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Abstract

Hillside Commons: a cohousing development

The focus of this thesis centers on the role of the designer in a cohousing project. Facilitator, orchestrator, and mediator are all roles the designer must accept as a professional within the participatory design process. A desired site, potential applicable codes, and the global, regional, and local environment, present tangible resources for the early stages of design. The most important resource remains intangible and that is the users themselves. Their ideas and or definitions for community along with their feelings about privacy combined with existing or desired routines make listening the most important tool available to the designer. The focus of all concerned aims at developing a cohesive intentional community design.

Facilitation is achieved by listening to the needs and concerns and translating them into ideas. Success of the participatory design process depends on the dynamics of group communication before it can be realized in three-dimensional form. Mediation between group members initiates the designer into the process. The succeeding development of a preliminary program marks the first phase of the process for the designer.

Phase two for the designer is marked by the purchase of the site. Theory for passive solar design can be given real numbers. Code compliance no longer has to be second guessed. The orchestration of actual site analysis and code compliance can now be combined with the preliminary program.

The combination of phase I and Phase II will eventually bring both the designer and the cohousing group into the final phase of the design process. When the final design phase begins all users need to understand the constraints and allowances of the site and the general conditions of the preliminary program. Once agreed to, physical design issues are less tedious and more accessible. Arriving at a group consensus on the final design acknowledges the efforts of all involved. The design consultant’s job may continue with construction documentation but the participatory design process works efficiently and effectively, more often than not, where professional consultation assists the process.
The Wetlands Update
A Publication of the Integrated Environmental Curriculum
Sierra Club Wetlands Project • Indianapolis Zoo • U. S. Fish & Wildlife Service

City of Bloomington, IN

My Dream Cohousing Community

Research

Building Permits

Homeowner's Guide to...
Cohousing, (shortened from cooperative housing), is characterized by consensus government, although other forms of decision making have been used. Members acknowledge the need to return to a more community oriented environment where safety for the very young and very old concerns everyone. Common values define quality of life as a balance between privacy and the community experience.

The process for developing a cohousing community varies from group to group and can have a working time-frame of one to six years depending on the commitment and organization of the members. Detailed stages are outlined in the Process Outline included in the appendix. Generally, the process begins with preliminary organizational meetings to create interest and formulate shared ideals. Schematic design does not begin until after site selection. It is the contention of this thesis that schematic design should be inclusive with site selection but acknowledged that time and budget do not always allow for this. The addition of professional consultants for schematic design can provide accessibility to an otherwise overwhelming design process and completion of a definitive built environment.

Due to time frame constraints this thesis project will proceed as an idealization of the Bloomington Cohousing group. Unfortunately the group is in the preliminary organizational stages leading into schematic design and is as yet without a definite site. They have been meeting once a month for over a year now. Currently discussion has reached a deadlock on site preference. One member's rural site that could be purchased by the group, or they could purchase an urban site close to downtown Bloomington that would allow access to jobs and the amenities of a larger community. The prospect of breaking into two groups and utilizing both sites has been under discussion. The rural site could provide retreat facilities for the group.

Consensus, their tool for decision making has not been exercised much beyond establishing common values. They have accepted my services for the purposes of understanding the challenges of their pending design process. Consultation with existing group members throughout thesis design renders is intended to restore authenticity to the program from which it is based. However, no contractual agreement for services has been made, therefore, no part of this project is binding to any party.

Those cohousing projects that move into a construction phase within a two year or less time frame will have on average had a professional consultant on staff from the schematic design phase through site selection so that objective choices can be made. The importance of obtaining professional design consultation cannot be over emphasized and has been a debated issue for the Bloomington group. Budget constraints do not always allow for this as in the case of my surrogate client, therefore it is hoped this project gleans benefits for all concerned.
Cohousing: Getting Started

Community awareness workshops are the most effective tool for introducing a community to cohousing. They can be held in a library or school auditorium but wherever the meeting convenes the atmosphere should be non-segregating and the facility easily accessible to the community.

Advertising in local papers and on the computer networks can create a stronger interest when geared toward cohousing’s goal of offering an alternative to suburbia without losing vestige of the American Dream of private ownership.

The cumulative efforts of the introductory workshops will be to alleviate the myths of cohousing and encourage interest. (Cohousing is not communal living.)

Once there are enough parties willing to make a commitment to cohousing development, then the workshops can be turned over to regular group meetings geared for the actualization of a compatible cohousing group. The meetings formalize into what is called an Umbrella Group. Meetings for the umbrella group remain general in purpose, composing a general mission statement and ascertaining potential for cohousing within the community.
The efforts of the umbrella group can produce resources for smaller groups at the neighborhood level known as core groups. Some of these resources can explore financial avenues available for project assistance and budget financing both in the private sector and in government.

