

Classroom Landscaping – Final Report

ES 471/ER 412 - Advanced Principles and Practice in Ecological Restoration

Kierra Moseman, Sadie Gibbs, and Gwen Janz



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Summary

As a part of a University of Victoria undergraduate course, “Advanced Principles of Ecological Restoration”, our group of three undertook a project to design the restoration of the Millard Learning Center classroom. In doing so, we developed a proposal to improve the functionality of the classroom and its surrounding areas, reduce the creation of dust and maximize ecological restoration opportunities around the classroom building. We hope that our ideas and suggestions will be embraced by the Conservancy and may eventually guide the future development of the Millard Learning Center classroom spaces.

Introduction

The Millard Learning Center is an epicenter for environmental education and research on Galiano Island. It is a hub for the community to come together to share ideas and resources, and for children and families to learn about the natural world. After having spent 9 days living and learning on the Galiano Conservancy property, our group came together to develop plans for how the functioning of the property could be enhanced. We also determined that the principles of ecosystem restoration could be applied directly to the areas that are being lived on, rather than just to the areas beyond the learning center. The classroom building at the Millard Learning Center has the potential to be an example of sustainable infrastructure, while also being the first example of ecological restoration that visitors see upon their arrival. However, the current layout of the classroom and its surroundings is falling short of this. Dust is creating problems for staff and volunteers, entrances and pathways are unclear, and there is plenty of opportunity to restore the land around the classroom for both ecological and aesthetic purposes. The following report will outline how we evaluated the classroom and the land around it, the conclusions we came to, and our suggestions for how the Galiano Conservancy may choose to move forward.

Goals and Objectives

Our assessments revealed that functionality around the classroom could be improved. Vehicles driving around the property raise dust, as do the everyday activities of the people who use the classroom. The rules about parking are unclear, building entrances are misleading, and the barren land around the classroom building may be unappealing to visitors. These problems bring us to our overarching goal: to manage dust in and around the classroom, to develop the immediately surrounding land in a functional way, and to protect the area from degradation.

The goals and objectives of our classroom design project fit into the larger Galiano Learning Centre Management Plan (2013). According to this plan, the learning centre strives to provide “opportunities and providing facilities for learning, research and innovation” (Galiano Learning Centre Management Plan, 2013). Consequently, we defined our main goals as follows:

1. to improve the functionality of the learning centre by redirecting people’s movements,
2. to create an inclusive learning environment by solving accessibility issues,
3. and to foster ecological integrity by reducing human impact on the landscape.

With these goals in mind, we chose to focus on low-cost and low-maintenance design ideas that would make a positive contribution to the Centre’s management plan.

We suggest creating efficient walkways and improving signage to counteract the confusion experienced by guests and to avoid further land compaction. These suggestions would involve clear signposts in the front, back, and bathroom entrances. We also must ensure that all entrances are made accessible to the public. The restoring of the main meadow - or the revegetating of the degraded land around the learning centre - is also an objective that we believe would be valuable to the Conservancy. The above goals and objectives helped to shape our design proposals, which we present to the Galiano Conservancy and its wider community.

Procedure/Methods

The classroom building at is the heart of the Millard Learning Center. It and it's surrounding areas form the focus area of our design project (figure 1). From conversations with GCA staff, we found out that the learning centre is intensively used by three groups: visitors, students, and staff. We engaged all three groups in our initial design work, although the limited time available meant that our consultations were necessarily selected and partial. We did our best to incorporate user needs and ideas into our plans. We also formed our own views by living at the Center for a week and carefully walking multiple times around the Millard Learning Centre. We observed how people moved around the learning centre and which walkways they most frequently use. After getting an idea about everyday movements, we designed our first two human movement, or energy flow, maps: one map depicting current uses of paths around the classroom (figure 2) and the other map outlining possible changes to these pathways (figure 3). The second map shows how movement around the properly could be more evenly distributed and could be more effectively managed around the main building (figure 3). These energy flow maps help to identify problems that we then address with this design project. We identified trouble sites that will benefit from ecological design improvements. Our procedure of first determining our focus area, second consulting staff, and finally our own observations formed our goals and objectives and led us to our proposals for the Classroom Landscaping.



Figure 1: Focus Area – This is the area we chose to concentrate on for the purposes of this project.

