

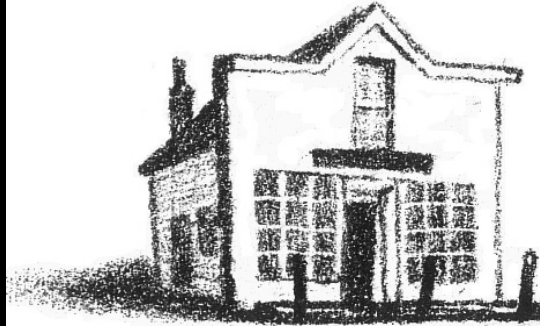
Pa Ingalls' Store

How to Recreate a Building That No Longer Exists

By Rich Kurz / History by Nansie Cleaveland



Pa's Store in the Books



Laurapalooza 2017

How to Recreate a Building That No Longer Exists

Rich Kurz

I came by my interest in the Little House series while reading the stories to my children.

I too wondered how well Laura's stories matched real life events.

And buildings such as Pa's Store - just how big (or small) was it really? Could we ever know?

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What Were They Like in Real Life?

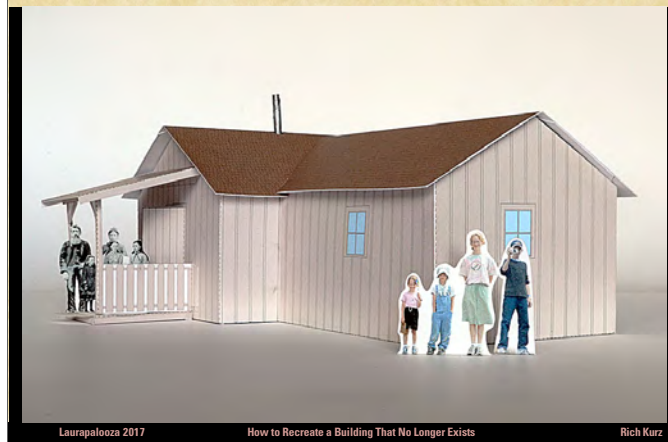


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Some buildings like the Surveyor House still stand and we can go there and experience it for ourselves.

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What Were They Like in Real Life?



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Others, like Ma's House on the De Smet claim, can only be guessed based on what Laura told us

and on the dimensions listed on Pa's Homestead Claim Final Proof document.

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What Were They Like in Real Life?

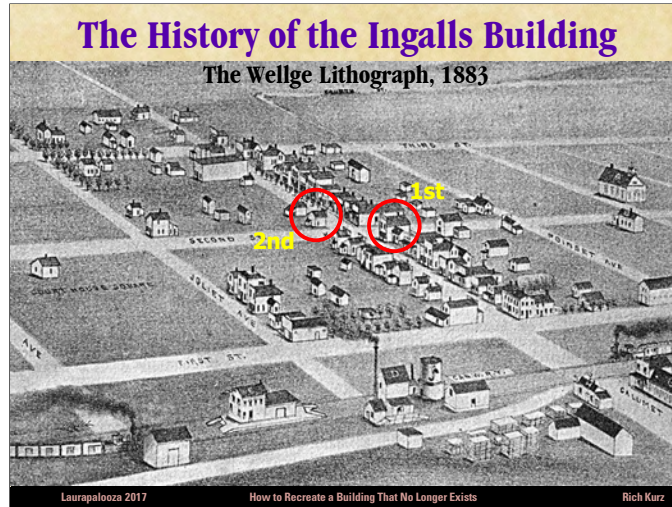


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Pa's Store falls into a third category. The building is gone, but it exists in photos and on maps.

There are techniques that can turn those photos into drawings.

I am going to share with you how I did just that.

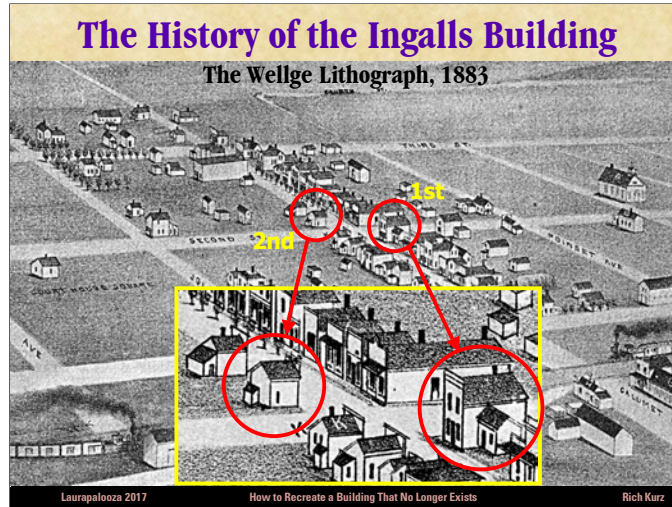


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Charles then built a 2nd store building on the SE corner, the building we affectionately call Pa's Store.

