

SCHOOL OF

We believe that a school of the future should be so much more than simply a series of classrooms and a playground. What if your science class didn't have to be in a small lab, but in a miniature ecosystem instead? Or if the cosmetology classes were taught in a professional studio? There is so much potential and we have found the perfect location to maximize it.



Museum



Recreation Centre

Mamawayawin School is attached to the previously existing Recreation Centre, allowing the expansion of the pool. A new museum and gallery will be incorporated into our building as well, giving us access to these recreation and culture facilities.

The Tennis Club courts, Curling Club and Red Deer Arena are close on the site as well, giving more options for the students to try.

SITE



Original Plan

Our Plan



THE FUTURE



Heritage



Tennis



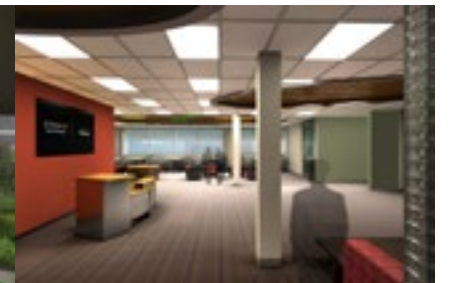
Curling

The site has many other learning opportunities within a 5 minute walk including: City Hall, the Public Library, The Donald School of Business, CAT theatre, the Court House, and numerous art and heritage walks.

Our site is within a 10 minute bike ride from Kerry Wood Nature Centre, the Red Deer River and a Performing Arts centre.



City Hall



School of Business

LOCATION

SCHOOL OF

Student Assessment

Instead of using exams to test our students on a list of memorized facts, we will employ a portfolio system. Teachers will sit down individually with their students to review their work. This system will make it easier for teachers to assign and mark projects that are more challenging, and develop real world skills required to succeed in the 21st century.



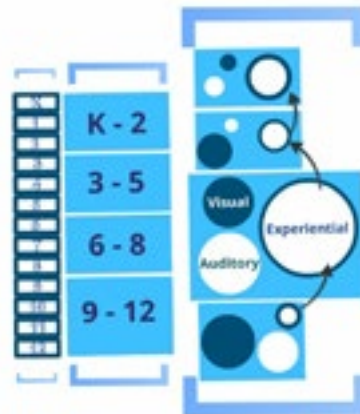
Student Groupings

To give the students a more individualized experience at Mamawayawin school, we would move away from the traditional grade configuration system. Instead of grouping by age, we would group the students into three main learning styles; auditory, visual and experiential. To make the system more economical, while encouraging social interaction with peers of the same relative age, we would further group the children in 3-4 year age groups.

CURRICULUM

The Finland Schooling System

Finland has been beating education giants such as South Korea on international test scores. How can this be? Is Finland even more intensive than these Asian superpowers? Actually, the opposite is the case. The Finland education system is more relaxed than most school systems around the world. They have gotten rid of conventional testing, most competitive sports and most of the nationally regulated curriculum. Each student has a strong connection with their teachers; in some classrooms the students even refer to the teachers by their first names. Each child gets a more individualized education suited to their needs, equipping them with the skills they need after graduation, which almost all will need, considering 93% of students graduate from high school, and 66% attend post secondary education.



THE FUTURE

Options and Apprenticeship Programs

Our site's central location allows for us to connect to surrounding downtown. With so many opportunities for inspired, real world learning, most of our option classes will be held outside in the community. Our students will have hands on experiences with professional mentors that equip them for success in the 21st century, while teaching them that learning isn't limited within the four walls of a classroom.



COMMUNITY

SUSTAINABILITY

LEED STANDARDS IMPLEMENTED IN OUR SCHOOL

- Water Use Reduction-30%
- Public Transit
- Reduced Parking Capacity
- No Potable Water Use or No Irrigation
- Renewable Energy 50% to 60%
- Green Power
- Restore 50% open space adjacent to building
- Storm Water Management
- Recycled Content: 7.5%
- Durable Building
- Daylight & Views: Views for 90% of Spaces
- Light Pollution Reduction



IDEAS RESEARCHED AND REJECTED

- Piezo Electricity
- Biomass
- Burning Waste
- Wind Turbines
- Cellulosic Ethanol

WHAT MAKES OUR SCHOOL SUSTAINABLE?

