instructables

## The Clubhouse

by balloondoggle on September 29, 2009

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## Intro: The Clubhouse

Herein is described the clubhouse I built for my kids. The final product varied a bit from the plans, but that seems to be the nature of these things. I apologize that none of the photos have captions, but that tool just doesn't seem to work for me. Three machines, no luck. [Edit: Turns out it works in FireFox. Chrome and IE, not so much.]

It was conceived as a "kids playspace" that they could decorate as they wish, spill things without consequence, and generally have a haven from the concerns of the adults relating to not breaking things in the house. As such, I had to continually be reminded throughout construction that "This is a CLUBHOUSE not a GUESTHOUSE!!" because I'd get wrapped up in some silly cosmetic detail.

Our local museum center has a few spots that are outfitted to resemble a clubhouse or treehouse and I keep hoping that our kids will use found objects to "decorate" thier space in a similar, eclectic, fashion. Unfortunately, they won't leave the yard to go find things.....

In general, you are looking at an elevated deck topped with a small shed. The roof of the shed accomodates a garden that serves a purely decorative function, although there is some small stormwater runoff control benefit. It is high enough that I will not be getting up there to harvest vegetables on anything like a regular basis. Perennials and groundcover to suit your climate are probably the best. We haven't decided much yet

Once the paint went on, I had a new concern. I'm afraid Ronald is going to come after me for trademark infringement. My neighbors keep knocking on the door and asking where their orders are. Well, the ones who are still speaking to me anyway....

A word on legality: In my city, a child's play structure does not require a permit unless it is over 12.5' tall (oops) or enclosed (darn).


## step 1: The plan

With this step, I have included the Google Sketchup file I used to design this project and a spreadsheet of the major components. I got most of my stuff at Lowe's out of habit, hence the Lowe's item numbers. Prices are subject to change at anytime without notice. And if you get it delivered don't just count stuff - open the bundle and check condition. There was some real crap in the middle.

If you aren't familiar with Google Sketchup, it is a free 3D design tool provided by *suprise* Google. Can't find it? Just Google "sketchup". I found it to be very intiutive and easy to use. I use AutoCAD Civil 3D professionally and this is definately easier than Civ3D - for this purpose. You should have no problem viewing, modifying,disassembling, or redesigning the plan to suit your desires.

I created components that reflected the actual dimensions of standard lumber then used these to virtually build the clubhouse. As a result most of the project went together like a kit. I was able to precut and predrill components on the ground then assemble them in place.

In the design process I got obsessed with the weight of the proposed green roof. I was concerned that the structure would collaps under the weight of wet soil. As it turns out, my concerns were misplaced. I didn't pay enough attention to the foundation and as a result the entire thing has a slight tilt to the right rear corner. The silver lining here is that the roof drain is now at the low point! Standard framing methods and materials will have no trouble with the weight, but it must be properly supported. A good municipal plan examiner would have pointed that out had it gone through a plan review at the city B \& I office.


## Image Notes

1. Some assembly required.

## File Downloads



Hill ClubhouseBOM.xIs (20 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'ClubhouseBOM.xls']

clubhouse.skp (1 MB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'clubhouse.skp']

## step 2: The foundation

Prior experience told me that this would be the most physically demanding part. I used $6 \times 6$ posts, so they needed $12^{\prime \prime}$ holes, 30 " deep to set in. Knowing that the summer had been on a record cool streak through June and July, I opted to wait until the dog days of August to get my long-suffering accomplice involved. Bob, I owe you several dude. Once the hard stuff was done, Bob made sure that he had 9-1-1 on speed dial and performed the stuporvisory function mandated by any construction project. He also provided a steady stream of hydrating beverage!

In the crappy cellphone picture here you can see that we set 4 posts and interconnecting beams. Earlier I had notched the $6 x 6$ posts to let the $2 x 8$ beams set flush. I predrilled and marked each part so that once the holes were ready it would be a simple matter to drop a post in a hole and bolt it up.

