

CASE STUDY
AUA 2005
OLD NORTH
1892

**THEY JUST DON'T BUILD
THEM THAT WAY ANYMORE!**

THANK GOODNESS!

AUA 2005

JUNE 2005/TUCSON, AZ.

CASE STUDY HISTORICAL STRUCTURES

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OLD NORTH

113 YEARS
&
COUNTING!

THE LAND RUN 1889



LITTLE HOUSE ON THE PRAIRIE



1889

1890 (ONE YEAR LATER) THE CREATION

- THE OKLAHOMA TERRITORIAL NORMAL SCHOOL ACT WAS CREATED AND PASSED DECEMBER 23, 1890.
- SIGNED INTO LAW DECEMBER 24, 1890.
- JUNE 1892.....THE NORMAL SCHOOL (TEACHERS SCHOOL) IS THE FIRST HIGHER EDUCATION BUILDING ERECTED IN THE OKLAHOMA TERRITORY.
 - OU WAS SEPTEMBER 3, 1893
 - OSU WAS JUNE 15, 1894.

BIRTH

**CONDITIONS OF THE
ACT REQUIRED
THAT LAND MUST
BE DONATED AND
THE CITY PASS A
BOND ISSUE**

**GAIL WHITELEY
PROVIDED THE ORIGINAL
DESIGN CONCEPT IN 1892**

- **ANTON CLASSEN
DONATED 40 ACRES**
- **EDMOND BOND
ISSUE \$2,000**
- **OKLAHOMA COUNTY
BOND ISSUE \$5,000**
- **SALE OF LOTS NEAR
CAMPUS \$3,500**

BIRTH

- **KANSAS** FIRM OF SPICKNALL, TOWNSEND AND HUBBARD BEGAN WORK SUMMER 1892.
- DURING CONSTRUCTION, CLASSES WERE HELD IN UNFINISHED PORTIONS OF THE BUILDING
 - (EVEN THEN F/S HAD TO DEAL WITH IT)
- CLASSES BEGAN **JANUARY 2, 1893**. INITIAL CONSTRUCTION CONTINUED THRU 1894
- DURING THE FIRST YEAR, NO INTERIOR FINISHES OR HEAT

BIRTH

- INITIAL RECTANGULAR HIP ROOF BUILDING CONTAINED FOUR ROOMS AND AN ASSEMBLY HALL ON THE TWO FLOORS
- AUGUST 1893, JOHN L. MITCH PLANTS 1,000 TREES ON THE NORMAL GROUNDS AND IS CALLED “FATHER OF THE NORMAL SCHOOL”

REBIRTH

1893 A LEGISLATIVE COMMITTEE
APPROVES A \$15,000
APPROPRIATION FOR
CONSTRUCTION OF A TOWER
AND WINGS

JG HASKELL (OF BACK EAST) IS
SELECTED ARCHITECT

JANUARY 1894 EXCAVATION
BEGINS & RYAN CONSTRUCTION
HIRED TO COMPLETE WORK

1893 UNDER CONSTRUCTION



BIRTH PAINS

- **1898** THE CENTER SECTION WAS STILL ORIGINAL BRICK WITH ARCHED WINDOWS
- **LATE 1899** THE CENTER SECTION WAS MODIFIED FOR SANDSTONE VENEER
- THE TROUBLES WERE JUST STARTING

REBIRTH

- LOCAL SANDSTONE IS SELECTED AND QUARRIED FROM LAND OWNED BY LB POTTS. (SAME STONE USED IN 2002)
- **JULY 20, 1894** REGENTS MEET AND OFFICIALLY OCCUPY THE NORTH WING OF THE BUILDING.
- EXTERIOR IS COMPLETE BUT INTERIOR IS UNFINISHED AND THE SOUTH WING IS NOT COMPLETED UNTIL 1896 (STILL PARTIAL EVEN THEN)

