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I, Ryan Andrew Lobello, hereby submit this work as part of the requirements for the degree of:

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ARCHITECTURE OF DUAL IDENTITY
Chicago Urban Context Informed by Finnish Process

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ABSTRACT

There is an identifiable and distinct Finnish tradition within architecture. The Finnish architectural approach achieves genuine significance in architecture through continuity and integrity between form and landscape. This Finnish approach to architecture, delineated as an innate respect to landscape, a reliance on the intuitive design move, genius loci, honesty in the use of materials, and an appreciation of Northern light and nature, is a process for designing successful works of architecture. Aligned with these cultural and poetic sensitivities in Finland, the tangible and intangible characteristics can inform architectural process for projects in Chicago.

Overall this is an investigation into how a specific architectural process and a specific architectural context can react and enrich each other to create an unknown, yet distinct entity.

Particularly this is an investigation into how Finnish architectural process and principles inform and adapt the design of Chicago architecture into a unique solution that is both Finnish and Chicagoan in foundation.

Central questions this thesis will answer are:

- How can these Finnish characteristics be applied in the Chicago environment in order to create a more rich and active context that allows buildings to more effectively communicate cultural values to the general public?

- How do two separate and unique architectural cultures interact and develop an architectural project in this method of cultural synthesis?

The analysis of the Finnish architectural tradition together with a critical examination of how these beliefs are viable and relevant in present-day Chicago form the base of the research. This thesis will direct a design project concerned with the typologies of cultural institutions and high-rises together with Finnish design principles, tradition, and process, specifically a Finnish Cultural Center in Chicago. By setting the project in the urban context of Chicago’s downtown loop it will strengthen the juxtaposition of the synthesis and allow full interaction between Finnish students, visitors, and immigrants and American students, visitors, and Chicago residents.
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Why Finnish Architecture?

Finnish architects, such as Alvar Aalto, Heikkenen+Komonen, Reima Pietilä, Gullichsen Kairamo Vormala, Helin & Siitonen, and Juha Leiviskä, are the authors of inspiring work because their buildings resonate deeply with people. These architects have created buildings that became entrenched in the texture of the context, site, and culture of the people. The Finnish culture has more apparent integration between life and architecture. The architects pay close attention to issues of materiality, construction connections, landscape, and their own intuition. Recent architecture in the Chicago region lacks these qualities. The reinterpretation of the Finnish design method in the Chicago context will help investigate and draw attention to some of the issues in the current framework and perhaps serve as a catalyst to the reinvigoration of the architectural region.

Why Chicago context?

As the largest Midwestern United States city, this city is representative of the typical American attitude towards cultural, social, economic, and architectural environments. Another rationale for the focus on the Chicago region is due to its distinguished architectural tradition and influence. Specifically, the thesis will investigate the design of a Finnish Culture Center along Burnham’s cultural corridor on Michigan Avenue across from the Art Institute of Chicago, Chicago Civic Center, and Millennium Park. The investigation into how Finnish architectural process and principles inform and adapt the design of Chicago architecture into a unique solution that is both Finnish and Chicagoan in foundation will also heighten awareness and appreciation of both cultures’ identities.

This thesis document will research the qualities of Finnish and Chicago architectural contexts. The design project will investigate a method of integrating the two architecture cultures into a unique entity. The Finnish and Chicago processes will inform the design methodology in the hopes that the resultant design will be further enriched by the relationships between the different cultures.
research in this document will provide concept ideation for the project as well as
guide the design throughout all phases. It will inform design decisions at all levels
(masterplanning, program, details, representation, etc.) of the project through its
methodology, historical analysis, and visual precedents.

**Issues with the Chicago context**

The loss of identification and connections with architecture contributes
to the situation in Chicago that is emblematic of the public’s decline in awareness
and appreciation of their environment and architectural context. This lack
of identification with the built environment alienates the individual, and thus
the collective society, from their context, tradition, and historical memory as
demonstrated through the experience of architecture. The alienation of the
Chicagoan individual relates directly to the separation of identity and meaning
between Chicago culture and its architecture.\(^1\) As architects, it is important to
analyze this generally lethargic attitude in order to alleviate the situation and
create a more rich, meaningful, and active context for society. Urban theorist and
Chicagoan Robert Bruegmann states:

> Every individual has some role in determining how the city looks
> and functions… If my choices are echoed by those of many other
> people, they can have a profound effect… therefore our urban
> areas are the result of the actions of every citizen, every group,
> and every institution, every day.\(^2\)

Adjusting the collective mindset leads to the adjustment of urban form. Removing
the current methods of alienation in architectural design involves change at the
fundamental stage of the architectural process.

Main issues gripping Chicago architecture are over-stimulation, cheap
construction, uniform contexts, and a design approach based on the principles of
monetary-based economics. These issues relate closely to the practice of real-
estate development and are partially responsible for the decline of the Chicago
public’s awareness and appreciation of architecture. The critique of superficial
semantic meaning has created a renewed interest in establishing resonance between
architecture and society as a means of enhancing the physical and emotional experience of the environment. This resonance is different from culture to culture and from region to region.

Philosopher Gianni Vattimo states “We need the ability to engage in building projects that satisfy these two conditions: an enrootedness in a place, and an explicit awareness of multiplicity.” Using Kenneth Frampton’s critical regionalism as a departure point, this thesis will provide a method that will enrich a specific architectural context with additional constructive meaning from the synthesis of multiple regional architectures. This method of cultural synthesis (as explained later) begins first with the examination of the success that the Finnish people and region have had with regards to their built environment, and second with the analysis of the constructed architectural context composed in the typical American city, Chicago.

American architecture is a “juggernaut moving inexorably across the countryside, flattening farms and forests, replacing country roads with highways lined with wall-to-wall strip centers and an endless sprawl of large-lot subdivisions.” By studying the Finnish system of architecture, an approach to architecture can be grounded in the Chicago context that emphasizes coexistence with nature as well as respectful acknowledgement of cultural values. This does not mean importing a Finnish building into the United States; instead, it is important to analyze and develop an understanding about why the Finnish buildings are successful and then use these lessons as a basis for designing in Chicago. Overall this is an investigation into how a specific architectural process and a specific architectural context can react and enrich each other to create an unknown, yet distinct entity.

The hypothesis is that the Cultural Synthesis method specifically utilizing Finnish process and principles with the Chicago context, will create buildings that better communicate to the public and add direct meaning and significance to connections between the Chicago environment and cultural values. The criteria of aesthetic and cultural values “in this world of multiple models of existence, cannot be legitimated except via the multiplicity, a multiplicity lived explicitly.” Cultural Synthesis is a method for the realization of multiple architectural cultures in the built environment.
Progression from Critical Theory to Cultural Synthesis: Cultural Synthesis Explained

Critical Theory as advocated by the Frankfurt School is a method of viewing and interpreting the world. Italian philosopher Massimo Cacciari explains Critical Theory as the process that produces “division, detachment, difference, rather than unity, inclusion” of concepts. This discriminating difference of concepts is an effort to clearly demonstrate how divisions of meaning, specifically architectural meaning, are created and conveyed to the general public. In architecture, the Critical Theory perspective has been most clearly adopted by the critical regionalists. This thesis utilizes a process that closely resembles critical regionalist methods, but is a slight departure in the basic proposition and projected end result. The critical regionalist approach puts the architect in the position to navigate between local and global conditions. This thesis contends that a method towards more specific results is Cultural Synthesis: the pursuit of associations and juxtapositions between two specific local cultural conditions, specifically American and Finnish. While critical regionalism navigates between universal and local cultures, Cultural Synthesis is the navigation between two different localized cultures. Cultural Synthesis is defined as the architectural union of two separate localized cultures into an amalgamated, yet distinct entity that maintains fundamental connections to both locales. It is necessary to follow the progression from Critical Theory to critical regionalism to Cultural Synthesis.

Widely regarded as the most prominent scholars in the field, Alexander Tzonis and Liane Lefaivre define critical regionalism as “partly an attachment, partly a rejection of regional elements.” This blend/rejection of regional elements is what accounts for the term critical. The architect can choose which elements of the region to acknowledge and which elements to not comment on. Notice that the term region is not confined to regional architecture but is left purposefully vague in order to encompass all aspects regional, such as culture, traditions, art, architecture, society, nature, climate, economics, etc. It is important for the critical regionalist architect to take all matters into account and create a building that is “self-reflective, self-referential, when it contains in addition to explicit statements,
implicit *metastatements* that make the beholder aware of the artificiality of her or his way of looking at the world.”

By being critical in this manner, the building will “appear to enter into an imagined dialogue with the viewer.” This dialogue speaks to a primary issue and concern in critical theory of navigating between culture, society, and the individual.

This begins now to scratch the surface as to the full possibilities of critical theory. Kenneth Frampton further elaborates the definition of critical regionalism:

> The fundamental strategy of critical regionalism is to mediate the impact of universal civilization with elements derived indirectly from the peculiarities of a particular place… critical regionalism depends upon maintaining a high level of critical self-consciousness. It may find its governing inspiration in such things as the range and quality of the local light, or in a tectonic derived from a peculiar structural mode, or in the topography of a given site.

Frampton begins to mention particular methods of designing in a critically regionalist manner. He refers to the tendency of critical regionalism’s salient cultural precept of *place creation* as the method most conducive towards creating high quality architecture. Keep in mind that for the purposes of this thesis, when Frampton mentions mediating the impact of universal civilization with elements of a particular place, the proposed process is by the introduction of two localized *processes and contexts* into the design problem. It is now important to note what is not considered critical. Critical regionalism is not the “simplistic evocation of a sentimental or ironic vernacular… [or] the demagogic tendencies of Populism.” It is not contextualism, historicism, or naturalism. It is a critical acknowledgement and decisiveness with the multitude of aspects that confront, influence, and associate with an architectural project.

Alexander Tzonis finishes his essay *Introducing an Architecture of the Present: Critical Regionalism and the Design of Identity* with a call to action which gestures towards the role and importance of cross-inspiration in terms of Architecture:
As we move into the unknown territories of the twenty-first century, the unresolved conflict between globalization and diversity and the unanswered question of choosing between international intervention and identity, are increasingly leading to crisis… The task is to rethink architecture through the concept of region… What we call the critical regionalist approach to design and architecture of identity, recognizes the value of the singular, circumscribes projects within the physical, social, and cultural constraints of the particular.\textsuperscript{15}

The ability of regional architecture to represent cultural identity allows the manipulation of the architecture to direct change in the collective identity.\textsuperscript{16} This can help create and foster the cultural identity of a region. Introducing a Finnish design process to the Chicago area does not mean that the project will be a Finnish building; it means that Finland’s cultural thinking will heavily influence the process. The building should read as an integrated part of the Chicago context while also making commentary as to the synthesis of Chicago and Finnish architectures.

The geographical remoteness of Finland has limited the extent to which universal culture has influenced the region. This has mostly enabled the Finnish people to maintain their traditional views and principles unfiltered by global influences.\textsuperscript{17} The key to the synthesis of architectural cultures is to connect with the spirits of the regions, while introducing processes and concepts that have the ability to fundamentally alter the preconceived notions and ways of life. The defining of what is and is not part of a region is important to clarify. According to Liane Lefaivre, a region is a place with a relatively homogeneous culture.\textsuperscript{18} A region can be defined as broad or narrow depending upon the specific boundaries in question (physical, cultural, linguistic, religious, etc). It is important to note that the connection can apply to multiple sub-cultures living in a same region as long as there is a common spirit of the people. In the case of Chicago, the city has numerous sub-cultures, but this fragmentation is subservient to the overwhelming identity of being a “Chicagoman.” This is the connection between the cultural spirit and the architecture that is necessary for Cultural Synthesis. Keep in mind that the resulting entity contains fundamental connections to both locales.

Vattimo states that “To construct a good building, one has to refer to a
determinate community amongst the multiplicity of communities that speak in our society, and one has to represent it in a definite way.” The explicit interaction, amalgamation, and unification of different communities and localities are the basis of this thesis. The synthesis does not imply a homogeneous transformation as the end result, but a work that is an adaptation referring back to both local cultures at the foundation. The “legitimation of the project... issues not from a strong metaphysical ‘foundation’, but from the voices of different communities, speaking not only from the past, but from the present too.”

The designer critically guides and orients the project to this legitimacy. Cultural Synthesis has been defined as its own term in order to avoid the direct connections, misinterpretations, and preconceived notions of the tenets of critical regionalism.


14 Kanekar, Aarati, Lecture on critical regionalism (Cincinnati: University of Cincinnati, 1/20/05).


ARCHITECTURE SUOMI
Finnish Architectural Process and Qualities
“I don’t think there’s so much difference between reason and intuition. Intuition can sometimes be extremely rational.” Alvar Aalto, 1972.¹

Late in his life, Aalto reflects upon a basic tenet of his practice. The ability to make intuitive decisions without any explicit rationale is a characteristic of his work and, as the following proves, consequently a characteristic of Finnish architects in general. The intuitive decision may seem irrational to the casual observer, but what Aalto is explaining in his comparison of intuition as ‘extremely rational’ is that the artist implicitly understands the reason involved in the decision. Without voicing the rationale or consciously acknowledging the reason, the Finnish architect makes a rational decision based on the built-up knowledge base of his lived experience. Notable Finn Kaija Siren, also an architect, phrases the concept in this manner: often one does the right thing spontaneously.² Spontaneity, intuition, implicit rationale, all methods of explaining the process that the Finnish architects embraced throughout their tradition and into their present works.

Mysticism and the Kalevala

How did the Finns become comfortable embracing their intuitiveness in their art and architecture? It starts at the beginning of their inhabitation and organization of culture a thousand years previous. The key to understanding the Finnish people involves understanding the influence of their oral history in the form of songs and poems, the Finnish national epic Kalevala. Finally transposed to text in the middle of the 19th century by Dr. Elias Lonnrot, the Kalevala provided the spark for artistic, nationalistic, and fellowship for the Finnish people.

[Lonnrot] gave Finland… its own mythic and literary heritage – its own national identity. He reconstructed for Finland a world of magic and mystery, a heroic age of story that may never have existed in precisely the form he gave it, but nevertheless fired Finland with a sense of its own independent worth.³
The actualization of the Finnish mythology in an easily accessible form created the impetus for the Finnish National Romantic movement that created the Finnish national identity and eventually culminated in the Finnish independence from Russia.

