

Regional Architecture Studio 2012

Andrew T. Hustedde

Arc 550 Regional Arch Studio 2012

Hand Made Orchard

Andrew T. Hustedde Regional Arch Studio Summer 2012

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Hand Made Orchard

Program Description

Design of a Small Orchard in Southern Illinois

A 55 acre plot, located North of Cobden, Illinois, is available for development of an agricultural establishment to attract visitors and revenue to the areas around Cobden by constructing an orchard with a unique quality. This unique quality should provide the orchard with a product that's different from the products found in the market.

This new orchard responds to the needs of the region, the environment, the people, and the culture of the area. Spatial relationships on the site affect the design of facilities and placement of crops. The unique quality of the orchard is its loyalty to manual labor to produce a genuine product of greater quality than those of mass producing automated machinery. Automated machinery cannot replicate the same work and quality that a skilled laborer can provide. This aspect of the orchard affects everything around the orchard. Due to the extensive labor required for quality produce, the site and the facility are designed to reduce the total amount of labor needed by designing around simplicity. This is reflected in the way the public circulation works. From the parking lot, visitors have four directions in which to head: the market, stables, rest area, and educational facility. This decreases the crowding of sidewalk traffic.

Space Allocation:

Processing Plant.....	3,800sf
Produce Processing.....	800sf
Cold Storage.....	800sf
Employee Room.....	500sf
Offices.....	3@100sf
Kitchen.....	500sf
Restrooms.....	200sf
Market.....	700sf
Stable.....	1,600sf
Open Group Horse Stall.....	1000sf
Wash Room.....	300sf
Bridal Room.....	300sf
Educational Facility.....	1,550sf
Classroom.....	1,200sf
Storage.....	250sf
Restrooms.....	100sf
Dry Storage.....	5,000sf
Hay Storage.....	5,000sf
Apples.....	1 acre
Peaches.....	2 acres
Plums.....	3 acres
Alfalfa Hay.....	8 acres

