a dental office designer, my father used to bring me to job sites

where renovations or new construction was underway. His ambition was that I would become a dentist someday and live the American dream like the dentists for whom he designed offices. I had no choice but to listen to conversations with dentists, general contractors, plumbers, electricians, and dental equipment dealers. My mother was thankful to get me out of the house for a while... so there I was on Saturdays, vacations, and summers, hanging out at construction projects looking at pipes and wires, hearing about how to pitch a waste line to prevent a pedestal cuspidor from gurgling, and how to position a ceiling-mounted dental light to ensure that lower lingual tooth surfaces could be properly illuminated.

When my father was in his office drawing plans, he liked to explain to me how he put a particular office together. I would pull up a chair and watch him draw circles, squares, triangles, and whatnot. He seemed to know everything about operatory sizes and the relationships between various pieces of dental equipment. He also knew which way doors should swing—in or out, left, or right—and where all the pipes and wires belonged, and what sizes and gauges they should be. Although building codes were sparse compared to today, Jim Murphy seemed to know the answers about whether to use 2×4 versus 2×12 lumber, and every miniscule question anyone asked him. Needless to say, I found the design and construction process fascinating.

Was it any wonder that I would occasionally sit at his drafting table, pick up one of his pencils, and draw dental chairs and delivery systems on a piece of letterhead stationery bearing the name and logo of The Ritter Company printed at the top? Ritter was a popular brand of dental equipment back then, and my father managed the New England territory for Ritter. Neither my father nor I was aware that I was being programmed for a future in the dental industry and dental office design rather than dentistry. What cemented the process for me was my father pointing out to me dental bungalow buildings he had designed, as we drove through Massachusetts towns like Braintree, Quincy, Newton, Somerville, and Melrose. I always liked cutting grass because I could look back and see what I had accomplished. But looking back at completed dental buildings was far more interesting than looking at grass. Today, when I look at the videos on the home page of my company's website, *designsfromspace.com*, I am fondly reminded of Jim Murphy's landmark buildings.

After graduating from Boston University and spending some time with the U.S. Army at Fort Dix, NJ, I decided to give the dental industry a shot as an equipment sales specialist. Frankly, after becoming acclimated, I was amazed by the lack of knowledge about dental office designs that I had witnessed. Things I learned as a kid seemed to be unknown by many of the dealers and territorial salesmen who were counseling dentists about new offices. I concluded that my father, decades earlier, knew more about the science of dental office designs than most people did when I joined the industry. Over the ensuing years, I concluded that there had to be a better way to design, build, and equip dental offices than the prevailing system used by the dental industry. Because dental designs had always been done by equipment manufacturers and equipment dealers, what had traditionally been good enough in the past was still considered to be good enough. To think otherwise was like starting to incorporate digital technology in an analog world.

In 1986, I decided to embark upon a different course. I offered dentists a more efficient cost-saving approach to the process of office construction. The basic plan was to develop a team approach to creating dental facilities: one that involved office planning,

architecture, engineering, interior design, financial advice, cabinetry creations, equipment recommendations and comparison-shopping. I shopped for the best value from lenders, contractors, cabinetmakers, equipment vendors, and everyone else involved. Inherent to the success of the plan was providing project coordination whereby the planning, construction, and ancillary services would be supervised on a regular and frequent basis by someone who knew everything needed to complete each dental facility, usually me. Though in the past, dental equipment dealers were typically relied upon to design offices for their customers, *Designs From Space LLC*, began to offer a more effective way to design, build, and equip dental facilities.

THE PROCESS: PLANNING TO GET IT RIGHT THE FIRST TIME

Dentists do not need to reinvent the wheel to begin an office construction project. Building a dental office is not rocket science; the process is predictable, as are the results, when an efficient process is implemented, and when unpredictable, intervening events do not occur. The paramount question is “What constitutes an efficient process?” Unfortunately, there is too much misinformation, distortion, and confusion created by some well-meaning people who design and equip dental offices. To a large extent, this is caused by biases resulting from differing perspectives. There are three types of dental office designers we would like to mention.

Type One: is the dental equipment dealers who provide drawings and specifications for construction, who create the detailed equipment orders and who are available to provide the contractors with dental-specific information needed to complete the projects. The upside here is that the equipment dealers employ people who are competent office planners and, knowledgeable equipment specialists, and there is no charge for these services *if* the dentist is placing a substantial equipment order. The downside is that an equipment dealer may promote equipment brands that are more profitable to it or not available from competition, and an equipment dealer may be reluctant to provide more construction supervision than necessary. Furthermore, there is less opportunity for you to comparison-shop the equipment items.

