the SHED
Designing and Building

An Honors Thesis (HONRS 499)

by

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Abstract

As I near the completion of my undergraduate degree in Architecture, I am often asked if architecture is my future. I typically reply, "I don't know," and then continue with, "what I really need to do is design and build something – no bigger than a shed, and I think that will be the litmus test for my future as an architect or designer." I sense the need to move from $1/8" = 1'-0"$ to $1" = 1"$. The full-scale world is all I am concerned with. It is a world that was utterly neglected in my studies as an architecture student.

Last autumn, alongside my Dad and a family friend, I helped assemble a Sears backyard shed that came as a kit of parts waiting to be formed into floors, walls and a roof. This particular kit of parts must have sat in our garage for over a year, but the pieces went up willingly enough, as it was only daylong project. Having followed the directions and making sure the end result looked as the diagrams indicated, we assumed we now had a shed to last. But, Kalamazoo – where my parents reside – is accustomed to regular snowfall in the winter months. The Sears shed must not have been designed for such regular snowfall, because within three months of assembling the shed, nature disassembled it, collapsing the roof under the weight of the snow. My opportunity had arrived.

The following is a log documenting the construction of a new backyard shed. For most, a humble project; for me, a project infused with sentiment and introspection, concepts of beauty and ethics, and a chance to turn from a critic to a creator. Oh, to most who ever see this shed it will appear as nothing more than any familiar organization of brick and metal, a proper orientation of walls and a roof - nothing to even mark a memory in one's mind. But, I don't build for them.
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An Introduction to the Shed:

The following is a log documenting the construction of a backyard shed. For most, a humble project; for me, a project infused with sentiment and introspection, concepts of beauty and ethics, and a chance to turn from a critic to a creator. Oh, to most who ever see this shed it will appear as nothing more than any familiar organization of brick and metal, a proper orientation of walls and a roof - nothing to even mark a memory in one's mind. But, I don't build for them.

Beginning in San Antonio, Texas as an idea and a proposal to Ball State University's Honors College as my thesis for Honors 499, and ending in Kalamazoo as a reality and tangible asset to our home, the shed has been a delightful burden that is finally reaching its close.

A challenge and an opportunity: after years of architectural critiques both external and internal, can I put my money where my mouth is? Can my design satisfy the incredibly high standard I hold for others? Will I thrive upon or collapse under real world constraints (what's the value of a stable roof anyway, or a plumb door, or square walls?)? What happens to architectural ideals when a project can no longer bank on its potential and instead is evaluated by its achieved reality? For now the evaluative question becomes "what do we have?" instead of the more esoteric and hopeful, "what could we have?!" and the promising, "imagine what this could be!" The difference between proposals and finality, between scale model and full-scaled actuality is incomparable. I've always loved the scale world because it seems limitless, it is fantasy. I could represent anything in the scale world, even if it didn't have a direct correlation to something in the real world. Now sacrifices will have to be made - compromises on design and perhaps compromises on myself. Even a budget will be considered for my first time as a factor in design, in material choice, even in the appropriation of necessary tools. This isn't Studio¹. And all of this for a mere backyard shed? Leave it to an architecture student to complicate something so ordinary and simple, something thousands of unnamed Americans have done in the year since I began this project.

¹ Studio - The environment every architecture student learns to design in. A hybrid of classroom, work station and home. A place almost always concerned with theoretical and hypothetical design.
From a grand perspective this shed isn't revolutionary. It isn't unprecedented. In fact, it isn't even remarkable. When considering global issues, or humanity's historical timeline or catalysts that trigger cultural revolutions, this shed is obviously of no consequence. Yet, if the focal length is made a bit tighter and perspective is narrowed, say to a view of my day-to-day, you might find need to describe the shed as unprecedented and remarkable; because in some ways the shed has drawn a line in the sand of my life – before I had never built a project of my own design, now I have. For one who studied architecture, I can't see this as anything but a watershed for my architectural future. Monumental is also an appropriate description, as more than a year of my life has been attached to this project. The shed might even be a catalyst for great personal change; its completion brings me within one credit hour of completing my undergraduate degree, a process spanning eight years; its completion also allows for evaluation of my architectural talents and passions and a serious assessment if I will be pursuing architecture any further. Thus, the scope of one's perspective determines the significance of this project; it is objectively irrelevant, but subjectively immense.

The chronicling of the designing and building of the shed is primarily for those who over the course of the project have inquired how progress was being made; for those who heard my incessant complaints and excuses and plans and requests all connected to the shed. Those who helped build, those who donated materials and offered suggestions for strategies to find resources or use the ones I had; these are the people I write to. A small community who mostly cares about the shed by way of caring about me, with only one primary tenant constantly concerned about the shed - myself.
Aiming to convey the spirit of the project, as well as a few logistics of the new shed – such as siting, scale and shape – the scale model and two sketches of the northern profile were the first visible communication of the design from creator to client. Sketches and scale models are typical starting points for a design project, derived from my architectural training at Ball State; but, now I begin in this manner not because of imposed requirements blindly followed without comprehension of their purpose, but because of the need for the new shed’s users to be able to see and understand what they will be receiving. Scale models and drawings are good tools for the clients to more clearly perceive the verbal descriptions I’ve used to illustrate the design until now. Further, putting something tangible before them allows me to gauge their honest reactions to the design.

I also need to recognize that while this presentation is an initial benchmark, these two drawings and the scale model aren’t the actual starting point for the shed – many sketches were made and countless iterations of the shed (as a whole, doors, details) have run through my mind by this time; this is merely a checkpoint and a reference.
WHAT NOT TO DO
August 22, 2009

The need for a new shed is illustrated below. An Arrow brand shed purchased from Sear’s as a kit rested in its original packaging in our garage for over a year before any effort was made to erect it. When we finally pulled the pieces out of the boxes, the pieces formed into a shed easy enough with the effort of three men and the better part of an autumn day. Every piece of the shed was aluminum, with exception to the OSB\textsuperscript{2} for the floor. Such a weak and lightweight structure, as well as a mild roof pitch allowed for heavy snow accumulation atop the shed until the weight brought the roof downward; so much for quality storage. But this turned out to be a personal blessing, for as one shed came down a need for a better replacement was arose.

Yet for all its shortcomings, this Arrow shed acts as a good predecessor to the new shed, teaching me several lessons including the best location within the yard to place the shed and the approximate amount of storage we need. The chintzy structure of the collapsed roof clearly illustrates the need for sound, snow-bearing construction in the new shed. One further lesson learned from the predecessor is the disadvantage of a low roof/ceiling/door height. The previous door entry is no higher than five feet, making it necessary to crouch to enter the shed, and stay hunched to reach anything near the back. Though a shorter shed makes for a smaller object in the yard, I think with the right aesthetic presence one doesn’t need to work to diminish the profile of their shed, but can make plain the new construction on the property.

\textsuperscript{2} OSB - Oriented Strand Board. Similar to plywood and used in all contemporary residential construction
Currently everything we own for outdoor use is stored in our garage. The idea is to free up a lot of space in the cramped garage as well as move all hazardous and flammable chemicals out to the shed, far away from the house. The highlighted areas above indicate most of what will be moved. A list of what we hope to transfer from the garage to the shed includes the riding mower, weed whip, snow blower, rototiller, power washer, leaf blower, gas and oil, yard tools (shovels, rakes, hoes), hoses, pool equipment (filter, pump, hoses, skimmers), and gardening supplies.