Historical Analysis

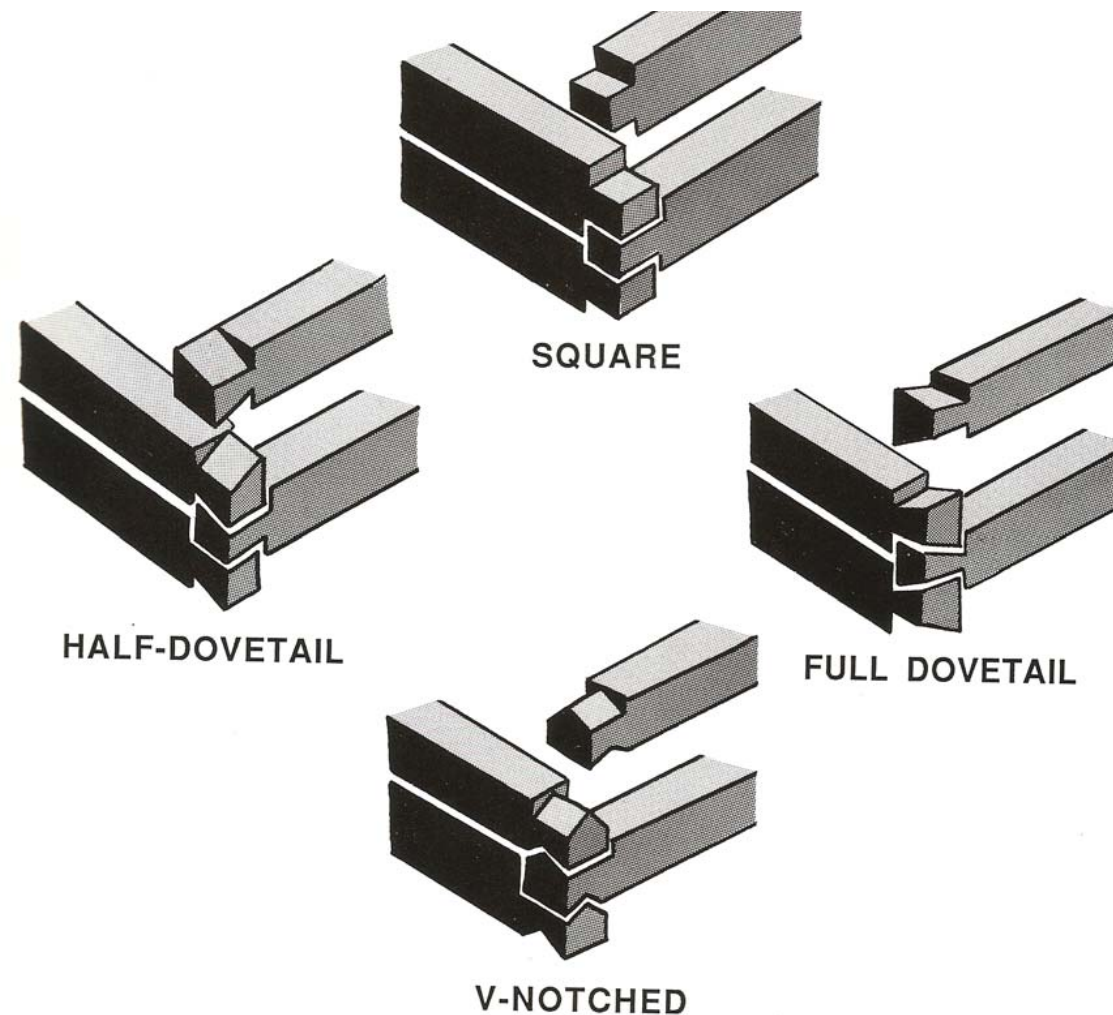
Precedent Study



During the 19th Century, an immigration boom took place in Southern Illinois. The Anglo-American immigrants were one of the first major groups into Illinois. They occupied a large region at Illinois' Southern tip. This region reached up to Carbondale, just north of the site for the Hand Made Orchard.

The Anglo-Americans were well known for their log cabin barns. The key to their log cabins were their well crafted notching techniques. The immigrants were excellent woodworkers and it showed in these techniques. These notchings are still used in log cabins today.

As a major part of our site's history, log cabins can be used in the architecture to revitalize the heritage of the area's early farmers.

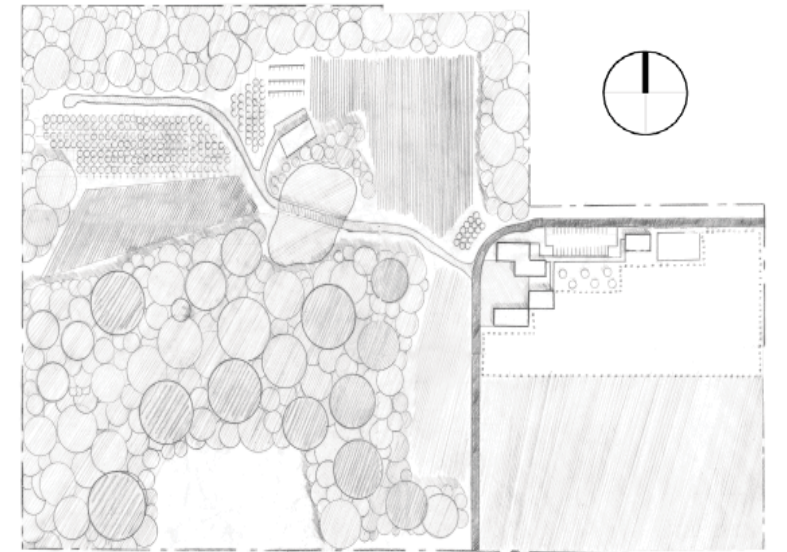
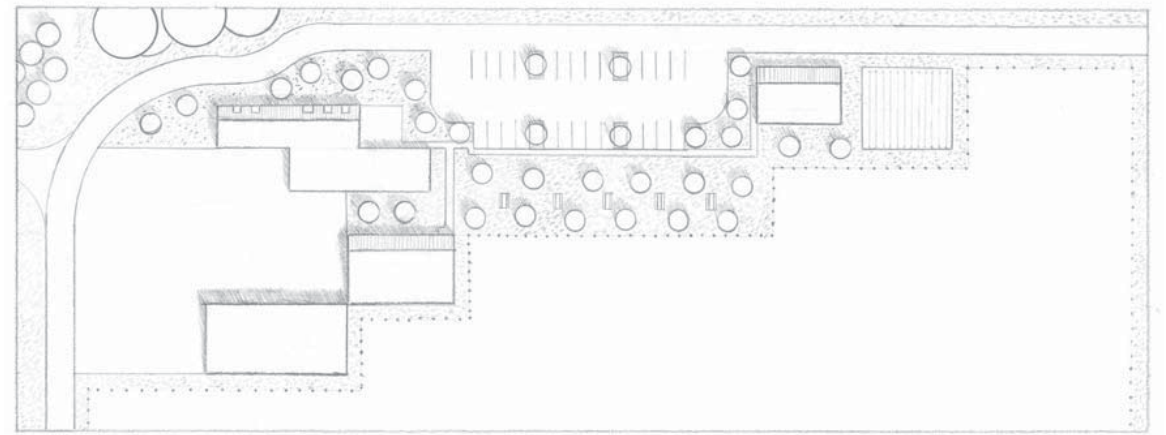


