NK’MIP DESERT CULTURAL CENTRE MEDIA KIT
Project Overview

The Nk’Mip Desert Cultural Centre is designed to be a specific and sustainable response to the building’s unique context—the unusual Canadian desert found in the South Okanagan Valley in Osoyoos, British Columbia. Sited adjacent to a remnant of the Great Basin Desert (approximately 1,600 acres are being preserved by the band as a conservation area), this interpretative centre is part of a larger 200-acre master plan.

Nk’Mip is the first of a number of new B.C. aboriginal centres, and part of a growing trend to explore the expressive potential of architecture to convey the rich past and the transforming future of aboriginal culture. The practical reasons behind this architectural exploration grow out of provincial leadership—a premier whose efforts to improve aboriginal relations have resulted in changes to the treaty process—as well as a shift in the regulatory environment governing the types of buildings permitted on reserve land.

The building features indoor and outdoor exhibits that celebrate the culture and the history of the band, and is designed to be an extension of the remarkable site, and reflects the band’s role as stewards of the land. The desert landscape flows over the building’s green roof, held back by a rammed earth wall. The partially submerged building is sited very specifically to focus the visitor’s eye away from the encroaching development of Osoyoos to the west, with the height of the wall set to create a layered view of the desert rising up in the middle ground, receding to the riparian landscape adjacent, and the mountains in the distance.

The attenuated entry sequence from the parking area moves visitors through a series of nested concrete walls up to an entry plaza at the end of the rammed earth wall. The plaza—used for collecting large groups, and signage about events of the day—leads along a low concrete wall that separates the original desert landscape and the building. This route is further defined by channel of water that draws people towards the entry, past the cor-ten steel gate of the service court and administration access. Entry into the interpretive centre occurs at the midpoint of the gently arcing wall. Inside, a theatre and “black box” exhibition space present information about the band and its historical relationship with the land. The round volume of the “pit house” at the centre of the exhibition space invokes the experience of conversation around a fire. From here, visitors move through a glazed wall into exterior exhibit space featuring information on native planting, an outdoor performance area and amphitheatre, a tule mat teepee, a large figural sculpture, and a snake research area demonstration space. This area also serves as a trailhead for guided and unguided walks along 50 kilometres of paths through the desert. Small interpretive pavilions and a village of reconstructed pit houses and interpretive sculptures punctuate these trails.
Sustainability Features

The Nk'Mip Desert Cultural Centre is located in one of the most spectacular and endangered landscapes in Canada. Its rare desert condition is the northernmost tip of the Great American Desert, which extends southward as far as the Sonoran Desert in Mexico. This parcel of land is the largest intact remnant of this unique habitat in Canada. It is part of the land of the Osoyoos Indian Band. This band also belongs to the larger Okanagan Nation which extends down into the US (the Okanagan represents a broader geographic area of bands sharing common language with separate constituent bands). The project’s concern with deep sustainability grows out of the fragility of this landscape, and reflects the core values and history of the band.

The extreme climate made sustainable design a very particular challenge. Hot, dry summers and cool, dry winters see average temperatures ranging from −18 degrees to +33 degrees and often reaching +40 on summer days. The building’s siting and orientation are the first strategic moves toward sustainability: the partially buried structure mitigates the extremes in temperature, and its orientation optimizes passive solar performance, with glazing minimized on the south and west sides. The project’s ambitious approach towards sustainable design also includes the following features:

The largest rammed earth wall in North America
At 80m long, 5.5m high, and 600mm thick, this insulated wall (R33) stabilizes temperature variations. Constructed from local soils mixed with concrete and colour additives, it retains warmth in the winter, its substantial thermal mass cooling the building in the summer—much like the effect the surrounding earth has on a basement.

The use of bluestain pine
A recent infestation of pine beetles in British Columbia has led to an excess of bluestain pine, which here is used in interior and exterior applications. Although bluestain pine is a local material not normally specified for finished building use, Nk’Mip is something of a demonstration project, showing how it can be used both inside and outdoors to celebrate its unique visual qualities As its name suggests, the wood has a blue-tinted cast as though a blue wash has been applied, rather than the typical yellow colour more typical of pine. Although its inherent structural qualities are equivalent, the preferences of the powerful Japanese international market have historically influenced demand for yellow (white) pine.
A habitable green roof
This habitable landscaped roof reduces the building’s visual imprint on the landscape, and allows a greater percentage of the desert landscape habitat to be re-established on the site (replanting uses indigenous species). The roof also provides further temperature stabilization and insulation.

