ANN HEBENSTREIT
THESIS
COLLEGE OF ARCHITECTURE
AND PLANNING
BALL STATE UNIVERSITY
DECEMBER 1980

SOFT-TECH FARM, CARMEL, IN.
abstract

remaining as the function...
A BIG PART OF OUR HERITAGE:
the farm
Consultants Studying Lynnwood Farm Future

SUBURBAN NEWS

nearby probably would not look with much favor on a gravel pit operation.

Horace Paarberg, director of farms for Purdue, agreed when questioned that Purdue will make the best possible "business decision" when deciding the future of the land.

"That is the facts of the business. That's correct," Paarberg responded to the question. "There's no use hiding that because it's true. We're as much in the world of reality as anybody, and we've got to act like that."

Paarberg imagines that whatever decisions are made not everybody will be happy.

"If you leave it in Simmental cattle and green grass it will please the existing people," he said, "but it won't please those who would like to occupy it."

Although the discussion may be a bit premature since the university's designs are not known, it's clear enough that Carmel Mayor Jane Reiman has no sympathy for a gravel pit at Lynnwood.

"I've always said gravel pits don't make good neighbors," the mayor said. "I know there is a lot of money in it. I'm sure it would be quite a decision for anyone to make to put a housing development over hundreds of thousands of dollars worth of gravel."

Mayor Reiman said she appreciates that state-supported schools need all the money they can get.

"I don't want to inject any of my thoughts on a university," she said, "because I know the more money they can make on the land the more it will help them in running a state university."

However, I think the public relations of that (a gravel operation) would be very poor."

Hentschel said the decision to hire consultants rather than having staff professionals do the job was made because of several problems peculiar to the project. These include:

* The size of the acreage involved
* It is far from the Purdue campus and in an area unlike West Lafayette, where the university has clout in local government and can better control its land transactions.

Some Imponderables

Among other questions needing answers, said Hentschel, is how fast can development of such a large area take place?

"Here we know how fast the city can grow; down there we don't really know because it is a bedroom community of Indianapolis, and this adds to the problem."

He said the university is also "sensitive" to the fact that Carmel "is inhabited by extremely wealthy people" and that "there are also legislators" who might interject themselves into the situation.
But Transaction Not Imminent

Consultants To Study Lynnwood Farm Sale

Rumors have surfaced off and on for at least 15 years that Purdue University will soon sell Lynnwood Farm, its agricultural experimental station in Clay Township. The most recent rumor — that the university will hire a consulting firm to study options for disposing of the 630-acre farm — is untrue.

Josef Hentschel, vice president and treasurer of the Purdue Research Foundation, said the Journal News last week that the university will have an Indianapolis consulting firm to study the future of Lynnwood Farm, located in eastern Clay Township north of 22nd Street. But, he emphasized, Purdue has no immediate plans to sell the farm.

"We WILL NOT sell soon. If anything is going to be done within the next five years, it will be gradual, adding that even then that time frame is uncertain," Hentschel said.

Hentschel, overall director of Purdue's experimental stations, agreed with Hentschel's announcement. "The university try's to keep up to date on what's going on, but I don't think it implies there's anything imminent," he said.

He admitted, however, that this is the first time Purdue has hired consultants to study options for Lynnwood Farm. In other years, the university made judgments about the farm's future in-house.

Hentschel explained that Purdue will most likely be developed gradually, with the university staying on, under a lease agreement, for a long time after the farm is sold.

"You don't develop that much land in a short period of time," Hentschel said, estimating it could take as long as 20 years to develop a piece of property the size of Lynnwood Farm.

Under such a scenario, the buyer would develop several acres of the farm at a time, leaving the rest for the university. That would allow Purdue to gradually move its operations to a more rural area of the state.

"You really couldn't move a town if that close to one another," Hentschel explained.

Outright sale of the land for commercial development is not likely, however, Hentschel said. The possibility of selling the land for gravel pit operations is also open for discussion.

Hentschel explained that a developer could remove the gravel, creating a space that could be filled with water and used for lakes. Homes could then be built around the lakes, he said.

Three consulting firms are being considered for the study: Smith Environmental Group, Howard, Nussele, Tanenbaum and Associates, and another firm yet to be contracted.

MIKE FEELINGS

Whatever the consultants and Purdue decide, Clay Township residents are sure to have mixed feelings about the farm's sale.

Several residents already have objected to plans to develop a gravel pit on land just north of Lynnwood Farm owned by Conner Prairie Settlement, and they are now opposed to such an operation on Lynnwood Farm.

Others may support the sale of the land as providing increased property taxes to the township, taxes not paid by Purdue because it is a public institution.

But others may fear the loss of a recreational space that may be sold to developing land or commercial development.

Carmel News Journal
VOLUME 15 NUMBER 8
WEDNESDAY, FEBRUARY 20, 1980
It is a problem. Purdue’s Lynnwood Agriculture Research Center is letting public its question to stay as a farm or sell for housing or aggregate mining. It’s scary. I say as I’m at the farm: seeing it, smelling it, feeling it. But in Carmel, it’s easy to look at it as a potential increase for the tax base.

On a large scale: the earth;

—Centuries worth of work will be irrevocably destroyed by land “developers.”

—Our energy-intensive agriculture, which produces 1 calorie from 20 calories needs to evaluate itself or compare to China’s labor-intensive agriculture which produces 50 calories from 1 calorie.1

Fuel prices force our food prices up because of it.

—We are fast losing the efficiency and quality of food produced on once family-owned farms, now run by agribusinesses or “absentee landlords.”

