



Alcalde
Artesia

Clayton
Clovis

Mora
Tucumcari

Agricultural Experiment Stations:

Dr. Dave Thompson - Associate Dean/Director

Dr. Steve Loring - Associate Director

Facilities and Services:

Scott McLean - Assistant Director, Project Design

David Church – Engineer, Facilities Engineering

Heidi Hubble - Project Manager, Project Construction

The following is an assessment of six Agricultural Experiment Stations
April 23 – 26, 2012.

Alcalde Agriculture Science Center

Steve Guldán - NMSU
David Archuleta - NMSU
Quentin Wilson – Adobe consultant

Facts and History:

- Ag Center located seven miles north of Espanola.
- Ag Center is approximately 60 acres in size.
- This property was part of the formally known “San Gabriel Ranch” which had been part of a large land grant given to General Juan Andres Archuleta in the early 1700’s.
- Two buildings (the two present day residences) once served as the seat of justice for the area which is where the name Alcalde comes from, meaning Mayor or Justice of the Peace.
- Around 1910 Florence Bartlett, a philanthropist from Chicago, purchased the property and built a home in 1923, which is presently the office for the Alcalde Agriculture Science Center.
- Elite personalities that stayed at Mrs. Bartlett’s home included: Mary Cabot Wheelwright who founded the Wheelwright Museum; and Georgia O’Keefe, who worked on her paintings and writings on the third floor gazebo of the Center.
- Tile paintings from different artists are placed into adobe wall near back door.
- NMSU purchased the property in 1952 for \$80,000, and has been using the site for agricultural research.
- There was a fire in 1994 which started in the designated mechanical room from a defective furnace.
- Quentin Wilson, internationally known adobe specialist, met with us to advise the team on proper restoration of an adobe facility.
- Steel I-beam installed in original home (now office) in middle of main entrance room.

Office: #350H (Figures 1-6)

- Built in 1923.
- 1989-1990 renovation.
- Three story adobe building.
- Three furnaces replaced in past 10 years.
- Roof replaced in different areas over the years (some still original 1923).
- Exterior plaster/stucco in poor condition.
- Cracking of walls close to the ground.
- Vigas on exterior is missing or rotted.
- Single pane windows; window frames rotted in areas; screens missing or torn.
- Concrete around the NE corner to keep from falling off.
- Electrical service good condition; electrical conduit has been placed on exterior walls of facilities which takes away the ‘historical feeling’ of building.
- Due to settling most exterior doors do not open.
- ADA entrance door does not open properly.
- Small AC units placed in windows throughout the building.
- Adobe wall is deteriorated at foundation due to water.
- Interior fair condition overall.
- Rodent control on second floor desperately needed.
- Guard rail on second floor unsafe.
- Office building needs new septic tank soon. Old septic tank is near the point of collapsing; have placed safety warning cones to prevent some from falling into.

- Basement walls deteriorated and crumbling apart.

Office: #350H (Figures 1-6) contd.

- Upper lookout area is not placed on a load bearing wall.
- Have monitors in area recording water levels around building.

Have obtained past quotes of \$40,000 to \$100,000 respectfully to re-plaster exterior walls. Quentin Wilson estimated that it would take \$100,000 to plaster office. Need to be careful not to use stucco because it holds in moisture and this will cause further damage to the adobe walls.

Residences:

Guest home: #350F – (Figure 4)

- Built in 1800's adobe single story.
- Smaller home just recently remodeled inside—looks good but could use more work.
- Used by graduate students.
- Needs door to bathroom.
- Outside stucco cracking in areas.
- Needs new roof.
- Single pane windows.

Residence: #350G

- Built in 1800's adobe single story.
- Fairly good condition inside.
- Single pane windows.
- Outside needs stucco/plaster and paint.
- South wall of home bulging out from above the window.
- Needs new roof.

Mobile homes (2) F

- Acquired from FEMA.
- Used for graduate students.
- No major problems.

