



RED HILL VALLEY INTERPRETIVE CENTRE

Schematic Design Brief • April 2015



for the Joint Stewardship Board



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EXECUTIVE SUMMARY

Acknowledgements

The Red Hill Valley Environmental Interpretive Centre Design Brief is an informed result of the generous and thoughtful contributions by the Joint Stewardship Board including:

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Executive Summary

Definitions

Biophilia Biophilia is a term popularized by Harvard University myrmecologist and conservationist E.O. Wilson. Wilson uses the term to describe the extent to which humans are hard-wired to need connection with nature and other forms of life. “Biophilia...is the innately emotional affiliation of human beings to other living organisms. Innate means hereditary and hence part of ultimate human nature.” (Wilson, 1993, p.31). To Wilson biophilia is a system of “complex of learning rules” we have developed over thousands of years of evolution and human-environment interaction.

Ecotourism Ecotourism is cultural tourism (a cross-cultural experience), nature tourism (assisting with conservation programmes), a travel-learn experience (discover how we are coping with modernity), a little bit of soft adventure (just being here is an adventure), and benefiting the well-being of indigenous peoples.

Source: Western Samoa, National Ecotourism Programme

Permaculture Consciously designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fibre and energy for provision of local needs.

Source: David Holmgren

Sustainable Design Truly sustainable architecture could be defined as the creation of buildings for which only renewable resources are consumed throughout the process of design, construction and operation. Sustainability status must also include the manufacture and transportation of materials, components and construction equipment.

Source: Royal Architectural Institute of Canada

Executive Summary

In creating the Red Hill Valley Interpretive Centre, the Joint Stewardship Board tells a story of the changes in the world that they envision. The Centre will be a story of the communities that share a history in the Valley, the values that bind our communities together and our path to a resilient future. Here, exchange and engagement foster the potential in us to understand that....

...we are connected to a community, but a community that transcends time.

Rick Hill Sr. (Tuscarora)

Chair, Haudenosaunee Standing Committee on NAGPRA

As you consider this Design Brief, we ask that you deem the Interpretive Centre as a living portal in the exchange of ideas, discourse, research, creativity, and discovery. The Red Hill Valley is a rich network of natural systems ready to transform auspicious relationships into unique opportunities for our communities' participation. Gathering, learning and meditation, collaborations, forums, training opportunities, speakers, and inventive partnerships will introduce new ideas and connections. We use the analogy of a bridge to describe these connections.

We are the bridge between the past and the future of the Red Hill Valley. We stand here together, to share with each other our stories of the past told in the landscape. Embodied in the valley is a reciprocal relationship between this earth and generations before us. We look to the past, to reflect on our ancestors' experiences, to breathe new life into our inheritance by adding our own thoughts and experiences in the present. In facilitating a deeper understanding of our place in the world, the Centre translates experiences into a shared universal visual and physical language that can be felt.

In this document, the Joint Stewardship Board, with architects Tillmann Ruth Robinson, prepared a framework to develop a new and worthy destination in the Red Hill Valley. What follows is a description of our intent to bring the experience of the Valley to life. We will outline this intent through a creative process summarized by our Vision (Our Aspirations), Guiding Principles (Connecting Philosophical and Design Intentions), Concept Design (A Framework for Design) and Schematic Design.

1.0 RESEARCH, ANALYSIS + ENGAGEMENT

1.1 Project History – How We got Here

The Red Hill Valley is a striking landscape linking the top of the Niagara Escarpment with the shores of Lake Ontario. Here, the story of past histories and possible futures reside for us to experience through a new Environmental Interpretive Centre in the Red Hill Valley. This initiative is headed by the Joint Stewardship Board (JSB), a collaborative agency of the Haudenosaunee Confederacy Council of Chiefs and the City of Hamilton. Committed to creating a meaningful, shared community asset to tell these stories, the JSB issued an Environmental Interpretation Centre Statement of Purpose noting:

Major components of the planned Joint Stewardship Board Environmental Interpretation Centre may include a park, recreational trails, outdoor education spaces, research and resource centre and associated developments such as environmental art, cultural arts market place and demonstration projects of sustainability. (July of 2009)

Outlined in this Statement is a suggested program for an estimated 40,000 square feet of permanent and changing exhibitions that connect the visitor to the biosphere of the escarpment and Red Hill Valley. Since this initial statement, the JSB has recognized a shift in the focus of interpretive centres from a static to an immersive experience. As noted by Rick Hill:

The exhibits are more than objects in display cases. The most effective exhibitions create an atmosphere for learning and immerse the visitor in the cultural environment of the community.

Dynamic, inspiring and enabling, the Interpretive Centre will engage the entire Valley as a learning environment. In facilitating a deeper understanding of our place in the world, the Centre translates experiences into a shared visual and physical language that can be felt. In listening, tasting, smelling, touching, living and telling the landscape and our histories, we remove our distance of the things that ensure our well-being. If we are aware of and can engage in experiencing these things more deeply, they will matter to us more than they do now.

The JSB has drawn upon the following sources in order to rethink responsible stewardship:

- Ecotourism: Responsible tourism is ecologically and culturally sensitive, as well as economically sustainable.
- Biophilia: Humans share an innate bond with nature.
- Permaculture: It guides us to mimic the patterns and relationships we can find in nature and can be applied to all aspects of human habitation.

