## Chapter 1 : When the Church Works Together, Homes Are Built | Mountaintop Community Church



The Great Wall designers took advantage of the terrain, and built at strategic places to repel invaders most effectively. From the Great Wall relics we can see that the wall is either built along mountain ridges, across mountain passes, or across key transportation areas on flat land. Watchtowers and beacon towers were built high for observation and communication by signal fire. On the plains and deserts, designers made use of rivers and their cliffs as natural barriers. This not only controlled strategic places, but also saved labor and materials. Wood was used for forts and as an auxiliary material. Using the mountains themselves as footings, the outer layer of the Great Wall was built with stone blocks and bricks , and filled with uncut stone and anything else available like earth and dead workers. Sand was used as a fill material between reed and willow layers. West China around Dunhuang is desert. Innovative builders there made use of reeds and willow brought in from rivers and oases to build a strong wall. To build a strong wall with bricks, they used lime mortar. Workers built brick and cement factories with local materials near the wall. Transporting ,, Tonnes â€" by hand, rope, cart â€¦ goat? The Great Wall over the ages used around ,, tonnes of stone, bricks, and mud. According to history and legend, there were three ways to get the materials up the mountains and across the plains Carried by Hand â€" the usual way Workers carried most of the stones and bricks up the mountains on their shoulders or backs. Bamboo baskets were used for soil, loose stone, and lime mortar. Human chains were also used to pass the blocks and baskets up. Lining up on narrow mountain paths was more efficient than trudging back and forth. Primitive Technology â€" wheel barrows and ropes On mountains with flat enough paths, one-wheel barrows were used. Basket and pulley systems were used over deep valleys, and materials were also pulled to the top of the Great Wall on ropes. Many poets expressed their resentment with poems, along the lines of:

## Chapter 2 : Castle - Wikipedia

*Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.*

One can acquire a mountain bike frame. In these dark times one can also acquire name-brand Japanese drivetrain parts on the internet for significantly less than at your local bike shop. Cobble together a cockpit of your choosing and youre damn near ready to build a bike from all the constituent pieces we often take for granted when we select the new hotness from off the rack all gleaming, tuned, and ready for shred-y. As my loyal readers reader will know I work in the bike industry. As you may have read , one of the perks of being a bike business grom is getting parts for cheap. Another perk in my case is having entr into the world of the frame builder. In my service for the previous administration I worked with one of the granddads of the mountain bike world to develop his glorious return to the dirt world. In my duties I had to interface with the talented and generous fellows who would hand-make the fine steel frames for us in Taiwan. At one point a thought occurred to me: And thus a crackpot idea was born. I opened the box containing my precious couplers imagine the scene in Pulp Fiction where Vincent opens the briefcase and is bathed in a mysterious golden glow and asked the frame builder Can you make a frame with these? A good deal of translating and then the answer: Yes Have you ever built a frame with these before? Much more translating and the eventual reply: Yes Not exactly confidence inspiring, but what were my options? A frame of this type built by a custom maker in the United States could buy me a trip to Moab to ride the White Rim , a bike rental for a week, and enough rum to give an entire pirate ship a hangover. So 11 months, 14 skype conversations, and a plane trip with a true friend and former co-worker, my frame arrived in all its naked glory. If youve never seen a raw steel frame before you may be shocked: I took it to a local machinist with a sandblasting booth and cleaned it thoroughly. From there I brought it to a powdercoater for a suit of Valspar Cloud Blue. And the waiting continued I was so excited I forgot to get any photos of the powdered frame by itself. The process of gathering parts for the build began slowly; I didnt want to invest too much coin in parts until I knew I had a straight, finished frame to hang them on. Once back from the powdercoaters in all its azure glory I started spending in earnest. Fork, wheels, drivetrain, brakes â€" it was all scrutinized and evaluated before the trigger was pulled. X9, speed all around with X7 Truvativ cranks. Cobble together saddle, grips, bars, stem, pedals, and various doodads from my parts box and were damn near ready to assemble. Though now weve reached the sticking point for many an amateur bike assembler: I happen to have access to a fully equipped race shop with every Park tool youve never seen. In many cases this is the point where an amateur would be looking for an LBS that is willing to assemble a mishmash of internet-acquired parts on which they earned zero dollars into a true dirt surfer. Those shops are hard to find, so I continue in the understanding that not all of you can get a headset reamer on short notice. These are the days that indicate what type of person you are. It is a delicious time when youve got every last item towards the final goal of railing down the trail on a top-freaking-notch ride put together with your own wits, knowledge, and craft. Are you the type to barrel ahead and get on the trail ASAP, or do you savor every chased thread, trued spoke, and properly-torqued fastener? For me being a bike build maiden I took my sweet time. The right tunes on the radio, a fine ale in a clean glass, and my tools and parts laid out just so on the workbench. One of the things you need to do to a raw frame in most cases is deal with the paint that made its way into the threads, faces, and crevices where it does not belong. Enter the Expensive and Seldom Used Tools. These are what make a bike shop different from your buddys basement where he converts old road bikes into fixed gear abominations. The bike industry loves to change up conventions. Hey, we gotta make money somehow, might as well be in the headset business. Anyway, I cut delicate little curls of steel from the bearing seats and faces on the head tube until my headset bearings sat in there just so. My steering thanked me for the efforts. Next the bottom bracket. Are you a fancy Johnny Come Lately with those press-in bearing jawns? Are you simply too good for threads? Then I cannot help you friend since I am stuck in the mids where real men twisted things into other things and pedaling magic was made. I got a second

Expensive and Seldom Used Tool from the drawer and took the thick powdercoat off the BB threads and shell faces. Finish it off with chasing the threads of your water bottle cage mounts, derailleur hanger if it isnt replaceable and facing the rear disc brake mount and youre ready to move to The Hanging of Bomb Parts. Crown race goes onto the fork steerer. This calls for another relatively Expensive and Seldom Used Tool, but the internet can show you how to improvise with some hardware store tubing and a mallet. Slide the fork into the head tube and clamp it down with your stem. Taking the form of a thing resembling a bike: Set the star nut more specialized tools and assemble from end. Start hanging the derailleurs, set the low and high limit screws. Get the chain on there, put the wheels in. Cable time These fellas will allow me to split the cables when I pack the frame. Tinkering with cable adjustment can be tedious or it can be rewarding; again, it depends on what type of person you are. From there the brakes are a breeze when youre working with pre-bled hydraulics. Finish up with grips, pedals, final adjustments and the like. The time for the shakedown ride has arrived. Keep that multi-tool in your pocket, youre on this ride to feel every little setting and tweak as necessary. Listen for rattles and creaks, pay attention to how comfortable you feel on the bike, make changes as needed. Now go out and enjoy the fruits of you dollars, labor and know-how. Its a satisfying feeling to ride on a creation all your own.