It was here where the Ingallses lived during the Long Winter of 1880-1881,

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where Laura and Carrie observed the bustling new town from the upstairs window on the Fourth of July,

and where Almanzo brought Laura home on weekends from the so-called “Bouchie” school.

Chronology of the Ingalls Building

- **May-July 20, 1880** Charles Ingalls constructs the building.
- **July 17, 1880** Charles contracts with the Chicago & Northwestern Railroad to buy Lot 21, Block 4 for \$50. He will pay for it on October 2, 1882.
- **August 28, 1880** Charles sells "*Lot 21, Block 4 and all his personal property*" to Caroline L. Ingalls, for \$300.
- **October 31, 1885** John Carroll purchases "*Lot 21 plus premises*" from Caroline Ingalls, for \$600.
- **Spring 1886** The building is moved to the back of Lot 21 and rotated to face 2nd Street.
- **January 22, 1918** Peter O'Hara buys the east 65 feet of lot 21, and turns the building into a produce store.
- **April, 1919** The store is razed to construct a new building.

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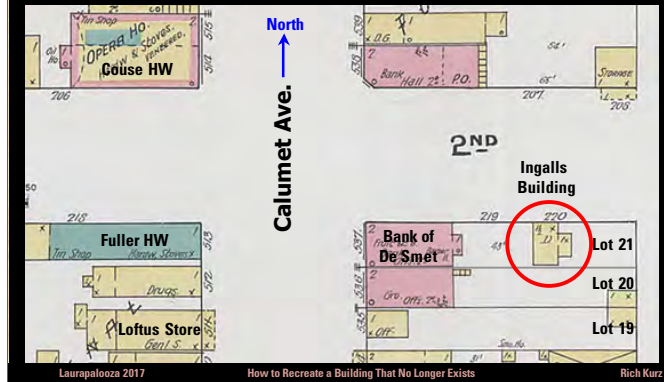
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From documents and newspapers we learn that:

- Charles Ingalls formally contracted to buy Lot 21 on July 17, 1880, and paid for it on October 2, 1882.
- Charles constructed his 2nd building from May to July 20, 1880.
- Interestingly, on August 28, 1880, he sold Lot 21 and all his personal property to Caroline Ingalls for \$300.
- From 1880 to 1885, Charles rented it out and the Ingallses lived there during the first three winters.
- In October 1885, the Ingalls lot and building were sold for \$600 to John Carroll.

The Move to Second Street

- **Spring 1886** The building is moved to the back of Lot 21 and rotated to face 2nd Street.



In the Spring of 1886, before John Carroll began building his brick bank, he moved the Ingalls building to the east end of Lot 21 and rotated it to face north onto Second Street.

There it served as a shoe shop, dress shop, cigar store, insurance office, land office, as well as a residence.

Pa's Store on Second Street

• April, 1919 The store is razed to construct a new building.



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How to Recreate a Building That No Longer Exists

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On January 22, 1918, Carroll sold the east 65 feet of Lot 21, including the building, to Peter O'Hara for \$200.

Peter O'Hara opened a fruit and vegetable store in the building, in partnership with William D. Storts and LITTLE HOUSE character Robert Boast (1848-1921).

In April, 1919, the Ingalls building was razed to build a new office building.

Boards from the building were said to have been reused in a house south of town, but that is also believed to no longer be standing.



My own research relied primarily on four photos, as well as a Sanborn insurance map, an 1883 aerial view advertising print of De Smet, excerpts from Laura's writings, and primary source material provided by Nansie Cleaveland.

Little House Snippets

“Pa’s store building ...stood by itself on the east side of Main Street. Its false front was tall and square-cornered, with one upstairs window in it. Downstairs there were two windows with the front door between them.” *The Long Winter*, pg.66

“The lean-to’s inside door opened under the stairs that went up from the back room. The narrow, back room would be the kitchen...and it had a window...looking out across the road that was Second Street...” *ibid.*, pg.67

“Under the attic roof, a building-paper partition made two rooms. One had a window to the west and one to the east.” *ibid.*, pg.71

“...and the pine color of the floor and walls and ceiling were gay.” *ibid.*, pg.73

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From brief descriptions in the Little House stories, we learn:

- That the storefront had one window up and two windows down.
- That the interior had two rooms and the back room was “narrow”.
- That the attic had a building paper divider between the front and rear put up during the Long Winter.
- That the store was unpainted, both inside and out.

Recreation - Take a Photo...



So how does one turn a photo into a drawing?

The technique is called single view reconstruction (SVR), or orthographic reconstruction.

In drafting class, we learn to turn 3-view drawings into perspective drawings, but we are going to do the reverse.

It can be done by hand using drafting tools, but it is tedious and not always very accurate.