—Our nation’s rural character is being forsaken in the rush to improve the cities and the highways. We see forbidding fences and metal barns.

1 Kern, Barbara & Ken. The Owner-Built Homestead

the problem
The greatest fine art of the future will be the making of a comfortable existence from a small piece of land.

—Abraham Lincoln

By drawing people out to the farm, respect for the organic process, that we are often left ignorant of due to our civilized education, will come naturally as we see more clearly our relationship to the processes.

I am proposing a working farm, one that "extends our heritage into the future." 2 Charles Lynn, a conservationist, thought something similar in 1942, perhaps when he gave the farm to Purdue, maintaining its present functions as a hog and cattle research farm for the university, I

description of project
THE BIOSPHERE

THE MOST BASIC AND OVER-ALL CONCEPT WE NEED TO SEE IS HOW WE ACTUALLY FIT IN THE SYSTEM OF THE EARTH.

INTERACTIONS INVOLVE:
THE SENSES
THE PRODUCTS AND WASTES
THE SHARING OF NATURAL ELEMENTS.

IN ARCHITECTURE, MULTIFUNCTION OR RESOURCE-SHARING CAN OCCUR IN THE FORMS: A. MATERIALS
B. SPACE
C. FACILITIES

A. NATURAL MATERIALS: VINES CAN SHADE INSTEAD OF PLASTIC OR METAL BLINDS OR SHADES.

B. A GREENHOUSE PROVIDES FOOD CREATES A SPACE AND PURIFIES THE AIR. RABBITS AND HUMANS PROVIDE FERTILIZER AND CO2 FOR PLANTS WHICH RETURN O2 AND FOOD.

C. A METHANE DIGESTER PROVIDES FERTILIZER, GENERATES GAS AND TREATS SEWAGE.

1 KERN, BARBARA & KEN
1. FORM AS A TOTAL:
SINGLE THRUST: CROSS-SITE CIRC.
VIEWS
SLOPE
SECONDARY ROUTES

3. MAN'S ZONES
MAN'S CIRCULATION

4. SMALL SCALE
WASTE USAGE IN FOOD PROCESSING

5. THE FOCAL POINT: MARKET
OF ALL CIRCULATION
BUILDING INTEGRATION W/ LAND:
OPEN-AIR (HYPOTHETICALLY)
PROTECTED BY SURROUNDING
ENCLOSED STRUCTURES
CANOPED AS EUROPEAN
MARKETS

MAN'S INTEGRATION W/ SYSTEMS:
FOOD & PEOPLE
FARMERS & CITY FOLKS

6. THE AXIS: INTEGRATION
OF MAN & SYSTEMS
IN A VERY VISUAL
WAY.

Food
Waste

circulation
concept
ON AESTHETICS
The monumental (in their blandness) farm buildings of today, results of serious-minded engineers and agriculturalists cannot be ignored by me, anymore than those old farmsteads of our heritage. Both constitute the vernacular and form as a result of function. As the Pilgrims adapted wood to buildings previously of stone, we are in a transition again and so materials might be one of the variables. The character of farming should surely be felt in the architecture and that can be extended into the future.

ON ENERGY
"Today we are experiencing deprivation because of our dependence on foreign oil. Is the next deprivation food? We must be self-sufficient. We have examples of it on all scales from the algae to the earth. The small farm must survive, meaning:

- Less environmental impact
- Less soil erosion
- Labor intensive
- Cheaper food

ON EDUCATION
My 14 year old brother goes to Carmel Jr. High, a mile from the farm. He "hates nature." Education must go outside the classroom, and outside of the man-made environment. The farmer and the city person aren't different beings as we see in Indiana between the 'hicks' and the... The suburbanites, architecture school, beyond all its elitist tendencies, opened my mind to this problem. I am just starting this other lifestyle which I think will be more integrated with ours in the future: to build your home and grow your food are necessities of survival.
THE SCENE OF THE MAGIC PLAYS WITH A DICHOTOMY THAT IS BETTER EXPLAINED BY THIS LIST OF CONTRASTING THEMES. ON A LARGE AND SMALL SCALE THESE HAVE RELATIONSHIP TO THE PHILOSOPHICAL AND ACTUAL BUILDING FORM:

**Organic**  **Technology**

**Vernacular**  **High-Tech**

**Human**  **Machine**

**Indiana**  **The World**

**Regional**  **International**

**Countryside**  **Suburbs**

**Earth**  **Man Made**

**Traditional**  **Futuristic**

EVOLVED TITLES DURING THE PROJECT'S SPAN:

1. Farm in the Suburbs
2. Future Farm
3. Outdoor Museum
4. Mud Tech
5. Ecological Testing Center
6. High-Tech Organic Farm
7. Paw Paw Acres (Dave Cole—suggested in the tradition of Carmel Suburbs)

the dichotomy
MAN'S INTEGRATION WITH SYSTEMS

- TRADITIONAL SPACE
- SYSTEMS - DIAGONAL
  SUBJECTS DIRECTION AND
  MATERIAL AND TIMES EFFICIENCY
- INTERACTION OF ACTIVITIES
  WITH CIRCULATION IS MAXIMIZED - BENEFICIAL FOR
  VIEWING AND PROCESSING