1920 CHURCH STREET DEMOLITION
September 08, 2009

1920 Church St. is no more. The families that have occupied this house can no longer drive past and with nostalgic fondness reminisce about the holidays, birthdays, summer fun and family firsts. Not that an artifact is needed to recall a memory, but a physical thing – an object, a smell, a scene – will often trigger memories we didn’t know we had tucked way. It was asbestos that condemned this house. But, in a more honest evaluation, when I walked through this house, it looked like it had been abandoned before the city’s condemnation for poor health conditions. Located in a poor, undesirable part of town this house probably housed all
sorts of transient families who came and left as quickly as vacancies were posted and rent was due. And while there may not be so many happy memories here as I would like to think, there are certainly memories that are part of the formation of some real people out there.

Utter waste. In need of building materials, I contacted Kal-Trek Demolition\(^3\) in hopes they had a scheduled demo upcoming—of any kind. And while I was really hoping for a commercial building that had been long abandoned, loaded with unique and usable materials I could gather by the trailer load, I was presented with 1920 Church St.—a small, ordinary house that was about to be leveled to the ground. I barely had time to get there, evaluate the site and gather any loose materials before the metal machine began tearing things asunder. A few bricks and a few concrete blocks was all I could gather from the yard. The rest, as you can see was torn to useless shreds. I can’t help but feel guilty watching these men tear this house down—nothing is to be reused, no ceremony of remembrance, no respect given at all to this home. Just waste. Tear it into pieces small enough to fit into a truck, take the truck far away, dump the pieces and drive away—out of sight, out of mind. And to top matters off, the site won’t even be left clean—the basement of the house will be filled with as much rubble as it will contain, and that will be discretely covered with soil to appear tidy and undisturbed. Isn’t that the equivalent of a child saying he did clean his room, when all he did was shove everything (his dirty and clean clothes, his scraps of food, his toys and his school papers) under his bed? So much for a healthier property.

\(^3\) Kal-Trek was the first demolition company I came across in the Yellow Pages. They were more than willing (on the phone) to donate any materials from a demolition project they had scheduled.
In contrast to the destruction of the one home, a foundation for a brand new house was being poured right next door to the abandoned property. How many years will pass before we condemn it for the then realized toxic material laced throughout? How many years before it’s broken and sent in pieces to a landfill? How long before it’s erased from all living memory? Vanity!

And to add to the frustration of the day, I left my sledgehammer at the site only to find it missing when I returned to get it.

H&R WOOD SPECIALTIES’ SHIPPING PALLET

September 08, 2009

Driving out specifically in hopes to find materials for the shed, I was returning home almost empty handed and a bit dejected (this was my first trip and my hopes were unrealistically high). Finding myself on a road I had never driven before, I passed a business I had never seen before, and in the yard I saw wooden shipping pallets – stacked high and without intent for reuse (or so I hoped). I had just spoken with my thesis advisor a few days before and remembered a fact he told me from his research – that wooden shipping pallets are a great resource for reuse projects as they are abundant, and most pallets are used only once and then discarded. So, with that on my mind I ventured with confidence into this business to inquire if I could have some of those idle pallets.
I encountered the shipping manager, Dave, and he turned out to be the perfect man to meet on my first hunt for materials. After explaining my intentions, Dave set about giving me six 6x10' pallets and a seventh that was about two third the size of the others, even loading them onto my trailer. This was particularly generous because H&R does reuse their pallets. On top of that, Dave called me back into the warehouse and showed me a few pieces of laminate shelving, asking if I could get use out of those, too. I told him, “Sure! I'll find use for those;” and took those as well. Dave was a great encouragement to my spirits, giving me hope that not only are there materials out there that I will be able to use, but there are pleasant, congenial and generous people in this community.

AMERICAN BARN WOOD
September 28, 2009

Dad and I went out east of Paw Paw today to a collapsed barn that Grete and I found on Sunday. The barn seems a bit smaller than how I imagine the classic, American barn, but the wood still carries a trace of that red paint so widely associated with the same icon. My source - a man named Dennis who collects hay balers – said the barn had been down for about three years and was
overgrown with very tall grass. He was right, as grass, vines and weeds wrapped themselves around boards, nails, tables and junk working steadily but unnoticeably to conceal this heap from any passerby.

Yet Dad and I intervened, ripping aside the overgrowth until we got what we wanted — a trailer full of siding and joists. Most of the wood was too rotted ever to be reused for anything of purpose; just disassembling the mess crumbled many of the pieces. But, the deeper we went, the more usable wood we found, as the collapsed roof, which still lay on top, protected many pieces from the elements determined to undermine the wood's integrity. There were also pieces which the owners forbade us to take — all of the large, easy to access, boards and posts that were in usable condition — as if they might actually pull them from this rotting pile in due time and put forth the effort to give them new use. (Reexamining the wood later revealed that most of the wood we pulled wouldn't serve any purpose. It is all quite rotted and thin and there just isn't enough integrity to put most of it to use.)

There was a particular moment today that made me see harm in this "sustainable" approach of building with used materials. A mother mouse and her two babies were forced to relocate to a new home because of my avarice for used materials, for as I ripped aside unusable boards, digging for better ones, I exposed their current residence for the first time to the deadly world above. The two younglings seemed utterly helpless and blind, as they made no move at all except for their heavy breathing; total dependence on their mother. I didn't see Mom initially, until she returned from a more recluse nook of the collapsed barn, coming back to snatch up the first of her remaining, bald youngsters in her mouth to carry him away to safety and possibly to their new nest. As she was away with the first of the two babies, I was careful not to let anything fall on him and I was nervous as minutes passed and he was still abandoned, frozen in place in a seeming blind darkness and fear. Finally, after five or so minutes, Mom returned to the vicinity, struggling to find the exact location of her remaining offspring. Once she did, she picked him up in her teeth too and scurried away to that deeper part of the barn which just might remain untouched by man until the end of us all. Today was a reminder that the most friendly of building methods still impacts the world and surrounding ecosystems and communities, even if the effect is only small enough to be felt by a mouse.
I set out driving to look for residential construction sites with open dumpsters filled with easily transportable and usable materials. I found one in the area and instead of looting it, I decided to wait until morning when workers would be present to grant or deny permission for me to dig around. I had already peaked to see what was inside and was planning at minimum to use the scraps of OSB forming the top crust of the contents. So, I returned in the morning and asked the first worker I found if I could rummage through the dumpster. He was as compliant as one could be, and encouraged me to take as much as I wanted since they paid for a new dumpster each time one was filled.

So I pulled my truck up alongside the dumpster in a position where I could drop pieces of the wood into the bed. I took pieces that seemed of a worthwhile size, despite any random angular makeup. These pieces were mostly scraps from sheathing the new home's roof. OSB was nice, but not a special discovery. I was really anticipating the discovery of more materials beneath this OSB – but my time was cut short. As I was atop the dumpster, still picking the OSB scraps I would take home, the delivery for the
new dumpster arrived. The driver seemed less than pleased to wait for anyone, let alone some kid picking a few scraps for his college project, so I settled for what I had already, hopped in the truck and drove away. This OSB might be less ideal than a 4x8' sheet, but it cost me nothing and will put to use perfectly usable, high quality materials that were on their way to the dumpster. I consider this a successful morning of material gathering.

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ONE MAN'S JUNK... (TIRES)
October 15, 2009

Next door to the school where I work is an auto shop. In the back portion of the parking lot is a small fenced nook where three walls contain a messy stack of tires. These tires are picked up every so often by a tire recycling company, for which the auto shop pays dues. Thus, when I asked if I could take some tires for a project I had at home, they were more than willing to donate to the cause.

With inspiration from the Yancey Chapel, a project of the Rural Studio, I thought it would be good to put to use these lifeless tires I pass everyday going to and from work. Unfortunately, the shed's clients were none too eager to have a wall made of tires, even after viewing images of Yancey Chapel. However, I felt this would really give the shed some unique character and have it stand off from conventional wood framed projects; and the tires were already available. So, after some convincing, it was decided one wall could be made of tires – the west wall, pressing right up against mature pines that separate our yard from the neighbors – in other words, the wall no one ever sees.

