

A STABLE FACILITY

for

THE BUDWEISER CLYDESDALES

Columbus, Ohio

P378
.OL45

MONTANA STATE UNIVERSITY
LIBRARY

A STABLE FACILITY for THE BUDWEISER CLYDESDALES
in COLUMBUS, OHIO

by

Suzanne A. Ollerich

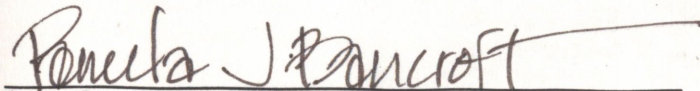
a thesis submitted in partial fulfillment
of the requirements for the degree of

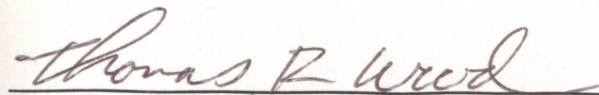
BACHELOR OF ARCHITECTURE

MONTANA STATE UNIVERSITY

1991

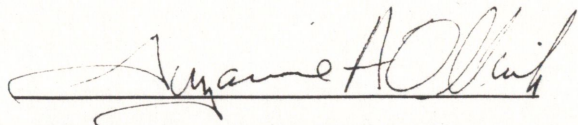
Approved By:


Pamela Bancroft: Advisor


Tom Wood: Director, School of Architecture

STATEMENT OF PERMISSION TO COPY

In presenting this paper in partial fulfillment of the requirements for a Bachelors of Architecture degree at Montana State University, I agree that the library shall make it freely available for inspection and study. I further agree that permission for extensive copying of the paper for scholarly purposes may be granted by my major professor or in his/her absence, by the head of the library. It is understood that any copying of this paper for financial gain shall not be allowed without my written permission.

A handwritten signature in cursive script, reading "Suzanne A. Ollerich", written over a horizontal line.

Suzanne A. Ollerich

CAL
NA
2540
OL45

P378
.OL45

DEDICATION

I wish to dedicate this book to my family, mainly to Mom, Dad, and Grandma, who kept picking me up with their love and support and guidance. Also to Jeff Betts for his continual understanding and unconditional love. Finally I wish to dedicate this book to my horse, Wildfire, who taught me how truly incredible it can be to love a horse.

TABLE OF CONTENTS

Introduction	1
Thesis Statement	2
Introduction	3
Clydesdale History	4
Program Goals	7
Function	
People	
Clydesdales	
Form	
Site Analysis	8
Location	9
Contours	10
Slope	11
Traffic	12
Major Site Features	13
Vegetation	14
Noise	15
Views	16
Wind	17

Climatic Analysis	18
Solar Angles	19
Wind	20
Rain	21
Temperatures	22
Degree Days	23
Relative Humidity	24
Sky Cover	25
Case Studies	26
St. Louis Hitch Stable	27
St. Louis Stallion Stable	29
St. Louis Grant's Farm	30
Ft. Collins Stable	32
Bridger Canyon Stallion Station	34
Cottonwood Stable	35
Scottish Architecture	37
Spatial Analysis	40
Overall Zones	41
Square Footage Breakdown	42
Design Considerations	48
BOCA Codes	49
Building Character	51
Form	52
Building Materials	53

Ventilation	55
Interiors	58
Future Use	59
Schematics	60
Layout	61
Elevations	65
Bibliography	72

Introduction



INTRODUCTION

Horse of all breeds have been held in high regard for thousands of years. I, myself, can not remember a time that I did not want one of my own.

THESIS STATEMENT

I thought as more than I will ever be able to pay back. Therefore I had always hoped that one

day The famous Budweiser Clydesdales, or so fondly phrased as the "Gentle Giants", have held a very distinguished position among society, not only as an incredible advertisement campaign, but as the very strength and proud heritage that this country is based upon. People all over the world recognize these proud beasts, which are in high demand to make public appearances. In order for more fans of the beloved Budweiser Clydesdales to ^{have} get an opportunity to witness them in person more facilities should be created. August Busch, Jr., worshiped these animals and started a tradition of excellence. This tradition of bringing fans and Clydesdales together should continue.

INTRODUCTION

Horse of all breeds have been held in high regard for thousands of years. I, myself, can not remember a time that I did not want one of my own. My horses have taught me more than I will ever be able to pay back. Therefore I had always hoped that one day I could somehow combine the world of architecture and the world of horses. When I discovered that I could not only design a stable, but one for the Budweiser Clydesdales, the ideas soared.

With this project I hope to be able to learn more about the horse by designing for the horse. Also this project will create a form of architecture well suited to the wonderful event of bringing people and horses together.

with the local mares and the offspring were of incredible traits. All of them ranged in color from bay to black and they all had uniform white markings.

They were incredibly strong and willing to work. This was the foundation of the breed. Some performed heavy farm work while others brought back coal from the mines on their backs. Some of the later names of famous clydesdale stallions were Baron's Pride, Baron O'Buchlyvie, and Danvers Footprint who continually beat out his champion father at all the contests.

In 1837 a Clydesdale was bred and born in England by the name of Grey Clyde. He won many championships and shows all over Canada

and the United States. Later Grey Clyde was shipped to Kentucky and became our country's

CLYDESDALE HISTORY

In the 1870's more Clydesdales were imported from Canadian settled Scotland and from Scotland directly. Their popularity grew and large numbers were

imported. A long time ago, in 1352, King Edward III of England gave William, the Earl of Douglas, permission to bring 10 big Flemish studs to the Clyde Valley in Lanarkshire, Scotland. This area was known as Clydesdale and was to witness the beginning of one of today's most favorite breed of horse.

The records of long ago are rather sparse, and the above account is possibly the start of the Clydesdale breed. In 1750 the records get better. John Patterson, a Lochlyoch tenant farmer in Lanarkshire, imported black Flemish studs from England who were all unnamed. He crossed them with the local mares and the offspring were of incredible traits. All of them ranged in color from bay to black and they all had uniform white markings.

They were incredibly strong and willing to work. This was the foundation of the breed. Some performed heavy farm work while others brought back coal from the mines on their backs. Some of the later names of famous Clydesdale stallions were Baron's Pride, Baron O'Buchlyvie, and Danure Footprint who continually beat out his champion father at all the contests.

In 1837 a Clydesdale was bred and born in England by the name of Grey Clyde. He won many championships and shows all over Canada

A normal hitch includes eight horses with two back-ups so that the show is always ready. The hitch horses are usually three to

and the United States. Later Grey Clyde was shipped to Kentucky and became our country's first Clydesdale. In the 1870's more Clydesdales were imported from Canadian settled Scotch and from Scotland directly. Their popularity grew and large numbers were imported in the 1880's and in continued for several years. In 1878 the Clydesdale Horse Society of Great Britain and Ireland was established as well as the Clydesdale Breeders Association of the U.S.A.

On April 8, 1933, the day after prohibition was repealed, August Busch, Jr. brought his father, August Busch, Sr., outside to see his new car. Instead of a car parked on the street Busch, Sr. saw an exclusively trained eight-horse hitch of Clydesdales decked out in brass and leather harnesses standing before his eyes pulling a shiny Budweiser wagon with the first keg of beer on top. For many years following these horse pulled wagons delivering beer in style and later the sidekick of a dalmatian dog was added to protect the hitch while the driver was inside the shop.

Since April, 1969, Anheuser-Busch has been the largest buyer of Clydesdales. At one time they purchased one stud and 22 dams in one consignment. The Clydesdale can still be seen on today's farms working away but they will not be delivering beer daily. The Budweiser Clydesdales today are simply a symbol of the pride inside of the great Anheuser-Busch company and the Clydesdales travel around the country proving just that.

A normal hitch includes eight horses with two back-ups so that the show is always ready. The hitch horses are usually three to

four years in age and are strictly bay with four flashy white feet and a big white face. Weighing in at approximately 2000 pounds they are 72" at the shoulder. Their shoes start with a piece of steel that is one and one-half inches wide and two feet in length!

Today's Clydesdale are less massive than the shire but still average 16-16.2 hh at the shoulder. They are brown, black, or bay and sometimes grey. However they always have lots of white. Their feathers on their feet are silkier and finer than the shire's feathers. The average stud weighs in at 1700-1900 pounds while the "petite" females average 1600-1800 pounds. Though they are bred for their sound feet and legs, their beauty comes from their marvelous proportions of weight, size, and activity. The Clydesdale is always ready for action.

only the horses' glory is outrageous in scale.

Clydesdales:

The Budweiser Clydesdales should enjoy the environment without the pressures created by all the visitors. The horses should feel that the barn is theirs and that everyone else is the outsider.

Form:

The site should be an open, majestic setting for these incredible beasts. The environment should be easy-going, welcoming and comfortable to all who enter. The image should reflect the Scottish heritage yet in a modern way.

PROGRAM GOALS

Function:

This facility should work with extreme ease and a calming efficiency for both horse and handler. No action should ever put the design to a test.

People:

This facility should be physically and emotionally pleasing to all who enter within it. The public should be able to experience the Budweiser Clydesdales in an environment where only the horses' glory is outrageous in scale.

Clydesdales:

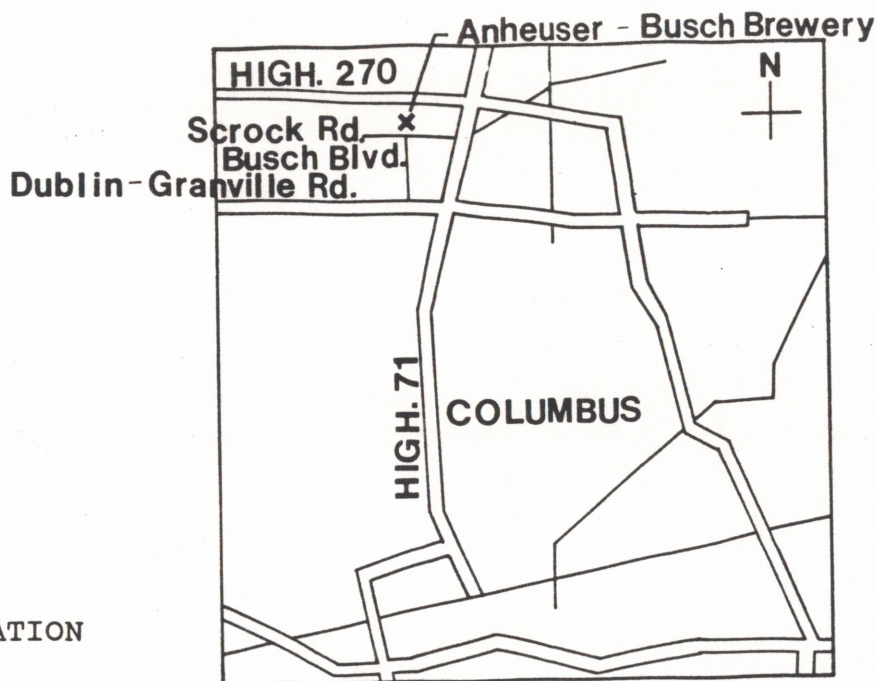
The Budweiser Clydesdales should enjoy the environment without the pressures created by all the visitors. The horses should feel that the barn is theirs and that everyone else is the outsider.

Form:

The site should be an open, majestic setting for these incredible beasts. The environment should be easy-going, welcoming and comfortable to all who enter. The image should reflect the Scottish heritage yet in a modern way.

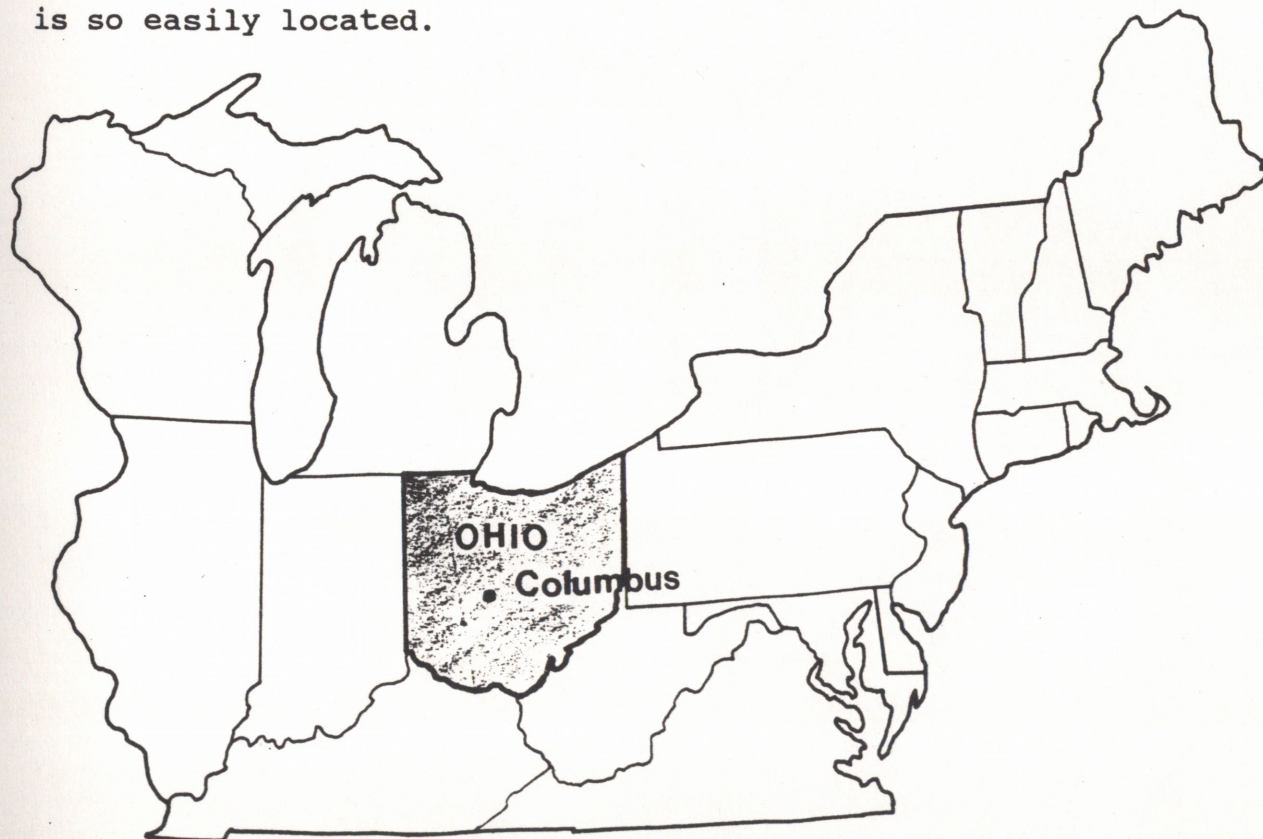
Site Analysis

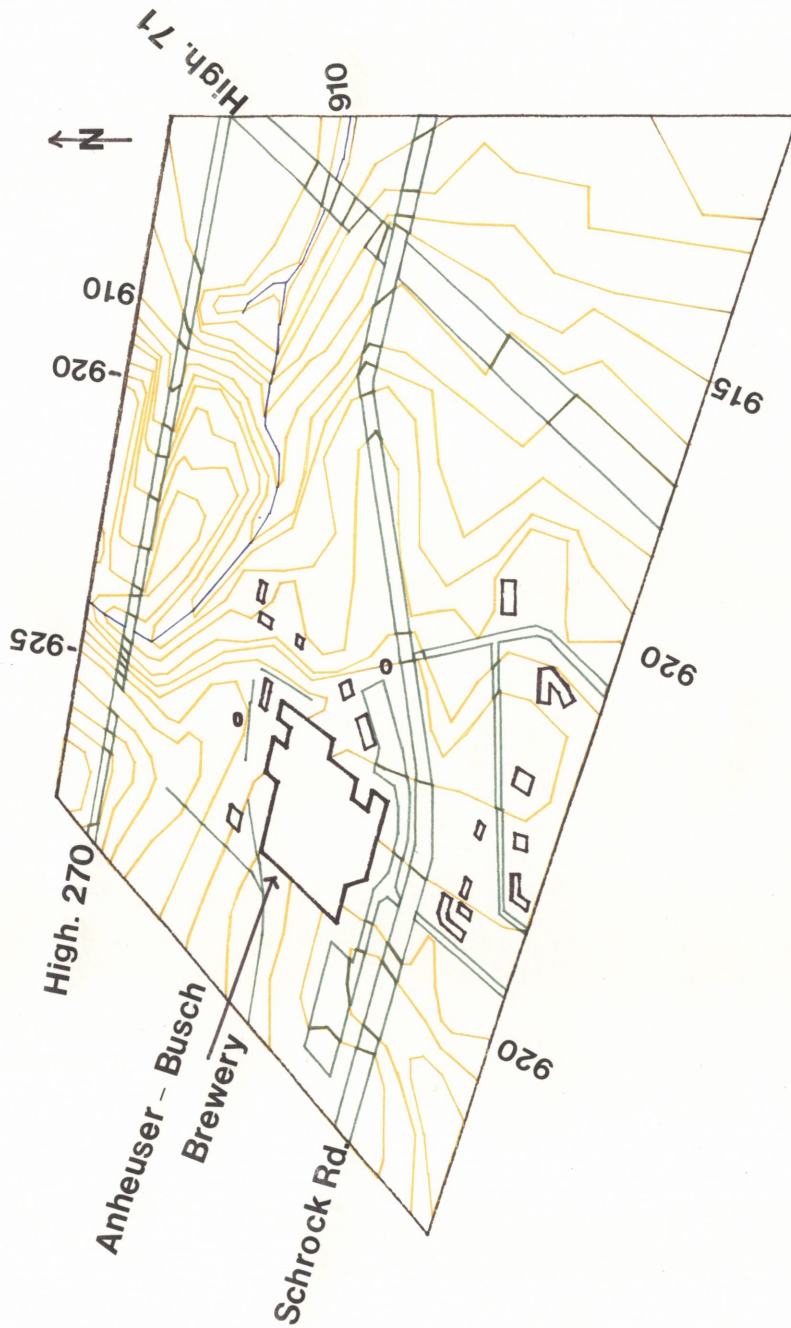


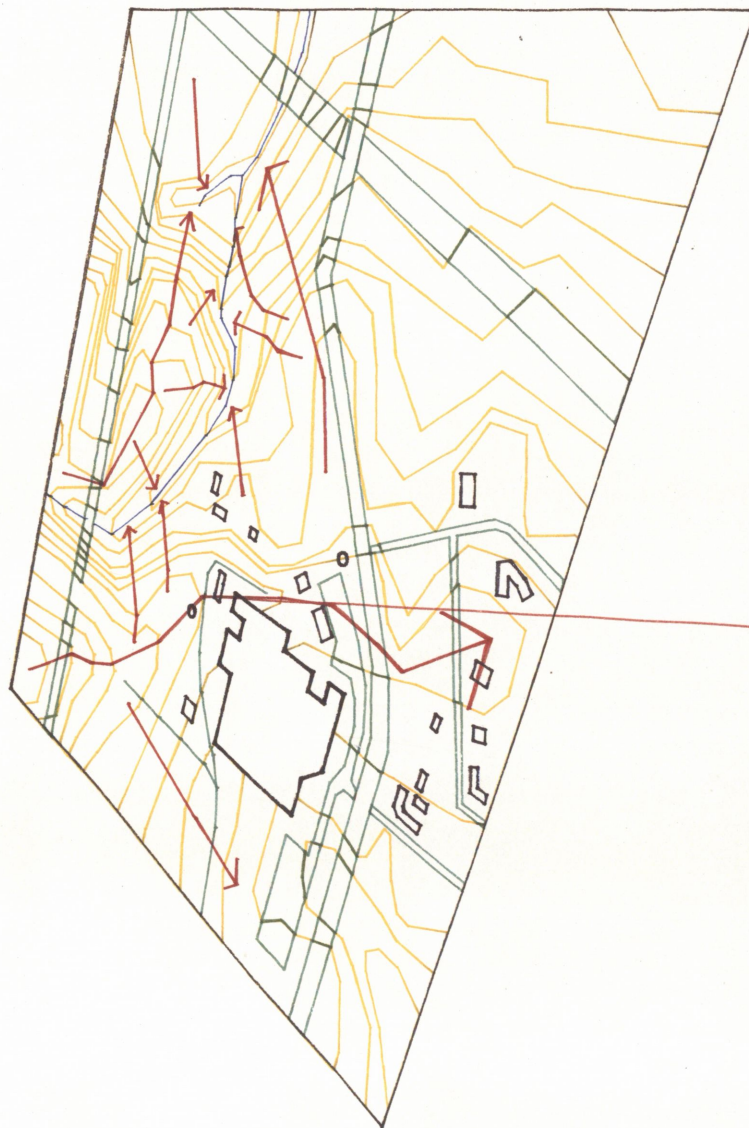


LOCATION

The Anheuser-Busch Brewery is located at the intersection of Highway 270 and 71 on the north side of Columbus, Ohio. The Brewery is accessed by Busch Boulevard off of Dublin-Granville Road or by Schrock Road. The site is good for public exposure since it is so easily located.