1.0 Research, Analysis + Engagement

1.2 Joint Stewardship Engagement Process – Forward to a Vision

The goal of this Brief is to describe the Schematic Design for the Red Hill Valley Interpretive Centre, the second phase in the development of a built project that includes the following.

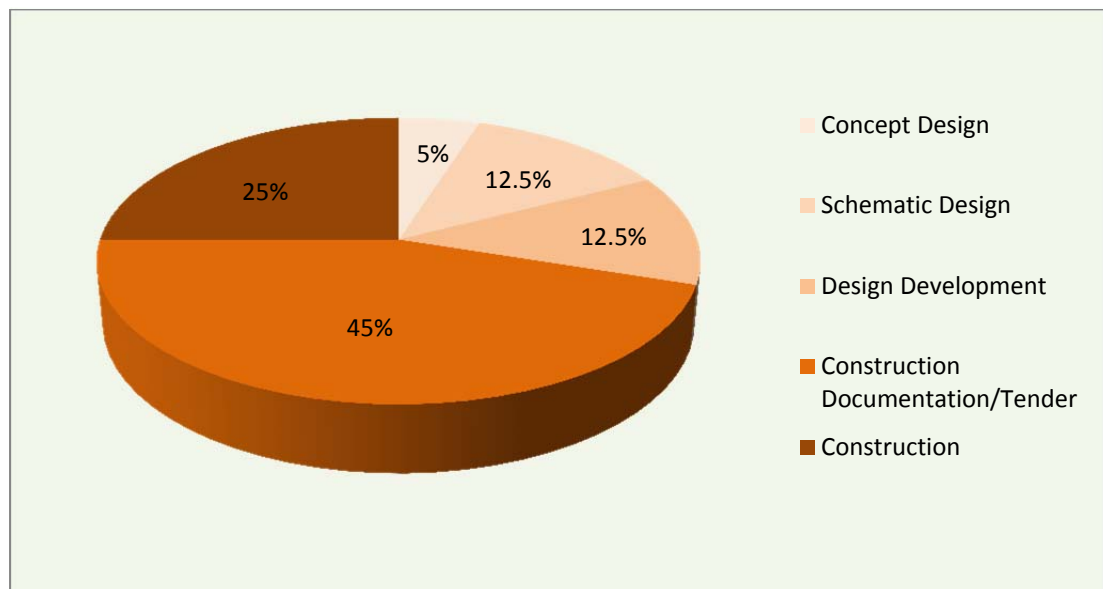
- Conceptual design phase: Also known as Pre-Design, this first phase defines a basic understanding of budget, schedule, program and site, and is illustrated by a design parti – the chief organizing thought presented in the form of a basic diagram and a simple statement
- Schematic design phase:
 - Development of Concept Design into a schematic plan that describes areas and relationships of spaces as well as 3-dimensional explorations
 - Preparation of Order of Magnitude costing.
- Design development phase:
 - Completion of the detailed design including engineering systems.
 - Discussions with Authorities Having Jurisdiction. .
- Construction documentation/Tender phase:
 - Preparation of final contract documents for the Project sufficient for co-ordination of all components and elements of the Project.
 - Construction documentation (drawings and specifications) for the purposes of construction.
 - Preparation and collation of tender documentation in sufficient detail to enable a bid or bids to be obtained for the construction of the Project.
 - Identification and evaluation of potential contractors and/or specialists for the construction of the Project. Obtaining and appraising bids and submission of recommendations to the client.
 - Assisting with the application for Building Permit.

1.0 Research, Analysis + Engagement

1.2 Joint Stewardship Engagement Process – Forward to a Vision cont.

- Construction phase:
 - Perform periodical general review and submit required documentation to the client, the contractor and authority having jurisdiction.
 - Administration of the construction contract i.e. certificates of payment, supplementary instructions, change orders, etc.
 - Perform a review to establish Substantial Performance and deemed completion as defined by the Construction Lien Act.

Below is a diagram identifying the effort in each phase.



1.0 Research, Analysis + Engagement

1.2 Joint Stewardship Engagement Process – Forward to a Vision cont.

Together with the Joint Stewardship Council, we approached this project by engaging the Council in an integrative process of identifying the singular aspirations describing physical activities, social interaction and engagement for their communities. We then built upon these opportunities that connect a place with what makes it special. An essential first step in understanding the implications of a shift from a passive to an immersive experience in the Red Hill Valley is the development of a set of a vision and design guidelines. Meetings with the JSB were structured to this end as follows.

Meeting 1

- Development of the Vision: The Visioning Session is a process of collecting the singular aspirations that describe physical activities, social interaction and engagement for Red Hill Valley communities. Organized as a round table discussion, the Session gathers and synthesizes ideas expressing what the experience of the Red Hill Valley will be.

Meeting 2

- Review of Vision Statements.
- Exploration of the Design Principles: The Design Principles or “building charter” is developed to help ensure the project vision now and in future phases. Each will guide an aspect of the Interpretive Centre by describing the philosophical intentions and desired outcomes of the building. Once complete, these documents along with the Vision Statement will be the benchmark for assessing the success of the Centre.
- Preliminary discussions on facility program and site location.

Meeting 3

- Review of the Design Principles.
- Presentation and discussion of a design Parti: The Parti is a simple diagram that summarizes both the vision and principles of the project, an abstract drawing that conveys the primary organizing thought or the “main idea of the project.”
- Presentation and discussion of a Concept Design: Advancing the Parti.
- Further examination of the program and site options.