1893

*Presented by
Prof. S. B. Johnson,
Nov. 30 '97*

*Normal School, Edmunds
'93*



1898



BIRTH PAINS

- CLASSES HAD BEEN HELD IN THE BUILDING SINCE **JANUARY 2, 1893** WITHOUT HEAT OR ELECTRICITY
- **JULY 1895** CONTRACT AWARDED TO INSTALL HEAT
- **1896** THE SOUTH WING WAS STILL UNDER CONSTRUCTION
- **JANUARY 1898** THE NORTH WING WAS FULLY OCCUPIED AND THE SOUTH WING THREE FLOORS WERE COMPLETED

GROWTH PAINS

- **LATE 1899** THE TOP FLOOR NORTH WING IS MADE INTO CLASSROOMS AND DORMERS ARE ADDED FOR LIGHT AND AIR FLOW (HOT IN OKLAHOMA AND TUCSON)
- **1899** GAS LIGHTING SYSTEM INSTALLED AND CANDLES ARE REMOVED AFTER SMALL FIRE
- **WORK CONTINUES** ON THE FOURTH FLOOR SOUTH WING



1900

GROWTH PAINS

- **1902** FOURTH FLOOR SOUTH WING COMPLETED AND FOUR CLASSROOMS ADDED
- ATTIC REMAINS ABOVE CENTER SECTION
- **1903** ELECTRIC LIGHTS AND FIRE WATER LINES ADDED (NO INTERIOR PLUMBING)
- **1905** COAL HEATING INSTALLED AND FIRE PLACES REMOVED

GROWTH PAINS

- **1905** PORTICO'S ADDED TO NORTH AND SOUTH ENTRY'S TO CONTROL WIND (REALLY WINDY IN OKLAHOMA), COLD AND HOT.
- **LIFE WAS GOOD!**

1908 BASKETBALL TEAM



1908



North Building C.S.N.S.
Edmond, Okla.

OLD NORTH MANUAL TRAINING



1908

1910



AGONY

- **1911** PLANS WERE MADE TO DEMOLISH **OLD NORTH** DUE TO DILAPIDATED, UNSAFE AND UNSANITARY CONDITIONS (CIVILIZATION HAD ARRIVED IN OKLAHOMA)



IN STYLE

YEP, MA AND PA
WOULD NO LONGER
LET JUNIOR ATTEND
A SCHOOL WITHOUT
INSIDE PLUMBING!

1911

AND YOU THOUGHT
CURLY IN "OKLAHOMA"
WASN'T REAL?

ECSTACY

- **1911** THE OKLAHOMA LEGISLATURE APPROPRIATES \$25,000 FOR COMPLETE OVERHAUL TO INCLUDE WIDER HALLS, NEW CLOAKROOMS, **TOILETS**, A WATER FOUNTAIN, WIDER WINDOWS, A GYMNASTICS ROOM IN BASEMENT (**FORMER COAL DUMP**), BELL ENUNCIATOR AND TWO ADDITIONAL ROOMS IN THE FOURTH FLOOR CENTER **ATTIC**.

NOPE, WON'T GROW HERE

1911



PALM FRONDS
IN THE COLD
WIND DIDN'T
WORK HERE

1911



1912



ECSTASY

- IN ADDITION, WOOD SHINGLE ROOF REPLACED WITH MODERN STAMPED METAL, A FACELIFT OF THE EAST AND WEST FAÇADE'S ARE REDONE BY ADDING ADDITIONAL SANDSTONE VENEER TO MATCH THE TOWER AND INTERIOR STRUCTURAL REPAIRS ARE PERFORMED, INCLUDING CONCRETE COLUMNS AND CONCRETE LINTELS TO FIX BROKEN STONE LINTELS ON THE EAST AND WEST TO "MODERNIZE" THE BUILDING.