## Chapter 3 : My Ground-Up Mountain Bike Build - Singletracks Mountain Bike News



Heavy granite stones are the primary materials. Granite cutting is a difficult operation even with modern equipment and can take hours to cut. The Buildings of Machu Picchu Among the dwellings, you will find mostly houses, several temples, food deposits, water fountains, a guard house and even a jail. Most of the city is occupied by the residences. The waterways, irrigation systems are running between buildings and at the edges of the city especially. Why the Incas chose this complex way of building the stairs is not known Machu Picchu has more than stairs and some of them have over steps. Interestingly, you can even find single-rock stairs in Machu Picchu. All stairs are made out of a single rock and they were never split. The building roofs have perished. They were made out of grass and branches and the specialists did not work on rebuilding them. The Aqueducts, Irrigation System of Machu Picchu The Inca aqueducts and irrigation systems are approximately years-old and many of the installations are still functioning. Even the ones in Machu Picchu are still working. Of course, they are being well-maintained in order to demonstrate tourists how they were used in the past. Most of the aqueducts are constructed with the minimum number of components in order to reduce binding, thus minimizing water leakage. Drinking water, bathing water and even for irrigating the agricultural terraces are all ensured by the excellently functioning ingenious Inca waterway system! Fountains called "pacchas" and interconnected water channels that unite and form ponds are also found in Machu Picchu. The Incas were incredibly creative. The Districts and Sectors of Machu Picchu Some sources will call the sectors districts and you will not be able to understand which one is which. What we call districts are the parts of urban Machu Picchu. And, what we call sectors are the 2 main parts of Machu Picchu: The urban sector is the city itself. The agricultural one contains the guard house and the agricultural terraces. The urban sector comprises of the following 3 major parts: The building walls are slightly sloped and the base is wider than the upper parts. This technique was also common in case of European medieval buildings. Machu Picchu has a bird-like shape. It might be a coincidence The narrow area on top of the "Old Peak" might not have permitted extensive constructions and therefore the unusual shape. Huayna Picchu Waynapicchu or "Young Peak" is the peak on top of the high cliff that can be seen on most photographs of Machu Picchu. That peak too contains buildings, stairs. Access to that area is limited to only a few hundred people daily. Huayna Picchu has spectacular views over Machu Picchu down below. Machu Picchu stretches dangerously to the edges of cliffs What is Inside Machu Picchu? Check out this thorough guide which will unveil the sectors, the buildings and the purpose for which they were built

## Chapter 4 : How the Great Wall of China Was Built â€" Materials, Methods

*They also wanted to be the ones to build it. So they bought some property up by an absolutely beautiful mountain lake, and got to building a cabin. Check out their build and the amazing bond between the 3 of them below.*

During the school year, high school juniors -- the Class of -- devised a plan to assert their superiority over the other classes. They selected March of for their project, after the snow had disappeared from the steep mountain just east of the new Upper Campus. Before dawn one Saturday morning, they shouldered sacks of white lime and began to hike their way up the side of the mountain. About halfway up the mountainside, in bold view of everyone in the valley, they began to create their graduating year "" in a relatively bare patch. The BYH seniors and other classes were outraged, and they declared war on the upstart juniors. A massive invasion of the mountainside began. The boys of BY High enjoyed class rivalries It was not the first time that graduation year numerals had appeared, sometimes on the side of an empty building, a watertower, or a nearby mountain. But it WAS the first time a junior class had attempted to eclipse a senior class in the rustic old tradition, triggering violent reprisals. This new threat to the peace of the school and community constituted a serious challenge to school administrators. President Brimhall understood the competitive nature of high school classes because he had served as principal of BYH several years earlier, from to  They all knew that such rivalries could be healthy, serving to create a valuable bond between students, cementing life-long friendships and giving strength to future alumni loyalty. At the same time, however, emotions had to be kept in check to avoid vandalism and violence. Each class was already encouraged to create a banner, a slogan, and sometimes a cheer, although the competing cheers grated on the nerves of some of the older members of the Board of Trustees. This particular brawl on the mountainside called for an exceptionally creative and rapid administrative solution. One idea came from the faculty. The Board and administrators had a long tradition of encouraging faculty members to further their education during the summer months at various universities around the nation. A few faculty members each year chose to take summer classes at the University of California at Berkeley. BYH and BYU faculty members who took classes there during the summer of saw the giant "C" and returned home talking about the possibility of placing large B-Y-U letters on the mountainside above Provo. As the Class of incident developed, high school and university leaders seriously began to consider the idea of painting the school initials on the mountainside in a dignified, monumental manner. They hoped this would unite the classes, and forestall graffiti vandalism by future classes. The letter "Y" was laid out first to insure that the initials would be properly centered on the mountain. Partridge was asked to design the emblem and supervise its survey in  He had taught Brigham Young high school and collegiate students in mathematics, agriculture and theology since , and was an expert surveyor. When the outlines were complete, the center letter "Y" measured feet in height and feet in width. The school purchased acres on the face of the big mountain east of of the Upper Campus, extending clear to the top of the mountain, for the project. From the air, the letters would appear elongated, but they were intentionally designed that way so that they would look normal from the valley floor. Students spread lime on the first Y - Hot lime was carried up in Dr. Fletcher, in his autobiography, recounts how the high school and college students participated in that first Y Day: The students stood in a zig zag line about 8 feet apart stretching from the bottom of the hill to the site of the Y. The first man took the bag of lime, sand or rocks and carried it 8 feet and handed it to the next man. The second carried it another 8 feet and handed it to the third man and thus the bag went up the hill, each man shuttling back and forth along his 8-foot portion of the trail. But it was a much bigger job than anyone expected. It was 4 p. So no attempt was made to cover the other two letters. It was very hard work and most of the boys had had no breakfast and no dinner. No one dared to quit as it would break up the line. In the afternoon it was more than some of them could take and they fainted and had to be helped down the hill. I am sure those who worked in that line that day will never forget it. They were somewhat rewarded when they got back to campus and looked at the beautiful white Y on the mountainside in just the right proportions. It looked like it was standing in the air just above the ground. The original Y consisted of only a thin layer of lime powder, and was in constant need of repair. Students showed their loyalty to their class and to the school by

