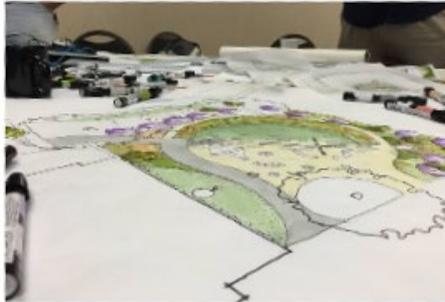




# 2020 DESIGN CHALLENGE

## Belleville, ON

Presented by:



In Partnership with:



# UNIVERSITY *of* GUELPH

## Project Narrative

# Contents

## Project Overview

Approach and Vision

The Five Senses

Responding to Feedback

## The Design

Nicholson Grove

Central Lawn And Community Garden

Central Paved Areas

St. Michaels Playground

Nicholson Courtyard

Memorial Orchard

## Phases and Budget

Phase One

Phase Two

Phase Three

Budget

# Approach and Vision

When entering this competition, we kept our minds as open as possible. We intentionally kept ourselves from thinking of design ideas until the charette session in order to allow the input from students and staff to have maximum impact on our designs and decisions. During the charette, several consistent themes emerged including the incorporation of the 5 senses, incorporation of water, habitat for wildlife, interactive play, outdoor educational opportunities, diverse programming, community, more seating, and more green space. These consistent themes became the core of our design, and every intervention is connected to at least one of these ideas. The schoolyards have been broken into 6 areas, with a corresponding sense as the main theme. We hope to get students and parents involved in the implementation and maintenance of the design, not only to save costs, but also for the students and community to have fun, learn, and gain a sense of agency, ownership, and pride over the site. Through the application of these ideas, the incorporation of habitat and natural play, and the use of recycled and local materials, we hope that the Nicholson and St. Michael's Schoolyards will become strong places of play, learning, and community where students will be able to form great and lasting memories for generations to come.

## The Senses

### Touch



The sense of touch is addressed throughout the site in a variety of ways. From tactile play experiences to the textures of different plants and materials. Student involvement in the crafting of bird houses, painting of murals, or planting of shrubs and flowers allows students to get “hands-on” with the space and develop a strong connection to the world through touch.

### Sound



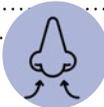
The variety of different play areas and wildlife habitat allows for a multitude of ways for students to experience sound. From human sounds like those of children playing or friends conversing to sounds of nature such as the wind in the trees, birds and squirrels chirping, or the babbling of water in the “creek” by the community garden.

### Sight



Sight is also addressed throughout the site. Bright and beautiful plantings, murals, and paving play graphics provide a vibrant and visual experience throughout the site. Elements such as the central running track and exploration pathway twist and turn and as they meander throughout the site, providing a different view at every turn.

### Smell



Fragrant pollinator plants such as lavender or milkweed and other species provide a variety of fragrances through the schoolyards around the year. The rich soil in the community gardens or planting beds also contribute earthy, rich fragrances to air. Students can enjoy the smells while they play, read, attend outdoor class, or walk through the site.

### Taste



One student repeatedly mentioned the idea of vending machines, and others mentioned edible plants or gardens. While we cannot provide actual vending machines, we can give you Nature's vending machine. Through the liberal application of edible plants throughout the site, as well as with the central community garden, we provide opportunities for students to taste their way through the site and grab snacks right from the planting beds during recess.

### Memory



A dedicated space for a memorial filled with fruiting trees and shrubs to provide a headspace for reflection and remembrance of those we have lost. Students' memories are made throughout the site as they grow to making connections and relationship in this schoolyard.