The success of the core group depends on the clarity of the group’s goals and their willingness to meet the challenges that lay ahead. Specific goals can be decided upon by group consensus with the aid of the questionnaires during programming. Questionnaires should include a one day diary of routine activity kept by each member so that activity needs can be compared with one another. Cognitive mapping is a good tool to discover how each member sees their community, by how they travel through it in their mind’s eye. What they see or do not see could make a difference in the organization of the site. A bicyclist has different needs than a walker.

Potential themes to stimulate group discussion might be to ask for ten words or less to define ‘My American Dream...’ or to ask ‘Where will you be when’. The former serves as a means to understand individual goal definition, and the latter focuses on community goal definition. The delicate balance of privacy and community during group meetings has been proven to be best served by a professional design team.

The most sensitive issue for cohousing in America revolves around privacy and financial disclosure. In order to determine a financial structure, it is important to understand what group resources are. This is done with utmost discretion. No one is comfortable revealing their assets. Predetermined financial commitment options can be presented to each member from research done in areas of interest by the group. Homeowners association, cooperative, rehab risk development, and more. A focus on affordability may or may not preside over each option. Regardless, personal investment takes precedence within the private dwellings.
Realization of community continues long after they occupy their site. Site selection, although a major consideration, is only one of many major commitments to challenge both the community and the individual investor. There will be numerous committees to join before during and after construction. Pre-construction has group maintenance committees who will keep records and minutes of the group and its cohousing project. Research committees will investigate options for site, construction methods, financial strategies, and consultant referrals. During construction there will be site maintenance committees, possibly sweat equity crews, and continued group maintenance as well as liaisons between contractors, neighbors, and the group. Post construction committees will have the ongoing task of realizing the cohousing mission statement in the day to day lives of all members.

Regular meetings nurture the group's potential for consensus government allowing for the opportunity to prioritize individual goals as well as group goals. Documentation of meetings aids in discerning the group's dialog after the meeting clarifying individual communications and eliminating redundancy. Once the group establishes its' goals and workable dynamics the real task of realizing their American Dream becomes an exploration in community and commitment.
Cohousing is more than a built environment. It is a community environment with a dedication to investing in the quality of life originating from good health, prosperity and the pursuit of happiness. From its’ inception a cohousing group engages in concentrated participatory design efforts.

Regards for the surrounding community environment are a priority. Considerations that can guarantee open lines of communication would be to extend an invitation to construction up-date meetings to non-members. Also any ‘how-to’ workshops for the cohousing group would be ideal workshops for youth group field trips. Documenting the entire process provides a great learning tool for the area. Most importantly, investment in local services reflects a recognizable interface between the community at large and the intentional community. Last but not least, being patient can always avoid friction, intervention in neighborhood objections should always be made with provisions for inclusion in the process. Open lines of communication recognize the surrounding neighbors as extended members of the group.

Success can be monitored by the growth of the cohousing community. If properly designed, accommodations for growth were provided. New Member Applications should not be much different from the start-up questionnaires and surveys. The main difference will be how a new member wants to respond to the pre-existing conditions of a cohousing group. Instead of how well they fit in, the question might be how well does the group fit them. Once involved, group dynamics allow for changes to be initiated by any member as needed.

Interest in cohousing is growing in the United States. It is helping to change the way people think about community. Investment in cohousing allows for a person take part in the design and construction of their own dream home, but also of the immediate neighborhood in which they will be living. It breaks down the barriers of the isolated suburban castle by recapturing an era where are not afraid to invest in their community as well as their privacy.
**Muir Commons**
Davis, California
26 Units
Group Inception: 1988
Completed: 1991
Common House: 3,670 sq. ft.
(McCammitt, pg 211)

**Winslow**
Bainbridge Island, Washington
30 Units
Group Inception: 1989
Completed: 1992
Common House: 2,500 sq. ft.
(McCammitt, pg 211)

**Nyland**
Lafayette, Colorado
42 Units
Group Inception: 1988
Completed: 1993
Common House: 6,500 sq. ft.
(McCammitt, pg 211)

**Cohousing site organization:**
Light-weight concrete *Pearson, pg. 67*

**Construction Method:** *Roofs*  
desired design R-Value = 35

Vaults and Domes *Khalil, pg. 122*
Straw Bale load-bearing (McCammit, pg 211)

Adobe (Steen, pg. 139)

Straw Bale in-fill (McCammit, pg 211)

Construction Method: Walls
desired design R-Value 35-41

Scored Concrete (Steen, pg 139)

Construction Method: Floors
desired design R-Value 18
Social Constructs

Bloomington Cohousing has accepted the role of surrogate client. The group has been meeting without consistent professional consultants for three years now and has only recently decided to locate on an urban residential block. Membership enrollment for the group fluctuates between four and eleven households. Enrollment of between eleven and twenty households is the desired goal in order to finance the purchase of a site and retain a professional designer or team.

