Historical Housing Archetypes of Texas

An Investigation of Texas Ranch Houses

Walter Cicack

Michael Fifield

Arch 510

12/7/2009
Introduction

The consistently hot climate of Texas creates unique challenges for architects and home designers. In modern Texas the market and the building professionals have chosen to handle the need to cool buildings with air conditioning. The housing system is conceived from the ground up with an attitude that places little value on energy efficiency. This attitude is changing, and a push toward a more energy efficient Texas is being driven by the consumer housing market and the cost of energy. However, most Texans do not live in brand new dwellings and they must contend daily with the downsides of living in homes that are poorly insulated and are designed to be cooled only with air conditioning.

The amount of energy consumed every day by Texas’ millions of AC units is astronomical, and the cost of this AC represents a significant portion of every commercial and domestic budget. Not only is this system wasteful, but with the high cost of energy it’s expensive too.

Texans have been creatively engineering their dwellings to combat the heat for hundreds of years. The archetypal dwellings of Texas are rich with ideas about how to keep a home cool with zero carbon emissions. The ingenuity of pioneers has expressed itself through the creation of energy efficient homes in a variety of shapes and styles and a plethora of approaches to the issue of heating and cooling. Why is it then that modern Texans are content to air condition every occupiable building in the entire state? Perhaps an investigation of how some of our Texas forebears have approached the issue of heating, cooling, and general efficiency in their homes can give us some ideas about how to better engineer our modern dwellings.

In this paper we will examine three of the most common archetypal dwellings in Texas’ history. The dugout, the dogtrot and the Texas ranch house are all deeply rooted in Texas history and tradition and each represents a unique approach to the needs of housing in Texas, complete with their own approaches to solving the issues of material consumption and heating and cooling. These home archetypes are what I term “ranch-style” houses. I define this term as a low-density dwelling, separated from other built space by wilderness or agricultural land which provides for most of its own infrastructural resources. Basically a “ranch-style” house is one that you might expect to find on a ranch or a farm, not one you would expect to find in a city. We will focus specifically on how these archetypes tackle these issues because they are the most relevant issues facing innovative home designers and architects in Texas today.

Today, over 80% of Texans live in urban areas, so naturally the state’s most pressing housing concerns are for higher density urban dwellings rather than low-density rural ones. However, the lessons to be learned from rural Texas dwellings of the past have definite applications for the more dense, urban dwellings called for in today’s housing market.

The last part of this paper will be my proposal for the archetypal low-density Texas home of the future. I will attempt to synthesize the useful lessons from the past about conservation and efficiency and apply them toward a housing proposal that is significantly more efficient than today’s average Texas home both in terms of energy and material needs. My proposal will be for a “ranch-style” house intended to stand alone. It will attempt to integrate the most effective features of the archetypal Texas homes of the past with some of the modern advancements in materials and construction technology. My goal is to design a dwelling that could be constructed on a modest budget and would be attainable to the middle-class.
Dugout Houses

The basic archetypal dugout is characterized by being “dug” into the side of an earthen mound or small hill. Although this archetype appears in dissimilar manifestations throughout Texas (sometimes with surprisingly inventive structural engineering strategies) all dugouts share this property.

An average dugout home would be constructed of three earthen walls with a fourth wall made of wood or stone. The interior of the dwelling would essentially be a hollowed out hill with dirt floors and few if any windows. Water and sanitation needs were satisfied outside of the dwelling- outhouses would be necessary accoutrement. The roof would commonly be made out of earth or wood and would be supported by internal wooden columns, beams and braces. Dugouts usually only had one exposed facade. Dugouts were often outfitted with a traditional Texas covered porch.

This house in Palo Duro Canyon near Amarillo is a typical pioneer period dugout. Probably constructed in the early 1800’s, it is located in an arid desert with little natural stone and sparcie timber. In archetypal fashion, this dwelling is composed of shaped earth on three sides and on the roof. The structural system is primitive, with crudely shaped cedar logs providing support and bracing and unshaped local stone providing interior wall support.