Shop Areas: #350 C, D, AND 3 E'S – (Figures 7 & 8)

- Several old outlying buildings: constructed of adobe.

Building 1: Large adobe #350C

- Needs new roof.
- Gutter falling off building.
- Cracking of stucco/plaster on exterior walls.
- Major cracks in area where wall meet foundation.
- Electric service (weatherhead) needs upgrade.

Building 2: Wooden white doors #350 D

- Used for milk cows originally in 1800-1900's.
- Used presently for storage of equipment.

Building 2: Wooden white doors #350 D contd.

- Needs new roof.
- Dirt floor, could use concrete floor.

Two/Three smaller buildings: #350 E

- Constructed of adobe.
- Used for storage.
- Major cracks in walls.
- Major cracks in floor.
- Needs new roof.
- No electrical receptacles to operate equipment.

New shop: #350A

- Built in 1973.
- Metal construction.
- Could use insulation in walls in south area.
- Needs a septic tank.

Grounds:

Adobe Fence: - (Figure 8)

- Adobe wall on east side of property is falling over due to water draining from street.
- Graffiti problems causing wall to have different colors.
- Stucco peeling near ground due to water.
- Large cracks in some areas.
- Area north of gate is bulging out/falling over due to drainage of main roadway.
- Fence is at the end of a street (have had vehicles run into it in the past).

Irrigation Ditch: - (Figures 4 & 9)

Area near office has washed out. Repairs required as water in ditch is causing erosion to property.

Major Concerns:

- Needs new septic tank for office.
- Need to plaster old historic office building.
- New roof needed on old historic office building.
- Second floor railings into center courtyard do not meet code and are in need of replacement.
- Needs new/restore windows and doors at office.
- New heating /AC unit for whole building.
- South adobe wall at residence.
- Drainage of water towards fence.

Adobe Office – Figures 1- 6



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

As shown in Figures 1- 6 above, the exterior of the main office is in need of extensive repair; stucco, vigas (possible removal), roof, railing, and surface mounted electrical and other exterior surface repairs and replacements. The building is also in need a new A/C and heating systems.



Figure 7 – Adobe Storage Buildings



Figure 8 – Adobe Storage Building & Fence



Figure 9 – Eroded Fence and Canal Wall



Figure 10 – Guest Home



Figure 11 - Superintendents Home



Figure 12 – Superintendents Home

As is shown in the pictures above, the historic barns, now shop storage buildings (Figures 7 & 8) are in need of significant repair or replacement. The exterior adobe walls are in poor condition, show significant signs of displacement, and the roofs and gutters need to be replaced. The superintendent' house (Figures 11 & 12) needs to be re-plastered as well as replacing the roofs. The irrigation canal (Figure 9) has eroded and the adobe fence next to it has collapsed. The exterior wall (Figure 8) surrounding the property is also deteriorating due to poor drainage of the main street next to it.

Artesia Agriculture Science Center

Robert Flynn - NMSU

Facts and History:

- Founded in 1955.
- Focuses on research needs of the Pecos River Valley.
- Is approximately 75 acres.
- Irrigation supplied by artesian well.

Office: #346A (Figures 1, 3, 4 & 5)

- New addition in 1977.
- Water drains from all direction towards building, especially from fields. Causing shrink and swell of soils.
- Concrete masonry unit (CMU) construction.
- Major cracks through the building interior and exterior.
- Cracks between ceiling and roof.
- Cracks in foundations – floor uneven – cracks in tile because of this.
- (Architectural drawing show 16" X 5' piers under foundation).
- Doors out of square due to settlement issues.
- Separation between old part of building and new edition.
- Both old and new have major structural cracks throughout buildings.
- Eastside roof sloping SE-E side.
- 10,000 gallon underground fuel storage tank shown on drawings. Unsure if removed.
- Ceiling popcorn treatment style - possible asbestos.
- Metal roof installed 7 years ago.
- Newer septic system.
- Eaves need paint.