The unavailability of adequate group members requires the simulation of a core group of twelve households with only four representing actual members of the Bloomington Cohousing group. The program includes expansion capabilities to total thirty units beginning with twelve residences. The group intends to operate and or administrate start-up businesses on the site, preferably within the common house. Most would be service oriented with minimal non-group demands upon the site for parking, etc. All members prefer walking to bicycling, and bicycling to cars, and none are happy with the mass transit system of Bloomington. Moving around the site depends on this hierarchy where the pedestrian takes precedence and cars present a strong design issue that wants to be as anonomous as possible.

The thesis core group shall henceforth be referred to as Hillside Commons. Their thesis statement defines community as the gathering of individual uniqueness to share in the possibilities of tomorrow, without hurting anyone. They are each already strongly involved in the basics of community spirit, taking part in the Only half of the original Bloomington core group membership are local to the region but all expressed a strong attachment to the area and see themselves enjoying long life as cohousing members.

Hillside Commons' primary goal centers the community as an environment with inter-generational and cultural diversity. The simulated core group will represent a cross-section meeting this goal. A breakdown of the group by ages includes: sixteen adults, ages twenty-five to sixty-four, two teenagers, eight elementary school age children, and four preschoolers. Two households are expecting. The average income runs just above twenty-five thousand annually. One member is semi-retired and moves about with an ambulatory disability. Professions are diversified and include law, education, business management, nursing, accounting, homemaking, natural resources, computer programming, photography and carpentry. Two members work out of the home. All desire the home to serve as a place of rest from the days activities.
Pre-Design Comments

Design consideration:

"...innovate flexibility in the wall system to allow for growth".
- Assoc. Prof. Andrea Swartz

Presentation point:

"Layout of concepts must relate to site views".
- Prof. Jack Wyman

Code compliance, etc.:

"-Planned unit development in Indiana requires twenty-five acres then the zoning can be side-stepped.

-Protected environmental elements might allow concessions for other amenities.

-Quest: consider ways people want to relate to the environment and ways the environment can relate to users."
- Prof. Dan Woodfin
The *Hillside Commons* project is sighted on a piece of property which lies on the fringes of the Bloomington urban fabric. It was chosen to reconcile the group's division between locating on rural acreage or in an urban environment. The property is nearly one half mile long, and half that in width. It contains extensive greenspace in the middle of medium to high density housing. The downtown lies only a few blocks away. Infrastructure dead-ends perpendicular to the North and East property lines at three separate locations.

**Opportunities** for extending the scope of the project can be made available by a manufacturing plant occupying the west end and suffering from down scaling. A television station sectioned off by a chain link fence on the north boundary towards the center is to remain. A large family estate looks out from the top of the hill on the eastern half of the property rising thirty-six feet above the Southwest corner of Hillside Avenue and Everett. Hillside Avenue borders the southern edge. There is a large stand of trees dividing the property in two. Most are over one hundred years old. Younger plantings border the property leaving the hill to rise up out of the woods with sculpted lawns and a crown of aging pine.

**Consensus** decides major design elements and involves strategies for determining responsible attention to the environment by means and methods of construction as well as not neglecting affordability. Concern for guarding against the image of pieced together homes using recycled mismatched materials was unanimous. Another concern voiced desire for sensitivity to how the site is used as well as how the users move about on the site, at any age.

**Site organization** centers on the existing residence to be used as the Common House. Skewed off access from the North-South orientation of the residences, the common house maintains a formal relationship with the site. The residential units although oriented on the same grid relate informally to the site accenting the curves of the hillside. Water treatment is located in the Northeast corner. Minimal extensions onto the site can produce peripheral parking without losing the enjoyment of the greenspace.

**Renovation** of the existing estate accommodates common facility needs as well as simultaneously providing workshop space and temporary living quarters for members on work crews. Progress can be readily monitored by on site administration. The only additions to the existing structure will be a South facing solarium along the extent of the two story section of the house and a glazed airlock entry at the main North entry. It will be an amenity for both the inside, allowing natural heat gain, and the outside, to soften the impact of the common house against the smaller units with reflective glass instead of existing heavy stone veneer. The solarium will also allow for visual access to the facing playground area aiding in child security measures.
The **Common House** for Hillside Commons is not unlike a community center. It will be a focal point of the community providing gathering space, shared dining, and an array of services to help the community function in a healthy and productive manner. The strength of the community lies in the quality of life experienced in the privacy of each individual home but is reflected in the organization and operation of the common facilities. Designated spaces are allocated in the Program Outline with square footage assigned accordingly.

**New Construction** includes clustered single family residences, and a gray water treatment facility on site. The units are designed for passive heating and cooling. Even though many members would like to go off-the-grid entirely it was decidedly too costly to include in start up costs.

**Passive solar energy** will be supplied by individual South facing solariums directing heat to radiant floor systems. Straw bale infill for the box truss wall system provides more than adequate R-40 values. The roofing system will be a standard truss system with major considerations for preventing unwanted heat gain or loss as well as providing adequate ventilation with operable clerestories and ridge vents where truss work is soffitted. Curved and wing walls will be wind oriented and fenestrated to ensure natural summer ventilation and winter protection.