Historical Analysis

Precedent Study

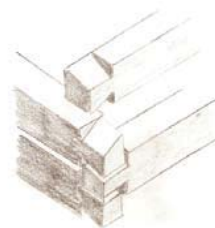
Predesign Phase

Design





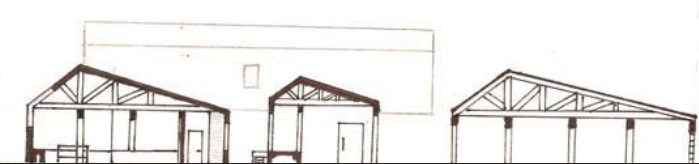
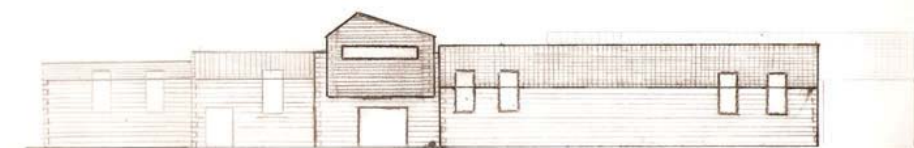
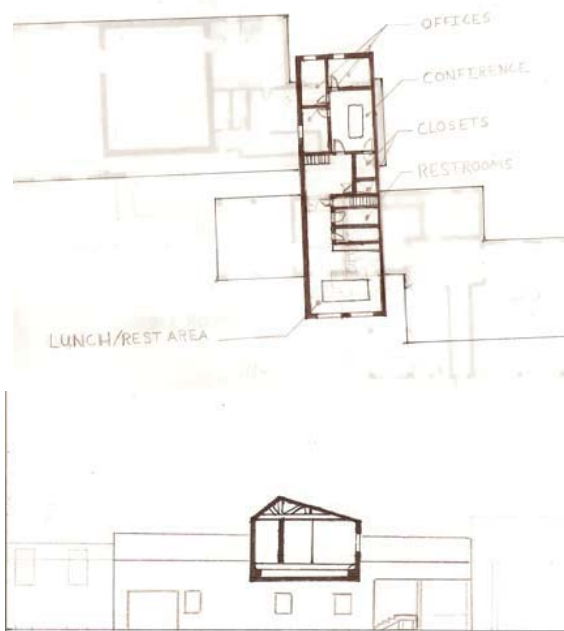
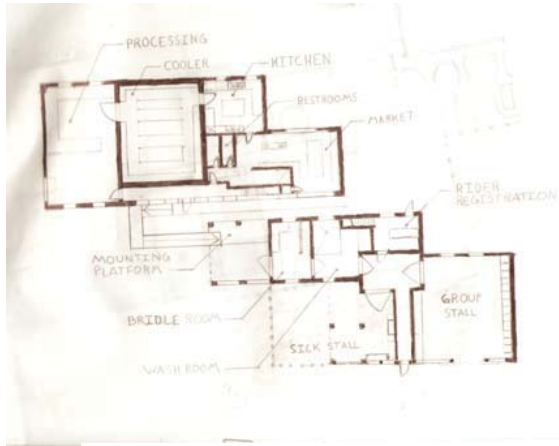
Predesign Phase



The architecture of the facilities in the orchard derives from the Anglo-American heritage in the region. In the 19th century, immigration in Southern Illinois peaked. Many cultures settled in various regions of Southern Illinois with the Anglo-American groups settling in the southern tip. The site for the orchard is within this Anglo-American region. The immigrants were widely known for their log cabin homes and their many notching techniques. From this, the buildings on site reclaim that heritage of the log cabin and its simplicity while still bringing a post modern aspect to the architecture.