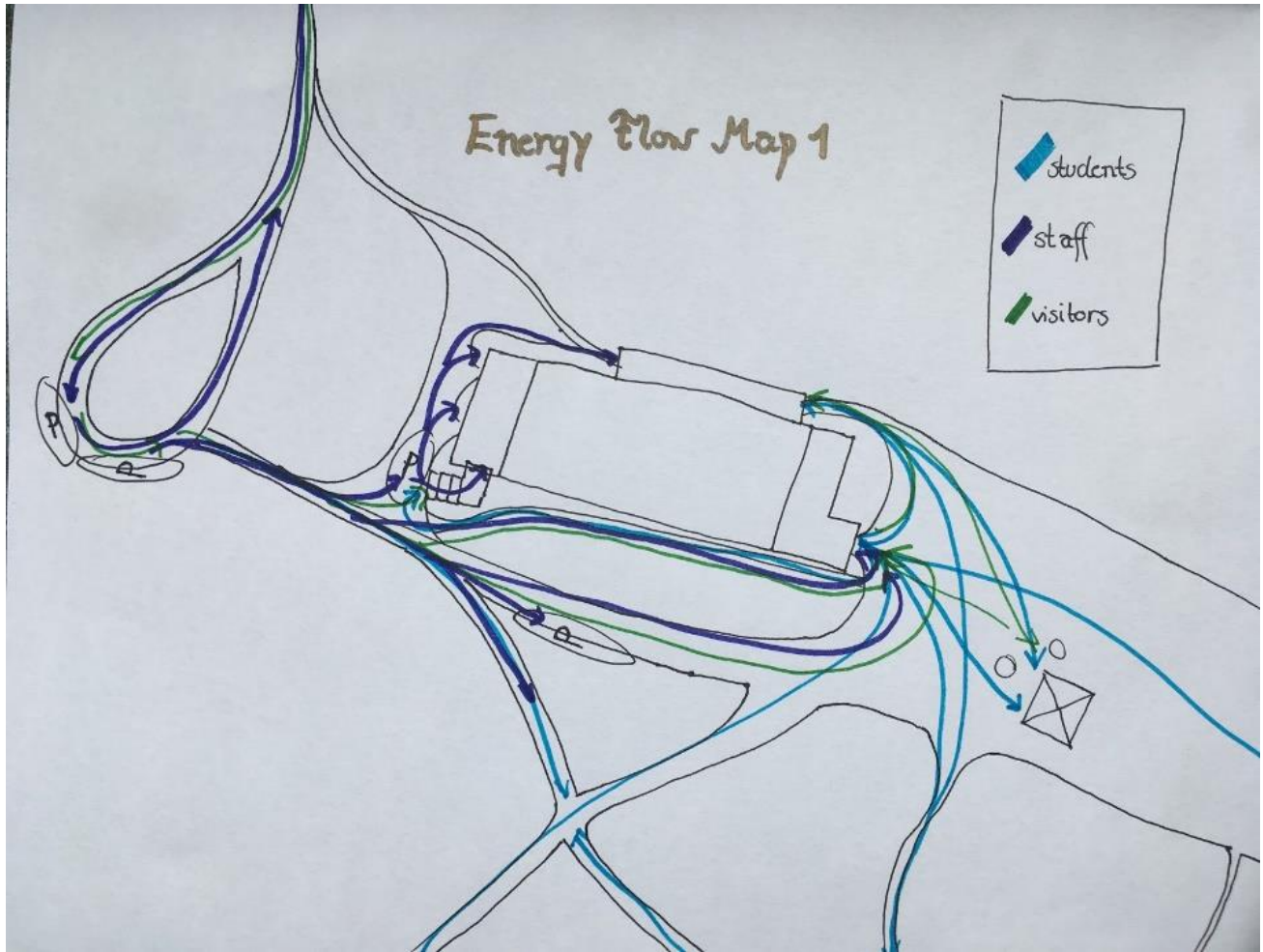


Figure 2: Energy Flow Map (current) – This map is a rough depiction of how the land around the classroom is being used. It primarily refers to foot traffic but also shows how vehicles are using the parking lot.