Mechanical features
In-slab radiant cooling and heating in both ceiling and floor slabs create an even, comfortable environment that avoids blasts of air, noise and dust. Coupled with 100% outdoor air displacement ventilation, the system will result in savings of 30 to 50% over a forced air system.

Endangered species research
The building program includes facilities for the band’s award-winning rattlesnake research project, as well as public viewing areas where visitors can see endangered rattlesnakes captured, tagged and microchipped for further study and protection.

Careful water use management
Water is precious in the desert, and a spare channel of water at the entrance along the rammed earth wall introduces this theme. Less visibly, demand on the site fed well is reduced by 40% by incorporating low-flow faucets, waterless urinals, and dual flush toilets.
Rammed Earth Wall

North America’s largest rammed earth wall gives the building exterior a unique material and poetic sensibility, its graduated layers of earth shades evoking geological sedimentation within a distinctly contemporary architectural language. The wall has the appearance of being at once handmade and precise—its layers irregular, and its overall form sharp and geometrical, (the wall’s surface telegraphs the familiar horizontal lines from the wooden formwork used in constructing it) as well as the irregular horizontal strata of the compacted layers of earth used to construct the wall.

Rammed earth construction is a traditional building technique found most often in dry regions where wood is scarce. The modern version of this earth-based wall system combines two –250mm wythes of compacted sand and cement with 100mm of insulation sandwiched between. Successive layers of differently coloured local soils were placed into the 600mm wide formwork and a pneumatically powered tamper was used to compress each layer to about 50 percent of its untamped height. Sedimentary-like in appearance, the exposed surface acts as the finished wall, is extremely stable and doesn’t off-gas toxic or greenhouse gas emissions. The technique results in a physically strong, durable wall with excellent thermal qualities—heating up slowly during the day in the hot Okanagan sun, and releasing its heat in the evening.

Sustainability of building process also extends to the involvement of band members on the wall’s construction, contributing to the long-term ecological sustainability of the area, of the band, and providing an opportunity to evolve an authentically South Okanagan building technique (something of an antidote to the faux Santa Fe style that increasingly dominates the region).

This project created the opportunity for the Osoyoos Indian Band to develop unique, highly artisanal construction skills as rammed earth contractors and a team of band members worked with the contractor on the fabrication of the wall.
Fact Sheet

Project Background
DIALOG was retained by the Osoyoos Indian Band to master plan the Nk’Mip Desert and Heritage Centre’s 200-acre site, part of a new resort destination that includes a winery with vineyards, an 18-hole golf course with club house, and tourist accommodation.

Client
Osoyoos Indian Band

Location
Osoyoos, British Columbia, Canada

Context
The eastern shore of Lake Osoyoos, on the Northern tip of the Great Basin Desert, in a 1600-acre conservation area.

Size
1115 square metres

Completion
June 2006

Program
Indoor and outdoor exhibition spaces, theatre, gift shop, administration offices, rattlesnake research facilities, 50 kilometres of trails.

Green Design Features
- Rammed earth wall
- Orientation/Siting
- In-slab Radiant Heating and Cooling (in ceiling and floor slabs)
- Habitable Green Roof
- Use of Bluestain “Beetle” Pine Wood
- Water Use Management
- Support for Endangered Species Research

Materials
Rammed Earth, Concrete, Bluestain Pine Cladding

Structure
Concrete

Mechanical Systems
Passive thermal massing with the rammed earth wall and landscape roof, and in-slab radiant heating and cooling with 100% outdoor air displacement ventilation.
Project Credits

Architecture Team
DIALOG (formerly Hotson Bakker Boniface Haden Architects)
Principal-in-Charge: Bruce Haden
Project Architect: Brady Dunlop
Project Team: Norm Hotson, Stephanie Forsythe, Tina Hubert, Julie Bogdanowicz

Structural Engineering
Equilibrium Consulting Inc.
Principal-in-Charge: Eric Karsh
Project Engineer: Ivan Ursic, Design Engineer: Ben Heath
Project Team: Ann Tomlinson, Raymond Vitkauskas

Landscape Architecture
Phillips Farevaag Smallenberg
Principal-in-Charge: Chris Phillips
Project Team: Ken Larsson, Mike Enns, Blair Guppy