**Private residential units** will share a common wall and be in clusters of three fanning out informally from the common house. The facades have separate orientations. One facade faces downhill. The views looking downhill, whether North or South, will be out of curved openings onto informal gardens. The other side facing the pedestrian corridor where rectilinear paths outline more formalized geometric spaces for gathering, walking, playing, gardening, and resting. Greenhouse additions will be optional to private garden space. The two bedroom unit will be representative as a study model.

**The pedestrian corridor** connects the private and public spaces. It balances the formal geometry with the informal lifestyles. The corridor also serves as access for emergency vehicles. Parking and vehicle access is limited to the North and South ends of the site so that child safety and the natural environment can be preserved through the center.

**Additional amenities** for the project include the consideration of back-up geothermal heat pumps. All units will be designed with composting toilets, and will be connected to the Aquatech gray water treatment facility located on the North side of the site. Above ground water distribution for runoff is planned through a series of falls and small ponds to a wetland habitat at the North edge adjacent to the treatment plant. It is hoped that the water course instill an understanding of natural processes by way of the visual connection between the public and private spaces to Aquatech.
Program Outline

The program is outlined according to potential phases of construction. Although the outline is not intended to function as a final directive, it offers the client a comprehensive schedule of events to sum up the scope of the project.

Phase I

A. All site work is to be sensitive to existing landscape
B. Infrastructure supporting construction is pre-existing and will provide access to new perimeter parking to be distributed along the west and east boundaries.
C. Complete site work will be provided by client to be outlined in Phase III

Phase II

A. Renovation of existing residence will provide common facilities:

1. Community Dining 750 sq. ft.
2. Commercial Kitchen 300
3. Workshop 400
4. Meeting Room 450
5. Guest Rooms 720 (4 at 180)
6. Office Space 300 (2 at 150)
7. Storage Space 300
8. Daycare 440
9. Teen Room 320
10. Reading Room 180
11. Laundry(s) 220
12. Restrooms 160 (4 at 40)
13. Solarium 400
14. Pool 1000
15. Exercise Room 500

Total Square Footage 6780

Total sq. ft. avail:
basement 1000
first floor 4120
second floor 2140
attic 740
Phase III

A. New Affordable Unit Construction will include 18 private units of straw bale construction with south facing solariums for passive solar gain distributed through radiant flooring. Amenities for the private units include: composting toilets, operable clerestory windows, private garden terrace, optional greenhouse on end units, access to pedestrian corridor, access to community gardens and bike trail, and perimeter parking. Emergency access to common facility or units can be gained along the pedestrian corridor or bike trail.

1. one bedroom unit...700 sq.ft.
2. two bedroom unit...940 sq.ft.
3. three bdrm unit....1250 sq.ft.
4. four bdrm unit......1500 sq.ft.

B. New Construction apart from new units and Common House renovations include Aquatech water treatment, a gray water treatment facility situated at the bottom of the hill on the Northeast corner of the site.

Phase IV

A. Complete site work for pedestrian corridor

B. Complete site work for children’s playground

C. Install finished landscaping designed around water treatment facility

1. brook and pond sequence
2. wetland habitat

D. Install community gardens and orchards
Site Analysis

Downtown  Med. Density Residential  I. U. Campus  Mall

Hospital

Industry

High Density Residential  South Highschool  Nashville / Lake Monroe

Hillside Commons
Community Interface
Common House Renovation

Plan
Section
through dining and North patio garden with optional atrium extension / play area
Private Residence
2 bedroom
Exterior view
South pedestrian corridor entry
Interior view

Garden entry and stairs
Exterior view

Garden entry

30
Interior view
kitchen to solarium
Interior view

dining and study space
Interior view
bedroom with attached greenhouse
Exterior view
wrap around porch and greenhouse
Wall Section

Hybrid straw bale system
Isometric view
There exist multiple layers of design issues within this project requiring prioritized focus that in no way minimizes the importance of any one issue. Design layers depended on first establishing cohousing as a viable design arena for the professional consultant and outlining a process for this interface. Unfortunately this thesis was unable to experience the full potential of the outlined participatory design process. The surrogate client is serving as a testing ground for the workshop exercises with results pending.

Subsequent layers normally dependent on the participatory design process were left open to the design discretion of the thesis. This had its advantages and disadvantages. The advantages allowed for unhindered research into the cohousing strategies, straw bale construction systems, consideration for potential expansion, site selection, wetland research, and passive solar strategies as retrofit and in new construction. All had to take place within the otherwise limited time constraints.

Organization of the Common House was also required but with minimal access to research of the existing structure. There was a straw bale construction site visit in Oldenburg Indiana. This led to an invitation to present straw bale construction to AIAS. Future involvement in the actual construction of a straw bale structure is being planned for this summer in Bloomington Indiana based on the two bedroom unit. The potential for expanding a straw bale unit was provided through post and beam construction using the bales as infill, there by removable. Open plans using soji screens and partition walls to separate the spaces as needed with plumbing cores centralized within the unit but adjacent to solar gain also accommodates expansion.

