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I, Shawn Anthony Hesse, hereby submit this work as part of the requirements for the degree of:

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at Dale Hollow Lake, Tennessee

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Progress + Preservation:
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This thesis begins with a place; Dale Hollow Lake, on the border of Kentucky and Tennessee. It is an exploration of critically practicing architecture in response and respect to this region. It will explore current issues of critically regional architecture concerning tectonics, local materials, social, geological, and political history. It will explore what it means to build in a regional way at Dale Hollow Lake in 2004. It consists of specific study of these issues which can lead to further understanding of similar situations elsewhere in the world. It differs from the current conception of Critical Regionalism in its multiple scales of intervention- a regional planning and zoning strategy, and a pedagogical link with local trade schools and craftsmen, carried through to building design and construction. It fits within the study of regionalism in its in-depth examination of a specific place, testing the thesis that there is an appropriate architecture to Dale Hollow that enriches and is enriched by the place.
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“Our duty is to preserve what the past has had to say for itself, and to say for ourselves what shall be true for the future.”

- John Ruskin

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Foreword

Dale Hollow Lake is a man-made Corps of Engineers flood control project, and serves as a great vacation and retreat spot. Increasingly each year insensitive housing and commercial developments inch closer and closer to the actual lake, contributing to the meta-morphosis of this place into a facsimile of other generic resort locations. Consider Gatlinburg, Tennessee. Gatlinburg gained popularity because of its proximity to the Great Smoky Mountains and the Appalachian Trail. Once seen as a great low-key gateway to begin a hike on
the Appalachian Trail, it has after many years of uncontrolled development, become over-run with putt-putt courses, gas stations, chain restaurants, and mini race tracks. Today many hikers avoid Gatlinburg all together because it has lost the qualities that once made it popular. Throughout my life, every year since I can remember (in 1983 or so- I would have been four), I have visited Dale Hollow Lake and watched as universally constructed buildings systematically replace local, place specific housing, stores, and service stations in the region. Perhaps there is another way to build in this area that has a rich history, a very perceptible culture, and a unique geography.

What would this be like, how could it be enriched by the region, and how could the region be enriched by this design?

Dale Hollow Lake covers Pickett, Overton, Fentress, Cumberland, and Clinton counties in Kentucky and Tennessee, created by damming the waters flowing from the Obey River and the Wolf River. This is a recreational fishing lake created by the Corps of Engineers as a flood control project in 1943, and provides a vacation spot for close to 3 million visitors each year. My family has been contributing to that number since before I was born, beginning with my parents’ first trip on their honeymoon in 1973. My childhood memories are filled with

Figure 1 Lake view homes
summer vacations at Star Point, the marina that will be the focus of the building site for this thesis.

In the years since the completion of the dam the area has begun to change from an agriculturally driven economy. According to the 2000 Census, agriculture is now sixth on the list of major industries, behind manufacturing, tourism, construction, retail, and education.\(^2\) The lake has become a major factor in the regions’ income, influencing several of the major industries in the area, from tourism, to construction of new homes in the area, retail at marinas, and even decisions of manufacturing companies to locate large plants there. As recreation places elsewhere in the world, it is a large draw for “lake-view” homes, and this is part of the problem that this thesis attempts to address. The property that the Corps of Engineers owns is rather irregular because it consists of the accumulation of the different properties they purchased in 1942. Past this property line is open to anyone that would like to purchase or sell the land. In the recent decade, many new developments have sprung up along this property line, marketing “the most beautiful [real

In most cases, these homes do not affect the visual beauty of the lake. This is because the land that the Corps of Engineers owns is usually beyond the sight lines from the lake; they do however affect the local ecology (increased infrastructure, less habitat for local wildlife, increased water flow due to more run-off, etc.). In several cases, occurring more frequently, the property that the homeowners purchase is visible from the lake, and the trees that are removed to afford the view of the lake, also allow a view of the homes—constructed with little to no response to the climate, traditions, or materials of the region. Throughout the area, this increased housing and infrastructure has its effect. The region now sports the ubiquitous Dairy Queens, Shell stations, and Dollar General Stores. These structures began to make me question the way we build. Why does every place begin to feel like ‘everyplace’? What would be an appropriate way to build in this area, in a way that would begin to speak to the beauty and uniqueness of this place?

Some may question whether this is just a desire to keep a childhood place of my memory intact through nostalgia. This is not true. This issue in fact, is one which faces many areas of the

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world. Many vacation areas are facing the same questions. I could just have easily chosen to focus the thesis study on another region, and been faced with the same problems. Likewise; is it wrong to attempt to protect an area that is full of memories for me, with the hope that through more sensitive work, others might also be able to continue to feel attached to this place in a similar way?

This is not to suggest that this development and these businesses are bad. Obviously it is very desirable to live in the area, and the people who choose to live here are accustomed to living in the 21st century. It is unreasonable to say that building houses here is bad, or that those that choose to build here are not entitled to eat dessert at Dairy Queen. The objective of the project then, is to accommodate these modern desires, to encourage progress, but to move forward with thoughtful design. Design that is responsive to the regional influences, the climate, respectful of the history, and that will allow the character of the place to be preserved; to welcome progress and preservation. Current thinking in Critical Regionalism leads us in a direction to begin to do this.
Chapter 1
Theoretical Responses

Critical Regionalism

Alexander Tzonis and Liane Lefaivre introduced the term “Critical Regionalism” for architects with their piece “The Grid and the Pathway,” in 1981.\(^4\) Since that time, it has gathered interest from other theorists and writers, and has established itself as an active mode of architectural thought in current post-modern conditions. Similar ideas have since permeated other areas of study. Concern over globalization escalated in the tourism industry when, in 1983, architect and ecologist Hector Ceballos-Lascurain coined the term “ecotourism” to describe a tourism that could help to preserve local ecology and culture rather than be a major influence in destroying it.\(^5\) Tourism has long been criticized for its negative impacts on the environments that are its main attractions as well as the role tourism plays in globalization of cultures. David Orr, in his book, *The Nature of Design*, observes that, “Our children, consumers in training, can identify over a thousand corporate logos but only a dozen or so plants and animals native to their region.”\(^6\)

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combat the issues of globalization, the spread of media, tourism, and consumerism “admass”, to begin to educate and foster pride in locality and culture?

Hassan Fathy

Hassan Fathy’s work in rural Egypt can be seen as one attempt at addressing workmanship, materiality, and regionalism. Although his view of the role of architects and their social status in relation to peasants and village craftsmen may be over-optimistic, Hassan Fathy gives a description of how architecture can begin to educate and foster pride in local traditions, and provides a good place to start talking about using architecture to combat the loss of local culture. He says in his work, *Architecture for the Poor*, that, “An architect is in a unique position to revive the peasant’s faith in his own culture. If, as an authoritarian critic, he shows what is admirable in local forms, and even goes so far as to use them himself, then the peasants at once begin to look on their own products with pride. What was formerly ignored or even despised becomes suddenly something to boast about, and moreover, something that the villager can boast about knowingly. Thus the village craftsman is stimulated to use and develop the traditional local forms, simply because he sees them respected by a real architect, while the ordinary villager, the

Figure 5 Red Maple (*Acer rubrum* L.) is native to the region.
client, is once more in a position to understand and appreciate the craftsman’s work. .”7

During the course of his work, and while designing his project for New Gourna in 1946-50, he worked exclusively and closely with the traditional stone masons from the Nubian region of Egypt. Throughout his projects, Fathy formed a relationship with his masons similar to the mythic origin stories of the ‘master builder.’ He could give them room dimensions, and the masons could finish the room, build the walls and vault automatically, detailed beautifully. Although this type of relationship is now almost impossible to achieve, the spirit with which Fathy explores the talents of the masons is applicable to today.