## Responding to Feedback

What We Heard	What We Did
"outdoor classroom", "amphitheater"	Inclusion of an amphitheater/classroom in the Nicholson Grove and another classroom in the St. Michaels playground
"vending machines"	Incorporation of edible plants throughout the site (Nature's vending machine) as well as the community garden
"ninja course", "obstacle course", "climbing"	Addition of a natural "ninja" obstacle course in the St. Michael's playground
"feels like a prison yard", "too much paving"	Removal of interior fencing wear possible, beautification of fencing through planting and art where removal is not possible. Removal of paving in areas and more plantings
"lawn is a muddy mess"	Conversion of overly compacted sod to impermeable clay surfacing which drains to bioswales on either side of lawn
"inclusion of water", "water management", "bridges"	Bioswales, rain garden, and "creek" flowing from spigot near community garden with small bridges crossing over them
"connection between schools and spaces"	Similar planting schemes and material choices provide unity throughout the site. Running track weaves between both schoolyards, connecting the two
"reading", "quiet spaces"	Creation of more quiet, secluded spaces in the courtyard, exploration area, and St. Michael's Grove
"gathering spaces", "talking to friends", "community"	Seating clusters and gathering spaces arranged throughout the site, particularly in the Nicholson Grove. The community garden, memorial grove, and programmable open spaces also create great opportunities for gathering and community
"more shade"	More trees, shaded seating
"video games"	While we cannot provide actual video games, we can mimic some qualities of video games such as in our exploration area and in our obstacle course
"place to wait for the bus"	Seating and play along Church Street
"birds"	Birdhouses and plants that will provide shelter and food for birds in the areas. Birdhouses to be built/painted and customized by students
"chipmunks and squirrels"	Feeders and edible plants will attract these species to the area. Small clusters of sticks and rocks in the raised planters will provide habitat for chipmunks, toads, and other small animals
"butterflies", "bees", "pollinators", "milkweed"	Planting of pollinator supporting plant species throughout the site
"memorial for marlow"	We dedicated an orchard in the memory of her and others

# Design

## The Six Areas:

- 1 Nicholson Grove
- 2 Central Area
- 3 Central Paved Area
- 4 St. Michael's Playground
- 5 Nicholson Courtyard
- 6 Memorial Orchard



## Nicholson Grove



Our vision for the design of Nicholson Grove is to create an open, inviting, and social space to serve as a gathering area for students and as an entryway to the school. This overlooked area is an opportunity for students to gather, socialize, hang out before and after class or after a basketball game. Our proposal includes turning the upper area on the north side under the "One Tree" into a gathering space filled with seating and surrounded by pollinator and edible plants, bird feeders, and small animal habitat. Seating will be arranged in clusters to facilitate socialization among students and community members. The southern edge of the elevated area will be retained by armor stones that double as seating for an outdoor classroom. The asphalt area to the west of the elevated along the school will be removed and turned into garden beds with an accessible pathway. Basketball goals will be mounted on the exterior of the building, and the open asphalt area behind them will be left as an open programmable space. Shaded seating is proposed for this area, but potential is left for it to be used for community or school events such as graduations, farmers markets, or during sports games. This space isn't a back entrance to the school or something forgotten anymore, it's something more inviting. It's a space of hearing as we listen to one another and for creating new



Amphitheater

Seating





Bridge



Bioswale

## East Lawn

As discussed extensively during the charrette and design process, the eastern lawn area is a muddy, unmanageable mess and has been for years. After trying for weeks to find a way to keep the area as sod, we realized that the only way that would work would be through extensive soil remediation, grading, and long-term intense maintenance that would likely still result in another mud pit before too long. Thus, we decided to go with a more impermeable clay surfacing, similar to that utilized on tennis courts. The field would be crowned in the middle and slope to two planted bioswales on either side, which would have bridges crossing them to the surrounding areas. In addition to dealing with the runoff, the bioswales can serve as educational features to the students. Fences will be located along the “inside” edges of the bioswales to prevent kids from falling in them and to retain balls in the field area. We are also proposing the addition of two small soccer goals. While it can be hard to let go of the attachment to a grass sports field and the upfront cost of the clay will be higher than sod, we believe that long-term this is the best solution from both a



Clay Surfacing

## West Lawn

In the west lawn we are preserving the majority of the open space. The only interventions are the addition of a climbing structure and/or swing set along the south side and the creation of St. Michaels’ Grove. St. Michaels’ Grove consists of a mulched area beneath the existing trees that will be filled with picnic tables as well our custom seating elements. The existing planters along the fenceline will also be planted. This will provide a space for students to gather to talk or read during recess as well as a place to wait for the bus. We are also proposing adding seating in front of St. Michaels along Church Street to allow for more places to wait for the bus.