This home represents the limited materials and tools at hand to the Texas pioneer; no cement was available so all the walls are sealed with tightly packed earth and clay. This dwelling has no windows, only a small door and a chimney for a woodburning stove. The interior space is likely small and cramped. The lack of large timber coupled with tools sufficient only to create rudimentary wood joints limited the inherent structural possibilities. This is a major reason why prairie dugouts were so small- shorter timbers means shorter spans. This dugout also has dirt floors and lacks the structural assistance of a concrete foundation. However, its been standing (or should I say crouching) for nearly 200 years, so its safe to assume that it is structurally sound.

These early incarnations of the Texas dugout came about as a response to limited means and materials. The upsides were notable however, and later Texans who were not pioneers and who had access to more advanced building materials continued to produce dugout-style dwellings to capitalize on the benefits of effeciency of materials and energy.
Dugout houses had a few notable downsides: They were spatially confined and dimly lit. They had to be built in a spot where the natural conditions were right, namely in a spot with a preexisting earthen mound of workable constitution, or in a place with workable natural stone. They were relatively arduous to construct and could be dangerous (due to the unpredictable nature of the materials). These downsides were most clearly present in the pioneer-era but continued to restrict the dugout homes of the 20th century.

This archetype boasts several positive features however, ones which make it relevant in an effort to develop better ranch-style housing in Texas today. The dugout archetype is extremely efficient in terms of material use and energy consumption. Dugouts utilize natural earth to form most of the space and structure, this means that all the materials that normally go to creating walls and then holding them up can be conserved for other purposes. The dense earthen walls and ceiling of a dugout dwelling keep it naturally well insulated. This means that with the help of a shading device (such as a porch awning) the interior of the structure can be kept relatively cool during the hot summer months without the consumption of energy, and, with the help of a wood burning stove, can easily be kept comfortably warm during the frigid winters. This is an enormous benefit when considering the materials required to give a wood-frame structure similar insulative properties.

The Lem Creswell House in Concho County was built in 1900 and represents a typical 20th century Texas dugout dwelling. Like its pioneer predecessors, this dugout has three sides supported by earth with the fourth side facing south. This dwelling boasts several advancements on earlier pioneer-era dugouts. It was built with the benefit of concrete, allowing for a poured concrete foundation and retaining walls; it also provides a sturdy mortar for the local stone which provides structural support. The plastic properties of the cement mortar allow for window openings in the entrance facade. This dugout greatly benefits from access to standardized building materials available in the 20th century. It also features a crimped sheet metal roof, a feature which would not have been possible in the earliest incarnations of the Texas dugout, but only after the proliferation of the railroad. The Lem Creswell house represents an incarnation of the dugout house built not out of material necessity, but instead out of consideration for its efficient material and energy characteristics.
Dogtrot Houses

The archetypal dogtrot house consists of two discreet rooms separated by an open air walkway and connected by a common porch and roof. As a basic cooling strategy, the walkway employs the Bernoulli effect to create a breeze between the rooms. The dogtrot house is so named because the walkway was typically the coolest place in the house, and thus the favorite location for the family dog.

Dogtrot houses were typically constructed of timber for the walls and the roof with dirt or wood plank floors. The evolution of the construction process is clear. In the earliest incarnations these homes were built of rough-hewn timber and held together with primitive notches and mud. As the houses evolved, it became common for dogtrots to be constructed of carefully-hewn timber and held together with intricate notching systems that allowed for mortice-free fitting. Wall timber could be stacked together so tightly that they could be made relatively water and air tight making for surprisingly draft-free interior spaces. Later incarnations of the dogtrot would be made with frames of standardized commercial timber.

The cooling strategy for the dogtrot home is ingeniously simplistic. By creating two discreet masses of sufficient depth separated by a narrow opening, the pioneers were able to capitalize on induced air flow similar to the air currents generated in the alleys between tall urban skyscrapers but on a much smaller scale.

