Construction Details

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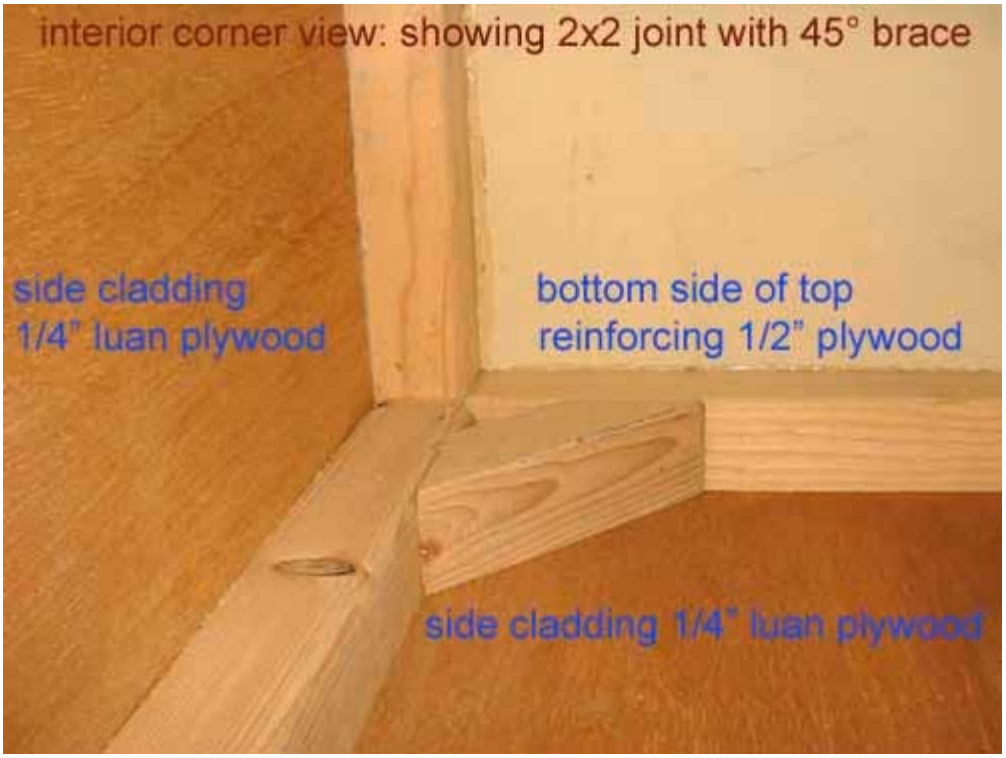
building sturdy rectangular-format display pedestals for sculpture

Don Dougan © 2006

My current design format uses nice (straight) 2x2s for a framework — think of Sol Lewitt's modular cube frames — that are first glued and joined with either pneumatically-driven nails or screw-gun-driven 'drywall' screws, and then followed by cladding with a lightweight 1/4 or 1/8-inch thick sheet goods (usually luan plywood) glued and pinned in place.
The techniques I use are in many ways developed from the tools and rather limited space I have available.

Tools:
My studio space is very small (a one-car garage filled with small tables, workbenches, works-in-progress and tool storage — so if the weather is dry I work out in the driveway), but I have a radial arm saw, portable circular saw, portable belt and random orbit sanders, and sawhorses (used when working in driveway). I also have an air compressor, pneumatic nailguns (headless 16 and 18-gauge pinners rather than for large framing nails), and cordless drills/screwguns. Generally I use the pinners for tacking glued boards in place while held in a vice (beginning with a miter-vise or miter clamps, but a machinist's and woodworker's vise are also used, following with bar clamps when the whole 'box-frame' is assembled), then follow that with drilled & countersunk pilot-holes and appropriate length screws for strengthening the joints. I also have a picture-framer's miter chopper which cuts 45-degree pieces very efficiently, but the same operations can also be done on the radial arm saw.