The labor seemed like it would be rather intensive from my research – up to two
wheelbarrows full of tamped dirt per tire. But I thought because the material was readily available and the end result was beautiful, that the effort would be worthwhile.

METAL
October 16, 2009

Today was a day of metal gathering – I was able to bring home steel (pictured above) and anodized aluminum (pictured below). Both of these materials were used in Portage Central High School’s auditorium roof. The steel was the structure that provided the mansard shape, and the aluminum was the exterior cladding. Portage Central is getting a new school, and though the auditorium is the one piece of the school remaining, it isn’t surviving without a remodel – which means the old mansard roof is gone. And although this metal can be sold to scrap yards, it was generously donated for the purpose of the shed. I took what I hoped would be enough, not exactly sure of how each material would be put to use. Below, the construction crew at PCHS is dismantling the auditorium roof. You can see how the orange steel pieces were forming the structure and how the aluminum appeared as the roofing.
Mike Whitenberg – one of the hardest working men around, is the front man to credit for all this donated metal. I promised it would be put to good use.

It turns out I was given more than forty linear feet of the aluminum; more than enough to run two sides of a gable roof if that is where it ends up. The pieces are designed to slot one into the other providing a tight seal perfect for waterproofing a roof or siding. Each piece is very lightweight and should prove easy to work with. I imagine I will be able to cut pieces as necessary with a metal blade attached to a miter saw – as you can see in the image below, some pieces aren’t the straightest, and I don’t think bending them back to their original shape will be an option.

PEA GRAVEL
October 25, 2009

The intent of the pea gravel is dual-purpose – to drain liquid and moisture away from the floor more quickly and easily than soil would, and to give a surface that is easier to level upon than soil. One wheelbarrow full of pea gravel isn’t much to fill up even this small shed’s footprint. Approximately 16x12’ and only a
few inches deep, it is going to take a several yards of pea gravel to fill the footprint. Purchased from Kalamazoo Landscape Supply, this is a cost I hadn’t anticipated.


DORMANCY & SELF-LOATHING

December 23, 2009

1) 9°F and almost a foot of snow on the ground. Why didn’t I value the warm weather – or at least the temperate weather – enough to be diligent and finish (let alone start) the shed before now? Why is it self-employed deadlines create in me no urgency? Thoreau knew the value of building before the winter came. But, I suppose that is a different scenario, for he was building his home, his shelter from the cold. Survival was his great motivator.

I am the sluggard who watched the industrious ant prepare all summer and autumn for this long, cold spell. Oh! How I want to be free from outside impositions!

2) Narrow windows of daylight and a job have made progress imperceptible. Oh, and did I mention my laziness?

3) I want to photograph a beautiful shed – not build one. I want to have things that are impossible, of which this is just one. I am wayward. I am whimsical. I am chaff. I am sea froth, pushed this way and then that way by the wind and the waves.

In other words, no progress made.
SPACING THE BLOCKS
April 02, 2009

Using a 3/8" thick spacer, I laid out the blocks to see how they would fit on the base. To my surprise and my happiness, the blocks fit perfectly, without a one needing to be cut. And if they all fit in a practice run, they will fit once the mortar is applied, right?

CUTTING STEEL
April 13, 2009

The twenty steel roof braces – generously donated by Mike Whitenberg at Triangle, Inc. from Portage Central High School's dismantled auditorium roof – needed some work for their purpose in the shed. In order to be useable, the "L" shaped pieces needed to become "I" shaped pieces. Unfamiliar with cutting metal, I figured it should be an easy process to lop off the short leg of the "L." I brainstormed and came up with a couple possible methods for doing so. The first was to take the pieces to a welder / metal worker my brother's company often uses, and see if they could cut the steel for me and to ask what they would charge. Capable they were, but they wanted $100 to make twenty cuts, so I politely passed. So, I stopped at the
hardware store next door to the metal shop to see if they carried a torch that would cut the steel. They didn’t and they didn’t have any other suggestions as to how to cut the steel. Driving on my way to the next hardware rental store, I called ahead and asked if they had a torch or a suggestion for cutting this steel. They didn’t have a torch or an idea either; other than giving me the name of another rental place – Goggin Rental was on the docket. Again I called ahead as I drove in their direction, and this call brought hope; after describing my need it was suggested with confidence that I rent their heavy-duty bandsaw. Well, that was the answer I’d been looking for – and for only $25 for a full day’s rental ($17 for a half was all I should have needed, but my inexperience led me to check it out for a full day). So, I rented the band saw, drove home and began cutting.

The process was much easier than I ever thought it would be. Not too dissimilar from cutting wood, you just laid the band saw (a rather heavy machine) on the angles and let the weight of the machine drive the blade down as the serrated band revolved around its course. The saw ran surprisingly quiet and was completely sparkless. I expected a rather loud and dangerous process, but was greeted with a straightforward clean and quiet process.
During the holidays my Grandpa inquired of my methods for building the Shed. Just as one builds from the ground up, I began my description also at the base. I didn’t get more than a couple of sentences spoken before he interjected with his advice, doubting my skills already. At the time I had intended to lay the first course of concrete blocks on top of a layer of pea gravel. My Grandpa thought this too unstable for a footing and told me I needed something more stable – some sort of board running under the perimeter of the block foundation. He was sure that without this wider base the blocks would shift and crack and the shed just might come tumbling down. Now, while I recognize that I know little about building and my intuition isn’t exactly trustworthy, my pride kicked in and I immediately retorted that no board was necessary. I said that the stone would allow for accommodation of any shifting the block would incur and that a wooden board underneath the earth would rot and itself cause cracking and shifting.

Wood, treated or not, just isn’t made to live under the earth. However, I also realized that any rotting this board would do would be long after my parents got their use out of the shed, and for all intended purposes a treated wood base would be as permanent as the concrete and steel that makes up other parts of the shed. Yet, I have personal notions and I have pride that work together to want to enforce (sometimes unnecessary) ideals, and if in theory wood will lose its integrity quicker than concrete will, then I argue against such use of wood.
However, my Mom was listening to this conversation and she knows all too well of my inexperience, plus she trusts in her Dad’s experience (as he has lived on a farm all his eighty years and has been a part of many building projects and sundry construction tasks) so she wanted me to really consider putting in wood plating underneath the block. So, to avoid family strife, and because on second thought I really don’t trust my inexperience, I built a frame to go around the perimeter of the concrete block wall. The width of the blocks is 8”, so to allow for a base wider than the block I purchased 2 10”s to comprise the perimeter.

MORTAR UP!
May 15, 2009

Mortar mix is a thirsty character. Obediently following directions, I always began with one gallon of water for one sixty-pound bag of mortar mix. From there I added water by hose without measuring, mixing until I achieved a mix that felt and looked right. The directions indicate that the mortar should be able to stick to a trowel without sliding off at a thickness of 1/2”. Once mixed properly, it’s easy to see why this stuff is nicknamed “mud.” Prep time – about five minutes per bag.
The metal I rescued from re­smelting slowly returns from whence it came. If I don't act soon, I will lose these materials in the overgrowth of the spring.

The first course of blocks is set in place. The craft is similar to that of a kindergartener's drawing of his mom and dad. And, while I desire my craft to improve, I still take satisfaction in the fact the blocks are set and a hurricane could come through without moving the blocks. The photos are honest – some show joints I am satisfied with, others I am far less than satisfied and others still that need touching up.
A pile of two thousand bricks has been lying undisturbed by man for as long as I've been alive; undisturbed until now.