Happily, programs exist on the PC to do the work. I used a freeware program called Hugin.

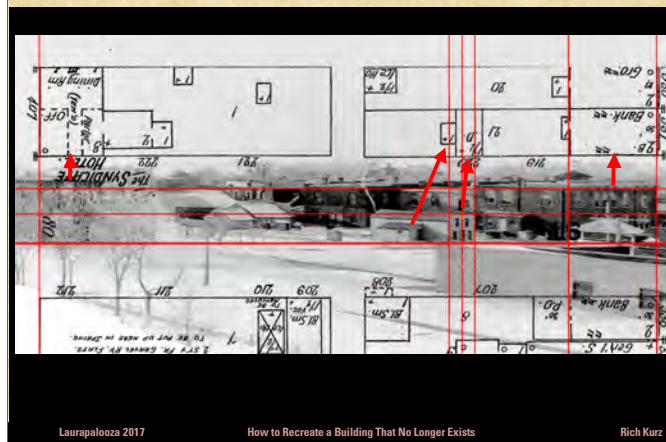
There are a couple of tricks to make it accurate. Here are the steps:

Recreation - Draw Lines...



- + The 1st trick is to take a photo and add very fine lines going to the vanishing points.
 - + I tell the program whether the lines are a vertical or horizontal.
 - + Then the program makes the calculations and gives a first approximation straight-on view. Sometimes it is very good.
 - + I then shift the image left or right, up or down until the horizontals and verticals are at right angles to each other.
- This can take a lot of trial and error.

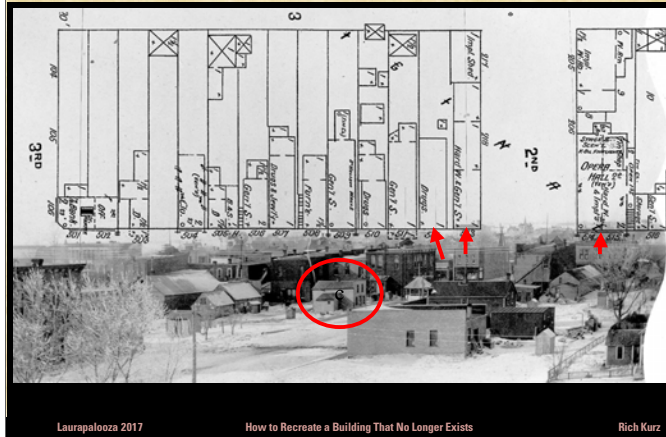
Recreation - Rotated to 2nd Street



+ When the horizontals and verticals are at right angles, I have achieved a straight-on side view, called an orthographic view.

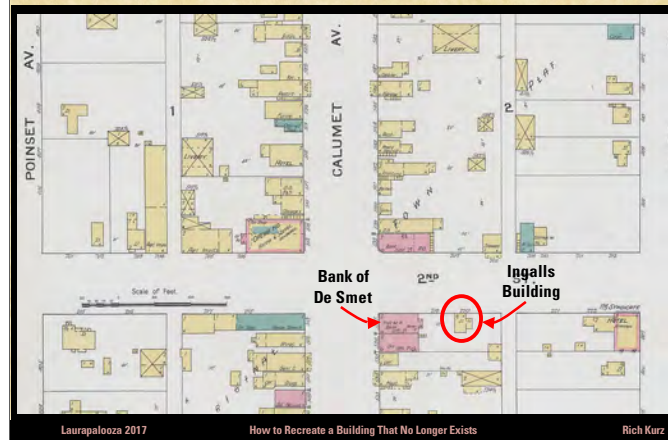
The arrows show how the buildings match the map.

Recreation - Rotated to Calumet Ave...



- + And, when I find the sweet spot, I can rotate the photo 90 degrees left, right, up, or down and view the different sides of the building orthographically.
- + I can then scale the building to get dimensions and trace the photos.

Sanborn Insurance Map



Another resource is an 1898 map of De Smet made by the Sanborn Insurance company. They used the maps to rate the structures for fire safety.

Sanborn Insurance Map Overlay



The maps are surprisingly accurate for both location of buildings and their floorplan dimensions. The maps confirmed the width and depth of both the bank building and Pa's Store. A version of the map is now freely available on the American Memory website. The aerial view can be found on Google maps and Mapquest.