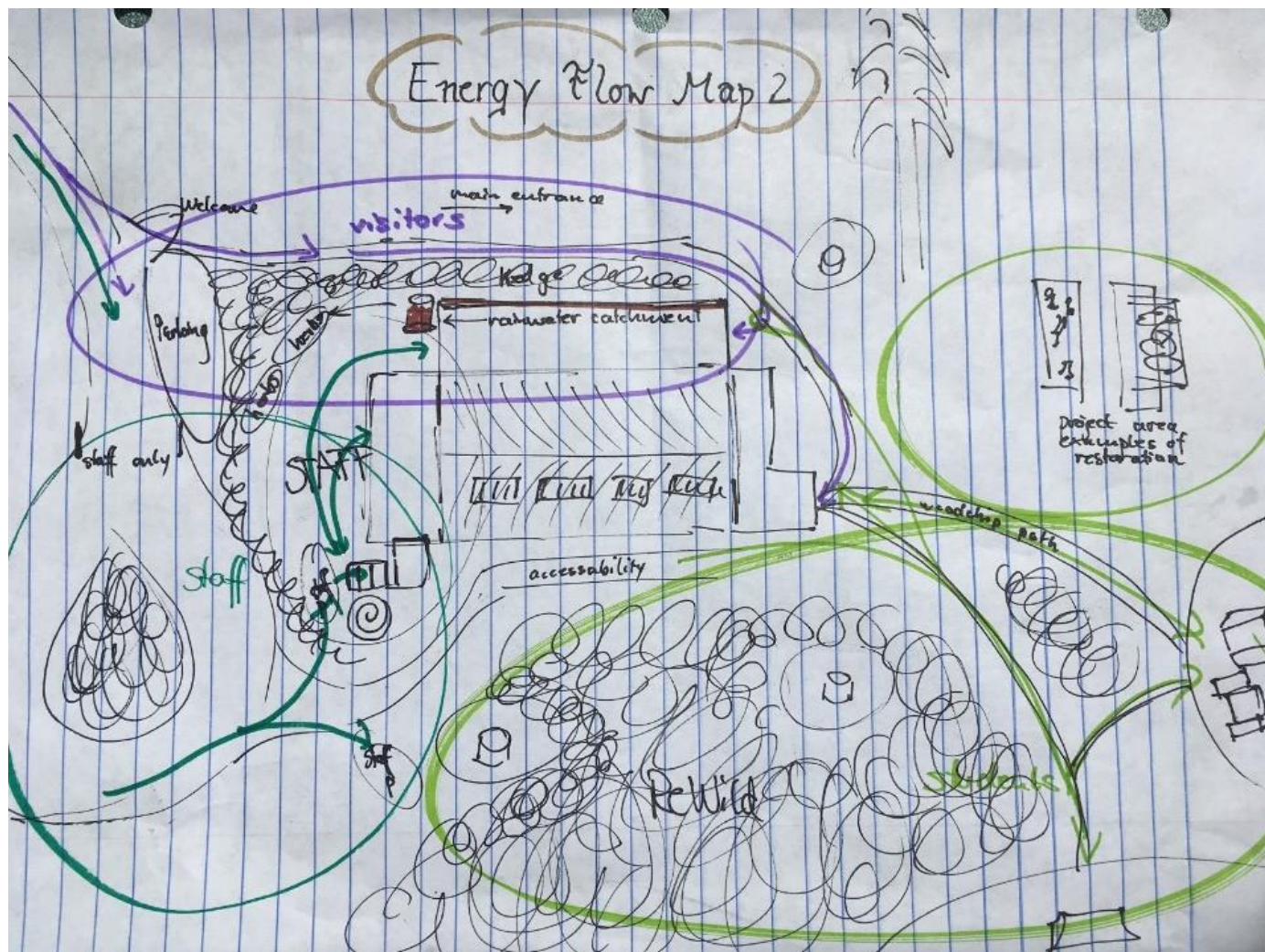


Figure 3: Energy Flow Map 3 (future) –This is a sketch of how the classroom and surrounding area might be utilized in the future.

Proposals for Alternative Designs

Each of one of our designs for the property are fluid, open suggestions for tackling the issues raised by dust, accessibility, and restoration. They are meant to highlight a variety of options which can be combined, mixed, and matched. We recommend that Conservancy members walk the sight with each map in hand to determine which pathways might best meet the needs of staff, students, and visitors while minimizing cost and volunteer hours and maximizing the restoration of the area.

This being said, we do recommend the Conservancy implement a few key points. Using wood chips, or another natural, permeable material for the pathways would be cost effective and minimize dust while suppressing plant growth. Of course, accessibility is an important consideration, and so the options can be weighed by the Conservancy staff and board members. We strongly recommend letting the salal, Oregon grape, trailing blackberry, black-capped raspberries, bracken fern, and wildflowers which characterize the slope between the Center and the campground regenerate between pathways. These native plants suppress dust, support goldfinches, take no maintenance, are food producing, and are already regenerating in these spaces. This will also allow full sun exposure for the Center's solar array. Logs and stones can be used to line paths to restrict walking disturbance while the salal mix regenerates. We also recommend encouraging the threatened Douglas-fir forest to regenerate wherever possible in accordance with the Conservancy Management Plan objectives.

