The Modern Medieval Manorhouse

an architectural thesis by
James M. Fanjoy
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Modern Medieval Manorhouse
One of the advantages of living in a modern age is that we have the ability to look back on history, and experience it vicariously through the hindsight of the present. Because of this, participation in historical societies and reenactment groups is commonplace in today’s world.

Reinterpreting historical architecture in today's context creates a viable living environment more conducive to the demonstrative and experimental needs of living historians.

**viable living environment:** the environment must be realistic and practical
- financial: it must have a plan to make it buildable, but also maintainable.
- cultural: the group must be designed to account for and nurture the interaction between community members.
- personal: it must be an environment in which each individual’s needs are met, and which they would WANT to live.
- ecological: these goals must be met with respect for the land and environment.

**demonstrative & experimental needs:** the living historians live in the style of the period to a reasonable extent to demonstrate the history for the education of themselves and others. They also engage in hands-on experimental “research” into technique as an anthropological tool. Theirs is an holistic environment true to the idiom of the given period, in this case 14th century anglo-european culture. It might include:
- living sciences: cooking, weaving, preserving, pottery
- agriculture: animal husbandry, crop cultivation, gardening, orchards, hunting
- arts: smithing, singing, furniture making, coopering, cobblering

**living historians:** there are 2 different client groups, whose needs must be satisfied as well as ensuring that they interact well.
- living historians (high participation level): these people are permanent residents who live the period lifestyle and live on the site.
- visitors (low participation level): these people come simply to see what is going on and to experience temporarily, or to stay for a little longer for a seminar or more intense learning temporary learning environment. Times range from a day to a week.
The site for the Manorhouse is a wooded site in northeast Indiana, bordering the Salamonie River State Forest. The overall site is 156 acres, mostly forest reclaimed from farmland half a century ago. The southern border is the Salamonie River, with granite cliffs rising over fifty feet to the area of the subsite. The subsite has a view overlooking a large stretch of the river—this would have been the location of choice in medieval times, both for its strategic river overlook, and the tactical advantage of having one side of the town protected by the high cliffs.

The beauty and natural environment of the site are a first priority when planning the overall site. A natural forested landscape is the perfect backdrop for the theme of the Manorhouse, and is protected for that reason as well.
Indigenous Species

Fauna
- Grouse
- Groundhog
- Raccoon
- Red-tailed Hawk
- Skunk
- Squirrel
- White-tailed Deer
- Wild Turkey

Flora
— on subsite —
- Sugar Maple
  Acer saccharum
- Shagbark Hickory
  Carya ovata
- Hackberry
  Celtis occidentalis
- White Ash
  Fraxinus americana
- Red Cedar
  Juniperus virginiana
- White Pine
  Pinus strobus
- White Oak
  Quercus alba
- Red Oak
  Quercus rubra

— elsewhere on site —
- Silver Maple
  Acer saccharinum
- Red Maple
  Acer rubrum
- Tree-of-Heaven
  Ailanthus altissima
- American Hornbeam
  Carpinus caroliniana
- Eastern Redbud
  Cercis canadensis
- Honey Locust
  Gleditsia triacanthos
- Tulip tree
  Liriodendron tulipifera
- Osageorange
  Maclura pomifera
- Sycamore
  Platanus occidentalis
- Black Cherry
  Prunus serotina
- Sassafras
  Sassafras albidum
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**HISTORIC PRECEDEENCE 2.0**

Nothing is created in a vacuum, least of all architecture. By drawing on the past (or at least learning from its mistakes) we enrich our own architecture to degrees immeasurable. This project, being in the style of the early fourteenth century, will draw much from the architecture of that period. But there is a lot to be learned from other sources as well, so as to make it better than it would have been if it had been built in that period. Modern communes, collective housing schemes, and farms all have things to offer to this project that stretch beyond merely design details— they all offer a philosophy, which is sometimes hard to get from the remains of the older buildings. Hopefully through this double input a fair, level assessment of where the project needs to go can be obtained.
Urquhart Castle sits on a rocky promontory at the edge of Loch Ness. Originally the site of a Pictish nobleman's home in the 6th century, the medieval fort was blown up in the Jacobite Rebellion in the 17th century, leaving ruins that depict a medieval fortress and how it operated.

The concept behind Urquhart is that of the shell-keep: a heavy masonry wall surrounds a courtyard and gives protection while defining space. All of the structures necessary to life are built within the enclosure. They included:
- granaries & a dovecot
- a blacksmith's tower
- a bakery
- gatehouse, guardrooms, and a prison
- a chapel
- great hall and kitchen
- a tower-house

All of the buildings are situated so as to make routine living services easily available.

Urquhart was sited with defense in mind: the loch to the east prevented attack from that direction, and the height of the hill combined with an excavated ditch and drawbridge to the landward side prevented attack from the west.
2.1 HISTORIC PRECEDENCE

Built mostly in the decade of 1240, Caerlaverock Castle was built mostly for the defense of the Solway Firth, the gate to Scotland. Being in the Borders and so near to English influence, the castle has a moat and courtyard—traits rarely seen in Scottish castellated architecture of the period. The 'epitome of the medieval castle', it has drawbridge and moat, machiolations, towers with overlapping fields of fire, and a large courtyard.

Besides these purely military features, however, Caerlaverock is notable for its functionality as a dwelling place. Substantial apartments for the lord and his family are located above the gatehouse, and there is a great hall and all of the necessary related spaces in the courtyard. (As the lord was an extension of the King, he was required to perform royal duties from time to time.) Apartments line the walls of the courtyard, originally for the garrison stationed at this key location, but later used for servants of the household and guests.

Caerlaverock Castle
Scotland
2.3 HISTORIC PRECEDENCE

Doune was built towards the end of the 14th century. It is one of three existing examples of combining the gatehouse function with the lord's apartments, an organizational device attributed to the mixed loyalties and politics of the time. The gate tower contains most of Doune's programmatic areas: audience hall, chapel, lord's apartments, gate mechanism, kitchen, and store-rooms. Beyond is a large courtyard (by medieval standards) that has a well and access to the public great hall, kitchen, cellars, and guest chambers. These spaces are all worked into the defensive walls, communicating with the courtyard space as a sort of "town square". Because of the age of the building it is impossible to be sure, but it is likely that there were wooden structures lining the rest of the walls, completing the village feel.

Doune Castle
Scotland
Conwy, one of the largest castles in Europe, was built entirely between the years of 1283 and 1292 by a massive force of as many as 1500 men at once. To get a sense of the scale of the place, you must understand that there are 2 separate parts to the castle: the castle proper, measuring 150 feet by 300 feet; and the walled town, measuring roughly a thousand feet on a side. The walls for each of these are about 12 feet thick and from 50 to 100 feet high.

Conwy is of importance to this project because it addresses the issues of a community within an enclosed space, and how the daily functions of life go on inside environment. The town within Conwy has evolved over time, and is still fully used: video stores, chip shops, and arcades sit next to stores that look like they might have dropped straight out of the 13th century: pubs, inns, and row houses. They town was enclosed within the walls completely in the first hundred years of its existence due to the threat of invasion and destruction, but more peaceful and prosperous times have pushed it beyond its walls, and now they are somewhat of an organizational nuisance (but extremely interesting to tourists!).

Castle Conwy
Wales
2.5 HISTORIC PRECEDENCE

The House on Locust Hill was launched in 1971. Designed by Malcolm Wells, it is a passive solar and wind powered sustainable building designed to accommodate a somewhat communal household of 4 men. I like it and find it applicable because it is an experiment in an holistic living environment for a small community, situated in one structure.

The Raven Rocks property is also interesting in that it is a natural preserve of sorts. The community members bought the property over 20 years ago to save it from strip miners, and now they have self-imposed regulations on what areas of the site they can and can't build on. Much of the site is maintained in pristine condition, while other portions are allowed to regrow back to how they were several hundred years ago. It is a prime example of sensitivity towards the natural environment.