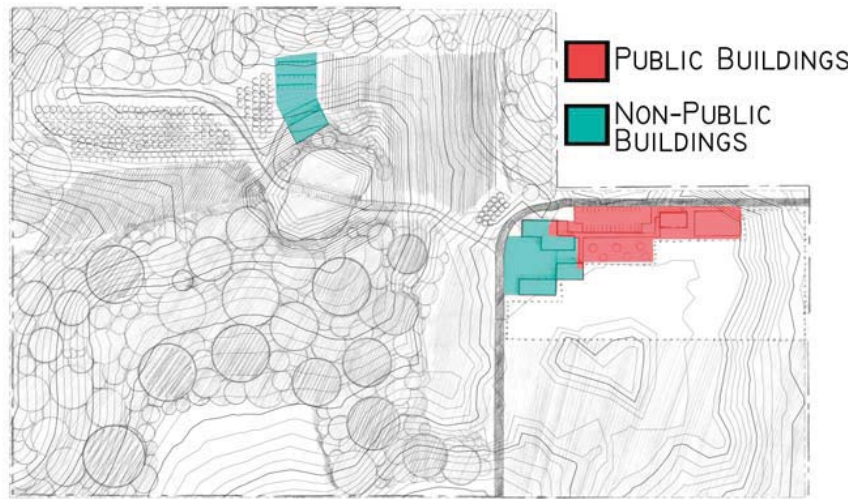


Design



Predesign Phase

Design



Predesign Phase



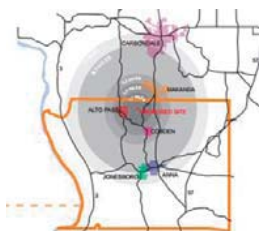
Design

Final Design Phase

Design



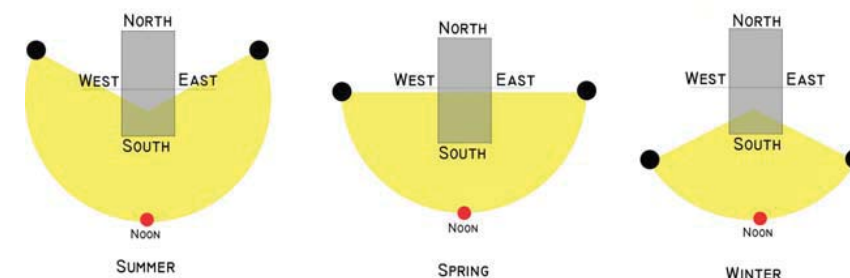
An automated machine is designed to produce the same product consistently for a long period of time. Yet, automated machinery cannot reproduce the same quality produce that a skilled laborer produces. With quality produce from quality manual labor, consumers may enjoy fresh, unbruised fruit that can not be found at large grocers.



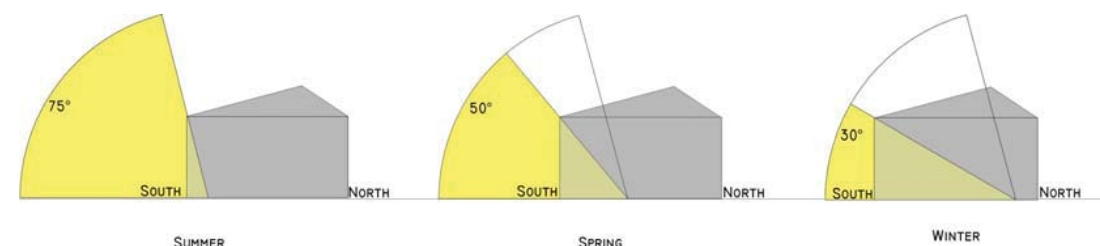
The site for the orchard is located in Southern Illinois, in Union County. It sits on the edge of the Shawnee National Forest. It lies in a rural area between the small towns of Makanda, Alto Pass, and Cobden. The site covers an area of approximately 55 acres.

HARVESTING PERIOD	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	ACREAGE*	TREES*	ANNUAL YIELD*	ALFALFA FOR HORSES	TOTAL BALES HARVESTED	
													ALFALFA HAY	8 ACRES	N/A	40,000 LBS.	10	800
													APPLES	1 ACRE	194	48,888 LBS.	BALES NEEDED PER HORSE	TOTAL BALES NEEDED
													PEACHES	2 ACRES	402	48,000 LBS.	75	730
													PLUMS	3 ACRES	326	26,080 LBS.	TOTAL BUSHELS LEFTOVER	
																	70	

The concept of the quality of manual labor is reflected in the orchard with its use of horses rather than large tractors. The orchard grows produce that cannot be picked by automated machinery. The whole site is laid out to accommodate for extensive manual by designing around simplicity. The architecture of the site is designed around the old notching techniques of the anglo-american immigrants, which can be constructed by hand.