- Free Heating and Natural Ventilation
- 25% Increase from conventional school hours
- 25% Less space than separate facilities
- PLATINUM LEED Rating
- ENERGY STAR compliant appliances
- Technology replaced every 3 years
- Paperless Library
- Renewable Power and Heating Sources
- Alternative Parking, using the parkade and shuttle buses
- Rainwater Harvesting

SOLAR: We will place solar panels at a 50 degree angle on the south side of the school to generate maximum electricity. We will use them on the south face of the gymnasium to provide not only electricity, but shade from the low winter sun. The solar will contribute to 3 LEED Standards



BIODIESEL & BIKES: Our school buses will run on biodiesel fuel made up of plant oil. This oil will come from the wastes our school produces. Since we are incorporating the school into the community, we need a way of quickly transporting students around. We will use bikes to fill that need, as bikes are a safe and reliable method of transportation.



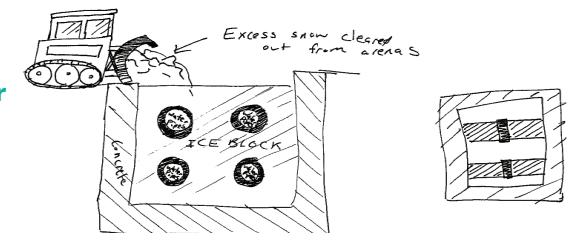
FEATURES

GEOTHERMAL: Alberta is only 2nd to Iceland in geothermal potential. We will use geothermal to provide free heating to our buildings. If we have a surplus of heat, we will provide energy to other buildings in our community, such as the hospital, to help cut down on fuel consumption.



GREEN ROOF: Our main building will have a full green roof. The slanted design will allow for people to pass over it. The green roof will be a natural insulator, while also cutting down on pollution. It will collect rainwater to be for use in the building.

WASTE ENERGY FROM THE RINK: Since the Red Deer Arena and Curling Rink are on the site, we want to harness the waste energy it will produce. We will use the waste heat from rink maintenance machines to help warm our building. Zambonis clean the ice and then dump the shavings into a trench with pipes running through it, providing free cooling for the buildings on our site.



SCHOOL OF

Community Help

Early on, when we were developing our concept, we knew that there would be safety concerns with our public integration model. As we saw during our tour of the Community Learning Campus in Olds, public integration can also provide benefits. At the Community Learning Campus, administration has seen a significant drop in disciplinary problems, including a complete lack of graffiti, since the public was brought in. As Tom Christensen, principal of the Community Learning Campus put it; "Nobody wants to be behaving badly if their grandmother could be watching."

Key Cards

For safety, key cards with unique bar codes will be handed out to students and teachers to access the educational facilities around the site. In the event of a card being lost, the bar-code will be terminated and a new one will be handed out to the student or staff member.



Play Space

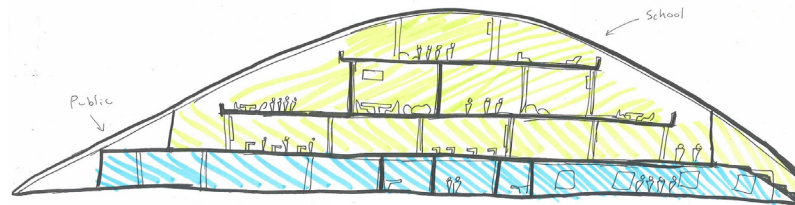
The children will play on the roof, which will be railed off. Only teachers, parents, and fellow students will have access to these areas during the day. Staff members will roam the facility, leaving no area where children are unsupervised.