As part of the classroom landscaping, we strongly suggest the Conservancy implement a rainwater catchment system to prepare for future climatic conditions which will tend towards longer droughts throughout the summer months. This also feeds into being fire smart. Cedar chip paths will suppress grass growth, build soil, and hold moisture to decrease fire risk, as will the regeneration of the salal mix shrubbery. Live salal does not readily burn and acts to slow fire spread. We do recommend trees surrounding the conservancy building have their branches trimmed three to four meters above the ground to decrease the risk of crown fires. This being said, the conservancy is surrounded by a forest characterised by tinder dry undergrowth. Controlled burns are worth considering as a long-term fire management strategy.

During our consultations with staff, the desire for a herb garden was brought to our attention. This would be a wonderful opportunity to showcase elements of permaculture so beautifully displayed in the Food Forest while relieving the need to buy cooking herbs. We envisioned the herb garden as spiral-shaped, which was purely an aesthetic choice. This is, of course, optional. The garden may also need protection from grazing animals, and therefore light fencing is suggested. Some suggestions for desirable herbs to plant are: parsley, rosemary, lavender, oregano, thyme, mint (native), sage (native), and strawberries (native).

The north-south side of the building could be characterized by tall Oregon grape to provide both shade and privacy for the bathroom windows (we also recommend some light curtains in the bathroom for added privacy). It was also suggested by students and volunteers that the

southwest side of the conservancy be planted with a variety of berry bushes, edible flowers, native herbs and medicine, and finished with a tiny bench to provide a seating area. This particular idea serves both an aesthetic purpose as well as the purpose of restoration.

A final suggestion was to install a pulley/dumb waiter system up the kitchen stairs for heavy food boxes and other equipment that may need to be moved. This suggestion came from volunteers and individuals who are on the site for shorter periods, but it may be a consideration for the Conservancy regardless.

We believe the above suggestions and the following mapped proposals will meet the goals and objectives of the classroom landscaping project.

Proposal 1



Proposal 1: Roads and Parking

This image showcases staff and accessibility/temporary parking outside of the roundabout, filled with a rock crush for dust control and surrounded by logs for parking control. This map also includes: a partial road for future construction; accessible washroom access from main entrance; and diverging paths to outhouse and campground based on current movement. We also envisioned an herb garden to divert walking away from building and to support kitchen staff/local food production. Larger shrubs along the campground facing windows would provide shade during the hottest summer months and keep the conservancy building cooler. We brought the fire pit closer to reduce disturbance while still having meadow space for children to run around in. The meadow space could be brought closer or be expanded. It is worth mentioning that any meadow space will be continuously dusty as the soil is not favorable for meadow conditions. However, we understand that open space is most optimal for the purposes of educating children and young people. Therefore, a balance must be struck between allowing for the natural growth of the meadow and keeping central areas clear for educational purposes.

Proposal 2



Proposal 2: Dust Reduction

This image aims to provide separate accessibility and staff parking to reduce disturbance and confusion while increasing accessibility. We included a partial road for future construction, as well as a cut-through path for staff loading and unloading to the main entrance. We envisioned separate paths to outhouse and campground, so staff do not have to walk very far for the outhouses. We wanted to include directional signage as well as artistic informational signage along the main entrance path for an interactive experience. This map also showcases meadowland for children to play in further from the building to reduce dust intake. The amount of salal mix is increased around the center, as seen in the light green, in order to increase the amount of sunlight reaching the rooftop solar array.