Greenhouse: #346C (Figures 2 & 6)

- Located at backside of office.
- Same crack damage as seen in office.
- Has not been used in 15-20 years.
- Electric no longer works.
- Water no longer works.
- Greenhouse AC system no longer works.
- Glass roof is missing in areas.

Residence:

Main residence: #346K (Figures 7-9)

- House is in extremely poor and unclean condition.
- Cracks in and between walls and foundation.
- Needs new doors (interior and exterior) and windows.
- Stucco is falling off.
- Needs new flooring—9"x9" tiles under carpet –possible asbestos.
- Water damage on interior walls.

Main residence: #346K (Figures 7-9) contd.

- Light fixtures missing throughout house.
- Needs a complete new kitchen - cabinets, floors, plumbing fixtures etc.
- Metal roof around 7 years old.
- Electric service good.

Mobile Homes (2):

- Acquired from FEMA.
- Used by graduate students and visitors.
- No sustained issues.

Laboratory: #346L

- Metal construction.
- Good condition.

Shops: (3)

Shop 1: #346D Next to mobile homes.

- CMU construction.
- Corner near front door is badly cracked.
- Other small cracks around building but not as bad as office.
- Entrance door is off center because of crack.
- Major cracks in concrete foundation/floor.
- Eaves need painted.

Shop 2:#346I

- Metal construction.
- Good condition.
- Building not on foundation therefore metal is rusting at the soil level.
- Problems with floor – either bad concrete or used asphalt which is deteriorating.

Shop 4 (Figure 4)

- Metal construction.
- Garage door do not operate properly.

Major Concerns:

- Office building drainage.
- Popcorn ceiling.(asbestos concern)
- Repairing cracks in office building - lifting building.
- 10,000 gallon underground fuel storage tank shown on drawings. Unsure if removed.
- Residence drainage and complete repair/remodel.
- Greenhouse operation.



Figure 1 – Office



Figure 2 - Greenhouse

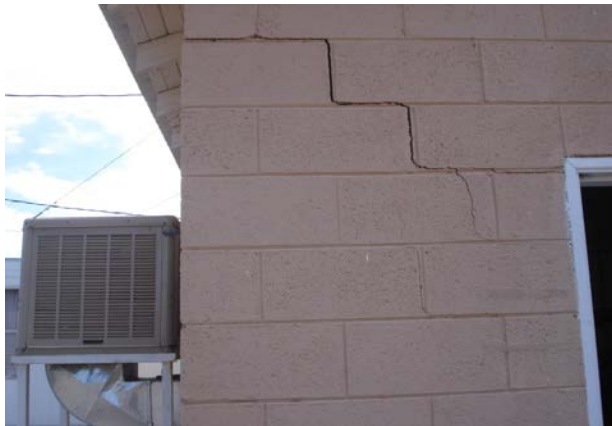


Figure 3 – Office

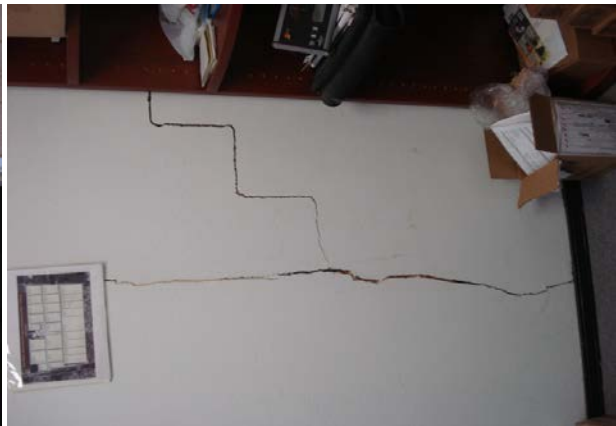


Figure 4 - Office



Figure 5 – Office



Figure 6 - Greenhouse

The most significant concern is the drainage sloping towards the main building office on site. Saturation of the soil around and under the building has caused major movement of the original building and the 1970's addition (Figures 1-5). All have structural cracks in every corner of the building. The green house is non-functioning and is only used for storage (Figures 2 & 6)