Meeting 4

- Review of Vision Statements and Design Principles linking the detailed Concept Design illustrating the functional relationship of the program and site.
- Presentation of a Site Specific and detailed Concept Design and facility program. The Concept is illustrated using plans and 3D modelling.

1.0 Research, Analysis + Engagement

1.3 Site Assessment

Parallel to the Meetings noted above, the JSB undertook an evaluation of sites for the EIC considering:

- Mud Road
- Carmen's
- Eramosa Karst
- Blacksmith
- King's Forest Golf Course
- St. Christopher's School
- Red Hill Bowl

On October 22nd, the JSB visited and evaluated these sites using criteria developed with the JSB, architects Tillmann Ruth Robinson, and the City of Hamilton including:

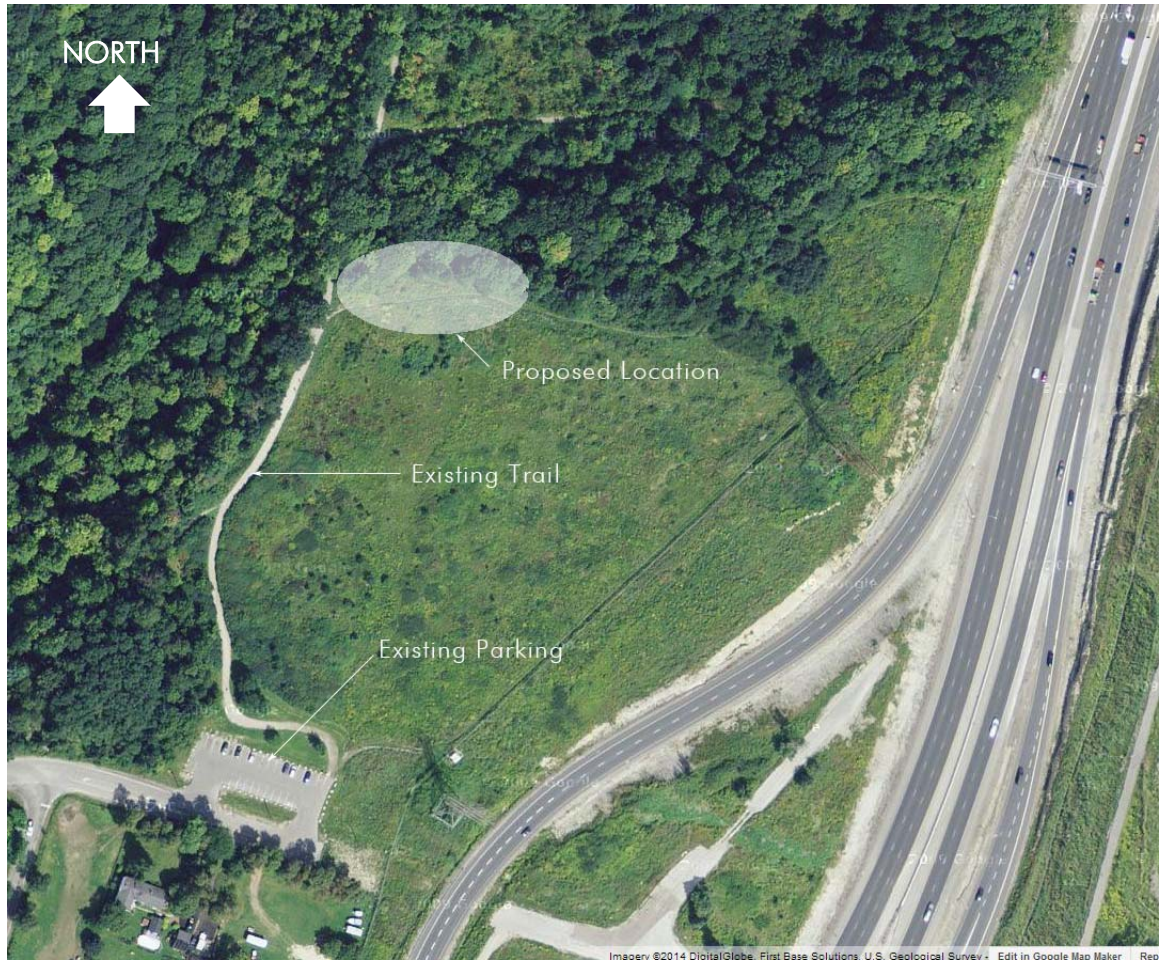
- | | |
|----------------------------------|------------------------------------|
| • Size | • Proximity to existing trails |
| • Well-treed | • Proximity to existing buildings |
| • Natural Site | • Suitability for outdoor teaching |
| • Proximity of existing services | • Approvals required from NEC |
| • Access to the site | • Ownership |
| • Proximity of existing parking | • Other |

1.4 Site Selection

The **Mud Street** site was selected as the best site for the Interpretive Centre, as it satisfies a number of selection criteria. The site can accommodate the 1+ acre required, it is a well-treed natural area, there is water, sewer, and hydro servicing within 100 M, and is very accessible from both the LINC and RHV Parkway. This site has the added advantage of providing a view of the valley, and the possibility of introducing an element that is visible from the RHV Parkway. There is ample parking. The site sits at a RHV trail access point. While there are some steep areas along the trail, there are less steep portions as well, and some of the trail is paved. The site is NEC Urban Area designated which may provide some advantages for permitting if the Centre is returning the land to conservation type activities.