Natural Climbing



Swingset



Seating



Seating

## Community Garden

The community garden area will be located on the current site of the portables. We are proposing several interventions for this area. The community garden itself will be fenced in and consist of several dozen small raised planters (OWNERSHIP MODEL?). The garden will serve as a great social node for the community, provide healthy food, and serve as an educational opportunity for the students. South of the community garden we are proposing a gazebo to serve as a gathering space, especially during poor weather or in the winter (fireplace??). Near the southwest corner of the community garden we have proposed a spigot that will provide water for the community garden. Excess water from the spigot will flow down a channel we are calling the “creek” to a rain garden at the bottom. The rain garden will be located surrounding an existing catch basin. The idea being that we can tear out the asphalt directly around the basin and implement a rain garden to support natural infiltration, while the basin would remain to serve as an overflow. If this works well at this catch basin, the same technique could be applied to others on the site. The areas surrounding the gazebo and creek will be planted with pollinator and edible plants and include bird and animal habitats.



Spigot + Creek



Gazebo



Rain Garden



Community Garden

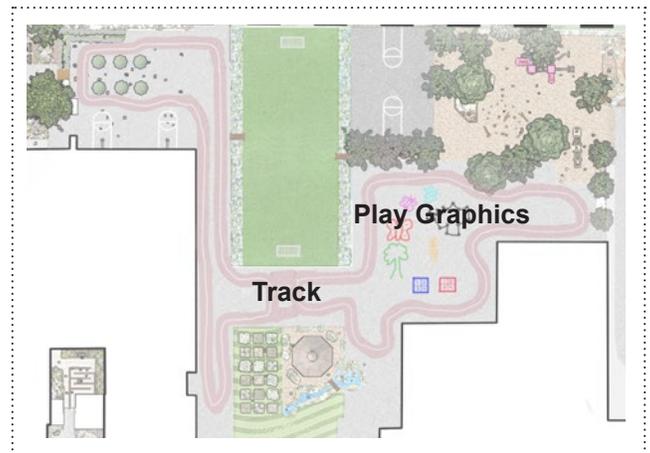


Rain Garden

## Central Paved Areas



Our design for the central asphalt areas is quite similar to current conditions. We are proposing that the areas be painted with play graphics such as foursquare and hopscotch. One important new addition is our painted track. We are proposing a painted running track that consists of two 200 meter loops, one in each schoolyard, that meet in the middle allowing the two to be joined into one single 400 meter track if desired. This track will not only provide physical opportunities such as for kids to race each other or to use during gym class, but it also provides a connection between the two schools. As with the open areas in the Nicholson Grove, the paved areas in this section could also be used for different flexible programming and events.