Mechanical Engineering
Cobalt Engineering
Partner-in-Charge: Ken Newbert
Project Manager: Tim Brown

Electrical Engineering
MCL Engineering
Principal-in-Charge: Marc Langdon

Code
LMDG Code Consultants
Frank Mattia

Exhibit Design
Aldrich Pears Associates
Partner-in-Charge: Phil Aldrich
Project Managers: Marc Belanger, Richard Lien
Project Team: Sheila Hill, Victor Chorobik, Megan Long, Val Kan

Acoustic
BKL Consulting
Principal-in-Charge: Doug Kennedy

Theatre Design
Douglas Welch Design
Principal-in-Charge: Doug Welch
Project Team: Paul Hodson
Theatre Electrical
Acumen Consulting Engineers
Project Manager: Garry Musgrave, Philbert Ang

Live Displays
Bufo Incorporated: Harry Parsons

Retail
Retail Excellence: Natalie Tan

Client
Osoyoos Indian Band
Client Team: Margaret Holm, Brenda Baptiste, Charlotte Sanders, Chris Scott, Mel Wooley

General Contractor
Greyback Construction
Project Manager: Craig Donoghue
Site Superintendent: Ray Eichberger, Armin Helbling, Larry Kenyon

Rammed Earth Wall Sub Contractor
Terra Firma Builders Ltd.
Project Manager: Meror Krayenhoff

Photography
Nic Lehoux Photography
DIALOG was launched in September 2010 as the new name for the merger of leading national design firms Cohos Evamy, Hotson Bakker Boniface Haden, Mole White Associates, and Office for Urbanism.

DIALOG is the language of collaboration. The name conveys the firm’s uniquely collaborative approach, founded upon engagement of clients and communities by multidisciplinary teams in an interactive planning and design process that encompasses architecture, engineering, interior design, planning and urban design services. It is an approach that has garnered international recognition for the firm’s outstanding contributions to the public realm and the design of cities.

At DIALOG, our philosophy is to deliver outstanding solutions that leave a lasting, positive mark on the community. Our people are unabashedly client-focused and passionate about their work – and our culture embodies talent, energy, creativity, integrity, tenacity, problem-solving ability, teamwork and a sense of fun.

In a world of increasing challenges in the way Canadians live, move and work, DIALOG is a strong voice for innovative thinking and sustainable leadership – a discussion that benefits from the collaboration of people with unique perspectives and skills.

One of our firm’s core values is sustainable design, and we bring that value to all of our projects. We typically examine a project’s impact on its physical environment, on energy sources and occupants, and its consumption of natural resources. In support of sustainable design, the firm employs over 130 LEED® accredited professionals in all disciplines.

DIALOG is wholly owned by its 38 principals. Augmenting their hands-on leadership is an exceptional team of 77 associates who play key roles in the day-to-day operation of our studios and projects. DIALOG attributes its strength to its multidisciplinary team of over 500 people who collaborate between studios in Vancouver, Calgary, Edmonton and Toronto.
HISTORY OF DIALOG

DIALOG stands on the shoulders of great firms that have been brought together by a shared vision.

Cohos Evamy began as Cohos Delesalle Architects in Calgary in 1960 under the leadership of Martin Cohos and Phillipe Delesalle. Michael Evamy and Paul Poffenroth soon joined and became early principals in the firm. Martin, Phillipe and Michael were architects. Paul was an engineer. This was the genesis of the multidisciplinary approach so central to DIALOG today.

Hotson Bakker Boniface Haden Architects + Urbanistes was founded by Norm Hotson in 1973, and joined soon after by Joost Bakker. Alan Boniface and Bruce Haden joined as partners in 2001. Their national reputation for integrated urban place-making has become an integral element of DIALOG.

Mole White Associates was founded in Toronto in 1976 by Susan Mole, Rodger Mole, and Marilyn White. MWA is recognized for intelligent design, effective project management, and for zealous client collaboration. These key characteristics are important to the strength of DIALOG.

Office for Urbanism is one of Canada’s foremost professional urban planning and urban design leaders, with a profound focus on the complex process of city building. Led by principals Jennifer Keesmaat and Antonio Gómez-Palacio, OU’s work is characterized by thorough project management, comprehensive planning analysis, a strong and clear commitment to beauty through design, and a drive to understand and reflect the uniqueness of each place. OU’s collaborative spirit is representative of the essence of DIALOG.