1.0 Research, Analysis + Engagement

1.4 Site Selection cont.



The Mud Street Site (Final Selection)

2.0 VISION AND DESIGN PRINCIPLES

Working with the Joint Stewardship Council, architects Tillmann Ruth Robinson lead a visioning exercise to think through diverse interests towards common aspirations – the Vision Statements – for the Interpretive Centre. Creating a shared vision for an exceptional visitor experience began with a series of round table conversations exploring future scenarios for community engagement with the Valley. During these conversations we developed Vision Statements describing the opportunities that connect the Red Hill Valley with what makes it special.

2.1 Vision – Our Aspirations

ONE – We inherit a responsibility to make decisions on behalf of the coming faces, so that they may enjoy what we have today.

...we are connected to a community, but a community that transcends time.

Rick Hill Sr. , Chair

Haudenosaunee Standing Committee on NAGPRA

Everything that we have now is the result of our ancestors who handed forth to us our language, the preservation of the land, our way of life and the songs and dances. So now we will maintain those and carry those on for future generations.

G. Peter Jemison. Faithkeeper

Cattaraugus Reservation, Seneca Nation

TWO – By better understanding our past and our present, we prepare for a resilient future.

We are the bridge between the past and the future of the Red Hill Valley. We stand here together, to share with each other our stories of the past told in the landscape. Embodied in the valley is a reciprocal relationship between this earth and generations before us. We look to the past, to reflect on our ancestors experiences, to breathe new life into our inheritance by adding our own thoughts and experiences in the present.

As we stand here, it is also our duty to engage the future by finding new ways to manifest our connectedness to family, community and the land. At the edge of the bridge, we can find the capacity to recover the path to peace, a good mind and a big love, to the right decisions now so that those who come after us can benefit.

2.0 Vision and Design Principles

2.1 Vision – Our Aspirations cont.

THREE – By building emotional connections to the land and each other, we can be part of something good in the future.

In facilitating a deeper, understanding of our place in the world, the Centre translates experiences into a shared universal visual and physical language that can be felt. In listening, tasting, smelling, touching, living and telling the landscape and our histories we remove our distance of the things that ensure our well-being. If we are aware of and can engage in experiencing these things more deeply, they will matter to us more than they do now. Can we then find within each one of us the commitment to take responsibility for the one piece of a more resilient future? It is our own behavior that will profoundly affect the well-being of people who inherit the results of our decisions.

2.2 Design Principles – Connecting Philosophical and Design Intentions

In the process of developing your Vision for the Interpretive Centre, we distilled five main principles – the Design Principals – that will guide us through, and inform key design decisions during the remainder of your project. We will also use the Design Principles to measure success. At the conclusion of each phase, we “test” our design to ensure we are embracing the spirit of each Principle listed below.

ONE - Provide a framework that will awaken our connection to the land and accommodate a shift in thinking towards an enlightened awareness of our place in the world.

TWO - Create a place that is an immersive learning environment, truly connected to the site and integrated with the natural patterns it embodies.

THREE – Tell, through modest building, a story about the history of the valley, the cultural relationship with the land and our future responsibilities to the coming faces.

FOUR - Design interior and exterior multi-sensory spaces to engage and enable an emotional, physical, mental and spiritual connection to the Red Hill Valley ecosystem.

FIVE - The project will be dynamic and adaptable with a responsible use of available resources and materials.

2.0 Vision and Design Principles

2.3 Functional Program

The Visioning process concluded that a modest approach to the building program be adopted given the requirement to create an economically viable model as well as a gentle footprint in the landscape of the Valley. A program for a core facility will propose both the essential spaces for a first development and a system of growing the Centre as future generations bring their ideas to the Valley.

Total building area suggested by architects Tillmann Ruth Robinson is summarized below.

EDUCATIONAL PROGRAMMING	1,200 sqft
<ul style="list-style-type: none">▪ Schools / Camps• Crafts• Class	
EXHIBITION SPACE	1,200 sqft
<ul style="list-style-type: none">• Art Gallery• Historical Display• Artifacts	
RECREATION & GATHERING	(2,500 sqft)*
<ul style="list-style-type: none">• Teaching• Gardens• Festivals / Ceremonies	
INTERACTIVE/DIGITAL	600 sqft
<ul style="list-style-type: none">• Website / Blog• Digital Display• Resources	
ANCILLARY SUPPORT	2,000 sqft
<ul style="list-style-type: none">• Entry / Circulation• Washroom, Storage	
Sub-Total	5,000 sqft
Planning (1.2% Efficiency)	1,000 sqft
TOTAL GROSS FLOOR AREA	6,000 sqft

*Exterior sapce not included in the Gross Floor Area

2.0 Vision and Design Principles

2.4 Sustainability Goals

Conclusions documented in “Red Hill Valley Interpretive Centre Ideas 07” noted the following:

More than the efficiency of the building, our facility needs to reflect a natural architecture, using as much local materials as possible, and being reflective of the indigenous connection to the earth. There needs to be both ecological and aesthetic harmony between the structure and its surrounding natural and built environment.

The building needs to draw you in to this kind of connection.

The presentation titled “Red Hill Valley Environmental Interpretive Centre – Architectural and Landscape Considerations”, sustainable or green architecture will mean that which is deeply rooted in, and reflective of, the ecosystem of the Red Hill Valley. The Joint Stewardship Board is keenly aware of their role in embracing these systems as responsible of stewards of the Valley. In fact, the Centre is a modest extension of the site, a simple offering of self-sufficient infrastructure that weaves itself along the path traveling the Valley wall.