CONTRAST FOR EXCITEMENT
AND READABILITY

PLAN

MACHINE AND VERNACULAR

THE BUILDING'S INTEGRATION WITH THE LAND

FORM ACCORDING TO MATERIALS,
USE OF MATERIALS ACCORDING TO FUNCTIONS' RELATIONS
TO THE ENVIRONMENT

- EARTH BERM
- STONE WALLS
- WOOD CONSTRUCTION
- GLASS
- TRELLIS
- GRID

INCREASE OF INVOLVEMENT WITH THE ENVIRONMENT IS GRADUAL

ELEVATION

ORGANIC AND HIGH-TECH

TRANSITION

DICHOTOMY

concept of form
SOUTH ELEVATION

"HIGH-TECH" IMAGERY: GLASS & STEEL
EXPOSURE TO SUN & SOUTH WEST VENTILATION

NORTH ELEVATION

"ORGANIC" IMAGERY: EARTH
EXPOSURE OF SMALLER FORMS, TYPICAL OF FARM BUILDINGS
SHELTERING OF CAR PARKING FROM ROAD, FROM BUILDING
WIND (NW WINTER) PROTECTION

VEGETATION, VERY DIFFERENT IN EACH ELEVATION, GOES
BEYOND THE CAPABILITIES OF ARCHITECTURE, TO INTEGRATE
WITH THE FARM BEYOND.

building integration
Levels of man's involvement increases

a. Buying only, fast entry & exit

b. Buying communicating, different entities, use of the core on 3 levels

c. Buying earning, alternate routes

d. Learning, experiencing, by truck or foot, the true meaning in the ecosystem

Intensity of activity and numbers decreases

Market: large 20000 & open-air/sheltered

Core: chus multorum, wash greenhouse: eating sitting.
Elevator, ramp, upstairs office, communication
Meeting on individual, library & community
Reading, scales, outside decks: flexible
Look out point: viewing

Axis: directional circulation
Folk, systems, pod structure
See, touch, hear, smell
Read graphic info

Farm: as a continuation of the axes
4 a continuation of food processes

Beyond circulation: growing, processing, selling your own celery.

Man's circulation
CROSS-SITE PATH WITH A CHOICE TO ENTER MARKET OR LOOK-OUT POINT

HIKE OR TAKE FARM TRUCK TO UNIT FARMS
### Assembly Lines

<table>
<thead>
<tr>
<th>GROW ECO &amp; ENDO SPACES</th>
<th>ANIMAL</th>
<th>GROW</th>
<th>GRAZING</th>
<th>FISH PONDS</th>
<th>GOAT AREA</th>
<th>CHICKEN YARD</th>
<th>RABBIT HUTCHES</th>
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<tr>
<td></td>
<td></td>
<td>GROW</td>
<td>BEE HIVES</td>
<td>FIELDS</td>
<td>GOAT MILKING</td>
<td>COLD STORAGE</td>
<td>MILK TANKS</td>
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<td></td>
<td>PASTEURIZER</td>
<td>CREAMER</td>
<td>YOGURTIZER</td>
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<td>MILL</td>
<td>DRYING</td>
<td>BAKERY</td>
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<td></td>
<td></td>
<td>COLD STORAGE</td>
<td>MARKET</td>
<td>STORAGE</td>
</tr>
</tbody>
</table>

**Coding of zones relates this list to product plan.**

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**Fruits**
- Greenhouse
- P-Patches
- Fields
- Trellis
- Hydroponics

**Vegetables**
- Cold Storage Bins
- Clean
- Dissect
- Juice
- Dry
- Preserve
- Ferment
- Juice

**Packing**

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**Space needs**
<table>
<thead>
<tr>
<th>Source</th>
<th>Equipment</th>
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<tbody>
<tr>
<td>Wind</td>
<td>Windmills</td>
</tr>
<tr>
<td>Manure</td>
<td>Methane digestor, compost toilet</td>
</tr>
<tr>
<td>Grain</td>
<td>Still</td>
</tr>
<tr>
<td>Wood</td>
<td>Wood-burning stove</td>
</tr>
<tr>
<td>Sun</td>
<td>Material: glass</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Limitations</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind is scavenged</td>
<td>Battery</td>
</tr>
<tr>
<td>Plenty</td>
<td>Tanks</td>
</tr>
<tr>
<td>Available at site</td>
<td>Silo</td>
</tr>
<tr>
<td>Consistent for these applications</td>
<td>Stone fish tank</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Energy Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Products</strong></td>
</tr>
<tr>
<td>Wind electricity</td>
</tr>
<tr>
<td>Methane</td>
</tr>
<tr>
<td>Fertilizer</td>
</tr>
<tr>
<td>Gasoline</td>
</tr>
<tr>
<td>Heat smoke</td>
</tr>
<tr>
<td>Heat chemical catalyst</td>
</tr>
</tbody>
</table>
a. Flexibility of Structure

Additions through grid framework, facilities and spaces flexible to quantities and varieties

b. Technology

Simple, logical and ultimately fuel-independent, e.g., the sun's heat, gravity, wind's force for power, drying and ventilation, the earth's insulating capability

c. Conservation

Energy: use of waste to methane
Use of renewable resources: wind, wood
Materials: "" "" : Earth, stone and wood (from site)

d. Management

Purdue (possible grants from USDA as an experiment) co-operative, private ownership of workers

e. Labor (the workers)

Approximately full-time (can live on-site) and 15 part-time grade and high school students as "migrant" workers hypothetica1 payment by barter system (meals for work)

f. Products

Local & less commercial, e.g., paw-paws, persimmons, new states (after refining), e.g., carrot-cabbage juice, "organically" raised pepper jelly, fresh with no involvement of time

g. Use

Total usage & by more than just a farmer: locals (especially apartment dwellers) to grow, barter, learn, process their products, hire, picnic, etc. farmers to barter raw to finished products

Matters of # and other things or feasibility issues
PROJECT INTEGRATION WITH MY LIFE

"THEY SHOULD BE CONSIDERED AN INTEGRAL PART OF A CONTINUUM AND NOT AN END OR A STopping POINT." 1

PAST PROJECTS

LIBRARY, 3rd YR

OVERHEAD CIRCULATION ENTRY AS AN OPTION AFTER VIEWS INSIDE ENTRANCE.