Fathy’s work proves that architects and architecture in traditional roles cannot solve the problems related to globalization alone. Architects must embrace other disciplines, planners, zoning, and the community to create work that contributes and reinforces the local culture. Although care must be taken to not approach these relationships as an elite outsider, a new relationship between architect, manufacturer, builder, and client must be formed. Today’s new relationship must be one of optimal benefit from exclusive talents. All parties involved,

including the architectural project as an artifact gain from the talents, skills, and knowledge of the others. The architect can learn new things about why, or when to build, how to detail projects for ease of construction during local site conditions for example. The builders begin to feel more pride from the work that they do because they are able to give input into the project that not only makes their task easier, but most likely, makes the finished product a better one.

With new resources at one’s fingertips, the architect is able to design a better, more place-specific project. This type of feedback system requires a level of communication that is uncommon today. It would require the creation of a forum through which builders, educators, suppliers, or anyone who has knowledge about building in a specific region, can share with those that are not familiar with the region. However this view of the process is susceptible to criticism.

As already discussed, this role between architect and craftsmen hardly exists today. Today, craft can be achieved both in the traditional way which Fathy found it- through skilled craftsmen- and through mechanized, pre-manufactured materials that allow precise control of the finished product. In a truly critical approach, this second form of craft could be just as much
a source of inspiration as the other, and avoids falling into romantic yearnings for the past. With this approach in mind, we can move on to how the design process must change to help combat this loss of culture, identity, and region.

Tzonis & Lefaivre

Tzonis and Lefaivre coined the term “Critical Regionalism.” The practice of critically regional architecture to them in broad terms means an architecture that “selects regional elements for their potential to act as support, physical or conceptual, of human contact and community, what we may call ‘place-defining’ elements, and incorporates them ‘strangely’ rather than ‘familiarly.’” After acknowledging this ideology as being susceptible to several criticisms, they produced “Why Critical Regionalism Today?” in which they began to address some of these issues.

The first criticism relates to the idea of region. Questions regarding how a region can be defined, what elements are used to describe the region, and what elements constitute “authentic”

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10 Ibid.
or the true regional culture? A second criticism relates to how these ideas are represented in the architecture. What makes Critical Regionalism different from other Regionalist movements of the past, and once the idea of region has been established, how is it represented in the architecture without being reduced to simple reproduction of vernacular forms?

Tzonis and Lefaivre counter that “Critical Regionalism is a more original movement which has come about as a response to new problems posed by contemporary global development of which it is strongly critical, and that the poetics of this new movement are to a great extent different from, if not antithetical to, other architectural regionalist techniques of the past.” Their response focuses on their definition of the term ‘critical’-involving ‘metastatements,’ and the term ‘defamiliarization.’

The first topic they cover is the two-fold definition of the term ‘critical.’ To them the term implies not only a confrontational attitude for the globalizing patterns of today’s world, but also an attitude critical of the existing value found in the region. The term critical then has an “antinomy in the thinking, partly an attachment, partly a rejection of regional elements,” and results in “a regionalism that is self-examining,

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self-questioning, [and] self-evaluating.”\textsuperscript{12} This is an important defense against the argument that one cannot be both “critical” and “regionalist”, as well as for addressing the concern that regions are less and less culturally pure. By practicing a truly critical regionalism, one also questions the very culture and region you are defending, which they argue “realizes the obsolescence of traditional concepts of region.”\textsuperscript{13} They are advocating selective response to regional elements. In order to accomplish this, Tzonis and Lefaivre claim that a building must contain ‘metastatements.’ ‘Metastatements’ are implicit images, elements, and moments of the architecture that are self-referencing, in addition to the explicit statements which address the globalizing “anomic, atopic, misanthropic ways of a large number of current mainstream projects.”\textsuperscript{14} These implicit moves in the design are intended to make persons in the place begin to question the region and its global relation on their own terms, and to “be aware of the artificiality of her or his way of looking at the world.”\textsuperscript{15}

The second term that they use in the defense of Critical Regionalism is ‘defamiliarization.’ This is a term which they use

\textsuperscript{12}Ibid., page 488
\textsuperscript{13}Ibid., page 488
\textsuperscript{14}Ibid., page 488
\textsuperscript{15} Ibid., page 488
to differentiate Critical Regionalism from older forms of Regionalism. They distance themselves from the “sympathy, affinity, memory, and familiarity”\textsuperscript{16} associated with Romantic Regionalism— one root of the criticism that regionalism is merely a reproduction and reduction to vernacular language. This term ‘defamiliarization’ is actually a description of a design process. The process is one which they claim “can be carried out by any knowledgeable, responsible, competent architect committed to the understanding of local constraints.”\textsuperscript{17} It is the process of identifying, decomposing, and recomposing those elements of the existing region that are defining and “makes them appear distant, hard to grasp, difficult, even disturbing. . . It disrupts the sentimental ‘embrace’ between buildings and their consumers, ‘de-automatizing’ perception and thus ‘pricking the conscious’. . .”\textsuperscript{18} This is the process that Fathy refers to when he says that the “formerly ignored or even despised becomes suddenly something to boast about.”\textsuperscript{19} It is the moment in the architecture which speaks to the local people, and validates, or calls to question their current location in the world.

\textsuperscript{16} Ibid., page 484
\textsuperscript{17} Ibid., page 489
\textsuperscript{18} Ibid., page 489
\textsuperscript{19} Fathy, page 43
Tzonis and Lefaivre are striving for Critical Regionalism to be seen not “as contradictory to trends towards higher technology and a more global economy and culture. It merely opposes their undesirable contingent by-products borne of private interests and public mindlessness.”\textsuperscript{20} They have concerned themselves ultimately in the problem of creating “community in a world of global mobility and integration.”\textsuperscript{21} This idea is further explained by the extremely influential works of Kenneth Frampton. “Six Points for an Architecture of Resistance”\textsuperscript{22}, “Prospects for a Critical Regionalism”\textsuperscript{23}, and “Ten Points on an Architecture of Regionalism”\textsuperscript{24} give a much clearer interpretation of how Critical Regionalism can begin to participate and mediate between local culture and global civilization.

\textsuperscript{20} Tzonis and Lefaivre, “Why Critical Regionalism Today?”, page 490
\textsuperscript{21} Ibid., page 490
Kenneth Frampton

Frampton’s “Ten Points” is the work that is most influential in this thesis. Through this piece, Frampton gives an itemized list of issues that architects must consider when designing, and for each, he points in the direction of a “resistant” path—architectural practice that resists universalization, and strives to hold on to local culture. Although his list is not exhaustive, all of his points are valid, and we need only add clarification or sub-categories to some of them to make them even more effective. Frampton’s ten points will be used as the basis of this thesis; however, care must be taken to ensure that interpretations of these points, what they mean to Dale Hollow, and how they may be augmented, are thoroughly understood.

Point 1: Critical Regionalism and Vernacular Form

Frampton’s first point contrasts the difference between Critical Regionalism and new vernacular. Critical Regionalism should not be mistaken with sentimentality or a romanticizing of the past. To cite the vernacular as architecture that responds to its local climate, culture, and region is accurate, but the vernacular is not critical. Critically, we should question all aspects of materials, construction, and design to completely

25 Frampton, “Ten Points”, page 22
understand them and use them in the most effective manner. For example, perhaps there is a more modern process—baking, glazing, drilling—that can be applied to shale from the region that would allow it to be used in a new way as a building material. A critical examination of the relationships of builders, educators, architects, and clients in this area may also lead to a more critical understanding of the region. This process of questioning materials, processes, and relationships does not occur in the vernacular, and it is what distinguishes Critical Regionalism from simple reproduction of vernacular.