The dogtrot was one of the most prolific Texas pioneer home types. This home archetype entered Texas later than the dugout, coming with second and third-generation pioneers who were moving Westward in the mid to late 1700’s from earlier European colonies like Georgia and Florida; it was not a home type that would be common among Texas’ earliest French and Spanish settlers. The dogtrot house remained popular in rural Texas well into the twentieth century and is occasionally still produced in modernized incarnations.

The Brown-Woodlief house was built in 1828 in Washington county. This home represents the primal archetype for the dogtrot; constructed of carefully hewed and notched Texas cedar, this home has the typical two rooms with peripheral masonry chimneys with a shed roof and a full-length front porch. It represents a significant measure of labor and material investment for the original builders. Beside the basics, this home also features a foundation of local Texas stone and a second full length porch on the back of the house.
Early dogtrot homes were built by pioneers with primitive tools, but as the dogtrot evolved so to did the craftsmen who built them. Later dogtrot homes were more complex and precise than the pioneer models and it became necessary for them to be constructed by building professionals.

The dogtrot is unique as a housing type because it was successfully adapted for large and small scale urban buildings all over Texas with great success. In the mid 1800’s, the dogtrot design began to be applied to urban structures such as hotels, workshops and stores as well as scaled down residences built on city lots. The dogtrot design has been applied to structures in many scales, from small dwellings of only a couple hundred square feet, to busy public businesses of several thousand.

The Winedale Stagecoach Inn in Washington county was built in 1834 using local cedar and experienced local craftsmen. The original building was two discreet rooms with upstairs lofts for sleeping quarters. In 1848 the inn was expanded and the loft quarters were separated into individual rooms. This beautiful historic building is proof that the basic dogtrot concept can be successfully adapted to larger and more complex systems than the simple two-room house.

This dogtrot house sits on a hilltop in Poplarville, Missouri and represents a stylish, modern approach to the basic dogtrot design. Dogtrots like this one are creeping up all over the Southern United States in an active attempt to build more energy efficient homes.

Modern climatary and topographical analysis allows architects to gain sophisticated information about site and wind conditions. Today’s dogtrot homes can be constructed with a high degree of response and precision relative to the conditions of its specific site. A home built with a deliberately engineered passive cooling strategy that responds directly to microclimate issues can save the owner thousands of dollars in the long run and reduce the need for electricity.
The Texas Ranch House

The “Texas ranch house” is a special case among the archetypes we are discussing. This is partly due to the fact that the “Texas ranch house” is an archetype that (to my knowledge) has not been specifically defined before. In order to discuss this archetype I offer this personal definition:

The “Texas ranch house” is a housing type characterized by a rectangular footprint, a shed roof extending from the front of the building to the back and not from side to side, a front porch held up by columns, and the presence of wholistic symmetry.

As I was growing up in Texas, this archetype was ever present. In every city in Texas, from the huge urban meccas to the smallest rural towns this archetype is everywhere. It appears in manifestations both old and new and in a wide range of styles and scales. Of all the archetypes discussed in this paper, the “Texas ranch house” (which from now on will appear without quotation marks) is the most quintesencially and representatively Texan.

The Texas ranch house does not carry with it any special site conditions, specific structural order, or special approaches to the issue of cooling and efficiency. These are not the areas where the Texas ranch house is unique- the Texas ranch house, as an archetype, is unique because of its distinctinve geometry. This stark rectilinear geometry embodies an amalgamation of cultural approaches to architectural geometry and is representative of the different ethnic groups that have had a major impact on early Texas architecture- most notably German. Since it is the formal features of this archetype that make it distinct, this discussion will focus on different formal expressions within the basic archetype.