Out to dinner with a friend, my mom mentioned that I was trying to gather materials to build a shed. As it turns out, her friend had a small stockpile of bricks and was more than willing to part with them, generously donating them all to the shed. She has even given me a pair of brick tongs to help move the bricks, and I've got to say that those are a Godsend. They save my hands from being torn and dried by the coarse, clay bricks. And because you can move ten bricks at once, your time spent moving bricks is much more efficient - which is great because they are being moved from their original pile into the trailer, from the trailer to new stacks, and soon from these new stacks to their place on the shed. Nothing more than a simple lever made of steel, the bricks tongs are a brick mover's best friend.
Using a sledgehammer I extracted 50 more blocks from this site where the last round of blocks came from (50 seems to be the capacity of our trailer). Discovered on craigslist.org, the site was a good thirty miles from home, but the price was right. Previously in December, my Dad and I had come down and gathered fifty blocks that were lying near this pit, unattached to any foundation or structure. This time the only blocks available were still mortared into the foundation wall and I was allowed to take as many as needed for $0.40 a block. Besides, these blocks have as much as life left in them as one will provide. There is, however, an extra step needed to chip away the mortar still attached, but that’s for later.

On top of the good find, I had a nice conversation with the owner, discovering that his nephew attends the high school where I work. And beyond that, I had a beautiful sunset on the ride home. It would be a memorable weekend, as my life would be permanently altered by the end of the week.
A SHORT LIVED SECOND COURSE

June 03, 2009

I laid the north wall's second course of block with far less trouble than the first course. Blocks lying square on top of other blocks are much easier to lay than blocks atop of a 2 10. This isn't to say that the process is easy – it is still difficult and beyond my skill – but it is less difficult in comparison. The design changed however, so now a brick ledge would be provided by the first course of block by offsetting the second and third courses towards the center of the shed. While this change undoes all of my work on the north wall's second course, looking again at the unevenness of the blocks make it seem like a blessing in disguise. The next go will include efforts to keep the top of the wall flat and level from east to west.

Observation: Laying block became less frustrating - not because I was better at it, but because I no longer held the expectation of being a naturally skilled mason.
The structure for the floor is set. It feels really like a sub-subfloor. Pallets rest atop of concrete blocks burrowed into the ground. The blocks were spaced at such distances so that the pallets didn’t sag with their own weight or with applied weight. The blocks were leveled in two directions and also leveled against the nearest block in proximity. Because of the acceptable margin of error, this isn’t a particularly strong method for leveling a floor. If even a 1/16” of an inch margin is accepted between one block and the next, a potential height difference of a 1/2” can arise over the longest dimension of the shed. In this I see the advantage of using floor joists - as level is much easier to achieve.

The blocks are set in the soil at a depth equal to about half of their height, four inches or so. This will give them a bit more stability than if they were set completely atop the earth. It also allows the pallets to be four inches above grade, disallowing direct moisture transfer from the soil to the pallets themselves. The width of the shed had
already been determined to fit around the pallet width, thus they fit snugly between the east and west CMU walls. The north to south dimension was not complimentary to the dimensions of the pallets, and the third pallet needed to be ripped lengthwise so as to fit.

OSB SUBFLOOR – FINISHED!
July 22, 2009

This is the OSB culled from the dumpster last fall (where I lost my driver’s license and barely made it out with my materials before the dumpster was hauled away). The largest two pieces are actually from the previous shed. The strategy here was to have all edges of the OSB lie on the boards of the pallets beneath, and not lie over the gaps between the pallet boards. Using triple coated deck screws (it was what was lying around in the garage) I screwed the pieces of OSB into the 2x’s of the pallets – making sure to mark screw reference lines before laying the OSB. While not air tight, and not perfectly flat, it is good enough for a shed. In a home, where squeaky boards and a sense of “give” in floorboards would not be tolerated, I would suggest another method. In reality, it isn’t the piecemeal OSB strategy that makes the floor uneven, but the pallet floor structure beneath. My brother suggested shimming the finished floor with shingles in the low spots of the sub floor. He works with industrial kitchen installers who often shim walk-in cooler floors using shingles to achieve level. I think it is a good suggestion – particularly because last I know we have some shingles lying around.
The company my brother works for has a warehouse full of industrial kitchen equipment. The majority of the equipment arrives in crates, as pictured above. The wood for the crates is made mostly of 1 4"s and 1 6"s. Upon mentioning the shed project to the warehouse manager (Wes), he recommended I take a look at all of their crate wood, lying stacked and waiting to be burned or discarded. Wes himself had already personally put to use some of this crate wood in his own home, having made wainscoting for his basement. As soon as I saw the wood, I wanted as much as I could have – and I haven’t been disappointed with the supply. This was just the first load (of two to date) and the amount of wood pictured in the pickup is a pittance compared with the second load.

If I can acquire enough wood, I will wrap the entire interior of the shed in 1x’s. The only minor catch is that the wood is full of staples that don’t always pull out easily, so a strategy has yet to come for removing the staples without wasting usable wood. The first priority for this wood will be to clad the exterior west wall. But at the very moment, the wood lies protected from the rain underneath these tarps.
LAYING BLOCK THE RIGHT WAY

July 23, 2009

An evaluation of my first attempt at the laying the second course of concrete blocks revealed a lack of control - edges weren't aligned because the process was rushed. This time Paul was out to help, and we prepped properly to ensure quality work. String guides were set to establish a uniform and level outer edge.

The second course of block was difficult to lay, as this row was offset from the course below by 2.5" to allow for a brick ledge. The difficulty arose because now each block had far more psi on the mortar, which forced the mortar out from between the blocks. Thickening the mortar a bit helped keep blocks from pressing all of the mortar out of the joint as well as laying down a lot more mortar than normally required. Space allotments were made for the sliding door and the entry door rough openings.

CONCRETE BLOCK - FINISHED

July 27, 2009

Moving to the third and final course of blocks brought relief to be nearing the end. This time the block laying went much more efficiently with the more conventional alignment of the blocks - top block aligning with bottom block - the way the process was intended.
I had postponed laying the first block for so long - intimidated to try something so foreign. And intimidation was appropriate, because laying block wasn't an easy process nor was the quality of my work impressive. But, it is now finished, and the blocks are firmly set. While joints aren't uniform, and mortar is lacking in some areas while excessive in others, I am satisfied with the work. A lot of respect has been gained for professional masons - who lay thousands of blocks each week, keeping walls plumb and level, and joints uniform on every block they lay.

BRICK LEDGE – THANKS, GRANDPA

July 27, 2009

This detail came as an idea again from my Grandpa, when he came with a recommendation to my building strategy just in the nick of time. He asked what the brick facade would be resting on - I told him I would figure it out when the time came. He disapproved of this nonchalance and recommended I use the top edge of the final course of block as the brick edge. I vetoed this on account of aesthetics. However, a quick compromise was made by offsetting the second and third course of blocks far enough toward the interior of the shed so that a brick could balance without falling off of the first course. The actual inset is about 2.5". This strategy made laying the second course of block a bit more difficult (as if it isn't hard enough), as the blocks now had more weight on less surface area and that tended to be too much weight as the mortar repeatedly squished out from between the two blocks. In the end, we made it work (slopping on lots of mortar and using less water in the mix) and were thankful once onto the third course. I am very pleased with this solution for the receiving brick ledge, as it will be a more sufficient than anything I would have provided afterwards and because there will only be about four inches of exposed concrete block between the ground and the brick. And even that may be covered largely with landscaping in the
end. The west wall didn’t receive this detail because there isn’t enough brick to wrap all four walls, thus this wall will have wood boards for cladding.