*Point 2: The Modern Movement*²⁶

Another distinction must be made to properly locate critical regionalism as a mode of thought. There is a wealth of inspiring architects whose work could be categorized as part of the Modern Movement. The work of architects like Frank Lloyd Wright, Jorn Utzon, Luis Barragan, and Alvar Aalto all completed buildings that adhere to the modernist functional ideal, but were also rooted in specific ways to the landscape or the region. Luis Barragan’s work shows this balance extremely well. Barragan is known for skilled use of light, water, and outdoor space.

²⁶ Ibid., page 22
Through these elements, he is able to give his buildings unique qualities that are related to their region, but the basis for his design came from modernist ideals. Frampton reminds us that we must not discount many of these architects simply because of their design language.

**Point 3: The Myth and the Reality of the Region**

Frampton brings up a very important aspect of Critical Regionalism in this point, one which should be expanded upon specifically for Dale Hollow. Frampton writes that it is necessary to begin to think of regions in institutional terms. “In this regard I would like to suggest that critically resistant ‘regions,’ like ‘schools,’ have to be created.” This is the myth of the region, and the reality, according to Frampton, lies in the fact that “a culturally significant work can hardly be achieved without a committed client.” I would like to expand on this point because in the case of Dale Hollow, it may be a true source of inspiration. Currently, within the five county area surrounding Dale Hollow Lake, there is a trade school that offers certificates in building technologies, six different private contractors, four distributors and suppliers of material, and four manufacturers of

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27 Ibid., page 24
28 Ibid., page 24
29 Ibid., page 24
materials or products. Within this group of construction related business, there are existing relationships between members of the construction industry, and with other members of the community. Because there are so many construction related companies, contractors, suppliers, manufacturers, and even trade school educators in the area, a ‘region’ in the institutional sense is already being created. This ‘region’ or ‘school’ is being formed because of the tight-knit relationships these individuals have with one another and the community. For example, in order for the owner of Star Point to rent out summer cabins on behalf of owners, the cabin must be built by her brother, one of the six general contractors in the area. Through discussion with Mr. Haskel Coleson from the Tennessee Technology Center at Livingston, I discovered the existence of an advisory committee. The committee is made up of contractors in the area that would be interested in hiring graduates from the Building Construction Technology program. This committee serves Coleson and meets with him twice a year to discuss his curriculum and what changes may be made to better it. This type of feedback would be invaluable for an architect when beginning to design in the region. If these relationships can be tapped and worked with in some way, than a new relationship between contractor and
architect could be invented. This type of relationship could be compared to what is now known as a ‘design/build’ firm or similar to the practice of architects like Glen Murcutt, who continuously works with the same engineers and contractors whenever possible. This relationship is not one that is reactionary and longing for the times when the architect could count on the craftsman to finish and detail a job as the craftsman knew best. It is not one of today where the architect is too busy dimensioning details to have a productive relationship with the contractor. This new kind of relationship could be the string that binds all of the existing elements of the ‘Dale Hollow School’ together. The interaction between the architect, contractor, manufacturer, and educator would create a resistant region. Another level that may be added to this institutional role of the region may be in the proposed Zoning and Planning Commission (discussed under point five), and the Community Action Group. This Community Action Group program was actually suggested by Mr. Willis from the Corps of Engineers. In this program, Willis and I envision different members of the community, including the Corps of Engineers rangers to educate and conference with prospective home buyers, developers, and real estate agents. Through this program, the Community Action
Group could inform these individuals of better alternatives to bulldozing trees for lake-view properties, and more responsible ways of building and planning. The goal would be to convince these individuals that growth is not bad, but *uncontrolled* growth is the real enemy. Many of these individuals would stand to lose income if development was halted, but intelligently planned, development can add value to the region. By allowing uncontrolled development, the area will soon lose its pristine appearance, and property will become less desirable. If a plan can be designed that would allow the impact to be controlled, the long-term value of the area will remain high, creating more income for many real estate agents, developers, and city chambers of commerce. A not for profit group of concerned individuals already exists under the name “Friends of Dale Hollow Lake, Inc.” (FDHL). This organization already sponsors volunteer clean-up days, hosts bald eagle watching tours in the winter, and is dedicated to preserving the beauty of the area. This organization could spear-head the formation of this proposed Community Action Group, and shows that many members of the local community would support the ideas proposed in this thesis.
Point 4: Information and Experience\textsuperscript{30}

No one can argue that society’s current relationship with the media is one that has drastically altered our lives. People are better informed today than we have ever been in history. One might even say that people are so informed that we are over- and mis-informed by the media. Frampton says that “in general, we have begun to lose our capacity for distinguishing between information and experience.”\textsuperscript{31} I was appalled when on my most recent trip to the Cincinnati Zoo, while looking over the railing of the alligator pit, I heard a child behind me exclaim, “That’s not real!” then promptly leave in search of other animals that moved more. Clearly the idea that our media driven culture has affected us; conditioning us to read buildings visually as images rather than experiencing them tactiley with our bodies, is very believable. In order to resist this trend, critical architecture must re-establish itself as a tactile, experiential phenomenon, rather than allow itself to descend to the level of mere styling and visual information. The project should speak to people though materiality, construction, and site response. It should engage these elements and users, not just looking appropriate, but being appropriate- to teach by example.

\textsuperscript{30} Ibid., page 24
\textsuperscript{31} Ibid., page 24
Point 5: Space/Place

This point deals mainly with urban space, but the philosophy behind the point is still applicable. The theory deals with the Heideggerian idea of bounded places, thinking of boundaries as where things begin their “presencing”, not where they end. This idea can be applied to Dale Hollow through another unique level of design intervention. Currently, there are no zoning regulations in any of the five counties surrounding the lake. The Picket County website boasts a Planning and Zoning Commission, however when pressed to find a member of the commission for me to speak with, the secretary was unable to do so. This is an opportunity to relate both point three, of creating the region, and point five of designing place, not space. This thesis proposes the formation of a diverse Planning and Zoning Commission for the region. A major role of an active Planning and Zoning Commission (PZC) would be designating definitive boundaries for specific places. For example, a well rounded PZC would be comprised of many different individuals, each representing different interests of the community. A member from city hall, a Corps of Engineers Ranger, a resort owner, a Farm Service Agency member, a real estate broker- each

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32 Ibid., page 25
represents their own interests. This would allow the PZC to effectively decide what areas of the region would be appropriate for Wal-Mart, or Pizza Hut to come in, and in which areas it would be best if smaller company’s were located, while at the same time, designating specific areas for adaptive re-use, new construction, and preservation. A diverse board membership is essential to this to make certain that the PZC cannot just be “bought” by special interests, while at the same time, not blacklisting those businesses which many people frequent and businesses that create jobs and income. The task of this board would be to designate place, bounded areas, with specific character. A strong relationship with the proposed Community Action Group would allow building/zoning permits to be given with conditions of involvement in educational forums and discussions hosted by the FDHL, and other concerned parties.

