



Shop Building on the Cheap

By Chuck Behm
Central Iowa Chapter

When the walls came a-tumblin' down, and the roof caved in on my old shop that day in the early spring of 2004, I knew there was no turning back. I had tossed the dice, and had left the future of my restoration shop in the hands of a high school shop class. "What in the world have I gotten myself into!?" The thought was to cross my mind more than once on that landmark day in the life of my business.



Photo 1: What now?? Does anyone have even a clue?

If it weren't for a certain event on a day several months earlier in the fall of 2003, the new shop project would have most likely still been the proverbial carrot on a stick – tantalizingly close, but retreating step by step as the days marched along.

For more than a decade, I had been mulling over the idea of making sweeping improvements to my shop. The structure I was using was woefully inadequate for the type of work I desired to do. My shop had started off life near the turn of the previous century as a 3 car (or horse) structure of sorts – possibly a pretty building in its day but anything but by modern standards. When we moved into the house at the front of the property on which the garage/shop stood at the back, it was a rickety structure. A dirt floor, one naked bulb hanging at the center of the dark room, and one small window letting in a hint of light – it was certainly a humble location for my restoration business. Had I been a person with deeper pockets, I would have simply bulldozed it, and started over. On a teacher's income, however, and coming off the expenses of helping with the education and marriages of our three children, I was not in a position to do anything that drastic.

So I did what I could. I had a concrete floor poured to cover half of the area one year, and the other half a year later when I could afford it. I wired and insulated the walls

myself as best as I could. I never managed getting around to insulating the roof, and heating the shop was a problem in the harsh Iowa winters. I had a Remington blast heater that would warm the area quickly, but which had the annoying habit of sucking much of the oxygen from the air in the process. Working in the shop in the winter was always a delicate balancing act between asphyxiation, and freezing.

The entire shop was, moreover, a firetrap. Too many flammables squeezed into too small of an area with not enough storage to safely put things out of the way when not in use. One sports car plus oily engine parts to another were intermixed among the woodworking equipment, refinishing supplies and piano tools and parts to create a hazardous environment which the fire marshal would have been sure to close down, had he paid a visit.



Photo 2: The inner sanctum.

What I wanted to do was to add space on to my existing shop. On my limited budget at the time, however, finding a solution where the numbers worked seemed impossible. No matter how I did the math, I came up short. If I did the work myself, building an addition would take so much of my time that my tuning/ restoration business would be virtually ignored for ages, leaving me without the income I needed to pay the monthly bills. If I hired the work out, the contractor's fees would add so much to the debt I already had that I would forever be in the hole. Finally, if I cut back on the scope of the project to the point where I could do the work myself in a reasonable amount of time, the amount of space gained would not be a real solution to my problems. I was stymied.

Then, on a day in which I'm certain Jupiter aligned with Mars, the answer presented itself in a most unexpected manner.

I was eating lunch in our school cafeteria – something I did once a year on the day before Thanksgiving vacation. The new shop teacher walked in with anger flashing in his eyes, sat down and announced to everyone at the table, “Crap!”

“Something wrong?” the math teacher asked, stating the obvious.

Steve, the shop teacher, forked a piece of turkey, shoved in a mouthful and spoke without waiting to chew. “Kabrinksky backed out on us for our spring project. He’s moving to Montana. Pitiful excuse, if you asked me.”

“So, what’ll you do to keep your guys busy next semester?” the science teacher asked.

“Dang if I know,” Steve said with a sigh. “Build a couple utility sheds, I guess, same as they’ve always done. I wanted to something new and different. A break from tradition. Something big!”

I looked up from my dinner tray, almost afraid to ask the idea that had suddenly formed in my mind. “How big?” I wanted to know.

Over the next few weeks, before and after school, the plans for a shop expansion project fleshed itself out. Steve, it turned out, was eager to get his shop kids involved in something of this magnitude. The kids in his class took a field trip to view the site and get a feel for the work to be done. They were enthused as well. Things looked promising.

In the interest of economy, I decided that we would utilize the old framework to the original shop, and add on in two directions approximately 14 feet both ways. New concrete would be poured by a local contractor, and then the shop class would erect the new framework to tie in with the old.

My wife had objections to the plan, not the least of which being that the addition to the west would take up 14 feet of yard space between the house and the shop. By this time, it had snowed, and one evening I went to the old shop for a 3 foot length of 6 X 6. I measured off 14 feet from the west side of the existing structure, and sunk the post upright into the snow. Viewed from the house, the amount of remaining yard seemed spacious. On that account, at least, she seemed less concerned from that point on.

Her other objection was that the larger shop would be unattractive from the front of the property, looking somewhat like a barn. I had to admit that the front view seemed imposing in the drawings I had worked up, but I suggested that we could tie the two buildings together visually by siding them with the same vinyl siding. We were planning on redoing the old steel siding of our home that coming summer and had picked out a contractor and a siding already. The new shop would need to be sided, anyway, so why not invest a bit more and have the two buildings match? I had been looking at some less expensive, plain white siding, but the cost difference, we discovered, would not be that great. I visited with contractor who was going to do the house – he was okay with just supplying the raw materials, and allowing the students to do the installation on the shop.