These two homes represent some of the earliest expressions of the true Texas ranch house; both homes were built in the first half of the 19th century and represent the most basic expression of this archetype during the pioneer period. Although the structural systems for these homes are different (the round top house is supported by columns and beams and the Huntsville house is supported at the walls by stacked logs), the geometrical similarities of these homes is striking. The basic features of the Texas ranch house archetype are unmistakably clear: the straightforward retangular footprint, the front to back shed roof (pitched in both cases at aproximately 30 degrees), the distinctive front porch (both expressed with four simple log columns), and the punctuated but wholistic symmetry.
The Texas ranch house archetype responds to climatary and social needs in the most straightforward way possible. These homes are expressions of a distinctive cultural mindset that values simplicity, raw functionality and social approachability. The front porch takes on a unique significance in the Texas ranch home because not only is it a frank solution to the issue of cooling (by simply providing a covered outdoor space to escape the sun and enjoy the breeze) but it also provides a space for Texans to enjoy social activities. Friendliness and general approachability are characteristics that one can expect to find as a baseline for Texan culture. This is in part due to the cultural history of friendliness that has been present since the times of the first pioneers. The front porch is just one way that this cultural characteristic crops up in Texan architecture.

These early examples of the Texas ranch house occur in sparsely populated rural areas, and exist on property with supporting infrastructure. In other words, these are true ranch homes, they exist in the wilderness and are surrounded by all the infrastructure (livestock, arable land, well water, outhouses) to make for a self-sufficient, sustainable existence. This archetype originated in rural ranch settings like this one (hence the name) and began with simple expressions of the tools and materials available to pioneer ranchers. As time progressed, the Texas ranch house saw a massive crossover into the urban arena (to be discussed shortly) but continued to evolve in the rural settings as well. We can observe a change from primitive pioneer dwellings to elegant and sophisticated homesteads. These changes came about as a result of greater stability (i.e. the Indian threat), the establishment of urban areas with their associated craftspeople /specialists, and the growth of wealth experienced by the state and its population as a whole.

The Peter Walter House in Fredericksburg represents a period in Texas ranch house evolution between the primitive wooden structures of the early 19th century and the more elegant, composed structures of the post-civil-war era. This structure exhibits huge improvements over its predecessors. The exterior walls of this structure are made of carefully hewn local limestone reinforced by shaped cedar braces. It is not clear what type of foundation this structure has, but it is adhered to the ground, not built on stilts like the log houses were. The level of spatial and aesthetic sophistication did not increase greatly in the transition from the early log houses to these more sturdy and structurally precise masonry houses; they did however improve greatly in terms of strength, protective safety and longevity.

It should be noted that Fredericksburg (along with many other Texas settlements) was a German immigrant town. The influence of traditional German architecture was prolific in 19th century Texas and, more than any other ethnic architecture imprinted onto the Texas ranch house. Let us digress momentarily to discuss the German influence in Texan architecture.

This original 17th century German farmhouse from the Rhineland now sits in a frontier museum in Virginia. Observe the similarities between this house and the Walter house. The only major difference is the lack of a front porch, a feature which is not needed in Germany’s mild summers. The roof shape, symmetry and proportions are remarkably alike between the two homes. They also display similar structural systems; both employ masonry walls with embedded timber braces. Notice how the German farm house places more emphasis on the symmetry of wall openings than does the Walter house.
Built around 1870, the Carl Wilhelm Rumel house in Round Top is a beautiful example of German-Texan craftsmenship and ingenuity. This home represents an apex point in the evolution of the Texas ranch house; it was in the post-civil-war era that the stylistic aspects that would come to most characterize and define this archetype were crystallized. This stylistic expression of the Texas ranch house is the basis from which all (or most) future iterations (both rural and urban) of the archetype were based.

The stylistic features that distinguish the Rumel house from its predecessors include the twin masonry chimneys set at opposite sides of the house. This home has a simple three room floor plan (two symmetrical rooms on the ground and a loft on the second floor) and the fireplaces are placed at opposite peripheral positions relative to that symmetry. The fireplaces sit at the sides of the house rather than the middle because the primary climate control issue in this home would have been keeping it cool, not heating it up; their position on the home’s perimeter means that much of the heat they create is dissipated into the atmosphere and not into the interior of the home. The presence of the two fireplaces allows the whole house to be heated when needed during the (comparitively mild) winter.