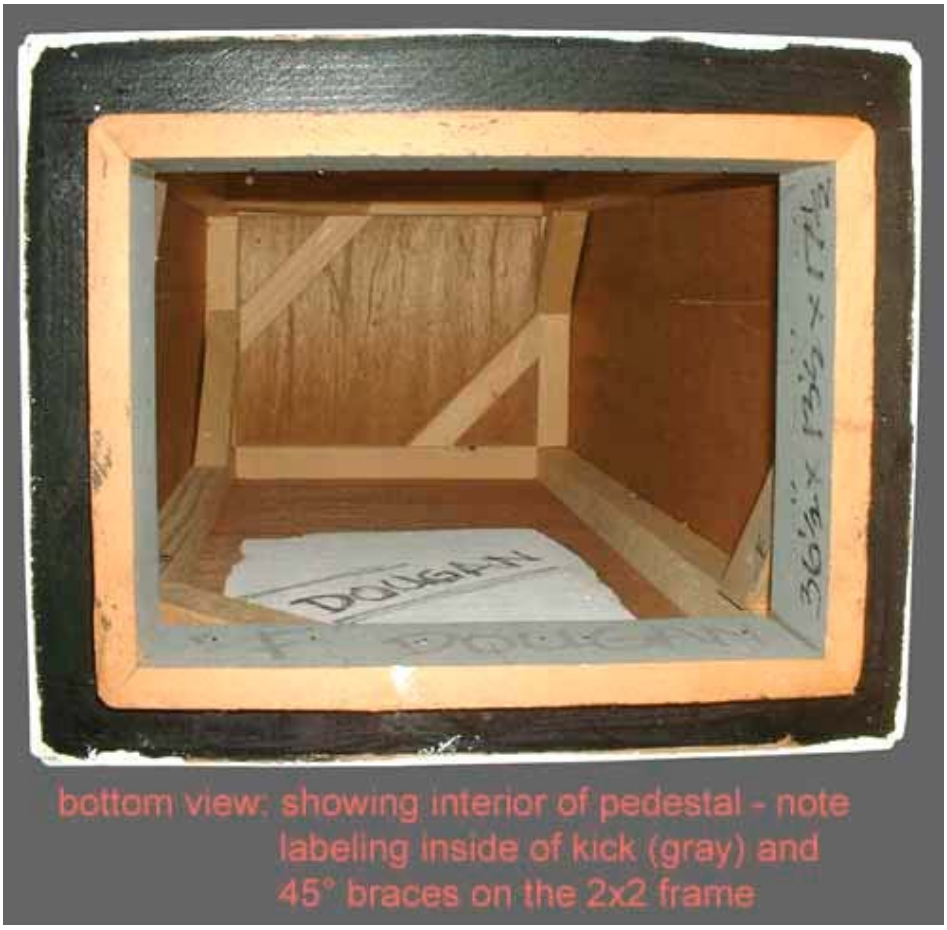


The photo at left shows the inside-top-corner view of a typical pedestal.

The underlying framing structure of 2x2s is strengthened with the short 45° braces, then the top surface (where the presumably heavy sculpture will rest) is reinforced with a ½" or ¾" thick piece of plywood cut to the be flush on the sides with the 2x2 frame.

The sides were then clad with ¼" luan plywood, glued and nailed into place.

Construction of box frame and kick:
Two equal-size rectangles are first joined and built from the 2x2s, followed by then joining the two flat frames with four equal-length 2x2 braces to complete the open 'cube' or rectangular box form.
Each of the four sides of this open box are additionally braced with two short 2x2s with ends cut at 45-degrees so as to reinforce a corner with a diagonal brace (using four braces instead of two does not increase strength of stability significantly). Two diagonally opposite corners are braced on each side, and each side is braced in a mirror-image to the opposite side of the box.
Depending on the size of the pedestal being made, additional cross braces may be added to the top, and then a piece of 1/2, 5/8, or 3/4-inch thick plywood is added on top of the frame to directly support the weight of the stone that will be resting on the pedestal (for a pedestal with a 12x12-inch top surface an additional cross brace may not be needed, and the 1/2-inch plywood would probably be sufficient — while a 16x30-inch top would have at least two 2x2 additional cross braces and use 3/4-inch thick plywood on top).
The kick is made from 1x6 boards, cut with miter-joints so as to fit snugly into the bottom recess of the open box, but the belt sander is used to round the mitered edges of the joined assembly. The 5-1/2-inch high kick-frame is fitted into the frame so the top is flush with the top of the four bottom 2x2s, tacked in place with a few pneumatically-driven nails followed by a strong joining with several screw-gun-driven drywall screws on each face. This leaves four-inches of the kick-frame protruding from the bottom, allowing a four-inch high recessed kick space under the pedestal so it 'floats' off the floor. The kick serves to allow toe room for the viewer who wants to get up-close, but more importantly it serves to visually separate the pedestal (and the sculpture atop it) from the architectural space (the room it is placed in) to emphasize the conceptual distinctness of the sculpture from its surroundings while at the same time providing an easy transition from the environment.



bottom view: showing interior of pedestal - note labeling inside of kick (gray) and 45° braces on the 2x2 frame

The photo at left shows the bottom-view of a typical finished pedestal.