Nk’Mip’s partner-in-charge Bruce Haden and its project architect Brady Dunlop have particular interest in evolving the environmental stewardship role of the firm. Bruce Haden grew up in Kingston, Ontario, studying architecture at the University of Waterloo, and receiving his Masters degree from the University of British Columbia. Bruce continues to be involved in a number of innovative first nations building projects: including work with Haida Gwaii and bands in the Northwest Territories. He has an active interest in contemporary treaty issues and fostering positive ways of expressing aboriginal history and future directions through architecture. This work has resulted in the development of a unique interaction and decision-making process that reflects the culture and the values of contemporary first nations clients.
View looking east at west face of rammed earth wall.

278d.055
View looking southeast at entry.  278d.023
Entry walkway looking north. 278d.032
Approach—west elevation looking north.  278d.026
Rammed earth wall and water feature detail.  278d.057
View looking south at outdoor theatre seating and bluestain pine wall.
View from gift shop window looking west.  278d.020
View looking east showing west face of rammed earth wall. 278d.052

View looking over green roof west to Osoyoos Lake. 278d.042
View looking east at service yard gate. Entry stair in foreground. 278d.065

View looking north at entry walkway. Service yard retaining wall to right. 278d.051
Night view of entry walkway looking north. 278d.011

Night view of entry looking north. 278d.009
View of outdoor exhibit area looking west.
278d.005

Entry interior with bluestain pine wall.
278d.018
Context Views

278d.039

278d.045

278d.040

278d.037

278d.012

278d.054

278d.050

278d.040

278d.038

278d.012

278d.027

278d.002
Context Views

View looking over green roof west to Osoyoos Lake.

View looking east showing west face of rammed earth wall.

View looking over green roof west to Osoyoos Lake.

View looking east showing west face of rammed earth wall.

View looking over green roof west to Osoyoos Lake.

View looking south at outdoor exhibit area with tulle mat teepee in foreground.

View looking over green roof west to Osoyoos Lake.

View looking over green roof west to Osoyoos Lake.

View looking southwest with exterior exhibit area in centre.

View looking west towards rear of service yard.
Architectural Features

278d.028
278d.046
278d.011
278d.008
278d.003
278d.004
278d.034
## Architectural Features

<table>
<thead>
<tr>
<th>Image Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>278d.011</td>
<td>Night view of rammed earth wall looking north.</td>
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<tr>
<td>278d.046</td>
<td>View of south end of rammed earth wall with entry walkway to left and service yard retaining wall to right.</td>
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<tr>
<td>278d.028</td>
<td>View of stairway from parking lot looking east.</td>
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<tr>
<td>278d.004</td>
<td>Night view of exterior exhibit area concrete seating.</td>
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<tr>
<td>278d.003</td>
<td>View of exterior of pithouse theatre with bluestain pine looking south.</td>
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<tr>
<td>278d.008</td>
<td>View of north end of rammed earth wall looking east.</td>
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<tr>
<td>278d.034</td>
<td>View of rammed earth wall and entry looking east with concrete retaining wall in foreground.</td>
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</tbody>
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Exterior Details

278d.047

278d.066

278d.029

278d.036
Exterior Details

- Detail of concrete stairs from parking looking east to service yard gate.
- View of stairway from parking looking east.
- View of south end of rammed earth wall with service yard retaining wall to right.
- Detail of rammed earth wall, cor-ten steel gate and landscape in background.
Interior

Detail view of theatre wall door recess in concrete.

View of bluestain pine wall at entry. Reception desk to right.

View looking west through entry doors. Bluestain pine wall to right.

Detail view of bluestain pine wall.

Detail of bluestain pine wall of pithouse theatre with rammed earth wall behind.

View looking through north window to exterior exhibit area. Pithouse theatre with bluestain pine wall to right.

Detail view of theatre door opening recess in concrete wall.
Construction
<table>
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<tr>
<th>Concrete wall formed and awaiting tie-in.</th>
<th>Concrete wall reinforcing and formwork.</th>
<th>Rammed earth wall footing forms and batter boards.</th>
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<tr>
<td>Completed rammed earth wall.</td>
<td>Dismantling of rammed earth wall formwork.</td>
<td>Rammed earth wall immediately following release of forms.</td>
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Site Study

Project Location: Osoyoos, BC Canada
Plan Indoor/Outdoor.