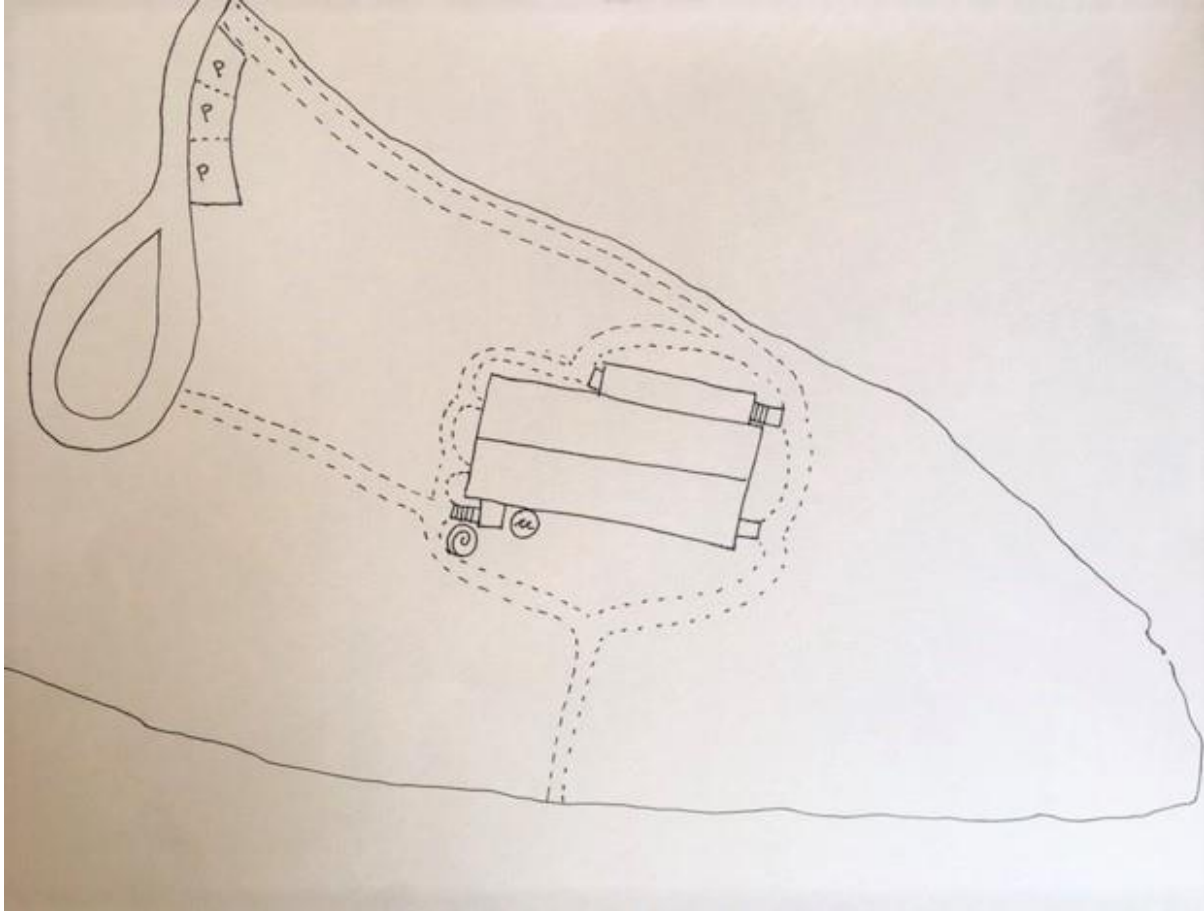
Proposal 3



Proposal 3: Lots of Signage

This image highlights the need for more signage and arches for clarity of entrances, elegance of information, and art incorporation. It would be beautiful to have welcome arches covered in honeysuckle vines, drawing visitors into an alder grove characterized by ferns, nettles, salal, and origin grape. This map has a suggested placement for a rainwater collection system, as well as placement for a comprehensive and “best practice” composting system. We envisioned less parking to try and encourage staff and students to park in the upper parking lot next to the offices but still have limited accessibility/short term parking along the upper roundabout. There is a low-key staff entrance for loading and unloading, which would be made easier with a hand cart kept on site. The meadow was completely taken out to maximize the restoration of the area. Alternative paths to the campsite were designed based on current flow patterns.

Proposal 4



Proposal 4: Elegantly simple

We kept this map as simple and open as possible for clarity and elegance. This outlay has the highest percentage of land open for regeneration, which we found appealing. The points covered in the other proposed maps pertain to this one.

Comparison Chart:

Figure 1	Figure 2	Figure 3	Figure 4
Enhanced parking with rock crush	Separate parking for staff and accessibility	Welcome archway (artistic signage marking entrance)	Entrance path from main road for visitors
Logs around circle to control parking habits	Loading zone for staff	Clear signage for main entrances, bathroom entrances, etc.	Clear paths to bathrooms, main entrance, etc.
Accessible washroom access	Visitor parking farther up road to reduce dust	Composting system	Minimalist pathways for foot traffic
Diverging paths to campground and outhouses	Open area farther from the building for activities (dust reduction)	Rainwater collection system	Maximum restoration of meadow
Pathways directed according to current foot traffic patterns	Separate paths to campground and outhouses	Accessibility parking ONLY at building; staff parking up the hill at office.	All other elements/suggestions can go along with this figure.
Fire pit area moved closer to classroom	Increased signage	Increased restoration of meadow area (reduced open spaces)	
Herb garden	Artistic/educational signage along entry paths for visitors	Alternative pathway options based on foot traffic patterns	
Allowance for natural growth of shrubs native plants			

Academic References

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