Locust Hill
Raven Rocks, Ohio
The Monastery of St. Gall was designed by the leading Swiss minds of the 9th century as the ideal plan for a monastery. Although it was never built, it gives interesting insight on what the planners of the time thought was the perfect arrangement for a medieval village. Services and all of the necessities for living were located in close proximity to each other for ease of access, and the whole assembly was centered around the church in which the monks would worship.
2.7 HISTORIC PRECEDENCE

St. Martin-du-Canigou is a church and monastery located in the French Pyrenees mountains. Started in 1001, St. Martin is a beautiful example how medieval towns and buildings were often placed on difficult sites, to great advantage. Architecturally speaking, the siting of St. Martin affords incredible views up and down the valley, along with exciting changes in elevation as you move through the building. The treacherous landscape around St. Martin also makes the monastery easy to defend in times of trouble.

St. Martin's close-crowded assemblage of buildings has a warm and comfortable feel, as well as being convenient for circulation and organization. The central cloister garden is like an oasis in the middle, pulling the spaces together and creating a sort of 'meeting place' as well as a place for introspection and meditation.

Abbey Church of St. Martin-du-Canigou France
Ravenscraig is the private home of architect Ian Begg. Built in 1984, Ravenscraig is a beautiful example of the style of architecture Mr. Begg specializes in: reinterpreting traditional Scottish forms and spaces with modern materials and construction techniques.

One of the fundamental innovations of the tower is the double-walled construction. It both simulates the feel of 2 meter thick masonry, and allows for the construction of mural chambers between the walls. The inner wall is the primary loadbearing element, and the outer wall serves for thermal and moisture protection. Mr. Begg shared a few fundamental concepts with me:

- small windows keep out weather, and don't rattle in storms
- windows on all sides to catch the sun, if even for only 5 minutes
- small window area encourages you to go outside on the few nice days there are
- You should pick a constraint (room size, structure) and design from there, working and solving
- part of the challenge is fitting the use to the arrangement of spaces
- sometimes romanticism is much harder then classicism; balance and subtlety are really important

Ravenscraig Castle
Plockton, Scotland
2.9 HISTORIC PRECEDENCE

English Peasant houses in the early medieval period (10th through 13th centuries) were mostly of 3 basic types: The peasant cot, the longhouse, and the farm. The peasant cot was a simple one-room structure that housed both people and livestock. The longhouse was a simple improvement over that type, allowing for livestock and people to use different ends of the building. The final refinement came when a wall was added to separate the building into two rooms, one for people and one for livestock, with some examples having the barn as a completely autonomous structure.

structurally speaking, the houses of the period were usually built with dry stone loadbearing walls supporting wooden crucks that held up a roof. The roof was usually thatched with straw from rye or wheat, but was on occasion covered with slate, if it was regionally available.
Scottish peasant houses of the early middle ages were basically of the same types as their English counterparts. The longhouse was known as the byre-house (barn-house), but was the same from a design standpoint. In the islands off of the coast of Scotland, we find a more varied approach to house design, as indicated in some of the plans to the left.
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PERIOD DETAILS & CULTURE

3.0

Living historians and reenactors live in a dual world: on one side, they are products of a modern environment, have a modern education, use modern medicine, and (for the most part) lead contemporary, mundane lives outside of their period. When in character, though, they experience the other side of their dualistic existence, a submersion in the medieval lifestyle of the period. In order to better understand the mechanics of this lifestyle and its practical requirements of the architecture in which it is housed, it is important to have a firm foundation of information on the lifestyles of the medieval people the historians are emulating. This section summarizes the details of actual period buildings from the 11th through the 15th centuries, as well as general glimpses and details of the lifestyle and culture of those times.

Introduction & Table of Contents
The earliest fortifications in western Europe were motte-and-bailey, consisting of a mound of earth with a wooden wall around it. This design incorporated a tower or donjon as a last refuge against attack, and the only entrance to the bailey was through a heavily fortified gate. These two main structures continued to evolve into the late renaissance, through all forms of castles. The gatehouse controlled entrance to the castle, and the donjon was the home of the lord and the last place of refuge in an attack. In some castles, like Doune, the two were combined into one structure. Many Scottish castles never evolved beyond the towerhouse itself, as the occurrence of a protracted siege was rare.

Towers, Keeps, & Gatehouses
Beginning in the 13th century, it became commonplace for a chapel to be built as a part of the main work of a dwelling. It was accessible from the solar or the great hall, so a clergyman would be close at hand for ministrations or clerical work. In smaller homes, the chapel was sometimes built as an addition; in larger castles, sometimes an entire tower was dedicated to the chapel and housing for its staff. The chapel typically had room for a very small, intimate gathering for a service, a piscina for washing the chalice, and an alcove in which to store it.
3.13 PERIOD DETAILS & CULTURE

As medieval man moved away from his communal great hall and began to savor his privacy, privacy also began to be extended to visitors. Scholars, pilgrims, and travelling clerics were the usual recipients of such hospitality. In the examples at the left, most from the 14th century or later, the chambers provided for guests are small but efficient. In the case of the colleges, study closets are accessible from the main chamber. Other amenities, such as private garderobes and windows, were present depending on the wealth of the benefactor and the importance of the visitor.
Stone walls evoke a romantic imagery when we see them, but not all medieval walls were stone. Often, residential structures were made of half-timber construction, with a heavy timber framework and the spaces between filled with wattle and daub. There have been more examples of the stone walls survive to this day, and this is where we get the bulk of our information on historic wall building technique.

Stone walls were very thick, both for defensive reasons and to overcome toppling. The thickness was put to good use, though, as many medieval buildings are rife with mural passages and chambers, those built with in the thickness of the walls. Theses chambers were garderobes, closets, hiding places, and more.

Walls also had a significant impact of the development of cities. They served to protect the most precious of the city's assets, the market, from destruction by raiders; but they also controlled the influx of people and goods, giving the cities a tool for levying taxes, and paving the way for the eventual decline of feudalism and the ascension of capitalism.
3.15 PERIOD DETAILS & CULTURE

Times were uncertain and violent in the middle ages, and everyone took steps to prevent unwanted visitors from killing their families and stealing their food. Although defensive treatments exist in virtually all medieval buildings, they are most prominent in castles. Of utmost priority was keeping the attacker out, and second directive was to have maximum visibility to the outside, so the attackers could be driven off with missiles. Arrow slits, or loops, were common and appeared in many forms, each designed so that they could be shot through easily from the inside, but were small and defensive from the outside. The angle of aim and height changed with the advent of the crossbow, and later the hang-gun, but the principal remained the same.

Doors, already made of over 2 inches of wood banded with iron (see 3.17), were backed with a heavy timber bar. An iron grille, or yet, was swung closed and locked behind it, denying entrance should the door be burnt away and allowing missile fire at those who should try. Walls were topped with machiolations to allow projectiles to be dropped, and stairs were designed to slow the progression of an attack through a building (see 3.19).
Garderobes were the medieval toilet facilities in large buildings where outhouses or open pits were not practical. Sometimes called "privy chambers", the garderobes were usually small, cramped rooms within the thickness of a wall. They usually had a flat stone or wood seat with a hole in the center, and little else.

One some versions, the garderobe projected on corbels outside the outer perimeter of the wall, and the waste dropped onto the open ground below. On others, the waste dropped through the hole and down a chute to a cesspit. These cesspits had to be emptied every few years— an undesirable job that paid quite well as a result. Sometimes the two systems were combined: a chute in the wall carried the fecal matter down to the ground level, where it was deflected to the outside at the base. These openings usually had a stone over them (called a "ground wall stone", or "Grunnelstane"). In some cases, they were decorated to look like grotesque faces, with the sewage emitting from a grimacing mouth.
Doors are important for keeping unwanted visitors out, and your belongings in. They were usually made of a stout wood, in two layers. The outer layer was vertical strips, and the inner was a frame mortised-and-tenoned or dovetailed together, with horizontal spreaders. The two layers were joined by through rivets, and held on with great strap hinges.

The frame into which the door fit was usually cut out of the stone of the wall, chamfered to withstand the wear and tear of everyday use, and had a rebate to stop the door from swinging too far inward. Doors that required security also had a bar-hole. The bar was also of wood, about 4 inches square, and slid across the door at mid-height to reinforce it. The hole on the hinge side was deep enough to accommodate the entire bar for storage, and on the other side a few inches deep to make it fast.