Figure 7 – Main Residence



Figure 8 - Main Residence Kitchen



Figure 9 - Main Residence



Figure 10 – Shop 2



Figure 11 – Shop 2



Figure 12 – Shop 4

The ranch manager's house shown above in the top two photos is in need of complete refurbishment. There are concerns with vinyl asbestos tile (VAT) throughout the building, mold, kitchen upgrades and whether this building is worth saving (Figures 7- 9). The other photos include the major shop buildings on site that are in relatively good shape (Figures 11 & 12). The lack of footings and erosion under the side walls of one of the shop buildings is a concern (Figure 10).

Clayton Livestock Research Center

Mike Hubbert - NMSU
Jonnie Sue McDonald - NMSU
Jim McDonald - NMSU
Lisa Blan - NMSU

Facts and History:

- Feed mill equipped with steam flaker.
- Feed mill has 10 overhead bins for different commodities.
- Also has 120 acres irrigated land using pivot irrigation.
- There are extensive cattle corrals and working facilities.

Office:

- Framed construction.
- Could use new stucco on building.
- Needs new stucco on fence surrounding office.
- Light fixture inoperable because of interference with the door.
- Un-covered pipes in concrete at front entrance are a safety concern.

Feed mill: #339E – (Figures 2, 3, & 4)

- Mill needs paint.
- Metal construction—some of metal on building significantly dented.
- Concrete Masonry Unit (CMU) building attached to back of mill has cracks.

Employees say one of the bins are flat instead of cone shape, therefore grains that are processed stay at the edges of bin and become moldy. They have to crawl into the bin to clean it out.

Cattle Barn: #339C

- Metal construction.
- Very nice indoor livestock scale and working chutes.

Shop: #339D

- Metal construction.
- Three 55-gallon waste oil drums are up against an outdoor electrical service.

Outbuildings: #339L and #339K

- Pump house and generator.
- Overall condition in good shape.
- Storage water tank have supports that need to be tightened very soon.

Residences:

Main house: #339B – (Figures 5-9)

- Frame construction.
- Building needs new stucco.
- Fireplace does not vent properly.
- Needs new windows – double windows fog up between glass due to break in thermo-panes.
- Past resident gutted the 2nd bathroom. Needs new bathroom
- Fences have cracks and need new stucco

Double mobile home: #339G ?

- Seems in good shape outside.
- No complaints from employees.

Single mobile home #339G

- Used by visitors and graduate students.
- Appears to be in good shape outside.

RV Sites: (4)

- Appears to be in good shape.

Grounds:

- Fuel tanks need secondary containment.
- Working corrals painted and in good shape.

Major Concerns:

- Upgrading of feed mill.
- Painting feed mill.
- Bathroom in Residence 339B.
- Windows in Residence 339B.
- Stucco office and residence.



Figure 1 – Entry Sign



Figure 2 – Feed Mill

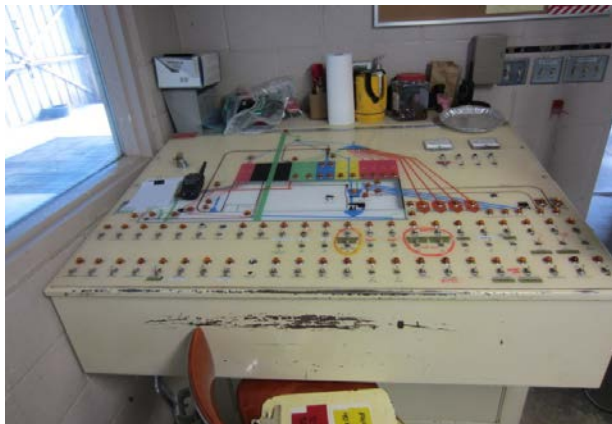


Figure 3 – Feed Mill Control Panel



Figure 4 – Feed Mill

One of the biggest concerns is the upgrading and/or replacement of the feed mill. This may have been a “state-of-the-art” facility roughly 30 years ago. This is the single most expensive upgrade to the Livestock Research Station in Clayton