The level of precision and craftsmenship on the Rumel house is another stylistic quality setting it aside from earlier Texas ranch houses. A poured concrete foundation slab establishes this building on a firm footing, and the structure is provided by an expressive mix of light and heavy timber integrated with local stone. Timber columns and beams along with rafters and floor joists comprise the simple, symmetrical structural framework and hold up the roof and loft. Stone walls held together with clean strong Portland cement comprise the anterior external walls. Notice how the side walls are finished in natural stone and the back wall is finished in white plater- this is done in order to help complete the order of symmetry by having the back wall more resemble the front. The detailing and fenestration on this house are simple yet handsome, testament to the German craftsmen who made early Texas architecture famous. The level of articulation in the window and door frames is elegant and precise; openings in this house are treated as opportunities for geometric and aesthetic expression.

The staunch, rigid expression of symmetry is the most significant stylistic characterisitic of the Rumel house. Previous expressions of the Texas ranch house were primarily concerned with raw functionality and not aesthetic grace. However, as structures, society and urban areas became more sophisticated this design viewpoint gave way to one that considered aesthetic qualities to be at least as important as functional ones. It is fair to say that the obsession with symmetry is a quality that was donned on the Texas ranch house from its German influences. Previous examples of the Texas ranch house had askew or off-center entrances. The Rumel house and others like it established a trend that placed single entrances on-center or double entrances symmetrically at the edges. The relationship of the windows and doors to the facade and each other is a factor of the internal workings of the structural system. Windows and doors fit precisely
The A. Goldman House in Victoria represents the next step in the Texas ranch house’s further integration into the urban sphere. This home displays all of the archetypal features like the Odom house, but it takes a more pedestrian approach in its relationship to the street and to its neighbors. The house is pulled forward toward the sidewalk and the street. Although the boundaries of the lot are clearly defined with a white picket fence the porch is clearly sized and lifted to make it approachable by passers by. This kind of porch to sidewalk relationship is at the heart of the Texas ranch house’s popularity in urban Texas during the periods before auto transportation became the norm.

This hill country ranch house by Texas architect Richard Mogas is a beautiful example of a modern expression of the rural Texas ranch house. Built in the late 1950s, this quaint, one story home displays all the stated archetypal features of the Texas ranch house. It incorporates several modern features such as sanitation, water and electric conveniences as well as structural upgrades such as the sturdy board and batt metal roof. This home deviates from the norm set by homes such as Rumel house by relaxing the internal and external symmetry. Also the presence of mechanical heating devices makes the fireplace more of a social and aesthetic feature than a necessity, leading to the incorporation of only one fireplace. Even well into the modernist era, these Texas ranch houses display the same set of basic geometries and adjacency relationships as their predecessors. Only minor geometric differences are present, largely due to the differences in building materials.

The Jim Odom house in Cherokee Community is a stereotypical example of an early cross over of the Texas ranch house into urban areas. Built in the early 1900s, this home displays all the archetypal qualities of the Texas ranch house, but with added features helping it relate better to its compact lot and urban context. These new features include the porch banisters and the elevated step-up entrance. The Odom house represents a transplantation of the quintessential Texas ranch house into an urban setting with the fewest modifications possible to help it adjust into built fabric surrounding it. The recessed position of the house relative to the (unpictured) street is part of an attempt to retain some of the private feeling of the rural Texas ranch houses.
Built in 1850, the Charles Stillman House in Brownsville is a fine example of some of the stylistic variations applied to the archetypal urban Texas ranch house. This home displays a unique twist between Greek Revival style and the expressive brick making and laying traditions of nearby Mexico. The extension of the gable walls over the roof is characteristic of the Mexican influence in both design and construction execution. Brownsville is a border town situated at the mouth of the Rio Grande at the southernmost point of Texas. It is a point of heavy traffic and immigration between Mexico and Texas. It is interesting to note how completely the Stillman house conforms to the archetypal characteristics of the Texas ranch house even amongst such significant cultural mingling.