We choose passive green design strategies as a way of working in partnership – and respect – with the site’s unique features towards reducing the energy required for, or crafting a self-sustaining system for a comfortable environment. Passive systems are simple, have few moving parts, and require minimal maintenance and require no mechanical parts. Building specific strategies will include examining:

- solar heat gained by orientation and by opening (glazing) size;
- storing solar heat stored by thermal mass in walls and floors;
- examining the role of shade in passive cooling; and
- cooling by encouraging natural ventilation through the careful placement of openings.

Opportunities for passive sustainable site strategies explored will consider:

- minimal grading of the site that preserves mature trees;
- maintaining storm water on site;
- using native planting species; and
- collecting and using rainwater for irrigation.

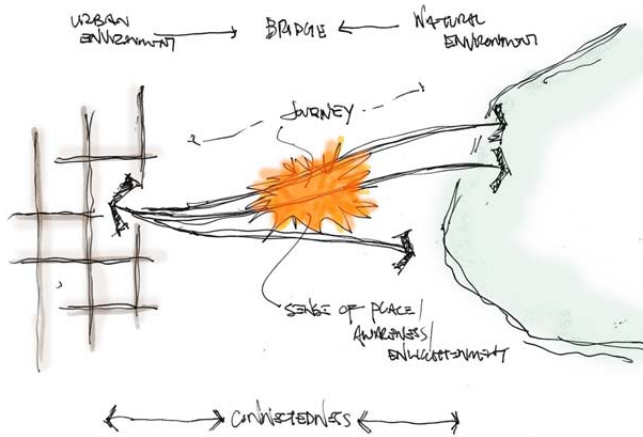
3.0 SCHEMATIC DESIGN

3.1 Concept Design – The First Step in the Schematic Design Process

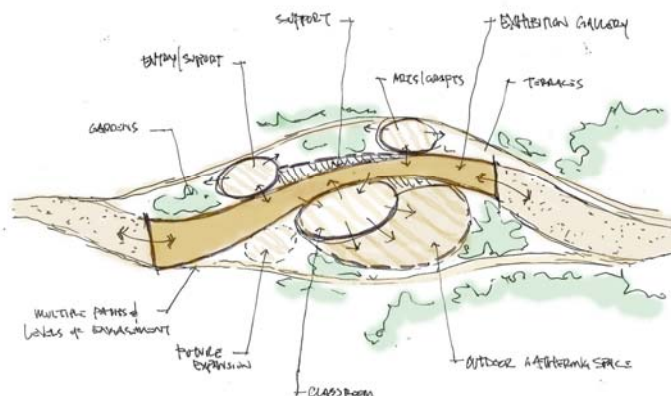
The Parti, the generator of the Concept Design, is a simple diagram conveying the primary organizing thought – the bridge as a journey of discovery between urban and natural environments – experienced over time through a series of components exploring the site we describe as:

- a bridge, path and spine;
- a series of linking program modules along the spine;
- a network of connections across the site and out into the Valley; and
- a sequence of enclosing garden and landscape elements.

The Parti



The Concept flows from the Parti



3.0 Schematic Design

3.2 Refinement of the Concept Design – Linking the Concept Design to Location

The selection of the site at Mud Street is also influenced by the physical relationship between the site characteristics and the aspirations expressed in the Vision and Principles. Slipped under a meadow overlooking the top of the Valley, the Centre marks a modest start to links that communicate the importance of place. The Centre will help us listen to the vibrations here – to the knowledge that is in the bones of this land. It takes time, a commitment to move and discover, to expand our consciousness and awareness of the connections that we share.

The following Concept Design engages the spirit of these ideas guided by three visual metaphors.

The Centre is a framework that invites many levels of engagement and movement through the site.

Visitors may choose to walk past on their way to other destinations. One can rest on one of the two outdoor decks, the first located on the grassy upper meadow or the second located below in the sheltered outdoor classroom. Or, travel through the building itself along a ramp that gently travels between levels where framed views to the Valley and Centre programs are visible.

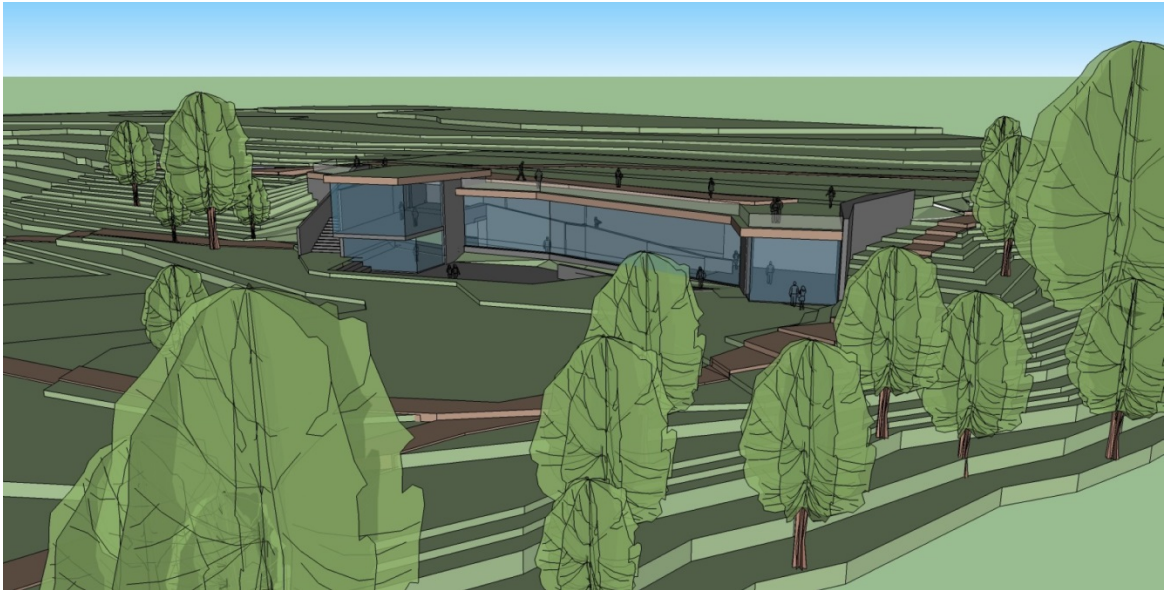
The Centre is a fragment of the escarpment and integrated with the natural patterns it embodies.