Here's where the foundation started to go wrong. On a prior project, we bored holes, set forms and poured a footer for each post. Despite our best efforts, they did not line up right and to this day my ramp looks like it was built by several drunk garden gnomes. So we decided that for the clubhouse we would set the posts in thier holes and let the beams set the line as we plumbed and leveled them up. A little gravel here, a nudge there and we were golden. Quick, pour a bag of Quickrete in the hole, hose it down and call it good. That back corner sank in a week. Damn.

Anyway, you won't make that mistake now because I did it for you. Make your own mistakes, this one is mine.
What you see before you now is the beginning of a deck, 6 ' above ground. The front 2 posts are well above the finished floor level because they will become the basis for the railings. The back 2 finish flush with the top of the beams and will do nothing more than support the rear of the structure.

I set joists and framed the opening for the access hatch, then decked it with $5 / 4 \times 6 \times 8$ deck boards. At this point it bears a resemblance to a Cochtaw Indian funeral platform. Let's hope I don't have to use it that way.


Image Notes

1. It was larger than expected.

## step 3: The framing

I used conventional framing techniques to build a rectangular shed $5^{\prime}$ deep, $8^{\prime}$ wide and $6^{\prime}$ tall. This is a pretty good size for my young kids to feel comfortable in. Scaling it down makes it more "kid" than an 8' ceiling would. I also hoped it would keep me under the 12.5' height restriction. If you don't know standard framing practices there are lots of places on the web to find it; I won't duplicate it here.

The shed is built on the back 5' of the 8'x8' platform. This gives the kids a $3^{\prime}$ "porch" in front that will be covered by cantilevered rafters and a sloped roof.
Access to the entire thing is through a hole in the floor in the left rear corner. They climb up to it with a cargo net from one of those prefab backyard playstructures everybody seems to have. They are readily available wherever you can get the lumber for a set. This one came from my mom and was previously used on a build my wife called "Baby Boot Camp". The kids have a pretty easy time using it, but anyone taller than 5' has to contort a bit.

At one point I considered a more typical ladder as an alternate, but the cargo net does double duty as a hammock for the kids. Putting a ladder on the porch seemed possible until one of the neighborhood boys started jumping from the porch. Scrap the ladder idea, railings all around. Same kid now climbs to the top railing to jump. Where's my coil of razor wire?


Image Notes

1. Getting bigger!


## Image Notes

1. Kid trap. Probably ought to cover this somehow, but that could lead to smacked heads and pinched fingers.

## step 4: Enclosing

I used 4'x8' sheets of siding to cover the clubhouse. The 8' height covers the joists at the bottom and extends to hide what will be the box for the roof garden. This was not planned. It's better to be lucky than good at times. Once the siding was secured I used a trim bit in my router to cut out the windows and door. The panel removed for the doorway became the door itself. It is set up with a basic screendoor hardware kit that included 2 hinges, handle and spring along with all screws needed.

The roof is $2 \times 8$ rafters placed directly over the studs. I initially covered the entire thing with 2 sheets of plywood, but later cut out the part over the porch. No real reason. The wood didn't serve any purpose there and I was able to use it elsewhere.


Image Notes

1. Cantilevered porch roof.
2. Cargo net access.


Image Notes

1. Starry skies coming soon to a porch roof near you.

## step 5: The roof garden

This is the part I was most concerned about. I needed to make sure it would hold weight and not leak. A leak will be impossible to repair once the dirt is in place.
The bottom of the garden box is the roof sheathing. I simply laid a rectangular frame on top. The knothole in the lefthand corner in the picture below is approximately where the drain ended up. I used roll roofing and roof cement to try and waterproof the box. It turns out that 1 gallon of roof cement doesn't go far. Get 2 . In the bottom of the box I lined the angle point with long strips of wood to create a 45 deg angle instead of the 90 deg angle where the sides meet the bottom. I had to do this because the roll roofing can't make a bend this sharp without cracking. I put down 3 courses of roll roofing, keeping in mind where the low spot was. A better material would have been rubber roofing, EPDM, but I had to use what I could get. The gravel surface meant that there is not a good seal between the roofing material and the drain.