This modern equestrian property is located in a housing development in Jacksonville. This property is typical of more recent expressions of the Texas ranch house commonly found in the suburbs. This home displays several major deviations from the classic Texas ranch home: it has a wraparound front porch, a three car garage, and it is relatively massive (4800 sqft). This home is testament to the Texas housing market’s thirst for the Texas ranch house iconography. This property does not embody any of the spirit of the classic Texas ranch houses; the properties that made those homes unique seem to be washed out and dulled down in this manifestation. Values such as frankness and practicality seem to have been pushed aside in favor of largeness and conveniences (note the size of the driveway flat top). However, even though Texans seem to be moving toward housing that expresses different values, they are still attached to the feeling associated with the imagery of the original Texas ranch houses.
The Underground House

My proposal for the archetypal Texas ranch home of the future is called the underground house. This proposal is an attempt to conglomerate the best aspects of the three archetypal home types we have discussed into a form that could represent a more sustainable, energy efficient model for Texas homes of the future. This proposal exists on the conceptual level and seeks only to illustrate the most fundamental ideas of the underground house. This proposal does not take into account site orientation, existing context or social architectural issues. As these factors have not been accounted for, the details of this proposal have been left purposely vague. This underground house is presented as a suggestion for possible exploration and research and not as a realistically determinate and cohesive system.

I define the underground house as a home which exists with occupiable interior spaces both above and below ground having two distinct above-ground masses separated by a narrow courtyard intended to produce a breeze like a dogtrot house.

The basic definition for the underground is simple and could be formally adapted into a myriad of shapes and configurations; it is not constrained (like the Texas ranch house) to any requirements of style or geometry. Instead, its defining characteristics deal specifically with passive cooling and energy efficiency. The bulk of the interior space of the underground house is built below grade, the idea being that the comparatively heavy insulation provided by the earthen walls and ceiling will allow the unit to remain cool during the summer without resorting to the use of air conditioning.

This proposal is not appropriate for some regions of Texas. Many areas along the gulf coast or Texas’ dozen major rivers are subject to seasonal flooding. Homes in these areas are often built on stilts so it follows logically that the underground home is not suited for these areas. Other regions of Texas like the lower gulf plains exist (on average) only a few feet above sea level. The water table is relatively high in these areas- meaning that it is common to encounter water only a few feet below the surface. This creates problems of soil integrity, erosion and ground stability for someone seeking to build underground in these areas. This does not mean that the underground house is unsuitable for the Texas gulf plains, but it does mean an extra investment in site, ground and soil analysis to ensure that the particular spot chosen for building is appropriate.

The diagram to the left represents two basic concepts for the underground portion of the unit. First, the ceiling of the underground area is covered with at least a few feet of earth; sufficient thermal mass must be present in order to endow the ceiling with similar insulative properties to the walls. The increased weight of the ceiling will create structural issues that must be resolved with heavier materials than standard light timber. In this proposal, the underground ceiling is supported by steel beams which also support the roof of the above-ground structure. Second, this diagram illustrates one suggestion for how to get natural light into the below ground chambers.
It proposes that skylights could be installed in the ceiling plane just above grade. These skylights would be engineered and oriented to allow for the maximum amount of sunlight to enter the interior spaces.

Although it would be the most efficient avenue, it is unlikely that modern Texans could be convinced to live in homes that were completely underground. To maintain a sense of familiar comfort and architectural balance the underground home keeps a few key spaces above ground, it then seeks to draw on the passive cooling lessons of the dogtrot house and organizes these spaces in order to create a passive breezeway.

The diagram to the right represents the secondary passive cooling strategy employed by the underground house. Two separate above-ground masses are organized parallel to each other around a central breezeway courtyard. This organization seeks to create the same Bernoulli-effect-powered natural breeze as the dogtrot house. This proposal however has changed the orientation of the breezeway from the front of the house to the sides. The breezeway is also significantly longer in the underground house than in the typical dogtrot.

The average Texas home consumes more electricity on air conditioning than it does on all other electrical needs all year; it is clear that tackling the AC issue is central in the progression toward a more sustainable Texas. This proposal is, at its core, a suggestion for one possible means of breaking Texas from this dependancy.