The shape of doors in Britain progressed over the centuries. They evolved from round-head in the 12th century to pointed arches in the 13th, square in the 14th, and ogee topped in the 15th century. The doors were usually asmall and tight, as they didn't move furniture in and out, and a small door was easier to maintain & construct.
Windows were necessary in medieval buildings to allow a little daylight and to provide ventilation. In early Norman buildings, they served mostly utilitarian purposes: on the lower levels, they were small openings to shoot projectiles from. On upper levels, where they were unreachable, the two-light pillared window was popular. Windows were unglazed until the 13th century, and then glass was only for the rich. Some windows were glazed with thin plates of horn, allowing a little light but no ventilation or view.

Shutters were common in windows of all periods. They opened inward to fit into rebates in the slanted walls framing them. If glass was present, the shutter closed behind the glass. Small bolt holes allowed the shutters to be secured against intruders.
There are many different types of stairs, but a few common threads connect their design in medieval buildings, regardless of their material. Stairs serve two purposes: to allow the inhabitants access to the other levels of the building, and (in typical medieval thinking) hinder any attack against the building's occupants.

Spiral stairs are relatively common in medieval buildings. Although they are a little more difficult to ascend, they save a lot of horizontal space. In almost every instance, they curve up in a clockwise direction. This is likely done because it causes the newel in the center to hinder the right-handed swing an attacker below.

Straight, or scale, stairs are also common. They are easier to climb, and if planned correctly, are reasonably efficient with space. If they lead up to a door that must be secure from attack, they usually have a dogleg to prevent a running attempt at breaking the door down.

In both these cases, the stairs were often narrow, with some shoulder width or less. Occasionally, ropes or handrails (recessed or surface mounted) were provided.
PERIOD DETAILS & CULTURE 3.20

The earliest building had simply a fire in the middle of the floor, and no provision for the dispersal of smoke. In later years, the hearth and accompanying louver were adopted. The hearth was a paved area in the middle of the hall, where a fire was built on the stones or in an elevated brazier. This heated the hall somewhat, and the smoke that collected on the ceiling was vented through a cupola-like structure called a louver. The hearth persisted up until the 16th century, when it was finally replaced completely by the fireplace.

The fireplace became originally popular in the 11th century in Norman England. At first, it was an opening in the wall with an arch over it to support the weight above. It evolved stylistically in the end of the 12th century to become a projecting corbelled hood of stone that drew smoke away from a fire built against the wall, rather than inside it.

Fireplaces, Chimneys & Hearths
On earlier medieval buildings, there were 3 main ways of supporting a roof, based on the wall construction.

Heavy timber buildings were framed with box-framing. This is similar to framing systems in use today, where vertical posts carry horizontal beams and triangulated geometries of rafters.

Small-scale stone buildings and some timber buildings were framed with cruck framing. The crucks were carefully selected crooked beams that doubled as walls and rafters, and were shimmed with cruck spurs to make the outer walls vertical.

Hammer-beam trusses appeared later on, to span the larger halls being built in large-scale loadbearing masonry buildings. Similar to our modern trusses, the hammer-beams redistribute the roof load to the wall while minimizing the length of wood needed and the vertical forces incurred.

In typical framing hierarchy, trusses support purlins, which in turn support rafters, which support decking.
PERIOD DETAILS & CULTURE

3.22

Roofs were typically covered with three different things in medieval Britain: thatch, slate, and copper. The type used varied with geographic location, available funds, and building function.

Thatch was the most common and earliest roof covering. Rye and other grain stalks were bundled together and carefully tied to purlins, creating a roof system that drew water away from the house via capillary action. The thickness of thatch made great insulation; however, it was prone to vermin infestations, had to be replaced frequently, and was quite flammable.

Slate roofs were common in Wales and bordering lands, because it occurred naturally and was easy to obtain. Slate roofs also appear in other parts of Britain, but in many cases, the slate was imported from Welsh quarries at great expense. Slate was used extensively on castles and defensible domestic structures, due to its longevity and resistance to attack by fire.

Copper roofs appear much later, towards the end of the middle ages. Copper was applied in sheets, with a slight overlap to prevent leaks. It had a long lifespan and covered large areas effectively. Weighing far less than slate, it was the only choice for long-span roof structures in buildings like cathedrals and great halls.

Roof Covering
Communication systems in the middle ages were not what they are today, so the people relied on more simple means to gather their information on the world about them. Sights and sounds within a building were monitored by the use of squints and laird's lugs.

Squints were usually small windows that allowed the lord of the house to watch the hall once he'd retired. In some cases, they were small peep-holes, camouflaged on the outside to look like carved decoration on a wall. In Eilean Donan, squints are created by leaving the mortar out of a joint in the wall, allowing observers in a secret passage to see into the hall.

Acoustical access was sometimes as good as visual, and it was a lot easier to disguise. The laird's lug, or lord's ear, takes several forms. In Castle Stuart, there is a secret room behind the paneling in the hall just large enough to fit a seated chamber boy. The theory is that the boy repeated what he'd heard the guests say after the lord retired. In some cases, clever design allowed a listener to clearly hear what was said in another room, as in Castle Fraser.
The laver and piscina look similar. Carved from stone and carefully worked into the construction of a wall, they are small bowl-shaped openings that can hold water. There are often recessed into the wall, or set on ornate pedestals.

Their main difference is in usage. The laver is a basin set into the wall of the hall, filled with water. It is used for washing the hands at and around mealtime. The piscina appears in ecclesiastical buildings, and is filled with holy water. It serves as a place to wash the holy vessels before their use.

Another commonly seen stonework outcropping is the bracket. Brackets hold candles (or sometimes torches) so that the occupants of the building could continue working after dark. This was not a common practice, as the cost of candles made it uneconomical, but was a good way to show off excessive wealth.
3.51 PERIOD DETAILS & CULTURE

The vast majority of medieval persons were engaged in agricultural work. For the most part, these peasants made or grew everything they needed for daily life. In population centers such as villages and hamlets, there was also the occasional skilled tradesman, such as a blacksmith or cooper. These specialists made things that were difficult for the peasants to create themselves. An extremely small percentage of the population was engaged in governmental work: the aristocracy was classed in this group, as well as their administrators: tax collectors, bailiffs, and reeves. This socioeconomic pyramid differs drastically from the modern one in that the middle class is virtually nonexistent—what merchants there were usually travelled around and peddled wares in a different style until much later in the middle ages. A final occupational category is that of clergy. The ecclesiastical pyramid was similar to that of the laypersons, but operated parallel and independently of it, with friars attending to the needs of the people and abbots and cardinals performing administrative and leadership duties.

SOME OCCUPATIONS

Farmer
The specific title of the agricultural person varied depending on their status as freemen; titles include villein, serf, peasant, and some unspeakable ones...

Their duties included raising crops, animal husbandry, maintenance of their homestead, and supplying a certain amount of days military service to their liege lord per year. They paid a percentage of their crops to their lord as a tax on the land.

This was about the only occupation available to women in the middle ages.

Blacksmith
The smith made things out of metal, such as plows and tools. The tools he made enabled the farmers to better carry out their duties. Smiths were trained by apprenticeship, and their secrets were carefully guarded. This, combined with their nightly work schedule, gave them a mysterious and revered aura.

Cooper
The cooper made barrels. It was too difficult for the average man to make a watertight barrel, so this developed as a skilled trade.

Barber
This character did more than just shave you and cut your hair: he was also the only doctor they had. He used herbs, bloodletting, and leeches (yes!) to heal what ails you.

Soldier
They had many titles, including housecarls, and knights. Soldiers were usually just militia from the agricultural population, but in some cases, a lord retained a standing body of full-time soldiers.

Forester
Foresters were controlled by the king. They managed his forest estates, and enforced Forest Law. Similar to the FBI today. They served in conjunction with a Sheriff.

Reeve
A sort of medieval tax collector, the reeve was in charge of making sure the population discharged their feudal obligations to their lord. He was a business administrator.

Franklin
A man who owned land but was not of noble birth. He could employ/hold other agricultural workers to work his fields.

Bowyer & Fletcher
The bowyer made bows, and the fletcher made the arrows. This type of specialized trade is typical of the later middle ages. Even more specialized is the arrowsmith, who made arrowheads.