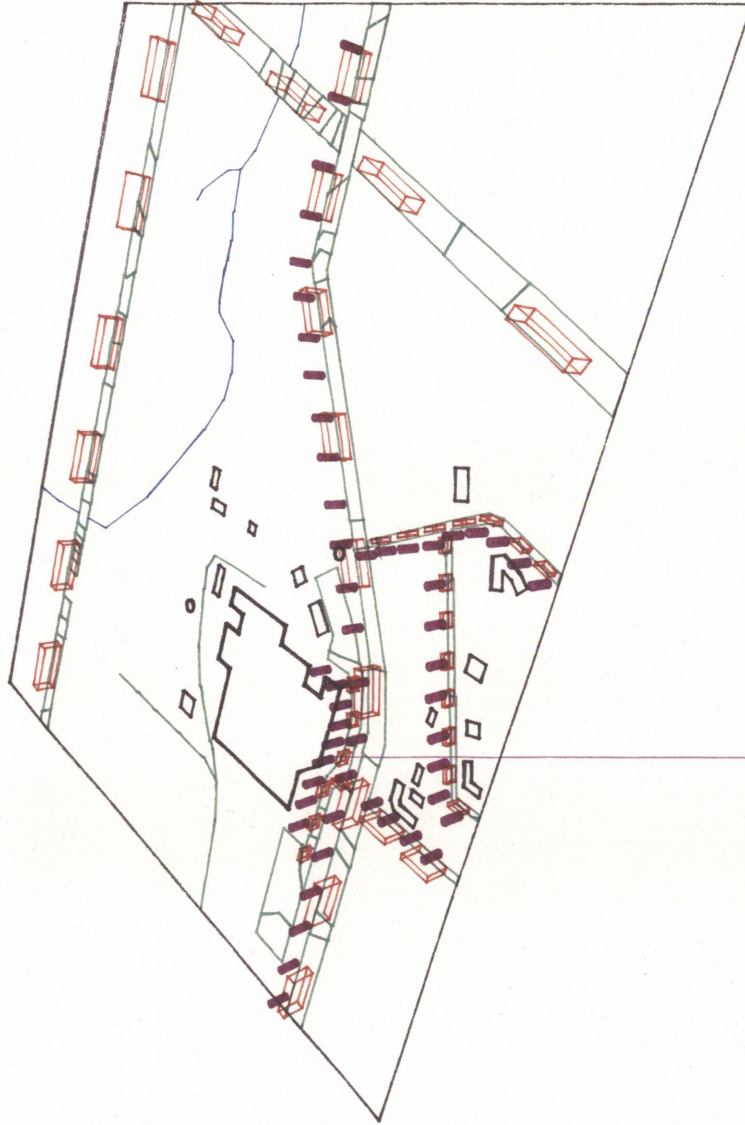






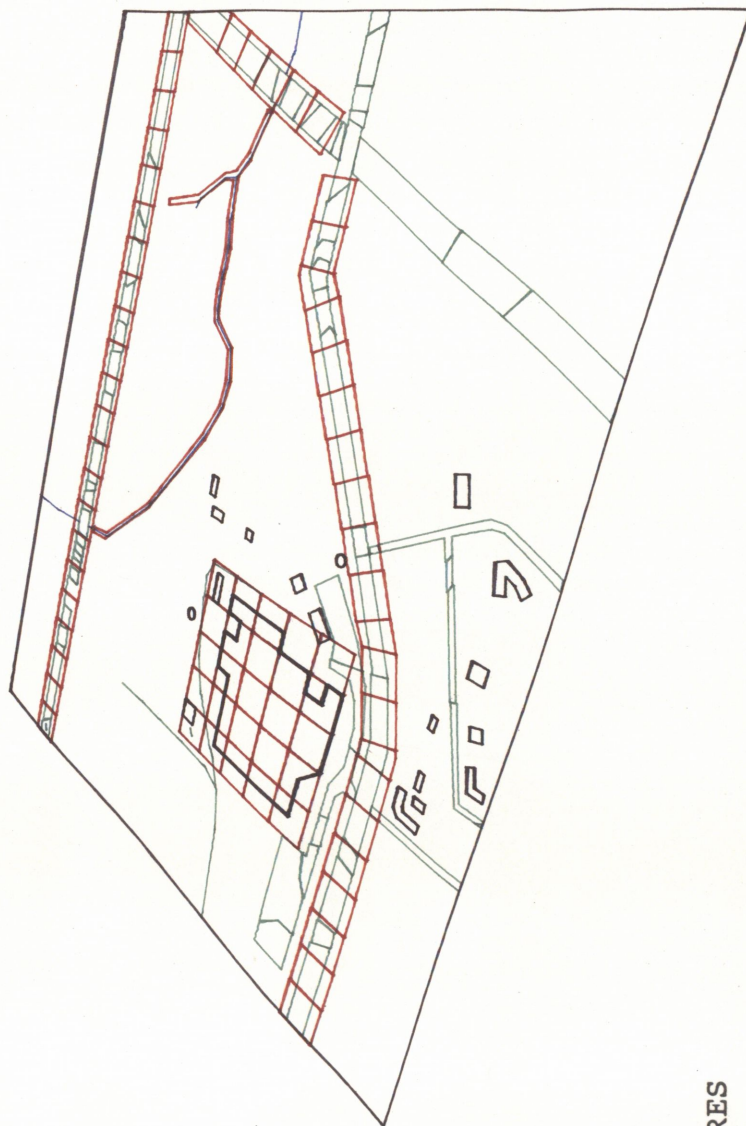
CONTOURS

The site has a gradual slope to the east and southwest as well as into the streambed. All of the local high points are outside of the site along the highways. Since the site is basically flat little grading will be required for the stable.



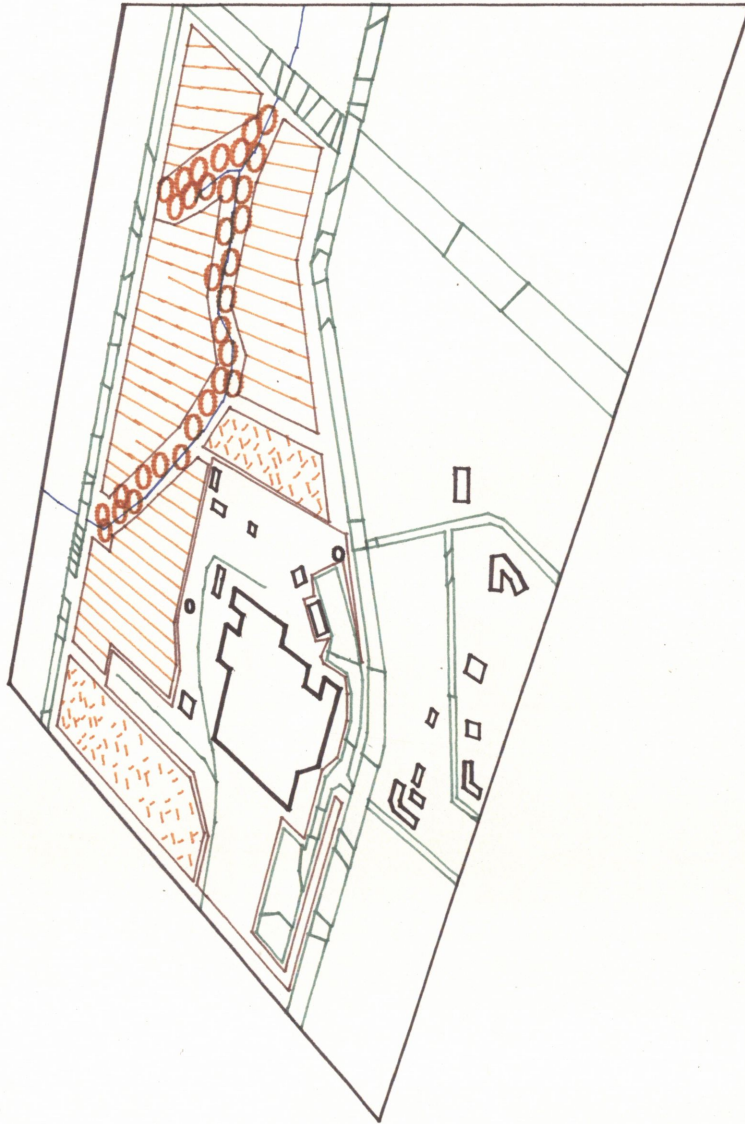
TRAFFIC

Automobile traffic is primarily on the two highways with less traffic on Schrock Road and Busch Boulevard. Other small side streets have light amount of traffic. Pedestrian use is very limited occurring along Schrock Road and Busch Boulevard. The railroad is constrained at the far west end of the site. Access into the site will take place along Schrock Road with a very nice pedestrian walkway located there as well.



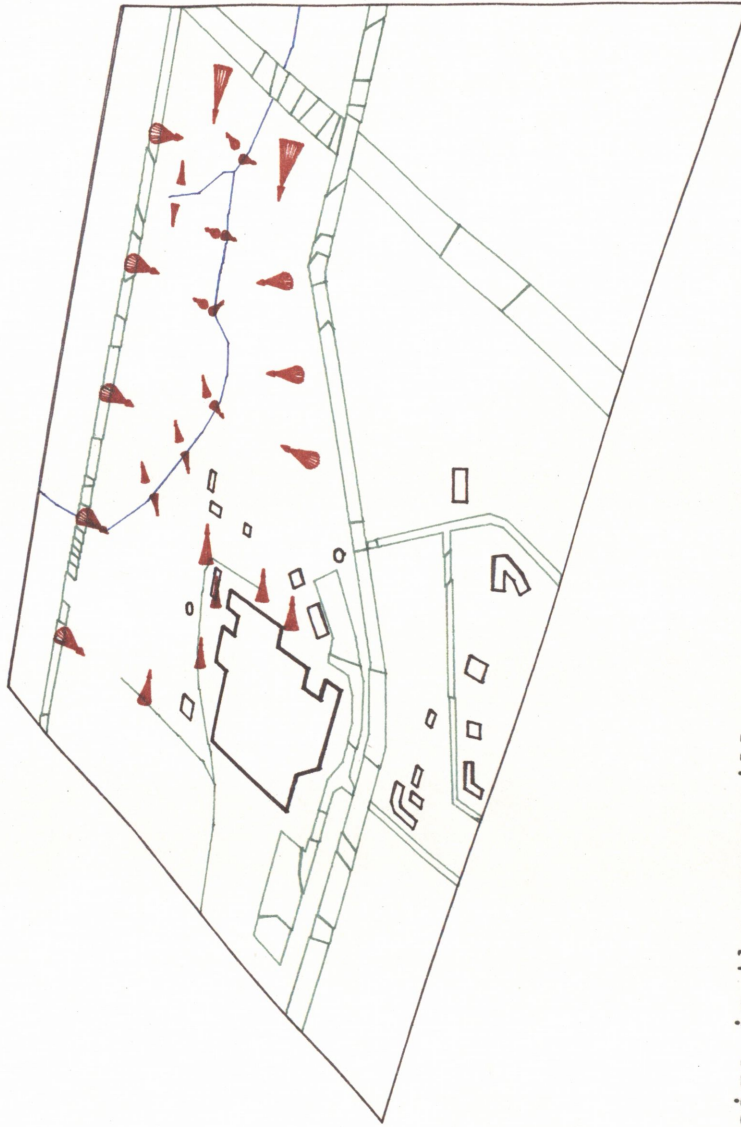
MAJOR SITE FEATURES

The Brewery itself is the most primary of the site features. Since two highways and Schrock Road surround the site on three sides these will also have an effect on the site. The railroad and creek are minor features, however the creek is a nicer feature. These features will not inhibit all that much from a design standpoint except for access to the them and orienting the stable facility in regards to them.



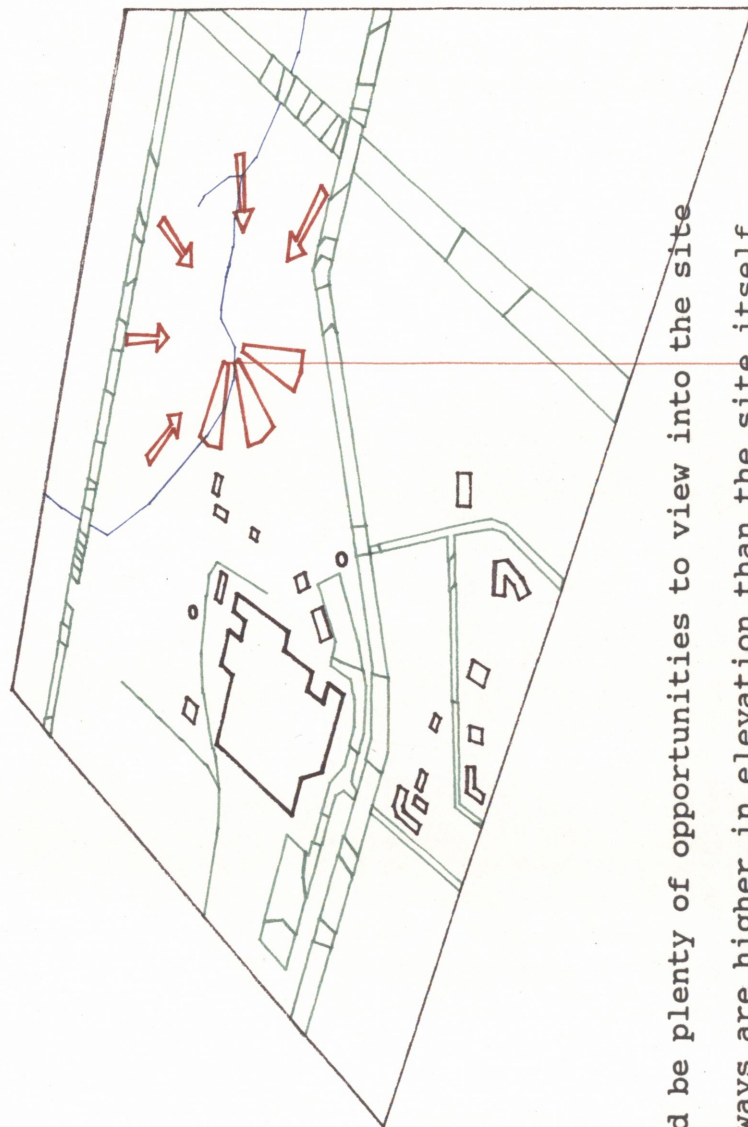
VEGETATION

The site's only trees are located along the creek. Most of the land is plowed up for agricultural use. Adjacent to the Brewery is mowed grass as a part of the building's landscape. Two other areas are grass which grows freely. None of this will provide a problem with the placing of the stable facility. The trees along the creek would be a great enhancement of the stable if it were located near the creek.



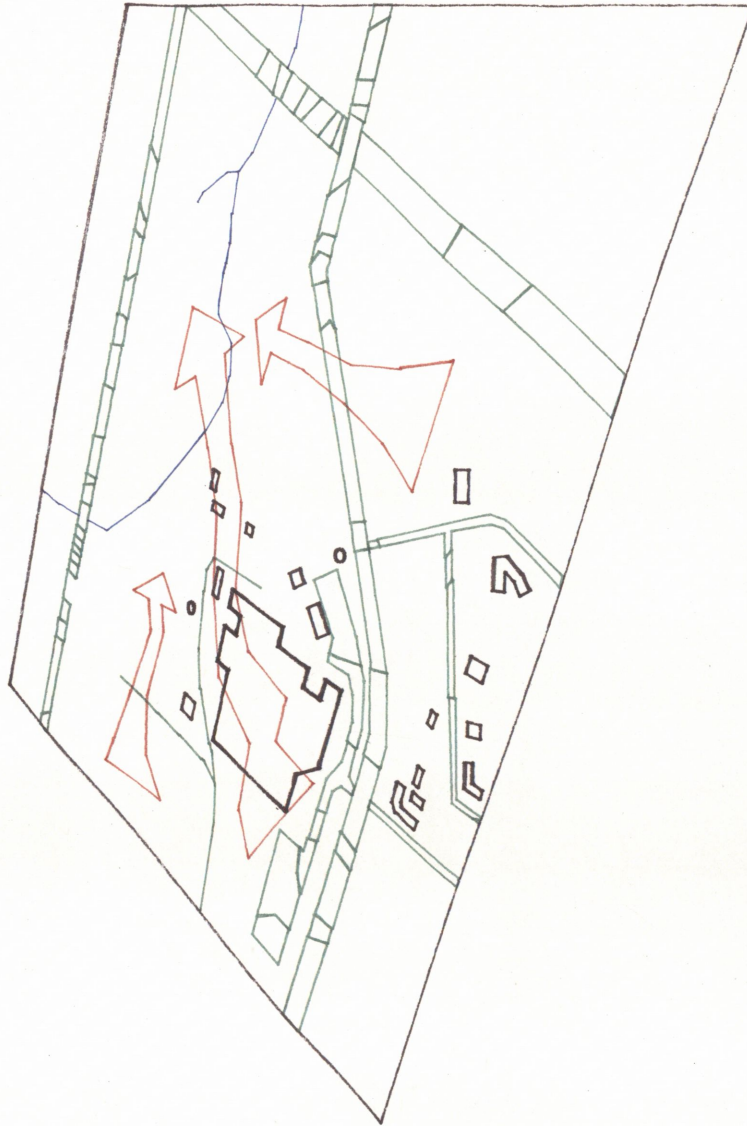
NOISE

The most noise in the area will come from the two highways. More noise will be created by Schrock Road and the railroad located on the site. The Brewery itself will create limited amounts of noise. The creek will provide minimal noise, as well, which may be a wonderful background noise to drown out the traffic of the highways. Therefore it would be a wise choice to locate the stable facility near the creek but as far away from the roads as possible.



VIEWS

There should be plenty of opportunities to view into the site because the highways are higher in elevation than the site itself. Though the interstates are great for looking into the site, they are not pleasant to look at themselves. Most of the views out of the site will be towards the Brewery, southwest to the Anheuser-Busch Corporate park, or west to the small community of Worthington. The stable facility should therefore be oriented so that the entrance is in a south-westerly direction.