Type Two: would be the various and assorted independent office design specialists and architects who claim to be experts in designing dental facilities. Suffice it to say that some are, and some are not dental experts, and the selection process sometimes is a roll of the dice. Architects are generally more concerned with structural integrity, building code compliance, Americans with Disabilities Act (ADA) handicapped codes, and keeping minutes of construction site meetings. Most architects are deficient in knowledge about dental office room sizes, dental equipment requirements, dental office lighting needs, and the day-to-day operations of a dental office. On the other hand, independent office designers are more oriented toward office themes, selections of materials and finishes, color choices, and patient entertainment features. However, independent office designers usually know little about architectural needs and even less about dental equipment. Architects and office designers usually require the assistance of a dental equipment dealer to supply most of the dental-specific information. As a result, architects and office designers add an additional layer of expense to dental office projects.

Type Three: is a hybrid category wherein companies like *Designs From Space LLC* operate. Because of the diverse experience of people like Bob Murphy, and the specialty skills of the other team members, there is usually no necessity for the involvement of a local dental equipment dealer although dealers sometimes do participate. Although there is still a secondary layer of expense, there are offsetting savings created by comparison-shopping for financing, construction, equipment, cabinets, and more.

The bottom-line result should be a facility that is completed on time and on budget. Not an ordinary dental office but an exceptional, high-tech, state-of-the-art showplace that is clean, well-lighted with plenty of sizzle. And because most of the steps in this process involve comparison-shopping for the best available values, the savings generated will typically be dramatic compared to more traditional design and construction procedures employed by other sources. It is about more bang for the buck... your buck!

In Exhibit 1, we present an example of an office plan by Bob Murphy, one of the dental facility projects completed by *Designs From Space LLC*, which utilized the concepts of the above-mentioned hybrid category of office construction. This office is as functional and efficient today as it was in 2004 when designed.

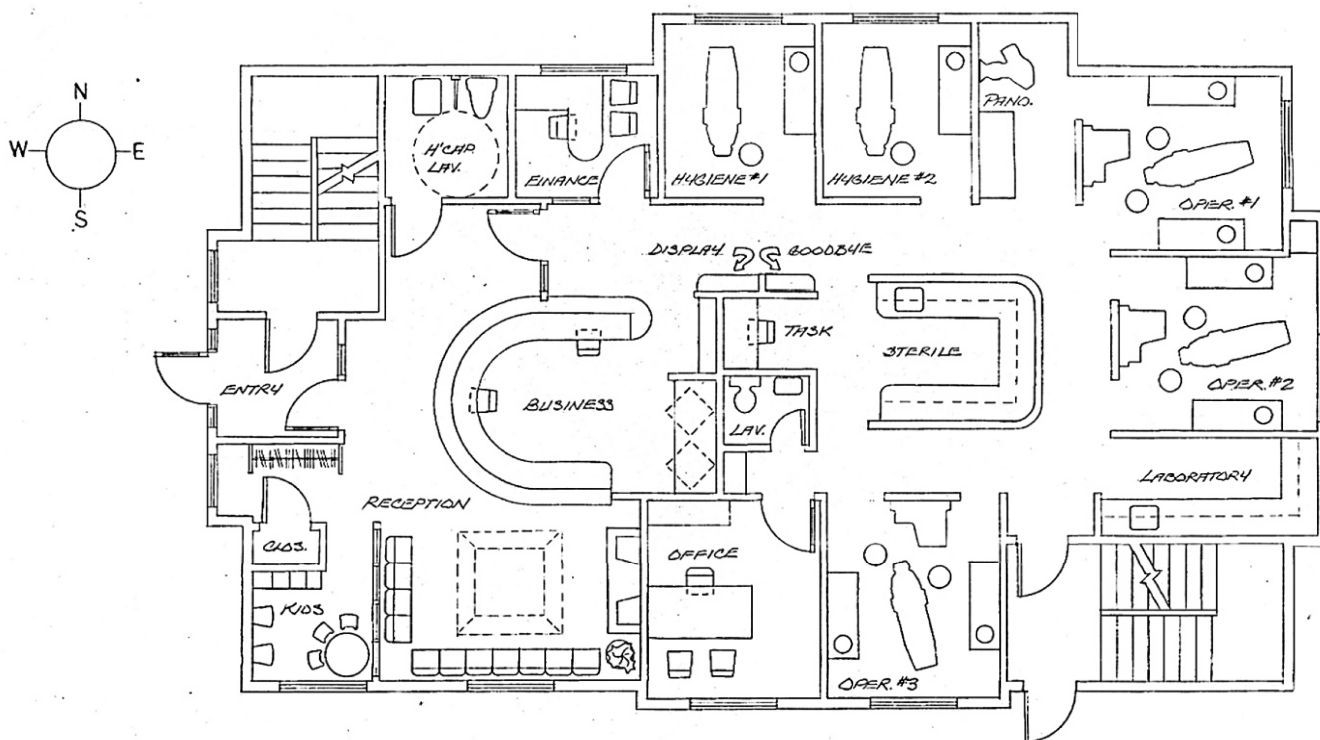


Exhibit 1.
(Office plan by Robert Murphy)