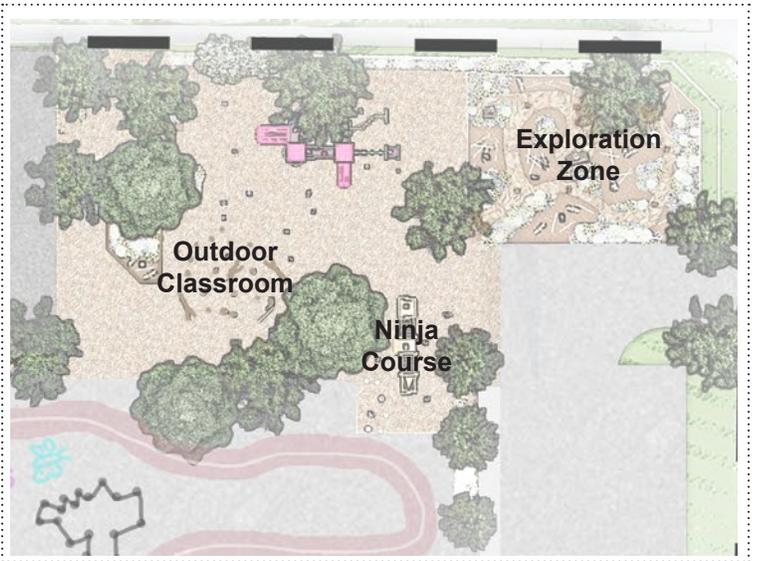
Play Graphics



Running Track

# St. Michaels Playground

Some of St. Michaels' playground is remaining the same. One of the play structures is remaining, and the raised planting beds are not being touched. One intervention that is happening is the addition of an outdoor classroom. This classroom will consist of a blackboard and movable log seating. The idea is to provide loose stumps and logs so that the kids can arrange them however they wish to provide a tactile play element some of the time that can be rearranged into a classroom when needed. While the raised beds are remaining, they are currently very empty other than a few trees. Thus, we are proposing planting a healthy understory consisting of edible and pollinator plants. Additionally we are proposing the inclusion of bird houses and feeders made by students, as well as small habitat piles for chipmunks and other small critters. Another design element is the replacement of one of the existing play structures with a natural "ninja obstacle course" to provide kids with an engaging and less traditional play experience. Finally, we have proposed that the empty space on the southern side of the space be turned into an "exploration zone". This will consist of a small trail weaving around the space, with thick plantings filling the space in between to foster a real sense of exploration and immersion in nature. Additionally small "alcoves" with seating will branch off the trail to provide small areas for kids to discover, and piles of sticks or stones will create habitat as well as provide more play and discovery opportunities. We are also proposing that the exterior fence be "beautified" using plantings, vines, and art, an intervention we should be applied on all fences in the site.



Ninja Obstacle Course



Outdoor Classroom



Fence Beautification



Edible Plants



Pollinator Garden



Exploration Zone



Bird Houses & Animal Habitat



# Nicholson Courtyard



## Upper Level

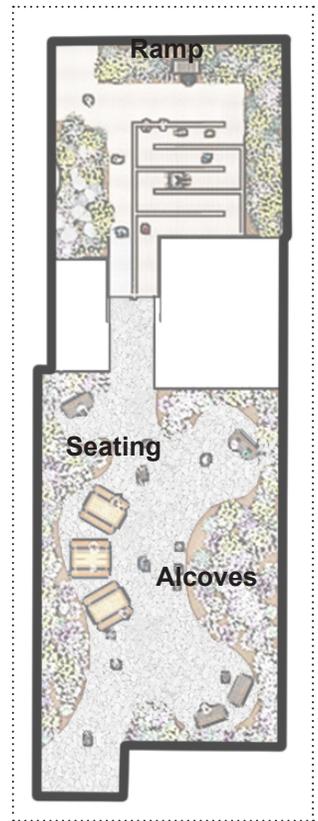
The upper level of Nicholson courtyard is envisioned as a gathering space for students and the community. A central paved area with seating offers a place to gather. Low plantings around the perimeter frames and greens up the space without blocking the windows, and small alcoves nested in the planting around the central spaces create secluded areas for students to read or have small group conversations. We are also proposing the inclusion of an Indigenous acknowledgement feature. However, this is not included on the plan nor has it been designed in any way, as we feel that it is not our place to do so, and that this element should be designed by or in collaboration with the local Indigenous community.



Alcoves



Murals



## Lower Level

The lower level of Nicholson will be dominated by a wooden accessibility ramp to the upper level. While we recognize that this is an intensive and costly intervention, we believe that it is important to make the space accessible. Using wood is also more natural and cheaper than typical materials such as concrete. Additionally, accessibility is not the only function the ramp will serve, as it can also double as seating for an outdoor classroom in the lower level. In the lower level, and potentially the upper as well, we are proposing that the walls be painted with murals by the students at the school, potentially as a part of the art curriculum, in order to enliven and brighten the space.

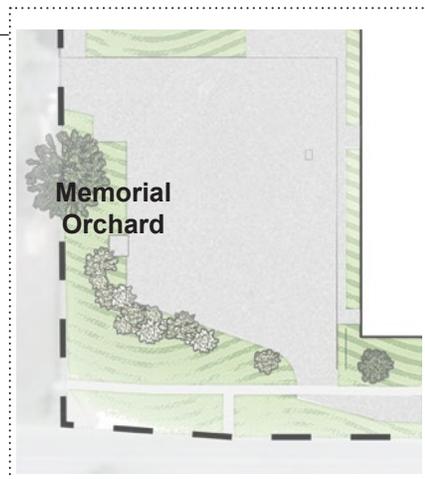


Wooden Switchback Ramp

## Memorial Orchard



Inspired in the memory of Marlow Ploughman, we are proposing a Memorial Orchard in the northwest corner of the site. Here fruiting trees and shrubs will be planted in memory of those we have lost along with seating to create a sacred space of quiet contemplation and reflection. This area will also be able to work in concert with the community garden once its plants are old enough to produce fruit.