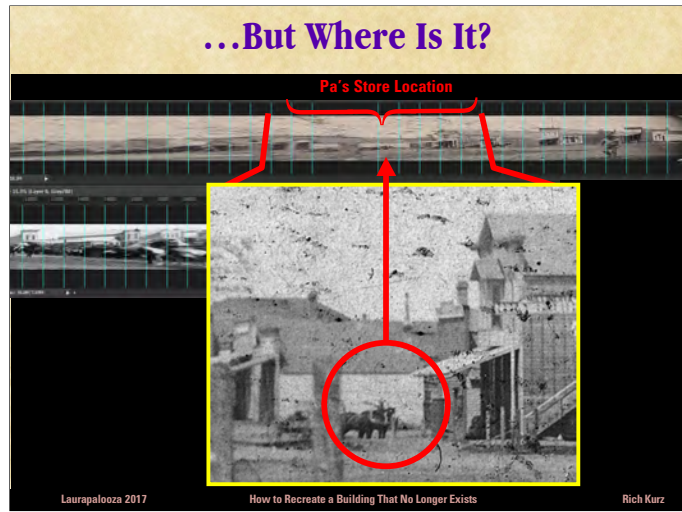
The best place to begin I thought was with the so-called earliest photo of De Smet. That should show Pa's Store as it originally looked!

The Laura Ingalls Wilder Society (LIWS) graciously gave me permission to make a high resolution scan of the original photo.

This view shows the east side of Calumet Avenue. The north block is left of the arrow.

The Ingalls Building was on the south block and should be just left of center.

I ran it thru Hugin and discovered a surprise!

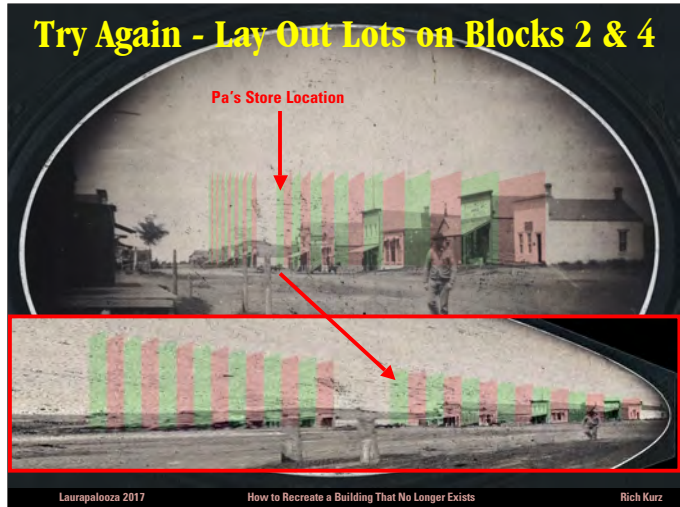


There was NO building where Pa's Store was suppose to be!
How could that be?! All the other buildings were recognizable.
Did I have the different lots correctly identified?
Did the building not exist yet??
Did Laura make up the building?!!!

Try Again - Lay Out Lots on Blocks 2 & 4



I carefully laid out each lot for the two blocks using by-hand drafting techniques. I colored each lot and reran Hugin.



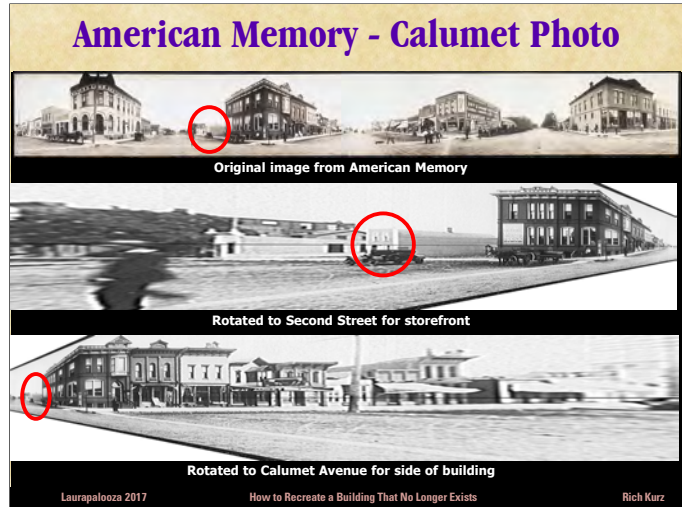
It definitely was not there.

But. . . that meant the photo could be dated!

It was taken in the late spring of 1886, the ONLY time when neither the store nor the bank were on the corner.

So this was after the store was moved to the back of the lot and before construction began on the brick bank building.

That makes this the earliest known photo NOT showing Pa's Store!

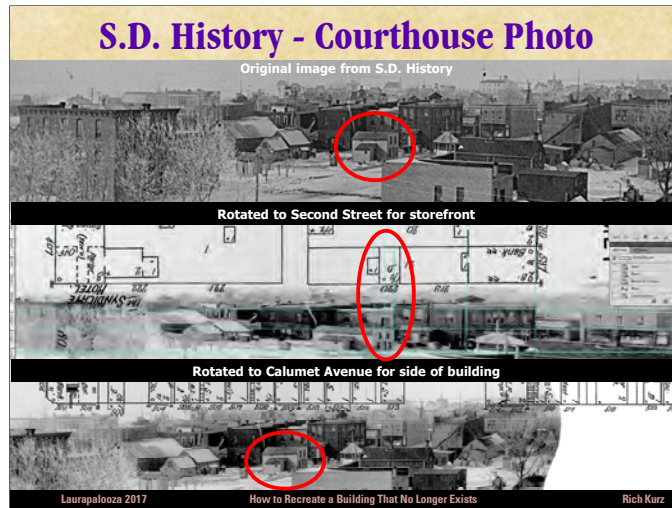


All other photos show the building at its 2nd Street location.