**1912 OLD NORTH AND
EVANS HALL UNDER
CONSTRUCTION**



NORMAL AT NORMAL

- **1911** THE ENTRY VESTIBULES ARE REMOVED
- **1912** CLOCK AND CHIMES ADDED
- **1912** FIRE STAIR ADDED FROM FOURTH FLOOR SOUTH TO SERVE AS ACCESS TO FOURTH FLOOR (INTERIOR STAIR ONLY WENT TO THE THIRD FLOOR)
- INTERIOR CHANGES IN THE FOURTH FLOOR **ATTIC** CONTINUED.

LOTS AND LOTS OF SKY 1915



1917 SNOW IN OKLAHOMA



NOT NORMAL

- 1918 ATTIC RENOVATED FOR THE MILITARY CADET TRAINING CORPS BARRACKS
- 150 YOUNG MEN LIVED IN THE ATTIC!



IN THE ATTIC AT OLD NORTH

NOTE
WOOD
COLUMNS



1918

REALLY **NOT** NORMAL

- IN ORDER TO MAKE ROOM IN THE ATTIC, **ALL ORIGINAL BRIDGE TRUSSES WERE CUT**, BOTTOM CORDS TIED TO TOP CORDS WITH WOOD, BOTTOM CORDS HELD UP BY CEILING STRUCTURE AND THE NEW FLOOR SUPPORTED BY THE CEILING STRUCTURE AND HUNG FROM THE TOP CORDS

**(PUSH ME PULL YOU DON'T KNOW
WHAT HELD IT UP ALL THIS TIME)**



1893 ROOF JOIST

**WHO NEEDS A
TRUSS ANYWAY?**

**1898 REVISED
ROOF**

JOIST

**1898 FIELD BUILT
REPLACEMENT
TRUSS**

**1918 TRUSS CUT FOR
NEW DORMER**

LEFTOVERS?



1920

IVY LEAGUE



1925 AND ALL IS WELL



UNTIL 1929 AND.....



DEPRESSION HITS BUT LIFE CONTINUES

1936 OLD NORTH CONDEMNED
AGAIN

- DILAPIDATED CONDITIONS
- OVERCROWDING
- UNSAFE CONDITIONS AND
FIRE HAZARDS

1945





1950'S

POSTCARD PERFECT?

IF YOU CAN IGNORE REALITY

- 1936 TO 1950 LIFE CONTINUES
- OLD NORTH CONTINUES TO
STAND
- MORE AND MORE PUT IN IT
- LESS AND LESS CONCERN
FOR HOW MUCH IT WILL
HOLD

LIFE GOES ON

- **1953** OLD NORTH UNDERGOES EXTENSIVE RENOVATION AND AIR CONDITIONING INSTALLED
- **1953** THE OLD FOURTH FLOOR ATTIC, LONG ABANDONED (**REMEMBER 1936?**) DUE TO “RICKETY CONDITIONS UNSAFE FOR OCCUPANCY” IS REMODELED FOR USE BY DEVELOPMENT AND PUBLIC INFORMATION OFFICES.

SOMETIMES

- NO **STRUCTURAL** WORK WAS DONE TO ACCOMMODATE THIS NEW LOADING
 - GUESS THE PR FOLKS WERE EXPENDABLE?
- NOTE SAID SOME **“STOP GAP”** MEASURES WERE TAKEN

AND ON

- **1955** THE FOURTH FLOOR WAS REMODELED FOR CLASSROOMS. NEW ELEVATOR AND STRUCTURE FOR ELEVATOR ADDED
- NO OTHER **STRUCTURAL** WORK PERFORMED
- **1955** NEW DORMERS ADDED
- **1955** THE REPLACEMENT TRUSS (**REMEMBER 1918?**) WAS CUT AND REMOVED AND THE DORMER CARRIED THE ROOF LOAD

DISCOVERY

1911 WOOD COLUMNS ADDED TO TOP OF EXISTING CONCRETE COLUMNS (ONLY EXTENDED TO BELOW ATTIC FLOOR) TO HELP SUPPORT THE ROOF LOAD

1955-1972 SAW MANY UNWISE CHANGES AND MODIFICATIONS, INSTALLATION OF DUCT WORK, ELECTRICAL WIRING, NEW PARTITIONS, NEW TOILETS, SUSPENDED CEILINGS, ETC. ALL OF WHICH LEAD TO CONTINUED STRUCTURAL FAILURE BY REMOVAL OF LOAD BEARING WALLS.

