

An aerial view of the Cougar Pass Lookout Tower's 14'-by-14' cabin. With a careful historical renovation, this cabin could form the heart of the Cougar Pass Lookout Education Center.

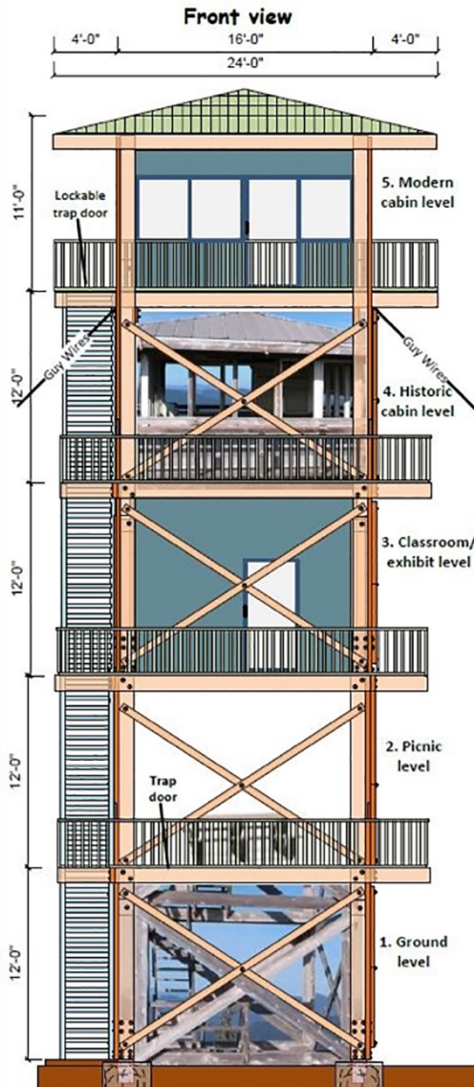
Cougar Pass Lookout Plans

The plans on this page show various ways we could rebuild the Cougar Pass Lookout and transform it into a Cougar Pass Lookout Education Center.

It's best to break any large construction project into separate phases so each task can be given attention sequentially. For this project:

1. **Phase 1** will preserve the most important parts of the Cougar Pass Lookout so it isn't torn down and entirely lost.
2. **Phase 2** will add the necessary features to operate a basic Lookout Education Center.
3. **Later phases** are less certain, but they are likely to add permanent restrooms and make other important improvements. Over time, we hope the Cougar Pass Lookout Educational Center will grow to become a world-class cultural resource and tourist destination, and that sort of magical thing will only happen if it develops in a thoughtful and orderly manner.





A sketch of the proposed replacement lookout tower.

Phase 1

The Phase 1 is limited in scope: it will do the bare minimum necessary to preserve and stabilize the Cougar Pass Lookout.

The first step will be to use a crane to carefully remove and set aside the current 14'-by-14' cabin. This will preserve it, so it can be renovated in Phase 2.

Next, all but the first 12 feet of the current tower will be removed and thrown away: this part of the historic tower is just too far gone to be renovated in Phase 2.

Next, a new and wider tower would be constructed that surrounds the existing tower. The existing tower has a 14'-by-14' base, and the new tower will be 16'-by-16', 18'-by-18', or 20'-by-20' -- the exact size will need to be determined later. The new wider tower will shelter the first 12 feet of the existing tower so it can be permanently preserved as a museum-like exhibit.

The new tower will use modern building materials and methods. For example, the stairs would meet current building codes for run, rise, width and landings. While the new tower would look generally similar to the historic tower, it will use more steel, aluminum, glass and plastic so it wouldn't rot, and will have two well-insulated levels for the classroom on level 3 and cabin on level 5. It will be built with bolts, splitting connectors and screws so it can be easily repaired if necessary.

Each of the upper four levels would have a solid deck that is entirely surrounded by a catwalk. The new tower five levels will each have a separate function:

- 1. Ground level:** A playground area that lets people interact with the first 12-feet of the original tower's base structure.
- 2. First-floor level:** A picnic area with with tables, chairs, countertops and BBQ.
- 3. Second-floor level:** An interpretive sign level with historic photographs and information about fire towers in Oregon. This level should have exterior walls to it can be heated, stackable chairs so it can function as a classroom, and a ceiling-mounted video projector to play documentary movies.
- 4. Third-floor level:** The renovated historic cabin fills this level so visitors can see what a 1930s fire lookout tower cabin actually looked like. This cabin would be entirely surrounded by a catwalk, so visitors could look in all its windows just like a museum exhibit, but its door could remain locked.
- 5. Fourth-floor level:** A modern cabin level. This level might be rented so visitors could stay there overnight. Alternatively, this level might be made available to volunteers on a no-cost basis in exchange for having them oversee the lookout tower.