climbing the mountain each year to give the Y a fresh coat of lime. Hoping to make it more permanent, a layer of rock was added in  The next year, 20, pounds of sand and cement were carried up the mountain to form a three-foot high wall around the letter to hold it together. At first, it was a plain letter, but in it was made into a block "Y" with the addition of serifs at the tops and bottom, forming its current appearance. Every spring, students organized themselves into groups and assisted in cleaning up the campus and community of Provo. The event was called "Y Day", and most of the morning was spent in whitewashing the "Y". Aerial view of whitewashing the Y in Students formed a human chain from the base of Y Mountain to the "Y". Every year it was built up a little more with stones and cement, then whitewashed by thousands of students hauling thousands of gallons of lime mixture up the mountain using a bucket brigade. They passed a mixture of water, lime, and salt from hand to hand until it reached those assigned to spread the whitewash. This tradition lasted for over six and a half decades. Beginning in , the letter was whitewashed with the aid of a helicopter to reduce erosion problems on the mountainside. The Intercollegiate Knights, a club dedicated to chivalrous principles and maintaining school traditions, performed the ritual. In earlier years the members of the Intercollegiate Knights carried torches up the mountainside to light buckets of kerosene-soaked mattress batting placed around the edge of the Y. In later years, the Knights rolled out a cord of lights around the border of the Y. Streams of students climb up to the Y during those days. Lighting the Y with fire in  Lighting the Y with electricity today. After several decades, when it was decided that the kerosene was too dangerous, a generator was placed nearby to power watt light bulbs through the night. Members of the club remained on the mountain through the night to watch over the lights and insure that they remained lit through morning. On such nights, the dazzling symbol of BYU can be seen from the far reaches of the valley. Lighted Y viewed from Maeser Memorial. Located about one-half mile east of campus and halfway up the mountain, the Y looks out over the valley and is one of its most prominent features. Hiking up to the "Y" takes an hour or two, depending on the condition of the hiker, and the view of the campus and Utah Valley is spectacular. Would it have happened without the upstart juniors in the BYH Class of , and the crisis they caused? Y Mountain from the Abraham O. The subsequent letters section held a tongue-in-cheek response from Norman A. Darais, BYH Class of  Why not add ALL the letters in the school name -- since we would only need 21 more. Or maybe we should consider covering the entire mountain with concrete. Then we could paint whatever we want on the mountain, or, for the ultimate touch of class, we could cut the school letters out through the concrete facade. In so doing, the letters themselves would be displayed through the concrete in beautiful mountain colors which would change with the seasons. Covering the entire mountain with concrete, although somewhat expensive initially, would also eliminate any future worries of erosion. With Y Mountain now the exclusive property of the private Provo school, students, alumni and outdoors enthusiasts are celebrating. They expect the land-ownership transfer from the U. Forest Service to improve safety on the steep one-mile path that leads to the block letter. The thought of upgrades is reassuring for BYU graduate Leslie Findlay, who ran the trail as a student and hiked it when she was pregnant with her first child, Hugh, now  When the boy was 3 months old, Findlay hiked to the Y at night with Hugh and husband Jacob to illuminate it with lightbulbs, part of an annual homecoming tradition. Even after moving back home to Arizona, returning to the path remains a ritual on yearly visits back to Utah. The school, owned by The Church of Jesus Christ of Latter-day Saints, is already planning a series of upgrades to repair erosion on switchbacks and the summit, which requires some scrambling. The Utah Republican told lawmakers at the time that BYU wanted to provide water on the route and had the resources to better clean up litter. Orrin Hatch, who successfully tucked permission for the transfer inside a national defense bill last year. Provo Mayor John Curtis also lent a hand, testifying in favor of the legislation. The law is personal for Hatch, who graduated with a history degree in  Administrators put an end to the scuffle by commissioning a mathematics professor and his students to write "BYU" on the mountainside above the upper campus. But Harvey Fletcher later wrote in his autobiography that the daylong project proved too much for the workers. After completing the Y, the crew abandoned plans for the other two letters. Some fainted on the way down, Fletcher wrote. Students such as Hatch followed the same path each spring to whitewash the Y until the mids, when a helicopter was brought in to do the chore. It now is covered in concrete and illuminated five times per year: Repairing the erosion will take some time, the school

acknowledged, adding that hikers and runners should expect intermittent closures this year. And while BYU hopes to improve access for many, not every type of adventure will be welcome. As a freshman in fall , Mark Emmet attempted to drive his Chrysler more than halfway to the north end of the trail before he got stuck.