To drain this "bathtub", I used a simple PVC drain with a stainless steel grate over the opening. To this I connected some PVC pipe I had in the basement and ran it as a downspout through the inside of the clubhouse, through a hole in the floor to drip freely near the rear post. I considered just making a quick 90 deg turn while it was still in the ceiling area and then out through the siding, but didn't have any 90's in the right size.

On top of the roofing material goes a layer of gravel for drainage. On top of that is a layer of landscape fabric - because I didn't have any filter fabric, that's why - and then the garden soil. I used about 350 lbs of gravel topped with 400 lbs of potting soil. I don't know what the long-term viability of potting soil will be, but the weight of garden soil would have been closer to 800 lbs. dry. I don't want my kids to resemble Flat Stanley (Google that if you don't know who he is). I carried each $40-50$ pound bag over my shoulder and up a 16 ' ladder. That was F-U-N FUN!!

Sadly, I was not able to make the drain installation watertight. Roof cement may have been beneficial here in large quantities. The good news is that it appears that the ONLY leak is around the drain, so moving the soil and gravel out of the way to try and improve conditions may be possible. The bad news is that I probably won't get around to it until it's too late and the roof has rotted out and dropped gravel and soil all over the interior.

For planting, we still haven't made any real firm plans. About the time I was finishing up our son brought home a fundraising packet from school (where did my property tax receipt go? I swear I already paid for this free education!) and there was a good deal on a variety of spring and summer bulbs. We ordered some. In addition to these, we think we'll put in fall mums around the sides and maybe phlox to fill in around the bulbs and prevent weeds. Since any access to the roof requires me to rent a ladder, I need to keep maintenance of the garden to a minimum, and this plan seems to facilitate that.


Image Notes

1. Drain is here.
2. Cut a triangular strip to fill these joints and make 45deg transitions.
3. Top of siding is even with top of garden box.


Image Notes

1. This is the downspout.
2. Random part that provided needed length.


## Image Notes

1. 350 lbs of gravel.
2. Standing water. The drain is covered with weed block fabric to keep the gravel out of it. This slows down the flow, but that's okay.


Image Notes

1. This is the edge of the fabric that separates the gravel and the soil.
2. 400 lbs of potting soil, moistened.
3. Neighbor's street sweeper.

## step 6: The porch roof

For the porch roof, a sheet of 4'x8' plywood and 2 bundles of cedar shakes worked like a charm. I don't know about the bug repellant properties of cedar beyond moths, but it sure smells good up there.

It's starting to look like something now. The neighbors have noticed it. I told them I'm mounting auto-targeting .50cal machine guns on it.
I figure after that, planting 12 ' sunflowers on top won't seem so bad to them.
To secure the cedar shingles, use something besides staples. This is another case of "use what you've got" and $3 / 8$ " staples and $1 / 2$ " brads are insufficient. By spring they should all be back on the ground where I can reach them. I'll rent the ladder again and take another stab at it. I've got a hefty supply of thumbtacks l'd like to use up. Again, make your own mistakes; this one is mine.


## Image Notes

1. Rope and pulleys for the bucket. A convenient way to get things into the clubhouse.

## step 7: The interior.

This part has been left largely to the impulses of the children. They were equipped with some cheap brushes and washable paints and told simply "Don't paint each other". The results were predictable, but that's why we gave them washable paint. Who's the green kid?

I used a cheap piece of green plastic outdoor carpet to line the floor and keep small toys from falling through the spaces between deck boards. Plus it can be hosed out.
The "granny's attic" area over the porch seems perfect for storing small toys that you can't reach. I can't wait to see what's collected up there in 10 years when I have to figure out how to get rid of this thing. I bet it will be like a time capsule of their favorite lost toys.

My son, the 7yo, has installed a computer on the door. He appears to be checking out www.evil.com. I blame Dr. Doofenshmirtz. (Go look it up. That's what Google's for.) Hey, where's Perry?

There should probably be some sort of guard rail around the hatch, but I haven't done that yet. For now we'll consider it a first aid training opportunity. And yes, I was the first person to fall through it. My shoulders are too broad to fit though, so I looked a bit silly. Bob didn't dial 9-1-1; he was laughing too hard.

Another hazard here is the support for the pully system. I can't count how many times I hit my head on that thing. No, really, I'm too woozy to count.