Fit and finish #1: Because the replacement tower won't be historic, it can be built with some style. This image certainly isn't like any 1930s Forest Service Lookout Tower, but perhaps this sort of fit-and-finish would be appropriate for the replacement tower.



Fit and finish #2: Certainly the original 14'-by-14' cabin should be restored to look roughly like this because that's how all historical fire towers looked: utilitarian. Should the replacement tower also follow this sort of fit-and-finish?



Phases 2 and later ...

Phase 2: Complete the Basic Education Center

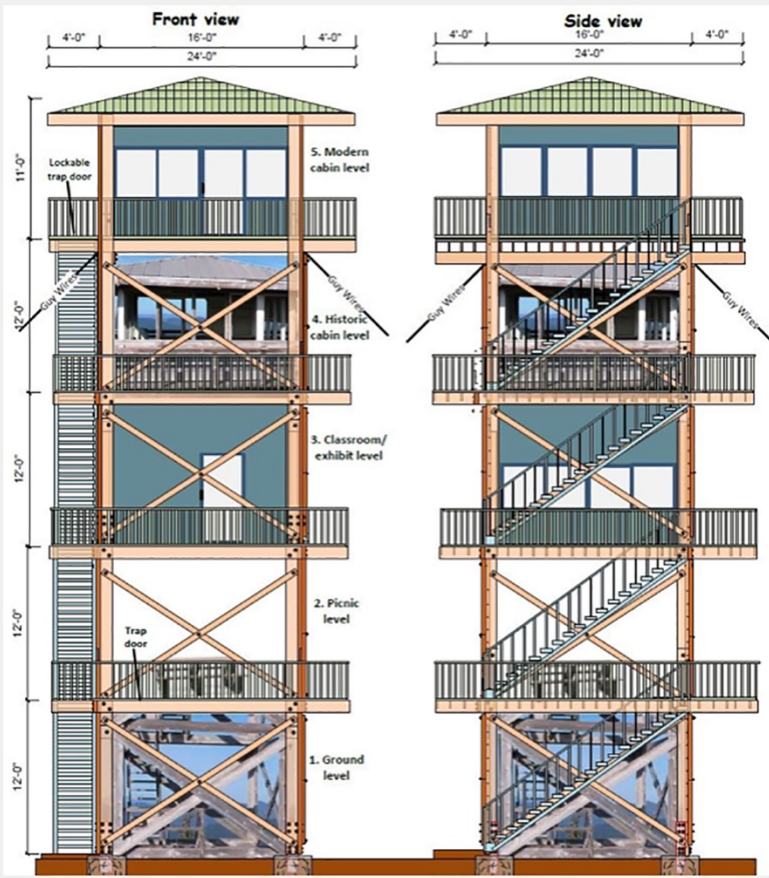
This phase will add the features and finishes necessary to convert the skeleton tower into a functional education center. This includes:

- Fit and finish of interior surfaces: floors, walls and ceiling.
- Exterior railings and decking.
- Provide a minimal electrical system. This is likely to involve combining solar panels with a Tesla Powerwall and a backup generator so the site can have enough power to run lighting, a video projector and a security system.
- Install a security system with cameras that send images in real time to the cloud (think Google Photos) to provide deterrence against vandalism.
- Renovate the 14'-by-14' original cabin and equip it with furniture and an Osborne range finder so it looks like it would have looked in 1965.
- Create interpretive signs and have a 20-minute movie produced so people who visit can learn about Lookout Towers and the Elliott Forest.

Phase 3: Add Optional Improvements

We really are getting into entirely speculative ideas here ... but it's fun to dream. Obviously it would be nice to have permanent restrooms. No forest service lookout towers had elevators, but that would be a good thing to have. A trolley or chairlift from the parking lot? Disassemble an eastern Oregon fire lookout tower and reassemble it on the adjacent knoll 200 yards away?

looking at utilitarian. Should the replacement tower also follow this sort of fit-and-finish? ... eastern Oregon fire lookout tower and reassemble it on the adjacent knoll 200 yards away?



Side-by-side Concept Sketches

All the sketches on this page show replacement towers with a 16'-by-16' base structure, but a larger base might be a better choice. For example, a 20'-by-20' base could house the original cabin on Level 4 without chopping off its eaves to make it fit. Also, the larger base would make for a better classroom, more picnic tables, and a more spacious cabin on Level 5. But anytime you make buildings bigger, they get more expensive, and it's currently unclear how this project will be funded.

Legal Disclaimers

Engineering and Architecture Ideas

The concept sketches in this website are just that -- ways to generate ideas about how a modern lookout tower might be built. Although they look detailed, that's an illusion created by how CAD software makes quick sketches look professional.