NOVEMBER 9, 1972 OLD NORTH ADDED TO NATIONAL HISTORIC REGISTER AS HISTORIC SITE

**REMEMBER THESE FROM THE
1918 BARRACKS PHOTO?**



MORE DISCOVERY

- **1972 TO 1977** MORE INTERIOR RENOVATIONS, REMOVAL OF NARROW WOOD STAIR AND INSTALLATION OF NEW CONCRETE STAIR, INCLUDING STAIR TO FOURTH FLOOR SOUTH WING. MODERN ALUMINUM WINDOWS INSTALLED AND WOODEN WINDOW FRAMING ON FOURTH FLOOR EAST DORMER IS REMOVED (**REMEMBER THE PART ABOUT HOLDING THE ROOF UP?**)
- ALUMINUM WINDOWS AT EAST DORMER ARE **ONLY VISIBLE MEANS OF SUPPORT** FOR ROOF LOAD (REALLY GOOD ALUMINUM)

**SLIGHT BOW IN THE
ROOF....WONDER WHY?**



STAYS BAD, BUT HEY

- **1972 TO 1992** THINGS GOT WORSE
BUT NO ONE COMPLAINED SO
HEY....**BUT FINALLY!**
- **1993** GENERAL OBLIGATION BOND
 - OLD NORTH ADDED FOR
RESTORATION
 - **UCO FUNDING PULLED**
 - OLD NORTH CONTINUED **IN USE**

SO WHAT IF IT SLOPED 8"
OVER 8'?



STYLES MAY CHANGE



OR NOT



RENEWED LIFE

- **1996** REVENUE BOND GIVES OLD NORTH ANOTHER CHANCE
- \$1,500,000 AVAILABLE FOR EXTERIOR RESTORATION
- **NOVEMBER 1999** DESIGNS STARTED

HELP WANTED

- **NOVEMBER 1999** MILES ASSOCIATES HIRED
- HISTORIC STRUCTURES REPORT AUTHORIZED
- STRUCTURAL ANALYSIS AUTHORIZED

WE'RE OFF!

- **2000** MID CONTINENTAL RESTORATION AWARDED CONTRACT FOR PHASE I
- **2000-2001** MAJOR EXTERIOR REPAIRS, STONE CONSOLIDATION, FOUNDATIONS, TUCKPOINTING (100%), STRUCTURAL TIES TO STABILIZE CLOCK TOWER (BANANA PEEL)
- STRUCTURAL STABILIZATION FROM 1912 FIRE STAIR, TOTAL WINDOW REPLACEMENT, ETC.

FINALLY...UNDERWAY



OR SO WE THOUGHT

- EXTERIOR REPAIR WORK WAS “JUST IN TIME”
- MAJOR **STONE** PROBLEMS
- MAJOR **ROOFING** PROBLEMS
- MAJOR **FLOOR** DEFLECTIONS
- MAJOR **INTERIOR** FAILURES

BOLD EXPLORERS GO OUT WHERE??????



LOTS OF NEW STEEL



I STILL WON'T GO OUT
THERE.....



WHY IN THE WORLD?

- MAJOR INTERIOR DEMO REQ'D FOR STRUCTURAL FIX
- THE MORE THAT WAS OPENED THE BIGGER THE PROBLEM BECAME
- THE MORE MONEY I HAD TO ASK FOR

AGONY AGAIN OR JUST..... DEJA VU

- **2000** EXTERIOR WORK CONTINUES
- **2000** INTERIOR DEMO CONTINUES
- **JULY 2001** THE PROBLEM IS SIMPLY **TOO BIG** TO IGNORE

REALLY BAD

- **JULY 15, 2001** THE BUILDING IS **VACATED** DUE TO SEVERE INTERIOR STRUCTURAL DAMAGE
- 72 FACULTY AND STAFF RELOCATED IN 23 DAYS FOR \$142K (**DON'T TELL ANYONE**)

WHAT HOLDS IT UP?



