

TRANSCRIPT of [OVHS Video Series: Hohokam Style Pit House Replica at Steam Pump Ranch](#)

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My name is Allan Denoyer, and I work for a nonprofit here in Tucson called Archeology Southwest and we specialize in protection and preserving of archeological resources and trying to get the Native American perspective on the past out to people now.

My job with Archeology Southwest, is to teach people how people made things pre historically, how they did the things they did to make a living, to live their lives.

And so here at Steam Pump Ranch, we built this replica of a Hohokam style pit house. This house is based on houses that were excavated archeologically up the road here.

This house is a Hohokam style pit house and when the archeologists go out on these sites to excavate these houses, they use backhoes. They come in and they scrape the surface of the ground off and expose the pits that the prehistoric people dug to build the houses out of and then they go in with picks and shovels and trowels and brooms and stuff and excavate all that dirt out of those holes to see the outline of the pit that the people built in the house.

So, this house is based on houses that we saw in those excavations up there at Honeybee Village in Rancho Vistoso. So, when people built houses like this, they did not have blueprints to build these houses, although they had a pattern that they used. So, everybody living in a village at this time basically built their houses the same way; but their blueprint was in their heads.

They knew when I build a house and attributes and everybody more or less followed those and a lot of that is based on the materials that they had available to build their houses with. So, depending on what you had growing in the washes around here, depended on what you used.

And so here at this house, one of the big resources, one of the big things they used was dirt or mud to make the house with. And so, when they came in and they built a house, they dug this big pit in the ground and then they built their house out of it.

And a way to think about that is their house is kind of like a basket; so, it has a superstructure. And then they weave willows and reeds around the interior, and then they would mud over the roofs and then oftentimes they would mud the sides, or they would just have thatched grasses on the sides. And then they built a big berm around the edge that that was higher than the ground surface so that when it rained, the water wouldn't flood into the house.

And so a big deal with these was to keep the rain, the water out. So, the mud roofs shed the water really nice and then the grass thatching on the sides would allow the water to run down the sides and the mud berms on the outside, the thatching would go over the top of those berms and shed the water outside the house. So, you could keep these houses relatively dry.

These Hohokam folks, and here in Tucson, were growing corn, beans and squash - the three sisters. And so you had to store a lot of those foods and things to keep them dry so they wouldn't rot or fall apart. So, it was really important to keep the interior of your house as dry. That's where you would have been doing that.

People learned how to build pit houses long, long ago. Some of the earliest structures that we see in the southwest, the earliest houses and things, they're all pit houses. We've had... There's pit houses in this part of the world that go back probably seven or 8000 years old, way before agriculture.

We see corn coming in here in the Tucson basin about 4000 years ago. And when we excavate those villages, we find pit houses all over the place. And they were living in pretty decent villages along waterways. By the time the Hohokam are building pit houses like this, they're much larger. They're much more sturdy than the earlier pit houses. The earlier pit houses are built with more grass, less mud, and they're not nearly as big around. This house that we built right here is based on a house, a Honeybee Village that was probably twice the size of this one I built.

When we came in to build it, I was having a hard time finding resources to get it. So, when the archeologists were excavating at Honeybee Village, they had a lot of pit houses that had burned down and so when I pitched house burns down, sometimes the mud on the roof will collapse in on that house and smother out the burning logs so they don't turn to ash.

So as archeologists, when we come in excavate these houses, we map those burn logs, all the cross pieces, all the materials that are used in there. And we take samples of them that we can get species ID'd. So, we know the kind of woods they were using. So, what was really cool at Honeybee was, is they found logs that had come off of Mt. Lemmon.

So, people actually went all the way up to Mount Lemmon to get some of the building materials they used in these houses. So, a group of folks have been for a number of years, have been exploring along the mountains around here to find good trails up to Mt. Lemmon, where they may have carried these logs down to here.