Point 6: Typology/Topography

Typology, in the sense that Frampton uses it, is meant to represent a universal approach to design problems. Frampton uses Enlightenment period buildings to demonstrate this. “They were gridded, rational matrices, capable of admitting a wide range of institutional programs and were applicable to almost

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33 Ibid., page 25
any regular site.\textsuperscript{34} In contrast to this and similar design methods of bulldozing site and applying design, Frampton writes about the work of Mario Botta. Botta refers to topography as a way to “build the site.”\textsuperscript{35} By tracing contours of a site, terracing, and stepping a building into the topography, the architecture becomes part of the site—inherently place-specific—in what Frampton refers to as the “place-form”.\textsuperscript{36} This is the resistant mode of design, rather than falling back on the bulldozer to level a site into a flat plane from which we can begin to work. This represents a different mind-set than what is most common today towards building. In his work, \textit{Vernacular Architecture}\textsuperscript{37}, Mete Turan describes the difference in ideology between modern builders and vernacular. Turan says, “the environmental wisdom exhibited through vernacular architecture clearly shows the connection between human aggregates in time and space and the role of the environment, provided that we start seeing and thinking about the relational aspects between built environments and society rather than looking at a single building or group of

\textsuperscript{34} Ibid., page 25
\textsuperscript{35} Frampton, Kenneth. “Towards a Critical Regionalism: Six Points for an Architecture of Resistance”, page 26
\textsuperscript{36} Frampton, “Ten Points”, page 25
buildings as self-determining. I do not suggest that those who produced the vernacular were conscious of this distinction, but as contemporary architects, we must be, in order to resist the constant bulldozing of sites. It is important that the entire process be responsive. It is not enough to bulldoze, and then rebuild the land to look natural. The entire process from groundbreaking to use should have the same sensitivity to site.

**Point 7: Architectonic/Scenographic**

This point is closely related to point 4, Information and Experience. The architectonic refers to the physical way that the building resists gravity, aging, and weather, and to the roots of the term architect, or master builder. The term scenographic relates to the Renaissance, and to the representation of things. Thus, by reducing a building to scenography, one reinforces the media driven conditioning to visually assess buildings rather than experience them with the entire body. One may begin to resist this tendency by critically constructing buildings. Constructing buildings not just with attention to detail, but adoration of the joint, allows meaning in the architecture to be construed. Through careful attention to where water will run, how materials will weather, and how joints are detailed express meaning in the

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38 Turan, page 9
39 Frampton, “Ten Points”, page 25
buildings in architectectonic terms. This meaning can then become part of the critical discourse within the building, the design, and between designers.

Point 8: Artificial/Natural

Buildings interact with nature in a completely different way than other productions of man. Architecture developed in a response to nature, to filter the effects of elements of weather, and temperature on man. Buildings necessarily interact with precipitation, temperature change, sunlight, and wind. “All of this seems so self-evident as to hardly require stating, and yet we tend to forget how universal technology in the form of modern mechanical services (air conditioning, artificial light, etc.) tends towards the elimination of precisely those features that would otherwise relate the outer membrane of a given fabric to a particular place and a specific culture.”

In design, we are given an opportunity to create unique places that interact with their surroundings in a way that only buildings do, while at the same time, create buildings that are pleasant to be in, that have natural ventilation, natural lighting, and natural methods of heating, balanced with mechanical equipment. When it’s a nice day, who

\[40 \text{Ibid., page } 26\]

\[41 \text{Ibid., page } 26\]
says you have to miss it by being inside? Will Bruder’s Phoenix Library is a great example of mechanically augmented response to natural climate. The building is shaped so to funnel the prevailing winds through the building, allowing natural ventilation to occur, and skylights on the roof are controlled by computer to maximize natural light and minimize heat gain.

This is important to note, no matter what the design ideology involved, in any project. It is one that I consider to be independent of style and methodology. The balance of the built environment with the natural one is an important issue that should not be considered something within the realm of choice in design. By default, buildings should always relate to the natural environment, they should strive to use recycled and healthy materials, and should aim to fit within the category of “sustainable architecture.”

Point 9: Visual/Tactile

As already discussed, one part of architecture’s resistance to universalization, avoiding visual representation, is an important one. The tactile is an important part of experiencing architecture, through senses other than sight, like sound, smell, and texture. This materiality can be used to critique the visual in

\[42\text{ Ibid., page 27} \]
terms of the tactile, substituting something that is heavy for elements that are expected to be light (Scarpa’s travertine door in Fondazione Querini Stampalia for example). In this manner, the tactile experience can bring attention directly to the material experience of architecture, in the choice of materials, and the region it is in, not just a perception of style or form.

*Point 10: Post-modernism and Regionalism: A Summation*⁴³

Again, the distinction between neo-historicists, neo-avant-gardists, and critical regionalists is being made. The resistant path is the moderate one, critical of both strict historicism, and the pressing force from popular society for the avant-garde. It is “a culture of dissent free from fashionable stylistic conventions, an architecture of place rather than space, and a way of building sensitive to the vicissitudes of time and climate. Above all, it is a concept of the environment where the body as a whole is seen as being essential to the manner in which it is experienced.”⁴⁴

With a strong understanding of previous theory in Critical Regionalism, we can move on to practical applications and methods of intervention.

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⁴³ Ibd., page 27

⁴⁴ Ibd., page 27
This thesis proposes three different scales of intervention as a response to the problems occurring at Dale Hollow. The first is the creation of a Zoning and Planning Commission, and a Community Action Program, both working out ideas about where different types of development are acceptable, and where they are not. Second is the formation of a relationship with the local construction industry- the contractors, the suppliers, the manufacturers, and the educators. This mock-guild, or regional ‘school’, can be the source of inspiration for directions in the design of the third scale of intervention, in the actual building design. The zoning and planning commission as discussed earlier could follow from the example provided in the book, Regionalism in Architecture, published as the proceedings from a seminar sponsored by the Aga Khan Award for Architecture. Lailun Nahar Ekram presents the “Planning Aspect of Upazila Shahar”. In this example, very clear objectives, scope, and methodology are detailed about how the Bangladesh Government set up a system where the local planning and zoning of land use was determined by the local “Upazila”, or sub-district. An important aspect of the zoning plan guidelines is the inclusion of current land-owners into

the plan, not ignoring or taking their land, but working with them to ensure that both the planning project and the owner benefit. This is important to ensure that when a zoning strategy is developed for Dale Hollow, current land owners are not further abused by government planning powers, and they will have a voice where Wal-Mart and other national/international corporations locate.

Preliminary investigation into a potential planning scheme highlights specific areas for adaptive re-use of existing structures, and other areas where commercial development by corporations might be pursued. This potential strategy is mapped on page 36 in figure 14. In this example, zone 1 is considered approximately one mile from the shoreline of the lake. This area is where developers are building lake-view homes. In this zone, there might be strict rules and a strict review/approval process that would regulate how the development is planned, what trees could be removed, and how the new homes are built. This zone would include involvement with the Community Action Group for improvements to be approved.