Figure 5 – Main House



Figure 6 – Main House



Figure 7 – Main House (unfinished RR)



Figure 8 – Main House (unfinished RR)



Figure 8 – Main House



Figure 9 – Main House

Some of the bigger concerns with the superintendent's house shown in the above pictures are the stucco repairs, window replacement and completion of bathroom renovation work. (Figures 5-9)

Agricultural Science Center at Clovis

Rex Kirksey - NMSU
Mark Marsalis - NMSU
Aaron Scott - NMSU

Fact and History:

Irrigated and non-irrigated agricultural research center for the past 50 years.

Office: #340E

- Framed with module add-on.
- Fairly good shape inside and out
- Fairly new shingled roof.
- Electrical upgrade a few years ago.
- Need new ceiling tiles.
- Insulation under roof.

Module part (which is mostly offices) needs more receptacles in each room. Each room has only one receptacle on each wall. Computer technology has receptacles maxed out.

Residence: #340D

- Brick and framed new addition.
- Needs new garage door.
- Basement windows leak when it rains. Poor drainage.
- Fairly new shingled roof.
- Two-piece style septic tank.
- Vents on remodel may be too low - Water drains towards house in all directions.

Mobile home:

- Acquired from FEMA.
- Outside looks good.

Crop/Feed Storage: #340H

- Quonset building.
- In fairly good shape.

Shop: #340B

- Formerly a methanol/alcohol facility.
- Had three phase electric; now single phase.
- Shop needs an addition – hard to work on two vehicles if needed.

Garage: #340C

- Fairly new metal construction.
- Three-sided on purpose to park equipment.

Greenhouse: #340F

- Some of the greenhouse area needs new covers on the roof.
- Need new ceiling fans to keep crops from burning in the summer. (Areas of the greenhouse not being used because of this issue)

Grounds:

- The most important problems at Clovis are their wells.
- One irrigation well is going dry.
- Ground water comes from the Ogallala Aquifer. In the winter they have no problems, but in spring it begins to go dry. In summer the well is pumping dirt.
- Well is 500 feet deep with surface motors to pump.

The well used for domestic use is also having problems. The pressure has decreased over time. Could be the pressure (bladder) tanks need to be replaced. One tank seemed water logged. Tanks are approximately 10+ years old.

Major Concerns:

- **Water**-both wells domestic and irrigation are drying up.
- More receptacles in module part of office.
- Repair the greenhouse issues.
- Adding on to the Shop.



Figure 1 - Office



Figure 2- Back of Office



Figure 3 - Shop



Figure 4 – Shop



Figure 5 - Storage Facility



Figure 6 - Greenhouse

Other than the wells going dry, the facility is in pretty good shape. The shop area is far too small for the repair of ranch equipment and the shop could easily be doubled in size. (Figures 3 & 4)

Mora Research Center

Tammy Parsons - NMSU
Benjamin Espinoza - NMSU
Robert Heyduck - NMSU

Facts and History:

Research done on forest biology, silviculture, agro forestry, christmas tree, and ecology.
Produce seedlings for New Mexico residents and businesses.

Office/Shop: #334A – (Figures 1-3)

- Combination office and shop area.
- Metal construction.
- New roof required.
- Water from rain seeping into ceiling area—getting into light fixtures.
- Need new ceiling tile after roof is repaired..
- Office and two residences share same septic tank—have to pump every 3 months.
- On city water.