## Chapter 5 : GG Mountain Building

*Together, They Built a Mountain by Patricia T. Davis, Mortimer Cohen starting at $ Together, They Built a Mountain has 1 available editions to buy at Alibris.*

The earliest fortifications originated in the Fertile Crescent , the Indus Valley , Egypt, and China where settlements were protected by large walls. Northern Europe was slower than the East to develop defensive structures and it was not until the Bronze Age that hill forts were developed, which then proliferated across Europe in the Iron Age. These structures differed from their eastern counterparts in that they used earthworks rather than stone as a building material. Roman forts were generally rectangular with rounded corners â€" a "playing-card shape". Importantly, while castles had military aspects, they contained a recognisable household structure within their walls, reflecting the multi-functional use of these buildings. Discussions have typically attributed the rise of the castle to a reaction to attacks by Magyars , Muslims, and Vikings and a need for private defence. Some high concentrations of castles occur in secure places, while some border regions had relatively few castles. To protect against this, and keep other threats at bay, there were several courses of action available: These features are seen in many surviving castle keeps, which were the more sophisticated version of halls. They allowed the garrison to control the surrounding area, [62] and formed a centre of administration, providing the lord with a place to hold court. Building a castle sometimes required the permission of the king or other high authority. In the King of West Francia, Charles the Bald , prohibited the construction of castella without his permission and ordered them all to be destroyed. This is perhaps the earliest reference to castles, though military historian R. Allen Brown points out that the word castella may have applied to any fortification at the time. Switzerland is an extreme case of there being no state control over who built castles, and as a result there were 4, in the country. Historians have interpreted this as evidence of a sudden increase in the number of castles in Europe around this time; this has been supported by archaeological investigation which has dated the construction of castle sites through the examination of ceramics. The introduction of castles to Denmark was a reaction to attacks from Wendish pirates, and they were usually intended as coastal defences. Their decoration emulated Romanesque architecture , and sometimes incorporated double windows similar to those found in church bell towers. Donjons, which were the residence of the lord of the castle, evolved to become more spacious. The design emphasis of donjons changed to reflect a shift from functional to decorative requirements, imposing a symbol of lordly power upon the landscape. This sometimes led to compromising defence for the sake of display. This has been partly attributed to the higher cost of stone-built fortifications, and the obsolescence of timber and earthwork sites, which meant it was preferable to build in more durable stone. The towers would have protruded from the walls and featured arrowslits on each level to allow archers to target anyone nearing or at the curtain wall. The larger towers provided space for habitation to make up for the loss of the donjon. Where keeps did exist, they were no longer square but polygonal or cylindrical. They were connected to the castle by removable wooden bridges, so if the towers were captured the rest of the castle was not accessible. It seemed that the Crusaders had learned much about fortification from their conflicts with the Saracens and exposure to Byzantine architecture. An example of this approach is Kerak. Although there were no scientific elements to its design, it was almost impregnable, and in Saladin chose to lay siege to the castle and starve out its garrison rather than risk an assault. The castles they founded to secure their acquisitions were designed mostly by Syrian master-masons. Their design was very similar to that of a Roman fort or Byzantine tetrapyrgia which were square in plan and had square towers at each corner that did not project much beyond the curtain wall. The keep of these Crusader castles would have had a square plan and generally be undecorated. Both Christians and Muslims created fortifications, and the character of each was different. Saphadin , the 13th-century ruler of the Saracens, created structures with large rectangular towers that influenced Muslim architecture and were copied again and again, however they had little influence on Crusader castles. It is one of the best-preserved Crusader castles. The orders were responsible for the foundation of sites such as Krak des Chevaliers , Margat , and Belvoir. Design varied not just between orders, but between individual castles, though it was common for

those founded in this period to have concentric defences. There would be multiple rings of defensive walls, one inside the other, with the inner ring rising above the outer so that its field of fire was not completely obscured. If assailants made it past the first line of defence they would be caught in the killing ground between the inner and outer walls and have to assault the second wall. For instance, it was common in Crusader castles to have the main gate in the side of a tower and for there to be two turns in the passageway, lengthening the time it took for someone to reach the outer enclosure. It is rare for this bent entrance to be found in Europe. One of the effects of the Livonian Crusade in the Baltic was the introduction of stone and brick fortifications. Although there were hundreds of wooden castles in Prussia and Livonia , the use of bricks and mortar was unknown in the region before the Crusaders. Until the 13th century and start of the 14th centuries, their design was heterogeneous, however this period saw the emergence of a standard plan in the region: Although machicolations performed the same purpose as the wooden galleries, they were probably an Eastern invention rather than an evolution of the wooden form. Conflict and interaction between the two groups led to an exchange of architectural ideas, and Spanish Christians adopted the use of detached towers. These were the men who built all the most typical twelfth-century fortified castles remaining to-day". The new castles were generally of a lighter build than earlier structures and presented few innovations, although strong sites were still created such as that of Raglan in Wales. At the same time, French castle architecture came to the fore and led the way in the field of medieval fortifications. Artillery powered by gunpowder was introduced to Europe in the s and spread quickly. Handguns, which were initially unpredictable and inaccurate weapons, were not recorded until the s. These guns were too heavy for a man to carry and fire, but if he supported the butt end and rested the muzzle on the edge of the gun port he could fire the weapon. The gun ports developed in this period show a unique feature, that of a horizontal timber across the opening. A hook on the end of the gun could be latched over the timber so the gunner did not have to take the full recoil of the weapon. This adaptation is found across Europe, and although the timber rarely survives, there is an intact example at Castle Doornenburg in the Netherlands. Gunports were keyhole shaped, with a circular hole at the bottom for the weapon and a narrow slit on top to allow the gunner to aim. Defences against guns were not developed until a later stage. In an effort to make them more effective, guns were made ever bigger, although this hampered their ability to reach remote castles. By the s guns were the preferred siege weapon, and their effectiveness was demonstrated by Mehmed II at the Fall of Constantinople. While this sufficed for new castles, pre-existing structures had to find a way to cope with being battered by cannon. A solution to this was to pull down the top of a tower and to fill the lower part with the rubble to provide a surface for the guns to fire from. Lowering the defences in this way had the effect of making them easier to scale with ladders. These could be built from earth or stone and were used to mount weapons. First used in Italy, it allowed the evolution of artillery forts that eventually took over the military role of castles. Around , the innovation of the angled bastion was developed in Italy. From this evolved star forts , also known as trace italienne. The first was ugly and uncomfortable and the latter was less secure, although it did offer greater aesthetic appeal and value as a status symbol. The second choice proved to be more popular as it became apparent that there was little point in trying to make the site genuinely defensible in the face of cannon. However, it has been estimated that between 75, and , were built in western Europe; [] of these around 1, were in England and Wales [] and around 14, in German-speaking areas.