Because Livingston, Byrdstown, and Celina all have defined town centers, which date from the early 1820’s to 1830’s, they have been included in zone 2. In this area, the
Planning and Zoning Commission might advocate certain structures should be considered for preservation or re-use if possible, and new construction should be limited to sensitive response in selection of site, materials, etc. Allons and Static in contrast, have origins that date back much more recently, in the early 1900’s. These towns are grouped with other stretches of main traffic routes in zone 3. These areas do not have defined centers, and have developed in response to traffic along major routes in the area. In these spots of high traffic, it makes more sense to allow companies that profit from travel like gas/service stations, and fast food chains. In all other areas, new construction would need to adhere to certain performance standards regarding degree of relation with the region. For example, in some areas, the zoning guidelines may call for 30% of the exterior to be clad in wood processed through one of the local saw-mills (harvested from other areas of the county and the Appalachian foothills). Other areas may specify that at least one of the contractors on the project must be from the region, or schooled at the Tennessee Technology Center. Through these different levels of connection, the planning and zoning committee will be able to designate the degree that different areas begin to relate to their specific place at Dale Hollow.
Figure 14
Dale Hollow Regional Planning Scheme

Zone 1
Zone 2
Zone 3
Regional Skill

The second important method of intervention is the Dale Hollow Trade Guild (see figure 15). This entails the organization of a forum of construction related individuals, linked through the local trade school, the Tennessee Technology Center at Livingston. Through this network, educators, trainers, contractors, suppliers, manufacturers, real estate brokers, and architects can share their different ideas and specialized knowledge regarding any individual building project in the region. This network could have a virtual meeting place, hosted on the internet via the TTC. This would allow an architect to post job information, site, square footage, direction for material choices, etc. and allow the local builders and educators a chance to post their knowledge of the area, materials, and different processes that are applicable. Once the design process has begun, in-person forums between the construction team and the designer would occur, including site tours, and conferencing at TTC. Through this process, the architect can learn about the local materials, labor shortages, best site conditions for working regarding grade, and weather. The workers can learn about the direction of the project in advance and give their feedback, allowing them to influence the design in ways that make their jobs easier and of higher quality. This also
begins to foster pride for the project in the builders more than the traditional relationship between architect and contractor, because they are able to have their input heard. This pattern can then be applied elsewhere; anywhere there is an existing bounded region. Soon, small pockets of local builders for Appalachia, the Deep South, the east and west coasts can organize into similar guilds that allow forums like this one to influence the design of projects.

An effective working relationship with Mr. Coleson will allow him to make suggestions and give advice to the design project as it develops. This type of working relationship will stand as a model for the type of cooperation being proposed through the Dale Hollow Trade Guild.

Through discussions with Haskel Coleson, the director of the Building Construction Program at TTC, I discovered that there are several problems that are currently faced by construction in the area that are often not properly addressed by the designs. Specifically, these are mold and radon gas.

The mold problem is clearly also related to moisture. Because of the shallow bedrock (28 inches), there is also a shallow water table. Just above the bedrock, there is a layer of moisture that must move horizontally. Because new construction
does not deal with this effectively, moisture builds up and stands next to or in the buildings walls, giving mold a perfect place to grow.

The radon problem is similarly related to the shallow bedrock. Typically, to build a basement for a new home, dynamite is placed in the bedrock which is then blasted out to the depth that is required. This causes fractures to travel through the bedrock, many times tapping radon gas pockets deep within. These fractures then create a path for the radon to travel into the new construction, which is not equipped to vent this gas.

Clearly even from one interview with Mr. Coleson, the design project can begin to respond specifically to construction related issues that are inherently region specific. With continued communication throughout the design process, Mr. Coleson, and any member of the Dale Hollow Trade Guild, could provide extremely helpful information.
Figure 15
Dale Hollow Trade Guild Map

Contractors

- Moody's Backhoe + Dozer Service
  (931)864.6130   Byrdstown, TN
- Logan's Heating and Cooling
  (931)864.3377   Byrdstown, TN
- Parris Construction
  (931)864.6280   Byrdstown, TN
- Cross Builders
  (931)864.3470   Byrdstown, TN
- J + S Construction
  (931)528.7475   Cookeville, TN
- Nelda Copeland Construction
  (931)864.3811   Byrdstown, TN

Suppliers

- Picket Builder Supply
  (931)864.3156   Byrdstown, TN
- Mullins Lumber
  (931)864.3191   Byrdstown, TN
- C + E Hardwoods
  (606)387.6213   Byrdstown, TN
- Specialty Woodworking Wholesale Outlet
  (931)864.6150   Byrdstown, TN

Manufacturers

- Livingston Limestone + Livingston Redi Mix
  (931)823.5619   Livingston, TN
- Albany Redi Mix
  (800)331-5393   Albany, KY
- Tennessee Truss
  (931)864.6490   Byrdstown, TN
Material

The third scale of intervention for this project involves the construction of a support ranger station for the Corps of Engineers rangers that patrol Dale Hollow Lake. The design ideology for the station should relate to these points discussed, and those presented by Frampton. One important aspect of Critical Regionalism that Kenneth Frampton does not emphasize, is the use of a local material, or process in a new, inventive, or critical way. For this project, there seem to be several different materials and processes that may lead to unique design applications. Cedar, limestone, concrete, and shale are four materials that have a history with the site and are readily available in the region. Cedar is well known for its aroma, and for its natural insect and rot resistance, but perhaps there is a way of treating it for barn construction that is unique to the area. The possibilities for limestone and concrete are endless, and there are many other designers looking into unique applications of concrete, Rem Koolhas is one in particular. Perhaps the most intriguing material found on the site is the shale rock. It is not traditionally used as a building material because of its brittleness, but ESCSI, the Expanded Shale Clay and Slate Institute of Utah is using crushed shale as a lightweight aggregate for concrete.
applications. This is one example of how shale has been modified for use in construction. There are many other possible experiments with the material that may prove to be useful—can it be baked, drilled, cut, broken, crushed, glazed, set, imbedded, tiled, shingled, or even painted in such a way that gives it a new application? Experiments with shale, concrete, limestone, and cedar are all important parts of the pre-design and research phase of this project that will inform the design of the building.

Critical research about the history of the place, the geology, social influences, and local materials will provide important regional influences. Historical construction in the area dealt mainly with farming of tobacco. Could there be a forgotten method of constructing tobacco barns that could be revisited and studied in a more modern application? The intended scope of work is to focus on a detailed exploration of these different threads of defining companies, natural resources, and history, for this region. The application of which can be explored only in a similarly detailed design exercise. The scope of the design project should deal with materials, their connections, the people who would actually be constructing the building, and its timing and construction detailing.
Chapter 3
Design Project

Client

The design portion of the thesis needs to be explored in a small scale building project in which the different applications of these materials, details, and influences can be studied. Therefore, the focus on a small station for the Corps of Engineers Rangers that patrol and serve the Dale Hollow lake project is appropriate and, through interviews with the rangers, wanted.

In July of 2003, I sat down with the Resource Manager at the Corps of Engineers office just below the dam near Celina, Tennessee. I spoke with Mark Willis about a potential expansion of his team of rangers, and expansion into a second building from which they could operate. This is an idea which as he said, they have often talked about, but lamented the lack of funding for such expansion. In discussions with him about what the ideal expansion would be for them, we chose an area of the lake that would be the best location for such a station.

Currently, the lake is patrolled by five permanent rangers, plus one seasonal ranger. The lake is divided into four regions, and one ranger is assigned to each region, serving as a public relations liaison, controlling and monitoring campers at various primitive camping sites around the lake, and solving Corps of Engineers property line disputes with neighbors concerning tree
removal and new construction. The fifth and seasonal rangers support the other four in their tasks when needed, and perform lake patrols. During the summer months, night patrols become a necessity to monitor and keep night fishermen, as well as campers safe. Through my discussions with Mr. Willis, we outlined a potential program for the new satellite ranger station and selected a location.

**Site Selection**

Dale Hollow Lake straddles the border of Kentucky and Tennessee, covering five counties. There are several small towns surrounding the lake (see figure 20); Celina is located just over three miles to the west-drown-river from the Dale Hollow Dam. Byrdstown is located approximately six miles east of the lake, nestled between the two tributary arms of the lake; the Wolf and the Obey Rivers. In Kentucky, to the north-east of Byrdstown lies Albany approximately seven miles to the lake, and to the south lies Livingston, about eight miles from the lake.