Schematic design centered on site organization with design development focusing on the two bedroom unit intended for one of the members of the existing Bloomington Cohousing group, Marian Sinclair. Otherwise, minimal program input was obtained from the surrogate client with only a token of curiosity in site selection due to their own stage of development as a group. The academic schedule limited involvement in a start to finish design process but requests for use of thesis results as reference materials during the client’s on going process have been granted.

Site selection, analysis, and organization brought up challenges in environmental issues as well as the challenge of positively responding to the surrounding neighborhood. Environmental issues involved the placement of new construction around the existing estate in a manner conducive to water conservation, minimal land disturbance, and the addition of a grey water treatment facility. The amount of greenspace sheltered by the estate is atypical to the surrounding neighborhood and offers the opportunity for new residences to preserve this greenspace and save it from unnecessary over development.

Epilog
Clustered housing presented a logical solution to saving the greenspace currently preserved out of ostentatious reasons rather than conservation. With more user friendly attitudes the greenspace could continue to encourage natural habitats such as a micro-wetland. Such use of the land would benefit the larger community by reinstating nature as a good neighbor to all. A sensitive design for drainage of the rainwater runoff from the parking and rooftops can adequately supply terraced gardens. The wetland habitat is pre-existing on the north edge of the site but is a suppressed unwanted element among the highly manicured lawns.

One solution for land use conservation was to place the residences as close to the house as possible so that the required plumbing would place minimal demands on the site. In essence the units became the moat around the castle. During a preliminary presentation one point made sited too much focus on the estate as a center of community activity only served to idealize the statement already being made by this estate isolated at the top of the hill. The view maintained that the scheme still gestured alienation to its neighbors regardless of the removal of the chain link fence. The Common House is the center of community activity but the main focus of this thesis is to balance community and individual privacy.

The final scheme for the new units pulled them linearly along the ridge adjacent to the house but allowing more space for the corridor and drawing the new units closer to the eastern edge of the site and closer to their existing neighbors. The connection between them and neighboring residents becomes the pedestrian corridor. The vehicular street turns to access parking on either side but the dead end is no longer. The streetscape continues up a well lit and accessible pedestrian corridor lined with low to medium plantings. An unobstructed view is offered down either side of the hill between units for early morning or evening exercisers.

The corridor occupies the entire East West ridge line of the hill with the intent of neutralizing the dominance of the common house. This is accomplished with the similar formal rectilinear geometry. However the placement of this geometry in informal non-regular sequence identifies it with the informal geometry of the units. The common house remains visible from every unit,(a suggested strategy for maintaining member commitment to community).

The units cluster into groups of three and are situated so that no one unit is cut off from both morning and evening daylight. The party walls minimize labor and costs, but the clustering aids in distributing the drainage system through the site to appointed destinations. The units are set into the crest of the hill opposing one another along the north and south slopes so that all have access to natural ventilation.
Bloomington Cohousing has chosen an urban location and is looking at residential blocks close to the downtown with existing residences that can be incorporated into cohousing. They will be following the lead of N Street Cohousing in Davis, California, a group that slowly acquired a city block through purchase and lease and removed back yard fences for a larger common greenspace. An HF1 (Housing Futures Institute) charrette in Bloomington, three days in February allowed me the opportunity to design and present a quick study of a Cohousing development. Members of the Bloomington Cohousing group attended the presentation. The design explored potential for the group’s desired residential block using an existing church as a Common House with new construction providing rental units for the group as a means of income.
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I. Community awareness workshops- “What is cohousing?”

   A. use non-segregating facilities to hold meetings
      1. library
      2. school auditorium
   B. advertise
      1. local newspapers
      2. create a home page on the WWW (web network)
   C. present community opportunities in cohousing
      1. gain interest
      2. alleviate myths
   D. enlist successful consultants for presentations
      1. Check the Net (extensive consultant lists to comparative shop)
      2. local professionals in areas of interest
         a. construction industry
         b. natural resources/permaculture
         c. passive/active solar
         d. alternative technology

II. Organize Umbrella Group- to be a resource for smaller core groups

   A. formalize general mission statement
      1. ascertain community potential for cohousing
         a. membership opportunities- ‘Private space/Community place Matrix’ survey
         b. determine community involvement potential- ‘community activities’ survey
   B. explore financial avenues for project assistance and budget maintenance
      1. private sector
         a. neighborhood development grants
         b. small business loans/grants
         c. lender financing
      2. government
         a. adaptive reuse
         b. historic preservation
         c. urban renewal
         d. matching grants
III. Organize Core Group(s) - recommended ten family min., twenty-thirty max