## Image Notes

1. Rope and pulley from the inside. The end of the rope is secured to the window framing and there is a lot of slack to prevent hanging accidents. Nothing ruins your day like a blue kid.


Image Notes

1. Hook and eye to keep window closed. They'll never remember to close it. Why did I bother?


## Image Notes

1. Kid trap. Probably ought to cover this somehow, but that could lead to smacked heads and pinched fingers.


Image Notes

1. "evil.com" Good god, he's only 7 and already Goth....
2. Backer piece for the handle on the outside.



Image Notes

1. This is the downspout.
2. Random part that provided needed length.


Image Notes

1. McDonald's Lego Racer. I wonder how he'll ever get it out of there?

## step 8: Some details

I trimmed all the openings with $1 \times 3$ pine. Window sashes are $1 \times 2$ pine lapjointed, Gorilla Glued and tacked, then hung with stormdoor hinges. Later I will add plexiglass to the sashes for a bit of weatherproofing.

The railing is pressure-treated $2 \times 4 \times 8$ screwed to the posts and corners of the shed. Apparently they resemble climbing structures.
The ice cream bucket lasted about 10 minutes and was then replaced with one of my good 5gal buckets. I'll never get it back. The things you sacrifice for your kids.
Our youngest has ordered window boxes. Basic box, sized to hold 4 " pots. If you can build this project you don't need an instructable on these. I may modify the downspout to let her use collected rainwater to care for the plants that go in them. Eventually. Maybe in the spring. Before she starts dating, for sure.

Originally, I planned to move the swings from thier current rusty old metal swing set to the underside of this. However, it rocks a bit and would require bracing to steady it up under that sort of loading. This would provide another climbing route for the crazy neighbor kid to further contravene the railings and the intended safety provided by them. Gonna have to think this one through.

The porch received a ceiling, creating enclosed spaces between the rafters that can swallow Hot Wheels cars and smallish kids. This ceiling will be painted blue and be decorated with stick-on glow-in-the-dark stars and planets. The kids have been clamboring to "camp" out here for a while now, but never seem to mention it until bedtime on a school night. No. Wait for Christmas break. Maybe for New Years Eve. Big Foot will be in hibernation by then.

Still to come is a flag pole. We'll cut some fabric and let each kid make their own banners. I wonder how long it will take for these to begin serving as company guidons in backyard battles.

Another feature I'd like to look at is lighting. I have considered putting some of those solar powered landscape lights on the vivisection (GOOGLE!!!) table. Once the disassembly is complete, I could put the LED's around the interior and mount the panels on the outside. They seem to go on sale fairly regular-like as styles change, so if I come across a good clearance sale I'll grab them. Then they'll sit in the basement workshop for three years until I come up with some cockamamie scheme for them

I have not installed any utilities, as I see that as an invitation to higher water bills and electrocution. As they get older l'll consider a low-voltage solar charged system if they need some power for lights.


Image Notes

1. Interlocking lap joints.


## Image Notes

1. Yeah, that lasted. Cheap plastic is no match for rocks


Image Notes

1. Not to scale......


Image Notes

1. McDonald's Lego Racer. I wonder how he'll ever get it out of there?


Image Notes

1. Starry skies coming soon to a porch roof near you.


## step 9: In conclusion....

..much gratitude to Bob for his help and encouragement. Without Bob it would have burned down, fallen over and sank into the swamp by now. And thanks for not calling 9-1-1. That would have just been embarrassing.

And to my wife, who saw this as a chance to divert me from my boat-building project: Don't worry dear, l'll get that thing in the water before you know it! But first I need a big enough work shop to build it in - the basement simply won't do.

And to the kids, without whom this project would have been just a weird thing built by that creepy guy who seems to be luring children.


Image Notes

1. Me, painting.
2. Cauliflower. Did you know these plants are gender specific? Neither did I. I have lots of green leaves but no cauliflower.


