



EPISODE 1 2004 - EDISON HOUSE, UNION, NEW JERSEY.

Gwen Wright: Our last story will reveal a surprising side to one of the world's greatest inventors. The dawn of the 20th century began an unprecedented age of innovation – when men of great vision were transforming our world with new technologies. But one man stands out among them: Thomas Alva Edison. With his sophisticated new inventions - the electric locomotive, the electric light bulb, and the phonograph, he brought light into our lives and music to our ears. During his long and prolific career, Edison received over one thousand patents, more than any other person in U.S. history. But was one of those patents issued for this charming little house?

Gwen: The house is located in the town of Union, New Jersey. It's home to Antonio Cordozo and his family. He's heard that it - and nine neighboring homes - were built by Thomas Edison.

Antonio Cordozo: I would love to know everything about the home. I've never had, you know, people come down and tell me that, you know, this was true, this happened, and it happened 1930 or 1920 or whenever it happened.

Gwen: I'm Gwendolyn Wright and I've come to Union to help Antonio solve his mystery. Hi Antonio!

Antonio: How are you Gwen?

Gwen: Nice to meet you!

Antonio: Nice to meet you!

Gwen: What a great place this is! This is very interesting architecture. What would you like to know about your house?

Antonio: Well I've heard that Thomas Edison built them and I would like to know, did he really build them and why did he build them?

Gwen: Have you heard anything about when the houses were built? Have you heard from local people?

Antonio: I believe in 1930s if I'm not mistaken. But this is all hearsay.

Gwen: Do you have anything else for me to go on that you've heard about or that you've discovered?

Antonio: Well basically that's all I know.

Gwen: Can we go inside and take a look around?

Antonio: Please do.

Gwen: As an architectural historian, I'm familiar with the history of the American home. And I know Edison did experiment with new construction technology. But I'm looking for evidence he built this home. This house seems quite solid! I've asked Antonio to show me the basement.

A: This is my wife's little...

Gwen: Well the ceiling looks original, huh? Is that right?

A: Yes. That's solid concrete here.

Gwen: Concrete! I thought so! Underneath the dry wall! I know Edison and other innovators were intrigued by the possibility of using concrete – a radical shift when most houses were still made of wood. But you've done a lot of improvements, huh?

A: Everything is improved, everything. New piping, new electrical, new everything.

Gwen: So what did you have to do to make these improvements?

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Antonio: A lot of jackhammering. As you can see in the walls? Up in the corner there, right up behind my water pipes?

Gwen: Oh yeah. If it was Edison who built this house, he doesn't seem to have considered the problems concrete would cause. Maybe the exterior of the house will tell me more. Antonio's home has been refaced with brick – so I'm looking at some of the other houses that are closer to their original form. These homes are all based on an identical design - and look like they were all built at the same time. They all have a flat roof, a cubic shape, plain frames for the windows, and virtually no ornamentation. It's a very simple design that tells me a lot. I bet they were built earlier than Antonio thinks. My guess is these houses were built in the early twentieth century. There was a time when architects, builders –even popular magazines looked for ways to find beauty in simple, cubic forms -like these! The identical design also suggests these homes were mass-produced. This makes sense. In the early 20th century, mass production was catching on in cars, clothes ... and houses. So it's certainly possible that Edison built these homes, but to be sure I need some more evidence. I've come to the newspaper archives of the Union Public Library. Finally, in an old copy of the Sunday Star-Ledger, I think I've found something really interesting. I think these houses look very much like Antonio's neighborhood. And here's a headline: "Edison's Dream Homes Recall a Concrete Plan." And here's the reference to the early experimentation that Edison did on his own: "In 1906, some 25 years after he illuminated things with the electric light--Edison startled the world with his announcement that he intended to mass produce low-cost housing for workers." He goes on to say, "If I succeed, as I'm feel certain I will, the cement house will be my greatest invention." So it seems that as early as 1906, Edison was planning to build concrete homes. And look here. In 1917, Edison and Ingersoll, the wealthy watch manufacturer, began production in Union, New Jersey." So if this article is to be believed, Edison did build Antonio's home. As part of a plan to help society by mass-producing affordable housing. But I know Edison wasn't just an inventor, he was also a shrewd businessman. It seems surprising he would get involved with such an altruistic endeavor. To find out more, I've arranged to meet New Jersey historian Dr. Raymond Frey, an expert on local inventors. He's suggested we meet at an unusual location. I've asked you a question about Edison's concrete houses. This is a spectacular site, but why are we meeting at a mine?

Raymond Frey: Well this is one of the last working mines in New Jersey, and Thomas Edison had a mine right here about three miles away on this mountain. He bought 3,000 acres of land, built an entire factory town with 400 workers. Um, but this mine is very similar to what Edison did about 100 hundred years ago.

Gwen: Raymond explains that Edison invented new crushing and milling techniques for his iron mine. And shows me some photographs of it from the late 1800's.

Raymond: Unfortunately it never made any money. The price of iron ore went down below three dollars a ton and Edison went bankrupt, lost three million dollars of his money.

Gwen: So Edison's mining project failed! But I still haven't made the connection to his concrete homes.

Raymond: The same technology that's used to crush rocks can be used to crush limestone and make cement.

Gwen: Which is how you make concrete. Now I see it!

Raymond: Absolutely. He packed up all of this machinery, shipped it to a limestone quarry, which he bought, and this machinery was made to manufacture the cement that made the houses.

Gwen: As Raymond explains, Edison didn't just make concrete. He wanted to make lots of new uses for it.