UNDERGROUND HOUSE, 3rd YR

AXIAL PLAN TO PROVIDE SUN EXPOSURE AND BERNING.

INDY WHITE RIVER PARK, 4th YR

3-D GRID FOR ORGANIZATION AND IMAGERY: A CONTINUATION OF THE COUTNOWN

1 PAUL LAASE

2 THE UNIVERSAL TRAVELER

THESIS ITSELF

PAUL SAID ALSO TO USE THE THESIS TO EXPERIMENT, PRACTICE, DEVELOP, INCREASE SKILLS AND GROW. THOSE EXPERIMENTS WOULD BE:

A. COMBINING AGRICULTURE AND ARCHITECTURE, 2 VERY SIMILAR REALMS, THAT CONTROL NATURE FOR MAN'S SURVIVAL.

B. DEFINING IN VERBAL AND PHYSICAL FORM "THE DICHOTOMY" AND HOPEFULLY ACHIEVING THE BEST SOLUTIONS AVAILABLE.

C. PLAYING WITH THE RELATIONSHIP OF FORM FROM FUNCTION (AND BOB FISHER'S MIND):

D. FIGHTING WITH THE ADMINISTRATIVE AND PRODUCT-CONSCIOUS PHILOSOPHY OF THESIS: MAY QUALITY NOT LOSE OUT TOTALLY AND MAY I LEARN TIME MANAGEMENT....

NOTE TO THE FUTURE

TO THE PEACE CORPS I MUST GO FOR:

A. ADAPTATION TO AFRICA'S VERNACULAR AS A PUKE DESIGN CHALLENGE.

B. EXCHANGE OF LOW TECH SIMPLE, ENERGY-CONSERVATIVE IDEAS AND TECHNIQUES.

C. LEARNING BY BOTH SIDES (BY ME—MUCH).

AGAIN A REITERATION OF THE AESTHETICS, ENERGY AND EDUCATION ISSUES.

PROCESS ORIENTATION IS A LIVING INVOLVEMENT AND IS MORE HIGHLY PRODUCTIVE THAN AN ORIENTATION TOWARD PRODUCT." 2

the continuum
ASPECTS

A. PROBLEM AWARENESS

B. HISTORICAL SIGNIFICANCE

C. PRACTICAL APPLICATIONS

D. SOFTWARE (IDEOLOGIES)

E. DESIGN

F. ALL OF THE ABOVE

FOR ENDURING ME & MY "BABY" (OR BE IT MY "BROTHER", MY "MOTHER", MY "LOVER" AS HEATHER WOULD SAY) FOR

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THE FARM & FARMERS

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TOM SCHALLERBERGER, HAMILTON COUNTY S.C.S.

INDIANA DEPT OF N.R., INDIAN.

NOBEE LOWE, NATURAL RESOURCES, CHINA.

BUCKMINSTER F.

ANDERSON

SHERRY MAUREEN

LASEAU

DEAN

WYMAN

DAVE C.

KINGELEY

BLADE

FISHER

JULIE

SCHALLER

HENRY

WELLS

KURT

KOESTER

RUSSELL

EGGINK

HORACE PAARLEBERG, FURUKI,

MOM & NEWS CLIPPINGS (BAD TO)

INSPIRATIONAL & FACTUAL SOURCES
BUILDING TYPE ANALYSIS

EDUCATION
ENERGY
AESTHETICS

THESE THREE ISSUES HELP TO CATEGORIZE THE SIGNIFICANCE AND INSPIRATION OF THESE FOLLOWING BUILDINGS.

I HAVE TRIED DEALING WITH A DIFFERENT SCALE FOR EACH OF THE CRITERIA BECAUSE MY PROJECT ALSO DEALS WITH THEM:

RELATIONSHIP OF THE PARTS & THE WHOLE,
THE ECO- & THE ENDO SYSTEMS,
MAN, PLANT & ANIMAL & THE FARM TO CARMEL

EDUCATION — CONNER, PRAIRIE PIONEER SETTLEMENT
ENERGY CONSERVATION — THE AMISH FARM
TECHNOLOGY — CENTER FOR ALTERNATIVE TECHNOLOGY
PROTECTION — FARMHOUSE PROTOTYPE OF THE 19thC
AESTHETICS (FORM & FUNCTION) — GUT GARKAU, 1923 FARM
— THE BEASLEY HOUSE, 1930
EDUCATION: CONNER PRAIRIE

This is not 'education' in the scholastic sense of the word but a broader meaning of a function making contact with people.

1 POLITICS, COMMUNITY CONTACT
   HISTORY: 1836 FARM
   1969 LILY GAVE IT TO EAKLHAM COLLEGE
   EXPANDING TO A WORKING FARM

BENEFITS:
- PROTECTION OF HISTORIC BUILDINGS, FARMLAND
- MAINTENANCE OF A PUBLIC ASSET
- PROTECTION FROM GRAVEL MINING OR CONTINUOUS SUBURBS

2 BOUNDARIES & PROTECTION
   - INITIAL REASONS FOR SETTLING - SECURITY
   - NOW, ANOTHER FORM IN THE SUBURBS - CHARACTER MAINTENANCE

A MAN-MADE FORM: ROAD & NATURAL FORMS: RIVER, TREES

3. EDUCATION

CIRCULATION RE-ENACTS THE CIRCULATION OF THE ERA

RECENT NODES SUGGEST AN ITEM WORTH NOTING.