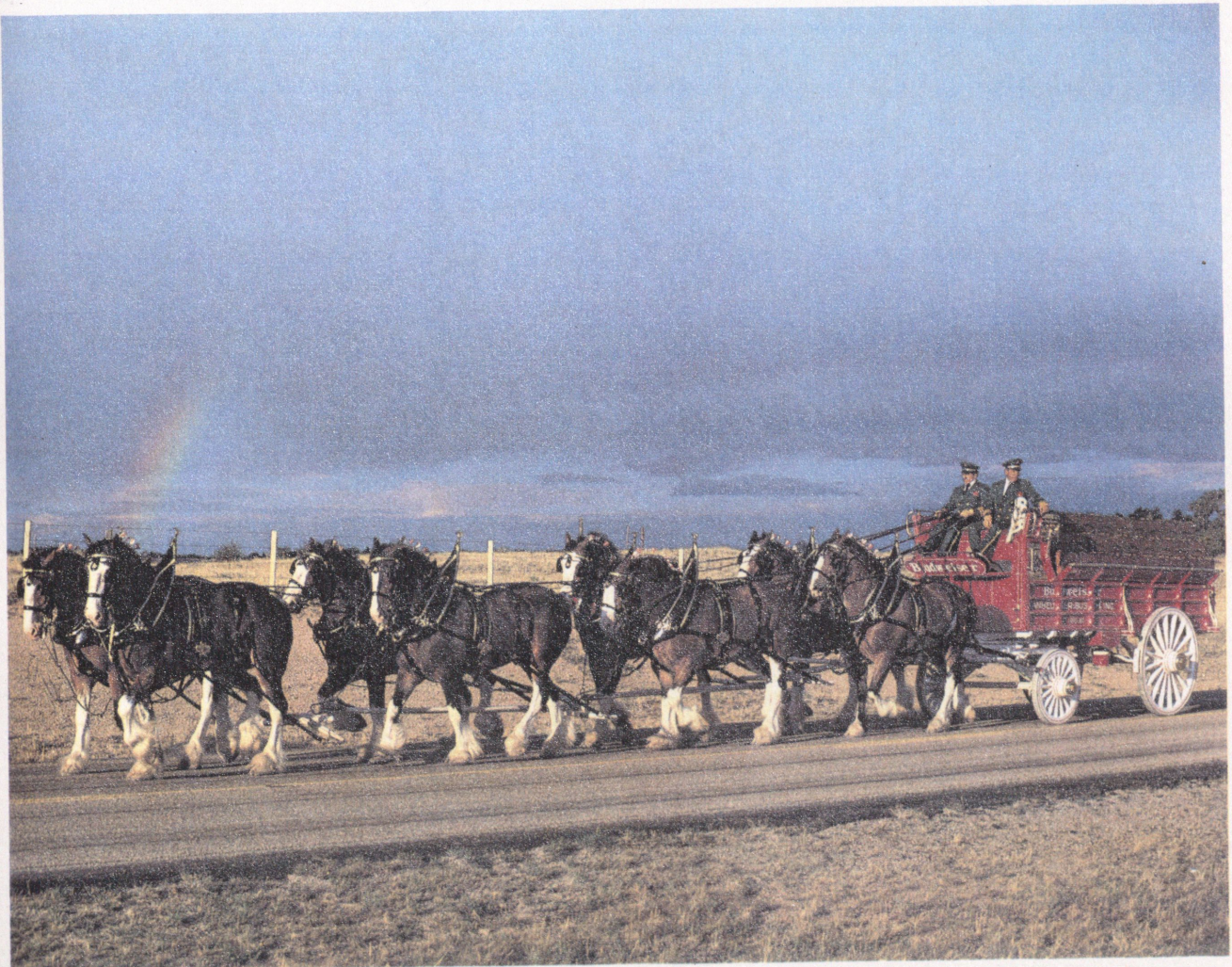


WIND

The winds come primarily from the southwest with an occasional west or south wind. For ventilation purposes a southwest orientation would be ideal.

Climatic Analysis

I have made a comparison between the climate conditions in Columbus, Ohio, and Bozeman, Mt., so that the reader is able to identify with the climate in Columbus.



SUN ANGLE

The maximum angle of the sun is 73 degrees while the lowest is 27 degrees. In order to keep the hot sun out of the building during the summer months a 60 degree angle, which exists in April when the heating begins, will be implemented in building design.

SUN ANGLE Columbus, Oh.	DEGREES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YR
		29	37	48	60	69	73	72	64	53	42	32	27	73 27

SUN ANGLE Bozeman, Mt.	DEGREES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YR
		25	34	44	56	65	70	66	60	50	38	29	24	70 24

WIND

From the southwest, on the average, the wind will carry smells from the Brewery into the site. However, the breezes will be desired in the ventilation of the stable. Therefore a compromise of some sort will be needed.

WIND SPEED Columbus, Oh.		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YR
	STRONGEST	NW 51	SW 55	NW 56	W 51	NW 49	NW 48	NW 60	N 53	W 47	S 43	S 53	W 49	NW 60
	AVERAGE	SW 11.8	W 12.0	SW 12.3	NW 11.7	SW 10.1	SW 9.0	SW 8.1	SW 7.9	S 8.6	S 9.6	SW 11.3	SW 11.1	SW 10.3

WIND SPEED Bozeman, Mt.		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YR
	STRONGEST	SW 73	W 73	SW 61	W 52	NE 50	W 56	SW 60	S 65	NW 54	W 62	SW 56	NW 59	W 73
	AVERAGE	W 6.9	W 7.7	W 8.5	W 9.4	W 9.0	W 8.6	W 7.9	W 7.6	W 7.6	W 7.4	W 7.2	W 7.0	W 7.9

PRECIPITATION

Columbus, receiving more moisture than Bozeman, expects 35 inches a year on the average. Contours will have to be manipulated to reroute the water away from the building.

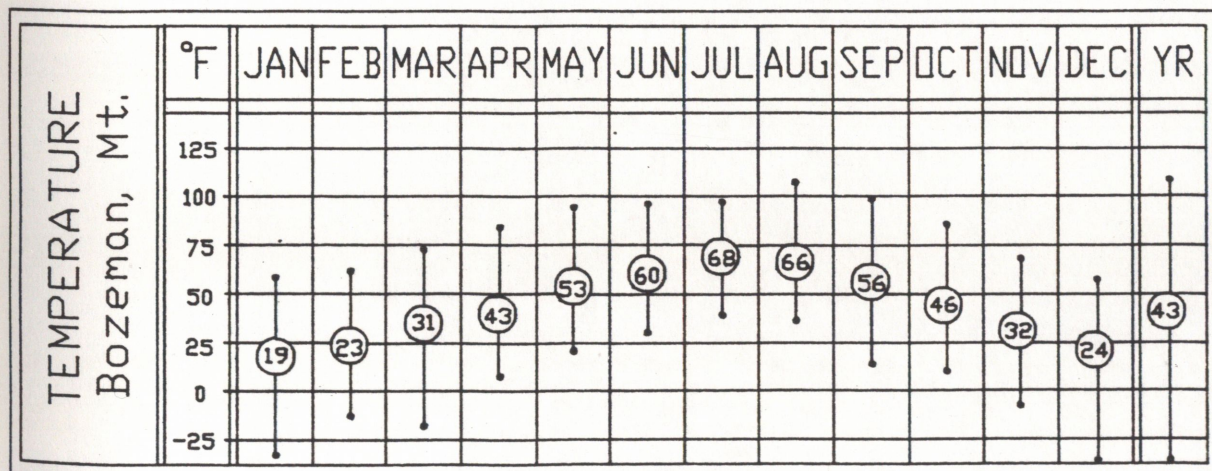
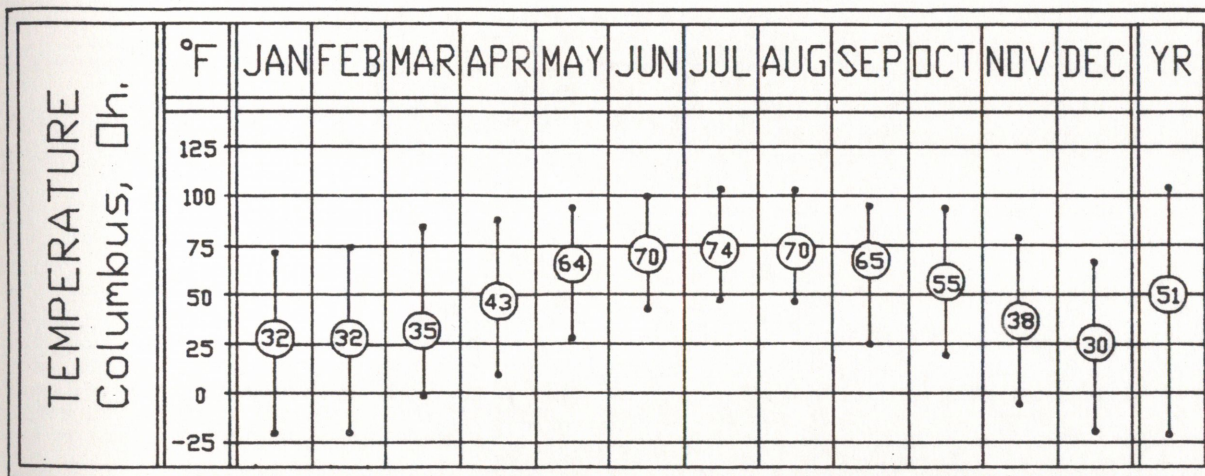
PRECIPITATION Columbus, Oh.	IN.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YR
	LEAST AVE. MOST	10.7	7.6	8.1	7.1	9.6	8.5	9.5	7.1	7.1	8.6	7.5	6.1	51.3
	12													
	10													
	8													
	6													
	4	2.9	2.5	3.4	3.0	3.5	3.5	3.6	2.5	2.5	2.4	2.6	2.6	35.7
	2	0.5	0.4	0.3	0.8	0.3	0.9	0.5	0.4	0.4	0.1	0.2	0.7	21.6
	0													

PRECIPITATION Bozeman, Mt.	IN.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YR
	LEAST AVE. MOST	2.78	1.13	1.43	2.38	3.77	4.74	2.7	4.23	3.37				31.9
	6													
	5													
	4													
	3													
	2	2.78	1.13	1.43	2.38	3.77	4.74	2.7	4.23	3.37				31.9
	1	.47	.38	.69	.93	1.76	2.38	.96	.98	.97	1.5	1.5	1.39	11.4
	0										.59	.61	.58	

TEMPERATURE

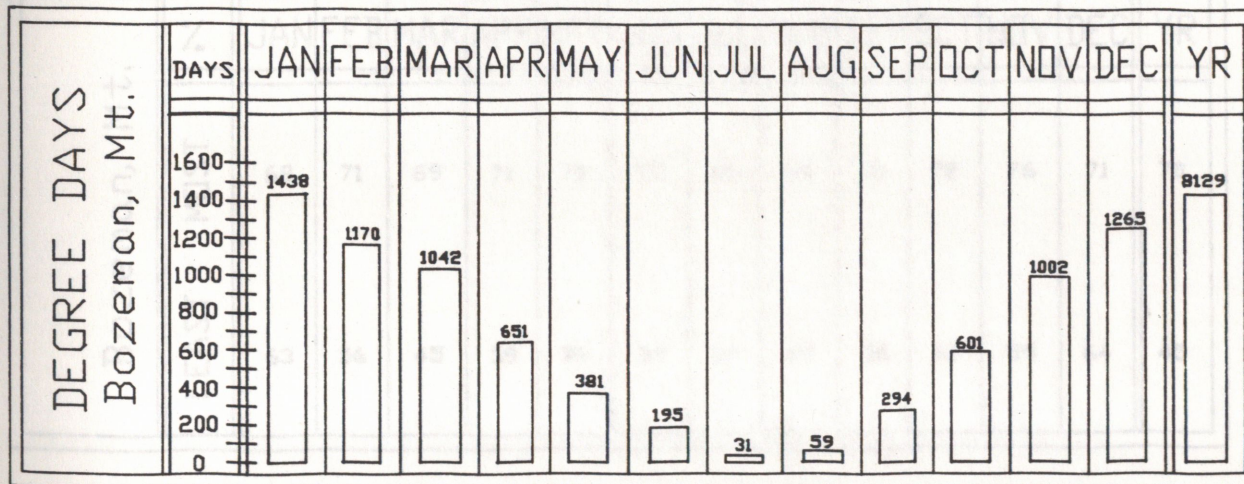
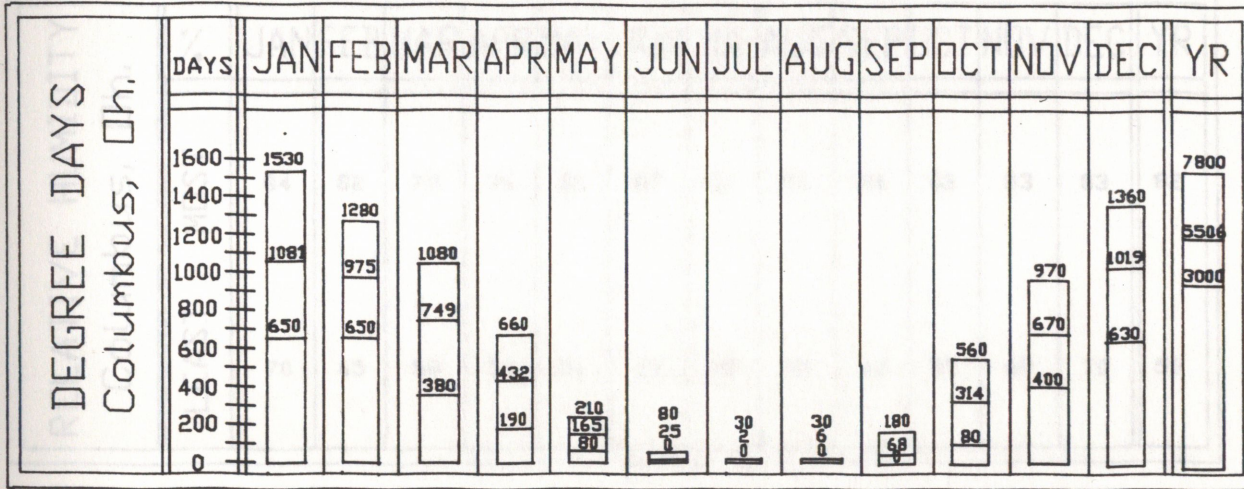
Columbus has its extremes such as 20 degrees below possibility in the winter and 106 degrees in the summer. However, the average are fairly restricted to 30-74 degrees.

Compared to Bozeman, Columbus averages 10 degrees higher, however both heating and air conditioning are needed in Columbus.



DEGREE DAYS

Comparatively Bozeman and Columbus are very resemblant in their degree days. In the summertime, though, Columbus has less days than Bozeman.



RELATIVE HUMIDITY

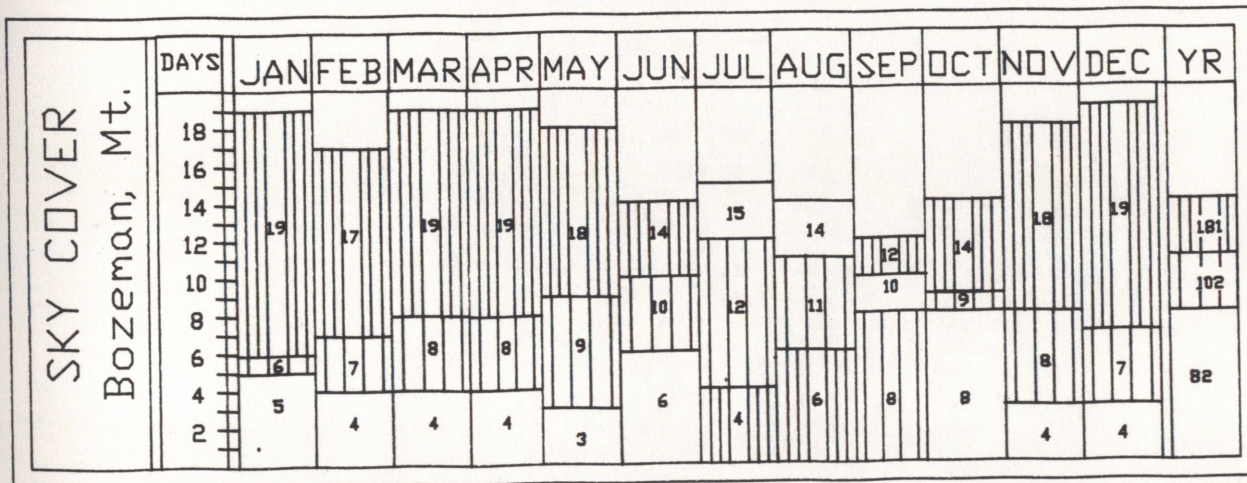
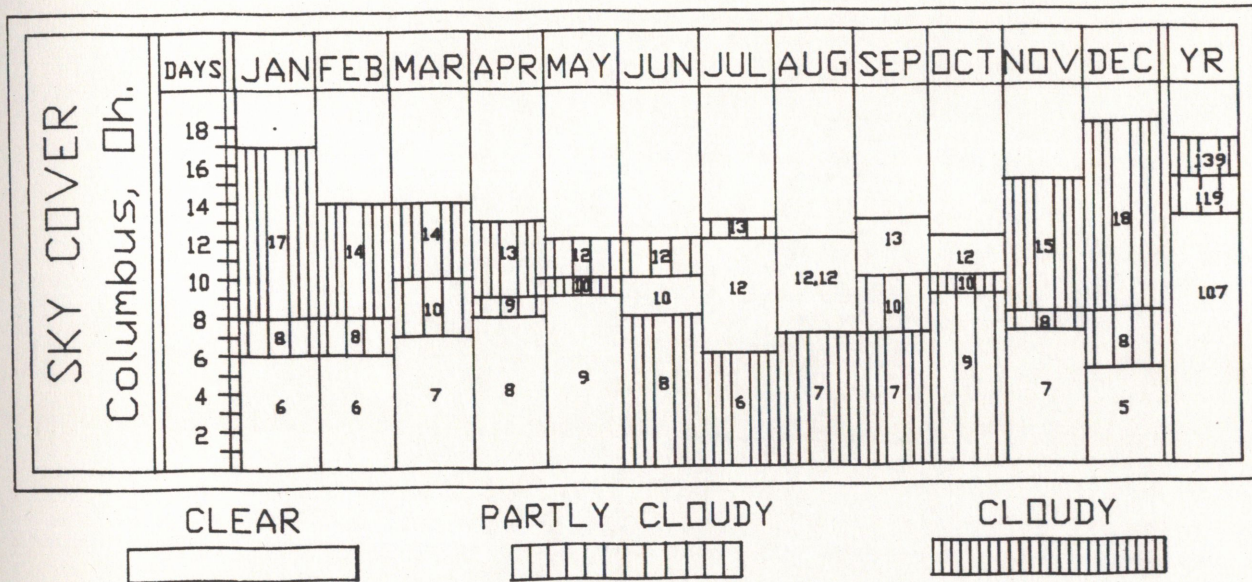
Because Columbus is a fairly humid place, ventilation will be very important in the barn. Combined with the humidity produced inside the barn itself, the clydesdales health will be threatened by the disease causing particles that the humid air will carry.

RELATIVE HUMIDITY Columbus, Oh.	%	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YR
	LEAST MOST	84	82	79	76	82	87	84	86	84	82	83	83	82
	LEAST	70	65	58	50	54	52	48	49	48	50	60	70	56

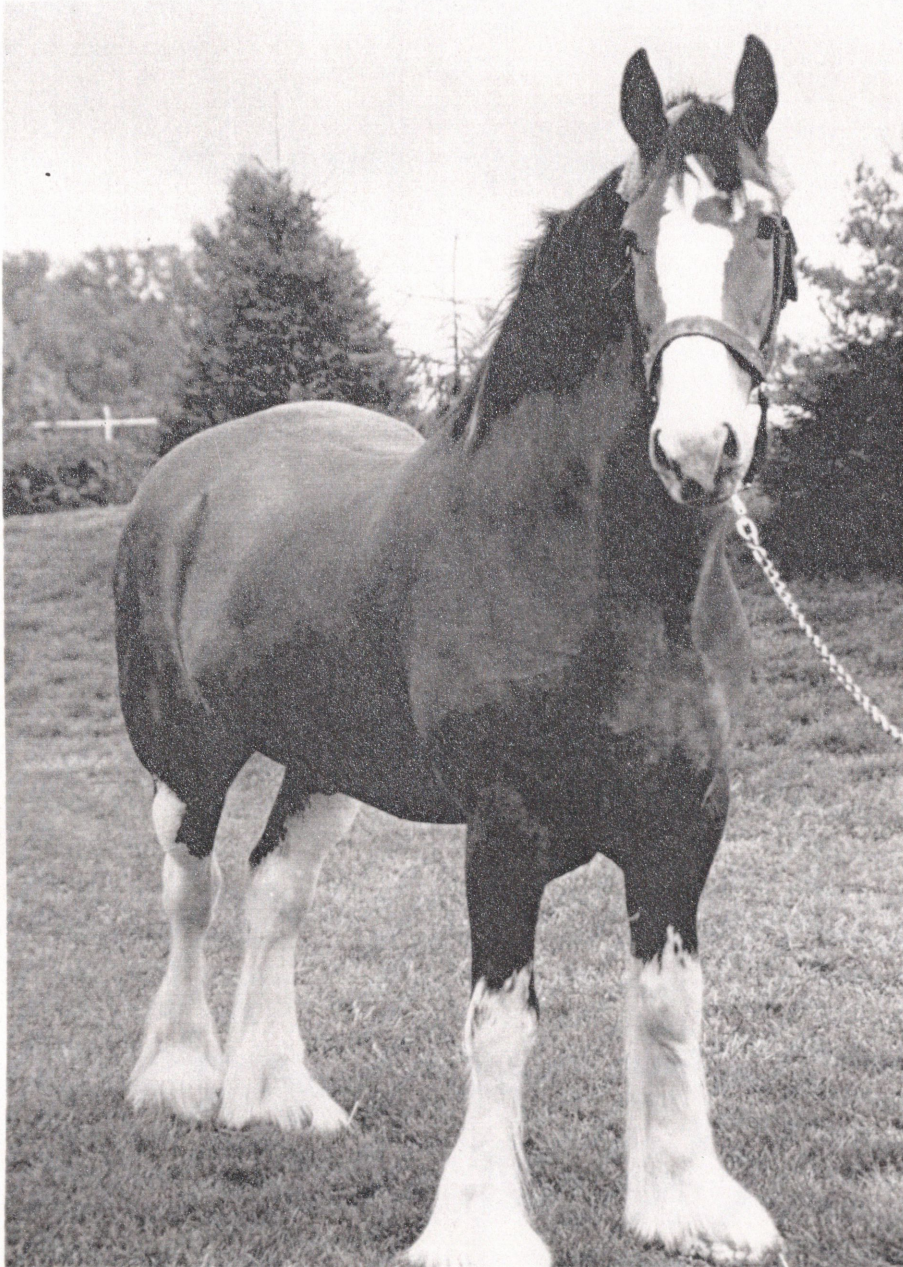
Bozeman, Mt.	%	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YR
	LEAST MOST	68	71	69	71	70	72	65	64	71	72	76	71	70
	LEAST	63	56	45	39	36	39	27	29	36	42	59	64	45

SKY COVER

Columbus has more cloudless days on the average than Bozeman encounters. Therefore windows will have to allow the winter sun in but to keep the sun out in the summer.