The heroic pre-history of the Finns created an interest in embracing the mystical relationship of the people to the land reflected in current design practice. This archaic, almost pagan, relationship amongst the Finns explains the predisposition to an almost spiritual reliance on the ability to create art through intuitive methods. As a text, the *Kalevala* is best understood through the power of the characters’ words and incantations to explain and create the wonder of the Finnish environment. National Romantic artists (Saarinen, Sibelius, Leino) from all fields unitedly made national statements in architecture, music, and poetry. Specifically, the National Romantic architects utilized earthly materials and simple forms to represent a connection to the Finnish pre-historic wonder of creation. Eliel Saarinen’s work with GLS best represents this connection:

An explicitly archaic treatment of forms was generally regarded as referring to the distant past and perhaps to the world of the *Kalevala Epic*. It was expressed for example in the heavy forms of metalwork, devoid of any refinement, and in the use of only crudely hewn natural stone.

The concept of *sisu* (see Appendix B) is apparent in the architectural works, perhaps due to the connection of the architects to the *Kalevala*. From the Finnish architectural tradition to more modern works, the concepts of stoic determination and inner resolve in the face of adversity is clearly seen.

Lars Sonck’s earlier Tampere Cathedral showcases the National Romantic characteristics while Reima Pietila’s Tampere Cathedral of the 1970s takes these concepts to the modern age. The ability of the church to lift into the sky, defy gravity, and inspire the Finns with its own mystic mastery represents a modern interpretation of the principles in the *Kalevala* to provide inspiration for the Finns. The almost nostalgic method that architects draw inspiration from the mystic nature of their history is evident in Erik Bryggman’s *Honkanummi Chapel*. Bryggman’s career started towards the end of the National Romantic era, developed into the
1930s functional modernism, and then returned back to an architecture utilizing rustic materials and simplified forms that are more reminiscent of Sonck or GLS. This is a testament to the power of the mystical drawing towards the environment that is exemplified in the Kalevala and creates inspiration for the Finnish architects. The kalevalan character Väinämöinen, the father figure of the Finnish culture, is representative of the mystical character of the earth and the ability of the Finns to recognize the environment as an element worthy of respect and inspiration. The respect for the environment is represented in most Finnish architectural works. In a tense poem in the Kalevala, Väinämöinen’s emotion is representative of the humbling power of nature that the Finns look to as an inspirational muse:

Lakes swelled up, the earth was shaken,
And the coppery mountains trembled,
And the mighty rock resounded,
And the mighty mountains clove asunder;
On the shore the stones shivered. 

Fig. 5 - Bryggman, Honkanummi Chapel

Fig. 6 - Saarinen, Helsinki Train Station

Fig. 7 - Saarinen, Helsinki Train Station
Spirituality and Humanism

In the history of the Finnish people, Christianity was introduced to the culture but never fully embraced. It was seen mostly as a method of controlling the peasants by the nobility and thus almost a lip-service aspect of Finnish life. Much more important was the continued sustaining quality of the almost pagan mystical relationship between man and nature that to this day remains an undercurrent in the collective Finnish cultural framework. In terms of architecture this is represented by a synthesis between rational and organic approaches in architectural works and process.\(^8\) The central focus being on the interaction of man and his environment, both Finnish architecture and Finnish spirituality comprise a dialogue that cannot be explicitly named as religious or transcendentalist but rather a mixture of both ideas.

Alvar Aalto critiques the modern movement by stating that rationalization has not gone deep enough in architecture and that instead of actively turning away from a rationalist method, architects should channel the rational approach from the technical sphere and into that of humanism and psychology.\(^9\) Human-centric design and care for experiential concerns are major aspects of Aalto’s work that have found themselves continually studied and developed among the Finnish architects. As the husband-wife team of Kaija and Heikki Siren has shown through their designs, the mixture of a transcendental religious tradition has existed from the early medieval wood churches such as Petajevski up to their own design and execution of the contemporary Otanemei Chapel in Espoo. This relationship can also be seen in secular works such as the humanistic details that GKV employ in the Poleeni Civic Center and the Olympus housing. These details reflect a deep relationship and understanding of the architecture as building and dwelling for experiential living and human-centric engagement.

Many architects consider the Villa Mairea as Aalto’s masterwork, but it is also the most exemplary building that shows the bridge between man and nature as well as the harmony between man and the manmade.\(^10\) The materials and detailing help make this salient human-centric connection. The natural materials that were selected for both the interior and exterior enhance the reciprocal relationship.
of the house to its surroundings, as well as showing how Aalto interpreted the functionalist principles of the modern movement to create the home in a warm, humanistic, adaptable, and engaging manner that defines the Finnish humanistic and experiential focus of architecture.
The ritual of Midsummer’s Night gives a glimpse into the essence that defines what it is to be Finnish: the romance lingers, the full blossoming of nature is cause for festivities that commence with the rite of sauna and last late into the blue-white night round a tall fire. The mystic transcendental attitude permeates throughout the culture and the architecture.

The best spatial entities are arresting without any kind of analysis, often through their own simplicity. The theorizing of the adult world and its ability to analyze the surroundings often destroys deep down the ability to experience primitive innocent reactions at first sight. Retaining this ability… and keeping faith with it is an important characteristic for the [Finnish] designer. — Sarlotta Narjus, principal of SARC architects.

Eliel Saarinen’s Finnish National Museum represents this manner of design and cultural emotion by “not express[ing] any festive mood, but rather ‘the murmur of the tall pines and the rush of the deep streams’ and it was close in spirit to the heavy and melancholy mood of folk songs.

Noted architectural theorist and Finn Juhanni Pallasmaa explains Finnish architectural notions and inspiration as the following:

[Finnish architecture is] an architecture of assimilation and amalgamation rather than exclusion, of essence rather that visual image. It draws equally on contemporary minimalist sculpture and humanity’s archaic symbolic constructions, on pragmatic vernacular architecture and the mysteries of cosmic geometry and time.

Concern with honesty and soulfulness in architecture is much more hierarchally important than image making. The blend of contemporary influences with archetypes and traditional customs are as central to Finnish architecture as natural connections through the environment. All these aspects that Pallasmaa mentions can in turn be manipulated as a quest for an essence in architecture, or as Finnish architect Reima Pietila explains it: Architecture is the framework for truth.
explains his work as an inference towards essences in the never-ending search for the elusive truth.

This elusive truth relates to both the human realm and the natural realm. The pursuit for the relationship between man and nature is seen throughout Finnish architecture and vernacular buildings. Face to face with a Finnish building, one still senses the sky, land, sea. In a country known for its architecture, this is a tribute to the success of the manmade and a sign of the link between form and materials. In modern Finnish architecture, this link has become a complicated reading of simple forms, joints, and connections:

[T]he unassumingly simple selection of elements becomes a complicated spatial and formal game that at times achieves a Piranesian density… Order plays against accident and arbitrariness, rigor against casualness, stasis against movement, opacity against transparency, lightness against gravity, form against image.

The multiple interpretations of a ‘simple selection of elements’ represents the contest that most Finnish architects enjoy. The engagement of the building user with the mass of meanings and the experiential response that is the resultant encounter is a focal point of Finnish design.
Reinterpretation of International Architecture Cultures

“The greatest liberty is born of the greatest rigor.” - Paul Valery, 1956.

What better exemplifies this maxim than the thorough method that Finnish architects employ in their meticulous refinement of international developments? Due to its remote location in the far north of Europe and as a transition between eastern and western cultures, Finland has always viewed international movements from a peripheral perspective. There is no hesitation for adaptation or reinvention of principles to create a better fit with their localized culture and geography. New phenomena were never absorbed as they were, but adapted to natural conditions, climate, environment, and available resources. The local variations thus achieved can differ decisively from the original theme.

The thoroughness at which the Finnish architects embrace the multitude of concepts in a movement with strict adherence followed by free intervention is a consistent viewpoint of which the Finns respond to global architecture.

The Finnish father figure of architecture Alvar Aalto demonstrated this characteristic throughout the progression of his career. He consistently took influences from global movements and refined his unique approach to Modernism. By utilizing specified pragmatic concerns, localized materials, and his own artistic creativity, he created a role-model process that has been followed in Finland ever since. The recent developments and current architectural practice seems to have spurned off from the Finnish functional modernism. This is simply a misconception; the Finns have not rejected Modernism, but have tried to add to the manifold benefits that it offers by reinterpreting its artistic and technological achievements.

Juha Leiviska continues to adapt and reinterpret the principles of the De Stijl art movement through his work. GKV adapts the western curtainwall construction practices, the western capitalist commercial tower building type, and the Russian Constructivist formal principles in their work. And this is just how two architects comment on the global trends and movement! The Finnish architect is fully versed and cognizant of global architectural conditions and how their own work interacts and engages the global situations. The Finnish Ministry
for Foreign Affairs in cultural distribution information holds the position that “The central quality of Finnish architecture is openness to outside influences, combined with a strong feeling for contextuality, the exploitation of local conditions and resources.” As an exportable idea the adaptability is conveyed as the principle quality. This is inaccurate proffering based on the hierarchical prioritizing; the ability and want to refine and adapt international developments while commenting on international trends is a sub-point of the Finnish society’s desire to feel global while maintaining local culture.
Philosophy

The composite Finnish culture maintains many beliefs that relate to what may be classified as an overall philosophy. For instance, the act of sauna reflects a transcendental event that becomes part of the collective perspective of the Finnish people. The sauna is a sacred place, an enclosed, dark and simple space for the cleansing of body and soul... when the ritual is finished one becomes part of nature.23 This holistic relationship between man and nature embodies itself in the specific philosophy of space and architecture. Nordic philosopher Sven Olov Wallenstein explains the Finnish architectural concepts:

Space can be articulated and made meaningful by an architecture that follows the movement of nature’s own spacing, as it were, that locates itself as the mediating juncture between nature and culture, and thus preserves them in their difference and harmonious unity.24

Architecture and the built environment are seen as the mediating beings between cultural constructions and the natural environment. Regardless of the current architectural movements and formal considerations that have occurred throughout Finnish architectural history, the inspiration and harmony with nature has remained consistent. While still maintaining the functional and utilitarian importance in architecture, Finnish architects persistently refer to the natural and mystical character of their cultural perspective. Architecture in Finland has been able to grow directly from its environment and functional starting points without the burden of formal stylistic demands.25 Finnish architecture is a purity which is not just about form and material but about concept and atmosphere, and the effect which things have on space... It’s about the poetic everyday possibilities which materials, processes, and functions allow. It’s new without forgetting old. It’s as refreshing as an iceberg. 26

There is a slightly differing philosophical view that takes its same natural root as Wallenstein’s explanation. This phenomenological explanation of architecture is issued from one of the leading practitioners in contemporary Finnish architecture Mikko Heikkinen. He says, “only what can be known and
experienced, is plausible. The truth emerges through concrete experiences, not through metaphysical constructions.”27 Clearly taking the root of his argument from the same primal relations and instinctive links with the environment as Wallenstein, Heikkinen is basically saying that the experience of architecture is the same as the experience of nature. Both should be viewed as similar phenomena and not as metaphysical constructions.28

The environment affects the method that the Finnish people interpret, interact, and create their architecture. Juhani Pallasmaa has drawn attention to the Finnish innate sensitivity to nature with mystical and pantheistic overtones; a sensibility that is often expressed in wonderfully appropriate sighting and response to topography, as well as in a tendency to layer into their work abstractions of their extraordinary landscape.29 This exemplifies the association of divinity being found within nature that serves as the inspirational quality for Finnish architects. To live in harmony with the environment for thousands of years without leaving traces shows the kinship all Finns feel with their surroundings and leaves them less inclined to disturb nature, more interested in appreciating it as it is.30
27 Heikkinen, Mikko, “Korkean taivaan alla,” 63-64. *Interview by Donald Judd* (Kunstverein St. Gallen, exhibition catalogue, 1990), 56.
The full effect the environment has as a reflection of the relationship to the Finnish culture in the collective schema between man, nature, and the built environment has been clearly established. From influencing intuitive design decisions and processes, to development of a collective cultural view towards international and domestic architectural developments, to the implicit rationale that Finnish architects have traditionally embraced and continue to develop, the inherit relationship between man and environment forms the primary basis for Finnish architecture. In Finland “everyone loves his or her landscape and the proximity of nature has a kind of inspiring effect on everyone”[1] as a muse for the culture.

Remoteness and Geography

Serving as a geographical and cultural border between the eastern and western cultures, Finland is Europe’s most remote country. Thanks to the sparse population distribution [and quantity], building has been able to take place relatively freely, often in natural surrounding[s]: it has been possible to take the structuring and scale of nature into account.2 Based on its appreciation for nature and localized geographic conditions, Finland would assume to place great stock in architectural aspects of sustainability. This is actually not true. The remoteness of the region and the sometimes hostile conditions explains how “pure ecological building has not assumed significant proportions – the climate is against it. …More important is the judicious use of natural resources in building.”3 Efficient use of materials and energy conservation are about as far as issues of explicit sustainability enters into the architecture. The Finns don’t adversely harm the environment with their building. This is not due to any preoccupation with issues of ecology, but the fact that they draw inspiration from nature and wish for coexistence between the built and natural environments.

The lonely and remote quality of their regional location is reflected in the Finnish term sisu (see Appendix B) and in the text of the Kalevala; this helps explain how the Finns physically and mentally relate to their geographical
condition. Prominent 20th century Finnish designer Timo Sarpaneva explains this relationship:

It is always said that Finns find inspiration in ice, water and trees. I love nature passionately, but I can’t recall where I caught that drop of creativity. I don’t lean against a pine and get ideas from it. I certainly love pines... [but] it can’t really be explained. It is shaped by the allure of Finnish nature, the allure of the wilderness, something whole extending from the earth up into the heavens.4

The cosmic connection between earth, sky, and man is a direct resultant from the physical quality of the Finnish region. For instance, Rovaniemi is a Finnish city in the Arctic Circle and has periods of 24 hours sunlight and 24 hours darkness. The Finnish architectural tradition and philosophy exists strongly even in this remote location. The dialogues from man to nature and from earth to sky are more pronounced and hence more significant in this region. The four-fold is more clearly recognized in the Finnish setting and creates an architecture that intelligently responds to the environment. The spirit of specific landscapes in nature can infer a specific place. The Finns have a phenomenal propensity to “cross the threshold and regain the lost place”5 that the spirit of the natural environment gathers.
Since ancient times man has recognized that different locations contain a unique spirit of place. This spirit is sometimes so strong as to determine the basic schema of the people engaging in the place. This common schema creates a sense of belonging in the people that ties directly to the place and its spirit. Norberg-Schulz states that the genius loci in some locations becomes strong enough to dominate the political, cultural, and social realms of a city. Wallenstein describes the conversion of the dominant genius loci of a Finnish place into an integrated aspect of culture:

The landscape is never purely natural, but acquires its full-blown shape through the intervention of artifacts: settlements, paths, and landmarks form focal points that ‘explain’ the landscape, ‘condense’ the natural environment, and actualize its capacity for sense. …the proper sense of the ‘spirit of the place,’ the genius loci, is only achieved when all of these determinations – the natural and manmade, the categories of earth-sky (horizontal-vertical) and outside-inside, and finally ‘character,’ the how of the presence of things – are brought together in terms of concentration and enclosure.