Architect
The master builder was engaged for massive public projects like castles and churches. He was assisted by the three building trades: carpenters, who worked with wood; masons, who worked with stone; and diggers, who worked with dirt.

Medieval Occupations
PERIOD DETAILS & CULTURE

3.52

The standards of hygiene of your average medieval man were not enviable, from what we can gather from scarce data. Much of their ways were governed by superstition and existing practice; for example, it was thought that bathing regularly would bring on infection and influenza, so bathing was restricted to a yearly cycle. Although dentistry was unheard of, skeletal remains rarely show someone dying toothless. This might be because of the relatively short lifespan (30-40 years max), but their diet also didn't include the harmful sugars and acids that ours today does.

Sanitation was abysmal. It was thought that sickness and infection was caused by bad air and smells (a belief that carried through until the 18th century!). Sewage was emptied into streets to be washed away by the rain, or just dumped outside. If people did wipe, they often did it with moss or their hand.

Lifestyle & Hygiene
The average medieval diet consisted of what could be grown locally. The large portion of the diet was barley, oats, and wheat. Vegetables such as turnips and onions were good sources of vitamins, and some fruit was also available. Vegetables and grains had to be carefully stored to ensure that the people would be able to eat throughout the winter.

Meat was eaten infrequently, in part because of the relatively high embodied energy in meat products, but mostly because there wasn’t an effective way to keep it from going bad. Meat recipes from the middle ages are heavily spiced, despite the fact that spices were expensive and hard to acquire—the spices cover the taste of slightly spoilt meat. Meat was smoked or salted to provide some degree of longevity. In addition, every part of the animal was used: fanciful dishes such as kidney pie, blood sausage, and haggis (stomach) are still available in Britain to this day.
3- Year Crop, Field, and Work Rotation

<table>
<thead>
<tr>
<th>field, year</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A B C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3</td>
<td>fallow</td>
<td>fallow</td>
<td>plow &amp; sow wheat &amp; rye</td>
<td>GROWING</td>
</tr>
<tr>
<td>2 3 1</td>
<td>harvest wheat &amp; rye</td>
<td>fallow</td>
<td>fallow</td>
<td>fallow (plow if warm)</td>
</tr>
<tr>
<td>3 1 2</td>
<td>plow &amp; sow barley &amp; oats</td>
<td>GROWING</td>
<td>harvest (reap) barley &amp; oats</td>
<td>fallow</td>
</tr>
</tbody>
</table>

| annual tasks | repair & build fence, bldgs. | repair & make equip., clothes |

Medieval farmers, after centuries of trial and error, developed an effective 3-field system of crop rotation that staved off soil depletion, a farmer's worst enemy. By alternating barley & oats with wheat & rye, and allowing fields a year to recuperate, a farmer could uses his fields indefinitely, as the soil would naturally replenish the nutrients needed for fertility. This staggered cycle also allowed the farmer to spread his work load out over the entire year: in the spreadsheet above, the greyed areas are the places that the farmer has to be working in a specific field or on maintenance.

In the early middle ages, two-field rotation was popular. In this system, crops are planted in the field one year, and the next year it is left to fallow and used to graze sheep. The disadvantages here are obvious: not only do you neglect the nutrient replenishment of diverse planting, but you also only get 50% usage of your fields, rather than 66%.

Fields were plowed with a stick at the beginning of the middle ages, but within a few centuries, horses, mules, and oxen came into use. This increase in available pulling power allowed for heavier plows, which were then made of iron. This increased the acreage that could be planted in a season. Soon, farms were making more food than they needed to survive. This surplus could be traded for luxuries or items the farmer was unable to make or grow himself.

PERIOD DETAILS & CULTURE

Agricultural Systems

Agriculture was the cornerstone of medieval economics and politics. The feudal system is a complex pyramid of landowners allowing vassals to use their land in return for grain, labor, or military service. The farmers were at the bottom of the pyramid. In a typical feudal arrangement, they were allowed to grow crops on the land of their lord, but in return, they had several responsibilities. They had to work for the lord on his private fields a certain amount of days per year, they were sometimes required to perform military service as a militia, and they were required to mill their grain at the lord's mill. The miller usually kept 1/16th of the grain he milled as a sort of tax or payment. In return for these services, the lord was expected to treat his peasants fairly, arbitrate disputes, maintain infrastructure (roads, etc.), and defend the people in times of violence.

If the land was in a region declared a "forest" by the king, there was an additional onus upon the peasants: Forest Law. These somewhat harsh laws included a prohibition against killing deer or carrying bows, regulations on livestock foraging, and "lawing" of dogs (removing their claws).
This simulation was done in response to the need to develop an organic system of organization, typical of medieval settlements. Most attempted designs looked contrived, so this simulation was performed to "grow" a medieval design aesthetic in as authentic a fashion as possible. Each phase is designed without forethought to the next; to encourage randomness. Building locations and purposes respond to the immediate needs of the people at the time; they follow the contours of the earth to save work. They are built to be economical of material and labor, and are within the capabilities of the community at any given date.
1272 AD
Phase 1
Population: 6

- family settles, plows a field
- family builds pen for 2 goats
- family builds longhouse

At this stage, the pioneer family is talking care of the basic necessities of survival: food, shelter, and warmth. They arrived on the site with nothing except the clothes on their backs, a few simple tools, and 2 goats. Planting is done with a stick until the family can afford an ox to pull a plow. Having more children is also of high importance, as they can help make the farm successful.
• the family grows as children are born
• one son moves out and builds a cottage
• a grainery is built
• a draft animal is purchased

The family has survived the first few winters, so they are "out of the woods" so to speak. The eldest son is now matured, and he builds a cottage with his father's help. With the little bit they have been able to save over the last few harvests, the family is able to purchase a draft animal from a nearby farm. This will enable them to plant far more in a season, increasing their yield. This will also free up some labor, allowing them more time to hunt, gather, and construct.

Village Growth Simulation
Life is pretty stable now for the family. The children are starting to reach adulthood, and departing daughters are replaced by new daughters-in-law. A wandering trapper who sometimes traded with the family decides to make a permanent home on their land, in exchange for helping them at harvest time.
• detached smokehouse built
• barn enlarged, rearranged
• trapper builds larger hovel
• farmhand settles in old hovel

The population of the village increases dramatically, as the children of the family begin having children of their own. The trapper who moved in a few years ago also starts a family, and builds a larger home for himself near the original. It is soon occupied by a new farmhand, who helps the trapper to finish his new house before the winter winds come. The barn is enlarged to accommodate the livestock and equipment needed to support a hamlet this size.
Due to its increasing size, the family holding has been lately recognized as a village by the neighboring farmers. It is continuing to prosper, attracting 2 new additional families, one moving into the old longhouse, and another building a new cottage. The increase in available manpower has allowed them to turn additional fields; the increase in production then requires the construction of additional grainery space.
• marauders on their way to the 3rd crusade sac the village
• barn burnt, fences down
• graineries and smokehouse destroyed
• many cottages burnt or damaged
• some livestock carried off

War is hard on the homeland, as well. An army on the move raids the village for food, destroying much and carrying off years' worth of work. Miraculously, few villagers are killed. The burnt stone buildings can be reroofed, but the wooden structures are a total loss. Thankfully, a trapper was able to take and hide some livestock in the wood, so the village should survive the winter.

Village Growth Simulation
3.55 PERIOD
DETAILS
& CULTURE

1301 AD
Phase 7
Population: ±50

- families from surrounding
  destroyed villages move in
- buildings repaired
- towerhouse started
- church started
- more construction

In the wake of the marauders,
refugees from other nearby
villagers move in to cooperatively
recover from the catastrophe. The added manpower
allows a lot of construction. In addition, the immigration brings
in specialized skills: a butcher
and a smith. The dramatic
change in population also
prompts the village fathers to
start a church.

To prevent the catastrophe
from being repeated, the town
begins construction of a tower-
house, a large fortified area of
refuge.