FLOOR AND ROOF SUPPORT



A photograph showing the interior of a wooden roof structure. Several wooden beams are visible, with a prominent sag in the central beam. The wood is aged and shows signs of wear and discoloration. The text "It's OK to sag" is overlaid on the image.

It's OK to sag

just a little?

THE MAGIC TRUSS?



A CORNER TOO FAR

- **2002** OFFERS MORE
DISCOVERY
- MISSING BEARING WALLS
- MISSING COLUMNS
- MISSING STRUCTURE
- YOU GET THE POINT



1894 BEAM

1892 HIP ROOF
AND BEAM

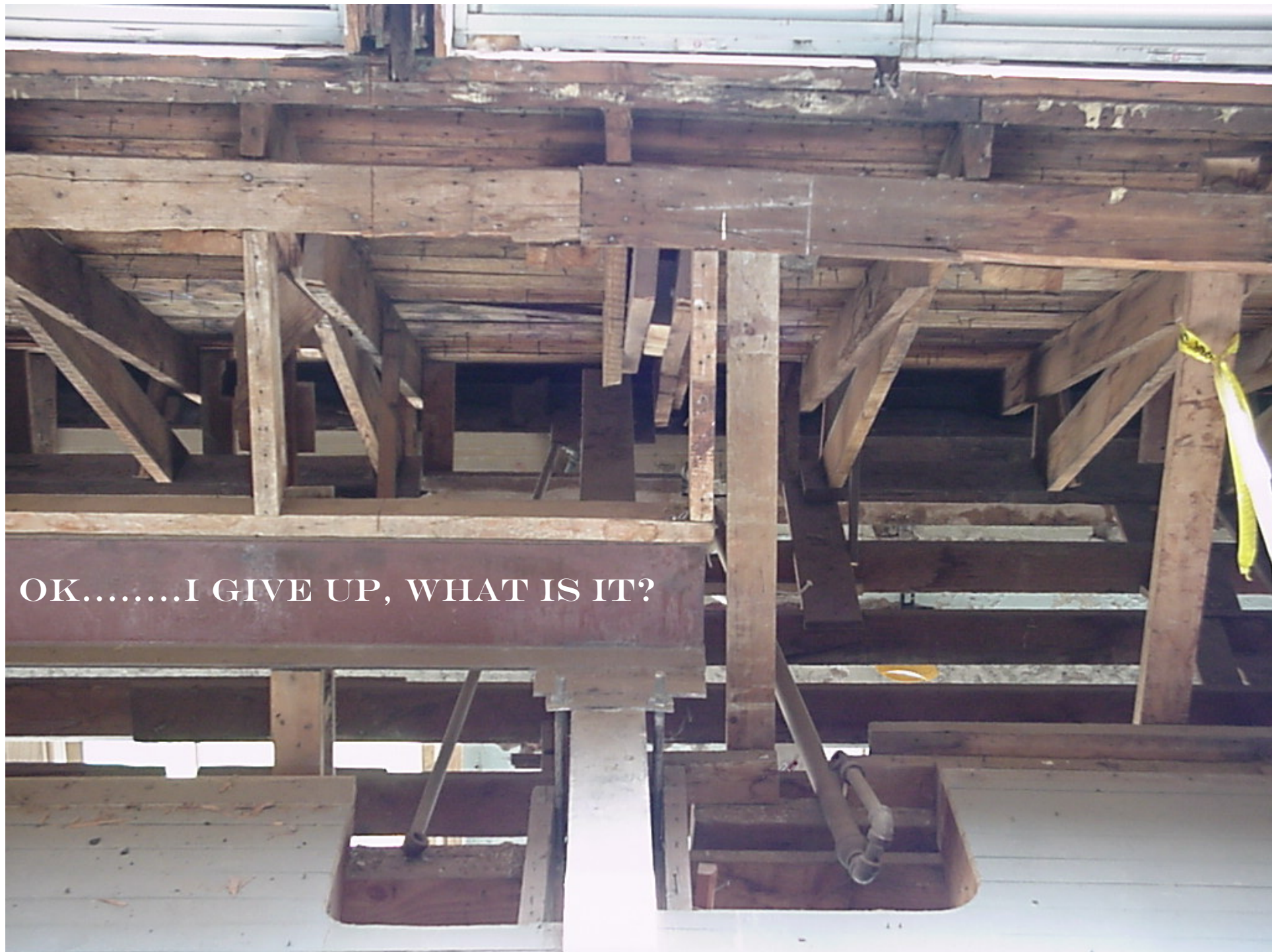
1911 REMOVED
BEARING WALL
THAT SUPPORTED BOTH