About five or six years ago, we built a little teeny sort of a replica of an earlier time period house. So back in the day, during the Cienega time period, people were building round houses. And the Cienega time period about is about 2000 years ago, maybe 500 years on each side of that. This was before people were making pottery. When people start making pottery and they're decorating it, that's what we call the Hohokam.

But those people's ancestors, where we call down here, are the early agriculturalists or the early age people. They were growing corn and they were they had irrigation canals and they had fields everywhere, wherever they could get them out of the rivers. Well, do is from houses that

we've excavated down along the Santa Cruz River. We've dug numbers of those that have been burned down. And so we built a little replica one that was two meters in diameter. And we burned it down. We wanted to see how fast one of these houses would burn down because we find so many burnt down.

It was made of willows that were bent over like look of a magical little African hut kind of with a domed roof. And then grass thatching all over it and then mud on the top and a big berm around the side but open grasses around the edges. So, we went in I took a shovel of coals over there a hot coals and just dumped them inside the door into that house that fire.

It went boom right up the sidewalls of that house. And in minutes it had burned down to where the roof collapsed.

And being an archeologist that has excavated a lot of pit houses, what was really, really cool was as that roof collapsed, the side of the house that it started burning. First the beams started the wall beams things started to collapse out. And when the roof finally collapsed. It sort of flipped up and went upside down and landed on the floor and all of the building materials part of that roof were on one side of the house.

I can't tell you how many times I've excavated pit houses where you find all kinds of burned material on one side of the house and none on the other. It's like, "Well why is this?" There it was boom! So, you could almost study the fire the burn to learn like where the fire started and do a little research on that, so that was really cool. Really, really exciting to see that happen.

So, the whole Hohokam region that we call the Hohokam stuff goes well above like the Phoenix Basin up north of the Phoenix Basin, and it goes clear over to like past Safford over into the Safford Valley to the east. And then the solid Hohokam stuff is down along that border like the US Mexico border now.

You start to get it transitioned into some slightly different stuff going on down there groups but kind of this whole region and to the west out past Tucson clear out by cells you see Hohokam stuff out there the Tohono O'odham folks all consider the whole Hohokam their ancestors and it's really easy to see that definition. They lived the same lifeways.

When folks came in here historically, they were living in very similar houses to these to these kinds of pit houses like this. And so, there was a big crash of folks back in back when the Spanish arrived. And before that, diseases rolled through populations crashed.

So, when the Spanish and folks rolled through these areas there weren't a lot of people everywhere. Our villages were small and in isolated places. So, a lot of people had a hard time seeing these people as the ancestors of the Hohokam. But clearly, they were. Their knowledge

of the desert of the plants is intimate, intimate, intimate. They've been living here for over years growing corn. And through time the other three sisters come in squash and beans.

And so, we see them later and later in time. But corn was one of the very first big ones. And then they're using all the other natural resources out here mesquite beans. And you could just go down the list a mile long. So, there was a lot of resources for these people to use here. It was a very good place to live.

So, Casa Grande ruins - their construction techniques are way different than what we see in these pit house villages. but they're coming out of the same traditions. It's the same stock of people. What happened was in the there was a migration of people from up north from the Kayenta Anasazi region that moved down here and built villages along the San Pedro River down here along the Santa Cruz in a few places here in town.

These migrants came in and they built their little their little villages their little enclaves. And over the next couple of hundred years everybody else who was already here sort of said, "Oh, you guys are cool." And they sort of coalesced with these people into what we call the Salado phenomenon.

And so, everybody starts to build houses that are above ground. And in this part of the world where there wasn't a lot of rock for masonry, they're building puddled adobe walls like Casa Grande ruins. So, they're using rocks at the bases of the walls and then they're mixing in pits like this.

Right here is one of the pits we use for the mud for this. They would mix the mud in pits, take baskets and put it on these walls and form the walls up with their hands. They weren't making formal bricks like the Spanish taught everybody to use when they came in. Although there are some examples where people were doing that in the southwest a little bit. But mostly its mixing in the pits, putting on the walls and forming up with their hands to make those walls.

