Environmental Research Pavilion
Plan • Design • Build • Change 2009
Flying Dust First Nation
The Environmental Research Pavilion is an extraordinary achievement. It is an example of what is possible when community members, volunteers and neighbours come together to make positive change a reality.
Environmental Research Pavilion
Plan • Design • Build • Change 2009
Flying Dust First Nation

Cities & Environment
Faculty of Architecture & Planning
Dalhousie University
Document Production
Cities & Environment Unit

Image Contribution
Justin Cormier
Magda Gawlik
Andrew Hill
Patrick Jardine
Dan Korver
Kate MacKay
Laura Mannell
Christina Persaud
Sumera Pepic
Brad Pickard
Crispin Smith
Graeham Verhulst
Michael Zabinski

Project Support
Free-Lab: School of Architecture, Dalhousie University
Indian and Northern Affairs Canada
Flying Dust First Nation
Cities & Environment Unit
HomeAll Building Centre
Meadow Lake Pulp Ltd.
NorSask Forest Products
Meadow Lake Salvage Yard
Aces Building Center
Acklands Grainger
P3 Architects
The Environmental Research Pavilion in Flying Dust First Nation is an extraordinary example of how to make a difference locally. It is a celebration of community action and collaboration. It is also a demonstration of what is possible when a community is guided by a broad Vision for the future and an action-oriented Community Plan.

The Pavilion is an illustration of the community-based, locally focused and project driven approach established in Flying Dust’s Community Plan. The site selection, program development, design and building were all community-based. The focus was on using and reusing local resources and materials. Local skills and energy were critical in making this project possible. The way the Environmental Research Pavilion was conceived, designed and built would not have been possible without the contributions from community members young and old, community leaders and staff, skilled tradespeople, volunteers and community organizers. Collaboration also extended beyond the community with support from Indian and Northern Affairs Canada, planners and architecture students from Halifax as well a numerous local companies and businesses, including NorSask Forest Products, HomeAll Building Centre, Aces Building Centre, Acklands Grainger; P3 Architects, Meadow Lake Pulp Ltd. and Meadow Lake Salvage Yard.

The development of the Environmental Research Pavilion served as a venue for local capacity building in design and building, environmental practices such as the recycling and reusing of old materials, economic development, community engagement and strengthening and building new partnerships. Community planning, design, building and change came together. In the end, the Environmental Research Pavilion, like other projects that will come after it, responds to an immediate need, building a stronger community.

This document is meant to commemorate the hard work and effort of a determined community that came together to make change happen. It also illustrates that positive change can result from rethinking what is possible when developing any project. The Environmental Research Pavilion is a model for change and a source of local pride.
Comprehensive Community-Based Planning (CCBP) pilot project begins.

Flying Dust First Nation Community Plan published. Concerted effort goes into implementing projects and ideas in the Plan.

Over the course of a year, many workshops were held and intense discussions had, that led to a Plan and a sense of collective purpose in Flying Dust.

The Plan represents Flying Dust’s hopes for the future and an approach and commitment to change.
Environmental Research Pavilion Kick Start Project developed over a two week period in July.

Continuing to shape the future
The Community Plan is the foundation. It captures Flying Dust’s resources, strengths, issues and aspirations. It’s a tool to guide and orchestrate change. It sets a bold, clear **Vision** and an approach to change that affects everything Flying Dust does.

**Community Vision**

*Through teamwork and the teachings of our Elders, we will build a strong, healthy and self-sufficient Nation.*

**Action Areas** provide specific direction to move towards the Vision. Each Action Area includes Kick Start Projects that serve as examples for how change can happen.

The **Environmental Research Pavilion** is one of the Kick-start projects. The intention of the Pavilion is to help community members understand, protect, enhance and monitor the environment.
The Environmental Research Pavilion stands as an important accomplishment and a remarkable example of what people can do together to make change happen. In this sense it is about **Building Community** on multiple levels: socially, physically and organizationally.

It illustrates how every project should attempt to do the **most with the least** and can be seen as an opportunity to advance many Action Areas. This project is one example of how to rethink the way all projects are developed. It demonstrates that projects do not have to be limited by budgets, government regulations or existing solutions.

The following pages trace how this extraordinary accomplishment unfolded.

The **Future Development Map** in Flying Dust’s Plan provides a broad long term context for all projects.
Thinking broadly about Flying Dust as a whole and seeing every project as an opportunity to connect, extend and inspire all aspects of the community, Band members, planners, architecture students and Meadow Lake Tribal Council staff look for a perfect site for the Environmental Research Pavilion.
Connection to school (Education)

Proximity to highway (Access, Visibility)

Connection to river (Environment)

Previous picnic area and campground (Gathering Space)

Connection to meadow (Environment)

Connection to garden (Environment, Education)

Connection to proposed Elders lodge (Teaching, Sharing Knowledge)

Old Camp Ground
With the **Vision** in mind, project participants of all ages work together to further determine the use and design of the Environmental Research Pavilion.

The **community-based** design process engages community members in many ways...

...brainstorming...

...building models...

Community Based: Process
...drawing...

...and visualizing.

Many ideas are generated.
From the community-based design sessions, two main **design elements** that make up the Environmental Research Pavilion are developed.

The wall is an educational tool that will assist people in learning about and interacting with the surrounding environment. It incorporates counter space, a sink and display areas. It also has a green roof to grow native grasses and a rainwater collection system.

The lattice structure is inspired by the teepee and serves as an informal gathering space to share ideas and knowledge. The lowest edge of lattice wall incorporates a garden. The placement of the structure on the site is inspired by the **circular** shape of the teepee. The two main design elements (the wall and the lattice) form two circles on the site.