Although the structuring and scale of nature are the starting points of architecture, buildings do not merge with their surroundings. Genius loci does not mean total or even partial confluence of the natural and the manmade.

The house in its natural setting: the house takes possession of the place, preserving its significance, revealing its character. The elements of nature are present.

It does mean that both subjects (the architecture and its context) should contribute to the inherent character, quality, and implicit spirit of the place. As Reima Pietilä states:

Genius loci is an atmosphere; it comprises the associations or character of a place. In architecture the usage of genius loci

Fig. 32 - Aalto, Villa Mairea

Fig. 33 - Jarmo Pulkkinen, Kuopio Apartments
follows no given idea or concept but varies according to the context. In general, genius loci is a hidden element, often inherent – inseparable from the place or building. It is a natural gift… a catalytic control… A genius loci trait is chromosomic for the growth of identity in the process of design.\textsuperscript{11} [emphasis original]

The identity of the place is what creates a strong, identifiable, and memorable architectural experience for the viewer. The interaction between natural elements and man-made artifacts creates this identity. Finnish architects take particular care to create places with a distinct local meaning, a genius loci that gathers to it a place.

One of the concerns of contemporary Finnish architecture is the search for place appropriateness. This is not accomplished by thoughtlessly aping elements of context, but by abstracting them and injecting the new with sympathy for the old, while making it appropriate for the needs and sensibilities of the current age.\textsuperscript{12} In Tapiola, the garden city suburb of Helsinki, the planned residential community took special care to respond to the manmade conditions as well as the natural setting in order to create a sustaining urban-edged place. The plan has proven itself to be not only community responsive but has maintained the natural environment so that its lake offers sailing, its sloped terrain cross-country skiing, and its tall trees and winding paths general enjoyment of the outdoors for everyone who lives there.\textsuperscript{13} In GLS’s Hvittrask compound, the architects created a place that even though currently unoccupied as a residence and maintained as a museum, the spirit of the architects and their constructed landscape is so strong to completely emanate throughout the place. Its dark-stained timber construction and that of the partly plastered-over stony main building showed the admiration of the three for strong deliberate forms and simple materials found in nature, and used in the log houses of Finland’s eastern wilderness province of Karelia and in the high-peaked medieval churches that strikingly accented the horizon.\textsuperscript{14}
The Nordic Light

Light may well be the phenomenon characterizing the natural and constructed environment of Finland; light as presence and absence.\textsuperscript{15} The Finnish view of space and light is the direct inverse of the view of space and light in southern Europe. The unified space of the South is where things emerge proudly with their proper identity.\textsuperscript{16} The southern light allows for an object’s eidos to be fully and easily represented. In the winter light is scarce, in the summer superabundant. In the north, light creates shadows that are long and a quality of light more delicate, luminous, and hazier.\textsuperscript{17} These characteristics have shadowed and mystified the Finnish world. Light has an essential effect on the shaping of spaces, the textures of façade surfaces, and the atmospheres of interior…\textsuperscript{18} let alone how the architecture is perceived!

Finnish architects throughout the tradition and contemporary eras have utilized light as a key aspect of their architecture. From the national romantics and Nordic neo-classisicts like Erik Bryggman, to Aalto and Pekka Pitkanen’s functional modernism, to Pietila and Leiviska’s sculptural post-modern work, to the reaches of contemporary architecture in the form of GKV and Heikkenin+Komonen, lighting defines the spaces that Finns live in. Lighting is central to all architecture, but the Finnish design specifically honors lighting for its spiritual, romantic, and functional characteristics.

Shadows at midnight, candles at noon… Finland is a place where life alters in accordance with the dramatic change in light. Such images – one expressive of pale summer nights, one of short winter days – explain something of the juxtaposition of extremes by which every Finn lives. It is in this context that a deep love of nature in all her robes, from stark winter whites and grays to flowery summer greens, has always blossomed and flourishes today.\textsuperscript{19}

Lighting is another tool in the arsenal of the Finnish designer’s palette of natural representations. The Finns view and represent nature through their lighting of form, materials, and space.
Materials

The variety of uses, treatments, and orientations to constant material changes are features of Finnish architecture that maintain variation and invention of the methods of articulation while still maintaining honesty to the original material. The materials also intrinsically linked to the environment, built and natural. The history of Finnish architecture and design allows the relationship with nature to take many different forms: “respect for the ‘soul’ of the natural material, placement of buildings in harmony with the environment, and inspiration derived from the forms in nature”20 are some of these forms. Respecting the natural characteristics and utilizing materials in a truthful manner (true to the ‘soul’ of a material) is paramount to Finnish design. Finnish architect Pekka Salminen explains:

I am a builder. I want to build with precision and show the character of the structure and of the material. The structures of nature have a beauty that is inconceivable. Material is the basis of my architecture. Using it gives birth to space and light.21

Finnish construction is characteristic of using authentic materials. Nature has always supplied wood as the primary material,22 “brick has been used since the medieval period, as has stone… concrete is a later invention… aiming for better results both technically and aesthetically,”23 but still maintaining respectful consideration for the natural and truthful spirit of the material. Salminen writes, “Concrete is the stone of today. Glass is a material well-suited to the Finnish climate.”24 The closeness for which the Finnish people are surrounded and enveloped by trees allows for wood as the primary building material even in the contemporary era. Wood has continued to be used alongside other materials even in the largest buildings, in cladding, detailing, and furniture – building components that are close to people.25

The connection of different materials is therefore also an essential aspect of Finnish architecture. “The joint is the essential element of architecture… it allows the other elements to come forth – the joint connects and separates.”26 Vittorio Gregotti writes:
The connection between the floors, the relations of the materials and the differences in the use, both practical and symbolic, thus become more explicit and for the first time expressive. …There has been discussion, not so much of the detail’s possible eloquence as its different expressive value and technical composition… towards the revaluation of the notion of relation and modification, of physical and historical place and context of specificity and difference.\(^27\)

This critical detailing adds beauty to the building through the signification process of truthful expression\(^28\) while also recognizing the pragmatic aspects of building design. In Finland, making architecture has always been extremely close to use: plans are made to be realized, not as theoretical projects. Because of this, architecture and technology have developed alongside\(^29\) in order to maintain the integrity to the truthful characteristics of the materials that are required due to the Finnish architectural philosophies.

The focus on honesty in construction allows the Finnish builders to show the material in the most logical condition, leaving the material as it is and wants to be. The expression of form as mass and the treatment of the joining of materials/components in a unique manner is a characteristic that originates from the northern Finnish regions. This allows for a more tactile experience where materials join and is a result of the rich stone and granite work that is prevalent in the far north regions.\(^30\)

Details respond to the touch in their form and materials. The front door with the chill of steel, but inside with warmth of wood… you have to take architecture with you – into memories and experiences, into nature and into life.\(^31\)

The basic lesson of the Finnish material approach is to be honest in the selection and the use of construction materials. This honesty comes from the nature of what is being built and the materials that are being used for construction.
Fig. 46 - GKV, Huiralankaari Housing

Fig. 47 - Pietilä, Finnish Pavilion

Fig. 48 - Helin+Siitonen, Nokialalo

Fig. 49 - Aalto, Personal Residence
22 Gaynor, Elizabeth. Finland Living Design. (New York: Rizzoli, 1984), 143.
The design culture in Finland generally does not discriminate between interior designers, artists, industrial designers, architects, etc. A Finn educated as an architect will produce graphic arts, sculpture, textiles, et cetera along with their architectural work. This blending across the design fields is a unique aspect to Finnish culture that creates a wonderful mixture of influences with contemporary works, associations, and colleagues. The basic qualities of Finnish architectural design as discussed earlier still hold true in the other arts, particularly the overall divisions of intuitively influenced design moves and the influence of the natural environment. “Mysticism goes hand in hand with a rational and constructive tradition which... emerges when both elements [being respect for nature and reliance on the intuitive rationality] of national sensibility are at work, and it is given deeper meaning and flavor by being the product of a culture which still retains a special integrity.” This integrity is upheld to the intuitive influences, personal experiences, and an ongoing search for the truthful being of materials, nature, and man’s interaction in the world.

Fig. 53 - Kivijarvi, Andrews Stone

Fig. 54 - Sarpeneva, Kajakki

Fig. 55 - Ikonen, Turku Icy Veil

Fig. 56 - Wirkkala, Vase 3525
Fig. 63 - Rimala (Marimekko), Petrooli

Fig. 64 - Aalto, Suomussalmi Monument

Fig. 65 - Suppanen, Nomad

Fig. 66 - Blomstedt, Winter Landscape

Fig. 67 - Aalto, Vase 1936

Fig. 68 - Isola (Marimekko), Tori
Fig. 69 - Aalto, Paimio Chair

Fig. 70 - Ilmari Aalto, The Bells

Fig. 71 - Koskinen, Blocklamp

Fig. 72 - Brummer, Finlandia

Fig. 73 - Viiva, Finnish Embassy in Berlin

Fig. 74 - Gallen Kallela, Lake Keitele
Finnish Embassy, Washington DC, Heikkinen + Komonen

Located at the end of Massachusetts Avenue across from the Vice Presidential Mansion, the Finnish embassy is an understated gem in the monotony of Washington’s embassy row. Inaugurated in November of 1994, the building quickly became the most talked about embassy in Washington. Designed by Mikko Heikkinen and Markku Komonen (coincidently the Finnish ambassador Valtasaari and Heikkinen attended architectural school together), the embassy is emblematic of current architectural practice in Finland. The embassy project fits into Heikkinen + Komonen’s design elegance, simplicity, and transparency that is characteristic of their oeuvre. As one of Finland’s leading architecture offices, the firm maintains quality connections to the authentic Finnish architectural tradition.

The goal of the project was to build an embassy that would, through its architecture and programming, enable Finland to have a tangible and modern presence in the United States and to the American people. The Finnish government acted fast to obtain the specific property once it became available. They knew the possible benefits the site along Normanstone Park provided for the demonstration of their national values to the Americans. The end result is a building that represents the culture of Finland in a manner that is neither presumptuous nor blatant. According to the first Finnish ambassador to occupy the building Jukka Valtasaari, “This is what happens when basic, national values are respected. There was no need to stress the point; the Finnishness is in the eye of the beholder.” The Finnish culture is clearly evident in the form and function of the architecture.

Analytical

According to Mikko Heikkinen, his vision for the building to be “modern, functional, a little whimsical” was very clear. “The question was how the building would coexist with this very extensive park, and what kind of relation the two should have.” The building blends into the natural environment at all levels and the end result is a building that is comparatively discreet from the exterior
while presenting a rich and varied architectural experience from the interior. An aspect of the building’s character that gives the architecture meaning is the clean material palette: copper with patina, steel, glass, wood, and granite. The palette is maintained from the exterior through to the interior.

Wrapped in a grid of copper sunscreens [with steel wires laced throughout]... the chancery instantly established a powerful and progressive presence for Finland in Washington.

Large stainless steel towers for services [are located] at either end of the grand canyon. Two other giant cubes, sheathed in copper and serving as conference rooms are suspended from the roof.

The use of copper and stainless steel as accent materials demonstrate this exterior to interior connection.

The structure of the building is maintained as a strict grid in the building and blends into the environment to help blur connections between the natural and built environment. On the down slope side of the building “an invisible grid of load bearing columns within the building is reciprocated in the form of poles in a darkened landscape surmounted by shining points of light: Finland in America.”

The strict interior grid is subtly hinted at during the approach by small lights in the car-park pavement. The use of the grid in both obviously perceptible and modestly discreet methods creates a unity to the embassy that is intuitively evident to every building user.

When asked about his favorite aspect of the project, Heikkinen responds, “it is the process of entering the building. From the entrance, down the ramp stairs and into Finland Hall, you arrive at an edge.” The edge coincides with the previous existing slope of the site, and the interior form thus infers the previous condition of the site. The main lighting element of the building also matches this edge. Aptly nicknamed the “Grand Canyon,” this extensive lighting shaft is not just an architectural feature lending drama to the building, but a canyon that abstractly cuts through the middle of the building. The positive forms of the building mass respond to the negative ‘canyon’ in a tension/compression manner that manipulates and controls the flow of people within the interior spaces and from interior to exterior.
The Finnish embassy accommodates multiple functions that are unique to the building type but align completely with the ideals of the Finnish culture. Most embassies contain program space for two purposes, office and reception. The Finnish embassy is an office, a gallery, a museum, a library, a performance space, and a work of art in its own right. It contains full kitchen services and even a subterranean sauna and dining area. According to past Ambassador Valtasaari “an embassy is a tool for representation and a symbol of national foreign policy, culture, and art. An embassy gives a face to the nation it represents in its host country.” The transparency between exterior and interior is representative of both the Finnish concern for nature as well as the pride that the Finnish government takes in openness with their dealings. The main reception area and the view of the landscape through its glass walls bid visitors welcome to Finland in America. The members and staff of the foreign ministry consistently reflect on the embassy’s capacity as a wonderful place to work. The central aspect that lends the embassy its versatility is the Finland Hall.

Finland Hall is a multi-purpose cultural space, with state-of-the-art facilities, acoustic panels, and a built-in flexibility to transform itself from exhibition space to concert hall, film theatre or seminar room. Finland Hall’s sheer aesthetic beauty, technical sophistication and welcoming atmosphere offer every event a forum of the highest standard. The ability of Finland Hall to stage cultural exhibition about Finland is the leading cause for the general American public to visit the embassy. Attracting visitors to its embassy, Finland has attracted interest in Finland itself.