SKEW SCALE OF INDIVIDUAL FORMS AND THEIR RELATIONSHIPS MAKE EASY, VISUAL UNDERSTANDING OF THE ERA.

RECTILINEAR MOVEMENT CHANGES ABRUPTLY TO LET ONE 'FEEL' THE CHANGE.

BOB, ASSOC. DIRECTOR OF CONNER PRAIRIE
RON STILLER, ARCH. PROFESSOR
ENERGY : TECHNOLOGY : CENTRE FOR ALTERNATIVE TECHNOLOGY

1. IMAGE-MAKERS:
   a. LEAVE CAR
      WALK
   ENTRY AS A TRANSITION TO THE 'ORGANIC' CIRCULATION
   b. COPY OF AN ENGLISH VILLAGE:
      WORKABLE CIRCULATION REALITY TO THE 'CENTRE'

IMAGE-MAKERS GIVE A NEEDED IDEOLOGICAL APPEAL TO:
   I. INTEREST PEOPLE TO COME.
   II. PROMOTE CHANGE IN THEIR LIFESTYLES TOWARDS SELF-
       SUFFICIENCY. THEIR EMOTIONS AND SENSES ARE THE MAJOR
       FACTORS IN HOW THEY EXPERIENCE THE 'CENTRE' AND UTILIZE
       WHAT THERE IS TO LEARN.

2. RECYCLING IN ACTION:
   a. THE OLD FARM IN WALES IS MAINTAINED AS SUCH.
      INSULATION AND SOLAR PANELS (DO-IT-YOURSELF) ARE ADDED.
   b. PEOPLE DISCUSS THEIR IDEAS WITH OTHERS

3. RELATIONSHIP:
   a. THE CIRCULATION ALLOWS ONE TO SEE ALL PHASES OF
      ENERGY PRODUCTION AND USE IN THE CYCLE THAT IS TRUE
      TO ITS NATURE.
   b. THE SCALE ALLOWS ONE TO SEE 'IT' IN A SHORT TIME: A
      VISIT.

C. CIRCULATION IS CYCLICAL. IT DOES NOT WASTE TIME
   NOR SPACE.

D. ALL FORMS OF ENERGY:
   WIND
   SUN
   WASTE
   MANURE
   FOOD

SOURCE: THEIR PAMPHLET
ENERGY PROTECTION: THE 19TH CENTURY FARMHOUSE

THE FARMHOUSE, IN ALL ITS VERNACULAR NOSTALGIA, CHANGED LITTLE OVER THE YEARS DUE TO ITS EFFICIENCY AND STAMINA AGAINST THE EXTREMES OF THE MIDWESTERN CLIMATE.

THE ELEMENTS OF NATURE

SUMMER

SLEEPING:
- SUN IN THE MORN
- COOL AT NIGHT

FOOD STORAGE:
- AGAINST COOLEST WALL, OR IN BASEMENT

VENTILATION

2-STORY:
- LESS ROOF AREA TO GAIN HEAT
- STEEP ANGLE TO MINIMIZE HEAT GAIN
- LIGHT COLOR ROOF REFLECTS SUN AWAY

AWNING:
- STOPS DIRECT SUN

PORCH:
- ALLOWS AIR TO CIRCULATE AROUND THE BUILDING
- FOR A SUMMER KITCHEN: NO COOKING HEAT BUILD-UP
- FOR SUMMER SLEEP

LOUVERED SHUTTERS
- BLOCKS SUN
- ALLOWS VENTILATION

BALCONY (UPSTAIRS)
- AIRING BEDDING
- RUG SHARING
- SUMMER SLEEPING
WINTER PLAN

- Open placement allows maximum heat to penetrate
- Trees naturally do the same

CENTRAL HEAT source slows heat losses

ENTRANCE vestibule to stop cold air

ELEVATION

- Less roof area to lose heat
- Angle to maximize heat gain

CIRCULATION TO 4 PRO FIELDS

- Bed room
- Bath
- Kitchen
- Living room
- Dining room

PORCH
- Glazed and weatherboarded dead air space for insulation

DETAILS

- Sleeping loft uses heat from the days uses
- Greenhouse heated from the basement

- Interior not white
- Built-in cupboards
- Painted for protection

BOHLEN, JAMES. THE NEW PIONEER'S HANDBOOK

BRINCKLOE, WILLIAM D. "PLANNING THE FARMHOUSE." ARCHITECTURAL RECORD. JUN 1920. PP. 558-60
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"BECAUSE FOR ME THE ADVANCE BEGAN WITH THE REORGANIZATION OF THE OLD BASIS OF ARCHITECTURE ACCORDING TO THE NEW REQUIREMENTS OF A HIGHLY TECHNICAL AGE AND A NEW DESIRE FOR MORE LIGHT AND AIR, THE "NEW WAY OF BUILDING."

Hugo Haering
1923-4

CONCEPTS
STUDY OF RELATIONSHIPS:

1. ABOVE "NOT 'PLASTIC TREATMENT OF BUILDING MASS BUT DEVELOPMENT OF A FLOOR PLAN REFLECTS PRECISELY DEFINED FUNCTIONS,' AN 'ORGANIC' DESIGN PROCESS MORE SO THAN FORM.