## Chapter 6 : PRIMITIVE STENCIL ITEM # And So Together They Built A Life They Loved

*And So Together They Built a Life they Loved. This handmade wood sign is the perfect addition to any farmhouse decor. Beautifully display this sign either on a wall, or a shelf.*

Howitzer cannon barrel makers through the U. Although there were commercial barrels to choose from, I decided to engineer and build my own Mtn. Howitzer cannon barrel; not only for cost savings, but also for strength. Raw steel material was readily available and so was the equipment I needed to build it. The mt howitzer barrel I designed consisted of 6 pieces. The "Cascabel" the ball at the back of the cannon barrel - Spanish for "coiled snake" The "Breech Plate" the plate at the back of the tube which holds the cascabel The "Chamber Plug" the plug in the rear end of the tube The "Trunnions" the 2 support pivots near the center of the barrel and the "Tube" itself. As you can see, when the separate pieces are assembled, they complete the mt howitzer barrel. This is the kind of ball that is used on fifth-wheel trailer hitches. The ball was finish shaped on a lathe, and then cut to length. It was lathe turned and bored through to receive the Cascabel. The Cascabel was pressed into the Breech Plate and then plug welded in place. The next item to be fabricated was the Chamber Plug. The name "howitzer" in a Mountain Howitzer cannon, defines that it will have a reduced chamber diameter that gradually tapers to the full bore diameter. This added a modern safety factor to our modern howitzer barrel; and made for easier loading of the powder charge. Compare the difference in the illustrations below. A tight, slide fit, matching the I. The Trunnions were lathe turned as a single piece also using HR bar. The ends were stepped to correspond to the finished dimensions of the individual trunnions. Once completed, the center section was milled out to the O. When the center material was milled away, 2 perfectly contoured Trunnions remained. The final piece of the barrel assembly was the Barrel Tube itself. The two important specifications of this material are "Seamless" and "Hot Rolled". It easily accepted the large barrel tube which weighed in at pounds. The muzzle end was machined first, then the Mt. Howitzer tube was turned end-for-end to machine the breech. The taper was machined by using a very slow power feed, synchronized with a "wrist watch timed" manual cross-feed. When the outside machining was finished, the surface was flat-filed and sanded and then polished smooth. At this point, the tube was sent to a local machine shop to have the inside diameter bored-through the full 33" length. Unfortunately this boring operation was beyond the capability of the equipment I was using. Specifications for the bore-through was "minimum clean-up" to a maximum I. When the 6 individual pieces of the Mt. Howitzer barrel were placed together, they looked like this. After the boring of the Barrel tube was completed, I machined the final O. This step ensured proper location of the plug for welding. With all the barrel parts completed, they were taken to an "Expert Welder" in our area. Since quality welding is the most critical factor in fabricating a barrel, I wanted to be sure I had a "certified" welder doing the job. In fact, the welder I chose was also certified for "pressure vessel" welding. As an added precaution, I contacted a Welding Engineer from the Society of Professional Welding Engineers to review and evaluate the intended welding process. For safety sake, hire a professional! Three important factors came into play in welding. First, the preheating of the mating parts prior to welding. Each trunnion was final fitted and number stamped. Matching numbers were stamped onto the barrel to prevent any mix-up prior to their being welded. Precisely aligned trunnions are necessary for accurate shooting of the completed mountain howitzer cannon. The Trunnion locating studs prevented shifting of position during welding. As the Trunnions were welded, a large radius weld was filleted up onto the barrel. Over 12 linear inches of weld secured each trunnion to the barrel tube. Too much weld here is better than too little, although cleaning-up the excess weld proved to be a very time-consuming task. It was now time to test fire the barrel. The first shot honors went to my son-in-law for his birthday present. Now for the hand finishing. An air powered die grinder with a small cut-off wheel was used for most of the weld clean-up task. After dozens of hours of grinding, filing, and polishing, the Mountain Howitzer barrel was finished. Last item to do was to enlarge the Fuse hole to the proper. Now that my mountain howitzer barrel was completed, I added details to make it look authentic. Original Civil War Mountain Howitzer barrels had a serial number stamped to the top front face of the barrel. There I stamped serial number "". On the rear Breech plate, above the cascabel

sometimes below original howitzer tubes were stamped with the exact weight of the barrel. There I stamped "". The right Trunnion face on an original barrel was typically stamped with the Company name and the city of manufacture. And, original barrels had the left Trunnion face stamped with the year of manufacture. So, how did I come up with all the numbers for my mountain howitzer barrel? That was the date of the battle when 1st Lt. Pond enlisted and organized the 3rd Wisconsin Cavalry, Company C. As a side note, original documented Mountain Howitzer barrels weighed between and pounds. This barrel weighed pounds, right in the ballpark.