SETTING STEELPOSTS

July 30, 2009

The concrete blocks are steady and the mortar is cured. Fourteen steel angles will be used as primary wall supports – prep already had to be made for their spacing when laying the block, because there are varying types of blocks with varying sized holes and the steel angles don’t fit in all varieties. The process to setting the posts was simple, allowing you have two people. Using two levels (one was magnetic, a very handy feature since we were using steel) one man leveled the post and held it steady, while the other poured concrete into the hole. In order to reduce the amount of concrete needed, we filled the holes with bricks picked up from a house demolition the previous fall. These bricks, which until this point hadn’t found a purpose in the shed, were the perfect fit. In the end, four bags of concrete were all that was needed, and that was also enough to fill in the blocks of the sliding door threshold. This was the quickest and most trouble free part of building the shed to date. While allowing the concrete to cure, we took care of a few other random tasks – we dug out a stump, raked out some dirt and relocated the metal roofing (which was getting in the way).
The concrete has set and the posts are all stable save one. A bit more concrete poured into the first course of blocks beneath the unsteady column should fix it so they are all stable and ready for to hold the walls. Finishing the third course of blocks really helped my eye perceive more accurately the size of the space.

The thirteen steel posts, erectly marking the general wall height around the perimeter aids my senses even more in comprehending what volume the shed will contain. As a side note, I don't know if I'm glad or disappointed that the orange color of the steel will be covered.
PALLET WALLS – 3 OF 4 IN PLACE
August 06, 2009

Paul and I were able to construct three of the four sides of the shed’s walls. Having run out of pallets, I should be able to pick up one more from H&R on Monday (or so they indicated on the phone). The construction was fairly simple and gave the sense of satisfaction that framing usually does – the feeling of real progress and the best sense of the volume of the shed yet. Wall height was determined so that I would be able to avoid ducking when walking into the shed, but just barely.

Pallets were attached to the steel posts set in the concrete the week before. We removed the boards from one side of the pallet, so that the inside face of the remaining boards would fit snugly against the steel posts. Pallets were secured to the posts via a bolt, a lock washer and a nut installed through preexisting holes in the steel. The work went smoothly and we finished working when we ran out of pallets.
RAFTERS – ALWAYS MAKE FOR GOOD PICTURES
August 20, 2009

A new decision needed to be made - roof pitch. Several other factors also needed to be considered, the first of which was a decision between trusses and rafters. After a visit to the local hardware store and essentially being scoffed at for mentioning trusses for such a menially sized project I decided to use rafters.

And then the decision needed to be made between using 2x4"s or 2x6"s. A phone call to Paul's father-in-law, a retired builder, led to the decision of using 2x6"s. If erring, err on the side of too strong versus too weak a roof. Then came a recommendation for spacing. A suggestion of 16" on center was given, in the end we used 24" on center as it felt strong enough when laid out the rafters and it saved a couple of boards.

Somewhere in the mix a 2x8" was given approval to serve as the ridge board. A 16' board was enough to span from the north to the south wall, however if I had really been thinking, I would have used an 18' board to account for the eaves on either end of the roof.
Cutting birds mouths and the proper angle to meet the ridge board is no easy task. A lot of head scratching, drawing, calculating and internet consulting was needed to get it right. And then the minute changes in lateral dimension from the center of the ridge to the outside of the wall made for calculation changes that weren't accounted for in our Pythagorean formulas. Good thing we used a simple gable roof - any hip joints would have really been a burdensome challenge.

PROCESSING CRATE WOOD
August 25, 2009

As all of this wood came as a crate or once was a crate, each piece is chock full of staples, and those need to go. Depending on the piece, sometimes the process displayed herein was followed to remove the staples, sometimes they were just lopped off. It all was a balance of getting the most usable wood in the least amount of time.

The problem (above).

Solution: Step One – Hammer staples flush with backside of board.
Solution: Step Two – Pry up staples with screwdriver.

Much better (on both sides)

Solution: Step Three – Square the ends.

The 1 4 is ready for use.
CRAIGSLIST – DOOR
August 28, 2009

Good old Craigslist. There were many exterior doors listed in the area, however, most were plain steel doors, which seemed unflattering for the aesthetics of the shed. Further, I wanted one more source (albeit small) of daylight to reach the interior of the shed, which meant the door needed some glass. Unwilling to wait any longer, I found this door in Saginaw, MI. Nowhere near me, but right by my uncle who we would see that weekend. I made a call to my Uncle, he borrowed a truck, picked up the door and met me at my grandparents; this could not have worked out better.

ROOF SHEATHING AND FASCIA
September 05, 2009

A friend had a garage fire back in June which caused her roof be replaced. A new roof is an indicator that there will be scraps of wood - both boards and OSB. Both proved true, with the OSB scraps proving to be the more useful of the two. My friend thoughtfully told the workers at her home to lay aside any decent sized scraps for me and they graciously did.

The scraps were similar to the ones I had previously taken from dumpster on a residential construction site - each piece cut at a different angle from the next. So, I
began by examining the scraps as if puzzle pieces to see if any two complimented each other to form a square or a rectangle. A few fit well together without any cutting, and others needed some shaping. In the end, I made sure all ends rested on the center of a rafter, and if a piece lacked stability, I reinforced it with a 2x4" nailing board on the underside of the sheathing, between the rafters. The east side of the roof was sheathed.

The west side of the roof was sheathed with two different sources of wood. I had been given a few partial plywood sheets the previous fall on one of my material hunts. Between those sheets and individual pallet boards, we were able to sheath the western side of the roof completely. We left a gap of a few inches at the ridge for ventilation.

STAINING THE FASCIA

September 17, 2009

The stain appears much more opaque than I anticipated. Hopefully it is much more transparent in application.

It is. But man, it's orange. Oh well, I don't mind it (if the alternative is sanding and recoating). The directions on the can indicate only one necessary coat, however, I applied two coats and it still feels thin and uneven. I intend to apply a third. And, as a side note, this stain couldn't be purchased in any quantity less than a gallon – wasteful.
WATERPROOFING THE ROOF

October 01, 2009

Thicker and a whole lot heavier than typical roof felt, I was able to pick up this rolled asphalt when I was on the search for my sliding door track. Though it ill all be covered, I think the light gray color works nicely with the stained fascia. A gap was left at the ridge for ventilation. We finished just as the rain started.

Drip edge was purchased brand new from Menards. While I am not trying to hold on to arbitrary and inconceivable goals (such as 100% reused materials), I still cringe every time I purchase new materials for the shed. I think I mentally need to move past this. The spirit of this shed is to be responsible both ecologically and economically, but not to bog down anyone with legalistic standards for what one calls appropriate design.

Anyway, the drip edge is a brilliant solution to cap the fascia, both functionally and aesthetically. Instead of the water running down the face of the fascia, it rolls off the drip edge and falls straight down to the ground. And it provides a very clean, uniform top edge and great tonal transition between the fascia and what will be the finished roof (the color of the drip edge and anodized aluminum roofing match very closely).

A gap of a few inches was created along the ridge to allow for ventilation. The metal roofing will stop short of the ridge, too, and the ridge cap will provide the proper weather sealing over this gap.
ROOFING – FINALLY!
October 02, 2009

A full Saturday of work, and very satisfying. The shed comes this much closer to being finished. This metal is one of the most efficient materials to work with. It is lightweight, easy to swing up to the roof, generally easy to cut, and two screws per piece make for a very quick install. Visually, the shed really begins to close in on its final, outward appearance. I couldn't have purchased better material.

ZERO WASTE – YEAH, RIGHT!
October 04, 2009

I can't meet zero waste standards, but I can have zero evidence of waste...

A blaze incinerates scraps of old barn wood, 2x's, 1x's and a whole lot of branches and twigs from the yard. Pieces I decided I couldn't use, pieces that are too small now to find purpose, boxes that nails came in... all burn into ash.
Taking a few pieces of the crate wood that I had “de-stapled” and aligning them as they will lie for the floor allowed me to get a beginning sense as to just how the finished floor would appear. I am very satisfied with the look and anticipate a very pleasing result.