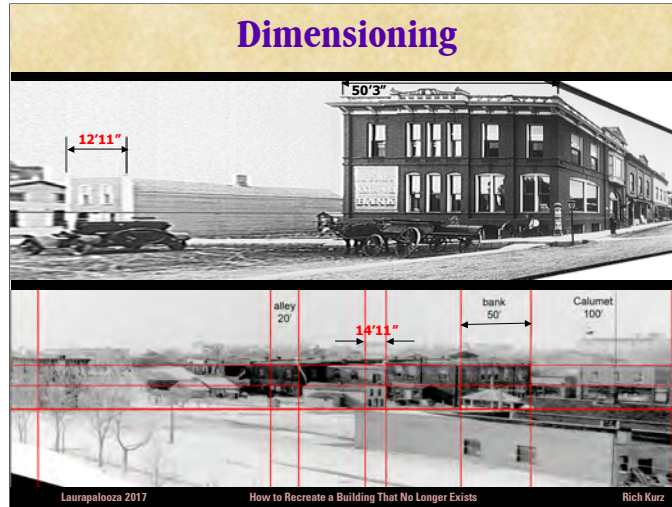
Two can be freely accessed and downloaded from the Library of Congress "American Memory" website.

This top view is one of those, a panorama taken from the intersection of Calumet and Second Street.

I ran it thru Hugin and got the entire block view along Second Street and along Calumet, giving me two orthographic views of the store.



From the South Dakota History website, I found a photo taken from the Courthouse catwalk. I ordered the image and ran it thru Hugin and once again obtained a block-long view of Second Street and of Calumet Avenue. Note how the storefront matches the size on the superimposed map, but its location on the block is slightly off.



Now, to get accurate dimensions, some known dimensions are needed.

The De Smet National Bank building, which still exists today as the Gass Law Office, also appears in the photos.

Thanks to Nansie Cleaveland, she actually measured the front and side of the building for me. That means it can be compared to the store.

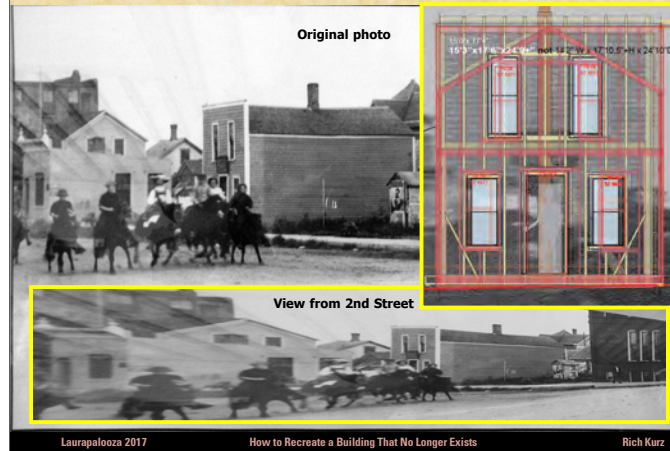
Here we see two different views along Second Street.

You may have noticed that the storefront width differs between these two photos. That's a problem!

Hugin does not always produce the correct height-to-width aspect ratio.

And if the two buildings do not lie on the same plane, then there are scaling differences.

Private Collection Photo



I found another photo from a private collection that showed the store front in greater detail.

More detail means better accuracy in establishing measuring points.

I was confident my dimensions were now to within inches, but how could I check my accuracy?

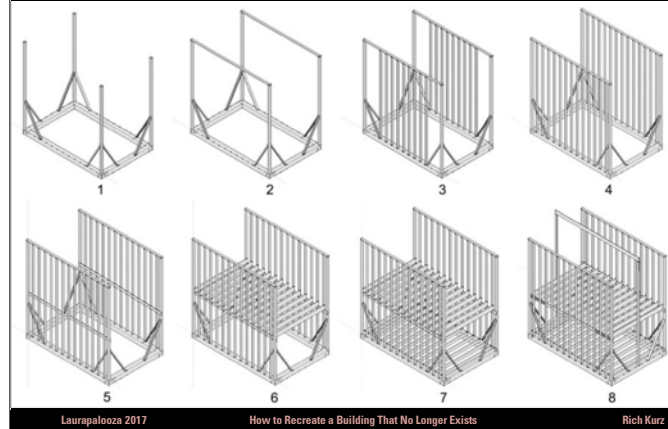
Balloon Framing



To confirm the dimensions, I "built" the store digitally using the "balloon framing" construction commonly employed for wood structures in 1880s.