Memorial Tree



Marlow

# Phasing and Implementation Plan

---

## Phase One

Nicholson Grove  
East Field  
St. Michaels Outdoor classroom  
St. Outdoor Grove

Phase one suggests implementing parts of the project that will quickly transform the schoolyard into a more sensory experience and begins to stitch together the fabric of the schoolyards together as a cohesive whole. We've chosen these areas for their location around the school yards, distributing benefits across the site, as well cost of construction and feasibility considering the timeline of when the existing portables on site will be removed.

## Phase Two

Activity Circuit  
Memorial Orchard  
West Lawn  
Community Garden

We've considered these places for phase two due the time constraints from the removal of the portables in the central area of the schoolyards as well as the feasibility of adding the activity circuit once the portables are removed. this phase also includes the beginning of the Remembrance/memorial orchard to commemorate students and teachers who've passed on.

## Phase Three

Nicholson Courtyard  
St. Michael's Playground  
Exploration Zone

Our final phase involves the area's of the site that we feel do not need immediate attention, but would still greatly benefit the users of the schoolgrounds in the future. These include the old, but not yet unfunctional playground on the St. Michaels schoolyard as well as the exploration zone and Nicholson Courtyard.

Item No.	Item	Description	Unit	Quantity	Unit Price	Subtotal	Additional Notes
<b>Phase 1</b>							
<b>Phase 1A: NICHOLSON COMMUNITY GROVE</b>							
<b>1.0 Demo &amp; Site Prep</b>							
1.0	Asphalt Stripping	Removal and disposal of existing asphalt. Base aggregate to be retained for re-use	sgm	60	\$10.00	\$600.00	
1.1	Sod Stripping		sgm	300	\$3.00	\$900.00	
1.2	Rough Grading	Includes excavation of paving area and rough grading of subgrades and planting areas	sgm	400	\$3.25	\$1,300.00	
<b>2.0 Paving</b>							
2.0	Limestone Screenings	Includes 150mm granular A subbase 50mm limestone screenings and geotextile	sgm	150	\$15.00	\$2,250.00	
<b>3.0 Planting</b>							
3.0	80mm cal. Deciduous Trees		unit	4	\$825.00	\$3,300.00	planting prep, plant material, mulch and staking included in unit cost
3.1	Shrubs & Perennial Planting	Bed prep and mulch included	sgm	240	\$50.00	\$12,000.00	Quantity TBD - \$12,000 to be allocated towards Planting Area. Propose that shrub and perennial plantings be done by students, reducing labor costs
3.2	Aluminum Edging		lin.m.	50	\$15.00	\$750.00	
<b>4.0 Site Furnishings</b>							
4.0	Benches		unit	5	\$1,000.00	\$5,000.00	
4.1	Picnic Table w/ Attached Umbrella		unit	5	\$1,000.00	\$5,000.00	Picnic Table and Umbrella
4.2	Armor Stone Seat Wall		lin.m.	20	\$500.00	\$10,000.00	Grading TBD. We might prefer wood timber retaining seating, similar to the precedent provided in our presentation. Does Wentworth have any experience with how that cost might compare to that of the armor stone?
4.3	Wall Mounted Basketball Nets with Court Painting		unit	2	\$2,000.00	\$4,000.00	
						<b>Area Subtotal</b>	<b>\$45,100.00</b>
<b>Phase 1B: LAWN AREA</b>							
<b>1.0 Demo &amp; Site Prep</b>							
1.0	Sod Stripping		sgm	500	\$3.00	\$1,500.00	