Here on the Mud Street Site, the Centre takes advantage of the drop between the meadow at the trail's entry and the slope into the Valley. Tucked into a rocky ledge, the only evidence of this building are the sloping and accessible grassed roofs. Once inside or below the meadow, the Centre opens onto the beauty of the Valley, using the geometries and materials around it as precedents for its character.

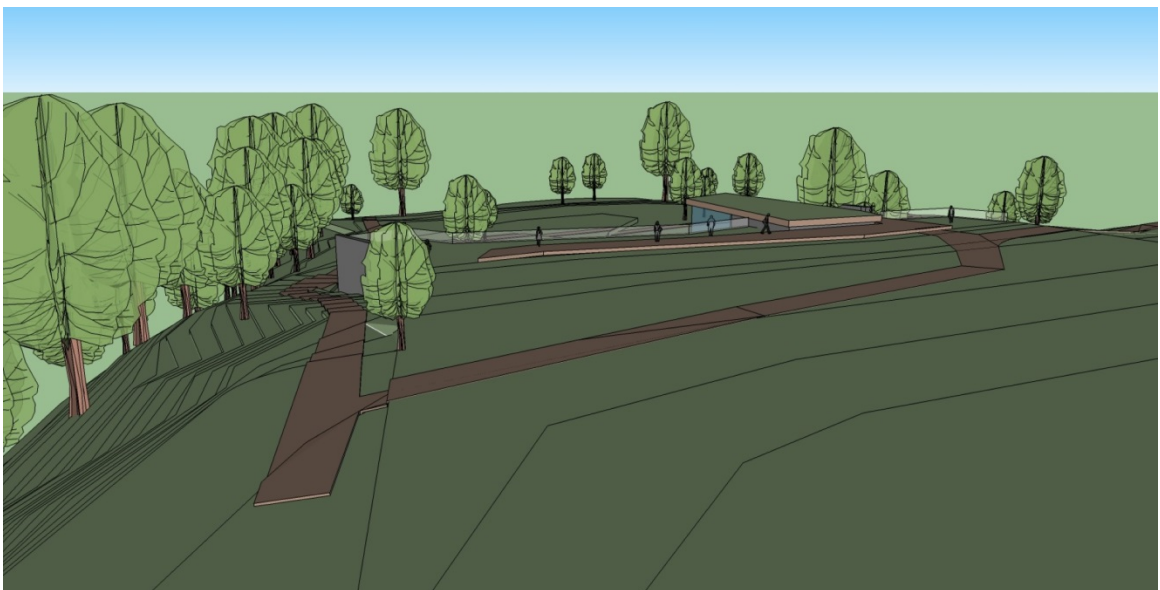
The Centre is a modest proposition, our responsibility to the land and those yet to come. Spaces are dynamic and adaptable with a responsible use of available resources and materials. The small footprint of built space is configured to maximize flexibility and adoptability in the use of indoor and outdoor classrooms and exhibition space. In tucking the building into the sloping landscape, the Centre also incorporates passive strategies for sustainable design.

3.0 Schematic Design

3.3 Concept Design Drawings



Perspective view looking south



Perspective view looking north

3.0 Schematic Design

3.4 Schematic Design

The built environment is a powerful force as it influences the mind, body and spirit. In developing the Schematic Design, we further explored how the Centre will invite visitors to consider their perceptions of the relationship between site and sustainable environments through:

- sensory experiences, such as natural light, views and water features are therapeutic and boosts the immune system; and
- connections to natural elements effecting physiological assistance in reducing stress and anxiety.

Building material and systems to be integrated into the Interpretive Centre are selected to engage visitors in this important discourse with the Valley.

Integrated Systems

- Siting: The partially buried structure mitigates extremes in temperature.
- Orientation: Glazing optimizes passive solar performance.
- Green roof: The habitable landscaped roof reduces the Centre's visual impact on the landscape, and permits a greater percentage of the valley to remain natural and undisturbed. A landscaped roof also contributes to further temperature stabilization and insulation.
- Thermal walls: The thermal mass of the Centre's walls retains, stores and radiates heat in the winter, and cools the building in the summer.
- Rain water: The rainwater collected along the top of the Centre is directed into a storage tank from which it can be distributed for irrigation and domestic water. Grey water is collected, recycled and recirculated in the plumbing system.
- Solar: Power is collected by a local array of solar panels positioned at the edge of the forest. More energy than is needed may be redistributed into the grid.
- Energy: Energy may be saved through a highly-insulated building envelope (double the R-value required by code). The use of geothermal ground-source heat pumps will also be explored.