SAFETY &

Design Features

When we were designing our school, we were very much aware of the concerns of having the public so close to the students. Our building is designed to give an illusion of openness, while providing the students with a chance to not only experience downtown, but feel a part of it. The school area is the highest of the sections in the building, giving students a chance to see the site and downtown Red Deer, while being closed off in a safe area. The public could access the school floors in the evening and on weekends when the public facilities are most busy, resulting in a better utilization of space.



Gamification

We would use the student's personal iPad to access gaming technology designed for learning. Seven billion hours a week worldwide are spent gaming, meaning that by using this, we could better engage students. Our lessons would be created in the form of educational games, with in game achievements that track the students' progress. This would also allow students to better learn at their own pace.



THE FUTURE

iPads vs. Textbooks

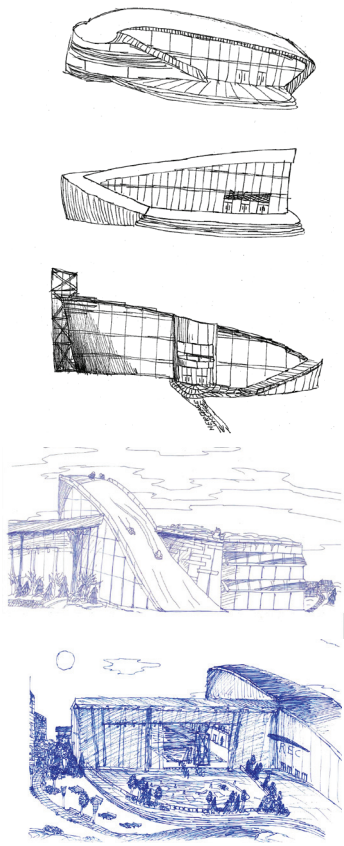
Early on, we decided to create initiatives to reduce our paper consumption. A large contributor to our overall use of paper in the school would have been the use of textbooks and conventional notes. iPads can be used for both and are extremely portable. Notes could be shared quickly and wirelessly over iCloud storage. We calculated that by creating a digital library of eBooks, opposed to a traditional library, we can save not only space but also paper, staff hours, transportation costs and money. Even now, education systems around the world, such as South Korea, are switching to this technology. Books would not have to be forgone completely though, as the public library is within a five minute walking distance.

We would incorporate cutting edge technologies for learning such as full wall, high resolution screens and a digital globe, showing real time weather patterns, shown here from our tour of the Taylor Digital Library in Calgary.



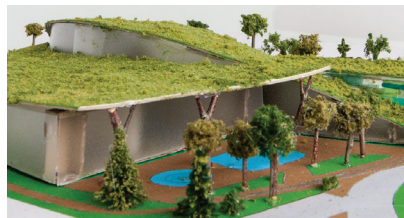
TECHNOLOGY

COMMUNITY



We wanted to create a building that incorporated as much nature as possible, and wouldn't destroy large amounts of public green space. This was achieved by designing a curved roof to be an extension of the park, to be used year round. In the summer, the entire south facing wall opens up to connect the indoor and outdoor pool areas.

In the winter the curved roof offers a great opportunity for sledding.



BUILDING



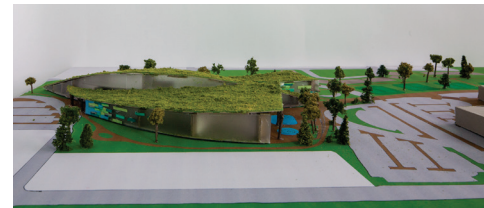
South Elevation

The outdoor pool, spray park and amphitheatre benefit from the summer sun.



West Elevation

The West side of the pool faces a small park. The Museum and Gallery are on the East side of the building, connecting to Heritage Square (a collection of historic buildings in the park). The bus drop off would also be along the east side of the site.