These concept sketches are not construction documents or architectural designs. Before any construction takes place, an Oregon-licensed architect or engineer will have to prepare and professionally stamp a detailed set of construction-quality plans.

With that legal disclaimer out of the way, this site's concept sketches have more validity than quick napkin doodles. For example, our concept sketches borrow heavily from tried-and-true forest service designs, such as the 1963 fire tower design shown nearby. Also, our concept sketches have been modified based on comments and suggestions from licensed architects and engineers. So we believe that with appropriate modifications and review, they can fairly quickly be converted into roughly equivalent drawings that have an engineering seal of approval.

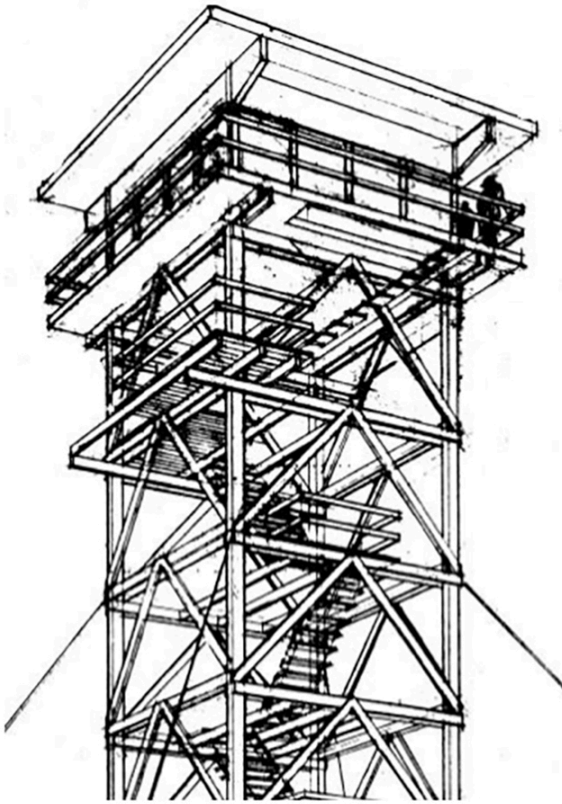
The licensed professional who has had the most impact on these sketches is Ben Brungraber who founded Fire Tower Engineered Timber, a design and engineering firm that specializes in timber frame and complex post-and-beam construction methods. You can learn more about Dr. Brungraber and his qualifications at [the Fire Tower Engineered Timber website](#). After talking with lots of design professionals, we believe Fire Tower Engineered Timber would be the best firm to do the sort of engineering needed by this project.

Historical Preservation Ideas

The Cougar Pass Lookout is listed in the National Lookout Historic Register. It's description in that register is:

The first structure on this site was a 30' L-4 wooden tower built in 1936. That was replaced with the present 50' treated timber tower with live-in Amort cab, which is presently occupied by packrats only.

Any changes to the Cougar Pass Lookout should be reviewed and approved by [the Oregon State Historic Preservation Office](#). Our prior experience with this Office has been entirely positive. It is staffed with knowledgeable folks who have offered excellent suggestions for renovating historic structures. Filling out the appropriate forms to start their review process is reasonably straightforward, but we haven't done that yet.

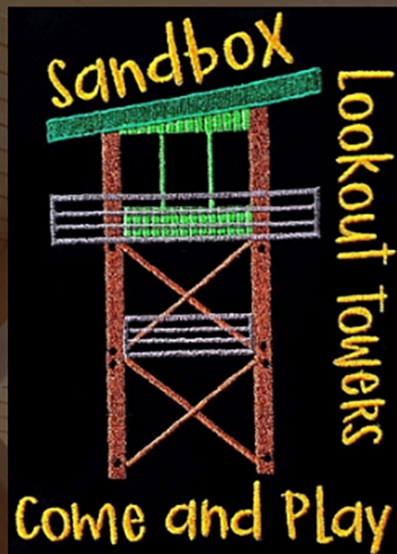


Another concept-level sketch: a 1963 experimental fire lookout tower design created for the U.S. Department of Agriculture.



Budget ideas ...

This section needs to be written. At a minimum, it should contain plausible estimates of the time and cost necessary to complete Phase 1. But as always, things get tricky because everything is interrelated. The budget will depend on the size of the replacement tower (is it a 16'x16' or 20'x20' base), its fit-and-finish, the time schedule, how much work is done by volunteers, and many other factors.



About Sandbox Designs

All the designs on this page were prepared by Sandbox Designs, a nonprofit educational corporation to promote the open source development of timber-framed tower buildings. Open source design and standardization should dramatically lower the cost of building lookout towers.

The best way to learn about Sandbox Designs is to visit www.SandboxDesigns.Org.