Greenhouses: #334B – (Figure 5)

- Steel and glass/plastic covering.
- Metal building on front of greenhouse.
- In good shape.
- Walk-in freezer needs new compressor; other equipment needs work - (Figure 6)

Second abandoned greenhouse needs power, water, and covering to be used again

Residences: #334G and #334C

Mobile homes: (2)

- Both need new roof.
- Both need new (separate) septic tank.
- Just pumped septic tank and it is already full again (septic tank for houses shared with office).

Grounds:

- Many military storage containers seem to be in good shape and organized.
- Safety railing on irrigation ramp at holding pond.

Major Concerns:

- New roof on office/shop.
- New roof on residences.
- Septic tanks for each building and not shared.
- Equipment not operational.



Figure 1 - Office



Figure 2 - Shop



Figure 3 - Office

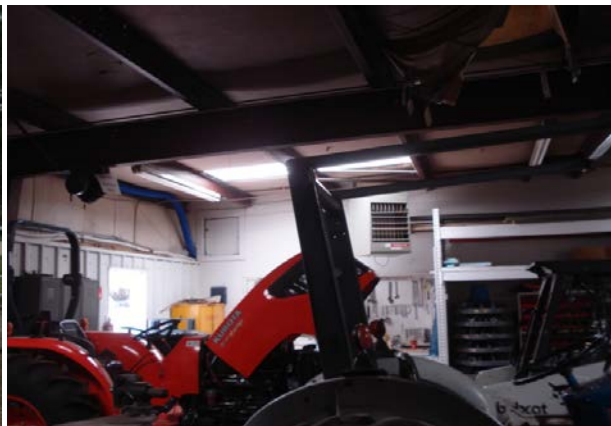


Figure 4 - Shop



Figure 5 - 2nd Greenhouse



Figure 6 - Compressors need replaced.

The primary concerns are that the roofs need to be replaced on the office/shop and the both residences (figures 1 & 2). Compressors for refrigeration and freezers need to be replaced (Figure 6). Finally, individual septic tanks for each occupied building.

Agricultural Science Center at Tucumcari

Rex Kirksey - NMSU
Leonard Lauriault - NMSU

Facts and History:

- Some buildings were built in 1912; others in 1930.
- Originally part of USDA Dryland Field Station and has been in operation since 1912.
- Transferred to NMSU in 1949 and research started in 1952 when surface water became available from the Arch Hurley Conservation District.
- Presently constructing pipeline to transfer effluent water from the Tucumcari waste water treatment plant.
- Research will be conducted using this new system.
- According to their superintendent, Rex Kirksey, prior to this site visit, NMSU Facilities and Services staff had never been to the Tucumcari Ag Center – Only our Engineering and Environmental Health and Safety Departments have been to this site.
- Power coming into the facilities is 3 phase. They use transformers on all the buildings to reduce voltage.

Office: #404D - (Figures 3, 4 & 11)

- Concrete Masonry Unit (CMU) red brick/ construction.
- Cracks throughout exterior wall, especially where foundation meets wall.
- Wall cracked at entrance step - maybe used to crawl under at one time.
- Fairly new roof.
- Single pane windows.
- Need more AC/cooling.
- Domestic well 110 feet deep; new pump 8 years ago.
- Need more receptacles throughout office.
- Drainage of water is toward building.
- Basement walls have major cracks.
- Paint is needed on window frames and eaves.
- Gutter has been removed.
- Chimney severely cracked.
- In basement, the joist are not on concrete wall and causing sagging in floor above.
- Water comes in basement windows.

Laboratory Building: #404C

- Red brick construction.
- Remodeled in 1985-86.
- Major cracks in stucco.
- Shifting of front of the building.
- Water drains towards building.
- Cracks in interior.
- Wood on outside needs paint.
- Floor rising in different areas.

Oven Drying Building: #404K

- Fairly good shape; some cracks.

Garage: (east) #404H

- Concrete floor has cracks.
- Termite damage inside.
- Stucco damage all around the building.

Garage: #404G

- Fair to good condition.
- Needs stucco.
- Needs paint.