Finally, I get past the intimidation of beginning the brick and I just start. Work begins at the south wall because it’s the least conspicuous wall; I’m figuring my brick laying skill will improve as I progress. Aiming for 3/8" of mortar between bricks both horizontally and vertically, the course stretched from east to west perfectly, with no bricks needing to be cut – a blessing. However, something is out of whack, because as I move up in courses, I eventually need to cut a partial brick to fill the row.

Striking the joints creates that finished look for the wall. The mortar beneath the uppermost bricks in the below image hasn’t yet been hit with the strike tool. The mortar consistency needs to set up enough that it will smooth and compact when the tools hits
it, and at the moment pictured it is too wet (typically for this project about 30 minutes after being set in place). I had initially wanted a raked joint because it recesses the joint deeper and gives more relief and texture to the wall, however as I remembered from school and was reminded in store, a raked joint is not advised for exterior purposes.

MY HAT OFF TO ALL MASON

October 25, 2009

The southern portion of the shed is bricked. Some difficulties definitely arose – the eastern wall has a bit of arc to it in the coursing on the lower half of the wall. Still, overall I am pleased with the wall. I need to clean the entire surface to remove the excess mortar.
Feeling the pressure of my deadline, it was time to bring out the work lights and continue my efforts after the sun went down.

PRACTICE MAKES PERFECT
November 06, 2009

The brick is finished! What a process – to keep lines level and walls flush and plumb all while maintaining uniform mortar width is a real skill. My hat is off to all masons who excel at what they do and who have made so many beautiful masonry creations throughout history. For our wall, we played with the idea of a soldier course topping off the last row of brick as a transition to the metal siding. It was vetoed.

Brick, brick, brick, brick, brick, brick, brick... The north wall was the easiest of them all. Perhaps it was the experience from laying the south wall. Perhaps it was because I didn’t go off level and have to play catch up each course. Perhaps it was just plain luck. Either way, the north wall was much easier to lay than the south and east wall. That being said, there are still many imperfections in the wall – particularly if you plumb the corners. But, it will
hold and at a glance it looks as good as any brick wall any of us pass on any given day.

Trying to achieve a transition between the brick and the next material, a soldier course seemed like a good aesthetic choice. However, because the metal siding above would be running vertically, using a top row of vertically oriented bricks didn’t seem like a good transition after all. Thus, after evaluating a “dry” soldier course I vetoed the change in brick bond.

INSPIRING MASONRY
November 07, 2009

For your viewing pleasure, here are a few of my favorite masonry projects. They truly had master mason’s working their handicraft into these projects.
Unfortunately, it was time to undo what had been done.

With the brick finished it was time to frame in the supports for the metal siding that would cap off the north wall. By the end of the afternoon, once the siding was in place, I had an uneasy feeling because I didn’t like the proportion of brick to metal, nor did I feel there was an elegant transition between the materials.
Both the North and South walls will have a material change beneath the peak of the gable. Since there is still plenty of unused anodized aluminum roofing, that seems a natural choice for the siding. Running it vertically seems to provide good contrast against the horizontally oriented brick. The dark color of the metal sets off the cedar fascia.

Proportion is key – how high should the brick go? It seems to make sense to bring it up at least to the top of the doorframe, and at that height the entire width of the wall is maintained in brick as well as at the base of the metal siding. So that is the goal.

Pictured above is a 2x frame allowing a screw at the bottom and top of each metal piece to attach the siding to the wall. The frame follows the top of the brick and traces up the triangle formed by the roof. The metal is easy to install, but a little laborious to cut – using a metal blade on a miter saw. But it's lightweight and easy on the back and shoulders when working over your head.

After a half-day's work it was time to step back and examine the design... upon examination the proportion didn’t feel right. Brick needed to grow, metal to shrink. It was time to undo the day’s work (hence the Control + Z title). Further, there needed to be a transition between the two materials. A cedar board flat on top of the brick, protruding from the face of the wall an inch or so should transition nicely, as well as enhance the cedar fascia. The metal will rest on the new cedar board.
Laying the finished floor with the help of four friends. Salvaged 1 4’s and 1 6’s screwed into the subfloor was a quick and painless process. Plus, the morning was beautiful. When we had to quit, the floor was more than three quarters finished.

I was blessed to have four guys from my Thursday night Bible Study volunteer to come over and lend their helping hands. One was called to work just as we started, so in the end we had three guys plus myself working for a few hours on a beautiful, sunny Saturday morning. I had arranged so we would install the finished floor.

Materials for the floor came from the crate wood gathered months earlier, of which only a portion of the boards had been processed (squaring the ends and removing staples from the boards). The crate wood came in two varieties – 1 4”s and 1 6”s, and after cutting and removing staples, the lengths were variable. In order to use all the wood, a pattern was set to use 1 6”s every fifth row.

The wood is all pine – incredibly soft pine. Pine will be very susceptible to damage from
moisture that I anticipate coming from a variety of sources – wet shoes, leaking fluids, spills, and general atmospheric humidity. Beyond susceptibility to moisture damage, the pine is so soft that anything dropped onto the floor will leave a three-dimensional mark. However, both of these factors are okay, remembering that the pine cost nothing and was going to be burned, it is incredibly easy to work with, and already had plenty of marks and scuffs and dings on it so my expectations weren't any different. I will increase the durability of the floor with polyurethane or some form of sealant.

From an aesthetic viewpoint, once installed the floor felt reminiscent of an old barn floor. The variegated colors add visual interest and help distract from the fact that these aren't the most uniform boards to begin with because of their pre-worn condition. I appreciate that the floor, through its appearance, expresses that though the boards are in a new use, this isn't their first use.
The air was unusually warm for November – mid 60's. That made installing the last rows of the floor particularly pleasant, both because of mildness of the weather and the satisfaction of finishing another section of the shed. I hope I can get enough of this wood to wrap the entire interior in the same pattern as the floor.
As the shed nears its finish, I couldn't be more ready to leave it behind as a project, but I look forward to using it; forgetting about it until I need it.

Here at the end of the shed's creation a question arises: is the shed more successful in its realized state or was it better off in the initial ideas and proposals from last year? It's a subjective question, but one I should be able to address. The entire spark for this project was the need I felt to move out of the world of hypothetical architectural design (which I had grown comfortable with at the architecture college), and move into the world all architects aspire to live – the world of reality, of full-scale, with real projects, real users of projects, real needs, real challenges, and tangible accomplishments. A world where two-dimensional drawings and even simulated models are insufficient. It's the world that allows me to look out the window to the backyard and actually see the shed. So, to think now that I have achieved that goal, to have moved beyond a studio environment, in that sense I can say the shed is more successful now than in its conception.

But I had ideals, ideas of acceptable quality that I needed to carry through the project, and not abandon because an unforeseen constraint didn't provide the conditions to meet that ideal. Whether that constraint was lack of time, money, tools, knowledge, experience or foresight; or the ideal of aesthetics, or of craftsmanship; the ideal that I wouldn't prefer a sketch over the end result, in other words, that the accomplishment shouldn't be regrettable compared to the potential. Were those ideals realized or abandoned?

Imperfections are abundant; miter joints aren't perfect; what should be equal measurements are actually off by fractions of an inch; the floor isn't square. If I were to list all of the imperfections of the shed, I would be depressed. I unrealistically expected my hands to be the equals of those men who have spent their lives at their trade. And if not the equal in efficiency, at least in the end result. If my craftsmanship was perfect but took one hundred hours to complete, while a skilled carpenter would have the same perfect result in only twenty hours, I would have considered that a great
accomplishment. But there is no perfection on the shed. I have to evaluate it as an amateur’s first project, lest I be disappointed. And herein lies the advantage in a project’s potential.