The inner circle is made by the lattice structure. The lattice structure is protected from the north wind and the noise of the highway by the arc of the wall which forms the second circle. This larger arc connects to the four cardinal directions: **north, east, south and west.** The implied circle also connects to the surrounding environment encompassing the river, woods and field.
The Environmental Pavilion includes the following design features:

**Water spout, rainwater storage tank**
- environmental building practices

**Counter (lab space)**
- connection to school curriculum: science projects and experiments

**Green roof, rainwater collection**
- interaction with the natural environment

**Counter (food preparation)**
- sharing traditional knowledge: preparing and preserving food

**Display cases, storage spaces**
- providing educational opportunities
Gathering space
sharing knowledge, space for community events and cultural activities

Adapted to local Climate
north facing wall providing shelter from wind and the highway

Circular Form
building on local and traditional knowledge

Garden
strengthening connections to the land
Many of the materials used to build the Environmental Research Pavilion were recycled or reused.
Old drainage pipe (Abandoned House)

Sink lid (Abandoned House)

Sink (Abandoned House)

French drain

Water spout

Sink
Plan  Design  Build  Change

**Conveyor Belt**
*(Donated by Pulp Mill)*

**Used Pipe**
*(Flying Dust Garbage Dump)*

**Used Membrane**
*(Donated by Pulp Mill)*

**Cladding**

**Footings**

**Green Roof**

**Local Materials**
Fence (Flying dust Garbage Dump)

Gabion Wall for Garden

Concrete Reinforcement

Rebar (Flying dust Garbage Dump)

Centre Post

Old Pole (Meadow Lake Salvage Yard)
Plan

Gravel and Sand
(Donated by Flying Dust)

Design

Weathered Plywood
(Donated by HomeAll)

Build

Unfinished Lumber
(Donated by NorSask)

Change

Foundation & Drainage

Walls & Counter

Lattice

Local Materials
Community members are involved in preparing the site and building the wall and lattice.

Local knowledge in carpentry, heavy machinery, financing, advertising and traditional building and design, are used to move the project forward and make it a success.
Plan  Design  Build  Change

Cooperation

Community Involvement

Traditional Building

Local Labour, Expertise & Knowledge
Plan  Design  Build  Change

Experience & Trades

Learning & Teaching

Fun
Project Driven: Environmental Research Pavilion
The Environmental Research Pavilion is a visible example of successfully implementing the Community Plan and making positive change a reality. Building on the momentum of this project, community members will continue to move forward, taking action to shape their future and achieve their Community Vision.
This sketch depicts the many ideas community members had for future development of the site. They reflect Flying Dust’s strong commitment to the environment and their desire to develop educational programs and other opportunities for research and natural resource management. In this sense, the Environmental Research Pavilion is about much more the physical structure depicted in this document; it is the starting point for something much greater.

Programming ideas connected to the Environmental Research Pavilion:

- interactive learning space for local schools, groups and other educational institutions
- environmental monitoring
- tourism
- gathering space for community activities and events
- gardening: growing, cooking and consuming local food
- sharing traditional knowledge and practices: medicinal plants, preparing and preserving food

Project Driven: Future Development
Camp grounds

Composting Toilets

Garden

Storage

Bat Houses

Bird Houses

CAMP GROUNDS

ADDITION TO ENVIRONMENTAL RESEARCH PAVILION

Garden Storage

Composting Toilets

Compost pile

Field
Kahkewistahaw Community Market
The Community Market project in Kahkewistahaw First Nation was only possible because there is a Plan, a Vision and an approach that empowers the Community to shape its own future. This document is dedicated to that spirit of community and all the individuals, groups and organizations who gave their time, energy, knowledge and skills to make it happen.
Kahkewistahaw First Nation
PO Box 609
Broadview, Saskatchewan
Canada
S0G 0K0

Cities & Environment Unit
Faculty of Architecture and Planning
5257 Morris St.
PO Box 1000
Halifax, Nova Scotia
Canada
B3J 2X4

Document Production
Cities & Environment Unit

Image Contributions
Waleed Albakry
Tina Alexson
Izak Bridgman
Andrew Choptiany
Simon Ellison
Magda Gawlik
Synthia Jahan
Patrick Jardine
Sam Lock
Kate MacKay
Laura Mannell
Sumera Pepic
Brad Pickard
Dustin Valen
Kate Vanderwater
Graeme Verhulst
Sarah Zollinger

Project Support
Kahkewistahaw First Nation
Yorkton Tribal Council
Indian and Northern Affairs Canada
McDiarmid Lumber
Home Hardware Building Centre
Cities & Environment Unit
The Community Market in Kahkewistahaw First Nation is an extraordinary example of how to make a difference locally. It is a celebration of community action and collaboration and it is a demonstration of what is possible when a community is guided by a broad Vision for the future and an action-oriented Community Plan.

The Community Market is an illustration of the community-based, locally focused and project driven approach established in Kahkewistahaw’s Community Plan. The site selection, program development, design and building were all community based. The focus was on using and reusing local resources and materials. Local skills and energy were critical in making this project possible. The way the Community Market was conceived, designed and built would not have been possible without the contributions from community members young and old, community leaders and staff, skilled tradespeople, volunteers and community organizers. Collaboration also extended beyond the community with support from Indian and Northern Affairs Canada, Yorkton Tribal Council, planners and architecture volunteers from Halifax and across Canada, as well as local businesses; Home Hardware Building Centre and McDiarmid Lumber.