We use the same technique today in an improved form called "platform framing".

Ballon Framing - Sequence



Balloon framing was developed in the 1860s and was used to build the towns that sprang up along the railroad lines.

It was a breakthrough because buildings could be quickly constructed by only two people using basic hand tools.

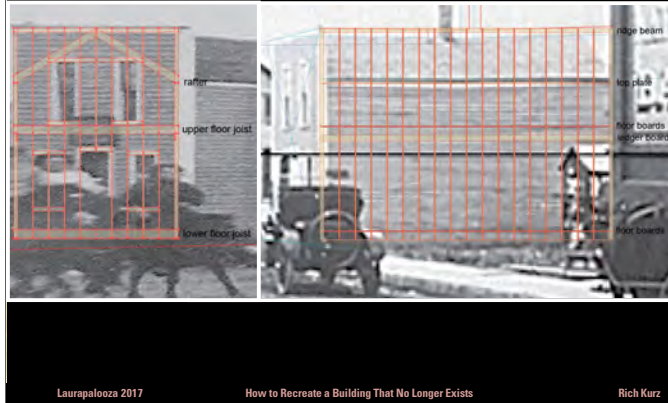
Walls were made with full-height 2-by-4 studs spaced 16 inches apart.

It used lumber efficiently and created a strong structure.

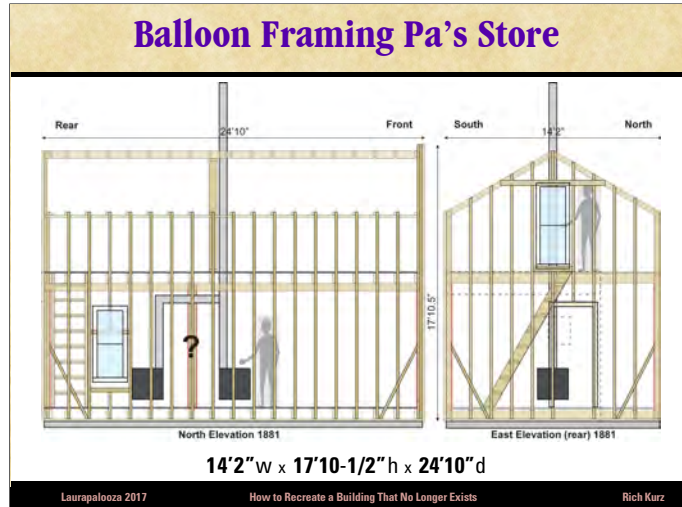
First, the walls would go up and then the floors were added inside the structure.

It was roofed and sided inside and out, and then the windows and doors were installed.

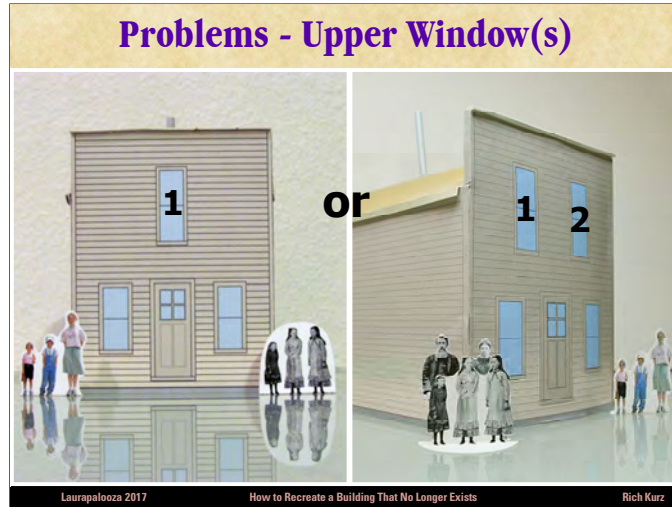
Balloon Framing Pa's Store



As it turned out, the SVR dimensions very closely matched the hypothetical framing dimensions.



And here is what the “bones” of the building worked out as.
My final dimensions were 14'2” wide by 17'10-1/2” high by 24'10” deep.



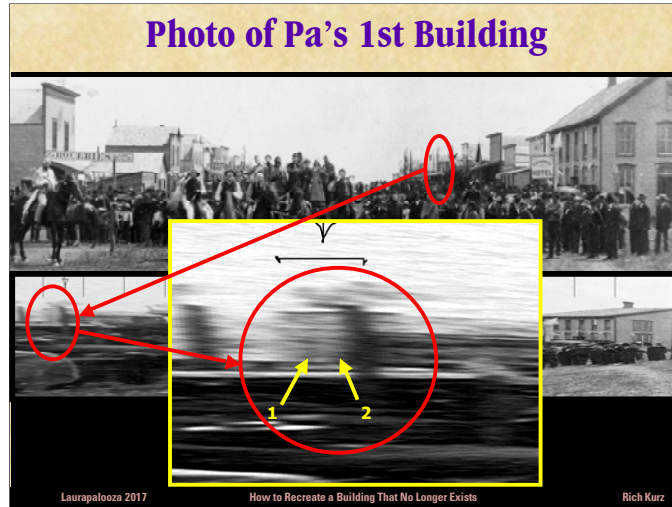
Even so, many questions could only be deduced.

