

The Universal Designed Smart Home Office

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Q & A

Q. Mr. Schwab: due to a recent injury I will be working from my home for an extended period of time. I am now using a wheelchair. Can you please give me some design ideas that can be implemented in my home? We may also be building a new home due to my situation. Any ideas would be appreciated.

A. Thank you for the question; it is one of increasing relevance. In fact now, more than ever, due to IT technology and rising fuel costs more Americans than ever are moving their offices into their homes. According to the International data Corp. In 1999, 49 million Americans worked from their homes at least part time, a figure that grows by 8% each year. Due to recent gasoline price increases and increasing improvements in technology, that figure is also on the rise.

It is my opinion, and I often hear the same from clients, that for the person with special needs, the home office is the 3rd most important room in the house besides the kitchen and bathroom. The home office has obvious benefits for those with special needs. Internet technology has leveled the playing field for everyone. When working from home it is no longer necessary to deal with physical barriers in the public built environment, and who wants to spend the money for increasing fuel costs and lost time in traffic anyway? While working from home, let's face it; you can also be free from some people's prejudices against people who use wheelchairs and other people with special needs.

So allow me to share some of the design features that I include in my *Universal Designed "Smart" Homes for the 21st Century*. (Home plan book available from *Special living Magazine*).

The first thing you need to do, even before beginning to plan or build, is to check with local municipal zoning officials. With such considerations such as traffic and taxes, there may be limitations as to what you can do. Some cities may not even allow you to work from home. Most cities require a business license to practice within its city limits. Remember a portion of your home office may also be tax deductible if used for genuine business, excluding hobbies etc. That is another topic altogether. See my article in *Special Living Magazine*, Spring 2004 and consult your Accountant.

The location of the Home Office needs to be in a portion of the home that is free from distractions, have good lighting and be accessible to everyone. It will be the environment where you will need to be productive, efficient and professional. It is for this reason that I always locate the home office at the front of the house.

The (rarely used) 20th Century Living Room / 19th Century Parlor has been replaced with the 21st Century Universal Designed "Smart" Home Office. I recommend the

Home Office have a separate entry with a sidelight, a covered porch and a package shelf. Many of our designs also feature a thru-wall mail and package drop detail, eliminating the need to go outside to get mail. All have zero-step entries with a max. ½” threshold. We specify sound batt insulation with resilient clips in the wall between the Office and the rest of the home to insure privacy.

Most home designs feature a fully accessible powder room or full bath immediately accessible or adjacent the office. (See my accessible bathroom article in the 2004 summer edition of *Special Living Magazine*) This will meet all your needs without going into the private portion of your home, enhancing professionalism and privacy. Some of the home office designs that feature upper or lower levels also have elevators with double doors. (One from the private side, one from the office side) This allows your office to extend to the lower (or upper) level for a conference room or additional storage space.

A 10x10 sq. ft. room can be large enough for a one-person office, excluding a visitor’s area. A 150 sq. ft. room may be large enough for a two-person office. The home office should be designed with a 10ft. 12ft. or 14ft. length room for maximum space efficiency. This will vary depending on your storage and individual business needs. Remember to consider whether or not you will meet with customers in your home office.

A separate “comfort zone” such as a couch, reclining chair and table can also be a nice break for you if you want to change your visual point of view or posture, kick back, and do a little research or break time. Often the home office also serves as a guest room. The old fashioned Murphy bed may be a smart alternative to a futon or hide-a-bed. There are mechanically operated Murphy beds now available and they have shelf space while in the upright position.

Speaking of the “comfort zone”, do not underestimate the power of bringing the outdoors inside and/or being accessible to your home office. A reasonable amount of natural light is necessary for maximum productivity and encourages positive and energetic thinking. It is also proven to be motivational. It is for this reason that Wal-Mart now includes skylights in most new stores. If you do “day-lighting” research, you will find interesting studies with school children that show increased learning and test scores in classrooms with increased natural light. Store sales also improve in outlets that have abundant natural light.

If you have the luxury, consider including a courtyard garden as an extension of the home office. Landscaping, a water fountain or just a spot in the sunshine can be a nice stress reliever and provide a nice productive break from the telephones. I must admit, probably 50% of the concepts I included in my plan book *Universal Designed Smart Homes for the 21st Century*, were conceived or researched when it may have appeared that I was relaxing on my back porch. In fact some of your best ideas will come to you when you are in a more relaxed state of mind.