The development of the Community Market served as a venue for local capacity building in design and building, environmental practices such as the recycling and reusing of old materials, economic development, community engagement and strengthening and building new partnerships. Community planning, design, building and change came together. In the end, the Community Market, like other projects that will come after it, responds to an immediate need, building a stronger community.

This document is meant to commemorate the hard work and effort of a determined community that came together to make change happen. It also illustrates that positive change can result from rethinking what is possible when developing any project. The Community Market is a model for change and a source of local pride.
Comprehensive Community-Based Planning (CCBP) pilot project begins.

Kahkewistahaw First Nation Community Plan is published. Concerted effort goes into implementing projects and ideas in the Plan.

Over the course of a year, many workshops were held and intense discussions had, that led to a Plan and a sense of collective purpose in Kahkewistahaw.

The Plan represents Kahkewistahaw’s hopes for the future and an approach and commitment to change.
Community Market Kick Start Project developed over a two week period in August.
action

The **Community Plan** is the foundation. It captures Kahkewistahaw’s resources, strengths, issues and aspirations. It’s a tool to guide and orchestrate change. It sets a bold, clear Vision and an approach to change that affects everything Kahkewistahaw does.

**Community Vision:**
*The strength of our children will carry us to a healthy and prosperous future.*

**Action Areas** provide specific direction to move towards the Vision. Each Action Area includes Kick Start Projects that serve as examples for how change can happen.

The **Community Market** is one of the Kick Start Projects. It advances the larger idea of Economic Development, where opportunities will be created for local training and employment, by building on the community’s natural and human resources.

More specifically the Community Market is a place where people come together to buy and sell local arts, crafts, baked goods, fruits and vegetables. It creates a lively space that can both accommodate regular market events, and also encourages and supports community gatherings.
The Community Market is a remarkable example of what people can do together to make change happen. In this sense it is about Building Community on multiple levels: socially, physically and organizationally.

It illustrates how every project should attempt to do the most with the least. Every project is an opportunity to make change happen. This project is one example of how to rethink the way projects are developed. It demonstrates that projects do not have to be limited by budgets, government regulations or existing solutions.

The following pages trace how this extraordinary accomplishment unfolded.
As indicated on the **Future Development Map** in Kahkewistahaw’s Community Plan, the Community Market is located in an important hub close to administrative and commercial services and facilities. It is also beside Highway 201, a well-traveled route, making the Market visible and accessible.
community-based site selection >> plan
With the Vision in mind, community members young and old, leadership, planners and volunteer architects work together to determine the **use** and **design** of the Community Market.

Kahkewistahaw’s Community Vision is about the strength and potential of **youth**. Youth involvement in imagining and building the Community Market is essential.

It soon becomes clear that the Market will be used for economic development and as a gathering space.

- place to sell wares
- place to play
- place to gather, share and celebrate
Through many days and nights of discussion, drawing and thinking, the community collectively establishes the location and some basic requirements for the Market.

- electricity (consider proximity to Complex)
- accessibility and visibility from the road
- respect for funeral fire area
- provide a covered place with seating
- consider, define and enhance the outdoor volley ball court
- consider the visual connection and route to the door of the complex
- re-use the shower buildings located on the site
The shower buildings were originally meant for visitors who attended Pow wow’s in Kahkewsitahaw. They stopped functioning and have been sitting unused on the Market site for a number of years.

It becomes a perfect opportunity for all those involved to re-imagine and reuse this local community resource to create something needed in the community.
A number of strategies are considered in determining how to use the shower buildings to form a Community Market and where they might be placed on the site to create a dynamic space.
siting strategy

The shower buildings are placed on the site in a way that best responds to local conditions.

Complex:
The market is close to the complex to ensure access to a power source.

Road:
Visible from the road, people driving by will know when the market is open.

Volleyball Courts:
The end of the deck sits near the middle of the future outdoor volleyball court. People can watch games from the deck.

Driveway:
The Market is set far enough away from the complex to allow maintenance vehicles to drive along the existing driveway.

Fire:
The market respects the funeral fire area and acts as a primary windbreak for the fire.
The final design responds to the list of programming and design musts developed by the community.

The Community Market is made up of five main design elements:

1. Three shower buildings become market stalls to sell wares. One shower building becomes storage and a possible future canteen for the volleyball courts.

2. A large deck connects the three market stalls and provides more space to sell wares as well as space to gather.

3. Two roofs between the market stalls provide a dry and sheltered space to sell wares and gather.

4. Doors provide shade and shelter for vendors and buyers when opened.

5. Art pieces brighten the market stalls and provide a sign for the Market.

The following pages explain the five innovative design elements that come together to create the Community Market in more detail.
The old shower buildings are reinvented to create three Market stalls as well as a storage shed for the outdoor volleyball courts.
Each Market stall is designed to have enough usable space for two vendors to sell wares. There is room for tables, shelves and hooks. The volleyball storage shed is designed to enable plenty of space for sports equipment and a possible future canteen.

Market Floor Plan
The deck and two roofs connect each Market stall to create comfortable spaces for selling wares and gathering.
The design of the deck ensures wheelchair access. Small sets of stairs along the length of the market provide access as well as seating space.
design >> innovative

doors

When open the doors are meant to provide shelter from the sun and rain creating a great space to sell and barter for various market goods.
Salvageable plywood from the interior of the shower buildings is saved and turned into pieces of art that decorate the market stalls. This art is also used to create a large Community Market sign that will attract people who are passing by.