Dr. David Hergott of Meriden, CT, had been trying to figure-out how best he could build a new dental building while continuing to operate his successful practice in a smaller building in Meriden. Given that his existing equipment was modern, well-built, and completely functional, Dr. Hergott was not a prospect for a significant equipment order—it was not what he wanted or needed. He found his dental supply dealer unable to provide him enough information and support to find a new location; predict how much space would be required;

determine how much financing would be required; perform a feasibility study; appraise the suitability of property options; negotiate with the town government; find a suitable architect; select a contractor; or coordinate the project so that he could continue to practice dentistry without interruption. The task appeared to be daunting and overwhelming for him.

When Dr. Hergott found that Bob Murphy was experienced in accomplishing all these required steps, with a substantial list of satisfied clients, he hired Bob to do everything necessary for him to remain focused upon patient treatment and income generation.

Upon completion of a thorough budget, Bob and Dr. Hergott met with Dr. Hergott's banker and concluded a loan negotiation that was affordable for him. Then, Bob engaged a local architect to propose an exterior design of the dental office, handled all the site and construction issues, interviewed prospective contractors, reviewed bids, and assembled a team of support people. Dr. Hergott was vitally involved with all of the progress and problems but never had to take time away from his practice of dentistry. Two of the construction bids were below the budget and one of them was from a well-respected local contractor.

A comprehensive team approach to Dr. Hergott's dental office construction resulted in the creation of a beautiful structure on a highly traveled road. It was as attractive on the inside as it was functional. The building has been visited by many dentists over the years and has been the favorite video presentation on the *Designs From Space LLC* website. In fact, one dentist liked it so much that she recently built a nearly identical building in another town.

This above-mentioned hybrid process has worked so well for Bob Murphy, that it is the standard method of operation for *Designs From Space LLC* and has led to many other successful facilities.

Our ambition here is to provide a reference book for you that is accurate and will cover everything needed to conceptualize, design, and develop your own dental office—just as Dr. Hergott did. We hope to save you money and to protect your investment, by showing you how to make critical decisions, which will stand the tests of time, and give you a clearer route to greater prosperity. There will not be any attempts to sell you equipment. This book was co-authored by a dentist and is designed for educating and providing good value to other dentists.

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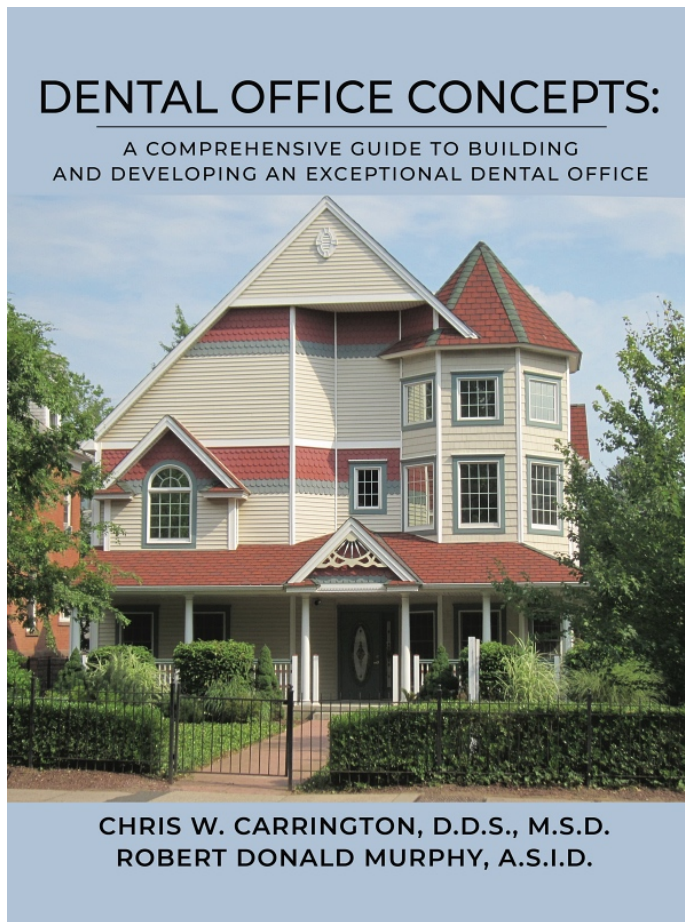
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This book was written to inform dental students, recent dental graduates, and practicing dentists about the complex processes needed to properly plan, design and build a dental facility.

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