Kurt's clinic

Kurt Hertzog answers some readers' questions

New workshop

Question: I'm planning on building a workshop in the back yard. From a clean sheet, what should I be thinking about and planning for?

Answer: You have a superb opportunity that many of us can only wish for. I'm envious of your chance to start from ground zero. I'm not sure whether you are planning a shed or a poured floor, multi-story barn, or something in between. Not knowing your floor size desired, finances, local building codes, existing terrain, building access, and other issues that impacts your choices, let me give you thought starters. Whether you plan on building yourself, being your own general contractor, or contracting the entire job, the thinking is the same.

PLANNING:

Plan on paper (or computer) to make mistakes there rather than in the real world. Work out everything so you'll hopefully have bumped into all of the potential problems before the first spade of earth is moved. Get guidance from others as best you can, especially from someone who has done something like this before. They may have made mistakes and help you avoid those or have successes that you can incorporate. While you are planning this building for yourself, always keep in mind how the next potential owner may view your building. Unless you plan on owning your home until they carry you out, creating something difficult to repurpose and functionally unique may be a negative issue down the road at any potential property sale.

Some builds are bigger than others but regardless of size, the common thoughts of planning for use, growth, and adaptability are the same

BUDGET:

Set a realistic budget for the project. Without planning and following one, you'll run the risk of not getting the best bang for your buck and could easily wind up not getting to a satisfactory endpoint when the available or planned money is gone.

REGULATIONS:

Research and follow the local building and zoning laws. If you don't, you run the risk of nasty surprises from the authorities during construction or even long after completion. Depending on the size and function, your building may require building plan approvals, periodic site and progress inspection. Often a final inspection and sign off by local government officials and/or insurance underwriters is required. If nothing else, the property alteration documentation and typical increase in taxes occur.

SIZE:

I would suggest that you plan for as large a footprint as your budget, site space and aesthetics, zoning, and your initial planned use allow. Today you may be turning trinkets for the local craft fairs or vases for the gallery. Tomorrow you, or perhaps the next owner, could possibly be building kitchen cabinets. I've never heard anyone complain of having too much space. Besides, open space allows for equipment placement and spacing, material flow, and flexibility in operations.

Utilities: Be certain what you need now and your best guess for the future is readily available or reasonably priced to bring in if not currently there. Plan on all utilities interior distribution and access. More availability is better since your equipment and process flow will likely change from any initial plans and throughout the years of use. Electrical, water, sewage, computer links, telephone, trash, and other necessities should be considered.

PHOTOGRAPHS BY KURT HERTZOG

Smaller and prefab buildings can be adapted to shop use depending on your needs. Styling can be flexible to match the surroundings

Restroom(s): Sounds like your new building may be unattached, so depending on the distance to the main house, consider a restroom. This can add much complexity and cost since water and sewage connections will be required unless you wish to go commando or RV-type self-contained accommodations. Even if the building is attached to the main home, this convenience is a nicety if it can be accomplished within budget.

Building location and orientation: The location on the existing site may be dictated by utility location, zoning setbacks, driveway/roadway access, aesthetics, and more. Also, consider the orientation and position with respect to prevailing winds, sun, natural drainage, etc. This can help with heating and cooling needs, minimising negative impacts of weather, as well as take advantage of natural lighting.

Exterior: Your existing home, local area, and other property uses (pool, patio, fireplace, outdoor cooking/dining, lawn games, pet runs, etc.) will likely determine what the building exterior finishing and colours best suit your situation. Interior – I suggest that you try to design in natural lighting for several reasons. First, it is very beneficial for colour interpretation and occupant wellbeing. Sunlight, or rather the absence of it, can have impacts on the health and moods of people, depending

Planning the building and equipment positioning to maximise natural lighting has many advantages. Adding windows might be an option to supplement electrical lighting

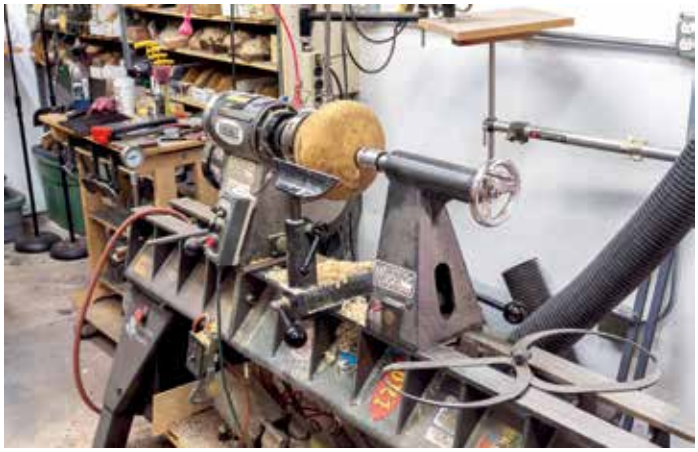
on the duration. If possible and sensible, include plenty of windows that will provide light, pleasant visuals, and ventilation if desired. Natural lighting coupled with a bright, reflective wall colouring can reduce the need for artificial lighting during the daytime. Regardless, use the brightest wall colourings possible just for their reflectivity and overall maximisation of lighting effectiveness.