This art project provides another opportunity for many youth and other community members to get involved in the creation of an interesting and fun Market area.
innovative >> design
This drawing shows how all the pieces of the Market come together: the shower buildings, the deck and roofs, the doors and the art work.
Kahkewistahaw community members come together to make this project a success. **Local materials, knowledge and skills** are used to build the Community Market.
Collaboration and support also extends beyond the community to Indian and Northern Affairs Canada, Yorkton Tribal Council, McDiarmid Lumber, Home Hardware Building Centre and volunteers from across Canada. Partnerships are developed and strengthened.
build >> locally focused and collaborative
The Community Market is a visible example of successfully implementing the Community Plan and making positive change a reality. Building on the momentum of this project, community members will continue to move forward, taking action to shape their future and achieve their Community Vision.
change >> project-driven
This diagram depicts some of the ideas community members have for future development of the site. They reflect Kahkewistahaw’s strong commitment to developing local economic development opportunities and their desire to create safe fun places for community members to gather. In this sense the Community Market is about much more than the physical structure depicted in this document; it is the starting point for something much greater.
The uniqueness of the Kinistin Arbour project was possible because there is a Plan, a Vision and an Approach to Change that empowers the community to shape its own future. Over the course of the Arbour’s construction, community staff, leadership, band members young and old alike worked tirelessly to build not just a physical structure, but to build the hopes and dreams of the community, keeping a part of Kinistin’s identity and culture alive and strong. This document is dedicated to that spirit of community and the individuals, groups and organizations who gave their time, enthusiasm, knowledge and skills to make the Arbour possible.
Kinistin Saulteaux Nation
PO Box 2590
Tisdale, Saskatchewan
S0E 1T0
Canada

Cities & Environment Unit
Faculty of Architecture & Planning
Dalhousie University
5257 Morris Street
PO Box 1000
Halifax, Nova Scotia
B3J 2X4
Canada

Dalhousie Faculty Design/Build Advisors and Contributors
Richard Kroeker
Frank Palermo
Roland Hudson

CEU Community Design/Build Leads
Kathryn MacKay
Brad Pickard
Ali Shaver
Crispin Smith

Dalhousie Freelab Team
Rand Abdul-Jabbar
Kimberly Fuller
James Haney
Daniel Korver
Justin Loucks
Brenda-Dale McLean
Nathan Orban
Duncan Patterson
Ryan Power
Kristiana Schuhmann

Document Production
Cities & Environment Unit

Image Contributions
Dalhousie Freelab Team
Cities & Environment Unit
Rex Lumberjack
The Arbour project was an exciting and rewarding experience for our community and was intended to revitalize our community spirit by bringing community members together and to instill the spiritual and cultural connection of Pow Wow back into our community.

The unique design of the structure makes us proud as it fits within the natural setting of the land and will last for many, many years. The countless hours of physical labour, sweat, and tears came to an emotional end as the final touches were placed on the Arbour on July 28th, 2010.

Kinistin Saulteaux Nation is very grateful for all those who brought their efforts, abilities, skills and time to make this vision a reality. We are also very grateful to the students and staff of Dalhousie University’s Cities & Environment Unit for all the time and effort they endured in making this project possible.

--

Heather Severight
Plan Champion, Kinistin Saulteaux Nation
This book is divided into four chapters: Plan, Design, Build and Next Steps. Plan and Design describe the project's goals. Build describes its construction. The final chapter, Next Steps, outlines what the community hopes the Arbour will accomplish and how it will serve as a kick start for future action and positive change in the community.

2008
Work on the Community Plan begins.

2009
Meetings with Kinistin Band members take place throughout the year.

2010
Kinistin Saulteaux Nation's Community Plan is published and launched. Preparation of plan implementation begins.

July 2010
Work on the Kinistin Pow Wow Arbour is started.
PLAN

The Approach To Change............................2
Community Plan........................................3
Community Vision.....................................3
Action Areas............................................3
Site Selection..........................................4

DESIGN

Design Concept.......................................6
Community-Based Design.............................7
Design Innovation.....................................9
Material Selection....................................10
Model Testing..........................................11

BUILD

Construction Sequence.........................14
Community Change................................16
Arbour Sign..........................................17
Finishing Touches..................................18

NEXT STEPS

Future Events........................................20
Canopy Build.........................................21
Additional Items.....................................22
Final Note.............................................23
This chapter describes how the Community Plan, Community Vision, and Action Areas inspired, informed and influenced the implementation of the Kinistin Arbour. This chapter also outlines the Site Selection process.
The Approach to Change

In 2009, Kinistin Saulteaux Nation completed a Community Plan including a specific approach to making change happen. The essential “must” ingredients of this approach are that change is community-based, locally focused, and project driven.

Community-Based
A community-based approach means that everyone in the community has a stake and a hand in their own future. It relies on the initiative, participation and resolve of community members to direct and make change happen rather than depending on outside consultants or government agencies.

Many community members were active leaders and participants in steering the pow wow Arbour project. The project provided the opportunity for learning, teaching and capacity building, helping to build momentum for implementation of the Plan. The Arbour is an example of how a community-based approach to project development is valuable and essential in making change happen on the ground.

Locally Focused
A locally-focused approach sees projects as opportunities to capitalize on local labour, knowledge and materials. It considers every project as an opportunity to develop skills, promote local business and create employment.

The planning, design and construction of the Arbour was reliant on local skills and knowledge which contributed different ideas and skill sets to the overall design and construction. Materials were acquired locally and community members lent tools, expertise, skills and knowledge. Community volunteers donated their hard work and time allowing opportunities for people to learn from and teach one another.

Project-Driven
A project-driven approach means that no project in the community is “off-the-shelf” and every project achieves the most impact for the least effort. Each project extends what people think is possible, what fits neatly into departmental or programme boundaries and what would typically be considered to address individual issues one at a time.