1.1	Rough Grading	Includes grading of lawn and excavation of swales. Cut from swales to be used to grade lawn	sgm	1300	\$3.25	\$4,225.00	
<b>2.0 Paving</b>							
2.0	Har-Tu City/Tech clay surfacing or similar product	Cost includes installation and subgrade elements	sgm	1100	\$20.00	\$22,000.00	This product is merely a suggestion at this time. We are open to other solutions as we learn more about the problem on site
<b>3.0 Planting</b>							
3.0	Bioswale planting		sgm	200	\$50.00	\$10,000.00	Quantity TBD - Propose that shrub and perennial plantings be done by students, reducing labor costs
<b>4.0 Site Furnishings</b>							
4.0	Relocation of fencing	Moving fencing along lawn to inside of bioswales	lin.m.	100	\$40.00	\$4,000.00	
4.1	Bridges	Small prefab wooden bridges over bioswales	unit	2	\$450.00	\$900.00	
4.2	Small Soccer Goals		unit	2	\$500.00	\$1,000.00	
						<b>Area Subtotal</b>	<b>\$43,625.00</b>
<b>Phase 1C: ST. MICHAELS OUTDOOR CLASSROOM</b>							
<b>1.0 Site Furnishings</b>							
1.1	Classroom logs (6'-10" dia.) and stumps	Loose logs and stumps for play and outdoor classroom. Rough, unfinished	unit	1	\$1,000.00	\$1,000.00	
1.2	Freestanding Chalkboard		unit	1	\$1,000.00	\$1,000.00	
						<b>Area Subtotal</b>	<b>\$2,000.00</b>
<b>Phase 1D: ST. MICHAELS GROVE</b>							
<b>1.0 Surfacing</b>							
1.0	Cedar Mulch	Mulch in square planters and in seating area	sgm	110	\$20.00	\$2,200.00	
1.1	Filter fabric	Filter fabric in seating area	sgm	40	\$1.00	\$40.00	
<b>2.0 Planting</b>							
2.0	Shrubs & Perennial Planting		sgm	80	\$50.00	\$4,000.00	Quantity TBD - Propose that shrub and perennial plantings be done by students, reducing labor costs
2.1	Timber Edging	To match existing	lin.m.	8	\$15.00	\$120.00	
<b>3.0 Site Furnishings</b>							
3.0	Informal Benches	Constructed from 6x6 posts, reclaimed if possible	lin.m.	20	\$8.00	\$160.00	
3.1	Picnic Tables		unit	2	\$750.00	\$1,500.00	
						<b>Area Subtotal</b>	<b>\$8,020.00</b>
						<b>Phase 1 Total</b>	<b>\$102,970.00</b>
<b>Phase 2</b>							
<b>Phase 2A: ACTIVITY CIRCUIT</b>							
<b>1.0 Paving</b>							
1.0	New Asphalt Seal Coat		sgm	2900	\$5.00	\$14,500.00	We want to make sure resurfacing will not be required for some time after application of play graphics
2.0	Painted Play Graphics and Running Track		sgm	1100	\$10.00	\$11,000.00	
						<b>Area Subtotal</b>	<b>\$25,500.00</b>
<b>PHASE 2B: MEMORIAL ORCHARD</b>							
<b>1.0 Planting</b>							
1.0	80mm cal. Deciduous Trees		each	10	\$825.00	\$8,250.00	
<b>2.0 Site Furnishings</b>							
2.0	Benches		each	4	\$1,000.00	\$4,000.00	
						<b>Area Subtotal</b>	<b>\$12,250.00</b>
<b>PHASE 2C: WEST LAWN</b>							
<b>1.0 Site Furnishings</b>							
1.0	Climbing Structure		each	1	\$2,000.00	\$2,000.00	
1.1	Swingset		each	1	\$1,500.00	\$1,500.00	
						<b>Area Subtotal</b>	<b>\$3,500.00</b>
<b>PHASE 2D: COMMUNITY GARDEN</b>							
<b>1.0 Demo &amp; Site Prep</b>							
1.0	Asphalt Stripping	Removal and disposal of existing asphalt. Base aggregate to be retained for re-use	sgm	15	\$10.00	\$150.00	Removal of asphalt for rain garden
1.1	Rough Grading	Includes excavation of paving area and rough grading of subgrades and planting areas	sgm	40	\$5.00	\$200.00	Excavation and grading for rain garden and creek