2. RELATIONS OF ANIMALS TO FOOD:
   CIRCULATION
   CENTRAL DISPENSING
   A PLAN
   MORE ACCESS TO COWS
   S.A.

Arts and Architecture. Feb/May, 1960. FP 8-12.

5. ELEVATION
   CENTRAL SUPPLY
   OVERHEAD
   CIRCULATION

3. SECURITY
   OR SURVEILLANCE
   INDIVIDUALLY: NO CALVES CAN
   BE CAST INTO A CORNER

4. FUNCTIONS

5. STRUCTURE
   ZOLLNER ROOF
   (LANELE)

6. MAINTENANCE
   OF STYLE & FUNCTION
   TIMELESS DESIGN
   OF CONDITION
   LOCAL WOOD BRICK
   CONCRETE

FORM EASY MOVEMENT OF HAY

COLLECTIVELY:
ONE MAN CAN WATCH AND
FEED ALL 42 COWS, 23 CALVES

CANTILEVERED COWBARN:
WARM, FOUL AIR RISES, ESCAPES
LIGHT SPREAD TO MIDDLE

EXTERIOR PATTERN OF MATERIALS.
AESTHETICS: BEASLEY HOUSE, MONROE, WIS.

FORM IN RELATION TO TIME: MODERN DAY TRANSLATION OF THE NINETEENTH CENTURY VERNACULAR Prototype
"These forms have served these places for a long time so why discard them?"

FORM IN RELATION TO CONTEXT
STRONG FORMS:
- OVERSIZED PEDIMENT
- CUT OUT
- LARGE SIDE ENTRANCE
- MATCH STRONG GEOMETRIC SHAPES OF BARNs

FORM IN RELATION TO ITS INHABITANTS:

SCALE:
- SMALL-SCALE CLAPBOARD
- ROOF TRACERY
- LEADED GLASS
- COLUMNS
- LATTICWORK

COST:
- MATERIALS
  - CLAPBOARD
  - METAL SIDING
  - BRICK FOUNDATION IS CONCRETE
  - W/ BRICK PATTERN
  - COMPACT FORM
  - FEWER ENERGY LOSSES
  - FLEXIBILITY
- 2 FAMILIES: 3,580 SQ. FT.
- $52,000

FUNCTION:
- OWNERS: GOOD VIEWS
- SENSE OF OWNERSHIP
- FARMERS: EASY ACCESS TO THE FARM

BY HAMMOND BEEBY & BARBA
"REPLICAS" AIJOURNAL, MID MAY 1980, P. 200-1.

"BEASLEY HOUSE" PROGRESSIVE ARCHITECTURE, JUN 1980, P.
ENERGY: CONSERVATION: THE AMISH

A MIDWESTERN RELIGIOUS SECT OF 70,000, MANY OF WHOM FARM IN NORTHERN INDIANA, LIVE BY SIMPLE MEANS, GOD AS THEIR PROTECTOR AND A QUOTE SUCH AS:

"THE LAND IS WONDERFUL. THE MORE YOU LIVE ON THE LAND, THE MORE YOU LOVE IT."

1. CONSERVATION OF ENERGY:
   a. NO USE OF:
      - ELECTRICITY
      - FERTILIZER, PESTICIDES
      - COMPLEX MACHINERY
      - GAS
   b. LABOR-INTENSIVE INSTEAD:
      - MAN
      - HORSE
   c. USE OF RENEWABLE ENERGY SOURCES:
      - WOOD
      - PASTURE

   Thus, an easy-to-see cycle:

   WOOD → PASTURE → HORSE → MAN → POWER

2. CONSERVATION OF ARCHITECTURE:

   a. ADDITIONS ARE MADE TO THE FARMHOUSE FOR THEIR EXTENDED FAMILIES.
   b. LARGE, SIMPLE SPACES FOR FLEXIBILITY:
      - BARNs: LIVESTOCK
      - HAY STORAGE
      - PARTIES
      - SERVICES
      - HOUSEs: KITCHEN
      - IS LIVING & DINING SPACE.

3. CONSERVATION OF LIFE:

   a. "OPTIMUM SETTING FOR THE GOOD LIFE." LESS STRESS, NO DOUBT.
   b. "THEY MAY PROVIDE AN IMAGE OF THE FUTURE."
   c. HOSTETTLER, MOOK, "THE AMISH & THEIR LAND" LANDSCAPE. SPR 57.
   d. JOHNSON, STOLTZFUS, CRAUMER, "ENERGY CONSERVATION IN AMISH AGRICULTURE," SCIENCE. OCT 28, 1977
SITE STUDY
THE NEED TO PRESERVE

THE CHARACTER AND ACCESSIBILITY OF INDIANA'S FARMS

- Areas over 75% prime farmland
- Educational amenities: dairy farms, pickle farms, etc.
- Commercial amenities: markets, u-pick farms

But it is decreasing by 14 million acres/yr in our state.

The extent of present-day public use of our farms
AND THE RECOGNITION OF ITS BARNS—
LIVING BARN: EARNEST BURDEN

AN OVAL CORNERED ON SITE
Sources of Indiana Info: Preserving Prime Farmland Issues 
& Options, Francis Parker 1980
Division of Agriculture Pamphlets

Regional Precipitation

Average Monthly Total

Regional Temperature

Average Daily Max

Average Daily Min

Clay Township is located 15 mi. north of Indianapolis.