A. schedule regular meetings
   1. govern by consensus
   2. remain goal oriented

B. formalize specific mission statement
   1. individual expectations and needs
      a. explore values, experiment with consensus
      b. define existing personal comfort zones
   2. community expectations and needs
      a. test group dynamics with posed scenario and responses
      b. define community comfort zones

C. prioritize goals
   1. individual goals
   2. community goals

D. determine financial structure
   1. community financial organization
      a. housing association
      b. cooperative
      c. corporation
   2. private financial commitment
      a. individual mortgages or available assets

E. establish committees
   1. pre-construction
      a. group maintenance
         - workshop organization
         - process documentation
         - financial organization
      b. consultant interviews
      c. site research
   2. construction
      a. sweat equity crews
   3. post-construction
      a. work committees

F. invest in a site
IV. Participatory Design Process

A. built environment
   1. hire professional consultants
      a. facilitate participatory design
         - common facilities
         - landscaping
         - private unit
      c. mediate
         - private/group needs
         - environmental needs
         - construction methods
   d. develop construction schedule

2. engage in balanced design of site for
   a. surrounding community interface
   b. group interface
   c. family privacy
   d. environmental sustainability

B. community environment
   1. be considerate
      a. open construction up-date meetings to non-members
         - ‘how-to’ workshops
      b. invest in community services
   2. be patient
      a. document process to offer learning tool
      b. intervene neighborhood objections with inclusion in the process
         specifically addressing complaints

V. Post-Construction New Member Applications

A. administer questionnaires/surveys
B. allow for guest privileges
C. provide transitional rental spaces
D. keep regular meetings open to greater community

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Workshop Exercises

Cohousing
The A B C’s of Community - an activities survey

Please rank all community activities in order of importance to you:

1. Very important
2. Somewhat interested
3. Not concerned

- Attend community gatherings (religious services, community planning forums, etc.)
- Buy local produce from farmers markets
- Correspond with family and or friends
- Dine out at local restaurants
- Exercise your right to vote
- Frequent small local businesses
- Give donations to the needy
- House decorate for community celebrations (holidays, parades, etc.)
- Invest in community programs (civic theater, symphony, children’s museum, PBS...)
- Join a community based organization (YWCA, Red Cross, Big Brothers, etc.)
- Know your local representatives
- Listen to local radio and t.v. programming
- Meet with local educators to set goals and share concerns
- Neighborhood watch
- Organize a club or support group
- Plan community picnics/gatherings
- Quarrel resolution in neighborhood or at community gathering
- Recycle
- Subscribe to local publications
- Team up with a sports league
- Use public transportation
- Volunteer time for community service
- Work at a fundraising activity
- X-perience a community fair
- Yard sale shop
- Zeal for a community based organization (donate time as well as money)

Scoring

- 1-30... Community is out of balance amid personal priorities. Cohousing is a balance of privacy and community values.
- 30-60... Community has value but involvement is tenuous. Healthy cohousing relationships are a direct result of the quality of individual involvement. The most recognized method for decision making is by group consensus. You can make a difference in the way your community works.
- 60-90... Community is of great importance and the balance of privacy and community in cohousing will benefit your lifestyle.
“What does privacy mean to you?” -Community Interface Questionnaire

This questionnaire poses closed ended questions (requiring mostly yes/no answers) to help determine more specific responses to community interface than the general survey. Responses to the questions should help define individual lifestyles and habits that would aid in determining a user friendly program. There should be a total of at least 30 questions and the results can be used to begin discussion of group expectations. The questionnaire can be a take-home booklet so that time is not a factor. Total self disclosure should only be encouraged to the point of providing reasonable community interface. This might best be exercised in the privacy of ones’ own home and booklets will not be put on record but retained by each member to encourage objective introspective analysis during group meetings. Questions should also reflect regional and cultural diversity but mainly focus on daily preference behavior. The following are sample questions to initiate a start but each group should develop a questionnaire that is geared towards learning information that is specifically aligned with the direction they want to go.

Sample questions:

Do you own a pet?
  If so, do you consider yourself a responsible pet owner
  How do you define responsible?

  If not, do you allow other peoples pets in your yard.
  Have you ever confronted a neighbor about their pet?

Do you like to be alone sometimes during the ___ day, ___ week, ___ month?
  If so, is ‘sometime’ ___0___ one hour, ___two-four hours, ___ more than four hours?
  What is your quiet space like?

Do you have a daily routine?
  Are you comfortable with it?
  What would make you change this?
  How often does change occur?
  Do you want your neighbors to know your daily routine?

Do you know your current neighbors ___ East, ___ West, ___ North, and ___ South?
  Do you feel you have to ‘keep up with the Jones’ next door?
  Does your home reflect you as an individual?

Do you have allergies that keep you out of circulation?
  To what?