The Arbour project was an opportunity to think creatively about how a single project can connect to other ideas, projects and programs within the community. It was planned, designed and built to ensure that it addressed as many strengths, issues, root causes and Action Areas as possible.
COMMUNITY PLAN

The Community Plan is the foundation for action. It captures Kinistin’s resources, strengths, issues and aspirations. It is a tool to guide and orchestrate change. It sets a bold, clear Vision and an approach to change that affects everything Kinistin does.

COMMUNITY VISION

“Kinistin Saulteaux Nation will honour our past, present and future through our culture and traditions, to become empowered and to inspire hope and positive change for our people.”

ACTION AREAS

Action Areas provide specific direction to move towards the Vision. The Pow Wow Arbour project is embedded in the Culture & Traditions Action Area and advances the following goals:

- Strengthen traditions
- Use existing human resources (e.g., Elders) to pass along and practice culture and traditions.
- Celebrate culture
A group of community members and Cities & Environment Unit (CEU) staff spent a day visiting and exploring different site options. After many community discussions, the hay field in the south end of Kinistin was chosen as the best site for the Arbour.

The Arbour is located along the main road to Lake Kipabiskau. The site was selected for a number of reasons based on what the community wanted.

1. The Arbour must be visible from the main road as a way of displaying Kinistin’s culture and traditions to the community and passers by.

2. The Arbour must be easy to find and access when Kinistin is hosting a Pow Wow.

3. There must be enough room for: people to walk around the Arbour, vendors to set up, vehicles to park, dancers to enter and exit.

4. There must be space for a camping area close to the Arbour.
This chapter describes the process used to create a locally-specific design that included: Community-Based Design, Design Innovation, Material Selection and Model Testing.
Through a community-based approach to design, the project reflects the cultural, social, economic, environmental and spiritual contexts of the community. The concept was developed through series of collaborative workshops that included community members, Faculty advisors, architecture students, and members from the CEU.
COMMUNITY-BASED DESIGN

A community-based design process brings together planners, architects, band leadership and a cross section of community members to determine the look, feel and use of the Arbour. Broad community involvement allows many community members to have a say in the development of the project and feel ownership for the finished product.

Brainstorming, model making, drawing and visualizing techniques were all used to engage the community, exploring the Arbour’s place in Pow Wow traditions while developing specific criteria for the design of Kinistin’s Arbour. In addition to providing shade and weather protection for drummers, dancers and spectators; six essential criteria were established by the community that helped to define the site strategy and influence the Arbour design.

1. Traditional Grand Entry from the east
2. Raised Master of Ceremony (MC) booth to the south of the Grand Entry
3. Space underneath the tripods must be big enough to house 12 or so drummers (roughly 10 feet in diameter)
4. Space for whistlers (people who like the song) to come up to the drum group and whistle
5. Electricity for speakers and lighting
6. Centre pole to hang eagle staff, lighting and speakers
Design sessions between the community and CEU allowed everyone a say in the development of the project. Brainstorming, model making, drawing and visualizing were all used to engage the community and decide on the needs of the Arbour.

1. Foundation Ideas
2. Canopy Ideas
3. Layout Ideas
The innovative design of the Arbour considers and capitalizes on local knowledge, labour and materials.

The Arbour design is inspired by two powerful local symbols: the structural form resembles the stretched skin of a Pow Wow drum while the tripods make use of a traditional teepee structure. It is constructed through the hard work of community volunteers and designed to make use of local and recycled materials.
Given Kinistin’s commitment to making change happen in a locally-focused and project-driven way, selecting and finding appropriate materials was an important element to the overall success of the Arbour. Community members and CEU used creativity and determination to find and secure the needed materials. In this respect, the Arbour worked to challenge and extend what many thought was possible.

While the design was being developed, a team worked to secure materials that would work with the design ideas. After searching for unused telephone poles in the area, the team secured a number of donated poles and a mix of donated and purchased metal wire to create the tripods and the inner and outer rings. Holding these rings is a system of pulleys and cables purchased from local suppliers. The cables are connected to anchors which are cast in concrete.
As a way of testing the Arbour’s design and construction, two models were made. One at 1:50 (1 cm on model = 50 cm on actual structure) and a final one at 1:10 (1 cm on model = 10 cm on actual structure).

1:50 Model
Community and design team members began modeling the design at 1:50. Tripod width, canopy covering, bleachers, the MC booth and the centre pole were all discussed and designs were developed. The model was later used on site as a reference during the build.
Once the 1:50 model was complete, a final 1:10 model was constructed. The increase in scale helped visualize how the actual Arbour would be raised, connected and anchored down. Afterwards it was recycled and used as stakes to mark the Pow wow Arbour building site, indicating the location of the auger holes, a process necessary to begin construction.
Once the final design was completed, work began on site to construct the Arbour. This chapter outlines the overall Construction Sequence, the Arbour Sign and the addition of a few Final Touches.
CONSTRUCTION SEQUENCE

This build sequence highlights the major aspects of the Arbour’s construction. It captures a fragment of the hard work and dedication that went into the project.