Image Notes

1. Trial run on the window sash.


Image Notes

1. She will get her own special swing underneath the deck.


Image Notes

1. Another happy customer!


Greenhouse From Old Windows by cheft


Children's Outdoor Play Table by richardw2


Trellis + "Vivak" greenhouse-shelter-playhousegarden room. by manuka


Birdhouse Maintenance by cheapchuck


Visual Treasure Hunt for Children by gabebillings


Idiots guide to making a yugioh deck by Instructoguy12125


Green Roofed Dog Veranda by Tool Using Animal


House of Cards by felix62

## Comments

## 25 comments Add Comment

## wander-in says:

Oct 19, 2009. 8:14 PM REPLY
Looks like a fun place. A couple of things though. Wood shakes need to have the roof at a slope of I believe either $4: 12$ or $5: 12$. If you don't, a high wind could peel them off. Also how secure is it now? To keep it from racking or tilting usually you would put at least one " X " brace on the legs. I think you could get away with putting small 45 degree braces on both sides of the corners and that would work. Ok, one last thing. If you could of lined your roof garden box with single ply roofing that would really make it last. Single ply roofing is basically swimming pool liner.

## CHIEFGR8TWOLF says:

Oct 14, 2009. 8:00 AM REPLY
Looks very good, but if you want to protect your kids you could put asmall gated rail around the rope ladder entry. Worked for yearswhen I did my son's club house. Also a solid ladder to one side ofyour front deck would be a great addition. I am sure this will give yourchildren years of enjoyment.
balloondoggle says:
Oct 15, 2009. 3:33 PM REPLY
We were going to put a ladder in just like you say, for easier parentalaccess. Then the kid down the street started jumping and wedecided to put up railings all around instead.

## CHIEFGR8TWOLF says:

Oct 19, 2009. 7:05 AM REPLY
Balloondoggle,
I feel your delima. You want to protect your children without endangering your nieghbors. The addition of a slide to that side would eliminate jumping. And a small fence surround would keep out unwanted critters (4 legged as well as 2 ) and add an extra measure of security for your kids. The best part of what you have done here is that when you get ready you can add swings and sandbox under the club, for all weather play. Best of luck to you and yours.

TheOIMaestro says:
Oct 7, 2009. 2:03 PM REPLY
Outstanding instructable, great parent! Like IdahoDavid, I, too, would like to live in something like it.
And ten extra points to Bob, provider of beverages, helper supreme, walking palindrome among men :-)
balloondoggle says:
Oct 8, 2009. 2:05 PM REPLY
Bob has been indispensible on many projects. Sadly, he has not undertaken any projects of his own that required my help, except that one time with the water heater. His help has so far been unrequited.

He's my hero.

## bikerbob68 says:

Oct 15, 2009. 11:38 AM REPLY
My pleasure, Rob. You just needed a second hand on occasion. You were the man with the well thought out plan and the gumption to gofor it. I admire your "who says I can't do this"approach to these projects and I learned a few things from you along theway, as usual. And it's always fun helping out on these projects, especially when it's your money, lol. The kids will rememberthis guesthouse, err, clubhouse for a long time, well afterthey've outgrown it.

## 1-2BGardening says:

Oct 9, 2009. 2:18 PM REPLY
Awesome parents! Awesome project! Thanks for sharing. My father built a fort for my brother and a playhouse for me maaaaany years ago. That was back when you could go to the local dump and scrounge for materials, which he did... yep! long time ago. Anyway, what does a project like this cost these days, if you don't mind me asking?

## balloondoggle says:

Oct 9, 2009. 6:53 PM REPLY
I originally wanted to build it from salvaged materials. Our local Easter Seals society runs a construction material reuse buisness, as does Habitat for Humanity. Unfortunately, dimensional lumber of useable length seldom shows up at these places. There wasn't much else I could use because of the scaled-down size. A door intended for a room with an 8 ' ceiling will not fit a room with a 6 ' ceiling and I'm not about to put real glass windows on this thing!

The original budget was $\$ 1500$ USD, but when all is said and done it will come a bit closer to $\$ 2 \mathrm{k}$. If I left off the green roof I could have used cheaper materials, but I wasn't about to risk that sort of loading on $2 \times 3$ studs. That would have saved the cost overruns I think. One of those cedar playsets that the pros come install would have cost about the same, but we had a lot more fun doing this.