If you're ever out hiking in the desert and you walk across a spot where you see these linear alignments of vertical rocks sometimes parallel rows or single rows those are called the semental stones. Those are the basis of walls for that time periods of houses and the ceramics on those sites will be polychrome. They'll have three colors of paint. They're all made on brown work place down here in the southwest. They're all made on brown work place down here in the southwest. And we like to lay those over the top of the fire hearth. They're using these brown where the clays all fire brown. This mud here is good enough. You could make pottery out of it. There's enough clay in it that you could. You could make a pot out of it and fire it. And it would work; it would function.

When we excavate these sites, these pit houses like this, what I mentioned before, that the pit house is there is a predetermined shape that they make them. And so, all these pit houses had

entryway ramps that went descended down into the pit house. And so, when we excavate these houses, what we see inside them is posthole patterns. So, we can see patterns of posts that ring both sides of this entryway ramp down into the house and around the outside of the house.

And then oftentimes we see two big post holes in the middle where they put two posts in the middle, and then they would lay a log across the middle of those. And in a lot of cases, for the bigger pit houses, those logs for these bigger poles are the wood they're getting up on Mount Lemmon. It's kind of hard-to-find big mesquite trees that are really straight, so those logs would have been really great for those parts of these houses. And so, we can see the layout of these houses.

And then from burnt houses we find sections of walls and roof sections sometimes that are still pretty intact. So, we can see the construction and then the rest of it is just plain guessing; we just don't know.

But in these houses, when you excavate one of these houses, it's like clockwork. So, if you're stripping with a backhoe and you find the outline of the house, if it's not abutting other houses, you see that outline of the house, it's going to be a sort of an oval, rectangular shape. And in the middle of that, there's going to be a little rectangular space thing that comes out that is the entryway. And so, when you excavated that tapers down into the house and then you go about maybe centimeters a meter into the house, you find the fire hearth.

And so, when we strip one of these houses with the backhoe and we can see the outline of the house, we sometimes don't excavate the whole house. We put a unit in there, a one-by-one meter unit or a two-by-two-meter unit. And we like to lay those over the top of the fire hearth. We find them manos and the matates they used to grind the corn with.

So, we come down on the hearth and so we can see that hearth and, you know, yep, we're in the house. We know the layout of it. If the house is burned, like a lot of times when we find structures like this, the way we find them, you can walk on to an archaeological site where there's millions of pit houses. And you won't know from the surface. You can't see them. They're all filled in. We go out with backhoes and we dig trenches across the site. Every twenty meters, we dig a trench.

So, then we go with our trowels and we face those trenches and we look at the features in profile to see where they're at. So, then we say, "Oh, there's a pit house here." And when we have those profiles, we can tell if the pit house burned. There's a layer of charcoal and ash in those houses. Those are the houses we tend to go after the most, because oftentimes or fairly often those are the houses that we find floor assemblages and we find pots on the floor, we find them manos and the matates they used to grind the corn with.

We get a lot more information out of those houses as opposed to the houses that were abandoned but not burned out. And they just slowly collapse in and fall apart. We don't get as much data out of those, so we sort of try to target the houses where we get more data out of.

Inside a house like this, if you when you go into the house, what you're going to see the first thing you're going to see is you're going to see the two vertical posts that are holding that main beam across in there. And right in between them, you're going to see the fire hearth. That's it's a little bit to the entryway side. You'll see that.

And then in this style of pit house, you're going to see that it has the walls are actually originating from a little ways up in the pit. So, there's two kinds of pit houses. Some pit houses the walls originate from the bottom of the pit and others; they originate from the sidewalls of the pit. So, this pit house has a little bench around the interior that you can kind of sit on and hang out on. But the bulk of the pit houses that I've excavated in over the years, most of the walls go all the way down to the floor in those houses, and then you'll see the materials used to construct it. And it looks like I like to equate it to a woven basket.