The American response to the building has been over-whelming. Regarded by some architectural historians as possibly the best building built in the United States in the 1990s, the general public clearly understands the building as piece of Finland transported to the United States. Dr. Jane Loeffler, author of *The Architecture of Diplomacy*, expresses the public’s viewpoint:

Everyone sees the building as a diplomatic bull’s eye for Finland.
Looking around the building, one notices immediately that Finland is a totally modern place, everything in the building is high-tech, and the quality of the work and Finnish design stand out above all else. A single glance gives a better impression of Finland than dozens of pamphlets, books, films, tourist advertisements and official exchange programmes. According to the architects, they did not have the distinct “Finnishness” of the building in mind during the design process. They relied on their cultural beliefs to inform the project, as they normally would have done for any work. Their building relied on high quality to tie the building together. This investment in quality by the Finnish government paid off very well for the public perception of the building. “At last, something fresh in Washington architecture,” enthused the Washington Post. The unobtrusive manner that the Finnish culture is represented in the building adds to the positive perception of the building. The Architecture Review added to the building’s accolades shortly after the inauguration, “Heikkenen and Komonen’s Finnish Embassy in Washington is a grave and powerful statement about its own essence from on nation to another… it is shot through with brilliant flashes of passion, poetry and wit.

Replication: Intuition

The passion and wit contained in the architecture of the embassy project demonstrate the Finnish approach that has been replicated to the United States. The Finnish President during the building’s design Martti Ahtisaari recommends that since “the Americans are fun-loving people… the inside of the house should be fun.” This seems like political rhetoric because the method that Finnish architects design, and specifically Heikkinen + Komonen, the project always contains some elements of fun, poetry, and wit. This design poetry is apparent from the moment a person comes into contact with the people. It has been stated that the building puts forth an understated façade to the general public. This façade is screened, yet open. It is man-made, yet natural. It is an “intriguing paradox of familiarity and the unusual: we are given security, while challenged to alter our perceptions.”

A main focal point of the building is the entry sequence highlighted by the elegantly curved main staircase. The entire building is based off of and corresponds
to the structural grid created by the columns. There are two instances where this grid is deliberately undermined: the main staircase and the above floors balcony stairs. The gentle curve of the main staircase represents the intuitive poetry of Heikkinen + Komonen’s spatial understanding of circulation and massing. “A row of stars from the night, an arc of bright, tiny lights suspended from above echoes the gracious curve of the stair.” Even the language used by the architects reflects the instinctive manner of Finnish design.

The grid continues from the structural columns into the landscape, represented by points of light in the foreground pavement to exterior light poles beyond the two story view glazing. At night their effect is magical, uniting building and woods in a mystical atmosphere so totally unexpected in the heart of a large city. During warm weather, the fabric canopy creates an interesting juxtaposition against the natural canopy of trees. The form and articulation of the tensile structure creates a metaphor to the shelter of the natural environment. As the weather cools, the fabric is removed and the structure is left naked by itself, not unlike the deciduous trees the sculptural object represents. These implicitly rationalized design decisions help create the distinctly Finnish quality of “intelligent opposition to nature rather than… romantic encounter[s].”

Repliation: Natural Response

The intelligent, yet subtle, integration of the natural and built environment is a clear determining factor in the architecture’s effectiveness. Beyond solar panels and operable windows (which the building does utilize), the embassy’s response to nature is apparent in the basic concepts of the building, from the design process though to the end product and daily use. Ambassador Valtasaari states, “our respect for the environment led us to cloak the embassy in greenery… the embassy blends seamlessly with the neighboring Normanstone Park.” The dual character of Finland Hall showcases the building servitude to the natural environment:

By day… Finland Hall’s two-story windows invite in the sky and surrounding trees. In the evening, lights sparkle on the terrace, our images, reflected in glass, extend out into the darkness, and boundaries between inside and out once again dissolve.
The skylights in the Grand Canyon are painted blue to fulfill two purposes. The first purpose is to soften the character of the sunlight as it filters into the building. The second reason is homage to the quality of light that exists in Finland. The light in Finland is subdued compared to the light in the United States because of the angle of the Earth with the Sun and the geographical location of the two countries. This seemingly small detail allows for connection and reference to Finland for the visitors and staff of the embassy. Just beyond the Grand Canyon, Finland Hall’s quality calms and the architects display further allusions to Finland’s natural environment. “Its white concrete columns are like metaphorical birch trees. An apparently seamless glass wall gives us a living mural of the woods, and the building assumes a supporting role to Mother Nature.”

**Replication: Culture**

Besides the full sauna that resides in the basement levels of the embassy, the project maintains further connections to Finnish traditional and historical culture. Architecture has represented the spirit of Finland since before the country was founded. The cultural, political, and social experiences as reflected through architecture played a key role in Finland’s independence and continues to inform the evolution of the Finnish national identity. The Finnish Embassy is a clear manifestation of the essences of Finnish culture. It emblematically acts to inform and echo cultural developments of the Finnish people. The Finnish Embassy is “a memory bank, a treasure chest of the essence of Finnish culture without the triteness of stereotypes. We need works of art, and places of work that… nurture the quiet side of our being.” Heikkinen + Komonen have created an understated, yet elegant masterwork that definitively represents Finnish culture.
Sanomatalo, Helsinki, Finland, SARC architects

Designed as the media headquarters for three Finnish newspapers (Helsingin Sanomat, Ilta Sanomat and Taloussanomat), the Sanoma house is situated in the very center of Helsinki in the Töölönlahti Bay area. Directly north of the Helsinki Central Railroad Station designed by Saarinen and separated by Steven Holl’s Kiasma Contemporary Art Museum from the National Parliament building, the site is located in a high profile, historically significant site. The competition was won by SARC architects in a collaborative venture by Professor Jan Söderlund and architect Antti-Matti Siikala. Their translucent glass creation, completed in 1999, brought the international trend of glass architecture to the fore of the Finnish cultural and architectural discussions.

As the largest office building constructed in the heart of Helsinki in over 30 years, the project allotted significant program area to the public for retail, restaurant, and social space. The building is an eight-story rectangle box with a double glazed wall on the southern facades. The first floor of Sanoma House is covered space largely open to the public, with the building divided along two diagonal axes forming pedestrian thoroughfares. The importance of public access and perception to the project is an issue that influenced many portions of the building. Artificial lighting throughout the atrium and transmission through the glass walls simulates a glowing beacon, very appropriate for the three news agencies that work day and night.

[The glass wall] creates a connection between the office levels which have been designed as open spaces and the surrounding townscape, and ensures natural light even in the centre of the deep frame. At the same time, the ecstatic pace of the newspaper publishing house is evident in the centre of Helsinki, 24 hours a day.

The building materials are primarily glass and steel with Finnish wood used throughout the interior in different forms, particularly in the public zones. The belief of the client is that “these materials [are] technically durable as well as timeless and classic, and immune to fashion trends,” particularly important for the open social zones that are consistently used by citizens of the city.
The main part of the project is clearly the four glass curtainwalls (two double skinned). The generous use of glass underscores the openness and lightness of the building, perhaps due to the public perception of transparency and honesty necessary of the media business. A practical purpose of the glass walls has to do with the geographical response of double-glazing. During the summer, the top of the wall is vented to prevent unwanted heat gain; while the vent is closed during the winter to capture and retain the limited solar heat. Diagonal bracing is not incorporated into the double skin, instead vertical fins tie the second skin laterally back into the building. The design explanation of this lack of diagonal bracing is to eliminate “motifs competing against either the horizontal landscape or the vertical lift theme.”

Structures and Space promote communication or prevent it: formal, spontaneous, intuitive – from carefully considered statements to gestures, glances, movements. Openness, transparency, spaces that gather people together unite individuals, foster gregariousness and encourage a sense of belonging.

The Sanoma house is a beneficial contributor to the Finnish urban landscape especially as a reflection of the cultural values of both commercial and media interests. The glass walls reflect the city back unto itself, emblematic of newspapers reflecting the current events of the city and world that they serve.
Located in a Finnish manufacturing town three hours north of Helsinki, the Sibelius Hall, Congress, and Concert Centre was built by Artto Palo Rossi Tikka Oy in 2000. The project is an addition and adaptive re-use of a sawmill into a world-class performing arts venue. Sibelius Hall is regarded as a model example of new technology in both performance/recording venues as well as modern wood construction. The exterior of the building is a wood, glass, and steel box in which sits an entirely wood constructed entry lobby and performance space. It is the only entirely wooden concert hall in the wood and the resulting acoustics make the venue one of Europe’s finest concert halls. There are also many functions in the venue that allow great flexibility as a small convention center for Lahti, such as rehearsal space, classrooms, multimedia lecture spaces, a restaurant, artist studios, and exhibition space. There are two main spaces for the building, the Forest Hall is the lobby to the Main Concert Hall.

The primary function of the building is to house the Lahti Symphony Orchestra and its corresponding program requirements. The timber and paper industries are traditionally, and still, the primary industrial output of the country. This importance was a leading factor in the determination of the material palette for the concert hall. The world of Finnish wood is displayed and revealed in the various demonstrations of joinery and artful construction. Birch, pine, alder, aspen, and spruce as timbers, veneers, art works, furniture components, flooring, wall paneling, acoustic reflectors, and light fixtures create a literal carpenter’s heaven out of the performance space. The technical construction of the performance space is also notable. Glass fenestration forms an outer volume in which sits the wooden constructed main hall. The interstitial space between the façade of the building and the outer wall of the performance hall is a reverberation (echo) chamber that may be opened to adjust sound reverberation times. The box-in-a-box design creates an acoustic isolation zone that may be opened by computer-controlled acoustic doors. The façade construction at this point contains sand-filled wooden elements and glass that increase the length of resonance for low frequencies when the sound chamber is open. Inside the reverberation chambers, the massive load-bearing glue-laminated timber structure with the inclined external wall leaning against it...
can be seen. The visual emotion of the space is that of walking through a temple’s antechamber into a holy precinct.

The Forest Hall is the joining space that ties the old sawmill spaces into the new construction of the main hall. Its large size accommodates functioning as a lobby, exhibition room, arena for festivities, or banquet room. The principle design features of this space (and why it is named Forest Hall) are nine 800 mm diameter laminated-wood columns that branch out to support the roof of the hall. The eight-story height of the lobby space is a metaphorical forest. The wooden pylons imitate branches that create a canopy over a spacious, forest-like atmosphere. The scale of the Forest Hall implies playful excitement, yet reserved reverence for the building visitors. The regular column grid is understated due to the lively geometry of the man-made forest canopy. The intuitive scale of the regularized nature metaphorically blends the users’ experiences with the Finnish landscape.

Forest Hall… resembles a Finnish forest: nine enormous wooden pillars spread out into ‘branch systems’, which support the roof. A starry sky looking the same as it did at the moment of Sibelius’ birth twinkles on the ceiling. The tall windows command a tranquil view of Lake Vesijärvi.

Vertical laminated-wood trusses form the mullion fins that enclose the space in sparkling horizontal fenestration. From the entry to the building, it is possible to view completely through the Forest Hall to Lake Vesijärvi beyond. During times of absence of natural light (night time and winter), the Forest Hall radiates light and warmth to welcome people to performances and events. It also functions as the symbolic glowing center of the town, visible from miles away due to its location at the focal point of a small valley. Sibelius Hall coexists with the Finnish natural environment that it emulates and abstracts into a man-made, regularization of nature.


**Power Plant, Varkaus, Finland, Gullichsen Kairamo Vormala**

Designed by Erkki Kairamo of Gullichsen, Kairamo, Vormala architects (GKV), the power plant is an addition to the existing paper mill in Varkaus. Kairamo designed the original plant in 1977, the addition was completed in 1990. Located within the Varkaus city limits and occupying the most visible corner, the main design issue involves connections and representations of the building to its urban context. The original mill is laid out horizontally (over a kilometer long) and utilizes layering almost completely along horizontal articulations. With the economic need to increase the mill’s output, Kairamo designed the new power plant as a vertical mass in order to add visual juxtaposition against the existing mill while also negotiating the scalar difference between the industrial complex and the townscape.46

The use of the vertical expression is carried throughout the complex to fulfill various functions. The design takes it contextual cues from the tall chimneystacks and forests to articulately accent fenestration, cladding, industry components, and circulation. There is a strong emphasis on the vertical quality of circulation, specifically in the hierarchic importance given to the spiral stair that is the entry to the main mass of the power plant. “The accented equipment-lifting well, stairs, air-conditioning ducts and conveyors form a network of vertical, horizontal and oblique lines which reflect the function of the building.”47 This system of vertical against horizontal articulations comes to a head at the main façade that faces the town. The given importance to the frontal image of the complex represents both the value of the function of the town as economic feeder to the mill as well as the social importance given to the general public that the town represents. The large amount of glazing which is not customary in the industrial aesthetic adds visual cues to the manufacturing process occurring in the interior as well as acting as a beacon and billboard for the company, most noticeably during the night. This adds presence towards the city that has not been previously realized, particularly in the vertical dimension (a lesson from Saarinen perhaps).

The building is set-up on various orthogonal grids that relate directly to the size, shape, and orientation of the original mill. The spiral staircase is the most noticeable exception to orthagonality that creates a strong, yet memorable
visual juxtaposition and interest. The building’s large scale is broken down by layers and overlaps of different materials articulated machinelike on the facades. “The use of glass as the main material alongside sheetmetal surfaces makes the building less massive and links it to the adjacent paper mill, forming a coherent unit of industrial buildings bound by the town center.” 48 This glass is a deep shade of green that is located at the canopy level of the local vegetation. The extensive glass use in the occupied zones of the building provides ample daylight for day to day functions in the interior as well as, since the mill runs day and night, illuminating the surrounding context during the long, dark Nordic winter. 49 The use of the industrial aesthetic in such a humanizing scale, material honesty, and with such concern for context and lighting issues, allows the Varkaus power plant to be read as a contributing positive work of Finnish architecture.
The Antithesis to Cultural Synthesis

Designed by Santiago Calatrava, the Turning Torso tower is a part residential and part commercial office high-rise in Malmö, Sweden. The Swedish developer of the project saw a sculpture by Calatrava and contacted the architect in order to create the skyscraper based off of the sculpture’s image. Calatrava’s tower consists of nine cubes that twist 90 degrees from top to bottom and contain a tensile steel element that provides gravity and lateral bracing for the cubes. The unique form required that the architects, engineers, and contractors artistically approach the awesome structural feats necessary for the construction of the project. The project is part of a housing exhibition which features low-rise apartments and single-family houses in a previously industrial peninsula just off of Malmö centrum.