With the rough outline of the outer perimeter of the building in mind, I began to busy myself with drawing plans, experimenting on paper with the placement of doors, windows and benches. I went through multiple plans, knowing that the time to revise walls, window placements and the like was now, not after construction had begun.

I also began putting together a preliminary cost list for materials and labor. Even with the utilization of the framework of the old building, and the super cheap labor costs (10% of the materials bill was to be paid to the shop class) it wasn’t going to be an inexpensive project. The concrete for the additions would be poured by a local contractor at full rate. The building supplies would come from a local building supply store, again at full rate. I began to take a hard look at wants and needs, trying to decide which things to include and which things to leave out. Choices needed to be made.

I had always wanted a shop with an abundance of natural light. The old shop was a cave. When I moved my business into it, it had only two small windows, both stuck shut, and one naked electric bulb dangling in the middle of the room. I had improved upon that considerably, being given some cast-off windows by a friend who installed new windows for a local window manufacturing company, plus I had added in a lot of spot lights and shop lights, so that the lighting situation was tolerable, but it still wasn't the light and airy space I had always dreamed of. With that in mind, I approached a local producer of windows with the number and sizes of windows I would need for an estimate. I was very pleasantly surprised by the cost, being lower than I had anticipated. Eight large sliding windows, spaced around the shop, would be letting in an abundance of sunlight. Things seemed to be coming together, at least for the moment.

Adding a restroom, however, proved to be another matter. No water or sewer lines currently ran to the shop, so a trench would need to be dug from the street to the back of our property. A contractor came out to look things over and gave me an estimate for running the necessary pipes to the shop for the plumber to connect to. If the estimated bill had contained one less zero, I might have gone for it. Three grand seemed way more than what I could justify for having the convenience of having running water and a bathroom. Add to that the cost of the fixtures, and the price tag was more than I wanted to add to the growing bill. The restroom was nixed.

At any rate, decisions of this nature occupied my mind during the long winter months between the handshake sealing the deal between myself and the shop teacher several days after Thanksgiving, and the actual groundbreaking after the snow melted the next spring. Many long nights of tossing and turning were involved.

Preparations needed to be made before work on the structure could begin. I had a shop full of benches, tools and pianos that needed to be squirreled away. The initial plan was to rip the old siding off of the original building, pour the floors for the expansion, then build the frame to the new part to tie in with the old.

With that process in mind, before the winter's snow even began to melt, I began to box up everything that could be boxed, and carted everything I could carry that was worth saving down to my small basement office in our house. As I worked at this transitional stage, my office floor was initially became covered with boxes, except for the area immediately around my desk. Boxes were covered by more boxes, and eventually the path I left to get to my desk was the only way in and out of the room.

I felt a lifting of my spirits at this stage of the process. Finally, I was actually doing something besides sketching plans with pencil and paper. As the old shop began to clear out, the project began to seem more real. It wasn't just a daydream any more.

As soon as the snow melted, the benches and large shop equipment which couldn't be carried to our basement were placed in the yard in between the shop and the house, and covered with tarps. A local mover who I worked with frequently generously offered to loan me a trailer to store the four pianos that were in the shop at the time. Everything, except for one old bench that I left in the shop for the shop kids to make use of during construction, was in time removed. As the spring time temperatures began to rise, the grounds to the north and east of the shop were made ready for the slab to be poured. As soon as the weather warmed sufficiently, the concrete was poured and the area to be made into shop space was clearly defined.

It was at this point in time that the shop teacher began encouraging me to go one step further than what I had envisioned. My thoughts from the very beginning of the project were along the lines of utilizing the framework of the old structure, and blending it together with the new addition. This was partly for reasons of economy, but also partly for reasons of sentimentality. I had invested untold hours in making the “house into a home,” so to speak. It was a piano shop because of my efforts to make it so. Being the preservationist that I am, I had trouble with the idea of simply tearing the old building down.



Photo 3: Adding floor space.

But now, more and more, what was left was just a hollow shell of the shop I had made. The original siding, which was to be replaced, was torn off, leaving the studs with nothing but the fiberglass insulation to serve as walls. Then, when the winds and rains of spring came, the insulation itself was ruined by the weather and had to be removed. The old building was now essentially a roof held up by studs. Steve encouraged me to consider pulling the old structure down entirely and starting from scratch with all new framework. I objected, but I could feel my resolve on the issue weaken.

The angle of the old roof was another issue that played into the decision. Since the new addition was wider than the original structure, the peak of the new portion of the building was going to be high, if the original angle was to be followed. The profile of the building when drawn on graph paper was going to look imposing from the kitchen. While it didn't bother me so much, it did bother my wife, who referred to the project as “the barn my husband's building out back,” when talking to friends. She was still obviously concerned that we were going to end up with a monstrosity on our back lot, matching siding or not.