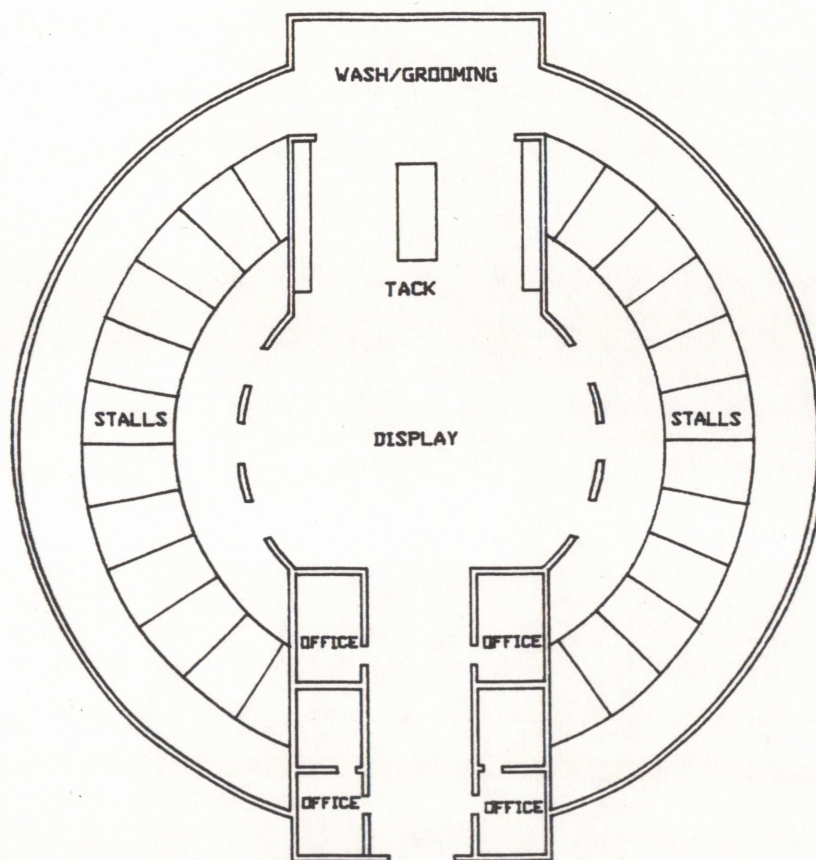


Case Studies



BUDWEISER CLYDESDALE HITCH FACILITY

St. Louis, Missouri



ST. LOUIS- HITCH STABLE

The stable for the St. Louis Clydesdale Hitch is located in downtown St. Louis right among all of the other buildings that make up the Anheuser-Busch Brewery. The stable ties in perfectly with the surroundings due to its brick facade. The only feature that tells of something different and special inside is the fact that the building is round in plan. Once inside the stable the feeling that this building is more of a "horse showcase" becomes evident. The immaculately clean, brick floor and the two enormous [700 pounds] brass chandeliers repeat how special this Brewery holds their Clydesdales.

The 20 tie-stalls are all on the perimeter of the circular building with the two display wagons and the many photographs and stories existing in the central hall. The four offices are all at the front of the building with the wash rack and tack being in the back. There is a major contrast in this whole set-up. Anheuser-Busch is so glamorous at one point with their decorated arches leading into the stalls yet so casual and friendly as shown with the three dalmatians that run around playing ball with the visitors.

The tie-stalls have automatic waterers and hay racks in them. The floors in the stalls are wood. The walls, including the stall dividers, are decorated quite beautifully. There is not much detail left out of anything with Anheuser-Busch.

ST. LOUIS- STALLION STABLE

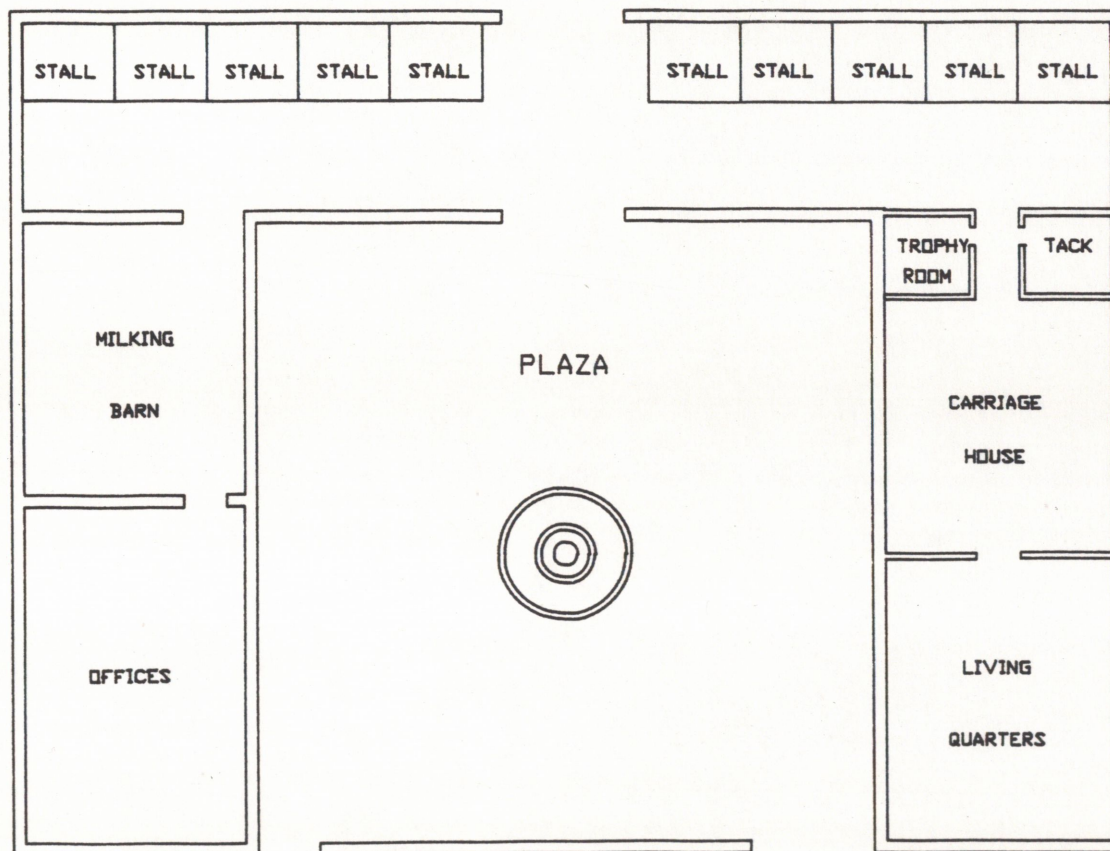
Compared to the hitch stable downtown this is quite simply put just a barn. There are eight 15 x 15 stalls in this facility with a 10 x 15 wash rack. The storage area [15 x 7] is equipped with a washer/dryer refrigerator, and the water heater. The feed room [15 x 7] contains three foot bins for grain. There is a loft up above where the hay is stored and dropped down into the stalls. Also upstairs is another, larger grain bin equipped with an auger to transfer the grain downstairs. The office is where Anheuser-Busch showed their extravagance once again. Inside the office not only is there furniture, but also the complete wet bar, stereo system, a black and white half-bath designed by Busch, Jr., and more trophies and ribbons than are countable. For the safety of the Clydesdales there is a two bedroom apartment in the barn as well.

On the outside, the barn is white painted wood siding with burgundy accents. Atop the shingled roof is a cupola with two stork statues nesting. Busch, Jr., had once heard a German folk tale that stated that as long as there were storks on the roof, the mothers will always have milk for the babies. Therefore storks can be found on some of his buildings.

There are two smaller, training rings out back of the barn as well as a large pasture. There are many trees around the barn making the stallion stable quite a nice setting.

GRANT'S FARM

St. Louis, Missouri



ST. LOUIS- GRANT'S FARM

Homesteaded on President Grant's farm is the Busch estate. Located here is where one of the original barns is located. There are ten 15 x 15 box stalls that are constructed out of redwood. The floors are just wood in the stalls now but they used to be wood blocks. The aisles are brick. Also inside is a display of the original clydesdales' harnesses. More silver, ribbons, and trophies occupy an entire room. Located next to these rooms is the carriage-house that converts into the ballroom. This space otherwise is wall to wall with carriages.

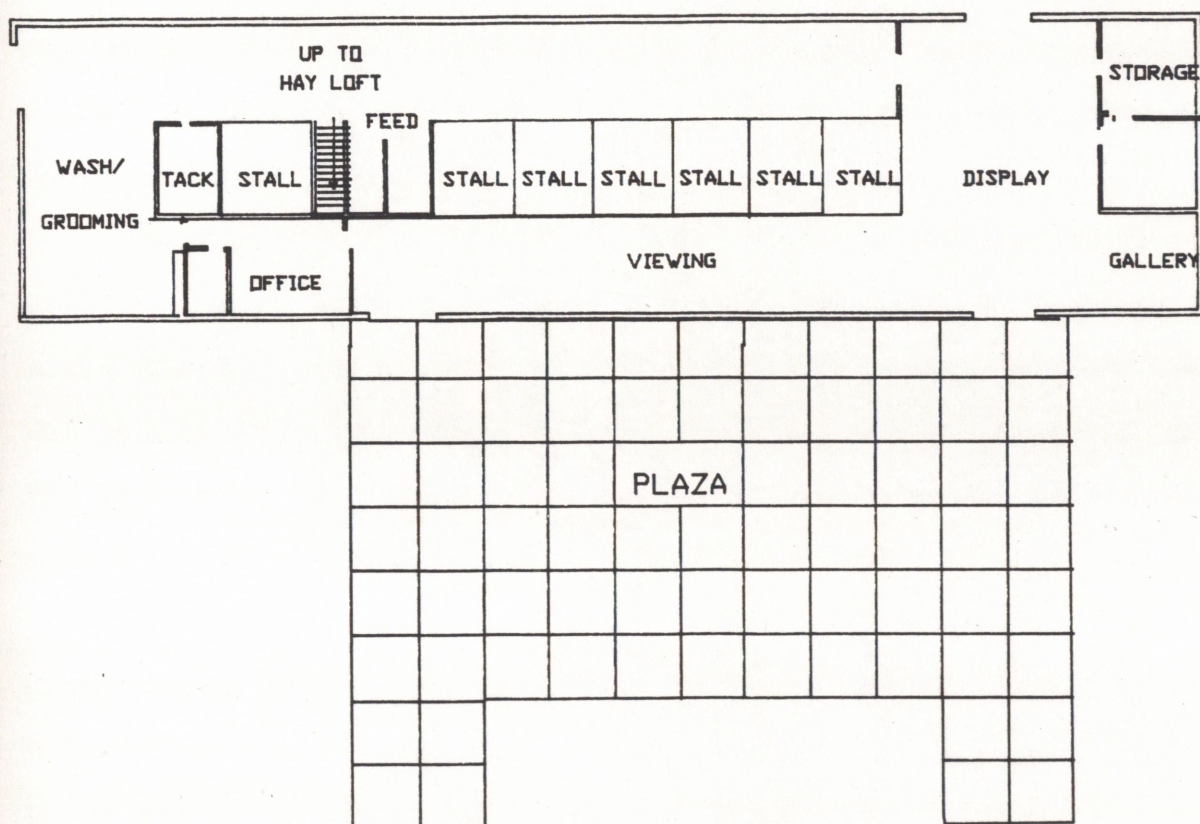
The exterior of the building is stucco with brick accents. The facade is fragmented into various levels in the roof and facade. Dormer windows and cupolas decorate the tile roof. Located here as well are statues of storks. The rest of the building is made up of offices, apartments and for the dairy cows that used to be present.

Along the grounds are corrals for the only residents left. There are only two riding horses, one being Busch's racing horse, and several miniature horses. Being a complete animal lover, Busch has a collection of animals ranging from camels and llamas to the tiny cattle of India.

With the rolling hills of the estate and all the wonderful trees Grant's Farm is a beautiful setting.

BUDWEISER CLYDESDALE FACILITY

Ft. Collins, Colorado



FT. COLLINS- CLYDESDALE FACILITY

Ft. Collins' stable is different from the rest since it is more of a recuperation home for tired or injured horses or simply the Clydesdales that are retired. There are only eight stalls that are 15 x 15 with another stall in the back isolated from the rest. The floors in the stalls are raised wood. The stalls are equipped with automatic waterers and troughs for grain. Hay is once again stored in the loft upstairs and dropped down through the ceiling. The office is more of a kitchen-breakroom combination with lockers and a toilet behind the office. The wash rack/grooming area is in the back. First-aid equipment and miscellaneous equipment is stored in cabinets in this area. Somebody is always present 24 hours a day.

The display area, with its brick floor, is at the front of the building which contains one wagon and several glass cases that house miscellaneous equipment such as bits, shoes and harnesses. The public view the horses in the front of the stalls which are in the center of the building. Behind the stalls the handlers have access to the horses from that side.

Outside the stone and stucco building is a smaller plaza that connects to the visitor's center. Both buildings have the highly pitched metal roofs with triangular dormers. Behind the stable are three corrals, two at 30 x 30 and one that is 60 x 60. There is also a large pasture for the Clydesdales to roam in.

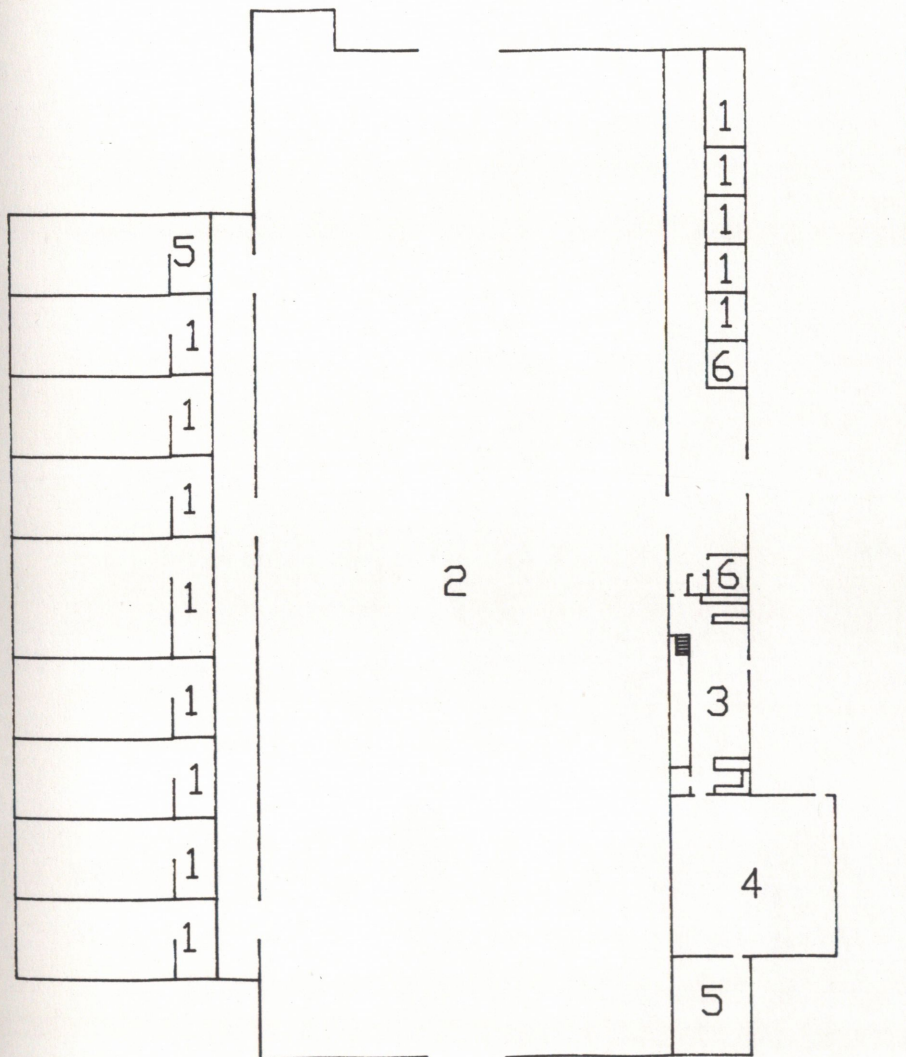
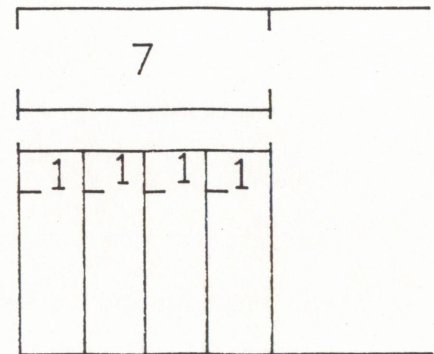
BRIDGER CANYON STALLION STATION

This breeding facility has one main barn that has 20- 12 x 14 stalls for the stallions and 24 box stalls for the mares. The stallion stalls have automatic waterers while the mares' stalls have only a bucket. Both types of stalls have a hay rack in the corner and a bucket for grain. The stallion area has a centrally located tack room that is 12 x 14, a rest room, a small office, and a feed/storage room. The mares' area has 18- 12 x 12 box stalls and 6- 12 x 18 foaling stalls equipped with video cameras. There is a large riding arena in side as well.

Located near the main barn is the breeding barn that has three chutes for the breeding process and an office. Outside are 14 stud pens and eight corrals all with waterers. In the front of the land are two pastures for the mares and foals to run in and there are 300 additional acres east of the corrals. The approach to the facility, between the two pastures, is a very nice experience with the small trees lining the road.

COTTONWOOD STABLES

Bozeman, Montana



1. Stalls
2. Arena
3. Office
4. Gallery
5. Storage
6. Tack
7. Hay

COTTONWOOD STABLES

This private facility, owned by Debbie Butterfield, has only 14 stalls total. There are four 12 x 12 box stalls, six 20 x 12 stalls with outdoor runs, and four more 15 x 12 stalls with outdoor runs in another, smaller barn. All stalls have automatic waterers while the hay is just thrown onto the rubber floor. There are two wash racks in the entry and in between the two tack rooms. There are grain boxes located outside of the four box stalls, a storage room for feed for the six stalls, and grain boxes again for the four stalls. Hay is stored in the smaller barn. Inside the main barn is the office complete with a full kitchen, pool table, and full wet bar. There is a raised seating area for observation into the enormous riding arena equipped with a sound system. A sliding glass door connects to the small patio outdoors. There is a half-bath also.