Materials

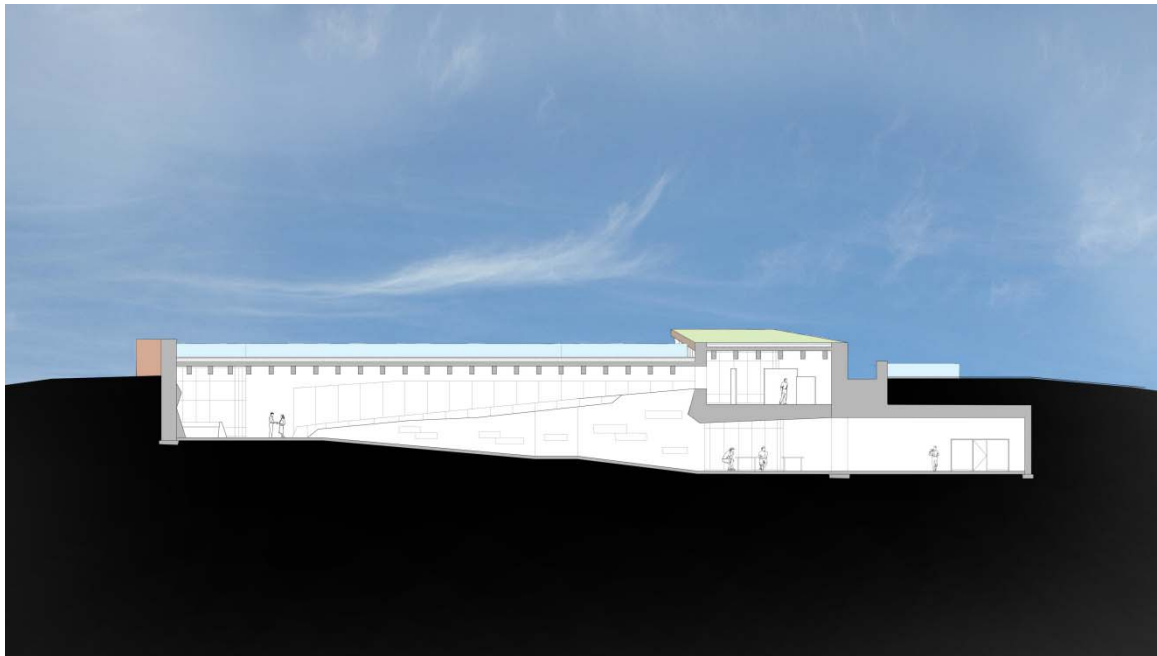
Innovative use of local materials will be key to making the Centre a unique extension of the extraordinary landscape that will make this place special. "Rammed" local earth mixed with concrete and colour additives, will not only reflect the colour of the landscape, it's mass will retain warmth in the winter and cooling in the summer. Only Ontario Certified Wood will be used throughout building – both structurally and aesthetically – for the best use of a renewable resource. The addition of natural stone will also contribute to the Centre's thermal mass as well as enable the building to recede into the existing landscape.