Village Growth Simulation
1310 AD
Phase 8
Population: ±75

- church completed
- stone houses built in defensive perimeter
- smith moves to new house
- church completed
- soldiers settle after crusade
- sunday market starts, bringing in trade
- inn started

Retiring soldiers combined with the new trades in the village make it a hot spot for commerce. The population increases as merchants move in, and the older families in town move into a new area of stone buildings, built in a defensive perimeter. An older cottage is converted to a pub, and an inn is added to accommodate travelers coming for the market day. A well is sunk.

Village Growth Simulation
The drastic expansion of the last decade is followed by "breathing space." The inhabitants complete work on the tower and wall, making a refuge for times of strife. Immigrants to the village still trickle in, at a slightly faster pace than the inhabitants die off due to age or sickness.
This is the final evolution of the village. It is the largest within a day's walk, so it is the center of agricultural trading and culture in the area. The skilled tradespeople that serve the area live here, as well as visiting merchants from farther abroad that wish to sell their wares without going to each individual farm. On Saturdays, the size of the town increases as people come to barter their excess supplies for things they cannot grow or make themselves. The town elders are respected for their experience, and serve as an unofficial jury for disputes between common men.
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MODERN DETAILS & CULTURE

4.0

This section covers the various modern aspects of the manorhouse, including both technological and sociological ideas that allow it to work. Many of them are the modern-day equivalents of period ideas or practices, while others are unusual adaptations of modern technology or culture that allow the village to exist in a medieval fashion.

Introduction & Table of Contents
A slip-formed wall is basically a laid rubble masonry wall with a concrete backing. The system has several advantages. The masonry side of the wall presents a visually appealing, weatherproof stone exterior. The concrete backing lends the wall a tremendous amount of strength, increased by the placement of steel reinforcing.

Construction is relatively simple. After the foundations are in place, the outer masonry wall is built. Then, formwork is braced inside the wall, and the void is filled with concrete and steel reinforcing. The forms are reused several times, as the wall creeps higher in 3-foot increments (see drawing). Interior finished and insulation are attached to furring strips on the inside of the wall. Window and door openings are blocked out and cast as they would be in a typical concrete wall.
WOOD:
  - Heating
  - Cooking
  - Raw material

ELECTRICITY:
  - Modern conveniences
  - From the grid
  - Backup system

HYDRAULIC RAM:
  - Pumps water uphill without power
  - For irrigation

SOLAR:
  - Plants/vegetables turn it into food
  - Horses & people convert food to usable energy

MODERN DETAILS & CULTURE

Physics dictates that in any system there is conservation of energy. This means that if the manor is producing product and sustaining the tenants, it must have some sort of power coming into the system. At the left is a list of the power sources that keep the village running. It is entirely possible that the medieval areas of the village will be entirely self-sustaining (which is very period, I might add) with backup power supplied from the power grid. Modern areas would likely be supplied with regular electric power service, but would still be heated with wood and use other more period sources for lighting, such as daylight and candles, where appropriate.
Modern mulching toilets have been around for over 50 years, but the general concept predates written record. In a traditional backyard compost pile, yard cuttings, kitchen scraps, and animal by-products are layered to allow natural decomposition. The resultant pile is a smorgasbord of nutrients for growing plants and fertilizing soil. The modern mulching toilet works on a similar principle: human refuse and kitchen scraps are deposited in a sealed container, where they are allowed to decompose into a rich compost. If ventilated correctly, the compost is free of harmful disease and insects. It is also odorless (the ventilation combined with the heat of the decomposition actually draws air into the toilet, leaving bathrooms with mulching toilets less odorous than even conventional bathrooms). And, best of all, you get FREE MULCH on a regular basis, while avoiding things like septic tanks, drainage fields, or city sewer systems.

By adding a greywater system with phragmites (tall grasses), waste water from showers, sinks, and washing can also be processed in an efficient, ecologically responsible manner.
Agricultural Products

Crops
Planted in plowed fields in large quantity. Harvested en masse at the end of the season.
- wheat (flour), barley, rye, oats
- corn (not period, but important)

Vegetables
Planted by hand in gardens, tended and harvested regularly.
- herbs (garlic, sage, mint, etc.)
- turnips, carrots, tomato, etc.
- potatoes (not period)

Orchard
Large plots of tended fruitbearing trees, bushes, and vines.
- apples, pears, cherries, peaches (!)
- blue-, rasp-, black-, and goose-berries
- grapes

Livestock
Animals kept and bred for their meat or by-products. Excess animals can be sold live to neighboring farmers, as well.
- Chickens, geese: eggs, meat
- Doves: meat
- Goats: milk
- Cows: milk, meat
- Sheep: wool, meat
- Pigs: meat
- Horses: work output
- Bees: honey

Forest Products
The forest lends food and products to those skillful enough to get them.
- deer: meat, skins, antler
- mushrooms: food
- turkey: food
- trees: fuel, material

Finished Products
These are basic agricultural products refined into a different form, to be sold to the public.
- jams, jellies, and honey
- beer, wine, mead, ale, and hard cider
- cheese
- baked goods

Modern Details & Culture

Bio-intensive gardening is a term applied to schemes that try to maximize use of land and sunlight for growing vegetables. Some extremely efficient designs have, for example, tomatoes growing with carrots in the rows between, where there is room for them to grow. Although these techniques aren't period to medieval farming, medieval farmers did use a similar technique, where they grew wheat between rows of apple trees in orchards. By experimenting with both modern organic bio-intensive farming and traditional medieval practices like 3-field crop rotation and hand-plowing, the tenants of the village are doing firsthand research into medieval farming technique.

According to the National Gardening Bureau, 2400 sf. is sufficient area to feed a family of four fresh vegetables and enough extra to can or freeze for the winter. These numbers are worked into the site program (see 5.1).

The products at the left are some of the possibilities that can be tried, for both creating income and discovering medieval technique.
4.51 MODERN DETAILS & CULTURE

Living Historians & Reenactors

Living historians differ somewhat from the members of an historical society. Living historians reenact a given part of history, and they are usually more centered on a specific time and event. In the case of Civil War reenactors, their regime is entirely composed of the clothes, equipment, and occurrences of the late 19th century in the US. Oftentimes, they relive the events of history, like an actor in a play: civil war battles are reenacted, and the outcome is as historically accurate as possible.

Living historians are also paid, occasionally, depending on their situation. In Colonial Williamsburg, the living historians are paid to make the history that the tourists are experiencing as authentic as possible.

At the risk of being judgemental, it seems often that this crowd has a better grasp of what's appropriate to their given period and tries more energetically to bring it about, but the flip side of this is that they are somewhat narrow in their field of interest and expertise.

Renaissance Festivals

Renaissance Festivals are much like carnivals. Ranging from a weekend to several weeks in length, they are entirely a capitalist venture. The public comes to spend a day shopping in medieval markets, eating traditional food, and watching period entertainment. Unlike the events of the reenactors or societies, renaissance festivals have a bifurcated body of people: the visitors, and the entertainment. To know who's who, you need only look to see who's wearing blue jeans.

The organizers of the festival hire a staff of experienced persons, often drawn from medieval societies and reenactors, to provide entertainment and add atmosphere to the event. The overriding concern here is to make sure that the visitors have a good time; as a result, attention to historical detail is of a lower concern. Merchants who specialize in selling things of an historical nature are present, and sell their wares to the visitors. Revenue for the festival operators is generated through an entrance fee and rental of merchant space to the vendors.

Medieval Societies

There are several medieval societies active in the United States today. The largest of these, The Society for Creative Anachronism, was founded in 1966 in California by a handful of college students and medieval history enthusiasts. Today its membership is over 32,000 and there are groups across the country (and overseas, now, as well).

One of the main activities of members of the SCA is discovering history by reliving it. SCA persons develop personas accurate to a specific time and place in history, and use this as a tool for learning more about their time period. A wide range of topics are covered, including archery, brewing, needlepoint, ironworking, and fighting. If it was done historically, it is likely that there is someone in the SCA doing it today. The defined period that the SCA researches is basically Western civilization before 1600 AD.

The people of the SCA are everyday people looking for something exciting to do on the weekends; in mundane life, they could be anything, including housewives, astrophysicists, welders, and architects.