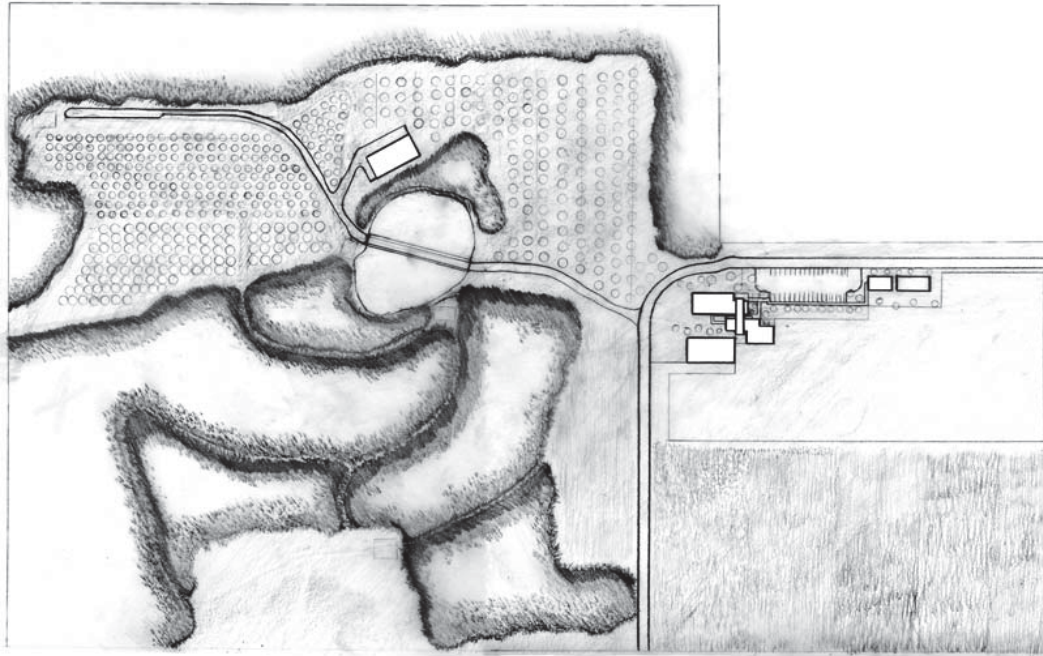


Due to the location and make-up of the site, the best option for a sustainable energy source would be solar power. The solar angle during the heating and cooling seasons can alter the buildings architecture. The solar angle of the site influences the layout of the spaces within the buildings. For instance, the horse stalls should have an opening on a southern wall to allow sufficient lighting and heating to suit the horses. Also, the slope of the roof has been altered to allow for as much southern exposure as possible to maximize efficiency of photovoltaic panels.

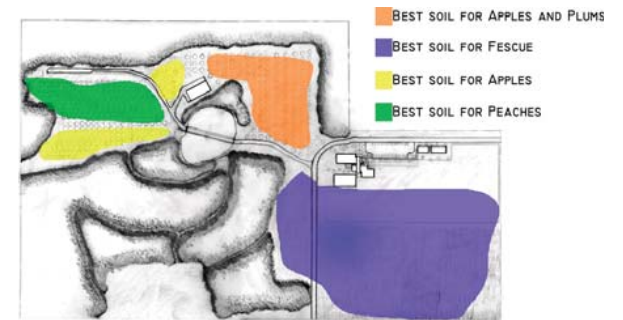
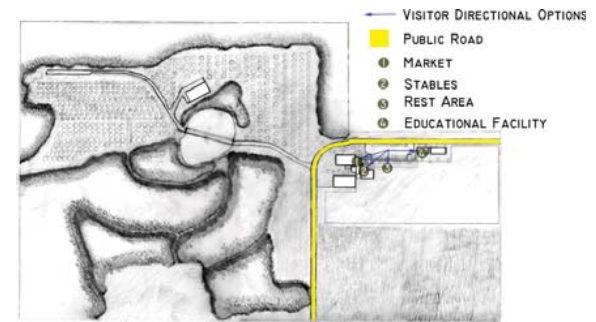
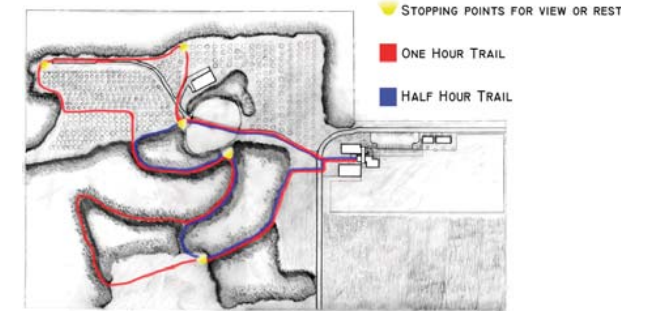