<b>2.0 Paving</b>							
2.0	Limestone Screenings	Includes 150mm granular A subbase 50mm limestone screenings and geotextile	sgm	150	\$15.00	\$2,250.00	Screening pathways between planters and connecting gazebo to garden
<b>3.0 Planting</b>							
3.0	Shrubs and perennial planting	Bed prep and mulch included	sgm	180	\$50.00	\$9,000.00	Plantings around creek and gazebo and in rain garden. Quantity TBD - Propose that shrub and perennial plantings be done by students, reducing labor costs
<b>4.0 Site Furnishings</b>							
4.1	Flower Planters	Includes wood, soil, and plants	unit	24	\$800.00	\$19,200.00	
4.2	1.5m Chain Link Fence		lin.m.	40	\$65.00	\$2,600.00	
4.3	1.5m Chain Link Gates		unit	4	\$150.00	\$600.00	
4.4	Water Spigot		unit	1	\$1,000.00	\$1,000.00	
4.5	Gazebo	Includes cost of running water line to location	unit	1	\$10,000.00	\$10,000.00	
4.6	Bird Houses and Feeders		bulk	1	\$500.00	\$500.00	
						<b>Area Subtotal</b>	<b>\$45,500.00</b>
						<b>Phase 2 Total</b>	<b>\$86,750.00</b>
<b>Phase 3</b>							
<b>Phase 3A: NICHOLSON COURTYARD</b>							
<b>1.0 Demo &amp; Site Prep</b>							
1.0	Unit Paving Removal from Upper Area	To be re-used in lower area	sgm	15	\$8.00	\$120.00	
1.1	Removal of existing stairway		unit	1	\$500.00	\$500.00	
<b>2.0 Paving</b>							
2.0	Unit Paving in Lower Area	Reduced cost from re-used materials	sgm	30	\$25.00	\$750.00	
<b>3.0 Planting</b>							
3.0	Perennial and shrub planting	Includes 150mm granular A subbase 50mm limestone screenings and geotextile. Cost has been increased to reflect access issues (product will need to be ordered bagged instead of bulk)	sgm	125	\$18.00	\$2,250.00	
<b>4.0 Site Furnishings</b>							
4.0	Wooden accessibility ramp	Cost increased to reflect access issues	unit	1	\$5,000.00	\$5,000.00	Quantity TBD - Propose that shrub and perennial plantings be done by students, reducing labor costs
4.1	Picnic Tables		unit	3	\$750.00	\$2,250.00	
4.2	Benches		each	4	\$1,000.00	\$4,000.00	
						<b>Area Subtotal</b>	<b>\$23,870.00</b>
<b>Phase 3B: St. Michaels' Playground</b>							
<b>1.0 Demo &amp; Site Prep</b>							
1.0	Removal of play structure		unit	1	\$1,000.00	\$1,000.00	
<b>2.0 Planting</b>							
2.0	Shrub and Perennial Planting		sgm	125	\$60.00	\$7,500.00	Quantity TBD - Propose that shrub and perennial plantings be done by students, reducing labor costs
<b>3.0 Site Furnishings</b>							
3.0	Birdhouses, Feeders, and Animal Habitat		bulk	1	\$1,000.00	\$1,000.00	
3.1	Ninja Obstacle Course		unit	1	\$5,000.00	\$5,000.00	
						<b>Area Subtotal</b>	<b>\$14,000.00</b>
<b>Phase 3C: Exploration Zone</b>							
<b>1.0 Surfacing</b>							
1.0	Mulch Path		sgm	150	\$20.00	\$3,000.00	
<b>2.0 Planting</b>							
2.0	Shrub and Perennial Planting		sgm	200	\$60.00	\$12,000.00	Quantity TBD - Propose that shrub and perennial plantings be done by students, reducing labor costs
<b>2.0 Site Furnishings</b>							
2.0	Birdhouses, Feeders, and Animal Habitat		bulk	1	\$1,500.00	\$1,500.00	
2.1	Benches		unit	2	\$1,000.00	\$2,000.00	
						<b>Area Subtotal</b>	<b>\$18,500.00</b>
						<b>Phase 3 Total</b>	<b>\$56,870.00</b>
						<b>Grand Total</b>	<b>\$246,590.00</b>