Raymond: They would assemble a giant mold on the site, they would pour the concrete, they'd let it dry for six days, and then take the molds off, and there you have a complete house. He had an enormous amount of cement to unload and this was one way to do it. He was hoping that this would take off and this would be housing for the masses. And not only was he doing a good thing but he was also unloading all of that cement.

Gwen: So his idea for concrete houses really came out of a failed business venture in iron.

Raymond: That's right. This was perfectly typical of Edison always trying to make lemonade out of lemons. Whenever

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there was a failure he tried to learn from it, make something practical out of it and also make some money out of it too.

Gwen: According to Raymond, Edison's concrete homes weren't much of a success either.

Raymond: Oh, there were lots of problems with the houses. First of all if you wanted to add on to your house, you literally needed dynamite to do anything. The quality of the concrete wasn't as good as they thought it would be, there were problems pouring the concrete. And by the time they were done, the houses cost three times more than they were supposed to.

Gwen: So after he'd failed at his effort to try to produce iron, he then failed a second time with some of the same equipment with his effort to make cement and have concrete houses.

Raymond: Well he didn't just try to make houses out of concrete; he talked about making concrete furniture, concrete beds, concrete phonograph consoles—even a concrete piano. It didn't work out at all and of course, the press had a field day with this. If you look these are some of the editorial cartoons of concrete pianos and concrete chairs.

Gwen: These are great. Nora sharpening her butcher knife on the piano. Grandpa drawing his easy chair up to the fire.

Raymond: And it just didn't work, I don't know what he was thinking.

Gwen: You know some people forget that an inventor is bound to make a lot of mistakes for everything that turns out right.

Raymond: Well Edison's attitude was "I didn't fail. I just found ten thousand ways that didn't work." So after all these media attention, Edison decided to cut his losses and get out.

Gwen: But that's a disparity, because Antonio's house was built in 1917, which is a number of years after this.

Raymond: That's right. Well, it turns out that Edison never did build a concrete house.

Gwen: So if it wasn't Edison, who did build Antonio's house? I've come to the Edison Papers Project at Rutgers University - where Edison's vast collection of records and personal correspondence are currently being catalogued. We now know Edison didn't build the Union homes, but I'm still hoping to find some reference to them. Here's lots of different sales bits, how to make concrete silos, how to make concrete basements, how to make concrete hot beds... Well, he knew how to promote his ideas. These files are full of letters requesting information about Edison's concrete homes - before he even built one! Lots of enthusiasm. People wanting to join the team in production, people wanting to buy plans. Oh, this is fascinating! The Archduke Francis Ferdinand of Austria-Hungary wants to find out more about sanitary houses at moderate cost. So even the Archduke Francis Ferdinand had heard of Edison's plans. And this is the man whose assassination started World War One! This is very interesting. From the laboratory of Thomas A. Edison, he writes "I have not gone into this with the idea of making money from it and will be glad to license reputable parties to make molds and erect houses without any payment on account of patents." So it looks like Edison was hoping other people would use his patent. And here's a letter to Edison dated 1917 - the year we think Antonio's home was built. It's from a Charles Ingersoll.

Gwen: "Dear Mr. Edison, you are accredited and acclaimed by the world as the inventor of the proposition of pouring a house complete in a mold. We shall be pouring this house in the next few days and if you will signify your willingness to go and inspect it, it would be my greatest pleasure to go with you." Now wait a minute, I remember Ingersoll's name from the local news articles about the Union homes. And Antonio's house is on Ingersoll Terrace! So was it Ingersoll who built the Union homes? The Newark Public Library is a great resource for New Jersey history. If I'm going to find information on Charles Ingersoll, this will be the place. Here's an early photograph of Charles Ingersoll, who becomes wealthy when he and his brother establish a company to make dollar watches. So he's interested in mass production from the 1880s. And he sells 75 million of these dollar watches and makes a lot of money. This is what I've been looking for. An article about Ingersoll written in 1941, when he was 75.

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Gwen: "Some years ago--before the last war I think--I took up Edison's idea of poured-concrete construction. Edison talked about forms made of cast iron. That wasn't practical. I had a planing mill in South Orange on my hands and I told the foreman to make me a form out of wood. I built more than 100 houses that way." Although Ingersoll was probably hoping to make a profit, he says he was truly interested in helping the working classes by building affordable, concrete homes. Was Antonio's house one of them? And here's something that I think will be a big surprise for Antonio. I've returned to Union to tell Antonio that his house could be called an Edison home, even though his house and the others were not actually built by Edison.

Antonio: Wow...

Gwen: The last article I found revealed that the Union homes were the first single-mold, single-poured concrete houses built by Charles Ingersoll in 1917.

Antonio: This house was built in 1917?

Gwen: 1917!

Antonio: Wow.

Gwen: You wanted to see a plan. I have something even better than a plan. I have a picture of these houses going up. Now I think, that this is your house right here behind the guy's broad shoulders.

Antonio: That is amazing!

Gwen: Isn't that?

Antonio: I like the best part, my house is there!

Gwen: I know! That's your house right there!

Antonio: That is awesome!

Gwen: So this is for you.

Antonio: Thank you. I've been wanting to know for a long time now and I've actually had someone to help me find it. It's beautiful.

Gwen: Well I've got something else. I told you that Edison was indirectly involved, right? Well here I have a picture for you of the patent for the single pour, metal frame, concrete house. This is the beginning of the houses that you're living in. You see here? "Inventor Thomas A. Edison."

Antonio: I never thought you could get something like this. This is amazing. And I can share this with my kids as they grow older. And I feel proud to live in here. Wish it was a bit bigger but I still feel proud to live here.

Gwen: Despite the best efforts of Edison and Ingersoll, their idea of poured concrete homes for the masses never caught on. Fewer than a hundred were ever built, making these homes in Union even more remarkable.

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