The underlying framing structure of 2x2s is strengthened with the short 45° braces, then clad with ¼" luan plywood.

The kick is made from 1x6 lumber mitred and joined to fit tightly inside the frame.

The pedestal is identified with name, dimensions, and a unique identifying number/letter (in this case 'F') which in addition to preventing potentially embarrassing moments with security personnel in exhibit venues also allow the pedestal to be entered into a database for keeping track of current locations, sculptures that fit onto it, etc.

Cladding the box:
After the frame and kick have been assembled the pedestal is ready to be clad. I have used several cladding materials, including several types of plywood, masonite, and plastic laminate. Each type of cladding has its own advantages and disadvantages for different situations, but for pedestals which I build for general use (used for presenting a variety of different works in many different venues and thus need to be both portable and easy-to-maintain optimum visual appearance), I prefer either 1/4-inch luan plywood or 1/8-inch luan door skin.
Luan plywood is inexpensive, lightweight, uniform in appearance, and very stable in various levels of environmental humidity (important in southeast USA with high humidity levels outdoors and ubiquitous indoor air-conditioning with low humidity levels). Perhaps the greatest disadvantage is the open-pore grain of the wood, which does require some additional prep in finishing. Door skin is used when I can find it (it is not available at many distributors) because of its light weight, but 1/4-inch luan plywood is widely available and still lighter in weight than other types of plywood.
Masonite initially provides a smoother surface with less prep, but creates raised dimples around each nail head, and the sides of the few pedestals I made with it will expand and cause the surfaces to bow in times of high humidity.
Whichever cladding material is used, I cut each face exactly the same dimensions as the 2x2 frame — any slight overlapping is sanded flush with a belt-sander after it is attached (the sides are attached sequentially around the frame, with the flush positioning adjacent to the previous clad side — the fourth and top sides cannot be belt-sanded to flush after joining, so they both must be carefully fit to size before joining. Joining uses white PVA glue (such as Borden's Elmer brand) and nailed in place with 3/4-inch finishing brads (I use pneumatically-driven 18-gauge pins).

The kick is painted black so as to read as 'shadow' when installed in the gallery space.

This shadow distances the pedestal and sculpture on it from the room, helping the viewer to make the perceptual jump into the subjective 'reality' of the sculpture.

side view of pedestal bottom: showing kick

Prepping surfaces:
When all five faces have been attached the surfaces are sanded with either a sanding block or a random-orbit sander, slightly rounding over the corners at the edges, and then the nail holes and the open-pore grain of the wood is filled with either sheetrock mud, spackle, or plaster so as to obtain a uniformly smooth surface. When this filler is dry the surface is sanded again so just the holes or pores are filled but no large surface areas of the filler should remain (though a large surface area of the filler would allow a smoother surface, it also gives a weak bond which allows paint to peel later).
The eight open corner edges where the cladded faces don't quite meet are filled by running a bead of acrylic-latex caulking into them, smoothing evenly to a concave seam with the fingertip, and the excess wiped away. When this is dry, again the edges are sanded with either a sanding block or a random-orbit sander to clean-up any stray surface imperfections (100-120 grit or so).

Painting:
A good latex primer is painted on the surface, using a roller frame with a 3/8-inch nap on the roller cover. This nap will leave a slight texture to the surface, which is preferable to a completely smooth surface because it make small damage or imperfections less discernable. For the subsequent final coat(s) a medium to good grade of flat latex paint is used — usually a warm off-white in color — applied with the same 3/8-inch nap roller.

Detail of corner of painted pedestal showing the joint between the cladding on the edges.
The edges of each piece of cladding were cut flush to the underlying framework dimensions rather than overlapping each other.
The resulting 'valley' was then filled with a bead of latex caulking and smoothed into the smooth and regular concave fillet.