## TechNerd1012 says

Oct 7, 2009. 6:07 PM REPLY
This is a very good instructable, good idea :)
did you use SketchUp for drawing the first pic?
balloondoggle says:
Oct 8, 2009. 2:09 PM REPLY
Yes, I used Sketchup for the full plan set. The first pic is just a .JPG of the finished assembly before I exploded it for component details.
I can't recommend GSU enough for simple construction projects. You can really fit things together in the virtual world and have measurements to work from so you don't have to risk arithmetic errors wasting your materials. Plus, it's free!

TechNerd1012 says:
Oct 8, 2009. 5:03 PM REPLY
Thats awesome! I( use Sketchup all the time! I never really knew of anyone else who uses it, or really even heard of it

## MacGyver1138 says:

Oct 7, 2009. 1:49 PM REPLY
I wish I had had something like that as a kid. I got a treehouse, but it didn't have much room. No roof, either
One thing you might think about is recycled rubber under the structure. I've seen it on playgrounds before, and it makes for a soft landing in case of falls. It also looks more uniform than the trampled grass you're bound to get from all the foot traffic.

Good Instructable

## balloondoggle says:

Oct 8, 2009. 2:01 PM REPLY
We thought about that, but to be effective you need about 6" of it which meant an excavation. I know the Safety Police are going to come down on me for this, but if you don't get hurt from time to time, what kind of childhood are you having? As far as the lawn, that was a lost hope when we started having kids! I'll worry about that when I'm an empty-nester and in the meantime we'll just try to keep the mud out of the real house.

I always wanted a treehouse like you had, and that was really where this started. Without any trees in the yard though, we were kind of stuck. Even without a roof, a tree house is still cooler than a clubhouse in my book. I envy you that


MacGyver1138 says:
Oct 8, 2009. 2:38 PM REPLY
suppose you're right about the excavation. Also, I have no idea on the cost, but it's definitely more than not putting anything there at all!
You're also right about a few bumps, bruises, lacerations, and breaks being part of childhood. It's best not to be overprotective.
I will say the treehouse was awesome at the time. It was a triangle between three different trees. The trees grew apart too far not long after I was heading to college, and the treehouse was no more. *sniffle*

## CementTruck says:

Oct 7, 2009. 8:53 AM REPLY
GREAT IDEA!!
I have been dreaming of making a clubhouse/swing set/rockwall/jungle gym for my kids + I wanted to enclose the lower level for a storage area for my lawn equipment (kills 2 birds with one cheap stone).

Kudos on a good design.
So what are we planning to do next summer Ferb?
http://www.stevproj.com/PocketYachts.html
PS - this was not a cheap stone! Budget was $\$ 1500$, but it will be over $\$ 2000$ before all is said and done. And I wouldn't want my kids around the lawn equipment - that stuff is costly.

## CementTruck says:

Oct 8, 2009. 2:34 PM REPLY
My plan was to enclose the first floor and but a locking door on one side for precisely that reason. Keep the yard apes off, and away from, the expensive "toys".

Good luck with the boat!
Signed,
Green With Envy (aka - no time-no money)
myke2020 says:
Oct 8, 2009. 9:09 AM REPLY
Roses on the ground would make good razor wire, you would need a lot or the kid would try to jump even further to clear them all.

## balloondoggle says:

Oct 8, 2009. 2:11 PM REPLY
Roses would be my wife's duty and then she'd prohibit the kids from playing near it in order to protect the flowers! I'll just keep supervising and use some negative reinforcement when I see him doing it again. With 4 older boys crowding out the 1 younger girl, it's best to have an eye on things anyway.

## NicodemusX says:

Oct 7, 2009. 7:39 AM REPLY
Good Dad and Mom! Great Playhouse!
If you're worried about kids falling into the entrance hole, carry the "climbing net" theme on. You might be able to run a heavy climbing net from floor to ceiling without having to build any structures.

A request has been received for shelves, so I think l'll put in something of a "bookshelf" unit that will serve as a wall on one side of the trap, leaving it open on just 1 side. It will mean an extra twist getting in, but that shouldn't be a big deal for the kids. And those nets get expensive.