+ Upper storefront window - was there one or two?

Based on Laura's introduction to the building and her 4th of July description, I concluded there was only one, but all the photos showed two.

Nansie Cleaveland pointed out in "Pioneer Girl" that during the winter of 1880-1881, Maggie Master's baby was born "in her room upstairs".

That would indicate the attic had two rooms in front (since Pa & Ma slept above the kitchen) and likely two windows.



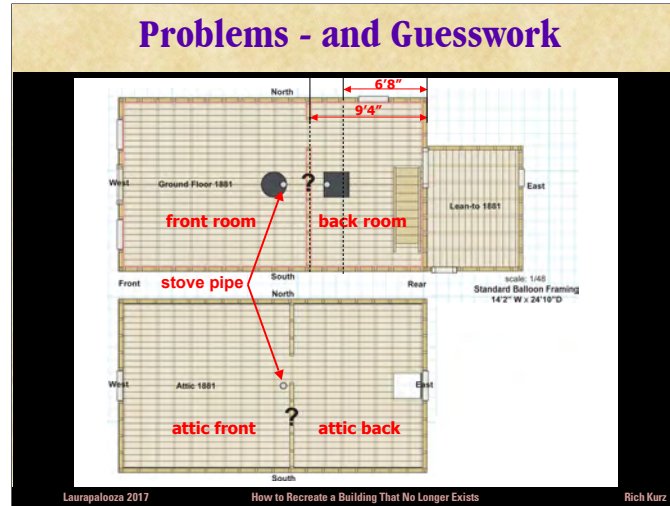
What clinched it was discovering a photo of Pa's first store building.

It looked very much like his second building, and it makes sense that they both would be made the same.

And sure enough, the upper story had two windows - just like in the Ingalls store photos.

The yellow arrows point to the two upper windows.

Problems - and Guesswork



- The stove pipe - was it in the center of the roof? The later chimney was likely positioned in the same location as the original stove pipe.

- Back room dimension - how much space would be needed to fit in a stove, chairs and rocker, small tables, and a ladder to the attic...plus eight (yes, eight!) people.

It is a question of interpretation of what Laura considered “narrow” to be, informed only by what needed to fit.

+ Back door & lean-to location - The 1883 print shows the lean-to to be about half the width of the store and on the southeast rear corner of the building.

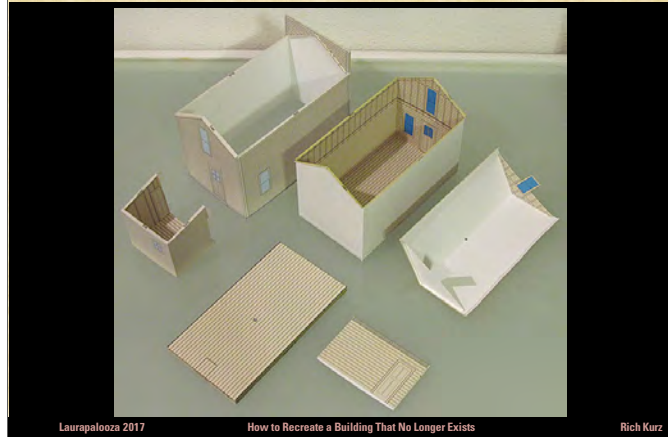
No door is visible, but it makes sense that the lean-to door would face south away from the viewer, and away from the wind.

But there are no photos showing the rear of the building. Was the back room door centered or was it on the southeast corner?

+ Foundation - Later photos seem to show the store resting on a foundation.

But my guess is that before it was moved, it rested on stone pillars spaced every six feet or so as was commonly done then.

Pa's Store Converted to a Model



The final step was to simply lay out the building as a paper model.
And now we can begin to see what it looked like if we stepped back in time.