1. surveying the site
2. constructing test tripods
3. analyzing test tripods
4. marking out tripod positions
5. measuring and cutting poles
6. drilling tripod holes
7. raising tripods
8. bolting/lashing tripods  
9. casting anchors  
10. raising center pole  
11. tying cables  
12. raising cable rings  
13. attaching cables
With the help of community volunteers the project came together in nine days. The Arbour illustrates a community’s ability to initiate positive change and serves as a stepping stone for the continued successful implementation of Kinistin’s Community Plan.
Artistic community members lent their talents to the project, designing and painting a sign to mark the Pow Wow entrance. Vibrant colours attract the eye and will help make the grounds recognizable to visitors.
With the Arbour nearing completion, volunteers began setting up posts to mark the outer walking space. The circle was divided into the four cardinal points, each quarter painted a different colour of the medicine wheel. Large rocks which were dug from the site during construction now mark the west entrance for the dancers.
NEXT STEPS

In order to complete the Arbour, important next steps have been detailed. The following chapter describes possible Future Events that could be hosted at the Arbour, the completion of the Canopy, and the other Additional Items for the site.
The Arbour site has the potential to be used for many important community events throughout the year. Some of these events include weddings, outdoor community dances and movie nights. By hosting different events at the Arbour, allows Kinistin to extend the use the Arbour beyond the Pow Wow season, creating a usable, vibrant and active community space.
A canopy will be cut, sewn and attached to the cable rings to provide shelter around the Arbour’s exterior.

Canopy attachment detail: option 1

Canopy attachment detail: option 2
bleacher construction sequence

announcer’s booth construction sequence

water hookup for vendors

electrical for announcer’s booth

lighting

sound system

additional items
FINAL NOTE

Kinistin Saulteaux Nation’s Pow Wow Arbour is an extraordinary achievement. It is an example of what is possible when a community has a vision, an approach to change and a dedication to taking action and making a difference. It is an example of what is possible when a community has a comprehensive and community-based plan.

Long after the community hosts its first Pow Wow in twenty years, the Arbour will continue to build hope, raise expectations and inspire community members. It is a reminder that anything is possible when a community opens its imagination and thinks creatively about new possibilities. It is a reminder of what is possible when a community comes together to plan, build and shape its future.
The unique design of the GreenShed and community-based process by which it was developed were possible because Standing Buffalo has a Plan, a Vision and an Approach that empowers the community to make local change happen.

This document captures the ideas, enthusiasm and hard work that went into this project. The GreenShed is a model for how future projects can be done.
STANDING BUFFALO DAKOTA NATION GREENSHP
PROJECT CONTACT
Standing Buffalo Dakota Nation
PO Box 128
Fort Qu’Appelle, Saskatchewan
S0G 1S0
Canada

Cities & Environment Unit [CEU]
Faculty of Architecture & Planning
Dalhousie University
5257 Morris Street
PO Box 1000
Halifax, Nova Scotia
B3J 2X4
Canada
[www.ceunit.dal.ca]

PROJECT TEAM
Standing Buffalo Dakota Nation
Band Members

Plan Champion and Community Contacts
Cheryl Tawiyaka
Sharon Yuzicappi
Betty Goodfeather

Planning Work Group
Charmaine Bear
Rosabell Goodwill
Mario Kaiswatum
Darla Redman
Cheryl Ryder
Jesse Ryder
Minnie Ryder
Inez Tawiyaka
Joy Tawiyaka
Ralph Tawiyaka
Alice Whiteman
Curtis Whiteman
Erna Whiteman
Beverly Yuzicappi
Marge Yuzicappi

Project Support
Standing Buffalo Dakota Nation [SBDN]
SBDN Chief & Council
SBDN Flood Claim Advisory Board
Indian & Northern Affairs Canada CCBP
Cities & Environment Unit
Rona Woodland Fort Qu’Appelle, SK
Fries Tallman Fort Qu’Appelle, SK

CEU Community Design/Build Leads
Angela Dean
Brad Pickard
Crispin Smith
Heather Ternoway

Document Production
Cities & Environment Unit

Image Contributions
Cities & Environment Unit
Cheryl Tawiyaka
Standing Buffalo recently initiated one of many “hands on” projects that will bring our community together. During community planning workshops throughout the year on and off reserve, we focused on a few key projects that would make a big difference. The Community Garden + Greenshed is one of these projects.

The Planning Work Group and community members have chosen this project because it will provide many benefits for our community and move us in a positive direction for the future. It is about bringing back traditions of self-reliance and improving our relationship with the land. We are excited to apply the skills learned through this project to build towards our new community hall.

The Planning Work Group and the Standing Buffalo Dakota Band would like to thank those who gave 100% of their time, effort and experiences to this project: volunteers, students, housing crew members and staff from Dalhousie University’s Cities & Environment Unit. Volunteers were happy with hot lunches and suppers to keep motivated. We look forward to making our garden grow.

—
Cheryl Tawiyaka
Plan Champion, Standing Buffalo Dakota Nation
2009
Community Planning process starts; Planning Work Group forms.
Meetings with Standing Buffalo members take place throughout the year.

2010
Community Plan is published and celebrated [September 11]

SEPT 2010
September 12 GreenShed project initiated; two weeks of intense design/build, project continued by community members throughout October.

This booklet is divided into three sections: Plan, Design/Build and Next Steps. Plan introduces the community’s plan and its relevance to this project. Design/Build describes its design and construction. Next Steps, outlines what the GreenShed will accomplish and how it is a demonstration for future action and positive change in the community.
This section demonstrates how the Community Plan, Vision and Action Areas inspired and shaped the GreenShed + Community Garden, setting the tone for future projects.
The approach to community-based change recognizes that planning is ongoing and affects every aspect of the community. Planning is not another project, but a way of aligning, developing and focusing all projects. The Plan is a tool that guides change that is:

1] Community Based
2] Project-Driven
3] Locally-Focused

Change happens one project at a time. Each project needs to connect, reinforce and advance many objectives. It requires thought, persistence and leadership to do the most with the least. This approach requires participation, invention and the determination to resist importing simple “off the shelf” solutions.
COMMUNITY PLAN

Standing Buffalo’s Community Plan is the foundation for local action and change. It was developed with extensive input and feedback from community members, and presents the community’s resources, strengths, issues and aspirations. The Plan is a forward-looking document that sets out what Standing Buffalo wants the future to be like, and outlines how to get there. It is a tool that the community is already using to direct and orchestrate change.