## Chapter 7 : Tower of Babel - Wikipedia

*The Global Mountain Bike Network is the best MTB YouTube channel, with videos for everyone who loves dirt: from the full-faced helmet downhill mountain biker to the lycra-clad cross country rider.*

The story of how they got there is one of the most fascinating stories in geology. Until the Theory of Plate Tectonics, the forces responsible for building large mountain belts like the Himalayas were entirely a mystery. It was obvious that it occurred, and there are many examples worldwide of these types of mountains, and the types and directions of the forces which generated them were pretty well understood from looking at the rock structures, and certain similarities are noted among all continental mountain belts, but the origin of the forces was entirely unknown. The towering heights, craggy peaks, and majestic scenery have inspired great works of art, poetry, literature, and drama, and have also provided dramatic background and subject material for films of all kinds. But mountains are not forever. Most of these major mountain belts began as sediments on passive plate margins, the material deposited there having been eroded from older mountain ranges on the continents mixed with the remains of marine organisms, which settled to the bottom. This is all part of the rock cycle in which rocks are uplifted, distorted, and folded, and eventually leveled again by erosion. Mountains also give us much information, not only about the movement of continents, but also the growth of continents. The process of differentiation of the Earth continues as continents grow by accretion at their boundaries. It also gives us a chance to study the relationship between the internal oceanic and continental processes. This is especially important since the oldest sea floor is only million years old, and the rocks preserved in these mountain ranges on the continents give us information about ancient conditions on the Earth. The lesson assignment for today is Lesson 7, Chapter 5, "Mountain Building. In this lesson we want to discuss the characteristics of major mountain belts in terms of the following features: We want to be able to describe the evolution of a mountain belt from its inception and growth on the sea floor and to explain the concept of "orogeny" as it applies to ocean-ocean convergences and ocean- continent convergences, and continent-continent convergences. All of these processes create slightly different mountain ranges. Before I actually introduce you to the lesson today, I have a couple of notes. Also, if you study Figure 5. You should also refer to the physiographic map on Figure 1. Everyone knows what mountains are. There are five main categories of mountains recognized. Usually, the same types occur in the same region, but in a large mountain system like the Appalachians or the Himalayas, we find all groups present to some degree or another. These form from volcanic eruptions, where material ejected from the volcanoes simply piles up around the site of the eruption. Another type of mountains are fault block mountains. The best example of this is the basin and range province in the Western United States, which comprises parts of Nevada, Arizona, and Utah. Here the crust is broken into hundreds of pieces, and the pieces are tilted to form these fault block mountains, sort of like the edge of a box buried in the sand. Along with the tilting and faulting are usually igneous activities, including both volcanic action and intrusions. These fault block mountains are thought to form either by upwarping from magma pushing up from below followed by cooling as the magma cools and the crustal rocks subside, but it may also have to do with changes in plate movements. Upwarped mountains show the greatest diversity. There are several examples in the United States: In these upwarped mountains the sediments are generally not deformed or deformed only very little, and they usually overlie a granite core. These are probably pushed up by rising magma still deep underground. Mountains can also be formed by erosion. Erosional remnants like mesas and buttes often occur in desert areas, where the resistant rocks simply remains after the surrounding land has been leveled by erosion. The largest and most complex type of mountains are folded mountains. A mountain is an individual peak. A mountain range, on the other hand, is a group of closely spaced mountains or parallel ridges. The mountains belts are large chains of folded mountains thousands of kilometers long, and I can show you some examples of where these are located on the globe. Beginning in Southern Asia with the Himalayas, a mountain belt, including the Caucuses extends all the way into Europe where it becomes the Alps. On the other side of the world in North America, we find the Rockies, which extend Alaska, to Canada, the Cascades, and the continuation of the Rockies, and in the Eastern part of the United States, the

Appalachians. There are also the Andes in South America. We recall that the continental crust is made out of granite and is thicker than the oceanic crust. The crust is thicker under the continents, and the continents themselves are covered by a thin veneer of sediments in most areas, but it turns out that the continents themselves consist of two fairly different kinds of structural units. One of these is called "cratons. The cratons are vast regions on the interior of the continent, which have attained tectonic stability. Some continents have more than one craton: Australia and Africa, for example. These cratons are usually stable for long periods of time, hundreds of millions of years. Orogenic belts, and the word "oro" means mountain, so orogenic belts are basically mountains belts, are elongated regions of continental crust that have been intensely folded, and faulted, and metamorphosed. These orogenic belts differ in age, size, history, and exact origin, but they were all once mountainous regions that are now eroded to various degrees. The Appalachians, for example, are nearly reduced flat; whereas, the Himalayas still extend 29, , 30, feet above sea level. The cratons themselves may be either exposed or covered. The exposed portion of the craton is called the "continental shield. They may be as old as 3. The continental shields have little or no sedimentary covering. Here the continental shield is exposed by continental glaciation, where glaciers have scraped off the overlying sediments and deposited them someplace else. The rocks in the Canadian shield are generally older than 2 billion years; in fact, there are no rocks older than about 1. By contrast, the stable platform is covered by a thin layer of sedimentary rocks, and by thin here I mean only a few thousand feet. These sediments are largely undeformed by any tectonic processes although there may be some large scale upwarping or downbowing. Here the basement rocks, or the rocks underlying the sediments, represent the cores of younger mountain belts which surround the cratons. In other words, the cratons are very old, and surrounding them are the continental shields, which represent the cores of yet younger mountain ranges that have grown outward from the cratons. The orogenic belts have many features in common, which suggest a common origin for all of them. They usually consist of parallel ridges of folded and faulted sedimentary rocks. Portions of them, especially deep down, are strongly metamorphosed and also intruded by younger igneous rocks. The sedimentary rocks, which form the folded portion of the rocks, formed from sequences thousands of feet thick, sometimes exceeding 30, feet, and these rocks were deposited before the orogeny; in other words, before the mountain building phase. The period of orogeny itself, the mountain building process, commonly exceeds a hundred million years in time. The rock structures that make up these sequences suggest that the deformation of the rocks proceeded in a landward direction; that is, it started from the sea and worked its way inward toward the continent. The deep water sediments were the first to be deformed. The rocks that we find preserved as these deep water sediments take the form of greywackies and volcanic debris of various kinds and shales. These rocks were intensely folded, and faulted, and metamorphosed. There are also numerous intrusions of magma, which generate this igneous and metamorphic core that we see preserved in the cratons and the continental shields. During the process of mountain building general thickening of the crust as its compressed causes the rocks to ride above sea level, and we find that the thinner shallow water deposits that represented the continental shelves are shoved inward toward the continental interior, sometimes producing giant thrust faults hundreds of miles long. These rocks consist mostly of sandstones, limestones, and, well, some shales. They also later, as part of the later stages of the orogeny folded and broken along smaller thrust faults. The majestic sight of a mountain range is an endless source of wonder and beauty. To most people, mountains are synonymous with great size and permanence, but are mountains really permanent? Rivers flow out of nearly every mountain range on earth carrying sand and rock that were eroded from the mountains themselves. This process would eventually remove the mountains from the landscape unless somehow they were being maintained by uplift. These processes are fueled by the escape of heat from the interior of the Earth, causing crustal uplift by volcanic activity and by movement along faults that, in turn, is responsible for the formation of mountains. Mountain building processes like these are concentrated at the boundaries between tectonic plates and are especially active where the plates are moving apart or converging. By studying the origin of individual mountain belts, geologists are helping to unravel the tectonic history of our planet. With the development of the theory of plate tectonics, geologists finally had an explanation for what causes mountains to grow. In addition, the geographical distribution of mountains also began to make sense. Most of the worlds great ranges lie not at the center of continents, but instead close to