Conference Building: #404B – (Figure 6)

- 100 year old adobe.
- Had flood irrigation damage in basement.
- Major cracks in stucco.
- Conference room is shifting both directions from center of room/fireplace area.
- Outside window frames and eaves need paint.
- Basement has been lifted with jacks and a steel I- beam installed where building was falling in.
- Major cracks in basement walls and floors.
- Attic is shifting both directions out from fireplace chimney.
- Windows and eaves need paint.
- Needs new windows.

Horse Barn/Storage Barn #404I - (Figures 7, 8 & 9)

- 100 year old adobe.
- Major structural problems.
- Has been condemned.
- One side of barn is bulging out at least 2 feet.
- Someone has tried to reinforce it with cable inside to keep from falling over.
- Major cracks in stucco - stucco should not be used with adobe. Should have been re-plastered.
- Needs new windows.

Shop #404E – (Figures 5, 10, 12, 13 & 14)

- 100 year old adobe.
- Major structural problems.
- Concrete braces on corners.
- Concrete support base inside.
- Major cracks outside stucco.
- Needs new concrete floor.
- Interior plaster coming off adobe walls.
- Roof and ceiling in good shape.

Shop #404E – (Figures 5, 10, 12, 13 & 14) contd.

- Electrical transformer concrete pad sinking.
- Roof joist has sagging areas when looking from outside.
- Wood doors, eaves, window frames need paint.

Wall movement is being measured to show distance the wall is falling over each year. When looking at support it looks like wall is falling outward. When looking outside wall is falling inward and pushing support with it.

Carport: #404G

- Wood framed.
- Appears to be in fairly good condition.
- Exterior wood needs paint.

Residences:

Main Home #404 A – (Figures 15 & 16)

- Concrete Masonry Unit (CMU) - red brick construction.
- Front area of roof drains back against the roof. This is causing water to leak inside kitchen area and upper cabinets.
- Chimney has major cracks and cannot be used.
- Exterior stucco has major cracks.
- Outside wood needs to be painted.
- Windmill next to house needs to be grounded electrically.
- Old electrical devices (switch and receptacles) throughout the house.
- Water has leaked into basement.
- House needs new windows.
- Part of basement needs concrete on floor.
- Need more receptacles in the house.

Mobile Home: #404L

- Acquired from FEMA.
- Looks good from outside.

Major concerns:

- 100 year old adobe building walls that are falling over.
- Electrical receptacles in office and residence.
- Stucco/plaster of all buildings.
- Paint rafters/eaves, windows, etc.
- New window in buildings.



Figure 1 - Main Home Chimney



Figure 2 - 1912 Photograph of facility entry



Figure 3 - Office basement



Figure 4 - Office



Figure 5 - Shop



Figure 6 - Conference Building

As shown in figures 3, 4 & 11, the office has stucco cracking on the outside of the building and also has foundation walls that are cracking. Other repair items to the office are noted in this report. The Conference Building (figure 6) exterior painting is needed along with other items listed in the report.



Figure 7 - Horse Barn



Figure 8 - Horse Barn



Figure 9 - Horse Barn



Figure 10 - Shop

The Horse Barn shown in figures 7, 8 & 9 is the most significantly deteriorated building on the property. The building is condemned and beyond repair. The building should be demolished and any current uses of the building relocated, or another facility will need to be built to accommodate current functions.



Figure 11 - Main office



Figure 12 - Shop



Figure 13 - Shop



Figure 14 - Shop



Figure 15 - Main Home



Figure 16 - Main Home

The Shop Building shown in figures 5, 10, 12, 13 & 14 is a 100 year old adobe building. Even though this building is a functioning shop, there are serious structural concerns with the building. This building is not in as poor of a condition as the Horse Barn, but needs a complete structural analysis and recommendations how to preserve the building to prevent further deterioration. Figures 15 & 16 show two different views of the Main Home and repairs and modifications are noted in this report.