Adjacent to the office is the art studio for the owners's sculpting and an upstairs bedroom for guests. This bedroom also has windows for viewing into the arena. Downstairs in the studio is another half-bath. Next to the studio is a large storage space.

All around the buildings are corrals and pastures for the horses to run. The buildings themselves are wood sided with shingled roofs. The buildings are in an attractive setting but their main attribute belongs to the main barn's enormous size.

SCOTTISH ARCHITECTURE

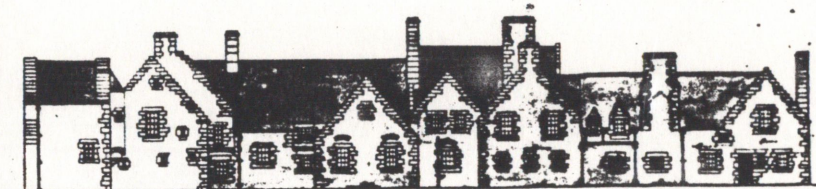
With such a wonderful setting as the rolling hills, Scottish architecture can not help but be wonderful. Detail is present down to the tiniest feature. The fragmentation of the grand facades combine with their steeply sloped, gabled roofs to create a vision of such mastery. The symmetry of the buildings do not allow for any portion of the building to out do another. Even the Scottish stables are treated as something special. Stone floors, arches, and courtyards cause these stables to be more than just a barn to house animals. The stonework reveals the strength and character that these structures hold.

The proud architecture of Scotland is most definitely to be taken into consideration for the Clydesdale facility. The fundamental characteristics are equal to that of the clydesdales themselves.



Place of Tilliefour, Aberdeenshire

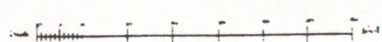
TILLIEFOUR
Diagram illustrating the addition
for the proposed wing



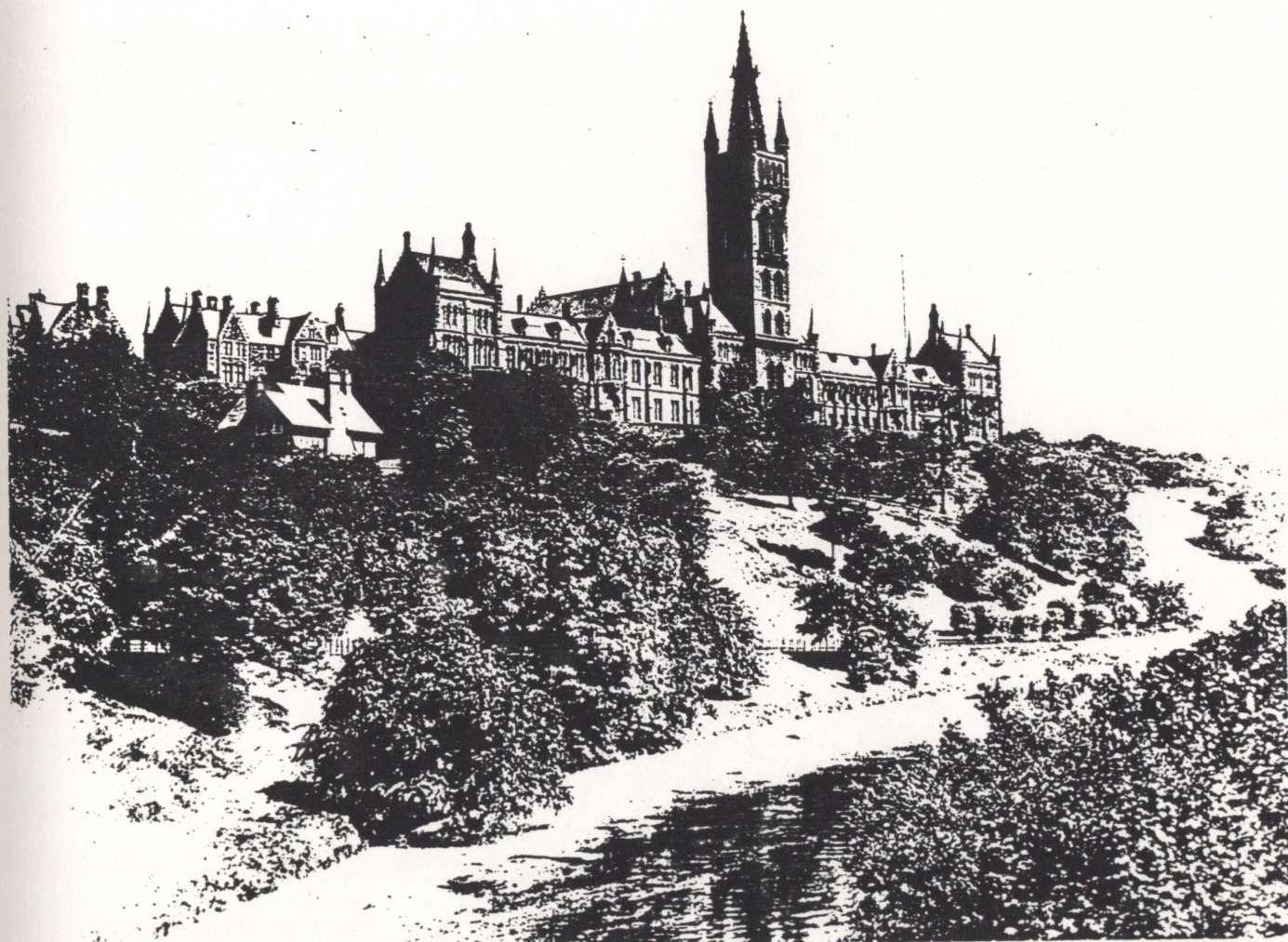
North Elevation



South Elevation



St. Andrew's Hall
Edinburgh University

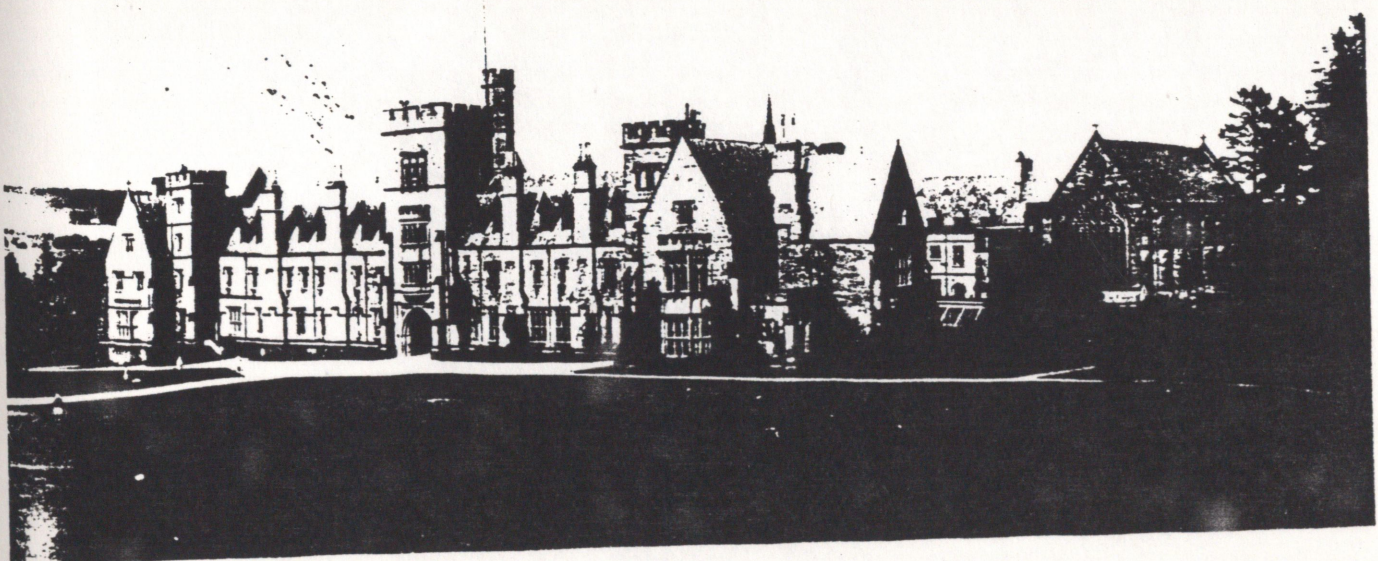


Glasgow University, Glasgow

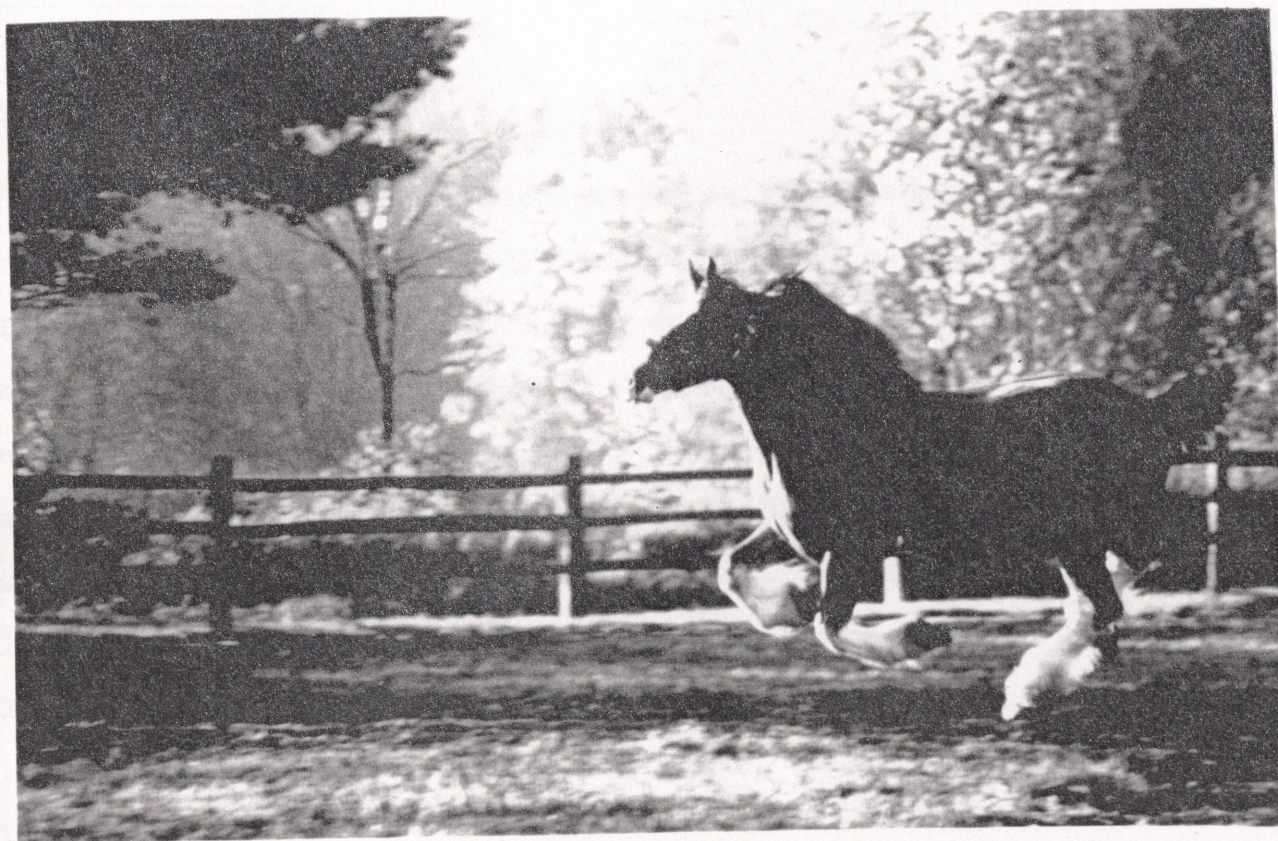


Bethelnie Steading, Meldrum

Trinity College, Glenalmond

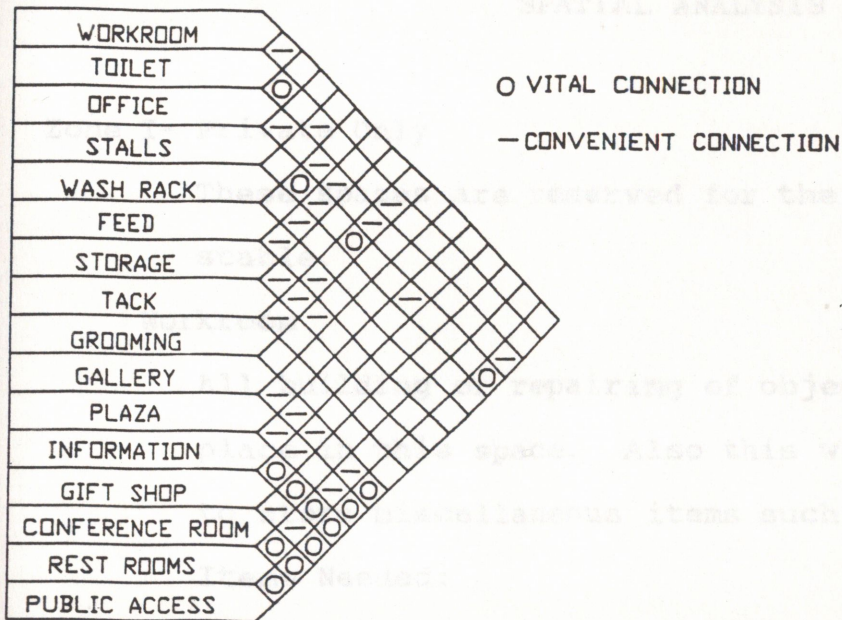


Spatial Analysis



OVERALL ZONES

SPATIAL ANALYSIS



For the facility itself there exists within it four basic zones. Zone I- Private Only consists of the workroom and toilet. These two spaces are intended only for those people employed at the stable. Zone II- Limited Public are spaces in which the public may enter but with supervision. These include the stalls, the office, and the outdoor wash rack. Zone III- Public is open to all public without restraints. The gift shop, gallery, rest rooms, information, plaza, and the conference rooms are in this zone. Zone IV- Clydesdales are the spaces that specifically pertain to the clydesdales. The stalls, wash rack, feed, and storage are in this category.

SPATIAL ANALYSIS

Zone I- Private Only

These spaces are reserved for the employees of the stable.

Workroom	15 x 20	300
----------	---------	-----

All building or repairing of objects will take place in this space. Also this will be a place to store miscellaneous items such as snow blowers.

Items Needed:

work bench

sink

storage closet

Toilet	5 x 7	35
--------	-------	----

Items Needed:

toilet

sink

shower

Zone II- Limited Public

The public may enter these spaces with supervision of some kind. They are allowed in the office for direct questions and information.

Office/Kitchen 15 x 30 450

This is where the records are kept and for employee use.

Items Needed:

desk

file cabinets

table with chairs

counter with sink

refrigerator

two-burner stove

Stall Viewing 20 x 120 240

This space is for the public to view the Clydesdales at a safe distance from the occasional horse bite.

Outdoor Wash Rack 20 x 20 400

Viewing a horse being washed will be an interesting event for the public. A short wall will surround the area for public safety.

Items Needed:

tie rings for Clydesdales

Gift Shop 45 x 50 2250
Zone III- Public who would like to buy some

The public will have direct access to these spaces.

Gallery handle 50 x 60 3000

Viewing articles of the Clydesdales, such as shoes and harnesses, and reading about the Clydesdales' history will occur.

Cor Items Needed: 15 x 25 375

wagons will be for conferences

display cases

moveable partitions

Plaza able with eight chairs

Relaxing after the tour or beer tasting will happen in this space. Special events may take place on occasion as well. The size will be derived from the surrounding buildings.

Re Information 15 x 20 360

A person will be in this space to answer any questions a visitor may have.

Items Needed:

desk and chair sponsor

switchboard

brochure racks

chairs

Zone Gift Shop	45 x 50	2250
----------------	---------	------

Visitors who would like to buy some
souvenirs or gifts will enter this space.

Items Needed:

merchandise	10 @ 12 x 16	1920
racks	1 @ 12 x 16	192
check-out counter		
display cases		

Conference Room	15 x 25	375
-----------------	---------	-----

This space will be for conferences
to take place in.

Items Needed:

table with eight chairs	10 x 15	150
cabinets		
small sink		

Rest Rooms	2@ 15 x 12	360
------------	------------	-----

Items Needed:	15 x 15	225
---------------	---------	-----

sinks		
toilets		
urinals in mens room		
mirrors		
soap dispenser	15 x 20	300
paper towel dispenser		

cabinet for each bathroom

hooks for miscellaneous rigging

Zone IV- Clydesdales

These spaces will be either for the horses to occupy or for their direct care.

Stalls 10 @ 12 x 16 1920

Items Needed: 1 @ 12 x 16 192

automatic waterer

hay rack

grain trough

rubber flooring

2-way access

hooks and name plaque on doors

Feed 10 x 15 150

Items Needed:

grain bins

shelves for miscellaneous items

Storage 15 x 15 225

Items Needed: grain downstairs.

Miscellaneous shovels

rakes

miscellaneous items 2 @ 30 x 30 1800

Tack 15 x 20 300

Items Needed: harnesses

cabinet for each harness

hooks for miscellaneous riggings

TOTAL SQUARE FOOTAGE 18,870

Grooming

30 x 30

900

This area will be used to wash and groom the clydesdales.

Items Needed:

cabinets for first-aid equipment

tie-up hooks

miscellaneous cabinets

concrete floor

Hay Storage

The loft upstairs of the stable will be used for this purpose. As much space as possible is needed.

Items Needed:

large windows for receiving hay

grain bin with two augers, one

to bring grain into bin and one

to transfer grain downstairs.

Miscellaneous Spaces

Parking

Small Pens for Clydesdales

2 @ 30 x 30

1800

Medium Pens for Clydesdales

50 x 60

3000

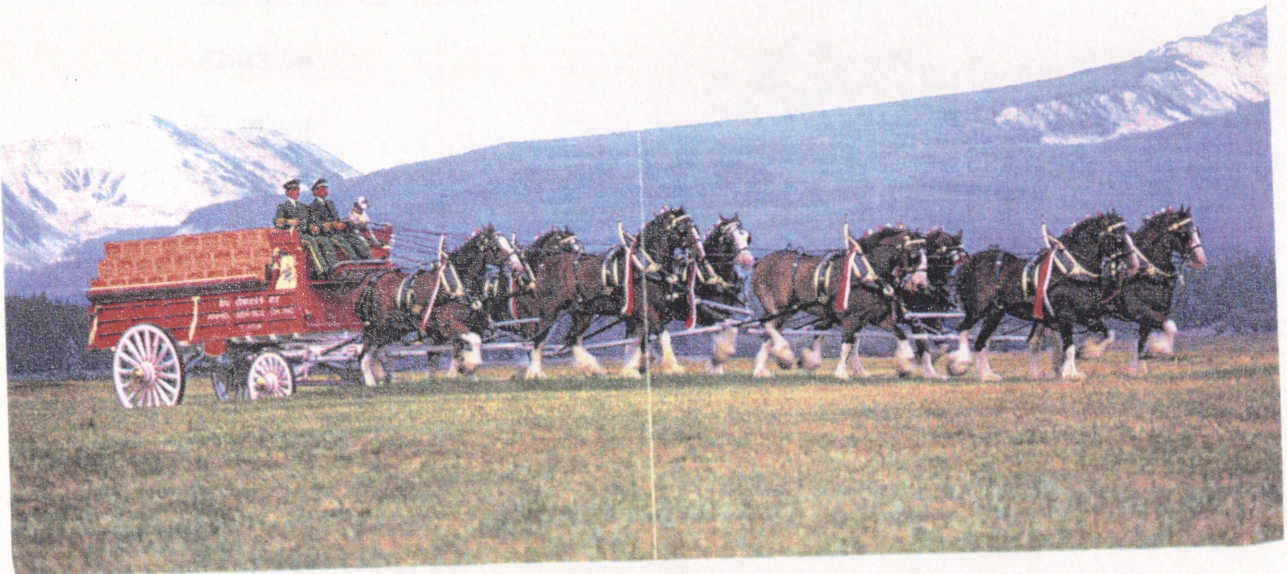
Pastures for Clydesdales

Picnic area for visitors

TOTAL SQUARE FOOTAGE

18,870

Design Considerations



BUILDING CODES

Occupancy Group	Group A-3 and Group U
Swing Out Required	[Group A-3 will take precedent over Group U since it is the tighter of the two.]
Corridors	
Width	
Glazing Requirement	8% of floor area
Fire Separations	1 Hour
Construction Type	Type 1B
Allowable Floor Area	No Limit
Area Separation Wall	Not Required
Maximum Building Height	No Limit
Fire Resistive Requirements	
Exterior Walls	3 Hours
Interior Walls	2 Hours
Partitions	2 Hours
Structural Frame	2 Hours
Shafts	2 Hours
Floors	2 Hours
Roofs	1 Hour
Exits	
Occupant Load	15 Maximum Floor Area per Person
Number of Exits Required	2 per Room
Dead End Corridor Length	20' Maximum

Distance Between Exits 400' Maximum

BUILDING CHARACTER

Distance to Exits 200' with Fire
Suppression

Doors Clydesdales portray a proud "giant" of a massive

creature and yes Swing Out Required Yes gentle to the slightest

touch of Corridors 16. So should be their home. The Clydesdales

have proud 32' Width 44" appropriate if the stable

reflects some Heighth 8' of long ago. Since the

event of Opening Clydesdales and Self-Closing is done in such

a friendly Stairs atmosphere, the entire facility should spill over

in friendliness Width 44" weiser Clydesdales say

about Anheuser Rise 7-1/2" Max. say about the

Clydesdales. Run Clydesdales have done 10" Min. tremendous amount of

publicizing in Handrails Yes should be their reward

a strong state Roof Stair Required No going to the public, yet

comfortable Special Exit Requirements No the Clydesdales.