The specific location of the support station on the lake was determined by the connections the site has with the programmatic functions of the building. Because of the role that the new ranger station will perform, it needs to be located on the eastern half of the lake. In an effort to minimize the impact of a
new structure on the lake, the station needs to be located within an existing resort. This allows the station to utilize existing infrastructure and leaves other coves of the lake undisturbed. Star Point is optimally located near the middle of the lake, accessed via Byrdstown. Star Point also serves as an excellent location for this project because it is the place on the lake that I know most intimately. It is the resort where my family and I have vacationed and where many of our family friends own property.

The exact site for this project is located on the hillside rising above the cove containing Star Point. The entrance road continues through the resort and ends in the lake as a boat launch. Immediately after the main office of the resort, a road veers off to the right going steeply up the hill. Several rental cabins are located on this road along the base of the hillside, parallel with the topography. After little under a quarter of a mile, the road again veers to the right and steadily begins to climb as it traces the curve of the hillside. It encircles the site for the new ranger station. This site is good for this project because it is the only portion of land in Star Point that is owned by the Corps of Engineers. Star Point is privately owned, (many of the other resorts lease their land from the Corps of Engineers) so the site for this project is partially determined by available land that the
Corps already owns in the area, determined from the original property acquisition maps produced by the Corps in 1942. The property line nicely defines an area of the hillside where the road wraps around and continues past the site to the other cabins. It is removed from the shoreline enough to not interfere with the resort, and is, at the same time, easy for visitors to find and access. The site also has sufficiently easy access to the water for a private boat house, and the grade on this portion of the hill is more shallow, making construction on this site easier.
First let us take a look at the history of the region. Much of the history survives only through legend and story-telling. Historical accounts exist that suggest those stories are accurate and many times different sources give similar stories, further validating the information. Some gaps do exist in the timeline, but the general story stays the same.

Sometime before the American Revolution, five families from New York state—Irons, Barber, Stone, Hill, and Mitchell—came to Tennessee and settled Willow Grove, named for the grove of trees on the banks of the Obey River. According to legend, Edward Irons lived peacefully with the native Cherokee Indians by treating them with respect and trading fairly with them. In 1799 Chief Nettlecarrier moved most of his tribe from Tennessee to Arkansas, the reason for which is unmentioned by legend, but the story of Nettlecarrier returning each fall to stay and hunt with Edward Irons is reported by several sources. At the same time, William Dale married Rachael, the daughter of Edward Irons. In 1808 William Dale and Rachael Irons moved from Willow Grove to 449 acres of farm land down river from Willow

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Grove in the hollow. William Dale later fought in the War of 1812, and in 1836, drowned in the Mississippi River when his trading boat overturned. As his legacy however, he gave his name to the land of his farm- Dale Hollow. Some time later, the exact time of which is not reported, the land and improvements of Willow Grove were assumed from Edward Irons and given to a man named Knox, a Veteran of the Revolutionary War. Edward Irons’ title to the land (“all the land drained by the Obey River”- sold to him by Chief Nettlecarrier) was not honored.47 This is where the storytelling about Edward Irons and the Dale’s ends.

However, life continued for the people of Willow Grove. By the 1930’s, the community grew and became home to three general stores, a garage and service station, two doctor’s offices, a post office, a drug store, and many Baptist, Methodist, and Church of Christ congregations. Then, in 1942, the Dale Hollow Dam was planned for “flood control for the more populated down stream cities”48. The Dale Hollow project was part of the Flood Control act of 1938, and when the Dale Hollow Dam project began, the land was bought and impounded through eminent domain from farmers and land-owners. Willow Grove became known as “The

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47 Ibid.

48 Hunter, *Dale Hollow Folklore and History*, pg. 1
town that drowned” after the completion of the dam in 1943.49

The dam site was built on the farm land known as Dale Hollow, and it is Corps of Engineers’ custom to name their projects for the land that they are on. Later, electricity generating units were added to the dam in 1948, 1949, and 1953.

I spoke with two helpful women from Willow Grove by phone, and discussed shortly what it was like for them to have their land taken by the government and used for this project. Both women had very different views on the situation. One woman, Mrs. Long, seemed to have no anxiety regarding her treatment, boasting to me that her father had actually helped clear the land of its improvements and had been hired by the Corps during the projects construction. The other, ‘Mrs. Geneva’, still felt very much betrayed by the process and was one of the last families to move from their land. Through this study of the history of the area, it is evident that this new design solution should strive to include the community, and to attempt to work within the existing social setting.

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49 Hunter, pg. 1
Topography, Climate, Flora

In addition to the history of the region, an important part of the design project will concern the specific site. Kenneth Frampton says,

“Topography... is unequivocally site-specific... it is, so to speak, the concrete appearance of rootedness itself. ... This opposition between typology and topography is potentially manifest at every level, from the integration of a new intervention with the existing environment to the ecological, climatological, and symbolic aspects of the resultant place-form.”

It is absolutely necessary to begin a program with site analysis on the basis of climate, as well as site-specific characteristics, such as drainage patterns, and wind exposures. Frampton goes on to say, “Nature is not only topography and site, but also climate and light to which architecture is ultimately responsive to a far greater degree than any other art”. In this regard, sun path analysis must be completed, heating and cooling degree days must be considered, and design must be sensitive to climate. Responding appropriately to climatic changes by using natural ventilating, heating, and cooling, reduces the dependency on mechanical systems and can help root the architecture in its place.

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50 Frampton, “Ten Points”, page 25

51 Ibid., page 26
The region occupies a humid temperate zone. Mean winter temperatures are around 36 degrees, and summers average 74 degrees with 60-70% relative humidity. The seasons change very smoothly, with no drastic temperature fluctuations. The area consistently maintains winds sufficient for natural ventilation, and receives uniform precipitation year round (average 4 inches/month). Also important to the site analysis is a brief description of the soil conditions of the area. According to Mr. Coleson, the frost line lies at 3 inches below the surface. Approximately 3-5 inches below that, the topsoil gives way to flaky shale rock. At 24-28 inches one hits the solid bedrock that according to Mr. Coleson, leads to some of the biggest problems for construction in the region.

The area is abundant with flora and fauna. Typical of the lake are blue-gills, smallmouth bass, walleye, black bullhead, gar, sunfish, and the channel catfish. The forested portions of the area are home to great horned owls, wild turkeys, mallard ducks, woodpeckers, bluebirds, hummingbirds, bobcats, bats, deer, skunks, cottonmouth, and water moccasin snakes. The most notable natural features of the site include the abundant red cedar trees (Juniperus virginiana) that populate the area, and the

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shale rock that makes up the ground. We can begin to see the important factors from the site and climate that will begin to influence the design; natural ventilation, shallow bedrock, moisture and radon problems, solar orientation, and drainage. To ensure the project truly represents architecture appropriate to this region, these responses must be integrated into the programmatic requirements of the design. The Climatic Site diagram (see figure 28) shows this analysis. In this simple diagram, it is easy to begin to see the potential orientation a building might take on the site, in response to prevailing winter and summer winds, sun exposure, drainage patterns, and topography.
Overview

The program for this design problem is broken down into three sections. The first covers the functional requirements of the new ranger station in relationship with the current one, the second lists the spatial requirements of the new station, including square footage estimates, and the third gives the design requirements relating the larger issues and different scales of intervention involved in the project.