For potential always carries with it an air of mystery, this idea that there is always more to be comprehended past what is immediately perceived. And I believe this gives potential an unfair advantage over reality - when you can walk around and touch all sides of a project instead of using imagination to complete a project, the mystery disappears. When you stare at an uneven window sill instead of imagining the perfect window sill, you can be left wanting. Great authors, such as Tolkien, who create other words can explicitly explain as much as he did about Middle Earth – about its history, its people, its wars, its customs – but there is always a part of the reader that enjoys knowing there are countless other heroic tales untold and rich histories one will never experience. And that sense of unknown helps make that place so fantastic and intriguing. It’s the unknown, guided and reflected by the known that largely drives the urge to visit Middle Earth.

In another sense, magic, if it existed, would be a marvelous mystery to behold. Wielded by only a few, those magicians would hold a prominent position in the public’s view. But if one day magicians exposed the truth and said, “There is no magic. Only slight-of-hand and illusion,” then the mystical aura once carried by magicians would evaporate, and they would be understood to be no more than clever men. All hopes for a larger force at work the world, hopes for special beings chosen to wield that force, hopes for a great sense of fate and destiny all begin to fade, because the mystery held within magic was explained away as nothing more than a couple of fast moving hands and a clever mind. It’s a hard concept to explain, but I think a necessary concept to understand, because I may find myself disappointed with the shed in comparison to what I once thought it might have been.

To keep my perspective healthy, I think it appropriate to list some of the accomplished goals of the shed (goals that couldn’t be solved with potential): to provide storage to reduce the clutter of the garage; to protect those pieces moved from the garage against the elements – rain, snow, dirt, animals; to provide a shed that has aesthetics pleasing to both the users and the neighbors; to build with reused materials, being a good
steward of our planet; to finish by the deadline given by Ball State University's Honors College; to move from paper to practice. These goals and more have all been realized. To note, we have had our first snowfall of the 2011 here in Kalamazoo, an accumulation of around twelve inches - and the roof is unmoved, and that is one easily comparable success in comparison to the previous shed.

Similar to the perspective shift described in the introduction, if I look through the proper lens now I can pull a sense of success out of this project. Goals were set and goals were realized. I can point to an object and say that it was largely the work of my hands. I am its creator. Without me it would not exist. Perhaps we should all take pride and pleasure in that sentiment - that we have the ability to bring something into existence. Would such a realization make us all more intentional of all things we create if we looked at ourselves as doing the work of God? Would we reexamine for whom and for why we build? Oh, I mean nothing irreverent here; I owe all to my Creator who truly did start with nothing and has created all I have ever seen. But, having been made in his image, is this a small paradigm of what he did in six days and does every moment of the day? If this is truly a way to know God a bit more, then it should be treated with all reverence, with all intentionality. But at the moment, exhaustion is prominent, and to experience this revelation only once, and to feel the incomparable vastness between God's creation and my own seems enough for now.

\[4\text{ Not in the purest sense of that statement. I still believe ex nihilo, nihil fit (out of nothing, nothing comes)}\]

\[5\text{ Hebrews 1:3 He upholds all things by the word of his power.}\]
There are as many ways to get one's hands on used building materials as there are materials available. And it needs to be noted that a term such as "building materials" can be expanded beyond things like 2x4 studs, plywood and brick. Sometimes it's a good idea to look for just those things, sometimes it's good to look for types of materials - things that will act similarly to a stud. I found it necessary to remove myself even further from conventional construction standards and use generic terminology, turning a "stud" into a "primary wall support."

In the architectural field, design precedes building. So much effort is put forth before construction that all materials are specified, down to hardware specifications. The order is always: design, specify materials, purchase materials and then utilize those materials. However, to fast track a project or to design in a more uncontrolled, organic method, it may be of benefit to gather materials and let a design arise out of your supply. I found my process to be a back-and-forth - sketch ideas, find materials to fit those ideas, find materials I didn't anticipate, re-sketch the ideas, build, find more materials, sketch again and continue building. Eventually, I had gathered as many materials as I could anticipate using and I focused on the construction of the shed.

Recently reading the latest update on the blog Tiny Free House, a project not too dissimilar from my own, the designer/builder was asked how he specifically would insulate his walls using the packing styrofoam he'd been collecting. His response was much like mine throughout the shed's construction; he said, "I'll probably not know exactly how I'll do it until I do [it]." He recognized the need to insulate his walls, was gathering materials to do so, but he hadn't yet begun insulating the walls, and hadn't yet figured his exact method for doing so. A burn that bridge when you get there mentality. Only one problem need be solved at a time.

My first quests for materials to use on the shed were admittedly really drives to the country looking specifically for barn wood. I had already established an arbitrary search radius of about ten miles from home in any given direction, simply for the sake of easy transport and efficient hunting (I didn't need to be spending time doubling over my tracks just trying to find out where I was). On my drives, I stopped at any house with an old, out-of-commission barn to see if I could dismantle part of it, and take home the useable pieces. The problem I encountered was that no
one wanted to part with their dilapidated barns, or the person I met didn’t own the barn, or no one was home (and they didn’t respond to my notes I left behind). Initially my response was to look to other sources for barn wood, instead of exploring the same country roads and properties for other usable materials which now seems ignorant. No, I turned to the internet to find the barn wood I was so intent on using. I started with Google searches and came across a couple of interesting, but ultimately not helpful sites. There are actually specific sites dedicated to classified listings for old barns. There are companies that specialize in disassembling these old barns and selling the harvested lumber. I was in no position to dismantle an entire barn - I lacked equipment, trailers, storage and the will. Further, I wasn’t looking to invest money up front to make money later; I wasn’t going into business, I was building a shed. So, again, I shifted to a different venue - still on the internet, I now moved to craigslist. But here too, I found only two disappointing modes to acquire barn wood. Similar to the classified pages I had found, there were several old, worn barns needing removal, but the catch was to take all or nothing. The other common source of barn wood was someone who already had disassembled a barn and had assorted dimensional barn lumber. Prices for this wood was steep and on par with high end antique prices. No one was advertising a fallen barn, come one, come all. No one had a stockpile of old barn wood they wanted to see put to good use. So desperate to use barn wood, I almost committed two thirds of my budget to use $1.50 / bd ft barn wood siding from a dealer in Ann Arbor. Such myopia!

In order to pull myself out of the stagnant search for barn wood and begin making progress collecting materials for the shed, I decided I needed to go out and take the first thing someone was willing to part with. I was still looking for barns, but this time barns that were in use. I figured lots of barns are giant storage units for things people don’t use, and I was hoping that I could come across someone willing to part with something perfect for the shed. It worked, too. Though technically speaking, the first piece of material donated to the shed wasn’t used in the end, my second stop on the same trip was a jackpot (see the entry about pallets from H&R Wood Specialties). Often times it’s beneficial to grab a hold of the any material you can obtain, and determine its use later.

But there are many other ways to search for materials, most of which don’t involve leaving your home. For example, I utilized the Yellow Pages to contact demolition companies in hopes to gather building materials. I called the few in the area, explained my project and desire to visit one of their demo sites, and waited for their response. Only one company had any demolitions lined up, and they were more than willing to have me out to their site. It seems the owner of the small company had an affinity for reusing materials as well. And craigslist, I believe, is the ultimate source to find cheap, used materials. There is a free section updated daily with people discarding their junk. Further, craigslist is nothing but a hodgepodge of all sorts of used or leftover building
materials updated daily. Through craigslist I found a great location for cheap, used concrete blocks. The bounty that's available on craigslist is constantly changing and always local.

At my grandparent's, I called into a local radio “swap shop” program to advertise my need for a sliding door track, and received a call back within a half hour. By the end of the day, I had my track for just twenty dollars. I also had roofing asphalt and a homegrown cantaloupe provided by the same owner of the door track - a man who lived without internet, so radio and phone were his best bets for sales transactions. I am convinced that more areas need these radio programs.