Sprinklers Required No

BUILDING CHARACTER

Budweiser Clydesdales portray a proud "giant" of a massive creature and yet still are so sensitive and gentle to the slightest touch of a small child. So should be their home. The clydesdales have proud Scottish roots so it would be appropriate if the stable reflects some of the Scottish architecture of long ago. Since the event of bringing the Clydesdales and fans together is done in such a friendly, open atmosphere, the entire facility should spill over in friendliness. Finally, as much as the Budweiser Clydesdales say about Anheuser-Busch so should the facility say about the Clydesdales. The Clydesdales have done a tremendous amount of publicizing Anheuser-Busch; their facility should be their reward: a strong, stately building, open and welcoming to the public, yet comfortable and spacious for the Clydesdales.

FORMS

The form of the stable facility should be one of grandeur and elegance. A high-pitched roof would be well suited to a stable for appearance sake and for proper ventilation. Dormers provide a convenient way to transfer hay bales into the loft area as well as to aid in the ventilation process. Also dormers are a great way to allow light into a loft space. A courtyard, found several times in other Clydesdale facilities, would provide a very pleasing outdoor space. The stable building will be one that is very long in length that can be broken up by fragmenting the facade. Finally, the tradition of storks on the roofs should continue on at this Clydesdale Facility.

and a room, and the gallery should be carpeted for the comfort of the material. The remaining public spaces should be of a decorative tile or brick to keep in the spirit of other Clydesdale Facilities.

MATERIALS

The materials that should be considered in this project are stucco, brick, and/or stone with wood being utilized on the inside. These materials have been used extensively on other Anheuser-Busch stables and the tradition should be continued.

The three materials, stucco, brick, and stone, are those put to use in the Scottish buildings. They are durable and strong materials that are very versatile. The interior spaces constructed of wood will also be very versatile for any class of designing. Flooring in the immediate Clydesdale vicinity will be of concrete due to concrete's ability to clean up easily. Offices, gift shops, information, conference room, and the gallery should be carpeted for the comfort of the material. The remaining public spaces should be of a decorative tile or brick to keep in the spirit of other Clydesdale Facilities.

	ST. LOUIS-HITCH STABLE	ST. LOUIS-STALLION STABLE	ST. LOUIS-GRANT'S FARM	FT. COLLINS STABLE	BRIDGER CANYON STALLION STATION	COTTONWOOD STABLES	SCOTTISH ARCHITECTURE
BUILDING MATERIALS							
BRICK	O		O				O
STUCCO			O				O
STONE				O			O
WOOD		O			O	O	
aisle floor							
BRICK	O		O	O			O
STONE							O
WOOD							
CONCRETE		O			O	O	
ROOF							
SHINGLE	O	O			O	O	O
METAL				O			
TILE			O				
PITCH							
SHALLOW	O	O			O	O	
HIGH			O	O			O
DORMERS			O				O
COURTYARD			O				O
STALLS							
PLAIN WOOD		O			O	O	O
NICE WOOD	O		O	O			
GRILLES		O	O	O	O	O	
STORKS		O	O				
CEILING HAY DROP		O		O			

O DEFINITELY HAS FEATURE

— HAS SIMILAR FEATURE

Humidity levels in a barn should never exceed the 50-75% level in winter. In Columbus' climate this is of minimal concern.

There are several factors VENTILATION be controlled.

Building Site- orient building to catch wind at right angles

A horse's respiratory system is not as equipped to filter out pollutants as a human's. Of all the ailments that horses suffer from, besides lameness, respiratory disease is number one. The cause of all the ailments is simply a poorly ventilated barn. Signs of this include visible dust particles in the air, condensation on pipes [too much humidity], musty, ammonia smell, and the sound of coughing horses. Horses consume more nourishment than people, so naturally they have more waste. They are furthermore constrained to sleep on the ground and breathe the air where the pollutants are the worst. The cure for all of this is to have an efficient ventilation system as well as to keep the facility clean. This reduces heat loss in winter and can

An efficient ventilation system will move a controlled amount of air into and through the entire building. A complete change of air will occur in a matter of minutes carrying with it the contaminated particles. Simply placing a fan up on the ceiling will only create drafts and still not pull the dead air out of a stall floor. stall doors should line up for cross

With the warm air rising and the cool air and ammonia and water droplets falling controlled air exchange is the required answer. Natural wind patterns can help if the barn is oriented correctly. This wind can cool the barn from seasonal and animal generated heat and help to ventilate the barn at the same time.

Humidity levels in a barn should never exceed the 50-75% level in winter. In Columbus' climate this is of minimal concern.

There are several factors that can be controlled.

Building Site- Orient building to catch wind at rise in topography.

Building Materials- Wood allows air to travel through it easier than other materials.

Internal Wall Height- If internal stall walls do not reach the ceiling used up air can escape over the top.

Buildings Overall Size and Peak Heights- Cupolas, equipped with an exhaust fan for more efficiency, pull air out at the top.

Interior Ceilings- These should not be designed to allow air to be trapped.

Insulation- This reduces heat loss in winter and can lower temperatures 5-10 degrees in summer.

Sun Exposure- Place awnings over windows to keep incoming air cool.

Placement and Size of Doors and Windows- Windows and stall doors should line up for cross ventilation to happen. Windows should open up at the top to expel hot air.

Vents- These should be placed at hoof level to draw in fresh air.

Fans- Install intake fans in outside walls and utilize ducts to direct air from fan to cover the stalls, or down walls to floor level.

Heating a barn involves a heat exchanger that captures the heat produced by the animals and warms up incoming air. The warmth of the used air is transferred to the cooler air through a thin heat responsive plate within the unit. Of course the temperature increase depends upon how many and what size of horses are in the barn. Using this system to heat a barn will work very well for this stable facility.

INTERIORS

The interiors of all the rooms and spaces in this facility should feel welcoming and friendly. Most of the visitors will be on vacation, which is a relaxing time, so never should any visitor feel rushed. Warm tones of interior colors and soft lighting can give off such feelings. Easily defined spaces should exist so confusion is never present. The interior spaces should speak some of the Clydesdales' Scottish heritage yet still in the most modern means. Clear circulation will keep the visitors in their designated areas. The texture should reveal the same welcoming feelings as the rest of the area. Nothing overly rough or entirely smooth is advisable. A nice mixture of lightly rough and slightly smooth will add interest that is not harsh. Finally the scale of the interior spaces should coincide with that of the outside. The only part of the whole scene that should be great in scale is the Clydesdales.

FUTURE USE

Since there still exists so much unused land on the site many ideas are possible in the future. Of course expansion of the brewery building is a possibility that probably will occur. As far as the Clydesdales are concerned a full facility of breeding and training is possible. Also more tourist type activities could arise such as a park, a small petting zoo in the tradition of Grant's Farm, or simply a picnic area for travelers coming off of the highways.

Schematics

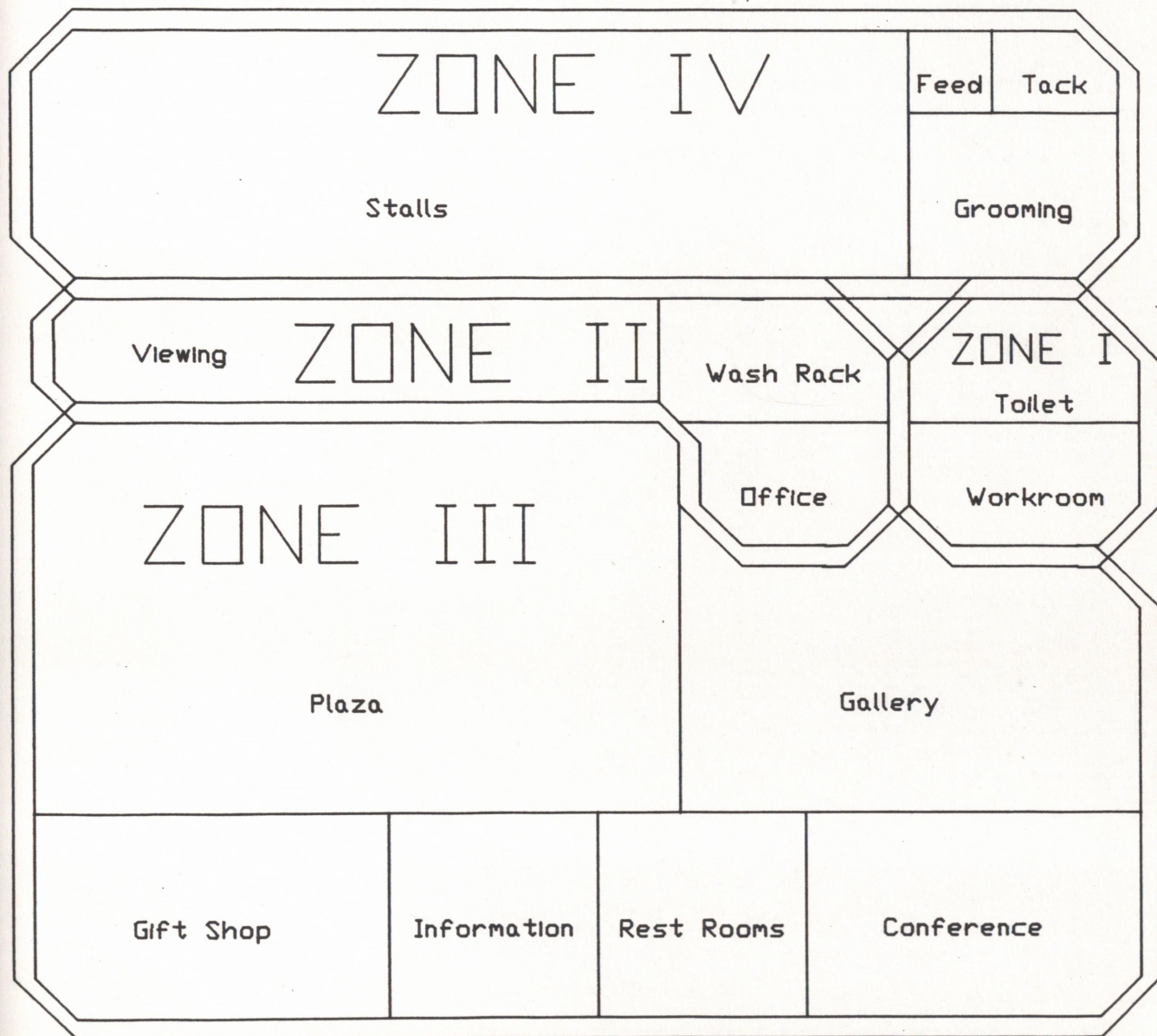


LAYOUT

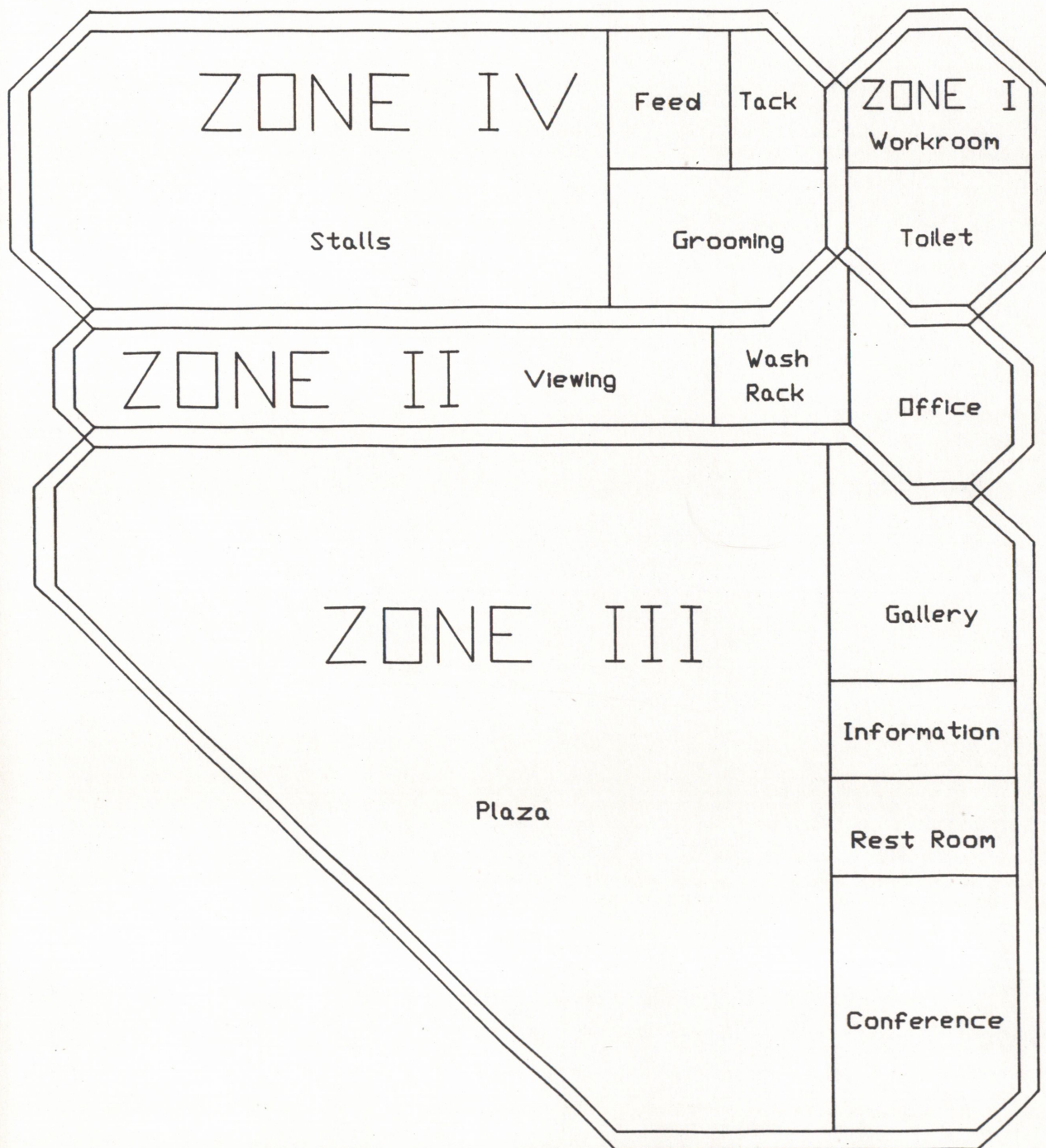
The layout of the stable facility should be in an area that is easily accessible from the road, yet far enough away so that the sound and fumes from the traffic are not noticeable. A location along the south end of the creek would be ideal as long as the location was not overly far from the brewery. Visitors will be touring both facilities and will need easy access from one to the other. Possibly some form of transportation would be the solution for the transporting of visitors such as a horse drawn trolley.

The brewery should be visible from the stable; however, the brewery should not compromise the stable's setting. The stable will be an entity that is somewhat apart from the brewery itself. The brewery should convey the operational aspect of Anheuser-Busch and the stable should convey the public image of Anheuser-Busch.