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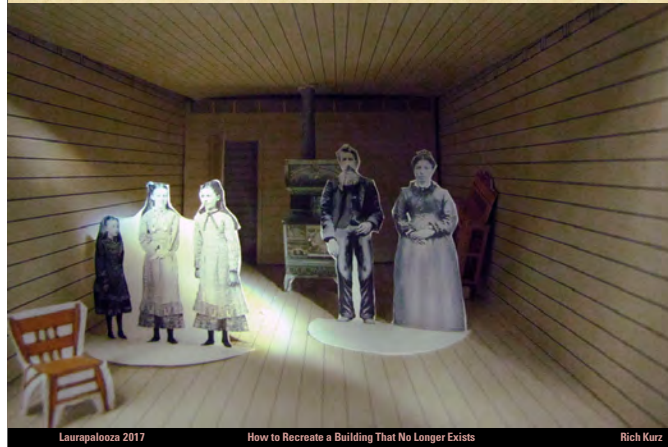
Bringing It Alive



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Here we see the Surveyor House, Pa's' Store, and the Gass Law Office together

Bringing It Alive - Front Room



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Here we are looking in from the front door.

The only light coming into the room was from the front windows.

Bringing It Alive - Back Room (6'8" w)



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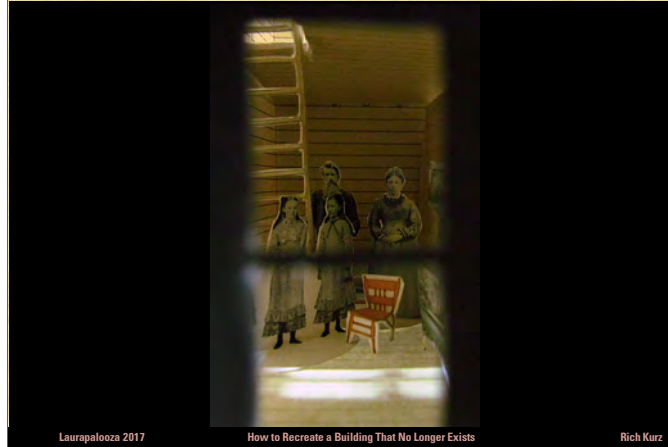
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Looking in from the 2nd Street window.

This is how tight it would be if the back room was five studs deep, or 6 feet 8 inches.

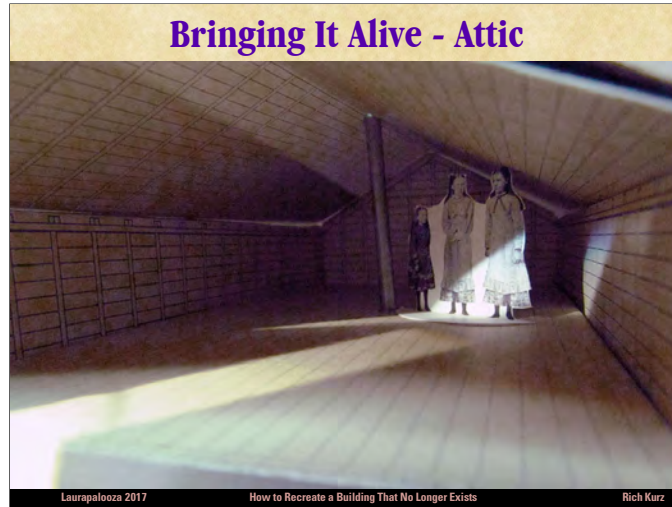
This is my guess at the minimum width it could be and still fit in all the listed furnishing.

Bringing It Alive - Back Room (6'8" w)



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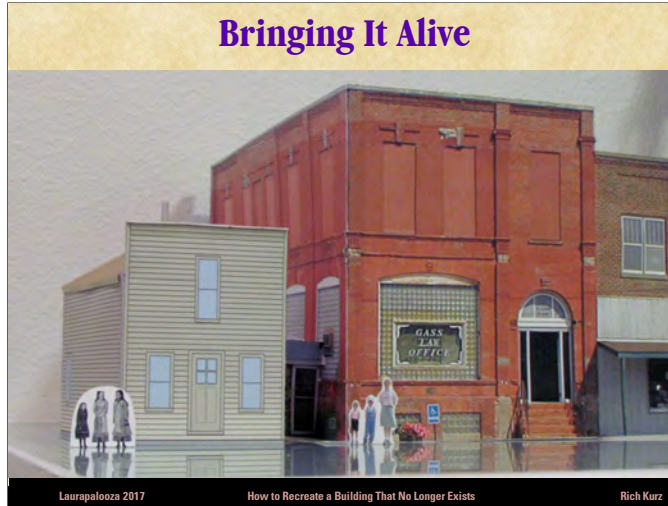
And a peak inside that evening.



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This is looking all the way back in the attic without the divider wall.
An adult could just stand up without stooping under the center ridge.

Bringing It Alive



Pa's store has been gone since April 1919 and only exists in a handful of photographs.

Still, it is best of all envisioned in the minds of the readers of Laura's stories.

And there it will exist, larger than life, and all the more vivid for the experiences lived inside it that we all now share thru Laura's stories.

Questions? Comments?

Please visit my De Smet webpage at:
www.richkurz.com/history/DeSmet/



And thank you for visiting Pa's Store with me.