3.0 Schematic Design

3.5 Schematic Design Drawings



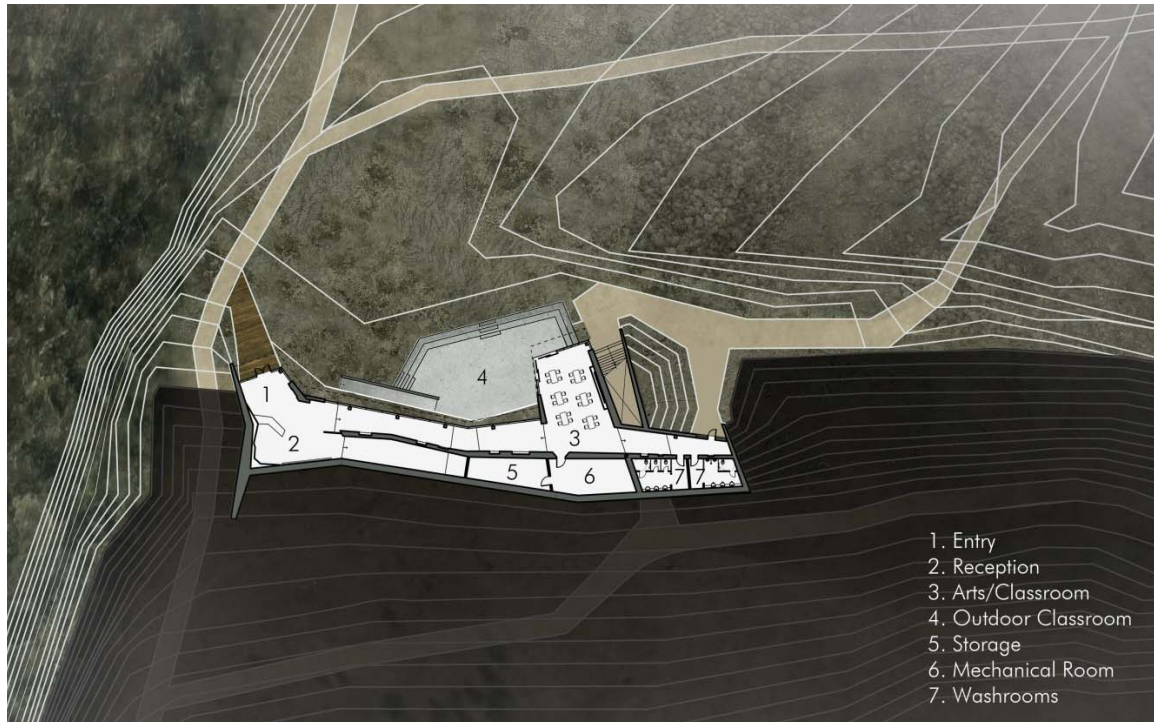
Site Plan



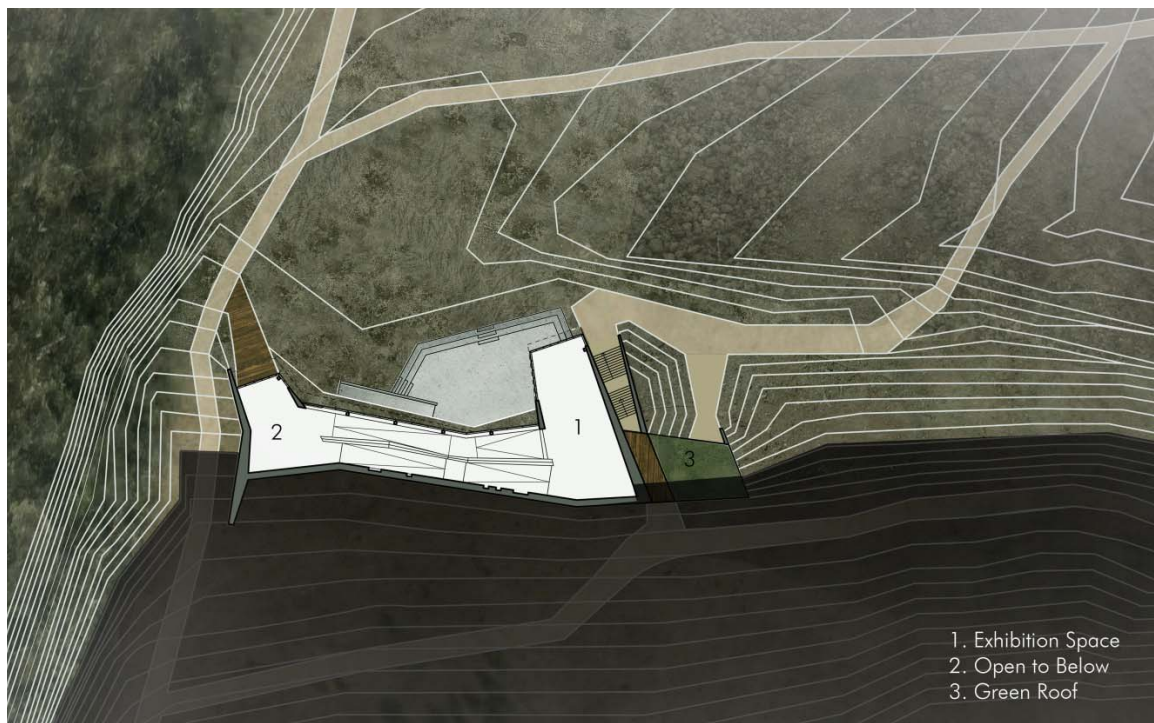
East / West Section

3.0 Schematic Design

3.5 Schematic Design Drawings cont.



Level 1 Plan



Level 2 Plan

3.0 Schematic Design

3.6 Order of Magnitude Costing

An Order of Magnitude Costing (OMC) is an estimate of costs and time provided in the early stages of a project when its scope and requirements have not been fully defined. OMCs are based on a cost per square foot grounded in our experience and in discussion with local contractors and consultants. In the next phases of this project, we recommend that a cost consultant be retained.

Estimated Construction Cost: \$350.00 per sq. ft.

6,000 sq. ft. x \$350.00 = \$2,100,000.00 (excluding HOST.)

Exclusions:

- Site work and landscaping
- site servicing
- furnishings and equipment
- price escalation
- soft costs
- professional and design fees
- development charges and levies
- financing costs
- relocating costs
- abnormal soil conditions
- inspection and testing
- post contract contingencies
- LEED costs

4.0 SUMMARY

Community-based museums and cultural centers strengthen the bonds that connect generations. We remember ourselves in these places and dream about who we want to be. At their best, these places are homes for cultural expression, dialogue, learning, and understanding. They serve the communities and people who initiated them, as well as wider audiences, by stimulating cultural activism and continuity that endures for the sake of all our children.

Karen Coody Cooper & Nicolasa I. Sandoval, Editors Living Homes for Cultural Expression, North American Native Perspectives on Creating Community Museums, Smithsonian Institution, 2006

APPENDIX

Sources

- Red Hill Valley Interpretive Centre – Architectural and Landscape Consideration (PowerPoint)
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- Environmental Interpretation Centre Planning, Hamilton-Ohsweken, Ontario, Canada, April 2009
- Environmental Interpretive Centre – Potential Sites, October 2013
- Constantly thinking about this: a reflection of Haudenosaunee worldview, mnemonic continuum, and the retention of knowledge, AGO Symposium, October 14, 2014