Function

Currently there are five permanent rangers for the Corps of engineers at Dale Hollow, and one seasonal ranger for the summer months. Each ranger is assigned a different quadrant of the lake which they are responsible for patrolling by land and serving as a public relations liaison. Each ranger has a truck which they use to make their patrols to different campsites and resorts. The fifth ranger patrols the lake by boat, while two other boats are available for the rest of the rangers when needed to access primitive campsites and to enforce Tennessee boating laws. The majority of their daily duties lie in public relations.
They patrol primitive campsites and campgrounds to ensure camping regulations are followed, and they also monitor for safe operation of boats on the lake. The other major duty they perform is boundary line surveying for dispute settlement. As mentioned earlier, many neighbors of the lake want to tear down trees to allow lake views. To control the aesthetic impact that the new housing will have, the Corps makes certain that private owners do not remove any trees that the Corps owns. However, in many of these cases, the exact boundary of the Corps of Engineer’s property is unmarked. Therefore the rangers often need to survey the boundary lines from the original acquisition maps to settle disagreements over who owns which tree. In emergency situations, the rangers are rarely dispatched by 911. When situations do arise, they mainly assist in Search and Rescue operations, and serve as boater “traffic control” in case of an accident. In most cases, the rangers are not the first to be notified of an emergency.

Every morning, all five rangers report to the Resource Managers office below the dam near Celina. This facility serves as the main headquarters for the Corps of Engineers at Dale Hollow. The office is a converted house left over from the housing built for workers during dam construction, and is
relatively small at about 3,000 square feet. Included in the station
is office space for six rangers plus a co-op, four clerical staff
member offices, a kitchen and break room, and a small
conference room. Brochures, maps, and equipment storage is
spread throughout the office in closets and left-over hallways.
Most days, the rangers make several trips to and from this office
throughout the day. With a drive from one end of the lake to the
other taking at least an hour, a lot of the rangers’ days are spent
driving to and from different sites. In addition to this problem,
during peak summer and holiday months, many long nights are
spent patrolling the lake and making sure that everyone is
camping and boating safely. Because the rangers commute to
work (the closest resides in Livingston), many of them do not
even go home at night or on weekends after holidays. In
response to this, the expanded satellite station would need to
provide sleeping quarters for the rangers. When asked what
would be the ideal expansion if the funding were available, Mr.
Willis responded with three major concerns. First he said that
locating a remote office on the other half of the lake would allow
more efficient work out of the rangers by eliminating much of the
time wasted in driving. Secondly was a desire to hire one more
permanent ranger for lake patrol, and one ranger specifically for
weekend and night patrols. This introduces another patrol boat for the team, and this expansion should include a private boat house for docking of the patrol boat. An improved space for public relations that would allow public presentations, potentially Community Action Group meetings, and hearings was the third major need that Mr. Willis expressed.

**Space**

Through my interview with Mr. Willis, we also discussed what the spatial needs would be for this new support station. Descriptions of the spaces he listed and their different requirements are given below. They are graphically represented in the following diagrams; Space Inventory (see fig 31), and the Spatial Diagram (see fig. 30).

*Conference Room* - (450 s.f.) seating for ten to twelve individuals at a conference table, plus another ten to twelve seated around the perimeter of the room; the space would be used throughout the year for inter-office conferences, and occasionally (2-3 times per year) for public presentations and forums with the local community. These presentations would include meetings of the Community Action Group for educating potential home-buyers and developers. The space therefore needs to be open, flexible, and inviting to the public.
Office Work Space - (380 s.f.) work space for a total of three new employees including two rangers and one clerical worker. The workstations need to have space for PC’s, file storage, and small gear storage. An open work environment is desired, while preserving some sense of personal space.

Copy/Fax Area - (36 s.f.) space dedicated to a fax machine, scanner, and copy machine.

Paper Storage Area - (48 s.f.) storage of maps and large format drawings in hanging files, as well as shelves for storage of visitor maps, brochures, and interpretive material. The room should be easily accessed from the office area as well as the conference room and public areas, although the room is not part of the public space.

Equipment Storage Area - (36 s.f.) storage of rangers’ gear. Equipment includes charging bases for communication radios, survey equipment, digital cameras, and marking paints. This space should also be accessed easily from the office area, but should not be open to the public.

Kitchen and Break Area - (180 s.f.) a small kitchenette including refrigerator, microwave, toaster, coffee maker, range/oven, and cabinet/counter space. Small seating for four should also be
provided, and direct access and connection to the outdoors is desired.

**Toilet Room** - (42 s.f.) one unisex public toilet room should be located near the conference area and be easily accessed from the office area.

**Personal Quarters** - (286 s.f.) space provided for two private sleeping areas, including storage of personal items. Included in this space is a private shower and bath facility for use only by the rangers. This space should be removed from the other areas of the building to allow for optimum privacy.

**Mechanical Room** - (200 s.f.) optimum plumbing, heating, cooling, and ventilating systems need to be determined and ample space needs to be provided to allow equipment to function properly, and maintaining access for repair. This room should also be completely private.

**Parking Space** - four parking spaces for rangers/employee vehicle parking needs to be provided, and an additional minimum of five parking spaces for visitors. During peak conferencing times, additional parking will be available at unused cabins, and at the base of the hill near the boat launch.

**Total Square Footage (+15%)**: 1,988 s.f.
**Boathouse/Dock** - the patrol boat measures approximately 22 feet in length, and 8 feet across. A boat slip appropriate for this size boat would measure 25-27 feet long by 11-13 feet wide. Included in the boathouse should be a storage area for life jackets, and an area dedicated to drying out wet equipment. The boathouse should be located within easy walking distance of the station, but is not required to have direct access or connection.

The Space Inventory (fig. 31) is a visual representation of the different spaces that have been requested. Square footage estimates and calculations have been added to the information the rangers provided for me during interviews, based on descriptions they gave. The diagram represents a connective way of linking the space titles and functional needs given by Mr. Willis with the dimensional and square footage estimates. The Spatial Diagram (fig. 30) represents the different relationships that the spaces should have with each other, including how public or private the space must be.
<table>
<thead>
<tr>
<th>Space Inventory</th>
<th>Seating for 10-12, (25'x18')</th>
<th>450 s.f.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference room</td>
<td>(9'x18') (9 permanent + 10 temporary spaces)</td>
<td>450 s.f.</td>
</tr>
<tr>
<td>Parking space</td>
<td>(9'x9') and (10'x10')</td>
<td>380 s.f.</td>
</tr>
<tr>
<td>Office space</td>
<td>(12'x18') sleeping area, (7'10')</td>
<td>380 s.f.</td>
</tr>
<tr>
<td>Personal Quarters</td>
<td>shower/bath area and storage</td>
<td>288 s.f.</td>
</tr>
<tr>
<td>Kitchen/break</td>
<td>(12'x15')</td>
<td>180 s.f.</td>
</tr>
<tr>
<td>Mechanical Space</td>
<td>(12'x18')</td>
<td>180 s.f.</td>
</tr>
<tr>
<td>Equipment storage</td>
<td>seating for 4, small kitchen</td>
<td>180 s.f.</td>
</tr>
<tr>
<td>Paper storage</td>
<td>optimal systems to be determined</td>
<td>180 s.f.</td>
</tr>
<tr>
<td>Copy/fax</td>
<td>(15'x18')</td>
<td>270 s.f.</td>
</tr>
<tr>
<td>Toilet Room</td>
<td>(6'x6')</td>
<td>36 s.f.</td>
</tr>
<tr>
<td>Boat House</td>
<td>(6'x8')</td>
<td>48 s.f.</td>
</tr>
<tr>
<td>Conference room</td>
<td>(6'x6')</td>
<td>36 s.f.</td>
</tr>
<tr>
<td>Parking space</td>
<td>(7'x6')</td>
<td>42 s.f.</td>
</tr>
<tr>
<td>Office space</td>
<td>(30'x15')</td>
<td>450 s.f.</td>
</tr>
<tr>
<td>Personal Quarters</td>
<td>(380 s.f. + 15% circ.)</td>
<td>1,729 s.f.</td>
</tr>
<tr>
<td>Kitchen/break</td>
<td>(Station Total)</td>
<td>1,988 s.f.</td>
</tr>
</tbody>
</table>
Design

Several key design parameters present themselves in relationship to the thesis. These can be summarized as response to Frampton’s “Ten Points”, compliance with proposed zoning and planning regulations, and working with the proposed Dale Hollow Trade Guild.