The Bo01 European Housing Expo is a response to the opening of the Øresund bridge between Malmö and its important neighbor Copenhagen. Malmö wished to raise their city’s profile by holding the housing expo, the Turning Torso tower being the crowning achievement or sore thumb depending on the perspective (see image 3). The housing project is billed as the ‘City of Tomorrow’ and created over 500 residences as well as office and retail areas. The residential homes and condominium blocks help create a highly successful living district that features squares, gardens, lanes, canals, and marinas in the natural environment as well as economically focusing on renewable energy (the district is self-supporting) and uses waste water as a raw material and heat source. The 180,000 square meter neighborhood is characterized by 2-3 story row houses and apartment complexes (see image 6) that form a “close-knit block development... [which is] typical of northern European cities.” The introduction of Santiago Calatrava’s 190m Turning Torso building is visible from up to 60 kilometers away as a ‘beacon’ of the Bo01 Housing Expo. The project is Calatrava’s first residential building and first high-rise. The tower was intended as a landmark in order to give a stronger identity to the area and define the intersection of two main commercial routes with Malmö.
Cultural Response

Like the German Werkbund of the International style, the country of Sweden has a commendable history of commissioning housing exhibitions as a permanent representation of the buildings of the future. The city of Malmö has had mixed reactions to the Turning Torso. Some call it “an absurd proposal” while others have gradually compared seeing the construction to that of astonished delight. The reactions to the project are mostly negative by the native Swedish, perhaps due to the touristic style of marketing and design process for the project.

Most residents, regardless of how they personally feel about the project, see the tower as a landmark tower that is an advertisement for Malmö.

[The tower] dominates the skyline in a forceful architectural statement that is challenging to construct and equally challenging on the eye.

Malmo doesn’t need Calatrava’s flats, which will undoubtedly be more expensive than anything else in the whole area, and could be put anywhere foolish enough to pay for them.

Regardless of the domestic opinion, the tower has attracted huge interest from potential residents and tourists alike due to its challenging form and equally complex construction. The billboard quality of the project belies the fact that it is meant as dwelling space. “People are supposed to live there… but it is clear from the architecture… and clear from the [tall for tall’s sake] program that the thing is meant to please other customers first,” mainly the international tourists and business leaders.

The complete juxtaposition of the tower against the Malmö context is perhaps the most criticized characteristic by both the Swedish and International community. “The nakedly tumescent tower commands the four-story cityscape, the low plains of Scania, the waters of the Øresund, and most importantly, the city of Copenhagen on the far shore.” Although the Danish capitol recently ruled against the construction of a 10 story tower due to its “violently tall affront to the human scale”, the Swedes still hope that the Danish public will look across the Øresund at the tower with jealousy. Still it seems that the other Scandinavian
and Nordic public get the last laugh, for at least they didn’t have to import an architectural style and building type to be noticed.

**Inverse Relationship**

Prominent architectural theorist Alexander Tzonis believes that Calatrava is not treating sculpture as a handmaid of architecture and engineering. The following line of reasoning will directly argue that Calatrava’s process is the inverse approach to connect with cultural aspects. Calatrava relies too much on his sculptural work to the detriment of the success of his building projects. It is argued that sculptural studies precede and supply conceptual resources for the design of Calatrava’s buildings and this is clearly the case of the *Turning Torso*. The sculptural approach while creating interesting buildings, mostly severs any tie between the building and its site. British architectural historian Peter Davey writes of the tower:

> It writhes as it rises with an extravagant muscular geometry that gives no apparent benefit to [the] inhabitants… it evidently adds to the architect’s private scrapbook of engineering sculptures, perhaps dramatically appropriate for stations and bridges, but clumsy… when used in the more tender scale of dwelling.

It is clear that Santiago Calatrava did not have apartments in mind in his design of the *Turning Torso* sculpture. “His investigation was sculptural, in the sense that he was not contemplating the possibility of inhabiting this object with users and users.”

Other architects have railed against the lack of scale, context, materiality, and cultural connection of the *Turning Torso* design. These characteristics are the backbone of Nordic design that the twisting-spine-sculpture-building clearly lack. “Rather insipidly named after one of the architect’s sculptures and rather disturbingly retaining the sculpture’s form to the detriment of the spaces inside.”

The Swedish people are known for the high-quality and long-lasting character of their products. The lack of human detailing in the sculptural tower allows the question to be asked: what will the building-come-enormous-piece-of-art be like to live in?
The *Turning Torso* is an example of the ‘western building tradition’ being directly transplanted to Malmo. Buildings as images and sculptural objects have precedent in global architecture. But the difference between Jørn Utzon’s Sydney Opera House and Calatrava’s work is that Utzon utilized and translated localized traditions and architectural aspects into his buildings while Calatrava imposes and transplants his large-scaled sculpture with reckless abandon to the local context, traditions, or symbols. The *Turning Torso* could be lifted from its foundation and planted in Las Vegas, Tokyo, or Berlin and still maintain the same detachment from the identity of the place, genius loci. Utzon’s project is the image of Sydney and its harbor and cannot be removed from its context without losing the represented meaning. Tzonis states that the *Turning Torso* signals a new direction in the professional practice of Calatrava, but it seems just more of the same. The *Turning Torso* fits directly between the works before and after it in Calatrava’s oeuvre; the Milwaukee Art Museum is the Turning Torso Tower is the 80 South St. NYC project… all the same sculptural tearing of context and human connection.


Veile, Rune. Personal interview with Danish architect, September 11, 2005.


Veile, Rune. Personal interview with Danish architect, September 11, 2005.


SUOMEN AMERICAN
Chicago Context and Cultural Synthesis Methodology
Cultural Critique of the American Skyscraper

Skyscrapers account for a major portion of the American contribution to architectural history, specifically the cultural engagement of architecture through the means of iconic buildings that comprise the city skyline, streetscape, and context. The skyscraper holds the unique position of being both an “urban icon and as a shaper of everyday spatial experiences.”¹ The struggle between private enterprise and public control is a reoccurring theme throughout the study of the skyscraper’s history. The capacity of conveying both widely shared urban experiences as well as very personal perceptions of the city/environment enables the skyscraper to be the “collector of these experiences, a focus for these fragments of experience and belief.”² Underscoring this experiential assertion is the idea that the perceptions of the American city, in particular the spirit of its great buildings, is imprinted into the collective history of a people and creates the events, personalities, and contexts that comprise the city’s identity³ and thus the culture’s identity.

Modernization

The advent of the skyscraper building type in America coincided with the modernization of the western world. Throughout the world today, the image of the skyscraper represents advancement and achievement of market forces and business. The first skyscrapers were designed concurrently with new requirements such as “new methods of financing, efficiency of office planning and engineering, and rapid construction.”⁴ The architects of Chicago were known for their shared devotion to the skyscraper as the new building type for the modern world. In particular, the architects embraced the modern technologies that made skyscraper construction possible:⁵ iron and steel framing, elevators, electrical illumination, centralized mechanical systems, mass-production, etc.

The proliferation of skyscrapers also formed a catalyst for massive social and philosophical change that reflect tenets of the American modern age. For instance, the role and perception of American women was adjusted and recreated due to the necessity of the economy that fueled skyscraper development. “Whether
it was an economic necessity or a desire for independence, given the prevailing gender system, [women] taking an office job… changed the way society thought about the downtown business district, the urban workspace, and the nature of women’s work.” 6 The pre-eminent 19th century American poet Walt Whitman expertly captures the voice of the American people and summarizes the metaphor of skyscrapers to modernization: Evolution may be slow, but it is sure… It is demonstrable that small rooms breed small thoughts. It will be demonstrable that as buildings ascend so do ideas. It is mental progress that skyscrapers engender.7

Public Control vs. Private Interests

The fight between members of the cultural status quo against the avant-garde mainly played out in the arena of architecture and city planning during the early development of the skyscraper. The dispute boiled down to those who supported public/governmental control over the built environment against those who championed the private interests that finance and build the projects. The City Beautiful aesthetic was motivated by Beaux Arts intentions, which focused primarily on the horizontal. Since skyscraper aesthetic gradually became more and more vertical to match the height of the projects, there was an inherit contention between those who wished for horizontal unity and those who strived for vertical points and views. Individual property rights doomed attempts to create civic order and civic embellishment6 of the Beaux Arts system. The City Beautiful aesthetic (unity, harmony, variety) hoped to achieve civic significance in Burnham’s Plan for Chicago. The plan was implemented but eventually failed due to lack of control over private development that did not follow the scheme. The plan “idealized the low-rise city, crowned with a nearly uniform cornice line, accentuated here and there by church steeples and the domes of public buildings, and traversed by wide, uncluttered, tree-lined boulevards.”9 Skyscrapers, as products of private enterprise, violated the City Beautiful aesthetic at almost every turn.10 The ultimate failure of the plan in Chicago led New York City to develop strict guidelines in the form of the 1916 zoning ordinance. The authors of the ordinance hoped to control the inevitable transition from a horizontal to a vertical city.11 To counteract this position, 1920s political scientist Robert Whitten said that the ugliness of
sprawling (horizontal) building development is the American city’s most apparent evil. These issues are still at the fore of American interpretation of the urban context and skyscrapers.

**Issues of Identity**

The skyscraper quickly became assimilated into the identity of the American city and culture. The Chicago Tribune tower competition hoped to create and bring together feelings of “being American” and the company stated that the purpose of the American skyscraper is to “represent higher values, humanity’s best impulses, and universal truths transcending time, place, and cultural difference.” The idea is that the high-rise becomes a landmark that when grouped collectively as a skyline provides significant spatial organization. The competition between the Chicago Masonic Lodge tower and the proposed Odd Fellows tower enabled the focus of creating civic identity for the city of Chicago. The towers “would be nothing less than a landmark visible within sixty miles around Chicago and would possess the utmost artistic and symbolic significance.” This would emphasize the Chicago Loop (Central Business District) as the skyscraper still-point around which much of the visible region and the city’s symbolic identity would rotate.

When considering a city’s identity, it is commonplace for most people to think of a civic skyline. As architects view buildings as individual entities, sometimes without their context, most people view skyscrapers as part of an assemblage of buildings in a skyline. “The general public early on learned to appreciate a landscape of skyscrapers. A new word had entered the American language to describe what a city full of tall buildings looked like: people spoke of the *skyline.*”

For most people, the skyscraper achieves a good deal of its meaning as a vantage point, rather than as a view. In popular culture the skyscraper is not a thing in itself, but a platform from which other things can be seen and evaluated. This is not to say that people do not look at skyscrapers from the ground, but when they do it is seldom from immediately in front of the building. Even a colossus like the Empire State Building may be ignored by people walking right in front of it, not only because of the many
distractions of the street, but also because the building is literally quite hard to see from nearby. Usually skyscrapers are recognized at a distance and seen as part of a more general pattern.\(^{18}\)

This general pattern (skyline) influences and determines how the culture views their environment. This environment usually focuses around the central business district of the city. This reinforces the priority that the American culture places on the importance of capitalism and free enterprise. Skyscrapers help construct this identity by serving as the public explication of business goals and corporate culture.\(^{19}\)

**Capitalism**

For millennia, human kind has built taller and taller in an effort to exert power and influence. This influence manifested itself in three modes: religion, government, and finally commerce. The skyscraper is representative of the form of power displaying capitalism. Skyscrapers eventually fulfilled requirements of both public and private interests. They became welcome additions to the skyline by creating spatial identity while maintaining their symbolic importance as icons of corporate power.\(^{20}\) Business (and later governments) utilized the skyscraper building type to add height even to financial disadvantage in order to create “the unusual and almost phenomenal additional value which will accrue to business premises as self-advertising.”\(^{21}\) The archetypical connotations that associate with height have always been an inherit aspect of skyscraper design and development as a building type. The skyscraper’s “presence, shape, and size conjured up images of the male form and related characteristics of strength, empiricism, and system. Tall buildings were then and are now edifices to capitalism, industrialization, and urbanization.”\(^{22}\) Taken more generally, the skyscraper has been explicitly linked to American capitalism, American industrialization, and American urbanization.

**Natural Expression**

The expression of might and power predominantly found itself in beings created by nature and God. From the Great Wall of China to the Egyptian Pyramids to Catholic Cathedrals, humankind has attempted to emulate this natural
expression usually found in nature. The development of the skyscraper, and the new aesthetics that accompany it, presented *urban space* as having the same awe-inspiring and uplifting qualities that up to that point had been mainly attributed to natural phenomena such as mountains and spectacular sites such as Niagara Falls.

It can be suggested that it is the Western idea to ‘tame’ nature, and that this taming occurs most saliently in the overall American attitude towards the natural environment. “Whereas all cities subjugated the natural world, Chicago did so on a scale that was immense, mechanical, and modern.” This subjugation manipulated the traditional engagement people had with their built environment. The new connection allows the collective skyline of skyscrapers to be “taken into consciousness, not as pure forms, but as experiences of air and sky that were immediately connected to American culture.” The magisterial gaze from a skyscraper seemed to materialize a new historical relationship between human beings and their environment. A new ‘body’ was created as materials are wrested from nature. Therefore, there are two methods of natural expression that are most commonly viewed of the skyscraper: The skyscraper serves as both a metaphor for nature and as the demonstrated command of nature through the built environment. The skyscrapers collectively construct a skyline that in turn is “the creation of an artificial horizon, a completely man-made substitute for the geology of mountains, cliffs, and canyons.”
Chicago Building Tradition and Materials

The Chicago developments of the high-rise building type created the material and cultural influence to modern American architecture and formed the important Chicago articulation of structural expressionism. Primarily glass and steel, the building tradition relates directly to the advancements in structure technology that occurred in Chicago’s past. William LeBaron Jenney and John Wellborn Roots’s development of the structural frame is the earliest manifestation of this technological advancement and innovation, but of most importance to the present identity of the Chicago region is Ludwig Mies van der Rohe’s influence. Mies’ skyscraper projects lead to the most iconic buildings in Chicago, and the progression continued after his death. Skidmore Owings and Merrill, CF Murphy, Harry Weese, Ralph Johnson, and Helmut Jahn all continue Mies’ articulation and material use. From Mies’ IBM and apartment buildings, to SOM’s Inland Steel, Sear’s Tower and John Hancock buildings, to CF Murphy’s Daley Center and First National Bank buildings, the articulation of glass and steel is so consistent as to create a system of expression that represents Chicago architectural identity. This continuation and development of the “fertile detail” creates a logic of technology based making and construction that becomes part of the cultural identity and expectation in the Chicago region.