THE CONCRETE COLUMN BELOW
IS MID POINT, NOT UNDER THE WOOD COLUMN



**It's really great
to surprise your
Consultant!**



THE AMAZING....HUH?

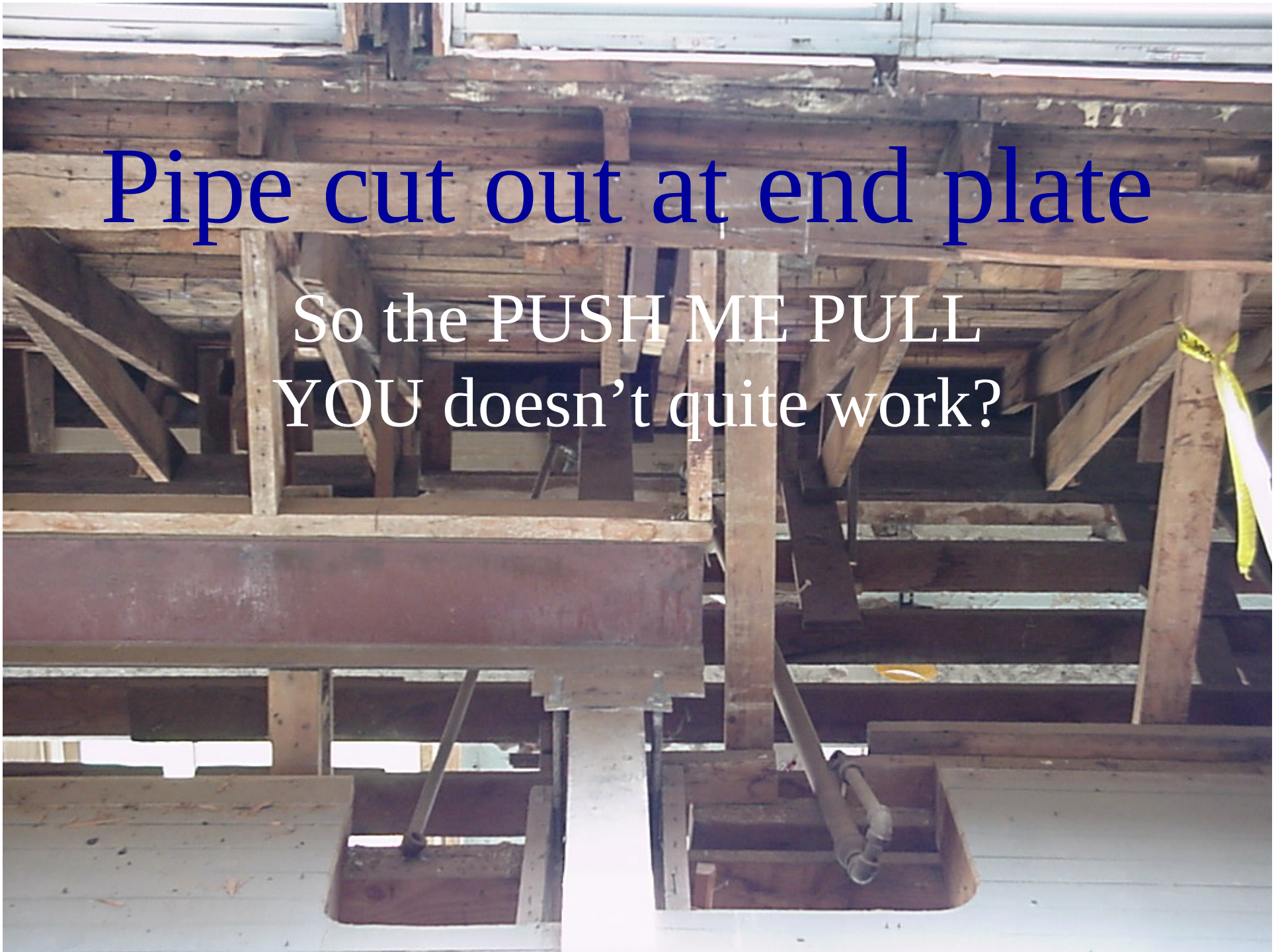
- For what it's worth...