The project must not simply be a repetition of vernacular form; it is not “reactionary”. One must also not discount many of the good modernist architects that attempted to merge some part of the site or place into their architecture, such as Luis Barragan, Alvar Aalto, and Frank Lloyd Wright. The design must address the integration of, and response to, the topography of the site. It must be demonstrative of both its technical means, as well as its relationship with gravity, weathering, and time. An appropriate climatic response in the design is necessary to balance the opposition between artificial and natural forces. From the general regional climatic descriptions, at least six key design guidelines can be described. First; keep the heat in and cold out during the winter, second; let the winter sun in, third; use natural ventilation for summer cooling, fourth: protect from winter winds, fifth; protect from summer sun, and sixth; avoid creating additional
humidity during the summer. Attention must also be paid to the tactile experience of the building through materials. Specifically, those senses other than sight-smell, sound, and texture can all be used in response to the region. For example, cedar has a distinct smell, and concrete similarly has a unique feel and sound. In order to practice architecture critically in this region, local materials should be explored and pushed to discover new applications. Other critical responses might come about through working with construction trades in the region throughout the design process.

As part of the thesis, a regional planning commission is being proposed for the area. The mission of this committee is to designate different zones where increasing levels of “belonging” will be required. The zone immediately surrounding the Corps of Engineers property for example, would be the most controlled. Strict guidelines for buildings to respond to local climate, tree removal, material choice, and potentially even contractor choices could all be applied in this zone. Further away from the lake, these guidelines loosen, until there is virtually no restriction—effectively filtering out Wal-Mart and McDonald’s from the core lake zone, while still allowing them to participate in the regions

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economy. These zones are preliminary, and would require in-depth planning research to implement. The zones actually implemented after intense planning investigation could vary, be more or less in number, and could be different from those I have suggested. For this project however, the design for the ranger station will be assumed within the zone of most concern, and must display positive ways to respond to these issues regarding climate, material, and builder.

One of the design guidelines from the zoning commission might involve the use of another proposed organization; the community trade guild. The five county area surrounding Dale Hollow Lake is rich in construction related business, contractors, suppliers, and educators. The proposed Dale Hollow Trade Guild that could be formed, would link all of these players together, using the Tennessee Technology Center at Livingston, the local trade school, as the anchor. Through this anchor, the level of communication between players can increase, and design projects within the area can truly benefit from what the region has to offer. With increased involvement in the entire process, from design, to manufacturing, to construction comes increased pride in the completed projects for the region. Gradually through this process, the local contractors can legitimately form a guild,
whereby they are training and educating craftsmen in addition to construction workers.

With a critical mind however, we must be careful not to fall into a romantic mode of thought and nostalgia. Pre-manufacturing and machining of parts that are assembled in the field can both be sources of craftsmanship in the 21st century. Less than fifty miles from Dale Hollow Lake, located between Dale Hollow and Lake Cumberland, there are five different houseboat and luxury yacht manufacturers. The hulls of these yachts are typically fashioned out of light gauge aluminum framing and aluminum sheet metal skins. Perhaps the skills of these craftsmen and shops can be used in a critical way in this project to further bridge between the regions identity and quality craftsmen in the 21st century.
U.S. Army Corps of Engineers

The Corps of Engineers perform large scale engineering projects—from damming rivers and creating lakes, to infrastructure such as waterway transportation like the Tennessee Tombigbee Canal. In many of their projects, they build housing structures for workers, or housing as relief projects during times of disaster. In these housing projects, and other projects like the pierced-steel plank runway system, an economy of materials and speed of construction are always present. They also rely heavily on mass produced, pre-manufactured products like CMU and other materials. This could provide inspiration to the design project—a way to balance the universal with the specific, while at the same time, represent the design goals of the client organization.
Renzo Piano Building Workshop

Renzo Piano’s Tjibaou Cultural Center is a good example of combining advanced technology and universal materials (steel structure) with local materials. The large shell shaped structures above the buildings are made from locally harvested wood louvers fastened onto a steel frame, and they are used to funnel ocean breezes into and through the building for natural ventilation. Another important aspect of the design is the spatial layout, following the native people’s tribal layout of linear organization.

Glenn Murcutt

The work of Glenn Murcutt is exemplar of a critical regionalist approach to architecture. He consistently combines historically significant materials (corrugated steel), climatically responsive designs, and aboriginal practices with his own style, and contemporary materials and techniques. In the Marika-Alderton House, local woods, steel structure, and corrugated steel are combined following influential ideology of the aboriginal people of Australia. Panels on all sides open to allow ventilation, and help the structure withstand the hurricane force winds that the area is prone to.
Stephen Atkinson

In the Zachary House for his parents, Stephen Atkinson employs the same techniques of regionalism by using socially significant materials (corrugated steel from surrounding farm structures), and form (the dog-trot layout common in the Deep South). Also of importance for this thesis is the fact that from the beginning, Stephen Atkinson’s parents were to build it. Neither of his parents is involved in a construction related job, so he had to design with this in mind. The details had to be worked out in such a way that he knew his parents would be able to complete them. This is similar to the ideas expressed in the thesis- by having an informed knowledge of what the builders know, the designs become better executed, and richer.

Samuel Mockbee

The experimentation with materials at the Rural Studio is fantastic. Not only do the students of Auburn University use unfamiliar building materials (license plates, windshields, cardboard) in their projects, but most of these materials are salvaged locally from the region. In many of the projects, the materials that the buildings are made from both come from the region, and are used in unique and critical ways. The students of
the Rural Studio for the next semester are also the builders of these projects, and again, the unique relationship between designers and builders exist for these projects.

**Hassan Fathy**

Fathy practiced in Egypt during much of the 1920’s to 1960’s. His major contribution was his work with two traditional masons from Nubia throughout most of his career. He was commissioned to design and plan the entire town of New Gourna, and his book *Architecture for the Poor* documents this process. Throughout his career, he focused on using natural materials traditionally found in the region, and more importantly, focused on the traditional builders and their methods. Fathy’s work is important because he demonstrates an attempt at reviving the traditional role between architects and craftsmen.

Figure 38 Alaa al-Din Mustafa, Fathy’s Nubian master mason
Conclusion

Critical Regionalism offers a way of designing for the Dale Hollow Lake region. This mode of thought requires response to local climate, materials, history, sociology, and construction techniques. Integration of this mode of thought through several scales of intervention will allow a far greater impact in preserving the identity of the region. Preservation can occur at the smallest scale, through the materiality of the built form, or by relating to the local climate, the local flora, and geology. Responsive and sensitive site techniques teach in an exemplary manner, while utilization of local skill for construction leads to the intermediate scale of intervention- the formation of the Dale Hollow Trade Guild. This interaction of craftsmen and designers may lead to projects that are more in tune with the regions weaknesses and strengths regarding building materials and techniques. At the largest scale of intervention, the Planning and Zoning Commission in concert with the Community Action Group begins to mediate between the global and local culture by designating specific places for different types of development. It also begins to make a change in the mentality of influential developers, builders, owners, and council members through educational programs and discussion.
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