The articulation of the tectonic joint goes hand in hand with the structural expressionism. This focus on connections is different than the materiality connection mentioned above. Frampton has written of Mies’ tectonic tradition, particularly as it relates to the City of Chicago.

In 860 [Lake Shore Drive] the secondary framing system of the mullions, carrying the fenestration, is mounted on... steel plates, thereby rendering the overall assembly as a continuous curtain wall. It is important to note that the assembly of this wall depended upon the welding of these mullions, together with the steel spandrels and column plates, into a continuous floor-height frame.

In this way the primary aspect of a Miesian curtain wall is the concealment of the joint for the purpose of recreating the appearance of the joint in a more commanding aesthetic expression.
The Magnificent Mile South: Michigan Avenue from Adams to the River

The building site’s surrounding context of Michigan Avenue has had an important role in the history and development of the city as well as a central position in the economic, tourist, civic, and cultural viability of Chicago’s present arrangement. The present arrangement maintains this central position of Michigan Avenue’s importance as the urban core is revitalized and undergoes grand renewal and gentrification that has been attracting an important influx of residents back into the downtown area. Besides being a vital urban area of Chicago, Michigan Avenue is perhaps the highest visibility location in Chicago. Locating the project in this setting will allow the Finnish Cultural Center to interact and communicate with the most people and hopefully serve as a catalyst for the population during the projected increase in building activity in Chicago.

Chicago history lends a better understanding of Michigan Avenue as the pedestrian street and cultural corridor for the city. The Chicago urban structure in 1850 was primarily oriented towards the Chicago River due to the economics of the era. At this time Michigan Ave. was the edge street along the lakefront heading south from the river. It was named Pine St. as it headed north from the river. With the advent of the Industrial Revolution, the introduction of the Railroad made Chicago the most important inland American city. This created a perpendicular economic shift in the city. Instead of primary orientation to the river, the connection with the railroads became priority number one. The railroads traveled into the city from the south and then progressed on a north-westerly route. The changing economic situation necessitated that the north-south streets become the most important to the city. LaSalle Street, State Street, and finally Michigan Avenue became these focal streets.

For the case of Michigan Avenue, the Illinois Central Railroad swept north along the lakefront to the terminus/depots located just south of the Chicago River mouth. This land continued to be developed by the railroad companies as landfill in order to meet the ever increasing economic demands. The end result is that Michigan Avenue, which used to be the lakeshore drive, ended up as a dividing street between the built-up urban development and the open railroad yards. In Hausmann fashion, Michigan Avenue and Pine Street were connected and widened.
in 1905. This intervention created the change of Michigan Avenue into the primary retail street in Chicago.

Daniel Burnham’s *Plan of Chicago* in 1909 proposed Michigan Avenue as the “cultural corridor” of the city. He proposed a scheme similar to the Champs Elysses in Paris. This scheme was never realized in built form, but the city did locate its cultural institutions along the street per Burnham’s plan. These institutes include: the Art Institute of Chicago, the Chicago library, the Chicago Symphony Hall, Roosevelt University, National-Louis University, and many more.

Following New York City’s zoning laws of the 1920’s, Chicago enacted their own version of the law. The main building mass could rise to 264’ and then only the tower could rise above that mark. The effect of this zoning law on Michigan Avenue was the creation of a moderately uniform cornice height with varying towers across the street from an extremely large open space. Eventually, the majority of Grant Park was filled with grass and trees over the landfill and the train tracks were sunken below street level. Chicago post WW II saw the zoning law abolished, and the subsequent building surge filled in the loop behind Michigan Ave. but interestingly enough the majority of the Michigan Ave. buildings remained.

The street is currently the main domestic, cultural, and non-retail thoroughfare for the citizens of Chicago. This is due to the continued support of the cultural institutions, the proximity to the Loop (Chicago’s central business district), and the outstanding success of the recently completed Millennium Park (built over the final remaining railroad yard in the northwest corner of Grant Park). The street is the boundary between urban density and the natural environment.
Grant and Millennium Parks as well as Lake Michigan, the beaches, and the Marinas. The street fulfills the criterion for a street that is ideal for people watching and strolling based on the following reasons:

1. Pedestrian traffic: Art Institute [+Renzo Piano addition], CSO, the Parks, the Loop, the cafes, boutique shopping, the plantings/tree lined strips.
2. Civic zone of Michigan Avenue: North of the river is mainly tourists.
3. Cultural Corridor: continued development of Burnham’s idea.
4. Proximity to Mass Transit
5. Urban Edge condition, high-density context
6. Direct views of natural elements [parks, lake, planters]
7. 24/7 occupancy and vitality

35 www.millenniumpark.org
CULTURAL SYNTHESIS METHODOLOGY

The hypothesis is that the Cultural Synthesis method utilizing Finnish process and principles with American contexts will create buildings that better communicate to the American people and add meaning to the American environment. The explicit interaction, amalgamation, and unification of different communities and localities are the basis of this idea. While critical regionalism navigates between universal and local cultures, Cultural Synthesis is the navigation between two different localized cultures. The synthesis does not imply a homogeneous transformation as the end result, but a work that is an adaption referring back to both local cultures at the foundation. Cultural Synthesis is a method for the realization of multiple architectural cultures into the built environment in order to enhance understanding and communication between people, buildings, and cultural values.

At the foundation of this thesis problem are the questions of what is the Finnish process and how is it transformed into the American context? The end result will be a unique entity that responds to both Finnish and American values. A key distinction will be the separation of the Finnish process from the Finnish context. Instead the Finnish process will engage American resources, geography, light, cultural values, contexts, etc. This does not mean that the American culture will overwhelm the Finnish characteristics or that the Finnish culture is replicated in the United States. The aspects of Finnish architecture will partially replace and partially augment the existing American process. Remember, the result will be a building that actively refers to both American and Finnish influences while presenting a unique solution that, in turn, influences Chicago culture and architecture.

The Architecture Suomi section discusses both tangible and intangible aspects of Finnish architecture that make up the Finnish process. These tangible and intangible aspects will be the source for the enrichment and adaption of the American context. Finnish architect Reima Pietila outlines the tangible aspects of Finnish architecture into a design matrix that is a non-authoritarian, but allows a permissive interpretation of a Finnish process representation. It is to be used
in order to identify and understand Finnish design motivations while providing an extensive framework for the absorption of the concepts into the American context.

<table>
<thead>
<tr>
<th>criteria</th>
<th>natural response</th>
<th>cultural response</th>
<th>functional response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quality of Space</td>
<td>Unites with sense of place and local geographic</td>
<td>Unites with social geometry of space, growing from</td>
<td>Unites with general space cosmos, growing from inside</td>
</tr>
<tr>
<td></td>
<td>components</td>
<td>outside in</td>
<td>out</td>
</tr>
<tr>
<td>2. Urban Component Form</td>
<td>Integrates urban and rural landscapes</td>
<td>Integral urban and rural</td>
<td>Stays as landmark to maintain continuity</td>
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<tr>
<td></td>
<td></td>
<td>landscapes</td>
<td></td>
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<tr>
<td>3. Form Language or Syntax</td>
<td>Analogy of nature</td>
<td>Cultural replica</td>
<td>Reflects own structural morphology</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Image-making Quality</td>
<td>Concrete Symbols, indefinite poetic meaning</td>
<td>Consensus of symbols closed, definite meaning</td>
<td>Abstracted symbols, open meaning</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td>5. Geometry and Order</td>
<td>Nongeometric variable type of geometry and order</td>
<td>Compositional type of geometry and order</td>
<td>Geometric techno-constants type of geometry and order</td>
</tr>
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<td></td>
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<tr>
<td>6. Functions</td>
<td>Unimpeled, liberated</td>
<td>Performance type, based on custom</td>
<td>Process type, sequential</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7. Scale</td>
<td>Accidental, derived directly from natural environment</td>
<td>Expressionistic, derived from cultural mode</td>
<td>Determined by technological production</td>
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<td></td>
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<tr>
<td>8. Relations to Man</td>
<td>Existence autonomous</td>
<td>Cultural symbioses</td>
<td>Existence as means or tools</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Material Quality</td>
<td>Togetherness with natural materials</td>
<td>Purposes defined as cultural for communication</td>
<td>Determined by production, cost control</td>
</tr>
</tbody>
</table>

Remember this is a specific process that relates to primarily tangible aspects of Finnish architecture. The integration and representation of the intangible Finnish aspects in the design is perhaps the most important quality of the project while also being the most difficult to fully represent. This is due to the fundamental quality that the intangible characteristics occupy in the Finnish culture that is not a part of the American culture. This thesis identifies specifically the Finnish understandings of mysticism, humanism, essences, philosophy, and genius loci as intangible aspects of the project. The inclusion of these intangible concepts into the project will too be at a fundamental level of the design. With the exception of the Finnish interpretation of genius loci, the other intangible aspects will relate almost directly back to Finnish inspirations and contexts. The tangible characteristics (noted in the Architecture Suomi Section and Pietila’s design matrix) and genius loci will utilize American resources, geography, light, cultural values, contexts, etc.

The Finnish Embassy in Washington DC and the Sibeliustalo Conference center are used as reference for the program and space requirements in the Cultural Center. The condominium tower utilizes Chicago residential building standards from projects by Goettsch Partners, Murphy/Jahn architects, and Solomon Cordwell Buenz.

**Finnish Cultural Center Goals**
Main: Serve as a cultural and scholarly link between the US and Finland.

Secondary: Stimulate and strengthen American interest in the Finnish Culture as an alternative approach to architectural, economical, environmental, and social issues.

Architectural: Finnish architectural process and principles should inform and adapt the design of the building into a unique solution that is both Finnish and American in foundation. It should represent a method for the realization of buildings that better communicate cultural values to the Chicago society.

**Space Requirements and Descriptions**

**Residential Tower**

Lobby: 24/7 operation with security desk, mail center, central office, connection to courtyard. [500 sq. ft.]

Condominiums: multiple cost-brackets, connection to exterior. [units from 1000 sq. ft. – 3000 sq. ft +]

Service: basement level storage, service entry and exit. [5000 sq. ft.]

Connection to Cultural Center: visual connection, controlled access point.
Cultural Center

Interaction Hall: entry space, funnels pedestrian traffic inside. [500 sq. ft.]

Finn Café: full service restaurant with fixed seating and self-service café with adjustable seating, serves the cultural center and general public. [1000 sq. ft. + 400 sq. ft. kitchen, outdoor seating not included]

Finn Shop: small boutique that sells literature, design items, and rotating products based on exhibition and season. [600-800 sq. ft.]

Research Library: controlled access but open to the public, heart of the center; includes reading and study spaces, short-term rentable research offices, and computer service. [3000-4000 sq. ft.]

Multipurpose Room: performance space, lecture space, and specified audiovisual service. [2500-3000 sq. ft. 200-250 people]

Gallery Space: permanent and temporary display space. [2500-3000 sq. ft.]

Learning Rooms: classroom, workshops, conference space. [(6) 500 sq. ft. each]

Administrative Offices: operational location for the day-to-day running of the center. [1000 sq. ft.]

Kitchenette: small area for cultural center employees. [100 sq. ft.]

Storage Space: near service elevator, gallery, and library. [1000 sq. ft.]

Public Restrooms: minimum of one female and one male restroom on each floor. [80-100 sq. ft. each]
Fellowship Foundation

Lobby: sub-lobby to control access to the Fellowship spaces. [100-200 sq. ft.]

Offices: variable adaptable sized open offices, and some fixed offices. [800-1000 sq. ft. open, 400 sq. ft. fixed]

Meeting Room: specific Fellowship conference room. [150-200 sq. ft.]

Kitchenette: small area for fellowship employees. [100 sq. ft.]

Fellowship Library: specified hall for intimate gatherings, specified information, and honor space. [400 sq. ft.]

Sauna

Black/Smoked Traditional Sauna: intimate, dark space, for small numbers. [150 sq. ft. sauna, 150 sq. ft. pool, 250 sq. ft. dressing]

Modern Sauna: open, naturally lighted, for large gatherings. [250-300 sq. ft. sauna, 250 sq. ft. pool, 400 sq. ft. dressing]

Exterior Program

Plaza/Courtyard/Park: space for natural connection between indoor and outdoor, possible sculpture area.

Café Dining: accommodated within the park, provides sidewalk-dining location.

Rooftop Terrace/Balconies: view to park and lake, exterior connection.
Then old Väinämöinen spoke these words: “Let the lower half of the egg be Mother Earth beneath! Let the upper half of the egg be the heavens above! Whatever in the egg is white let that shine as the sun, whatever in the egg may be yellow let that gleam palely as the moon! Let the other fragments of the egg be the stars in the sky!”

Väinämöinen’s creation of the Earth and Sky from *The Old Kalevala* 1:304-315

**Conceptual Development**

The concepts of ground and sky are significant notions in the Finnish culture. From customs to cultural schemes that influence the interactions between the Finnish people and their environment as well as inter-relations between the Finnish people, the associations between the earth and heavens filters throughout Finnish culture. In an almost non-logical relationship, the identities of ground and sky are contradictions of each other. It is highly difficult to define one term without use of the other. So the question begs to be asked, when one concept is identified through the use of a different concept, which is the concept that is being noticed? The ability for the two terms to be so wrapped up into each other as to become entwined conceptually due to their inherent contradiction and identification forms the basis for the conceptual *parti* of the design project.

The following groups of terms are all related to the specific integration of the Finnish process and the Chicago context. The mystical relationships between the terms’ intertwined identities are derived from the Finnish architectural and historical cultures. Their application and synthesis into an architectural project in Chicago will enrich the meaning and interpretation of the Chicago context.