COMMUNITY VISION

The Plan includes a Vision that is a bold statement of the community’s ambitions, defining where the community wants to go. It is the long-term and lasting direction for the community that inspires new project ideas, policies and ongoing action.

“Standing Buffalo’s pride in our Dakota culture will inspire us to become an engaged and united community, through support, empowerment and cooperation.”

“Woltanyan Tatanka Najin Dakota woniyan unkupe heun owajinnaya unkicagapi kta, etanhan woptan yuza wowasake ka witaya ounkiciyapi.” - Dakota Translation

ACTION AREAS

The Community Plan includes four Action Areas that focus on what is important to work on in order for the community to move towards its Vision. The Community Garden is a demonstration project in the Plan, showing how one initiative can have tremendous positive impact on many areas in the community if developed and implemented using the right attitude and approach. While the Community Garden + GreenShed will create opportunities for local employment and education, they also have strong connections that will build community, increase recreation opportunities and enhance collaboration through increased knowledge of and connection with the land.
By imagining how community facilities and gathering spaces will be organized in the future, people can see beyond what is there today. This project is a first move in building towards a larger idea of a safe and vibrant community core. Community members used the Plan and Structure Map to determine the best location for the Community Garden + GreenShed. The site is at the prominent southern entry point into Standing Buffalo, and the start of the community’s main street.

The project’s central location provides access for all community members, and offers close connections to the school, health clinic, band office, bingo hall and future community hall. These relationships will promote broad involvement and encourage many members to take responsibility for the garden and incorporate the garden into their programming. School kids, band staff, teachers, health workers and many others all have much to contribute to and take away from the garden.
On September 11, Standing Buffalo celebrated the publication of the Community Plan. The Plan is a major accomplishment, representing the hard work, ideas and aspirations of many, many community members. This Plan Launch was particularly exciting because it also kicked off the Community Garden + GreenShed project.

It is significant that Standing Buffalo decided to start this project immediately following the completion of the Plan. This move links the Community Plan to action on the ground, and sets the tone for future development.

images:
1. standing buffalo community plan hot off the press + cake
2. planning work group speak about the importance of the community plan
3. plan champion Cheryl Tawiyaka cuts the cake to celebrate
4. members gather for the celebration
5. planning work group with community plan
6. celebration continues
Planning Work Group [PWG] members shared their thoughts on being part of a group that is committed to taking action to make the community stronger.

“I am proud to be involved because I wanted to be here - I wasn’t appointed.”
- Curtis Whiteman

“I enjoy it because it’s volunteer… there’s always lots of people there.”
- Elder Rosabell Goodwill

“When you focus on positive projects, that’s all you see.”
- Minnie Ryder
This section illustrates the design/build process used to create a locally-specific design for the GreenShed. Much thought and care went into the design and construction of the project.
The GreenShed is a small test structure exploring how straw bale, a local material, can be used in the construction of community buildings. This project is an important starting point for the design and development of future projects, specifically the Community Hall. The wall panels were designed so that many community members could assemble them, and then tilt them into place to create a wall. This construction method allows people with experience to share skills, and for others to learn about design and construction, building capacity for future projects. Straw bale also has many advantages as a building material; it provides excellent insulation, is easy to work with and is produced locally.
COMMUNITY-BASED DESIGN

In order to determine how the Community Garden + GreenShed would work, community members were involved through an inclusive and iterative design process. As the plan was being developed, people spoke about the importance of starting a Community Garden as a place to grow food, bring people together and provide educational opportunities. In July, PWG members developed more detailed ideas for the garden, including the idea of starting the project by building a greenhouse. A pre-design session in the community in August further detailed the space needs and uses for the GreenShed + Community Garden.

elements:
- storage + tractor port (a place to store garden tools + equipment)
- greenhouse (place to start plants, extend growing season + teach)
- market stall (a place to sell + distribute garden produce)
- small garden (near greenhouse with raised planter beds)
- large garden (a place to plant + grow food)

images:
1. community garden site survey
2. greenshed site planning session
3. greenshed pre-design session - full scale mockup
4-5. Flying Dust First Nation community garden show & tell
6. greenshed design and program discussion
7. site planning
8. community garden discussion
9. structural design session
10. community garden + greenshed site location planning
Community-based means that community members are involved in every stage of project planning, development, construction and operations. This creates shared responsibility for making change happen, increasing self-reliance and participation in all projects. This attitude allows for an open and inclusive process that community members, volunteers, staff and leaders can all be engaged in.

Specifically, the community garden provides fertile ground for community-based education, training and employment that will bring people together to collaborate, share and socialize. The garden is being integrated into the school curriculum to teach youth about the benefits of local food and provide skills needed to grow different crops.
During community design sessions, the team visualized proposed spaces through physical models, full scale mock-ups (using painters tape) and staking out the building and garden areas on site.