Societies, Reenactors, & Festivals
Working with the Schneiders

The Schneiders had interests and concerns ranging from the level of visible technology to the authenticity of the construction. They felt that it was important to make the project as self-sufficient as possible, but without compromising its historical accuracy and honesty. They felt the idea of sharing property in a cooperative environment would be a desirable and stabilizing factor in the village, although it would be important to have a documented policy regarding administration and interview of perspective tenants.

The Schneiders also felt that the way the site was treated was of utmost importance. They are familiar with the site I used, and wanted it respected and kept in as much of a natural state as possible.

Melissa worked with me to refine the concept of the dual user groups and the economic impact it has on the manorhouse. She felt that the addition of the visitors gave the tenants an opportunity to make money to help support the village. Tenants who produced saleable items through the use of a period skill, like candlemaking or blacksmithing, would have a built-in consumer base if outsiders were allowed to visit the village. There is also the added bonus of allowing the tenants to show off their medieval lifestyle.

Mark served as a conscience and a time period policeman. He has an unfaltering persistence to keep everything as honest to history as possible, for the high motive of "being period". He is knowledgeable in several areas of history, and I often found myself being corrected as to what was a realistic element to have in my design.

By taking their comments and criticisms, it helped me to see what kind of things a real-life tenant family might desire (or require) if this project were to be actually built. But, more importantly for my morale, it proved to me that there is indeed a potential for this project to some day become a reality.

MODERN DETAILS & CULTURE

In order to better understand the needs of the people who would inhabit the manorhouse, I enlisted the help and advice of Mark and Melissa Schneider. They are both thoroughly involved in the Society for Creative Anachronism, and were receptive to the concept of my thesis. They acted as surrogate clients, playing out the role as a tenant family in the village.

Name: Mark Schneider
Age: 27
Occupation: Purchasing Agent
Hobbies: Blacksmithing, archery
Years in SCA: 10
Persona:
Marcus von Westphal, the third son of a 14th century German noble. He is currently fighting as a mercenary under the English in the Hundred Year's War.

Name: Melissa Schneider
Age: 24
Occupation: Personnell Management
Hobbies: Illumination, candlemaking
Years in SCA: 5
Persona:
Mae MacLachlan, a 14th century lowland Scot.

Surrogate Clients
It is every designer's dream to see their projects and ideas realized in the real world. This makes the work they do more timely and urgent. For the manorhouse, I feel that the systems that allow the design to function both socially and economically are every bit as important as any architectural statement or spatial relationship resolution.

By making the village a cooperative holding, it increases the available budget for start-up costs (see 4.54). It is then up to the tenants to maintain the system in a financially responsible manner.

Part of the economic system is the sliding scale of employment (see figure below right). In the early years of the company, much of its financial liability must be paid off, and the vast majority of the tenants would hold jobs outside, bringing in cash to pay the bills. As time passes and the manorhouse begins to mature, some of the tenants with marketable skills begin working in-house, selling their wares through the manorhouse. Once the manorhouse is fully established and the original mortgage paid off, the tenants will have had time to master many of the skills required to successfully operate the place, and only a few tenants who wanted to would work outside.

Revenue Sources

- Income from individual families, the majority of which work outside of the manorhouse, bringing in currency. A specified amount is paid to the cooperative, as a sort of "rent" or house payment.
- Admission to the village for daily visitors.
- Tuition/fees for short courses and workshops on period techniques.
- Sale of work done on-site (this would be somehow worked out as private profit, potentially).
- Sale of agricultural products, including excess livestock, prepared edibles, and general crops. This also counts for agricultural products used in-house by tenant families.
- Sweat equity from tenant families.

Annual Expenditures

- Mortgage on the property and structures.
- Maintenance on structures and equipment.
- Food and supplies not raised on-site.
- Utilities such as electricity, gasoline, etc. to run maintenance equipment and modern items in manorhouse.
- Administrative costs for managing the cooperative.
- Administrative costs for managing the visitors and related support services.

Tenant families have to have enough money left over at the end of the month to allow for self-actualization. This amount will vary greatly with the individual family and outside circumstances.
Cohousing communities are tight-knit comminutes. Since all of the community members know each other, it has a very safe, neighborhood feel.

Age Diversity
The structure of the community allows for the elderly and the very young to intermingle freely. Children and the aged can benefit from each other's presence.

People Helping People
Because you are living in a neighborhood of friends, it is commonplace for families to alternate baby-sitting duties and other domestic tasks, pooling their resources. Neighbors look out for the well being of other families, providing emotional support in times of crisis.

Commonly Held Spaces
It is typical of cohousing projects to have a public building that serves the community. It might have recreation rooms, meeting spaces, or a large kitchen and dining area. Several families share spaces that would be expensive and inefficient to own privately, and the nature of the space insures social interaction. In the case of the manorhouse, these publicly owned items range from services like the barn and stables to the land itself.

Pooling Resources
Depending on the specific arrangement of the community, services ranging from heating and power to trash collection can be purchased as a group, at a discounted rate. At the manorhouse, general administrative funds cover everything from agricultural startup to buying communally used equipment.

Financial Security
All tenants would pay their mortgage payments to the holding corporation, which in turn would make payments to the bank. This means that if someone were to experience a month or two of financial trouble, they could be carried "on the books" by the holding company, but it also unfortunately means that if someone continually defaulted on their payments, they could put the other tenants in financial jeopardy.

Sense of Responsibility
Since the cooperative is owned by everyone in it, public spaces are better maintained and respected. In addition, cooperative tenants are required to work a certain number of hours on maintenance per month, or make up the difference in cash.

Transfer of Property
Unlike a commune, where you lose all claim to property when you sign on, the cooperative allows you to build up equity in your home. To prevent buying as investment, several checks and balances are in place: as part of the tenant agreement, new tenants are interviewed and screened to see if they will be a good addition to the community. Also, if a tenant sells his share, he is not allowed to gain more profit than the actual value of the property at the purchase date, adjusted for inflation.

A Voice in the Government
Each member has a voice in the operations of the manorhouse, and important decisions are reached by consensus, with lesser details handled by committee.

There are several different means of holding property; here is a very superficial overview: Individual ownership is the basic type of home ownership where a person simply owns their home outright, and has control over it. Common-interest ownership is where an individual unit is owned, and the owner also has a stake in the overall ownership of the property and any shared spaces. Condominiums are typical of this arrangement. In nonprofit ownership, the entire property is owned by the group as a whole, and individual units are leased from it. Partnership ownership is where a specific person, rather than a nonprofit organization, owns and administers the property to lessors.
The Modern Medieval Manorhouse is a design for a structure that caters to the needs of medieval reenactors and living historians. By recreating a period living environment as true to history as possible, we create fertile ground for the rediscovery of our own Western European heritage. The enthusiasm in today's world for those things medieval is apparent to anyone who visits one of dozens of renaissance festivals, medieval reenactments, or historical societies.

This program responds to two different user groups, and two different need. There will be both long-term tenants and short term visitors. The program will be as thoroughly period as possible, but modern in construction techniques, life safety issues, and accessibility. The seamless integration of the two programs is essential to making a safe, believable environment for the tenants and the visitors to pursue their discovery of medieval history.
5.1 GENERAL PROGRAM

The programmatic concept is to create a time inversion: a place where time is out of place; the realistic existence of anachronism. In the mundane example of space planning, we often deal with spatial evolution and progression; here we are concerned with temporal progression. The site is a sort of controlled de-evolution from the modern, mundane world to the dirty, grass-roots but very fundamental world of the early fourteenth century. Nature and its trappings are the medium for the transformation. As we pass through the green belt of woodland that surrounds the site (be it by foot, horse, or car) we are also passing through a rift in time. As the forest itself is timeless, we don’t notice the passing until we are there in that place that once was.