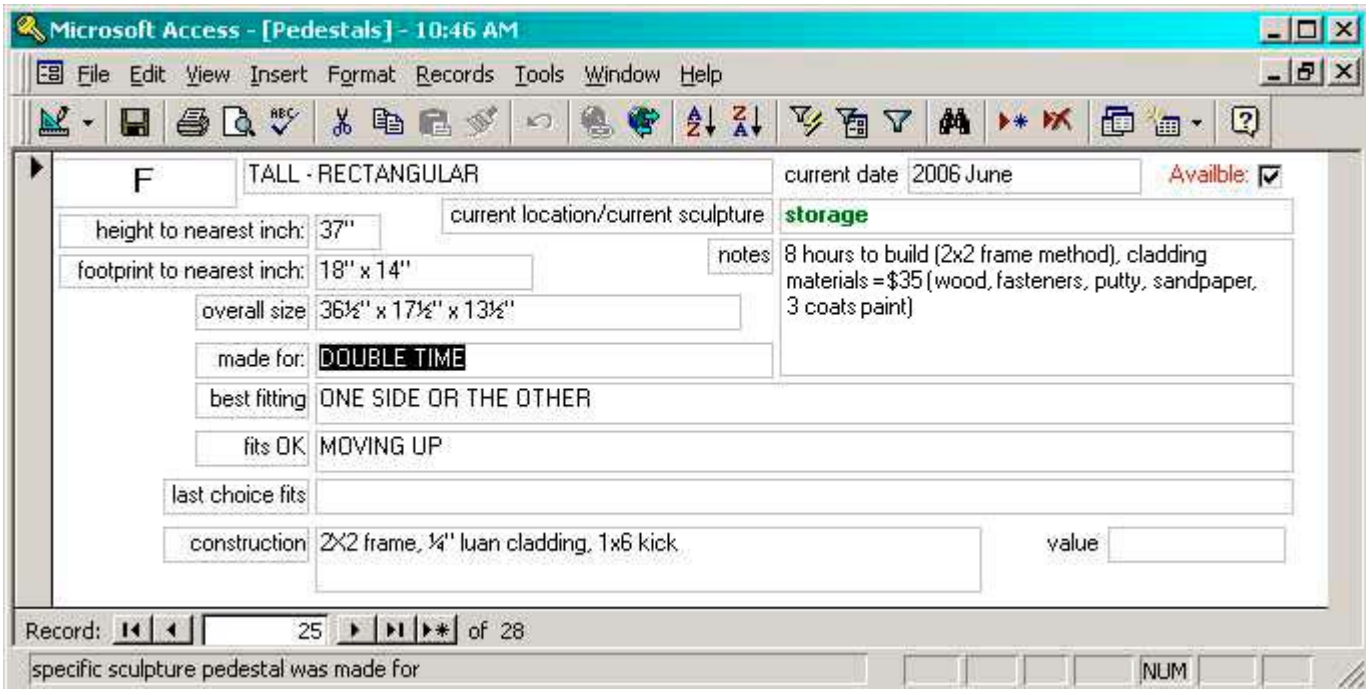
Note: cheaper grades of paint are chalky and don't cover well, and they don't serve as a good surface for bonding later coats of paint.
A warm off-white gives a good contrast to most of the stones I use, without seeming too 'clinical' and cold — the warmth invites the viewer to touch the work (a quality I encourage) and serves to either nicely contrast with stones of cool hues or nicely complement stones of warm hues.
You might be tempted to use a satin gloss paint because it is easier to clean than a flat painted surface, but even the satin finish will need touch-up before each new exhibit because of the inevitable dings and nicks acquired during transport, moving and storage, and it is much more difficult to make the touch-up blend-in with a satin finish. A flat finish does get dirty easier, but if you are going to be moving the pedestal around you can count on it getting damaged to some extent, therefore you want something that is easy to repair and make look good again. With a flat finish a little spackle, light sanding, and the new coat of flat paint it will look as good as new — and a flat finish allows the greatest contrast with the 'polished' surfaces of the carving.

Transport:
I keep about twenty-five or thirty pedestals of various sizes and shapes that I find most common (for my work) in storage so I can set up an exhibit with minimal lead time, and keep an extra gallon of the same color of paint handy for touch-up purposes after the sculptures are placed and installed. I transport the pedestals wrapped in old sheets or blankets taped (used with a tape-gun) in place with easily-removable box sealing tape. This keeps my dirty hands off the paint during manhandling on the truck or the gallery, as well as a minimal amount of cushioning when packing the truck. Large polythene drum trash liners are also handy to slip over the wrapped pedestal if rain is in the forecast (I have an open-body pick-up truck and use a tarp during transport, but even with a tarp the pedestals are exposed during loading/unloading).