their margins. In general, the centers of continents consist of stable regions of very old crust. These regions called "cratons" or shields are deeply eroded, mostly low lying, and level. To the north, this flatland has been stripped bare of much soil and sedimentary cover by past ice sheets. This is the Canadian shield, and within it is a vast region, the superior province, over 1, kilometers across. Here the rock ranges from 2. Cratons this ancient are significant for they hold clues to the birth of continents. The typical rocks of the superior province are granulite and greenstone. It is too severely metamorphosed to provide much information about the past, though its exposure at the surface indicates that the crust has been deeply eroded. Scattered throughout the granulite are intricate belts of volcanic and sedimentary rocks called "greenstones. Initially, in the early Earth, the crust of the Earth must have been principally oceanic crust surmounted by a thin veneer of water and a very dense atmosphere. Gradually, due to convergent plate motion, they were probably pretty small thin platelets back in early times. Small island arcs began to form along and above convergent plate junctions due to the rise of melt from the downgoing slab up into these primitive arcs. As those island arcs formed they were swept together by this continual sea floor spreading process, probably involved a lot of small rapidly overturning convective cells in the upper mantle, so very rapid growth accompanied the early Earth, and as these accreted together they formed enlarging eventually supercontinental assemblies. Those assemblies were kneeled over time, and gradually they formed relatively larger plates capped by continental crust. The continental crust itself is an amalgam of these smaller island arcs, which had been all swept together. Continental crust, however, consists mostly of granitic rocks and not greenstone lavas, so a mechanism must have existed for transforming the composition of the crust.

## Chapter 8 : History of the letter "Y" on Y Mountain, Provo, Utah

*Cobble together a cockpit of your choosing and youre damn near ready to build a bike from all the constituent pieces we often take for granted when we select the new hotness from off the rack all gleaming, tuned, and ready for shred-y.*

German Late Medieval c. And they had brick for stone, and slime had they for morter. The original derivation of the name Babel also the Hebrew name for Babylon is uncertain. However, that form and interpretation itself are now usually thought to be the result of an Akkadian folk etymology applied to an earlier form of the name, Babilla, of unknown meaning and probably non-Semitic origin. Etiologies are narratives that explain the origin of a custom, ritual, geographical feature, name, or other phenomenon. God was concerned that humans had blasphemed by building the tower to avoid a second flood so God brought into existence multiple languages. There have, however, been some contemporary challenges to this classical interpretation, with emphasis placed on the explicit motive of cultural and linguistic homogeneity mentioned in the narrative v. Authorship and source criticism[ edit ] Tradition attributes the whole of the Pentateuch to Moses ; however, in the late 19th century, the documentary hypothesis was proposed by Julius Wellhausen. Of these hypothetical sources, proponents suggest that this narrative comes from the J or Yahwist source. The etiological nature of the narrative is considered typical of J. He wrote that he was told when the light of the sun first appeared upon the land, giants appeared and set off in search of the sun. Not finding it, they built a tower to reach the sky. An angered Lord of the Heavens called upon the inhabitants of the sky, who destroyed the tower and scattered its inhabitants. The story was not related to either a flood or the confusion of languages, although Frazer connects its construction and the scattering of the giants with the Tower of Babel. However, their languages were confounded and they went to separate parts of the earth. He further relates similar tales of the Ashanti that substitute a pile of porridge pestles for the masts. Frazer moreover cites such legends found among the Kongo people , as well as in Tanzania , where the men stack poles or trees in a failed attempt to reach the moon. Historical context[ edit ] Hanging Gardens of Babylon 19th century , depicts the Tower of Babel in the background. Some biblical scholars see the Book of Genesis as mythological and not as a historical account of events. The Bible does not specifically mention that Nimrod ordered the building of the tower, but many other sources have associated its construction with Nimrod. The people whose languages are confounded were simply scattered from there over the face of the Earth and stopped building their city. However, in other sources, such as the Book of Jubilees chapter 10 v. In the Midrash , it said that the top of the tower was burnt, the bottom was swallowed, and the middle was left standing to erode over time. According to modern scholars, such as Stephen L. Harris , the biblical story of the Tower of Babel was likely influenced by Etemenanki during the Babylonian captivity of the Hebrews. Since a remote time, people had abandoned it, without order expressing their words. Since that time earthquakes and lightning had dispersed its sun-dried clay; the bricks of the casing had split, and the earth of the interior had been scattered in heaps. The already decayed Great Ziggurat of Babylon was finally destroyed by Alexander the Great in an attempt to rebuild it. He managed to move the tiles of the tower to another location, but his death stopped the reconstruction. Isaac Asimov speculated that the authors of Genesis  And they began to build, and in the fourth week they made brick with fire, and the bricks served them for stone, and the clay with which they cemented them together was asphalt which comes out of the sea, and out of the fountains of water in the land of Shinar. And they built it: Twelve men are arrested for refusing to bring bricks, including Abraham , Lot , Nahor , and several sons of Joktan. However, Joktan finally saves the twelve from the wrath of the other two princes. He wrote that it was Nimrod who had the tower built and that Nimrod was a tyrant who tried to turn the people away from God. Now it was Nimrod who excited them to such an affront and contempt of God. He was the grandson of Ham, the son of Noah, a bold man, and of great strength of hand. He persuaded them not to ascribe it to God as if it were through his means they were happy, but to believe that it was their own courage which procured that happiness. He also gradually changed the government into tyranny , seeing no other way of turning men from the fear of God, but to bring them into a constant dependence on his power Now the multitude were very ready to follow the determination of Nimrod and to esteem it a piece of cowardice to submit to God; and they built a