Central Lowlands

Clay Township has a 1980 population — 35,000
By 2000 — 81,005
Area 50 sq. mi.

The region
THE RESOURCE

SOIL IS VERY PLENTIFUL BUT IT IS NOT RENEWABLE IN THE SAME SENSE

THE FARMER'S OPINION

IT IS TIGHT, PRODUCTIVE AND HIGH IN POTASH.

BUT 5' UNDER IS A RICH GRAVEL DEPOSIT.

THE SOIL TYPES

FxC3:
FOX CLAY LOAM, 8-10% SLOPE

MnB1, C, D:
MIAMI, STEEP SLOPE, EROSION

OcA, OcB2:
OCKLEY SILT LOAM, 0-6% SLOPE

WE:
WESTLAND SILTY CLAY LOAM

ST:
SLEEPH LOAM

SH:
SHOALS, SEVERE FLOODS

1 BOB PETERSON

2 U.S. DEPT OF AGRICULTURE

3, 4 KERN, BARBARA & JAN THE OWENS BUILT HOMESTEAD.

TO UNDERSTAND ITS POTENTIAL AND NEEDS:

1. LEGUME-LIME, SOD CROPS
2. ROTATION-MANURE, ROW CROPS
3. NON-CULTIVATED SOD CROPS
4. CULTIVATED ROW CROPS
& its potential
SOURCE
WELLS
NO CITY SUPPLY

POWER: POSSIBLE GENERATING STATION FROM A GRAVEL PIT

POTENTIAL FOR A POND:
RAISE FISH, DUCKS, GEESE
WATERING LIVESTOCK
BEAUTY
FIRE PROTECTION
RECREATION

DRAINAGE
FLOODING PERIOD
IS BRIEF, DEC → MAY. ²

₇₆' WATER TABLE
₀ - 1' H.

FREQUENT FLOODING:
DRAINAGE NECESSARY. ³

SEE SOILS MAP
FOR DRAINAGE
DIRECTIONS

BUILDING DRAINAGE:
- USE OVERHANGS, HIP ROOFS
  FOR STORM WATER
- USE MINIMUM
  & MAXIMUM 5% SLOPES
  FOR CONCRETE FLOORS
  FOR ANIMALS,

U.S. DEPT. OF AGRICULTURE
SOIL CONSERVATION SERVICE

water
EXISTING:
CROPS, PASTURE
TREES
TO SHADE FARMHOUSES
TO BORDER FIELDS
IN GRAZING AREAS

TYPES OF TREES:
OAK
MAPLE
BEECH
SYCAMORE

POTENTIAL ENVIRONMENT:
PROVIDE:
BEAUTY, SMELL
FOOD & COVER FOR WILDLIFE

PROTECTION AGAINST:
WINDS THAT ERODE SOIL
EVAPORATE WATER
ANIMAL SMELLS
UNPLEASANT VIEWS, IN OR OUT
DUST, NOISE
STRONG SUMMER SUN

DESIGN:
FORMS SPACES, OUTDOORS
INDOORS
DIRECTS CIRCULATION
SHOWS ENTRANCE (BELOW)

ITS PRODUCTS CAN BE INTEGRATED INTO THE BUILDING PROCESS, NOT JUST EATING.

IT PROVIDES CHARACTER OF "NATURALNESS."

A SHADeD DIRT ROAD ON SITE

AGRICULTURE VALUE
(CORN, SOY, WHEAT, GRASS-
LEGUMES, HAY) ¹
1 → 4 (VALUE INC →)

TREE-CULTIVATION VALUE (BASED ON
SEEDLING MORTALITY, WIND-THROWN
HAZARD, EROSION & EQUIPMENT
LIMITATION) ²
a → c (VALUE INC →)

¹ U.S. DEPT OF AGRICULTURE
SOIL CONSERVATION SERVICE
1977

vegetation
Physiography
Mainly flat to slightly rolling except near White River and streams where abrupt changes occur.

Geology
Pre-glacial limestone bedrock underlies glacial deposits of clay, sand, and gravel.

Water
Clay Township lies within White River Basin. The 100-yr floodplain is used mostly for agriculture.

Land Use
Light industry and commercial will also increase tax base and encourage local employment. My proposal would do the same.

Area between arrows subdivisions low-med density single-family predominates, some condos, apartments. Housing is more spread-out past area shown by 5-10 acres average.

Carmel's existing edge Carmel's proposed edge: housing unless noted by aggregate mining. Possible schemes:

Clay Township Land Use Study, 1980. Purdue University

The results of the study are assumed for the extent of this.
RELATIONSHIP OF ECOSYSTEMS

ENVIRONMENT:
SUN ¹

WIND ²

NEIGHBORS' VIEWS & ACCESS
EXISTING:

STROLLING WITH THE VIEW BELOW FROM THE BACKS OF SOME HOUSES.

POTENTIAL: MORE WALKING OR BIKING AREAS, SAME VIEWS

ORIENTATION TO THE SOUTH.
HEAT-RETAINING MEANS:
- SOUTHERN GLAZING
- CLERESTORY
- GREENHOUSE
- TROMBE WALL

NOTE: IT IS NOT JUST ALL GAIN AND LOSE. INDIANA'S MILD CLIMATE IN FALL & SPRING IS ENOUGH TO ASK FOR "GRADUAL" IN TO OUTDOORS SPACES.