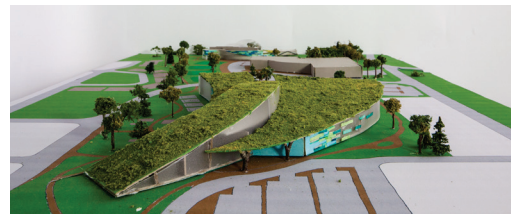


East Elevation

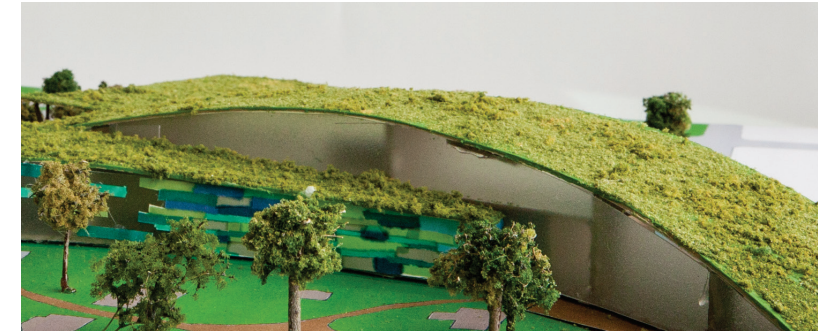


North Elevation

The North side of the building is lower, protecting the building from wind and blending into the park by showing more of the green roof.



CENTRE

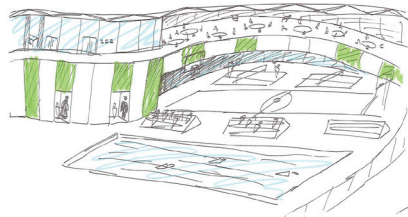


The higher, central section where the school will be located allows lots of natural light and cross ventilation to create a great learning environment. We can also open the classrooms out onto the green roofs to extend our learning area, or use these spaces for arts and community programs on evenings and weekends.



EXTERIOR

COMMUNITY



Because this is a public building, we believe the interior should be more fun and creative. Colors should be more vibrant, patterns more interesting and furniture more comfortable.



Furniture can be used to create a more comfortable, engaging atmosphere.



Our pool, field house, and museum provide great opportunities to our students and community to learn and have fun.

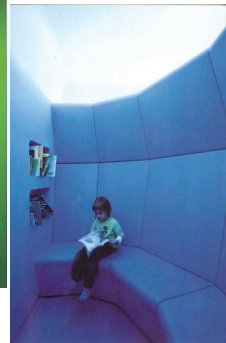
BUILDING

The pool and fitness centre are located on the west side of the building, the museum and field house are located on the opposite side. This creates an open environment and provides easy access.



Main Floor

2nd Floor



By using inventive decorations, we can ensure kids will remain entertained and engaged throughout the school day.



When simple spaces have interactive parts, it can transform a room into a space children are engaged.



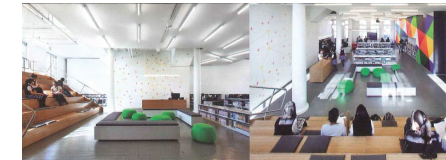
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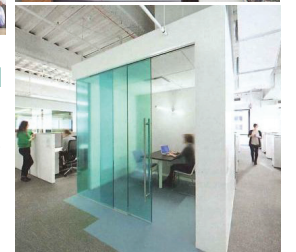
3rd Floor

4th Floor

By using space creatively for more than one purpose, a facility can remain smaller, contributing to sustainability.

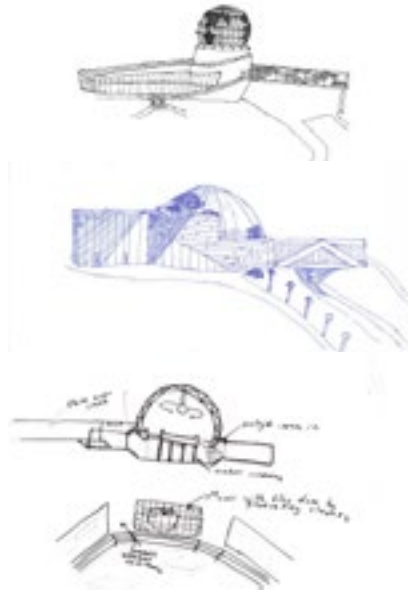


Group work areas and break-out rooms encourage collaboration.