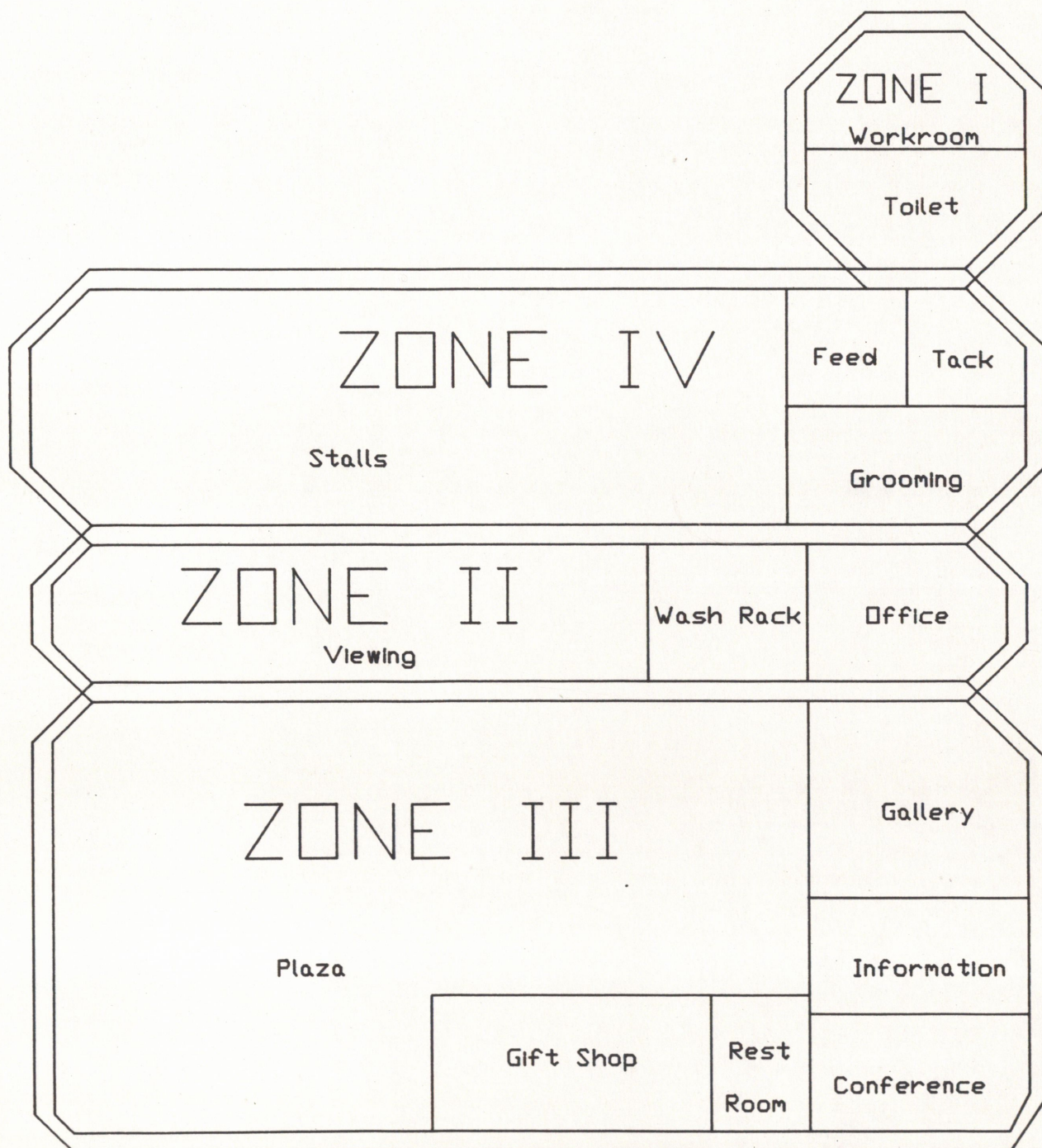
SCHEME 1



SCHEME 2



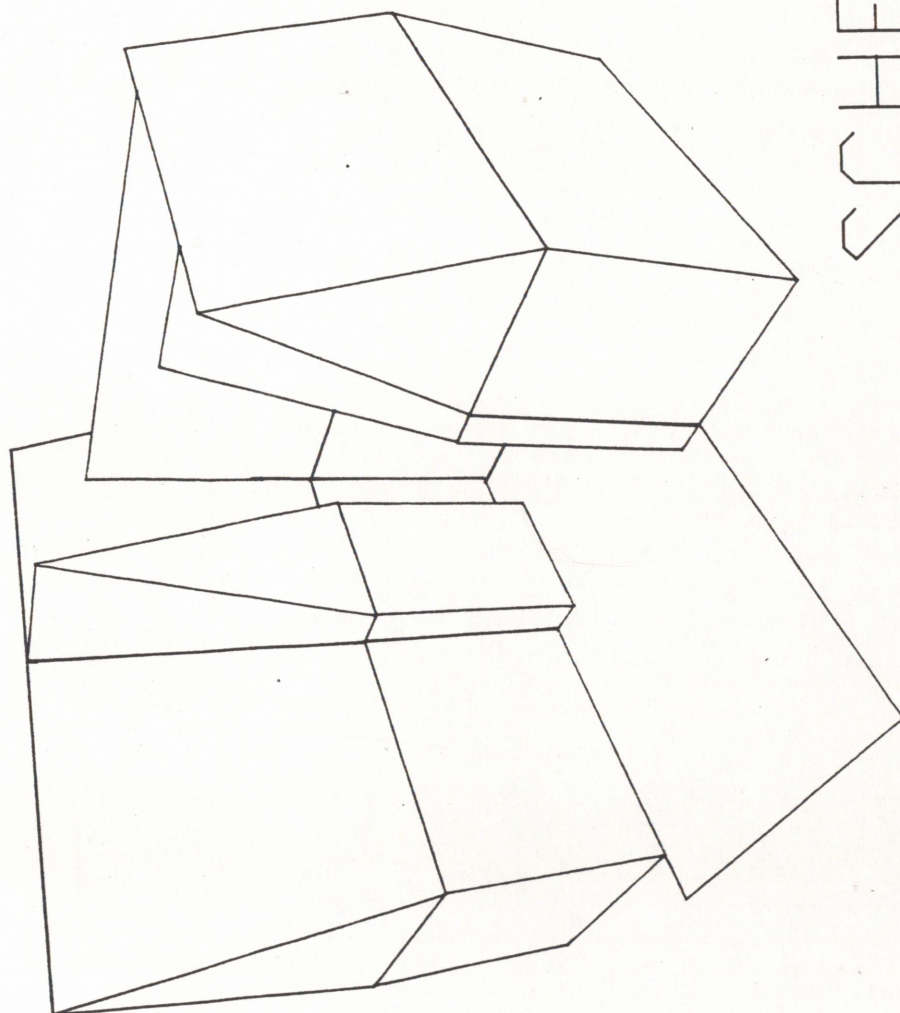
SCHEME 3



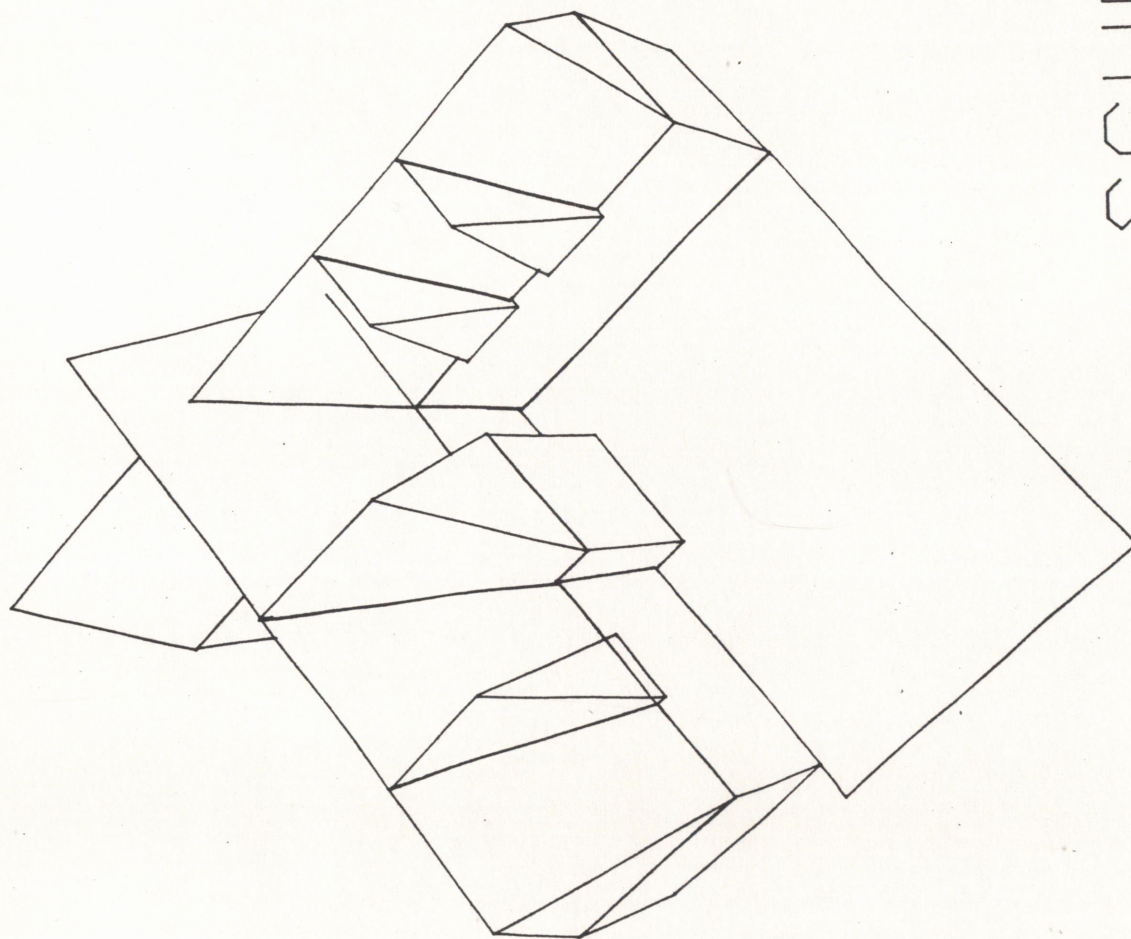
ELEVATIONS

The elevations for the Clydesdale Facility will be able to be very versatile while remaining with the desired materials. The possibilities are endless. A few of the more favored characteristics have been explored. Some of these features include arches, dormers, building fragmentation, and large entryways. The versatility of the brick and stone, combined with today's technology, have the ability to create numerous visions that are all related to the desired images.

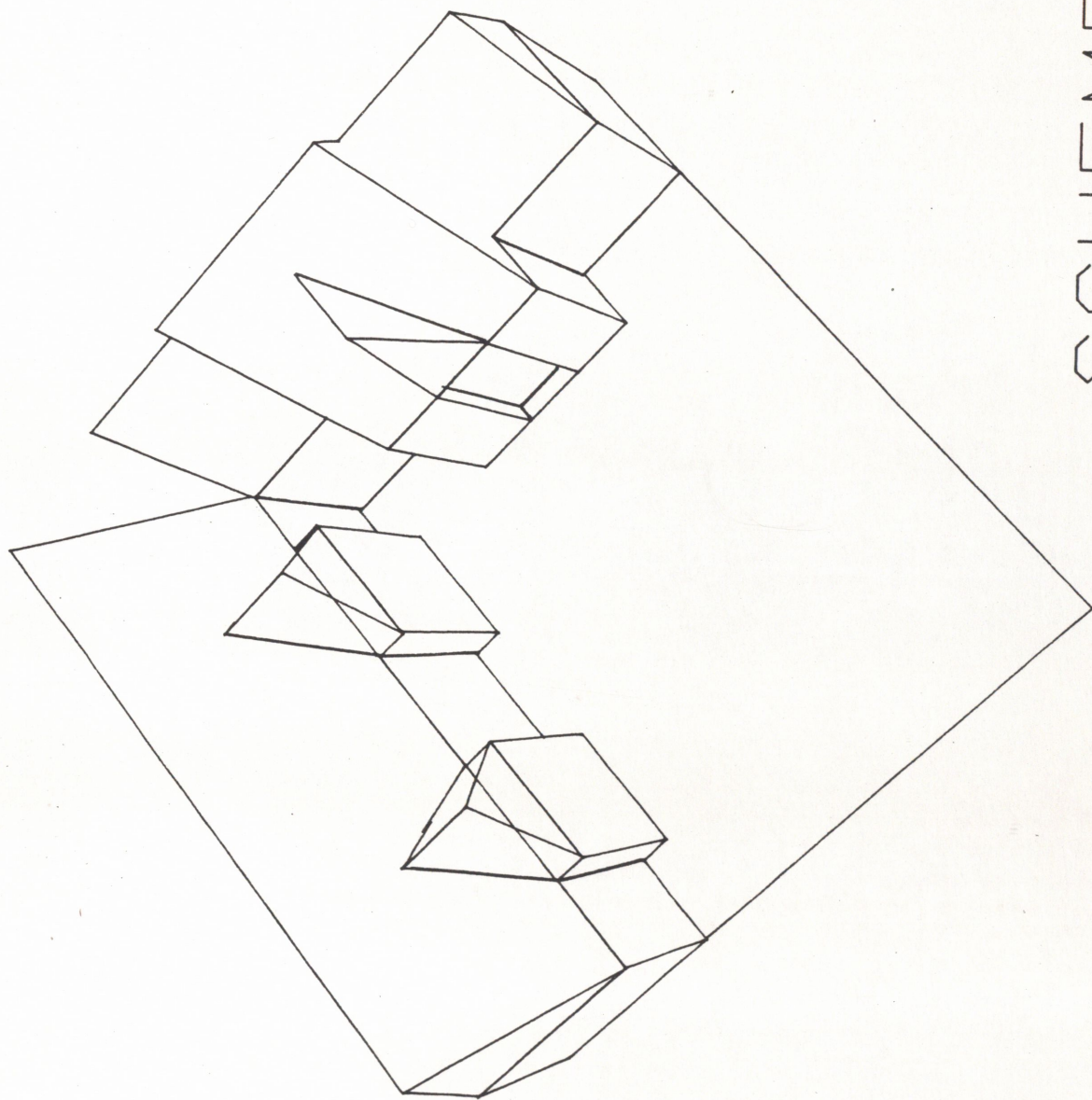
The building's elevations should portray that the facility respects the stone architecture of long ago yet "experiments" with the materials to represent the new found knowledge of today. New techniques of laying brick or stone will create a modern image that is the goal of this project.



SCHEME 1

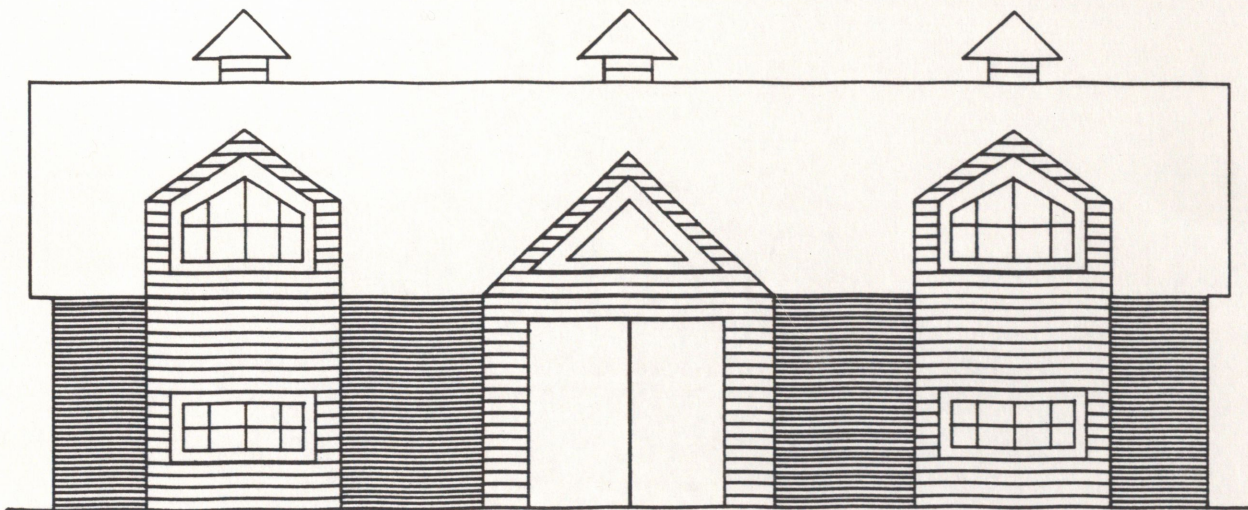


SCHEME 2

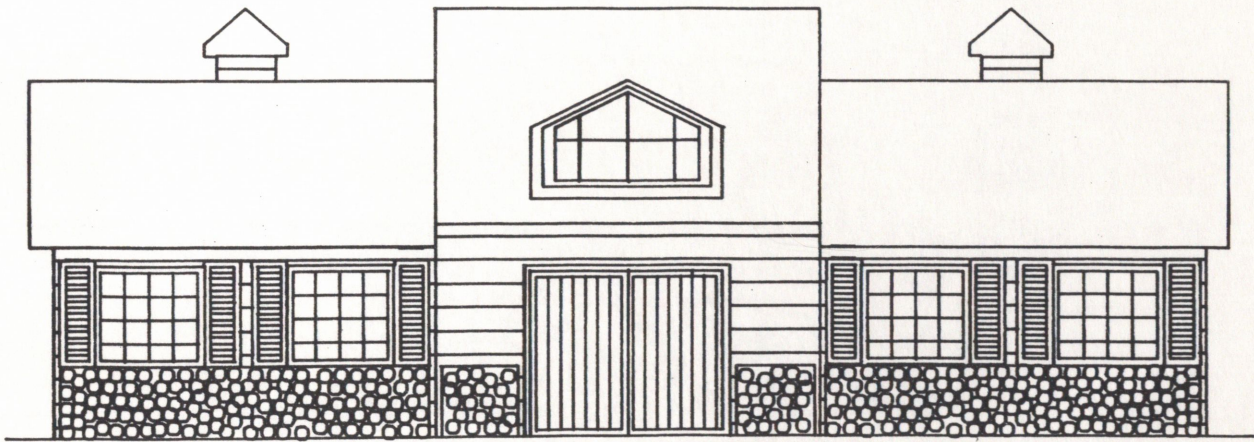


SCHEME 3

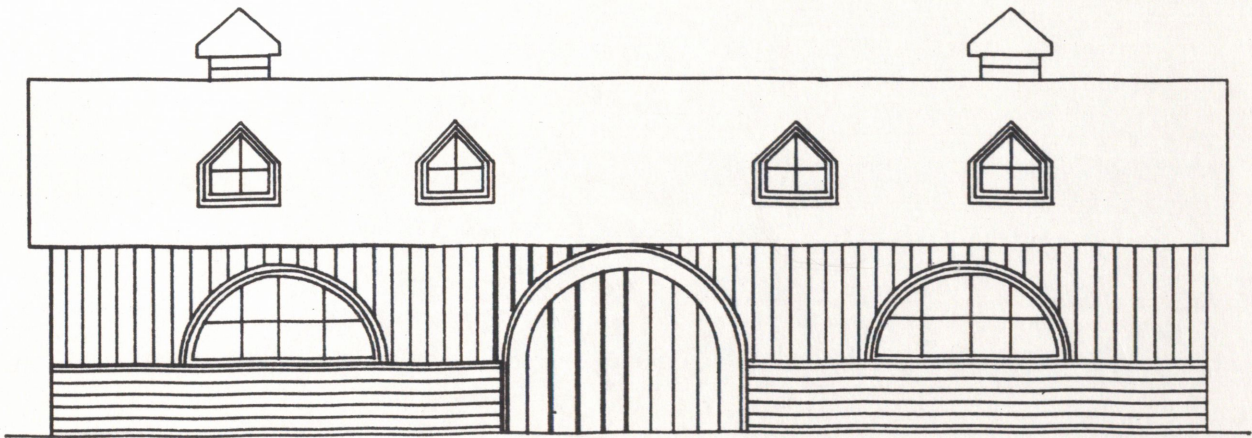
SCHEME 1



SCHEME 2



SCHEME 3



BIBLIOGRAPHY

A.I.A., "Regional Climate Analyses and Design Data: The House Beautiful Climate Control Project". 1949, pp.22-32.

Building Officials and Code Administrators, International, Inc., "The BOCA Basic Building Code, 1984". Illinois, Interstate Printers and Publishers, Inc., 1983.

Edwards, Elwyn Hartley, ed. "Encyclopedia of the Horse". New York: Crescent Books, 1977. p.42.

Gale Research Company, "Climates of the States", volume 1. 1978, p. 592.

Jepsen, Stanley M. "The Gentle Giants: The Story of Draft Horses". N.J.: A.S. Barnes and Co. Inc., 1971. pp.43-52.

MacEwan, Grant. "Heavy Horses: Highlights of Their History". Saskatchewan: Western Producer Prairie Books, 1986. pp.9-40.

Romeiser, Kathy. "The Fresh Air Factor", EQUUS, October, 1987.

Sinclair, Fiona. "Scotstyle- 150 Years of Scottish Architecture". The Royal Incorporation in Scotland, 1984.

The Royal Commission on the Ancient and Historical Monuments of Scotland. "Peebleshire- An Inventory of the Ancient Monuments", volume 1. 1967.

White, Edward T. "Site Analysis: Diagramming Information for Architectural Design". Arizona: Architectural Media Services, 1983.