The placement and orientation of the GreenShed on the site was determined by:
- Providing protection from the north wind
- Taking advantage of sun angles to heat the greenhouse
- Relating the structure to nearby buildings and spaces

The GreenShed structure was designed to ensure proper functioning of the greenhouse using passive heating and ventilation, which determined the roof and window angles for the entire building. The insulating north wall is supported by a simple repeated structure of posts and rafters, which also hold up the roof. As the pieces of the project came together, ongoing refinements to the design and construction details were developed.

images:
1. building models
2. foundation design layout on site
3. design/build of panel frame details on site
4-14. raising and securing straw-bale panel
Locally-focused means that local materials and skills are used in projects wherever possible, and that each project is also a way to develop new capacity and economic opportunities. Local carpenters contributed to the GreenShed, sharing expertise and extending their knowledge of new construction techniques and materials. Volunteers with little to no previous construction experience learned new skills. Straw-bales were obtained from a local farmer. Discarded windows from housing renovations were used in three of the wall panels for ventilation and light. When specific technical expertise or equipment was required, the team sought to hire community members, or contractors from nearby First Nation communities.
A lot of site preparation was required before construction could begin. Volunteers cleared away brush and debris from the site, and trimmed shrubs and trees to make room for the GreenShed. An existing chain-link fence was also removed. The storage shack was disconnected from utilities, cleaned out and moved across the road to its new home; the housing department will repair the shack and use it to store tools and materials.

Straw bales were locally sourced and brought to site. Measurements of the bales were taken to assist with more detailed design work.

images:
1-11. moving the storage shack and preparing the site
Project-driven means that each project should be extraordinary, and reflect local identity and potential. If the end goal of this project was simply to have a new storage shed, the community could have ordered a kit and installed it. However, Standing Buffalo decided to pursue the project creatively to meet the needs and ambitions of the community. This approach maximizes local benefits, leveraging available funds to extend the reach and spin-offs of a project, for example through training opportunities or developing local industries. Future possibilities growing from this project include cooking classes, food preservation, school lunch programs, composting and meals on wheels.
CONSTRUCTION SEQUENCE

This build sequence highlights the major aspects of the GreenShed’s construction. It captures a fragment of the hard work and dedication that went into the project.
1. site preparation
2. moving existing shack
3. foundation excavation
4. pouring concrete piles
5. grade beam formwork prep
6. grade beam formwork design
7. building grade beam formwork
8. straw used as void-form
images:
9. rebar placed in forms
10. tying rebar
11. forms poured
12. concrete troweled
13. forms removed
14. installing earth-tubes
15. weeping tile
16. building panel frame
17. testing panel frame
18. re-use of windows
19. building window boxes
20. half-bales tied
21. straw bales packed
22. completed panel
23. tilt-up panel
24. lunch break
25. panels upright and secure
images:
26. assembling posts and rafters
27. installing rafters
28. completing the roof structure
29. flashing and stucco edging
30. stucco preparations
31. stucco details
32. stucco scratch-coat
33. stucco finish-coat
images:
34. locating raised garden beds
35. digging raised garden beds
36. cultivating large community garden
37. building raised garden beds
38. filling raised garden beds
39. building bug-hotel
40. completed cultivated garden area
41. re-using pallets for compost bin
42. building compost bin
43. completed compost bin
44. compost bin sliding doors
This section describes further work required to complete the GreenShed. It also explores important next steps in preparing, planting and nurturing the Community Garden.
Following the intense design/build work in September, volunteers and members of the housing crew have continued work to complete the GreenShed building. In October, the stucco and rafters were finished. As this booklet is being published, the housing crew is working to close in the building, completing the walls, doors and small windows in the storage shed and greenhouse, installing glazing (clear polycarbonate panels that let light into the greenhouse) and attaching the plywood sheathing and corrugated metal roof. These elements will complete the shell of the GreenShed building, protecting the straw bale wall panels and reinforcing the structure.

Completing the GreenShed is an important next step so that in the spring, community members and students can start seedlings in the greenhouse, gather gardening tools and begin to operate the Community Garden. Other elements to be added inside the GreenShed include practical things like potting benches, work tables, planters and storage shelves. In order for the greenhouse to operate effectively, the inside north wall should be painted white to reflect light. Jars and bottles full of water can be lined up along that wall to capture and store heat during the day, which keeps the greenhouse warm at night.
GROWING THE GARDEN

The garden includes four raised beds, a compost bin, pollinator palaces and a large communal garden area. They provide opportunities to relax, teach, learn, gather and socialize all while producing a healthy and inexpensive source of food. The greenhouse provides an opportunity to extend the growing season of the garden, providing a warm place to start seedlings in the spring, grow heat-loving crops in the summer and continue lettuce greens into the fall. During the winter it can be used to store extra equipment and surplus produce. The addition of a cold storage unit would allow produce to be stored for later consumption while an on-site water system or pump would simplify watering.

The garden areas and greenhouse require coordination, education and care but they should not be seen as a burden. They should be a shared responsibility. Incorporated into school curriculum they can be used to teach about food production and environmental systems. Connected to health and social assistance the garden can provide lessons about healthy eating and active lifestyles, support families and ultimately lead to employment and greater self-sufficiency.
This booklet tells the story of a green house and garden shed built in the autumn of 2010. But the Standing Buffalo GreenShed symbolizes more than just a structure and a few weeks of hard work; it represents the culmination of years worth of planning, the creativity and imagination of many individuals and the hard work, effort and innovation of a whole community. And, it is just the start.

Over time the vegetable plots will grow into beautiful and productive green spaces, the gardens will expand and community members young and old will gather to learn, teach and share. The GreenShed will be a community market, economic venture, classroom, gathering place and hobby. It will be a symbol of hope and a reminder of what is possible when a community comes together to build and shape its future, an example of what a community can accomplish when it has a plan. It represents a new approach to building any project in the community, an approach that is community-based, project-driven and locally-focused.

As the community begins planning for a new Hall, these ideas and lessons learned remain relevant and essential: taking advantage of local resources, involving community members and working towards a product that pushes the limits of what is possible.
STANDING BUFFALO DAKOTA NATION GREEN SHED