Final Design Phase

Design

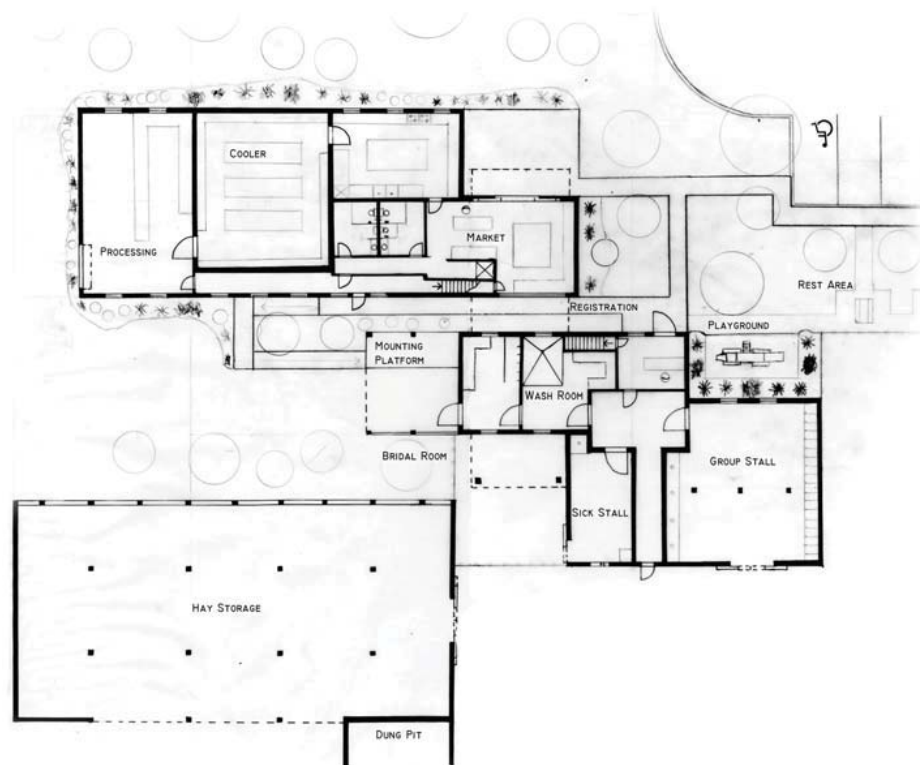


Site

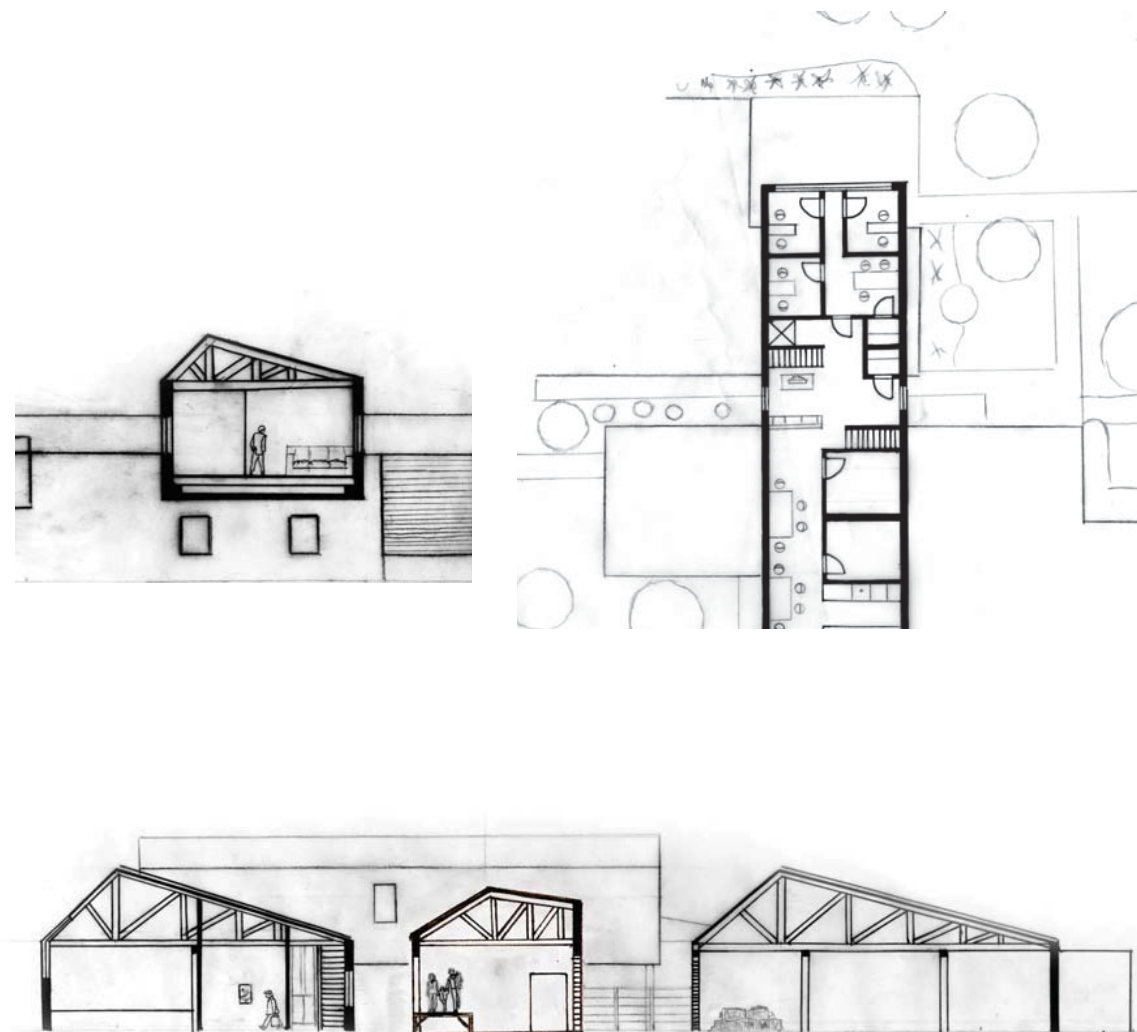


Final Design Phase

Design

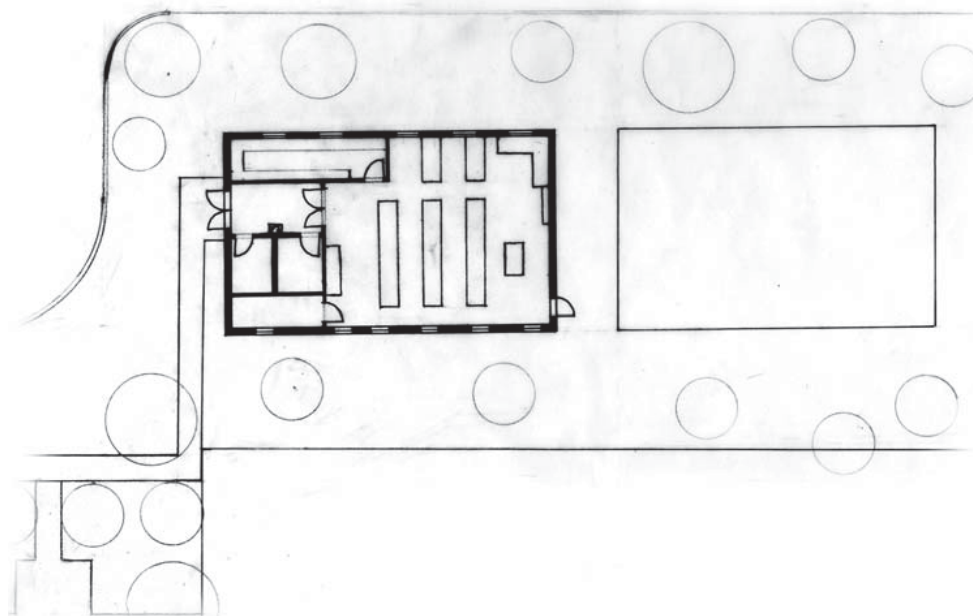