STABLE FACILITY
FOR THE
BUDWEISER CLYDESDALES
COLUMBUS, OHIO
SUZANNE A. OLLERICH



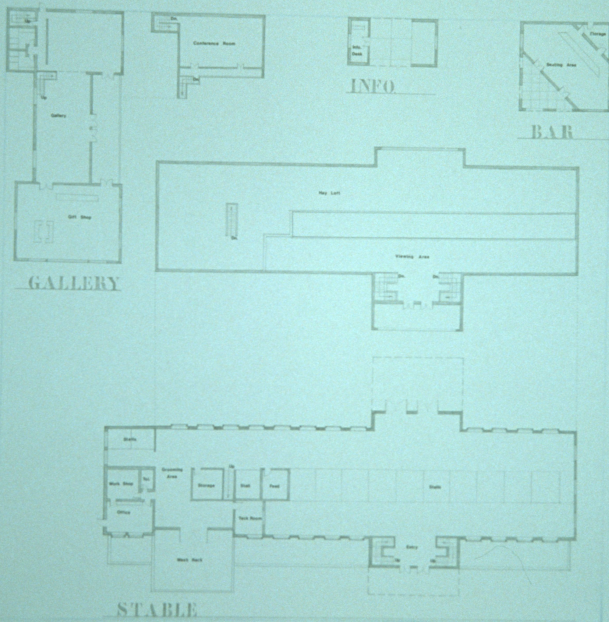
SITE PLAN

I-250 N



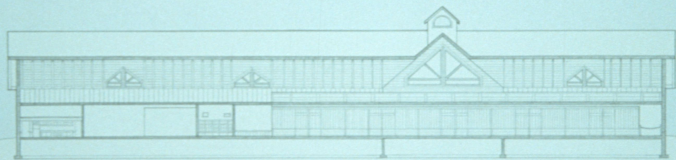
SITE PLAN

1-100' N



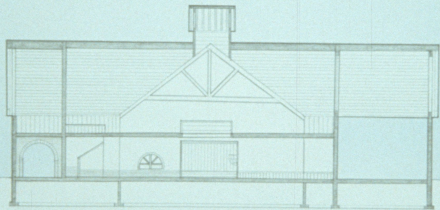
FLOOR PLANS

1/16" = 1' 0"

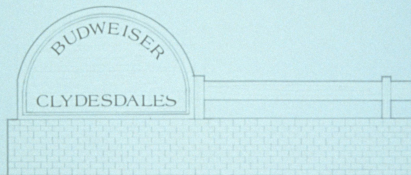


SECTION

1/16" = 1'-0"

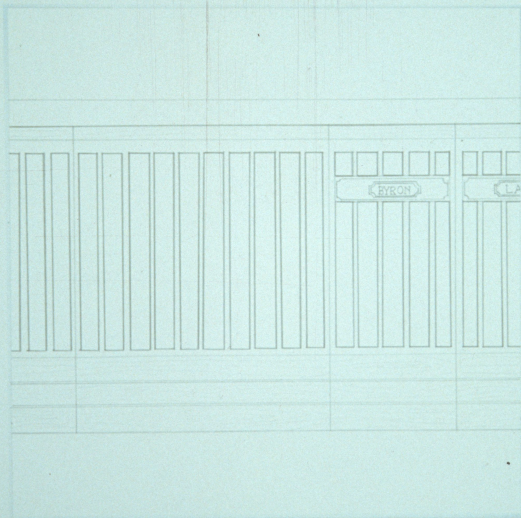


SECTION 1/16"-10"



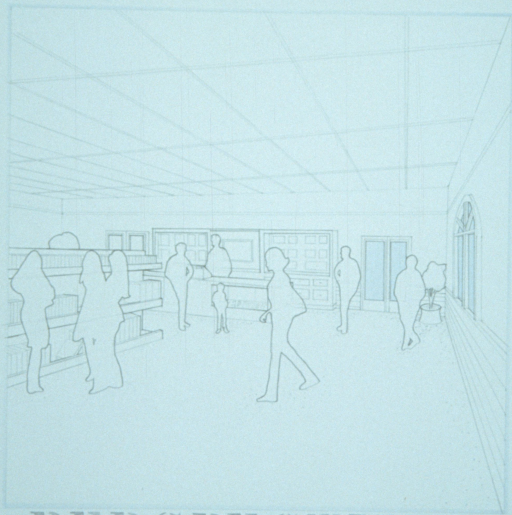
DETAIL

3/8"-1'-0"



DETAIL

1/2"=1'-0"



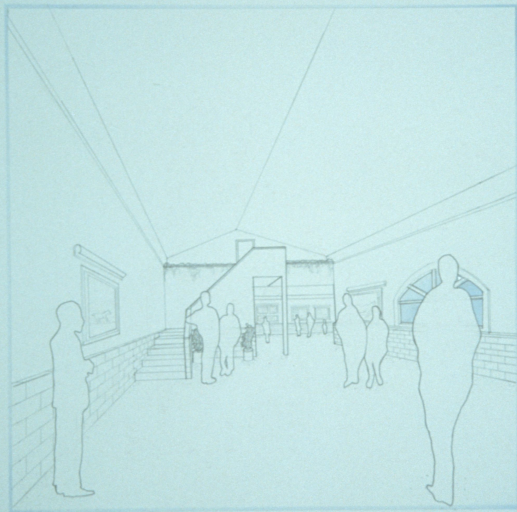
PERSPECTIVE



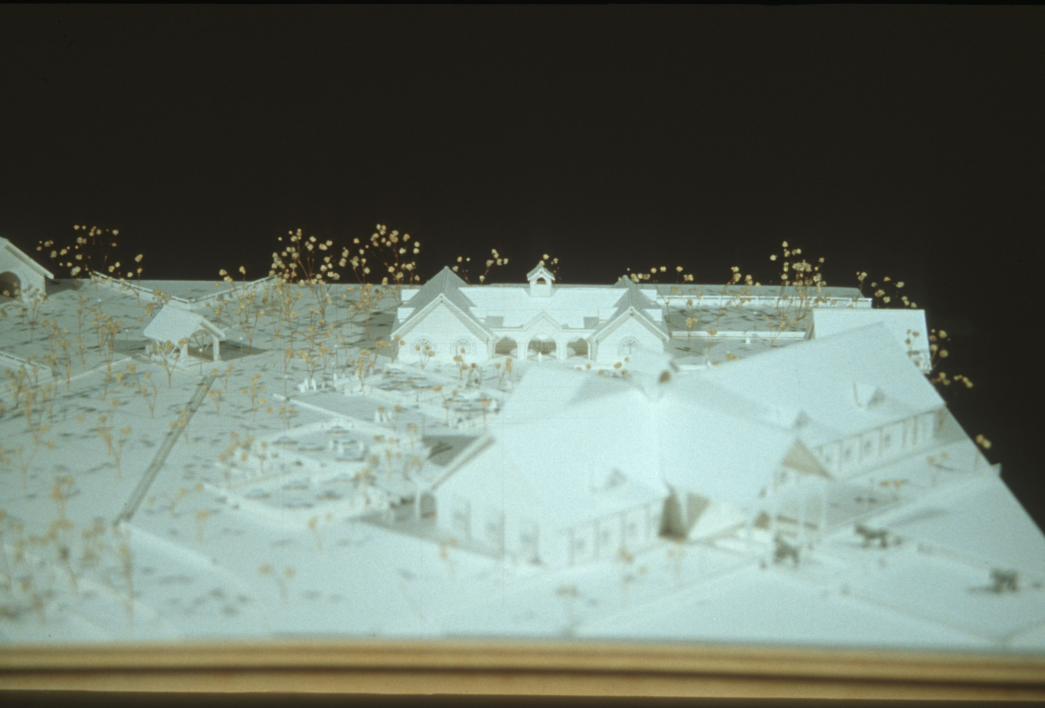
PERSPECTIVE

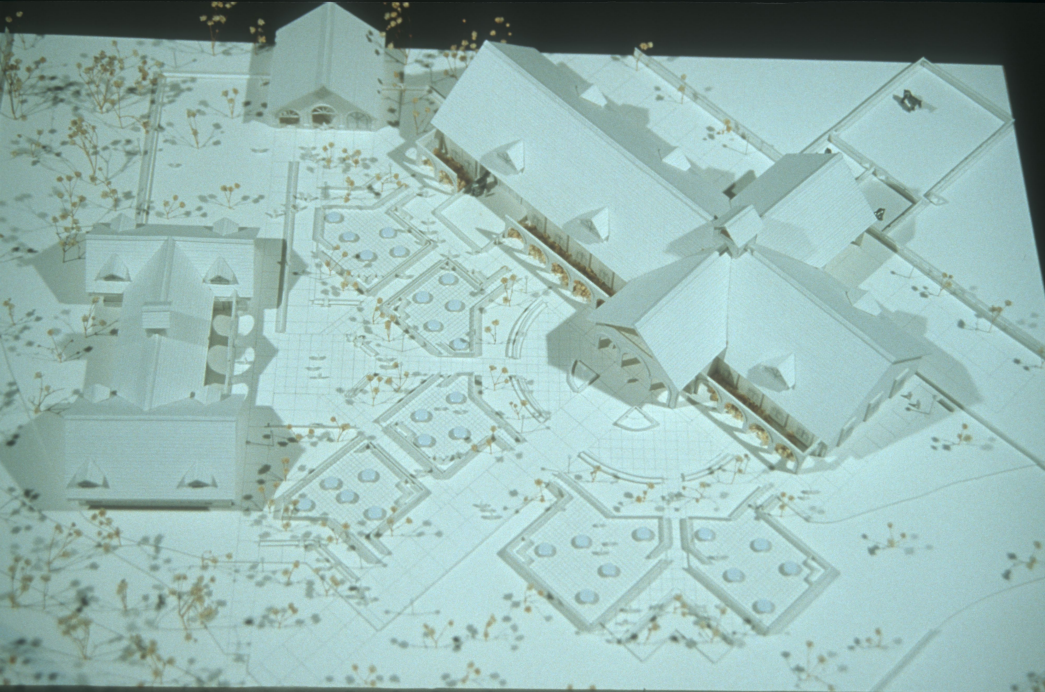


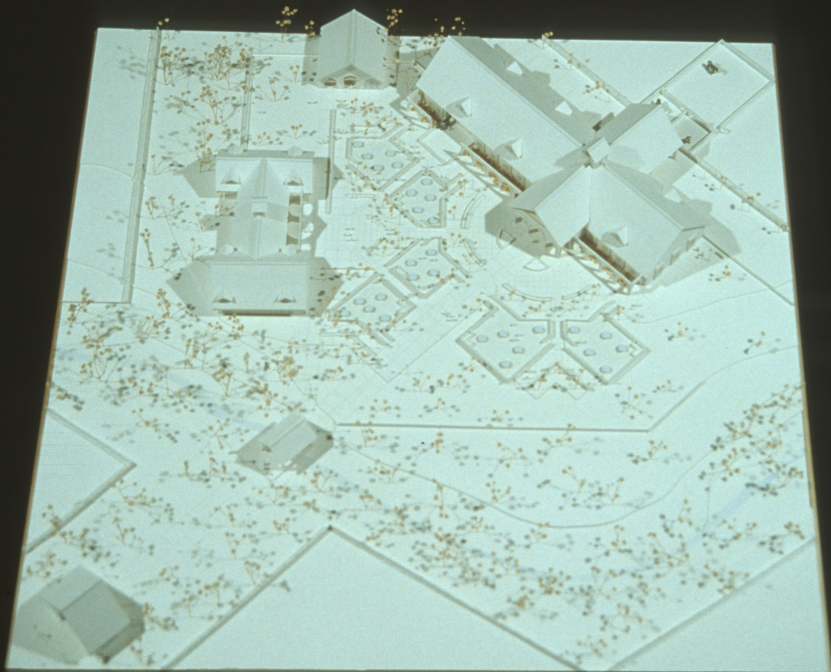
PERSPECTIVE

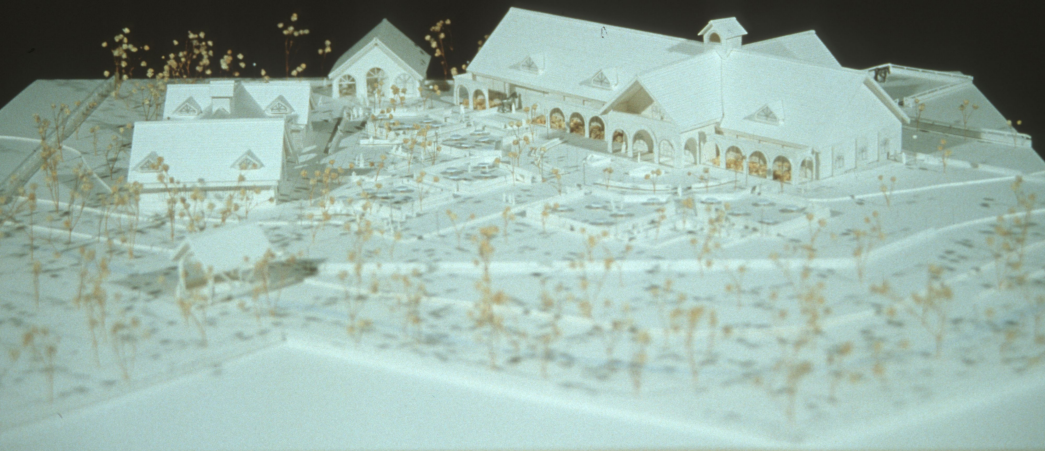


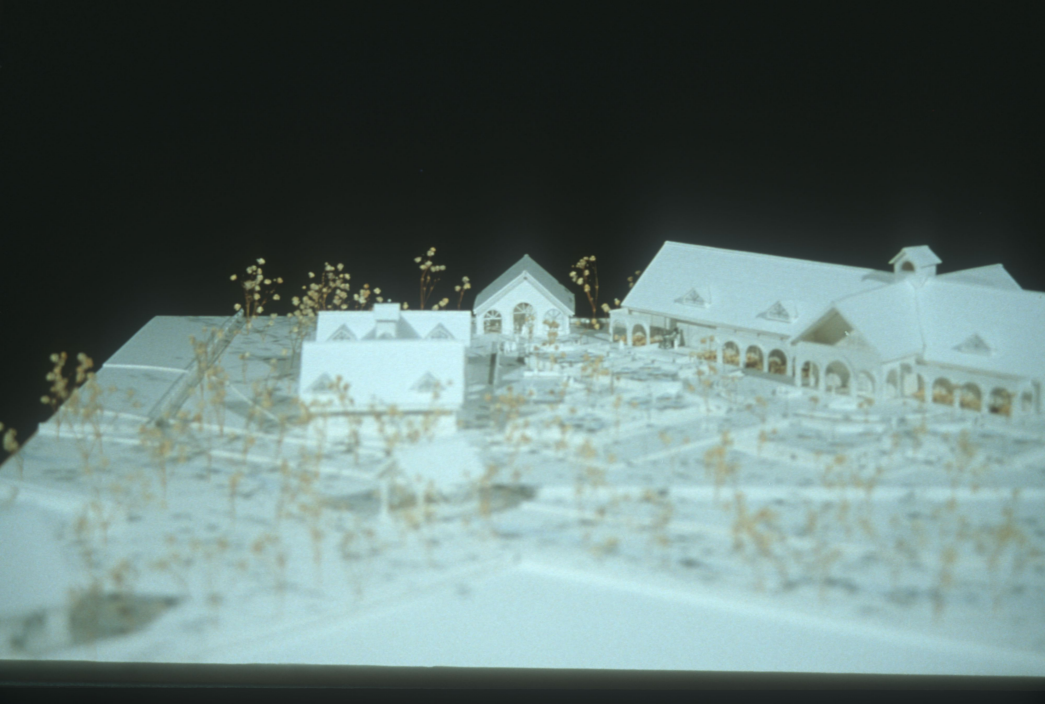
PERSPECTIVE

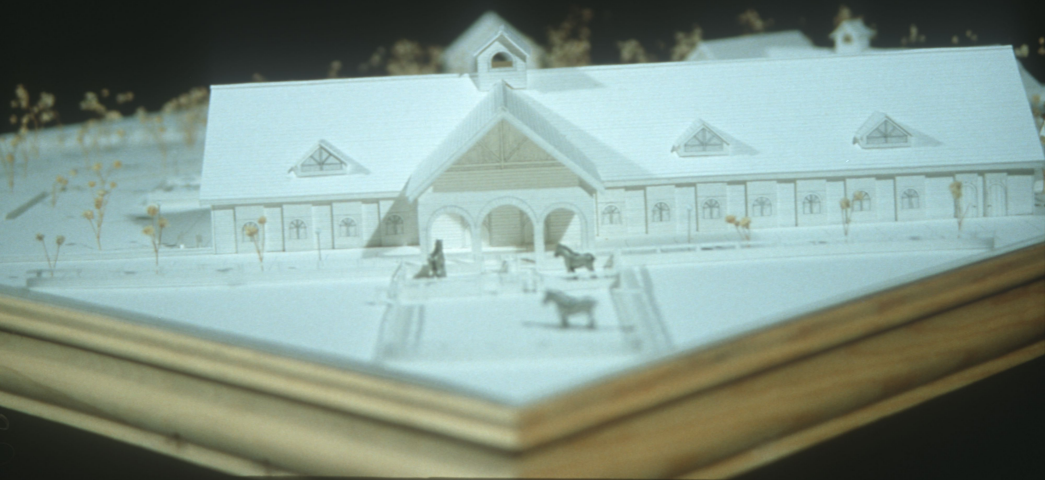


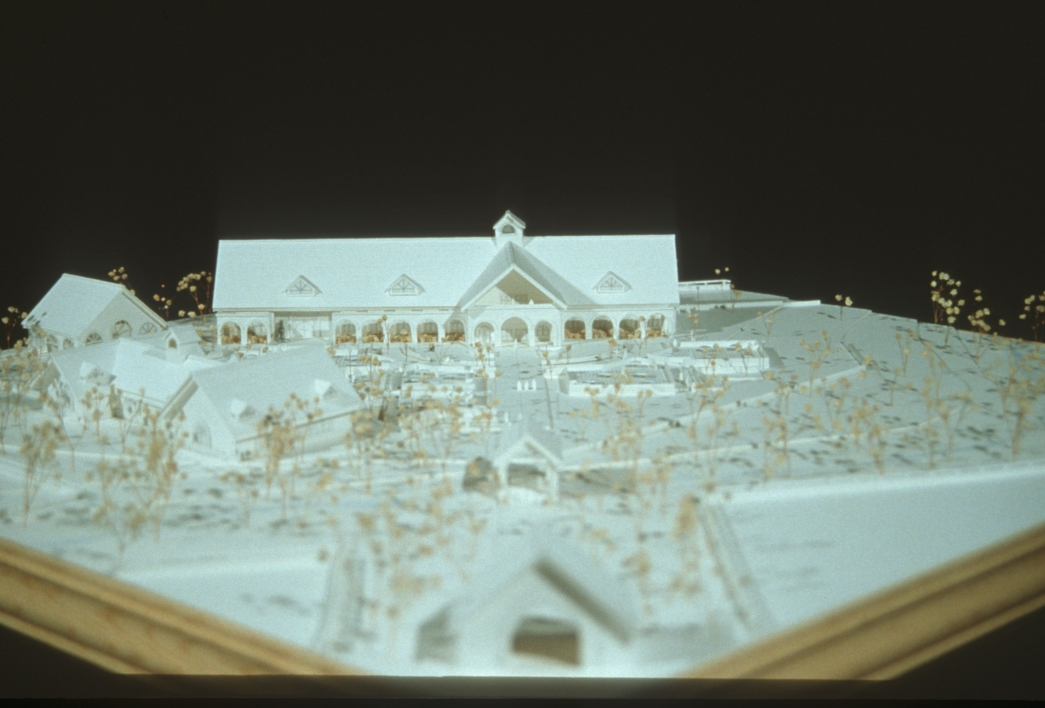


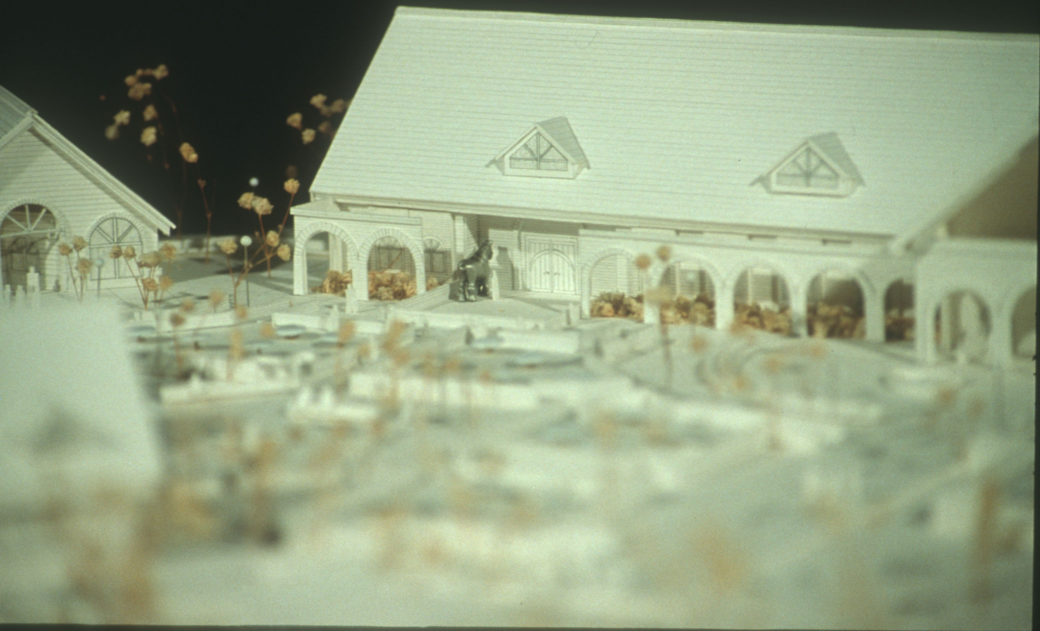














MONTANA STATE UNIVERSITY LIBRARIES



3 1762 10094321 4