Do you enjoy cooking for others?
  What?
Community Interface Activities

“A day in the life of...” -Community Interface Questionnaire

This diary will be used in conjunction with a short three page autobiography of core group members. (The autobiographies will be used solely by the design consultant for purposes of individual programming unless group consensus deems otherwise). The diaries become tools for programming the needs of the private individual as they relate to the community and will be open to group discussion.

Information will be recorded in short non-descriptive passages outlining activities throughout the day. Attention to details, (meals, outing destination, meetings, etc.), reference time allowances and functional requirements more than the whey’s of the activity, unless the activity is not routine, (not a daily occurrence). The diary should follow a minimum of one day’s activities or can be extended up to a maximum of one week. The more comprehensive the more responsive the group programming exercise will be. A diary can represent one household or one individual, but all members of a household need to be accounted for. Both the diary and the autobiography will be take-home exercises.

Sample:

-Day begins at 6:00am.
-breakfast of coffee and role at coffee house 7:00 am.
-rode bike there, 8 min ride, windy.
-library at 8:00am. 12 min. ride, research till noon
-night, rainy -lunch out of vending machine, research till rain let up,
-8:00pm
-dinner out, $7.50.
-escaped narrowly run in with vehicle on return home
-Hot toddy, t.v., and to bed by 9:45 pm.

“How I define my American Dream” -Community Interface Questionnaire

This questionnaire will contain open ended questions (requiring detailed answers) to be administered during a core group meeting and used promptly to encourage group discussion and help determine group dynamics. Time will limit the number of questions to be tabled but a good representation of group dynamics requires response to at least ten to twenty open ended questions. The stimulated responses give direction to the determining of the core group’s mission statement.

Sample questions:

Personally define:

What is privacy?
What is personal space?

What would you predict to be the most positive aspect of cohousing?

What would you predict to be the most negative aspect of cohousing?
Defining Community -post-it pin-ups (answers are written by each attendee on an index card and pinned up on a board for group discussion and massing: one question per card)

First exercise is in group exploration, what does the group represent as a whole?

1. What values do you think we hold in common

Second exercise is in group dynamics and how consensus can work in conflict resolution, and when it doesn’t what are the alternatives (“I feel” statements, role playing, mediating). Discussion opens with “how do these issues define your daily life”?

2. List five issues that get your attention in your current neighborhood, from the most rewarding to the most annoying.

   _____________________________________________1. most rewarding

   _____________________________________________2. rewarding

   _____________________________________________3. indifferent

   _____________________________________________4. annoying

   _____________________________________________5. most annoying

Third exercise is a visualization exercise in how members of the group define their private space and community space. Each attendee creates their own community using colored circles of paper that can overlap and or encircle each other. Discussion includes how these collages compliment the individual as well as each other.

3. Collect circles of colored paper that you can use to define your ideal organization of space that suits your needs of privacy and orientation to community. The larger the circle, the greater the importance of the space represented, the smaller the circle the less important the space. Remember, this is not an exercise in square footage but in relative importance.

   Part A defines your private needs: green to blue paper will be used, identify each circle with the space it represents on the back. These will be tacked to a “site” and displayed for discussion.

   Part B defines your needs in the community: use red to purple paper, label each as in part a.
“Where will we be in 2010?” - Community Interface Questionnaire

A follow up of the preceding questionnaire, this follows the same format but directs discussion towards group potential and allows for goal orientation.

Sample questions:

What do you want to see happening in your neighborhood in five years, ten years, twenty years?

How many neighbors does it take to…(fill in the blank with options like: share a meal, celebrate a holiday, raise a child, etc.)?

“How I get from here to there” - a cognitive mapping exercise aimed at bringing out awareness of how individuals see (and experience) their community.

“Mapping our community” - a cognitive mapping exercise combining results from the individual mapping exercise to promote discussion on how the group can define and understand their own yet-to-be-seen neighborhood and, most importantly, how it will connect to the greater community.
Part I: RECOMMENDED DESIGN GUIDELINES (for this location and fuel cost)

Recommended CF (Appendix D) = 1.28; recommended LCR (Appendix D) = 0.70; target SSF (Appendix D) = 30%.
Recommended wall total R-value:
R<sub>wall</sub> 4.1 = 14 x CF = 29.44
Recommended ceiling total R-value:
R<sub>ceiling</sub> 3.5 = 22 x CF = 77.2
Recommended R-value to be added to slab perimeter:
R<sub>perimeter</sub> 1.8 = (13 x CF) 5 = 27.48
Recommended floor (open slab space) total R-value:
R<sub>floor</sub> 1.4 = 14 x CF = 20.44
Recommended R-value to be added to basement wall:
R<sub>basement</sub> 1.0 = (15 x CF) 8 = 24.0
Recommended number of glazing layers on E, W, N walls:
R<sub>EWN</sub> 1.2 = 17 x CF = 2.94
Recommended number of air changes per hour:
ACH 30 = 0.42 x CF = 12.6

Part II: PERFORMANCE CALCULATIONS BASED ON PROPOSED DESIGN

Building element: load formula (fill in blanks and calculate)