- Aluminum windows above
- Removed truss below
- Removed truss below
- Elevator structure with push me pull you
- Tension/compression in wood

Pipe cut out at end plate

So the PUSH ME PULL
YOU doesn't quite work?





NOPE, JUST AS BAD AS WE
THOUGHT!

TIME TO RETHINK

- **2001-2002** MAJOR INTERIOR STRUCTURAL REPAIRS MANDATED. REMOVAL OF FOURTH FLOOR ATTIC PROPOSED, HOWEVER, STRUCTURAL ENGINEERS BELIEVE **BUILDING WILL COLLAPSE** IF DONE AT THAT TIME
- ROOF OVER CENTER SECTION REMOVED AND REPLACED
- FOURTH FLOOR **ATTIC SHORED** FROM BELOW AND REMAINS FOR REMOVAL IN PHASE II (WE HOPE)

OFF WITH THE ROOF



ORIGINAL 1892 HIP ROOF TRUSS READY FOR REMOVAL



AND THINK

- NEW TRUSSES REQUIRED, MAJOR DEMOLITION OF SECOND AND THIRD FLOOR MANDATED
- ALL ELECTRICAL SYSTEMS OFF LINE
- ALL HVAC SYSTEMS OFF LINE
- BUILDING IS IN LIMBO
- COSTS ESCALATE TO \$2,000,000

AND LIFE GOES ON

- **2005** GENERAL BOND ISSUE
- OLD NORTH FUNDED FOR
\$5,000,000 FOR PHASE I
INTERIORS
- BOND FUNDS HELD PENDING
LITIGATION
- PLANNING TO START JANUARY
2006

ARCHITECTS ROLE?

- 1970-1990 SEVERAL MAJOR A/E FIRMS PREPARED RENOVATION DOCUMENTS
- NO ONE LOOKED AT THE BUILDING AS A WHOLE
- ONLY DEALT WITH “THEIR” PIECE

WHO'S RESPONSIBLE?

- NO ONE LOOKED OUTSIDE THEIR BOX
- FEES WERE TOO LOW
- ASSUMED OTHERS KNEW
- BUDGETS WERE TOO TIGHT
- NOT MY (THEIR) JOB

THE END OF THE BEGINNING



SPECIAL CREDIT TO UCO ARCHIVES/COLLECTIONS

QUESTIONS OR HILARIOUS COMMENTS

- YES.....SAME CAMPUS AS ALL THE
GREAT COLUMNS
- NO.....DIDN'T KNOW WHAT I WAS
GETTING INTO
- YES, TIMES HAVE CHANGED.....
- NO, THEY DON'T BUILD THEM THIS
WAY ANYMORE
-