Lighting: With continually rising utility costs, I suggest using energy-efficient lighting. Daylight balanced colour temperature LED lighting is inexpensively available in the traditional 4ft and 8ft lighting fixtures. Whether integral or bulb type, these will provide plenty of light at a very low power consumption. Not only will they light quickly, save energy, throw plenty of light but most will light and work at low temperatures. In my unheated garage, the LED lighting always lights immediately and always works as compared to the prior higher cost, low temperature rated florescent bulbs.

Electrical: You likely won't need or have access to three-phase power but installing plenty of capacity of the available residential voltages is wise. In the US, 220 and 110vac is the norm. Most shop equipment you will use is capable of operating on a higher voltage at a lower current. Nearly all of my lathes, saws, jointer, and other 'heavy iron' can run on 220v as well as 110v. Wherever possible, I use the 220v connections. The electrical service entrance cost difference for a larger amperage capacity panel is very marginal compared to your total budget. I suggest opting for larger capacity rather than smaller. When in doubt, have electrical outlets available everywhere possible. Many, many of them, everywhere. Again, the cost differential is minimal when being done initially on new construction. If building codes allow, consider overhead power drops. This method eliminates interior floor interruptions, a blessing for clean-up, and flexible equipment location and relocation.

VACUUM

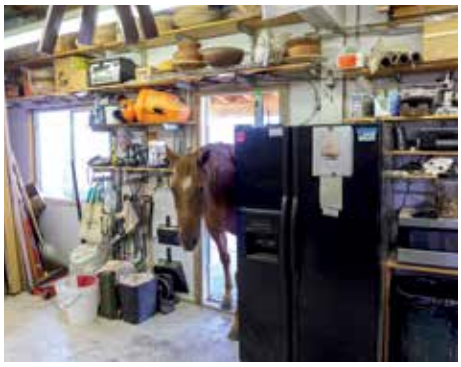
You will likely have a dust collector of some sort. Consider if you need overhead dust collection duct work to various machines in the shop. Now is the time to lay it out, maximise size, minimise bends, provide for flexibility, install gating, ground it, and size it properly for the flow losses that will occur. Also, location of the



White or near-white walls spread light and provide great backdrop contrast to turnings. When black is desired for whiter woods, a piece of dark coloured Masonite can be placed behind the machine

Locating the compressor and dust collector outside of the workshop will reduce the noise and dust problems significantly inside

Depending on the size of your shop and your needs, consider building in wood storage and potentially wood-drying capability



Open shop doors during the summer for fresh air and invited guests. The workshop near the pasture brings in Cinnamon or Chola on occasion

New building planning is a good time to adequately size dust collection and route the system to minimise losses while providing connections as needed

Natural lighting available, reflective wall colouring, equipment on mobile bases, and moderate-sized machinery make maximising space and flexibility possible

dust collector either sheltered outside or in a sound dampened enclosure of its own will make the noise level during operation bearable. Consider point of use power controls.

DOORS AND WINDOWS

I suggest you plan for the easiest movement of equipment and materials in and out. A ground-level garage door is often adequate for equipment and materials. You decide. A standard exterior door, or doors as needed or by code, will work for people and smaller materials. My choice would be to install as many windows as possible for their aesthetics and natural lighting. Two concerns need to be considered in addition to their differential costs compared to a plain wall. First, every door and window will add to your heating and cooling losses. Even the energy-efficient products and proper installation are more lossy than well insulated continuous walls. The other consideration is security. Depending on your location, security may be a concern. Windows, even with shades, can provide a view of your belongings and offer easier access to the building for those with ill intents.

CLOSING THOUGHTS

This is intended to be a collection of concerns that come to mind immediately. I'm certain I've missed things and obviously even as long-winded as it is. Space prevents additional detail to help immensely other than be a 'don't forget' list. I'll be glad to discuss it further privately.

Send your questions to Kurt's email: kurt@kurthertzog.com