INTERIOR

SCIENCE



When we were developing the concept for the Science Centre, we knew from the beginning that we wanted to incorporate an opportunity to learn about the flow of water through our city. From our first design, we had always included an arm of the building that would extend over the Waskasoo creek.

The largest array of solar panels located on our site is positioned on the top of the Science Centre, offering a unique opportunity for the community and our students to learn about solar energy.

The panels will be south-facing, tilted at an angle of fifty degrees to get the most sunlight and thus produce the most electricity



EXTERIOR

South Elevation



Waskasoo Creek

River Learning Lab

Solar Panels

Public Science Centre

Community Gardens



South—East Elevation



We would landscape the exterior grounds to offer an opportunity to learn, hands on, about water flow.

CENTRE



With bike trails, bridges, and pathways running around the site, our Science Centre will allow for visitors to learn about the world around them.

DESIGN

SCIENCE



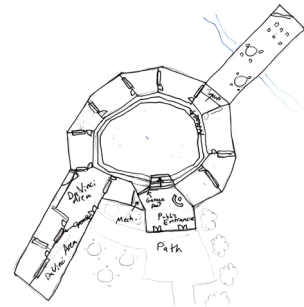
A collaborative classroom from our Sketch Up model.



Science labs can be used for school and for community programs.

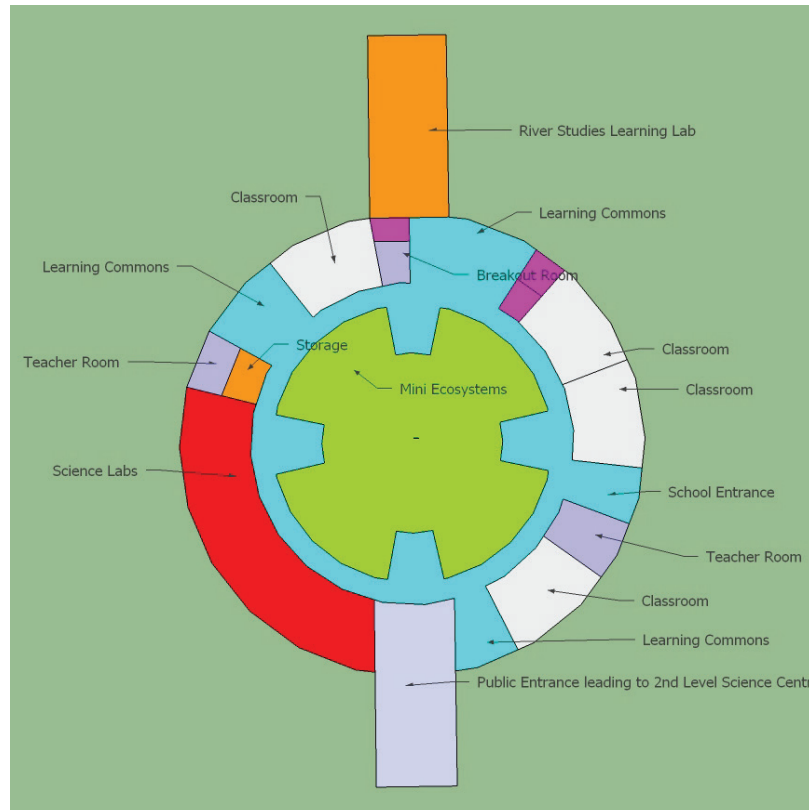


INTERIOR

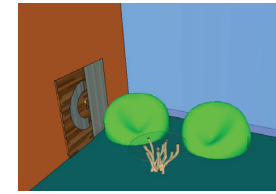


Our concept incorporates a substantial use of glass, providing daylight and beautiful views of nature to our students and community. This will improve focus and concentration, and make it easier to learn.

Our microclimates will create an environment high in humidity, which has also been shown to affect students positively.



CENTRE



The microclimates that we incorporated at the core of our Science Centre design will offer an exciting, unique opportunity for learners in our school and our community.



DESIGN