Ground and Sky
Earth and Heavens
Man and Nature
Man and Divinities
Urban and Natural
Absence and Presence
The involvement of these Finnish archetypal associations into the project forms the generating principles of the design.

Christian Norberg-Shulz sees these archetypes throughout the Finnish architectural tradition and uses them to articulate a further condition that is vital to Finnish architecture.

*Thing* and *character* are dimensions of the earth, whereas *order* and *light* are determined by sky. *Time*... is the dimension of constancy and change, and makes space and character parts of a living reality, which at any moment is given as a particular place, as a *genius loci.*  

The concept of a modern Genius Loci expressed in the project forms the other organizing element to the *parti.* The formation of the qualities that lead to the emotional and experiential character of Genius Loci is a constant goal of the design project. As it is realized, the specific project utilizes a path through the site that funnels people from the urban landscape, compresses them as they move along the path, and finally leads to a location off of the main path. This node off the path is the place that is hoped to contain the qualities of a modern Genius Loci. The inner place will be inward focused while still maintaining connections to the urban landscape of Chicago’s loop. All aspects (to be enumerated in the following Design Development section) of the project will be designed to reinforce the place in the hope that over time, the qualities of Genius Loci will take hold. Reima Pietilä explains the concept of Genius Loci as developing purely from the natural, not the urban, qualities of a space.

The Building articulates itself qualitatively, and within its surroundings as well. Genius Loci [GL] is the set of determinants for this common identity... the urban buildings of GL originate from rural-born ancestors with an inherited open landscape GL endowment. Thus, no pure urban character exists in GL. *All basic character stems from nature.*

With no pure urban character involved in the determination of a place with Genius Loci qualities, the discussion leads back to the contradictory concepts. How are...
the concepts of urban and natural located as they relate to Genius Loci?

Urban and Natural become a further gradient as Man-made, Man-placed natural elements, and Natural elements. For this project there are truly only man-placed natural elements. No purely natural elements are introduced into the project by man. This does not mean that nature does not exist in the design. Man-placed natural elements are belonging to nature, but in a more restricted sense. Pietilä explains the Finnish environmental approach as being “concerned with what is there as objects of human identification: trees, rocks, clouds, and light.”

The interaction between the building, the building’s form and materials, and the man-placed nature will reinforce the central space. This space overtime will become more and more natural (in juxtaposition to the building and other man-placed artifacts) and the experiential and emotional qualities of the modern Genius Loci will become inseparable from the place. The interaction between man-made artifacts and natural elements lead back to the conceptual impetus of Ground and Sky.

Reima Pietilä’s design matrix represented in the Methodology Chapter has been adjusted to demonstrate what aspects of both Finnish and Chicago approaches organize various points of the project. The resultant design rationale reflects the synthesis of both processes into a guiding template for the schematic aspects of the project.
<table>
<thead>
<tr>
<th>criteria</th>
<th>Finnish approach</th>
<th>Chicago approach</th>
<th>design response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quality of Space</td>
<td>Unites with sense of place, local geographic components, grows from</td>
<td>Derived from economical needs and cost-engineering, grows from</td>
<td>Finnish.</td>
</tr>
<tr>
<td>2. Urban Component Form</td>
<td>Integrates urban and rural landscapes</td>
<td>Landmark, view and real-estate oriented, urban.</td>
<td>Primarily Chicago. Scaled to view and urban conditions.</td>
</tr>
<tr>
<td>3. Form Language or Syntax</td>
<td>Analogy of nature</td>
<td>Artifacts above nature. Structural triumph against nature.</td>
<td>Finnish.</td>
</tr>
<tr>
<td>4. Image-making Quality</td>
<td>Concrete Symbols, indefinite poetic meaning</td>
<td>Consensus of symbols, closed meaning, indefinite interpretation.</td>
<td>Finnish.</td>
</tr>
<tr>
<td>5. Geometry and Order</td>
<td>Nongeometric variable type of order, also ordered compositionally</td>
<td>Efficient Cartesian order. Geometrically considered formal language.</td>
<td>Both. Lot lines relate directly to Chicago, site interior relates to Finnish approach.</td>
</tr>
<tr>
<td>6. Functions</td>
<td>Unimpeded, liberated, sequential</td>
<td>Performance based, efficiency of function.</td>
<td>Cultural Center &amp; Plaza apts. are Finnish, speculative apts. are Chicago.</td>
</tr>
<tr>
<td>7. Scale</td>
<td>Expressionistic, derived from cultural mode &amp; the natural environment</td>
<td>Tripartite organization derived from historical style or purposefully indifferent.</td>
<td>Finnish.</td>
</tr>
<tr>
<td>9. Material Quality</td>
<td>Truth to natural materials, materials defined to communicate cultural ideas</td>
<td>Majority use is value-engineered. Some instances of accented</td>
<td>Finnish approach, Chicago materials.</td>
</tr>
</tbody>
</table>

This matrix is an adaptation of Pietila’s Design Matrix in order to develop design rationale for the Finnish Cultural Center in Chicago.
**Design Development**

The first move of the project involves pulling the ‘ground level’ of the project into the air to 100’ above the contextual street. The project below this conceptual ground plane represents the Earth and above represents the sky. This is accomplished through the use of materials, articulation, and form. The earth aspect of the project also represents the pedestrian scale. It is common practice in skyscraper design that pedestrians primarily notice only the first 60’ of a building façade. The cultural center utilizes the mark of 100’ to ensure that the pedestrian view is completely occupied by the earth-aspect of the project. The material treatments correspond to this 100’ point. As the height increases, the level of dematerialization through variances of material layering increases. At the base of the project granite, wood, and trees form the material palette. As the height increases the granite is removed and the wood is gradually replaced by highly reflective glass that (due to the chamfered forms) reflect equally the tower and the sky. As a whole, there is a purposeful blur between what is representative of ground and what is representative of sky. The building itself is the mediating element in this blur. In essence, the lower part of the project is predominantly Finnish in treatment and form; the upper part is speculative and oriented towards views of the lake as well as its own experiential character. But both parts of the project correspond and reinforce the images and character necessary for the plaza space and its attempt at creating a modern Genius Loci place through the conceptual archetypal principles.

The sequential approach and egress from the main plaza is vitally important to the experiential quality of the modern Genius Loci place. As a person enters the site from Michigan Avenue, they are funneled and encouraged to climb towards the inner part of the site. They are simultaneously compressed by the building masses and man-placed birch trees that focus them towards the interior plaza. At this point, visitors can turn around and view over Millenium Park to Lake Michigan, reinforcing the interactions between urban and natural in the project. As the visitors continue into the plaza they are drawn into the center, which is occupied by a small static reflecting pool and a commissioned work of Finnish sculpture. While the cultural center programmatically wraps around this plaza, the reflections in the pool...
are that of the residential towers above. At this moment, the viewer looks above the pedestrian scale to the vertical lines that vanish and all center about the central plaza space. The tower’s articulation from this vantage point is particular to the emotion and experiential qualities in the plaza. Keep in mind that the formal slice in the tower’s building mass provides an aural connection and the transparency of the Cultural Center provides a visual connection to the urban fabric of Chicago. In this manner, a visitor to the plaza can never completely become separated from the urban quality of the city. This design move represents a major connection to the Chicago building context.
Further Precedent Analyses

Additional precedents from the Finnish tradition assist the illustration and validity of some of the design decisions relating to the conceptual parti and other details of the project. For instance, Juha Leiviskä’s work contains similar rationale for the intuitive chamfering of the walls that make up a significant portion of the visual language of the Cultural Center. In Leiviskä’s Vallila Library project, the building envelops an internal courtyard with “freely outlined” exterior walls. The project maintains focus towards the interior with materials and natural elements while projecting a contextual relationship in the walls facing the street, Leiviskä uses the same technique as the Cultural Center to the interior plaza and the exterior Chicago context. According to Leiviskä, “the straight walls my buildings present to the street side are a modern equivalent of those old wooden houses. The freely outlined structure is intended to maximize the connection between the interior and the courtyard.” This site strategy is seen even clearer in his competition for the Pirkkala Church. His method of using clear orthogonality to relate to the typical context while utilizing chamfered and intuitively focused openings towards the view and landscape has been described as being a “defensive rather than aggressive strategy.” In his masterpieces of Myyrmäki and Männisto Churches this defensive strategy to the site is also employed.
Reima Pietilä’s Dipoli Conference Center also contains elements that add credence to the techniques in the material treatment and formal language of the Cultural Center. Dipoli occupies a position next to a path. Directly off the path is a place that contains the experiential qualities for the experience of modern Genius Loci. The sculpture, the collected stones, the integration of vegetation, and the method that the building focuses the spaces energy towards the center are all aspects that bring about the Genius Loci character. Dipoli also contains material treatments and variations that force the viewer to see the building through layering. The ground is brought up above the ground line in an effort to highlight the visual and compositional weight of the building. The roof is capped in a naturally treated wood finish that blends with the trees in the context. Sandwiched between the man-made ground plane and the wood cap is a transparent layer of glazing that during the day reflects the natural surrounding while at night lends a transparency that allows the roof to seemingly float above the accented ground plane.
The firm of Helin & Siitonen Architects provides further precedent to the integration between interior and exterior. Their villa projects do not sit in the environment, they become a part of the environment. The ephemeral dematerialization and filter of the surrounding vegetation and sky with the building glazing and building forms create a blending between earth and sky. Flush floor levels lend clear connections between man-made space and man-selected natural environment. Over time, nature and the house grow together into a singular image of consistency between the mystical power of humankind on earth relating to the divinities in the heavens.
Finally, master architect Aalto lends his own expertise to the equation. His open granite amphitheatre at Otaniemi not only provides precedent for the programmatic function of the internal sunken plaza, but his articulation of the surrounding man-made and man-placed natural environment give justification for the manner of articulation between the plaza terraces that funnel people into the cultural center as well as for the articulation of the path through the grass that is adjacent to the central plaza. Aalto’s treatment of the ground plane at Finlandia Hall is also reminiscent of the same stepping/raising manner utilized in the primary design move for the Cultural Center project.
APPENDIX A: WHAT IS CULTURE

Modern life consists of changing phenomena and activities that require changing signs in built form and places. Christian Norberg-Schulz asks the questions “How does architecture (the environment) influence us?” “In what outer circumstances do we have particular experiences?” and “Do we always have the same experiences in similar outer circumstances?” Norberg-Schulz answers these questions by stating:

We therefore have to investigate more closely how we really perceive the world around us. A better understanding of this process may also help us to grasp what it means to ‘experience architecture’ in the changing situation of daily life... That the public ‘learns to see’ is also necessary if we want to increase the respect for architecture and to bridge the gap between the professional man and his client.²

He consistently calls for a general education and training in the appreciation of architecture.³ There is an inherent difficulty associated with these claims. The purpose of perception is to give us information so that we may participate in the world. But “perception is an unreliable companion who does not mediate an objective and simple world.”⁴ Norberg-Schulz believes that it is naïve to believe “that a similar world is given, a priori, to all of us.”⁵ We all live in a common World, but have unique schemata (personal frameworks) to justify that we participate and interpret in different worlds.

It has already been established that people participate and interpret the World in order to create unique schemata of perceptions. Norberg-Schulz best explains similar schemata as ‘culture’ in the following passage:

From birth we struggle to establish a fragment of order in the infinite variety of our environment. The order we attain is... a result of collaboration and the transmission of information. The achieved order is defended against all charges; the need for order makes man at the same time creative and conservative. A common order is called culture. In order that culture may become common, it has to be taught and learned. It therefore depends upon common symbol-systems, or rather, it corresponds to these symbol-systems and their behavioral effects. Participation in a culture means that one knows how to use its common symbols.
The culture integrates the single personality by giving him a feeling of security in an ordered world based upon meaningful interactions. The common symbols enable us to reach objects which are unattainable to the isolated individual, and thus give rise to a versatile and differentiated world. Common cognitive tools serving instrumental tasks are just as important as symbol-systems which may express values and complex life situations.

Groups of people with similar frameworks (although unique to the individual) comprise a culture. This culture uses its common symbols to create the framework to maintain similar schemata. “Architecture participates in these activities [of culture] by forming a practical frame, an adequate psychological background, and by expressing that what takes place is of importance to the community.” To paraphrase, Architecture is the basis from which the values of a culture/society are viewed. It is also interesting to note that Norberg-Schulz feels that a culture’s symbol-system “must find its direct expression in monumental architecture. [I]n solutions which manifest the cultural values which are basic to the social-milieu.”

“Since remote times man has recognized that different places have a different character. This character is often so strong that it in fact determines the basic properties of the environmental images of most people present, making them feel they experience and belong to the same place. The genius loci in many cases has even proved strong enough to dominate any political, social, and cultural changes.” The great city is characterized by a particularly strong genius loci. Chicago and its supporting region is one such great city. The cultural connection between the people of the region and the architecture of the region is powerful.

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2 same as above, 22-23.
3 same as above, 203.
4 same as above, 28.
5 same as above, 31.
6 same as above, 79-80.
7 same as above, 109.
8 same as above, 185.
This appendix will deal specifically with the various aspects of history and life that makes up the common-order that is Finnish culture. It is important to understand not only the architectural culture perspective of the Finnish architects, but also the upbringing and influences that create the cultural scheme that is inherently Finnish. A primary role of Finnish architecture is to express the Finnish culture. Lessons and methods of thinking that belong to Finnish culture and are implicitly taught from one generation to the next form the basis for the following.

Cultural Values

Throughout the Nordic lands “nature, life, and architecture are insolubly bound.” The Nordic peoples feel an intense relationship to their natural surroundings. This relationship is slightly different depending on the specific geographical configuration and location that the people are living in. The Finnish people specifically perceive their existence as ‘possibilities’ and their goal is to display the hidden qualities in their environment. This mode of perception has its origin in the mythical tradition that focuses on the geography of the land as its inspiration. This mode maintains one primary theme: incompleteness… [Finnish] understanding becomes the dream of engagement. They consistently strive to fill out their understanding of their worlds, their search for Truth.