Three pedestals used in an exhibit showing the effect the kick has on the viewer's perceptions. The pedestal at the back has a very low kick while the two in the front have about a four-inch high kick.

The pedestal at the back is also one that was built to accept a vitrine display case — though in this exhibit it was not used. The top of the pedestal projects up about ¾" from the joint, allowing the slightly-larger sized separate Plexiglas case to be fit telescope-like and then attached with horizontal screws into the pedestal .

Additional custom details:
All the pedestals are labeled inside the open bottom with my name (sometimes galleries have their own pedestals and labeling avoids embarrassing disputes as to ownership when dealing with security personnel), and a unique number.
The unique number allows me to keep a database of the pedestals with information such as dimensions, special construction qualities, current locations (for keeping track of which pedestals are available and which are currently being used in exhibits elsewhere).
The database also has a table section in which I enter matching fits of specific finished sculptures to each particular pedestal (with multiple listings in order of preferred choice). This allows me to keep to a minimum the physical manhandling of the sculptures-to-pedestals (for determining the ideal 'fit' of each available pedestal) for planning of each exhibition.



Screen shot of a form-view of the database entry for the pedestal uniquely-identified as 'F.' The highlighted entry is in the field which shows the title of the work the pedestal was originally built for (DOUBLE TIME). The field directly below that lists the title of my first-choice unsold sculpture that would fit on the pedestal, with the two fields below showing second and third tier choices. The entries in most of the other fields should be fairly self-explanatory.
The value listing is usually what I would need to sell the pedestal for to cover my basic costs — expenses plus labor. Though I have a field for the value in the database I rarely bother to track-time or figure-out exact costs (the 'note' field on times and expenses above is approximate and probably entered days after the pedestal was completed). Usually I just figure a medium-size pedestal like this one would go for a minimum of $300 if a client wants it to go with the sculpture they have purchased. However, I don't often sell my personal pedestals even with sculptures — if somebody wants a pedestal made-to-order I keep close track of my time and expenses and charge accordingly for the 'custom' building work it entails (this usually ends-up being more than $300).

This basic design plan allows for variations to accommodate special installations. Obviously special finishes for particular installations are easily accomplished with a coat of paint — sometimes a dark gray or black pedestal is preferable to white, and often the pedestals are painted to match the color of the gallery walls for specific exhibits.

Another special variation might include addition of ballasting weights to the pedestal. This aids in increasing stability when both the pedestal and the piece being displayed are particularly tall or narrow, or when the installation is on a carpeted surface.

When the pedestal needs to attached to the floor for either stability or security purposes I build an inner mounting-bracket that is attached to the floor, and then the kick of the pedestal is placed in a telescoping manner over it and attached with screws from the black sides. In addition — again for security purposes — a few times I have had to attach hardware through the interior bottom of the pedestal to physically join the base of a sculpture to the pedestal before attaching the pedestal to the floor.

Another security solution for display of small easy-to-pick-up items is to add a Plexiglas vitrine or display case to the top of the pedestal. The pedestal can easily be made to accommodate custom-made vitrines for display of small or delicate items which need protection from touch. If the 'cladding' of the top of the pedestal is made with ¾" thick material then the open-bottom of the plastic vitrine can be attached with screws through pre-drilled holes. If the vitrine needs to be retro-fit to an existing pedestal, a ¾" thick false top can be attached to the pedestal, puttied and painted to match, and then the vitrine attached in the same way. This design cleanly keeps the sides of the vitrine flush with the sides of the pedestal, though obviously small vitrines can be retro-fit to larger pedestals using the second method. If special security screws with special-driver heads are employed to attach the vitrine this will decrease the likelihood of casual theft or vandalism.

Sometimes I have made pedestals to present works that needed electrical connections, and so incorporated an outlet or lamp with the wiring hidden within the pedestal so the cord and plug could run fairly unobtrusively from the kick of the pedestal to the wall outlet.

I have found this basic design to be one of the most flexible and accommodating for my own purposes as a sculptor when I have a need for temporary exhibit pedestals. They are both strong and lightweight for ease on my back, they are easy to touch-up when they get the inevitable dings and nicks, and they are generally more visually unobtrusive than most 'gallery' pedestals.