So, there's actually two styles in this house. This one side is more of like a wicker shaped, and that's what we initially did on the house. But over the years, the sidewalls in the winters from the rains come in on it, they get soaked. And what...This is a big thing I've discovered in this, this is this is really big is that when you have massive, huge rains and the mud gets saturated like a hundred-year flood type things are big rain events.

The mud on the sidewalls gets saturated and at a point it gets so heavy it just sloughs off. And it's the same kind of erosion you see on adobe walls in historic structures. If they're left unprotected, it gets really wet and the tops of those walls sloughed off at an angle. So, you end up with walls with kind of pointed edges. Well, these structures, all that mud sloughs off. And then you can look right in and the rain comes in and it gets wet. So that's why I think from this house a lot of the structures had more of a thatched exterior.

The back side, we actually have a sort of a thatched visual. That's my personal belief that more of it was thatched on these walls. In the summertime, when the house is mud, it over like this, over the walls, all the way around. By the late afternoon when it's 100, 110 or whatever, it starts to get hot in there. But over the evenings they cool down really nice. But if you have it just open with the thatched grass sides, if there's any breeze, that breeze kind of moves through the house and it actually stays quite comfortable and nice in there.

So, it's a really nice place to be to get out of the sun. It's quite possible too, that a lot of these pit houses were built in and around, you know, where they have their fields. They're down there, their fields are close by, but there may have been trees nearby where they had shade from the trees as well.

The Tohono O'odham were building pit houses up till historic times. So, you can look and you can look and see pictures of these houses. To this day, they built houses similar to this for ceremonial structures out on the reservation. Which I have never seen one of them, because, you know...But that knowledge hasn't left them.

And in fact, I've worked on we I helped them build one up in Phoenix for the Salt River Indian community at their museum. We for their community members to see what the historic houses look like. And you'll see elders come by and go. I remember going to Grandma's house and this is this is what Grandma's house looked like.

And they're just a spitting image of probably what the Hohokam houses look like prior to that back, you know, two or 300 years. So, their styles of house has changed, just like everything, like the artifacts change the arrowheads change, the pottery changes.

But in Tucson, way to think about this is in Tucson...So that's the Hohokam.

When I first started doing archeology, I learned that agriculture came in. Corn agriculture came in about 1100, 1200 years ago with what we called the Hohokam. And so that was all fine and good. And then we started working in the floodplain down along the Santa Cruz.

And every year or two we work on another site either at the Ina Road Sewer plant or below "A" mountain for the Rio Nuevo Project or at another sewer plant off a Roger Road. We'd work in these spots and we just kept pushing it back. We dig a site and we dig trenches deeper in the floodplain. We go down in these trenches and like, "Oh my God, there's another layer!" So, then we go down and we dig down to it and, "Great! Oh my gosh." Now our dates were at, we got corn back to 2500 years.

And then another project, we push it back to 3000 years. And so now we've pushed it back to over 4000 years. And so, people have been here a long, long time growing corn. They don't have it is old in the Phoenix Basin because the Santa Cruz was an easier river to conquer. It wasn't the flow of water wasn't so bad and they could dig their canals and get the water out into irrigated fields easier. Then the Phoenix Basin, where you needed a bigger population to build the weirs to plug though, to bring the water up their canals. And their canals there are ten times the size of the ones here. But that's because they had that much water in the river. And so that also means they could grow ten times the amount of crops. So, the villages are ten times bigger...so it's all scale.

Another way to think about it is like we are in the crust. So, like if you think about the layers in the floodplain, if you're standing down below a mountain and below you at a depth of about if you're if you're about a meter year and a half down in the ground, that layer down there is about 4000 years ago. That's where agriculture comes in. All of those layers, all that dirt up

through there has been laid down by agriculturalists growing corn, beans and squash in the floodplain for that long. It's amazing!