The easiest way to understand the Finnish view of space and light is to compare it to the traditional Latin views. The Mediterranean area has a bright sun, this allows them to see objects in space. “The unified space of the South is where things emerge proudly with their proper identity.” The southern light allows for an object’s eidos to be fully and easily represented. Finland has no bright sun. The sun is always at an oblique angle to the land and is sometimes never seen during the winter days. This characteristic has shadowed and mystified the Finnish world. “The incomplete and unstable world of the North… here, nature implies nearness and empathy; one lives with and among things, as a participant in a web of phenomena.” They exist in a seemingly opposite relationship of both mystery and connection to what surrounds them. Their world becomes entrenched in the senses and discovery because they only view a part of an object and cannot grasp the object’s full meaning. In order to counteract this in their buildings, the Finnish employ a method of forms and materials that are directly contrasted to the Southern area. “Intimacy and warmth are more important than representative grandeur” in their buildings. Reima Pietila explains the Finnish connection between nature and art as not an imitation of natural environs, but instead an allowing of nature to speak through art in a method that allows both the man-made and the natural to
The main entity that represents the Finnish culture would have to be the sauna. The sauna represents the essence that most Finnish people value in their life. It is the blend of nature with the human condition. Pre-Christian Finns believed that the sauna had special powers and connected them to the spirit of the gods. Not only a bathhouse, the sauna has become emblematic of the culture. Mostly reserved Finns open up in a sauna and enjoy the intimacy and pleasure of the cycle. Does the experience begin with the chopping of wood to heat the sauna, or is it the gathering of the leafy, fragrant birch branches? The process of sauna represents the reflective nature of the Finnish people. It is the time for them to relax, celebrate, socialize, meditate, and cleanse their spirit. The connection with nature in a sauna is inseparable. It is the natural method of viewing nature, spiritually rejuvenating a person, and reflecting upon life.

Historical Culture

Sisu is a term in the Finnish language that means strength of will, perseverance, stoic determination, inner resolve, and tenacity; “the almost magical ability to muster the strength, stamina, courage, and willpower to succeed in the face of adversity.” This term helps provide a mindset in which to view the Finnish history. It is an appropriate term for a culture that exists in the cold north region of Europe, fractured by thousands of lakes, and has historically been under a consistent threat of being overwhelmed militarily, linguistically, and culturally.

Much of the Finnish region’s history involves being swapped back and forth between Swedish and Russian rule. Due to this fact, the Swedish language was reserved for the government and educational systems while the Finnish language was used by the clergy and the peasants. It was not until the middle of the 18th century that the area was predominantly termed ‘Finland.’ In 1808, the Russian czar conquered Finland and established the region as a Grand Duchy of the Russian Empire until Finland was granted independence in 1917.

In the beginning of the 19th century, the Russians attempted to ‘russify’ the Finns into their culture. This sparked a quiet nationalistic movement in 1850 and gradually gained steam until Finland was independent of Russian rule. The Kalevala, Finland’s national epic, was traditionally performed as an oral tradition. In 1835, Elian Lonnrot transcribed the poems into a written tome. The publication of The Kalevala provided the impetus for this Nationalist Movement in Finland. The movement was also primarily felt in the art and architecture of the era, specifically Sonck, Saarinen, Sibelius, and Leino.

On December 6, 1917, after Russia’s Bolshevik Revolution, the country of Finland declared and was granted their independence. This was a very tumultuous time in world history, and Finland was not exempt. Over the next 20 years Finland
experienced civil war, political unrest, and the continued renegotiation of the border with Russia. They also attempted to define their ‘Finnish Culture’ with a sustained development of Finnish art, literature, music, and architecture. In order to separate themselves from any Swedish or Russian history and traditions, they embraced functional modernism as a cultural aesthetic.

During World War II, Finland fought two separate wars against the Soviet Union. In November of 1939, the Russians initiated the Winter War of 1939-40 in an effort according to Stalin to “conquer the whole country by the end of 1939.” The Soviets were promptly expelled from the League of Nations and then forced to endure fierce resistance from the Finns. Although outnumbered 3 to 1, the Finns’ sisu kept the Russians from advancing past Lake Ladoga. In March of 1940, a peace treaty was signed that gave the Soviets a Pyrrhic victory. Finland knew that eventually they would be over-run by the Russians, and despite their military victory ceded 10% of their territory and 20% of their industrial capacity to the Soviet Union in an effort to protect their overall sovereignty. Soviet losses during the war were tremendous as well as the country’s international standing. Finland sustained less casualties, due to their guerilla tactics and local knowledge of the land, and gained considerable international goodwill.

As a term of the peace treaty, Finland ceded their portion of Karelia (including their second largest city Viipuri) to the Russians. The average Finn was shocked by the harsh peace terms because it seemed that more territory was lost during peace than while at war. The harsh terms motivated the Finns to find support from Hitler’s Third Reich in the Continuation War of 1941-1944. The war was named ‘continuation’ in order to explain its relationship to the Winter War. In order to combat their larger and more aggressive neighbor Russia, the Finn’s allied themselves with Nazi Germany. The Nazis supplied munitions as well as additional troops to defend against the Soviet invasion. By allying with Hitler, Finland became an enemy of Great Britain and the United States as well as the Soviet Union. At the time, the Finland government defended their action as a last resort in the face of Soviet aggression. The recent inability of the Allied powers to support the Finns in the Winter War was a key motivation for the alliance with Germany. In hindsight, consensus is that Finland would not have survived WWII intact had they not aligned with Nazi Germany. This alliance was short lived however; the Germans were allowed to fortify the northern regions of Finland while the Finnish army maintained positions in the south. During Hitler’s attempted conquest of Russia in Operation Barbarossa, his forces met strong opposition and eventually stalled. With Germany receding and Russia advancing towards mainland Europe while concurrently invading Karelia, Finland began to negotiate with the allied powers of Great Britain, the US, and the Soviet Union to end the war. A peace treaty was signed between Finland and the Soviet Union in 1944 that ended the
Continuation War; this greatly angered the Germans as they saw this peace as a violation of their alliance. The Germans stationed throughout Finland would not leave the country, so the Finnish army turned on their once-allies and fought them out of the country in what was termed the Lapland War, 1944-45.

After World War II, it became apparent that Finland would once again need to align itself with a super-power in order to survive as an autonomous country. The USSR was Finland’s largest threat, so the Finnish government allowed Soviet influence to permeate throughout Finland in the form of the Finno-Soviet Pact of Friendship, Cooperation, and Mutual Assistance. It seems that the treaty was compromised very equal to both parties. Finland maintained their democratic government and capitalist economy (the only country in proximity to Russia to keep capitalist democracy) while Russia (who seemed to have learned the lesson that the Finnish people will fight them if they don’t get their terms satisfied) received a military agreement that Finland would defend its territory and airspace against NATO. This resulted in Finland as an autonomous capitalist democracy that acted as a neutral buffer zone between the US and USSR.

During the Cold War, Finland experienced a period of rapid economic growth, wealth, and stability. The agriculture society that existed prior to WWII had been completely destroyed. To survive economically, the country invested heavily into mass-industrialization that paved the way for a technologically advanced market economy while still providing a very refined social welfare system. The market economy and the social welfare system refer to the neutrality between the capitalistic US interests and the communistic USSR beliefs. When the Soviet Union dismantled in 1991, Finland lost many of its exports. But the production capacity that it had previously created, enabled the country to sustain economic growth up to present day. Finland joined the European Union in 1995, and maintains strict neutrality in most military based operations. If they are not directly threatened, then they will not involve themselves in war or any other ordeal.

Economy & Globalization

Finland is a highly industrialized nation with a per capita output similar to the United Kingdom, France, or Italy. The free-market economy is split into two roughly equal sectors, manufacturing and services. Of the 1.4 million jobs in 2002, 463,000 were manufacturing while 501,000 were service jobs. The manufacturing sector is primarily focused on forestry related fields (such as paper mills and publishing), telecommunications (Nokia), and electronics. After the Cold War ended, Finland rapidly adjusted to the current economic situations and realigned themselves with Western Europe, joining the European Union and adopting the euro in the process. Transparency International, the coalition that measures country’s economic trust and levels of corruption, has rated Finland either the least corrupt (2002-2004) or second least corrupt (1999-2001, 2005) in the recent past. This reflects a willingness for Finnish companies to create pure economic activity without interference. The World Economic Forum has consistently declared Finland to be the most competitive economy in the world (2001, 2003-2005). Augusto Lopez-Claros, the Chief Economist of the World Economic Forum, describes Finland’s success:

Successive governments have managed to create a climate of transparency and honesty in public management that greatly contributes to business confidence. Integrity and efficiency in the use of public resources means there is money for investing in education, in public health, in state-of-the-art infrastructure, all of which contributes to boost productivity. Highly trained labor forces, in turn, adopt new technologies with enthusiasm or… are themselves in the forefront of technological innovations. [Finland has] entered virtuous circles where various factors reinforce each other to make them among the most competitive economies in the world, with world-class institutions and some of the highest levels of per capita income in the world.

Least corrupt and most competitive are two aspects of the economy that the Republic of Finland prides itself on. It reflects the degree and efficiency at which their economy has become on of the most globalized nations in the world.

Political Culture

Due to the precarious position of being a democratic country situated next
to communist Russia for 50 years, Finland’s political scheme is primarily that of neutrality. Internal divisions within the country are fairly narrow, while the external views are even more so. During the Cold War, the political atmosphere was always heavily influenced by Russia. This created a political system that groups parties around slightly different ideas and beliefs. Since the fall of the Iron Curtain, Finland has experienced an expansion of parties and ideas that represent an atmosphere that is free to express all political ideas. The most important aspect of the political culture of Finland is that no matter what internal conflicts arise, there is always a unified voice that is conveyed to an international perspective. The Finnish political system relies on self-censorship, self-interests, and self-preservation to exist in the increasingly globalized world.

Social Welfare

The Finnish citizens live in a welfare society that is emblematic of their relationship towards nature and each other. This area of the research is not complete but is important to note that they feel their social agenda as a natural component of life. That is to say that their social government is seen as a necessary part of being human in this world. The natural laws in their mind dictate that they help others while sharing their progress in a more communal manner.

Some would argue that Finland’s social programs could demotivate and detract the citizens from actively participating in their economy due to the high taxation and the ‘safety-net’ that the government provides. There is no evidence that the high tax rates adversely affect the ability of the country to compete effectively in the world markets or provide extremely high living standards for their citizens. This is due to the fact that the government is efficient at reinvesting the higher taxes into resources that boost the economy, such as world-class education, an effective social safety net, and increased training to provide skills for the labor force.

Education

The sheer quantity and quality of talent produced by Finland in music and the arts never ceases to amaze foreign observers; the secret behind this success story is education. The consistently high level of education in Finland enables its citizens to be very productive contributors to the local and global economy. Education conversation focuses on creativity as essential to every successful business, organization, and society and the future of the Finnish economy. The Organization for Economic Co-operation and Development measures Finland’s education system to be among the highest scores worldwide with their primary education ranking first in both reading literacy and science, and ranking second in mathematics. There are three levels in the Finnish educational system: Primary, Secondary, and Upper level studies. Classes are taught in Finnish, Swedish, and
English starting in the second grade of primary school. There is no tuition for schooling at any level, except for foreign students or Finnish students who do not progress academically in the secondary and upper level studies. Primary school is mandatory for all Finnish students until the age of 16. There are then two levels of secondary schools that do not interoperate. The divide occurs between a technical/vocational system and an academic/grammar school system.

Only students in the academic/grammar system may progress to the upper level studies. In order to advance, the grammar students have to take a nationally graded matriculation examination that then influences which university and field of study the student enrolls in. This examination is equivalent to an associate’s degree in the United States and holds high prestige in Finland. There is a holiday after the exams named Vappu, or May Day, where graduates wear a white cap with academic regalia representing their chosen fields of study and then proceed to host a spectacular carnival festival for the entire community.

Students in the vocational system may progress to polytechnic schools that provide practical instruction. Students from the grammar system may progress to the universities that provide more theory-based degrees. Examples of vocational degrees are nurses and engineers; while examples of university degrees are medical doctors and philosophers. Despite the differences in the education base, both vocational and university education compares to the Bachelor’s and Master’s degree in the United States. The high level of education in Finland is demonstrated by the fact that 86% of the population receives a degree from either grammar school or vocational training compared with only 71% equivalent education in the United States.

10 Organization for Economic Co-operation and Development, PISA assessment of student performance index, 2003. http://www.oecd.org/home/0,2605,en_2649_201185_1_1_1_1_1_1,00.html
Dedicated to my parents. The support and respect that I have learned and gained from you is beyond anything I could ever write. My success is due to your love and care.

Brett, the older we get, the closer we get. At what point did brotherly competition turn into us achieving our goals together? Go Cubs!

Danielle, your character is that of who I strive to be. I look up to you.

To my Nana and Granddad, a happy childhood in my memories will carry me throughout my life. Deb and Dan, thank you for always treating me as a peer, your lives bring me joy. Tony Lobello, your lessons (while lengthy!) lend truth to the importance of family sticking together.

Mentor Jerry Larson, thank you for your continued support and energy that you bring to those around you in our field. Your passion for architecture has infused me with the same. Jay Chatterjee, your guidance and friendship made thesis year a delight. Thank you for being my lion. Aarati Kanekar, your timely questions kept me faithful to my project. Your sense of humor brightens up my day. Professor Bradford, the energy and conviction in your philosophy classes have greatly influenced the way that I look at and participate in this world. Professor Niland, the lessons from you connect me to the tradition that I have joined. Jim Postell, your genuine character and thoughtful instruction bookend my architectural education at UC, I wouldn’t have chosen it otherwise. Terry Boling, your care for details teach me that yes, architecture can be accomplished to a very high level of articulation. And to Dr. Allen Dennis, you who have taught me to ever chase after and realize my dreams will never be forgotten.
The friendship from those who have been instrumental in shaping the person I am today and influencing where I go tomorrow. Ryan Newman and his family, Eli Meiners, Greg Wyatt Bleier, Carann Rak, Joseph Clarke, Eric Rahn, Chris Speelman, Dominic Iacobucci, Jim Kostura, John Reynolds, Dominic Berardi, Americo Soza and his family, Marcela Selman and her family, Jerry Sabatini, Alex Wilbur, Ross Barney, Huili Feng, Lara Hay, Eddie Huber, Mary Ellen Young, Nora Luehmann, and…

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Veile, Rune. Personal interview with Danish architect, September 11, 2005.


INTERNET SOURCES

http://www.archiwood.net/

http://www.dipoli.tkk.fi/english/

http://www.gofinland.org/


www.millenniumpark.org