tower, neither sparing any pains, nor being in any degree negligent about the work: It was built of burnt brick, cemented together with mortar, made of bitumen , that it might not be liable to admit water. When God saw that they acted so madly, he did not resolve to destroy them utterly, since they were not grown wiser by the destruction of the former sinners [in the Flood]; but he caused a tumult among them, by producing in them diverse languages, and causing that, through the multitude of those languages, they should not be able to understand one another. The place wherein they built the tower is now called Babylon , because of the confusion of that language which they readily understood before; for the Hebrews mean by the word Babel , confusion. The Sibyl also makes mention of this tower, and of the confusion of the language, when she says thus: In the account, Baruch is first taken in a vision to see the resting place of the souls of "those who built the tower of strife against God, and the Lord banished them. And the Lord appeared to them and confused their speech, when they had built the tower to the height of four hundred and sixty-three cubits. And they took a gimlet , and sought to pierce the heavens, saying, Let us see whether the heaven is made of clay, or of brass, or of iron. When God saw this He did not permit them, but smote them with blindness and confusion of speech, and rendered them as thou seest. Greek Apocalypse of Baruch, 3: According to one midrash the builders of the Tower, called "the generation of secession" in the Jewish sources, said: The building of the Tower was meant to bid defiance not only to God, but also to Abraham , who exhorted the builders to reverence. The passage mentions that the builders spoke sharp words against God, saying that once every 1, years, heaven tottered so that the water poured down upon the earth, therefore they would support it by columns that there might not be another deluge Gen. Some among that generation even wanted to war against God in heaven Talmud Sanhedrin a. They were encouraged in this undertaking by the notion that arrows that they shot into the sky fell back dripping with blood, so that the people really believed that they could wage war against the inhabitants of the heavens Sefer ha-Yashar , Chapter 9: According to Josephus and Midrash Pirke R. Pharaoh asks Haman to build him a stone or clay tower so that he can mount up to heaven and confront the God of Moses. In the History of the Prophets and Kings by the 9th-century Muslim theologian al-Tabari , a fuller version is given: Nimrod has the tower built in Babil, God destroys it, and the language of mankind, formerly Syriac , is then confused into 72 languages. Another Muslim historian of the 13th century, Abu al-Fida relates the same story, adding that the patriarch Eber an ancestor of Abraham was allowed to keep the original tongue, Hebrew in this case, because he would not partake in the building. In Islamic belief, he argues, God created nations to know each other and not to be separated. Because of their prayers, God preserves their language and leads them to the Valley of Nimrod. From there, they travel across the sea to the Americas. For the film, see The Confusion of Tongues. The confusion of tongues confusio linguarum is the origin myth for the fragmentation of human languages described in the Book of Genesis  Biblical account[ edit ] Genesis  In the confusion of tongues, this language was split into seventy or seventy-two dialects, depending on tradition. This has sometimes been interpreted as being in contradiction to Genesis  Subsequent interpretation[ edit ] During the Middle Ages, the Hebrew language was widely considered the language used by God to address Adam in Paradise , and by Adam as lawgiver the Adamic language by various Jewish, Christian, and Muslim scholastics. Dante in the Divina commedia implies however that the language of Paradise was different from later Hebrew by saying that Adam addressed God as I rather than El. Rasmus Rask in ; see Indo-European studies. Beginning in Renaissance Europe, priority over Hebrew was claimed for the alleged Japhetic languages, which were supposedly never corrupted because their speakers had not participated in the construction of the Tower of Babel. Among the candidates for a living descendant of the Adamic language were: The Swedish physician Andreas Kempe wrote a satirical tract in , where he made fun of the contest between the European nationalists to claim their native tongue as the Adamic language. Caricaturing the attempts by the Swede Olaus Rudbeck to pronounce Swedish the original language of mankind, Kempe wrote a scathing parody where Adam spoke Danish , God spoke Swedish , and the serpent French.

## Chapter 9 : 6 Ancient Things That Were Probably Built By Aliens | Topless Robot

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Take the final plans to several good builders and ask for a complete written proposal. This will be easier for the builder to do with a good set of plans. Make sure all your questions are answered. How long will the construction take? How much will it cost? Some builders quote low because their budgets for carpet, lighting, plumbing, cabinets, landscaping, etc are too small. Check with suppliers to make sure there is enough for the quality you desire. A real estate attorney can help you understand all the terms of the contract. Some builders will agree to a price before starting. Others prefer working on "cost plus" basis. There are some disadvantages to this method: A dishonest builder can hide extra costs such as materials for other jobs, tools, and unnecessary labor. The builder is not encouraged to be thrifty. But, there are also some advantages: If your builder honestly discloses all of the costs, you can see where the money goes. This can simplify your dealings with the builder, especially if there are changes during construction. The builder does not have to bid higher to cover unexpected problems. If your builder is honest and thrifty, you could come out ahead with cost plus. Ask for references, customers, and subcontractors. Is the builder easy to work with and reliable? Are workers paid properly? Do they get along with him? Taking time to choose a good builder can save you time and money, and help you to have a better home.