Make sure that your desktop workspace faces opposite the windows to avoid glare. Varying height counters will make your office work for people of all heights and abilities. There are several adjustable counter top mechanical systems on the market

that raise and lower per your needs. (See resources listed below). We also provide details that allow for less expensive manual adjustments to the custom workstation.

Cabinets should include “pull- down” and “pop-up” hardware so that higher and lower shelves may be reachable by everyone. I specify quality hardware products made by Hafele of the Americas. (See resource section.) The same company now provides Accuride full extension hardware for drawers. This is extremely useful in offices with limited storage space and for serving people with limited mobility.

Adequate telephone lines and data lines are a necessity. Consider both your current and future needs. In a new home I recommend category 5 wiring throughout. This will allow you to have outlets that serve existing and future electrical devices and systems everywhere in the home.

Provide a dedicated separate 15-20 amps of service. A separate ground is another precaution that will isolate your office equipment from other home appliances. It is nonetheless essential to have a battery operated full time power surge protector for all of your computer equipment.

According to the American Optometric Association, glare is one of the leading causes of eyestrain, especially if you work on a computer for more than two hours at a time. Fortunately there are some great products on the market that can help you burn the midnight oil and cut your energy costs at the same time.

I mentioned natural lighting as being very important to your productivity and general health. In addition to natural light, there are generally two types of indoor lighting known as ambient and task lighting.

Ambient lighting typically comes from a ceiling fixture that evenly distributes light throughout an entire room. I recommend 4 ft. T-8 lamps with electric ballasts in the home office. A good color choice would be 3500K. The long life, great color qualities and high efficiency make these a logical choice. Also the large size of these fluorescents provides a large radiant surface that helps minimize shadows. For ambient lighting we sometimes specify surface mounted fixtures, indirect pendants, wall mounted shelves and sconces which can add a sophisticated touch. Don't forget wall washers on your favorite artwork.

Task lighting is located on or near your work surface, and switched on to illuminate specific areas. If there's little room on your desk, consider a space saving model like 3M Ergonomics glare-cutting polarizing task light. The lamp employs a special filter technology to provide ample lighting while reducing glare levels and hot spots on your work surface. Do not forget under-cabinet and shelving lighting, also a task lighting source. Most of you are probably aware of the new compact fluorescent lamps that use only about one-quarter of the energy of incandescent bulbs and last 10 times as long

Last but absolutely not least is the important issue of you and your own home office safety. Keep the wires out of the way and make sure you do not have too many things plugged into the same socket. For this reason, I like to design outlets every 6'-0" on

center. (½ the distance the required per code). Always remember fire safety. If you do not have a separate door into the office from the outside make sure at least one of the office windows is an egress window .If you use a wheelchair make sure the sill is no higher than 30” above the floor for easy escape in an emergency. This is (often 12”) lower than what is required by codes. Verify that your office also has a smoke detector hard wired in series with the rest of the home. Be sure to make regular backups of your computer data and keep that in a separate location outside the home, maybe in a safety deposit box. Keep very important documents in one place so that you can quickly grab them if you need to get out in a hurry. Look into Home office insurance. This may be included as a rider to your homeowners insurance. Do not assume your home owners insurance will cover your office equipment and other materials.

Also remember office interior finish materials that encourage and improve indoor air quality. (See the article I wrote for *Special living Magazine*, Summer 2005) Interior finish materials with low or no VOCs and formaldehyde are just as important as proper lighting and ergonomics to avoid sick building syndrome keeping you feeling well and productive.

There is much more we could discuss about your home office. Most of that which will be special and unique to your own needs. I hope this has been helpful. I wish you all the best and many productive years in your “Universal Designed” “Smart” home office.

Thanks for asking

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Home Office products:

Adjustable countertop systems:

BJ Industries, Adjustable sink and worktop systems

www.bjindustries.com

AD-AS Adjustable systems, please do a google search

Accessible office and cabinet hardware

I personally recommend Hafele hardware as Americas best.

www.haffele.com

Home Office Lighting

3M Ergonomics Task Light

www.3M.com/ergonomics

compact 13 watt fluorescent flip-up desk light from energy guide

www.energyguide.com

International Home Furnishings Centers web site (more info. On office lighting)

www.ihfc.com