Steve showed me a sketch of what the shop would look like from the front using commercially available trusses for a new roof. The height of the peak could be reduced by a full four feet. I had to admit that it gave the shop a more pleasing profile. New trusses would necessitate, however, that the old frame also be torn down. The old,

rickety 2 X 4 framing would be replaced with a new 2 X 6 frame. It was an idea that was becoming more and more tempting. I made up a materials list of what it would take to rebuild the old portion of the shop from the ground up and went to the local building center to check on the price tag. \$800, not including the new trusses. I had assumed all along that the cost would be much higher. With the cost of trusses added in, it was going to put a further strain on my budget, but it seemed doable.

Finally, I just decided to go for it. I realized that if I didn't, I would probably regret not doing it right and always would wish that I had gone the distance. I called Steve on a Sunday evening to tell him that he had the green light to tear the old building down, and Monday morning the kids arrived with pickups and chains to pull it down. No regrets on their part, obviously! Not a tear was shed, except by me, when the old building fell to the ground.



Photo 4: Framing.

With the old structure down and hauled away, the new framing quickly went up. I was amazed at how spacious the new building would be. When I would stand at one corner, and look at how far away the opposite corner was, the shop seemed huge. Of course, as interior walls were added and rooms divided up the space, the effect wasn't quite as impressive; but still, it was going to be a nice size shop.

As the scope of the project became more apparent to the shop kids, their enthusiasm really took off. Students showed up early and stayed late, and were rarely absent. There were a few mistakes, but for the most part the construction went smoothly. (There was the incident where a young man working on the wiring inadvertently connected a 15 amp outlet to the 220 air conditioning service line. I discovered the error the next morning when I plugged in a shop vac to the outlet. It did a quick double pirouette, then died a quick death in a loud pop and a cloud of blue smoke. The lad responsible was pounding nails for the rest of the project.) Steve, the shop teacher, worked well with the students, giving them as much responsibility as they could handle, and making them feel a part of a team (Photo 5).



Photo 5: The shop class with Steve, the instructor, sitting on roof on the left.

With a long stretch of mild weather, rapid progress was made through the month of April and into the beginning of May. As the end of school was fast approaching, and many jobs left to finish, every day of good weather was a blessing. Once the roofing was intact, the off and on inclement weather of spring slowed things down, but didn't put a complete halt to the work being done. Steve and his crew of students took responsibility for the electrical work, wiring in all the outlets and lights and running the electrical service to the shop. They insulated the outside and inside walls (to allow for heating or cooling zones within the shop). They installed the sliding windows. They put up the drywall in all the rooms. A calendar hung up in the shop with a big red circle around the final day of school kept them focused to the task. What impressed me was the fact that I never saw kids just standing around. They were always busy with a task. Talk about hands-on learning. This was a great experience for every one of the students involved.



Photo 6: Learning at its best.

On the outside of the shop, students shingled the roof and installed siding and trim. The only thing which was left undone at the closing bell, in fact, was the landscaping on the outside, and the painting of the rooms on the inside. I could not have been more pleased with the work that Steve and the shop class did for me in carrying through with this project.

So that I don't seem to be painting too rosy of a picture, I do want to make it clear that there were headaches and worries aplenty to contend with as well during this project. From a financial standpoint, the shop was a burden at the time and for quite an extended period afterwards. Although the labor costs were small, the material expenses were not, and I needed to obtain financing for those costs which I still in the process of paying back. Added to that was the fact that for the period of time the project was in process, I did very little tuning and repair work – I spent my time outside of school on the building site, helping facilitate the construction process in anyway that I could. With cash flow reduced to a trickle, our savings were tapped to pay our normal bills to the point where by the end of the project, we were running on fumes. Those accounts have gradually recovered, but it's been a long haul.

Have I ever regretted building the shop? Not ever. It's my sanctuary, and the amount of restoration business that comes our way justifies its existence. The shop is also a great sales tool, in that customers who visit always seem to feel enthused about having their piano shipped to the shop for work in our work after seeing our facility and the work that we do there. Plus, I've always been of the belief that it's better to try an idea with the possibility that you might fail, than to not try it and always wish that you had. When my father was in a nursing home near the end of his life, he expressed the regret that he had never built the shop that he wanted. When I decided to go ahead with the building project, it was in part to honor his memory and to fulfill his unrealized dream of a shop.

Would I recommend this particular method of building a shop to others? Not without careful consideration of the alternatives. As I said at the top of the article, I rolled the dice on this project, betting on a long shot. I came up with boxcars, but the chances are the same that I could have rolled snake eyes. To play it safe, I would recommend checking the cost of having reputable contractor would charge to build a shop, and going that route if it's within your means. If student labor is to be considered as an alternative to hiring a contractor, check into the program, take a look at past projects, and visit with the teacher and school administrators to verify if a challenging project is feasible.

Whatever the means you choose, do your best to live your dreams. If you dream of owning a shop, go for it.

Chuck Behm
River City Restorations
behmpiano@gmail.com