Spaces in the overall site
- fields
  food production
  1-2 acres
- vegetable gardens
  1/3 acre
  minimum
- pasture horses (8): 1 acre
  cows (1): .15 acre
- beehives
  food production
  20 acres
- softwood harvest forest
  trees for wood fuel. rotated.
- hardwood harvest forest
  integrated with preserved lands.
- preserved acreage
  woodland, field, & stream maintained/
  degraded to primordial condition
- camp for visitors
  a place for visitors to camp primitively in
  period with minimum impact to the land
- approach, car park
  place for both visitors and tenants to leave cars. Should be inconspicuous.
- subsite
  building(s) & spaces
  ± 1 acre

Overall Site Program
Spaces in the manor proper

5.3 • towerhouse
public functions, community uses
4130 sf

5.4 • gatehouse
control access, entypoint, central node for visitors
1420 sf

5.5 • inn & tavern
housing for guests, place for community & guest interaction
5985 sf

5.6 • private dwellings
living places for permanent tenants
6 @ 1080 sf

5.7 • public garderobe
230 sf

5.8 • carriagehouse & stables
for both horses & carts, maybe even a modern vehicle
2550 sf

5.9 • well
typical open type
115 sf

5.9 • dovecot
either integrated into a building, or freestanding.
100 sf

5.10 • courtyard/esplanade/lawn
playing, harvest chores, ad infinitum
±1500 sf

5.11 • meditative/ herb garden
800 sf

total courtyard sf
2515 sf

circulation @ 15%
3497 sf
mechanical @ 15%
3120 sf

gross square footage
29927 sf

GENERAL PROGRAM

5.2

There are 2 totally separate and independent agendas in the program. The first is to create a program that accommodates the needs of the 2 main user groups: history enthusiasts (temporary visitors) and living historians (long-term tenants). The second agenda is to recreate the workings of a typical northern English 14th century village from a programmatic standpoint. The ultimate solution melds the two into one seamless construct, with all of the fundamental premises and character of the medieval model, but retaining all of the safe, sanitary, and efficient attributes of the more modern program.

A period medieval village would be the center of life, production, and society, even though it was probably no larger than a handful of families. Travel was hard, making authority and commerce very localized. As there was very little centralized government, each settlement had to have a way of protecting itself. This device usually manifested itself in the form of a wall. A respected local or royal appointee served as the leader of the town and arbiter of disputes. The village was the universe, the primal nucleus of all things.

Subsite/ Manor Program
EVENTS:
- Eating
- Conversing, telling stories
- Entertainment: music, tom tooley
- Games
- Being together

The Great Hall was traditionally the room for everything: eating, entertainment, sleeping, and public meetings. In the later middle ages, the great hall was even used for exercise during the cold winter months. In this program, the Great Hall is much like a community center or chapter hall in a church. Tenants can use the space whenever they want for whatever they want. One of the primary uses will be for preparing meals together. General meetings with high attendance will be held here, as well as private banquets and the like that are just for the tenants and invited guests. It is the central semiprivate space that the tenants share that is not open to the visiting public.

Standard sized tables allow flexibility in function by rearranging them as needed.

GREAT HALL: 1500 $
5.3 BUILDING PROGRAM

The towerhouse is the center of the community. In the traditional model, it was the dwellingplace of the lord and his family, audience chamber for visitors, and a place for general village meetings and business. It was a last place of refuge in times of attack, as it was built stronger than any other structure. In the modern example, the towerhouse is the collection of communal spaces that the tenants share: feast hall, kitchen, meeting spaces, and a library. Distinguished guests and family friends might stay here, as well. It is closed to access by the day-to-day visitors (except on special holidays or by permission), which is also fitting to the traditional idea of the building.

The Reeve manages the estate from here through a modern office.

<table>
<thead>
<tr>
<th>Towerhouse</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.3a · great hall</td>
<td>1500 sf</td>
</tr>
<tr>
<td>5.3b · harvest kitchen</td>
<td>400 sf</td>
</tr>
<tr>
<td>5.3c · pantry &amp; root/wine cellar</td>
<td>680 sf</td>
</tr>
<tr>
<td>5.3d · garderobe &amp; bath</td>
<td>250 sf</td>
</tr>
<tr>
<td>5.3e · library</td>
<td>220 sf</td>
</tr>
<tr>
<td>5.3d · council chamber</td>
<td>260 sf</td>
</tr>
<tr>
<td>5.3e · study/office</td>
<td>250 sf</td>
</tr>
<tr>
<td>5.3f · chapel</td>
<td>350 sf</td>
</tr>
<tr>
<td>5.3f · high guest rooms</td>
<td>2 @ 110 sf</td>
</tr>
</tbody>
</table>

towerhouse total 4130 sf
If you are going to produce and process agricultural products, you need a place to work with them once they are harvested. The harvest kitchen is a kitchen that is oversized to accommodate extra people and work space necessary to can, preserve, dry, and process food on a large scale. In this harvest kitchen, many of the medieval tools for this job are retained (like the masonry oven and firepit), but the modern is there as well (electrical appliances and refrigeration).

The pantry and wine cellar are adjacent to the kitchen, and are cool and dry in climate to better store dry foodstuffs.

**Events:**
- Food preparation
- Harvest processing
- Socializing

**Harvest Kitchen:** 400€
**Pantry & Storage:** 400€
**Wine Cellar:** 280€
The garderobe and bath in the towerhouse are there for the use of the tenants, but are also large enough for use by guests of the tenants if they are staying in the guest rooms or the great hall. They are not terribly large, as the demand is not high in this area.

Public Garderobes: 150¢
Single Bath: 2¢ 50¢

\[ \text{Garderobe & Bath Program} \]
The council chamber is a small-group meeting place for the tenants. Private interviews, subcommittee meetings, and workshops are held here. As it is somewhat of a formal space, there should be a dramatic view.

The library holds a collection of books on medieval history and related topics. The room is lit from clerestories to a level satisfactory for reading, and there is a comfortable chair and a work desk there for studying.

Period libraries were often considered "massive" if they held as many as five books, and how civilized you were was often measured by how many books you had in your collection.

**Library & Council Chamber Program**
The office is where the manager of the manor, called the Reeve, keeps track of tenants, keeps the books, and stores all of the records and files. Advertising for events at the manor originates here. The office is fully modern, with fax, computer, and copier available.

The chapel is a small ecclesiastical space that caters to the needs of the tenants. Tenants can attend church in town, or in the chapel, or occasionally have services outside if the weather provides. Besides the regular Sunday services, though, the chapel is also a place to have weddings, baptisms, or even funerals. It is small, which creates an intimate setting.

**Room Program 5.3e**

Office & Chapel Programs
If the tenants have guests that are too great in number, or the manor as a whole has a very special guest that needs special care, there are guest rooms available for their use. They are community property and for the use of all the tenants. Since they are in the character of the medieval style, they are quite rough; no in-house plumbing in these rooms, but they are fine nonetheless in a medieval sort of way. Tapestries hang on the walls, and a four-post bed and porcelain washbowl are some of the appointments.
### Gatehouse

<table>
<thead>
<tr>
<th>Section</th>
<th>Room Description</th>
<th>Size (sf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.4a</td>
<td>entrance control</td>
<td>90</td>
</tr>
<tr>
<td>5.4b</td>
<td>visitor center</td>
<td>70</td>
</tr>
<tr>
<td>5.4b</td>
<td>bailiff's office/guardroom</td>
<td>35</td>
</tr>
<tr>
<td>5.4e</td>
<td>bailiff's apartment</td>
<td>±865</td>
</tr>
<tr>
<td>5.4c</td>
<td>armory</td>
<td>50</td>
</tr>
<tr>
<td>5.4c</td>
<td>dungeon</td>
<td>50</td>
</tr>
<tr>
<td>5.4b</td>
<td>mail room</td>
<td>neg.</td>
</tr>
<tr>
<td>5.4d</td>
<td>first aid/emergency services</td>
<td>260</td>
</tr>
</tbody>
</table>

**gatehouse total** 1420 sf

### Building Program

5.4

Traditionally, the gatehouse was critical to the concept of wall. Besides preventing unwanted people from burning the village, it also regulated the flow of people into and out of the important trading centers around the world. By collecting a toll, municipalities could gain income to pay for public works.

In the modern example, the gatehouse serves a similar purpose. As the main entrance to the village, it is a place for visitors, not knowing the site, to get information and reception before exploring inside. Entrance fee and admissions can be controlled from this point, as well as security. Since the gatehouse is a visible landmark that all the visitors have to be acquainted with to gain admission, it is also a good place to put visitor services, like first aid and information.