An obvious source of construction materials is construction dumpsters. I just drove until I found some, peeked inside, and if tantalized, dug through the dumpster. I also had donations from friends - all the brick, a window, scraps of OSB and lumber were donations from friends of mine. I was able to take materials from the construction site at the school where I work. I called junkyards, stopped at random warehouses and pulled into random drives in random places and just asked people if they knew where to find discarded materials. Some did and some didn’t. Resources seem endless – so long as people have been building, materials have been gathering.

And of course I utilized the local hardware store (frequently). The most obvious and common place to find building materials is the place that advertises for them, the hardware store – whether it’s a large chain like Lowe’s or Home Depot, a smaller chain like Menards, or a DIY Center or Joe Average’s hardware, these places will carry everything contemporary construction projects use. Menards was my store of choice as it is only five miles down the road. Between all of these places though, prices will be fair and sales are regular. However, I found out just how expensive even a small construction project can be if using only new materials. Dimensional lumber and OSB alone will drive a projects cost up from the get go. There is no shortage of methods to find materials. Had I built with equivalent materials all purchased from a hardware store, I would have needed triple the budget, minimum.

///REUSED / RECYCLED / RECLAIMED / RECONSTITUTED / SALVAGED///

Terminology

Which term is most appropriate? Reuse is the most common classifying term for these materials, however, I suppose it could mislead to call the shed a reuse project. Perhaps a true reuse project employs stricter standards than I set. Whatever the case, I think it serves all parties best if we describe this as a simple shed, a small out-building,
backyard storage. And from there, if interest is taken, the list of materials can be described as partially reused, partially salvaged and partially brand new.

A quick categorization of the materials of the shed:

<table>
<thead>
<tr>
<th>First Use</th>
<th>Reuse</th>
<th>Salvage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x10 Base</td>
<td>Concrete Blocks</td>
<td>Roof Asphalt</td>
</tr>
<tr>
<td>Pea Gravel</td>
<td>Pallets - Floor Structure</td>
<td>Roof Sheathing</td>
</tr>
<tr>
<td>Brick Mortar</td>
<td>Subfloor</td>
<td>2x6 and 2x4 Sill Plates</td>
</tr>
<tr>
<td>2x6 Rafters</td>
<td>Finished Floor</td>
<td></td>
</tr>
<tr>
<td>Cedar Fascia</td>
<td>Steel Posts</td>
<td></td>
</tr>
<tr>
<td>Drip Edge</td>
<td>Pallets - Walls</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2x6 and 2x4 Sill Plates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entry Door</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jalousie Window</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metal Roofing/Siding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roof Sheathing</td>
<td></td>
</tr>
</tbody>
</table>

The selection of new or used materials came as a result of timing; if I didn’t need a material urgently, I tried to find it used. If a search for used materials proved futile, I went to the store. Convenience was a large factor in this decision making. To inconvenience the progression of the shed was often not a logical decision, and there was a workable budget of $1000 to pull from when necessary. I would estimate that fifteen percent of the physical makeup of the shed is from new materials. As one could imagine, the fifteen percent of new materials constitutes about ninety-five percent of the expended budget.
WAS IT WORTH IT?

Reflection

That’s a large question and I find it hard to begin answering. Yet, it’s an important question and aims at the heart of the thesis, so I must address

If I had to build another shed right now, would I build in the same manner? Would I try again to use reused and salvaged materials? Would I be more stringent and explicitly use only reclaimed materials, even reused hardware? And if I determined to build with used materials, would I allow the form and aesthetics to emanate from the materials gathered or select only the materials that fit the predetermined aesthetic?

I suppose those answers all depend on the client and the needs of the project. I think too many architects have set forth trying something (personally) novel, and end up pigeonholed into doing the same thing over and over because either cling to harsh standards once but out of context for future projects. Flexibility and adaptability vanishes. What was once a good idea for a project transforms into a regulative state of mind that ubiquitously affects all projects. There may be very rational times to use new materials on a project - they may be more energy efficient or more readily available - so I want to avoid nearsightedly administering regulations to any project before I know specifics.

During the building of this shed I had many ideas for other projects; ideas that came from materials I drove past but didn’t gather, ideas that I saw in other published projects, ideas from suggestions others gave me, and ideas that had been intended for the shed but didn’t come to fruition. Two examples: at the corner of 6th St. and Stadium Dr. lies a large pile of broken concrete. Even the smallest piece is too large to be moved by a man, thus I never even attempted to find use for the concrete on this shed. However, a project has a significant scale, it might be worth investing in a trailer that can carry such loads and a machine that can load the trailer and maneuver the concrete once on site. Or if I know someone who has such resources, then those slabs of concrete are in play. Instead of a beautiful limestone floor or patio/walkway, someone can have a beautiful

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6 Often times, clients request that an architect provide a detail to their own project that has its origin in a previous project of the architect, unaware of the contextual justification for such a detail.
concrete floor. With a treatment to the top surface and a jackhammer or chisel to shape the pieces to nest closely together, the end result could be rather elegant. An example of an abandoned design idea intended for the shed, resigned due to its difficulty and for the sake of finishing the project, was a detail for a water collection system. Our fire pit is just behind the shed, and the vegetable garden is on the opposite side. I had hoped to collect enough water to run a drip irrigation system for the garden, and to fill a reservoir feeding a safety hose for use when burning at the fire pit. It is definitely something that can be installed in the future; but I have no plans to do so at the moment, wanting nothing more than to leave the shed alone for a long time. So, I can conclude that I would be tempted to incorporate many similar design ideas and notions into future projects (as I seem to be creating an idea bank), but hope that in the end, I would always trust to context and need to determine their incorporation.

I HAD PAUL. WHO DO YOU HAVE?
Accepting help

Paul Johnson is a family best friend. He is a chemist by trade but a skilled handyman who seems capable of figuring out almost any home project. He was my Dad’s best friend, and when my Dad died just as the shed was beginning construction, Paul stepped in in a major way to lend a hand. Paul has been my right hand man on this project and without him the shed wouldn’t be anywhere near completion. One might think that two men work twice as fast as one man, but their efficiency is much more than double one’s individual efforts. Too many tasks on a building project require the use of two men. For example, to set a fascia plate requires keeping the top of the fascia flush with the tops of the rafters for the length of eight feet, and then nailing (with a hammer and a nail) the plate to the rafters without allowing the board to move up or down. Any work on a ladder or a roof means constant trips up and down to replenish the materials you’re working with - rafters, sheathing, roofing, etc... so, to be able to stay in place and perform the same task over and over while another keeps feeding materials to be used makes for efficient use of time.

But it isn’t just in these pragmatic increases to efficiency that Paul was necessary. He
kept me motivated - he was willing to work when I was willing to quit. Further, if we started a task together that I could finish alone, I had the motivation to avoid the shame of laziness, pushing me out to go and finish the task before we next met. He was a spur in my sides without ever having to feel like it.

Yet another strength Paul brought with him is a boost to my (and my parents’) confidence. The ability to be able to bounce ideas off someone, to think through a problem out loud, is invaluable. If I didn’t see a solution, Paul did; and vice versa. If we lacked confidence, we went at something together, which in itself increases confidence and morale.

Everyone needs a Paul on their project. Yet, you will be hard pressed to find another so willing to sacrifice their time and days off like Paul. Instead, you may try and find someone directly connected to the project, someone who has stake in seeing it through.

DO THINGS YOUR WAY
My best advice

I can offer no better advice to one working on a small building project than to just get out there and start. Don’t delay. Start now and work hard until it’s finished. Joy transitions to burden when carried on for too long. Don’t over rationalize your project, don’t think about it too long. Get your hands dirty, make some irreversible changes and begin, lest you allow a great project to be nothing more than a great idea.

On top of this, I can only think to recommend that you disregard any of the above and look for inspiration and education from far more qualified and original sources.