Walls:
[UA]<sub>wall</sub> = A<sub>wall</sub> x R<sub>wall</sub> = 3.28 + 4 = 36.4

Ceiling:
[UA]<sub>ceiling</sub> = A<sub>ceiling</sub> x R<sub>ceiling</sub> = 34 x 0.66 = 22.6

E, W, N glass:
[UA]<sub>EWN</sub> = 1.1 x A<sub>EWN</sub> + number of glazings x 1.1 x 20 + 4 = 5.5

Floor:
[UA]<sub>floor</sub> = A<sub>floor</sub> x R<sub>floor</sub> = 34 x 0.66 = 22.6

Slab-on-grade:
[UA]<sub>slab</sub> = 4.17 x P<sub>slab</sub> + (P<sub>slab</sub> + 9) = 4.17 x 114 + (17.3 + 5) = 499

Basement:
[UA]<sub>basement</sub> = 10.7 x P<sub>basement</sub> + (R<sub>basement</sub> + 8) = 10.7 x 15 + (17.3 + 8) = 224

Insulation:
[UA]<sub>insulation</sub> = 0.019 x VOL x ACH x ADR = 0.019 x 250 x 20 x 0.7 = 22

Sum of UA = 1197.4 Btu/°F

Net load coefficient NLC = 24 x Sum of UA = 29214 Btu/DO

Recommended projected area: A<sub>p</sub> = NLC + recommended LCR = 29214 + 40 = 29254 ft<sup>2</sup>

Design A<sub>p</sub> (based on recommended A<sub>p</sub> and construction considerations) = 46.6 ft<sup>2</sup>

Load collector ratio: LCR = NLC + Design A<sub>p</sub> = 29214 + 46.6 = 29260.6 Btu/DO

A<sub>ref</sub> (based on recommended A<sub>p</sub> and construction considerations) = 54.6 ft<sup>2</sup>

Auxiliary load coefficient (for using auxiliary heating equipment): TLC = NLC + (24 x [UA])<sub>combined</sub> = 39214 Btu/DO

Auxiliary heat, Q<sub>aux</sub> = NLC x DO (1 - SSF) = 39214 x 1.55 x (1 - 0.35) = 5324 M Btu/year

Design Worksheets

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Worksheet for Calculating Window Areas of Naturally Ventilated Houses

1. Building conditioned floor area = 940 ft²
2. Average ceiling height = 8 ft
3. House volume = \((\text{step 1}) \times (\text{step 2})\) = 7520 ft³
4. Design air change rate / hour (recommended value is 30) = 30 cfm
5. Required airflow rate, cfm = \((\text{step 3}) \times (\text{step 4}) + 60\) = 3780 cfm
6. Design month (recommended: May for Florida and Gulf Coast; June elsewhere) = JUNE
7. Name of nearest city: [Blank]
8. From maps in Appendix C, determine windspeed (WS) and direction (WD) for the design month: WS = N 5 mph
9. From prevailing direction, determine the incidence angle on the windward wall having the largest area of window (0° = perpendicular to wall) = 0°
10. From Table 15.1, determine inlet-to-site 10-meter windspeed ratio = 0.35
11. Determine windspeed correction factors:
   - a. For house location and ventilation strategy, determine terrain correction factor from Table 15.2 = 1.15
   - b. For neighboring buildings, assume neighborhood correction factor = 0.77; no surrounding buildings = 1.0
   - c. For windows on the second floor (or for house on stilts), use a correction factor of 1.15 (otherwise, use 1.0). Correction factor = 1.15
12. Calculate windspeed correction factor = \((\text{step 11a}) \times (\text{step 11b}) \times (\text{step 11c})\) = 1.0
13. Calculate site windspeed in ft/min = \((\text{step 8a}) \times (\text{step 12}) \times 88\) = 475 ft/min
14. Calculate window inlet airspeed = \((\text{step 13}) \times (\text{step 10})\) = 164.6 ft/min
15. Calculate net aperture inlet area = \((\text{step 5}) \times (\text{step 14})\) = 22.60 ft²
16. Determine total effective inlet + outlet area (screened) = 3.33 x (step 15) = 75.28 ft²
17. Determine total effective area as % of floor area = \((\text{step 16}) + (\text{step 1}) \times 100\) = 9.20 %
18. This total effective area requirement can be met by the same area of net opening. If windows or doors are used, then this area must be increased to allow for their effective area by applying the following effective opening factors: single- or double-hung window = 0.45, single- or double sliding window = 0.45, hopper = 0.45, awning window = 0.75, casement window = 0.6, jalousie windows = 0.75, sliding door = 0.40, hinged door = 0.95.
19. Select openings and calculate their total effective area:
   - Opening type: [Blank]
   - Opening area (ft²) x effective opening factor (step 18) x no. of this opening type = [Blank]
20. Total effective area as designed and installed (should equal or exceed step 16) = [Blank]