The man in charge of admissions, visitor services, and security is the Bailiff. Historically, the lord himself or one of his close friends lived in apartments over the gatehouse, to prevent the capture of a castle by treachery.
Entrance control plays a vital role in both the period medieval town and in the modern one. In the 14th century, gates prevented pesky neighbors from burning down your hard-earned homes and food storage. They also allowed a settlement to collect a toll of those passing through, to help raise money for public works projects. The gate's role in the modern village is similar in this respect; like an amusement park or a theatre, the tenants could collect a small fee from visitors, while also having some degree of control over who was entering their domain and at what time.

The size of the portal itself is important. It must be big enough to allow an unrestricted flow of both foot and cart traffic, yet it must be small enough that it can be defended in times of war. The gatekeeper must have a way to see who is before the gate, and the gate must be readily operable. In addition to all these considerations, period medieval gates also incorporated several devices to give advantage in a war. A Stout wooden doors opened inward to conceal bars and hinges, murder holes and arrow loops looked over the entrance, and an iron portcullis or yett backed up the wooden door in case it was burned down.

**Entrance Control Program**

- events:
  - greeting
  - passage input TRANSITION
  - access control

Portal/Gate: 90°
The visitors' center has to be close to the entrance and relatively easy to find, so that visitors who are unfamiliar with the layout of the place can find it. It will have the following features:

- brochure & informational pamphlet display area, free information handouts, etc. within easy reach.
- a place for the reception person or Bailiff to interact with the visitors and get acquainted.
- a mail room or area. The postman will deliver mail for the entire manor house to the visitor's office, and each household will pick it up from there.
- an office/guard room for the Bailiff. This will be integrated with the visitors' area. It will also have visual access to the gate area for monitoring.

**Events:**
- Observation/registration of entries/exit
- Information & registration for visitors
- Mail room
- First contact w/ visitors

**Visitors' Center & Bailiff's Office Program**
The armory and dungeon are two very medieval spaces that don't really have any place in the modern realm except in a token sense. I include them here because of the historical nature of the village, although they also are surprisingly adaptable in their nature. In Cawdor Castle, for example, the dungeon had no prisoners for years, because it was busily being used as either as a child's playroom (!) or a dry food storage area.

The program for both of these spaces is very simple. A dungeon needs to be plain, small, uncomfortable (cold, hard, damp...) and very difficult to get out of. Light is not a requirement. An armory has similar needs, in reverse: it must be hard to break into, and must be dry and cool for the storage of weapons.

Armory & Dungeon Program

**50**

- None, really.
First aid and emergency services need to be located in a readily accessible place to be most effective. Since the gatehouse fits that description for reasons previously mentioned, it is the home of these services. In a 14th century setting, emergency services such as fire fighting or civil defense were usually coordinated and controlled by the Lord or town elder. First aid, if available, was usually home remedies or a barber. In the modern world, however, life safety issues are addressed with more attention. The emergency area in the manorhouse will have storage space for fire fighting equipment, first aid equipment, and any safety devices whose need is foreseen by the tenants. Adjacent to it is an infirmary for low-level medical care or primary care until an ambulance arrives. If one of the tenants were also a physician, this would be the place that he could use for routine checkups and procedures.

**First Aid & Emergency Services Program**
The Bailiff's apartment is like any of the other private dwelling spaces, except that it has direct access to the gatehouse. This is simply because the Bailiff is responsible for the state of the gate. For specific room programs, please see the private dwelling room programs in section 5.6.

<table>
<thead>
<tr>
<th>Room Program</th>
<th>Description</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.6a</td>
<td>living/family space (hall)</td>
<td>±400 sf (hall)</td>
</tr>
<tr>
<td>5.6b</td>
<td>eating space</td>
<td>80 sf</td>
</tr>
<tr>
<td>5.6c</td>
<td>food preparation</td>
<td>50 sf ea.</td>
</tr>
<tr>
<td>5.6d</td>
<td>sleeping space x 2</td>
<td>±120 sf</td>
</tr>
<tr>
<td>5.6e</td>
<td>master sleeping (solar)</td>
<td>65 sf ea.</td>
</tr>
<tr>
<td>5.6f</td>
<td>bathroom (garderobe) x2</td>
<td>150 sf</td>
</tr>
</tbody>
</table>

**apartment total**: 865 sf
### Inn & Tavern

<table>
<thead>
<tr>
<th>5.5a</th>
<th>5.5b</th>
<th>5.5c</th>
<th>5.5d</th>
<th>5.5f</th>
<th>5.5f</th>
<th>5.5f</th>
<th>Inn &amp; tavern total</th>
</tr>
</thead>
<tbody>
<tr>
<td>common room</td>
<td>pantry/ wine cellar</td>
<td>toilet facilities: public</td>
<td>bathing facilities</td>
<td>cold dormitory (16 bed)</td>
<td>private rooms</td>
<td>merchant's rooms (larger)</td>
<td>1350 sf</td>
</tr>
<tr>
<td>taproom</td>
<td>storage space</td>
<td>private</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>kitchen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Inn & Tavern has two important duties. First, it is a place for the day-to-day visitors to have as their own, with opportunities for eating & drinking, sleeping, and socializing. Second, it is a chance for the tenants and visitors to meet one another and interact in an informal, after-hours sort of atmosphere. Combining both a pub and a bed-and-breakfast in the traditional medieval style, it is a warm and cozy place for a drink and a chat, and perhaps even a bite to eat. A coffee shop in the morning, a sub shop in the afternoon, and a home cooked meal in the evening...

The Innkeeper might live in an attached building or in a loft apartment above.
The common room and taproom are the rooms around which the inn revolves. They are the center of activity, where people meet, talk, carouse, and tell stories. The common room is a place for the visitors who are spending the night to hang out in the evening before they retire, but it is also a place for the tenants to go to spend an evening out with others—either tenants like themselves, or visitors. It is like a pub, in that it is a recreational relaxing place that is warm and friendly in character. Food and drink are served. People at the tables and bar engage in boisterous cheer, while others in the dim corners speak quietly of solemn affairs. Like the great hall, it is a space for everything, that gets used for everything. And in times of special events, it even serves as overflow sleeping space (a very period idea...)

**EVENTS**
- Interaction of tenants & visitors
- Drinking with people
- Drinking alone
- Taking meals
- Intimate conversation
- Dancing & boisterous merrymaking
- Warming by the fire
- Public meetings

**Common Room & Taproom Program**

**Events**
- 750
- Common Room: 1350

**Taproom**
- Up to 30 comfortably, but not to feel empty with only 6 or 8.
- Quiet, conversable.
The kitchen here is a special combination of the past and the present. It has period equipment where practical:
  * cast iron kettle on swings
  * masonry niche bread oven
  * spitted fire
  * wooden chopping block
Other more modern conveniences are also present to satisfy safety and practicality requirements:
  * walk-in refrigerator & freezer
  * stove & oven
  * misc. electrical kitchen equipment
Some sort of visual access to the medieval equipment should be available to the visitors. The layout should be efficient, with enough room to prepare meals for thirty.

The pantry is for storage of dry goods, and the wine cellar is a cool place for the large collection of ales, meades, wines, and beer that the guests demand. Both must be cool and dry, with a stable climate.

**Events:**
* Meal preparation

**PANTRY/WINE CELLAR:** 300$

**KITCHEN:** 500$

**Kitchen, Pantry, & Wine Cellar Program**
Garderobes, or toilets, are obviously a requirement in any public gathering place. It is likely that the visitors will not want such an intensive immersion in history that it include cesspits or the like, so this will be the one place in the manor with traditional toilets. In addition, the garderobes will have washbasins (unheard-of in the period model). Sexes will be separated. Interior surfaces to be sanitized will be of polished stone or the like, rather than plastic or tile, to enhance the aura of the place. Natural ventilation will remove odors without the use of fans.

**EVENTS:**
- Defecation
- Morning toilettte

**Toilet Facilities Program**

- Public Restroom: 150
- Inn: M. Toilets: 90
- F. Toilets: 65
- Washroom: 2 - 45

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**Code min. Features:**
- 1 toilet, lavatory, 1 lav.
- 2 toilets, 1 lav.