MATERIALS:
- R VALUE WALLS
- VEGETATION, DEAD AIR SPACE
- MASSING, LESS S. AREA

UTILITIES
- GAS
- ELECTRICITY
- TELEPHONE

² SECOND YEAR LANDSCAPE STUDIO, OMAR FARIQUE, SITE ANALYSIS, LANDMARK WEST, 1980.
RELATIONSHIP OF ECTO & ENDO SYSTEMS

ON THE SCALE OF THIS PROJECT: CIRCULATION

AND ON LARGE SCALE: ENVIRONMENT

BOHLEN, JAMES. "ENERGY MOBILE." 1975
Making use of the assets of the site allow layouts like these that have worked a long time:

- Animals must be down wind of man's functions.
- Shadows in feed lots prevented.
- Wind protection
- An entrance not too long to flow.

As well as structures: materials from the site can be interrelated. Wood gravel → concrete stone (nearby)

"OLD BARNs DON'T DIE YOUNG" 1

"FORTHRIGHT EXPRESSION OF FORM DEVELOPING OUT OF A UTILITARIAN FUNCTION." 2

"ANOTHER EXAMPLE OF 'ARCHITECTURE WITHOUT ARCHITECTS'." 3

THE PLANS ON THE NEXT PAGE SHOW RELATIONSHIP AMONGST THE GROUPINGS OF EXISTING BARNs. SOME OF THE OLD BARNs NO LONGER FUNCTION AS MORE THAN STORAGE, AS THE NEW MECHANIZED ONES ARE ADDED.

THE OLDEST BARN, GROUP 2 : 1900, ABOUT, IT HAS HAND-HEWN BEAMS THE OVAL CORN CRIB IS BEYOND.

KEY TO THE FOLLOWING PLANS

- ENTRY TO FIELDS
- FARMERS' HOMES
- NEW UGLY BARNs
- ORIGINAL BARNs
- SUBJECTIVE VIEW OF THOSE TO MAIntAIN

EACH FARMER NOW WORKS A DIFFERENT PART OF THE TOTAL FARM AND KEEPS HIS FAMILY AT THE JOB SITE.

KEY TO SITING

A. IMAGE : NOSTALGIA AND EVERYTHING GOOD
B. FORM : A DESIGN TOOL TO COMPLEMENT OR CONTRAST
C. INTEGRATING NEW MATERIALS & FUNCTIONS CAN PRODUCE A CHANGE LIKE THAT OF THE COLONISTS IN A NEW ENVIRONMENT.
D. SYMMETRY, USE OF THE 45° ANGLE, PROPORTION IN ALL PLANES OF 1:6:1

4 ME
2,3 BURDEN, ERNEST, LIVING BARNs 1977 P.3.
MAIN GRAIN PRODUCTION BARNs

HORSE BARN

GRAIN, HAY STORAGE

124th STREET

FIRST GROUP

NORTHWOOD HILLS
STRUCTURE
THE INTERIOR OF THE LARGEST BARN OF THE MAIN GROUP:
ENGLISH GAMBOREL

ELEVATION OF EXPOSED WOOD ≈ 110' OC.

CEILING PLAN

EAST ELEVATION
HOG BARNs

- Neuter hogs
- Sows
- Separate fields
- Sows shelter
- 1930 hogs
- Incinerator
- Corn crib
- Corn
- Market loading
- 1900 dairy barn
  - Now: hay, a horse
- 126th street

SECOND GROUP
CATTLE BARN

CORRAL

131ST STREET

THIRD GROUP
To evaluate the problem-solving process easily, it is better to be regular and incremental than irregular or occasional. Since we forget the major portion of our experience it is better to assign value as we go instead of only when we reach home.
GOALS

TO RETURN TO A CLOSED CYCLE

I. We will have to educate nature to stay in control

2. New crops

3. New breeds

TO INTEGRATE OURSELVES IN THE BIOSPHERE

TO USE IN ALL WAYS POSSIBLE:
PUBLIC COUNTRYSIDE

ECOLOGICAL TEACHING TALKING

RELAXATION

ENERGY, ECO-INDUSTRIALIZATION OF ECO'S

RHYTHM

FOOD: OUT-ECO WORK

ENGINE: COWS WORK FOR FOOD: A CELEBRATION OF THAT GREAT LABOR
RESPONSE TO SITE & CLIMATE

PASSIVE SYSTEMS

FORMATION AS...

TO IMAGE CODING

FORM AS...

TO HISTORICISM

MAN

ORGANIC FORMS OF NATURAL FUNCTION

ORGANIC MENTALITIES OF NATURAL FORM

MAN'S CONTROL OF NATURE = A FORM

FUNCTIONAL ASPECTS

SUN

AIR

GREENHOUSE

ROOF POND

SOUTH WINDOWS FOLLOWING THE CLIMATE

MAN'S DIARIES AND RESEARCH

LIVING

COLD AIR

WIND CIRCULATIONS

THERMAL MASS

LOCAL RAIN - BANKING TOWARDS SOIL
Plants buffer different functions yet man, animal & plant interact at all nodes on the farm.
THE FOCAL POINT, THE MARKET, IS ALONE. AGAIN PLANTS BUFFER. MAN IS SEPARATE.
FUNCTION THAT TIES MAN, ANIMAL & PLANT-FOOD PRODUCTION

EATING AS THE FOCAL POINT
THE CELEBRATION OF
(OR AFTER) WORK

INTENSITY OF REFINEMENT
Eating as a focal point, the final stage of food processing & its relationship to the farmer, according to time & place.
MARKET AS FOCAL POINT
SYSTEMS AS ZONE-GIVER,
FORM-GIVER
BIOSPHERE ON TOTAL SCALE