Main Facilities: Market, Processing, Offices, Stables, Hay Storage

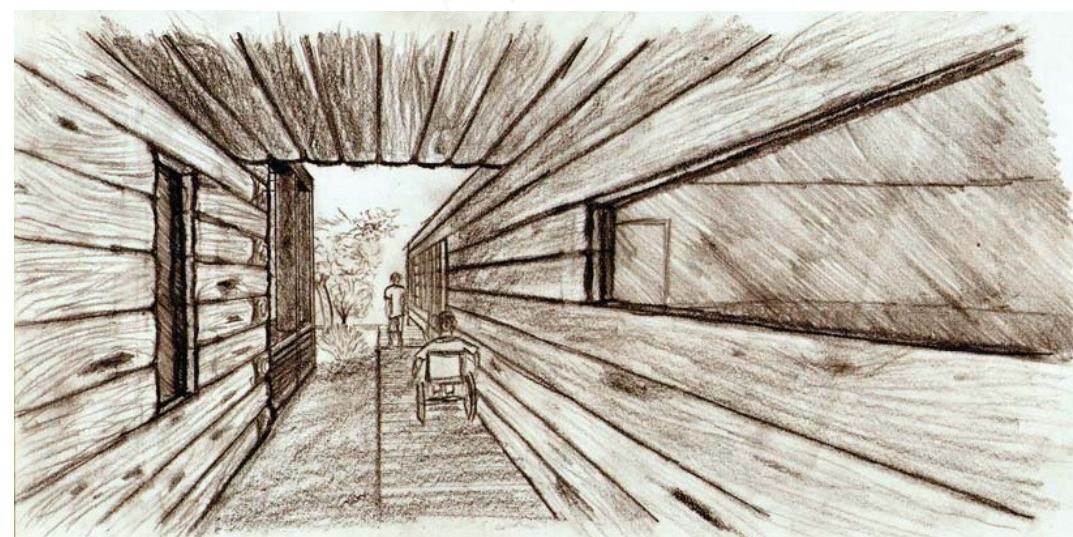
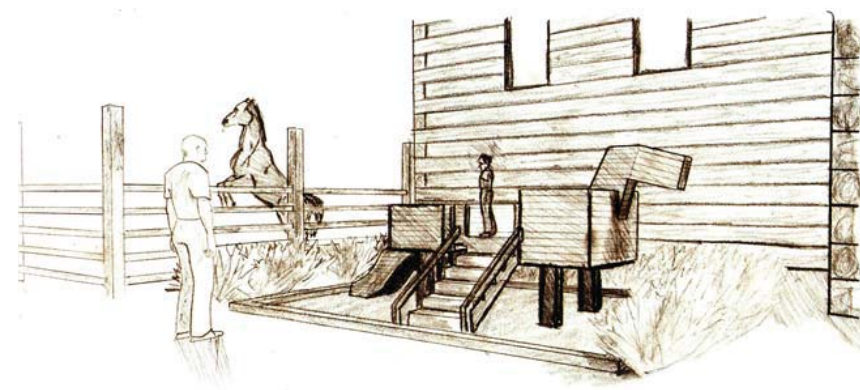


Final Design Phase

Design

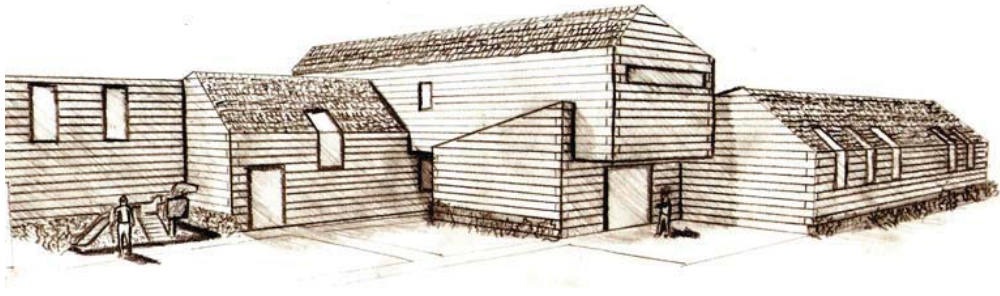


Educational Facility



Final Design Phase

Design



Final Design Phase

Design



Final Design Phase

Design



Final Design Phase



Design



Hand Made Orchard

Final Design Phase