The following pages illustrate a proposal for one possible manifestation of the Texas underground house. Once again, details of the scheme have been left vague, but the proposal has been brought out of the diagramatic stage and into one with specific spatial relationships and a distinct aesthetic style. This iteration of the underground house contains all of the basic archetypal characteristics of the underground house as defined previously but it also contains consideration on several other levels.

This underground house incorporates some of the aesthetic and geometric characteristics of the Texas ranch house in an attempt to fit more into the normal, expected built fabric of Texas. The front portion of this underground house is designed to resemble the symmetrical shape and mass of the Texas ranch house on a scaled down level. The front portion of this underground house is only about 450 sqft (30' x 15') and is intended to be used as one of the primary living quarters of the house—probably the kitchen and dining room. It is adjacent to both the front and back covered porches (and the associated breezeway) and the underground portion of the dwelling. The incorporation of the Texas ranch house form is also intended to endow this underground house with a “Texas feeling” aesthetic. The hope is that this aesthetic feeling will make Texans feel comfortable and therefore more willing to accept an unusual idea like the underground house. The concept is not, however, fundamentally tied to any kind of “Texas feeling” aesthetic and other manifestations of the underground house concept could look like anything.

The rear above-ground portion of this underground house contains the at-grade garage and a small study/sun room. This rear mass serves the dual function of housing utility needs and creating an external wall to complete the courtyard breezeway. The breezeway is a 2 to 3 rectangle with dimensions of approximately 20’ x 30’, this makes for a breezeway that is three times the size of one you would expect to find on a typical dogtrot but is proportioned roughly the same. The breezeway creates a new space uncommon among Texas homes—an open-ended courtyard space with covered sitting and a passive breeze. This space can be used for private relaxation or for social functions, and it provides the residents with an outdoor space which would be more comfortable than most. The breezeway could be configured as a visually public or private space by manipulating the orientation of the house relative to other points of interest.
Bibliography


www.texastripper.com/blog/labels/Panhandle%20Plains.html

www.window.state.tx.us/specialrpt/tif/population.html


archrecord.construction.com/residential/hotm/archives/0708HotM-1.asp

Transverse Section
1/8" = 1'
The breezeway could also serve as a pedestrian byway and could facilitate pedestrian social interaction similar to the urban front porches of the Texas ranch house. The breezeway is not a backyard like most Texas homes have, but rather a different kind of space with different spacial designations and boundaries. A back yard is surrounded (in most cases) with a fence, but the breezeway offers the opportunity for a more integrated space with meaningful adjacencies. The breezeway can be adjacent to other homes, walkways, points of interest or open space but since it is so clearly defined spacially by the parallel house masses it does not require the addition of a fence to make its discreetness distinct. A fence serves more to define the boundaries of public and private space than to physically prevent intrusion; the underground house’s breezeway accomplishes this through simple spacial geometry. The underground house offers a small but meaningfully articulated outdoor space as opposed to a large, undefined space.

The overall unit is about 2,200 sqft with 800 sqft existing above ground and 1400 sqft existing below grade. This underground house was designed with an attitude which favors spacial effeciency over sheer volume, so rather than going for large spaces, this iteration of the underground house seeks to make meaningful use of a modest spacial budget. The bottom floor of this underground house has bedrooms located around the perimiter of the building; they are organized specifically in relation to the at-grade skylights that bring light into these spaces. Less important spaces like bathrooms, closets and utility spaces exist under the stairs or in the interior core. Bedrooms and support spaces are all organized around a central living room which is lit with skylights at either end. The public spaces in this underground house are larger and given more orientation prominance than the private spaces, with the intention being to facilitate family togetherness and cooperation; large private rooms have a tendancy to make people (especially young people) reclusive.

This underground house proposal is presented in an attempt to discuss one possible way to eliminate the average Texas home’s need for air conditioning. However, it is more globally concerned with raising awareness of the issue of air conditioning in Texas and the fact that there are more ways than one to cool a building. With a little creative engineering Texas can be freed from its crushing dependancy on AC. Hopefully the exploration of how these archetypal homes of the past and present tackle this issue passively will lead to further thought and development on how to do this other ways aswell.