

COVER PAGE

PROJECT INFORMATION

Please complete the fields below with information regarding your project.

Project Title Solin Hall Green Roof

Brief Description A student-accessible green roof project on the Annex at Solin Hall

Total Estimated Project Budget \$619k **Estimated Amount Requested from SPF (\$100-\$400K)** \$219K

Campus(es) Impacted Downtown Macdonald Gault Nature Reserve Other _____

CONTACT INFORMATION

Project Leader

This person must be a current McGill University student, administrative staff, or academic staff.

Name	<u>Wynn Rederburg</u>	Affiliation	<u>Undergraduate</u>
Phone	<u>250 510 5973</u>	Faculty/Unit/Organization	<u>SHHS</u>
Email	<u>shhs.sustainability@mcgill.ca</u>	Campus	<u>Downtown</u>

Project Team Members

The SPF encourages you to be inclusive, collaborative (especially between staff and students), diverse, and interdisciplinary when possible. To list more members, please complete a second cover page. You may e-mail it to SPF Staff to include with your application.

Name	<u>Jonathan Rousham</u>	Affiliation	<u>Administrative Staff</u>
Email	<u>jonathan.rousham@mcgill.ca</u>	Faculty/Unit/Organization	<u>SHHS</u>
Name	<u>Ali Rivers</u>	Affiliation	<u>Administrative Staff</u>
Email	<u>aileen.rivers@mcgill.ca</u>	Faculty/Unit/Organization	<u>MOOS</u>
Name	<u>Philippe St-Jean</u>	Affiliation	<u>Administrative Staff</u>
Email	<u>philippe.st-jean@mcgill.ca</u>	Faculty/Unit/Organization	<u>FMAS</u>
Name	<u>Jim Ghoshdastidar</u>	Affiliation	<u>Academic Staff</u>
Email	<u>avik.ghoshdastidar@mail.mcgill.ca</u>	Faculty/Unit/Organization	<u>Residence Life</u>
Name	_____	Affiliation	<u>Choose one.</u>
Email	_____	Faculty/Unit/Organization	_____

SUBMISSION INFORMATION

In line with the [SPF Eligibility Criteria](#), our team certifies that this project will take place at **McGill University**, is **sustainability focused**, is requesting **seed funding**, and is **action oriented**.

Yes No

Our team has read the [SPF Terms & Conditions](#) and agrees to respect them.

Yes No

Our team understands that this application is not confidential and consents to have its contents shared with relevant stakeholders during the review process if needed.

Yes No

BIG WAVE (\$100,000-\$400,000) PRE-APPLICATION FORM

Instructions: Please answer the questions below as clearly and concisely as possible. You will be able to detail your project further in an official application should your proposal be accepted. Once you have completed this form, save it and submit it online. SPF Staff will respond with feedback on your application within 2 weeks. Once the document is finalized, it will be provided to the SPF Governance Council for their review and decision. As a reminder, all SPF applications are assessed using the [SPF Eligibility & Evaluation Criteria](#):

ELIGIBILITY CRITERIA		EVALUATION CRITERIA		
AT MCGILL	SUSTAINABILITY FOCUSED	ANALYSIS	IMPACT	FEASIBILITY
SEED FUNDING	ACTION ORIENTED	COLLABORATION	SUPPORT	CAPACITY BUILDING

Before starting, you may find it helpful to consult the [SPF Sustainability Brief](#) and [Vision 2020 Climate & Sustainability Action Plan](#).

PROJECT IDEA

Criteria assessed in this section: **ALL ELIGIBILITY & EVALUATION CRITERIA**

1. **What is your project idea? In your response, please describe how the idea will help contribute to sustainability at McGill. Describe the idea thoroughly and concisely, outlining the key activities and anticipated timeline. Limit ~600 Words**

The Solin Hall Annex roof has reached its end of life and SHHS will be replacing it. The Annex building currently experiences issues with flooding on the ground floors and in the basement during extreme rainfall events. During winters with large swings in temperature, sudden shifts between freeze and thaw often result in leaks into apartments situated along structural support beams. As a result, there is interest in replacing the roof with one more capable of rainwater retention, and developing a holistic rainwater management system on the property. The municipality of the Sud-Ouest (an area susceptible to flooding) also now regulates the management of runoff stormwater in all new constructions and renovations. We seek to replace the roof of the middle section of the Annex building (the section experiencing performance issues) with a student-accessible green roof in order to manage rainwater, provide a learning space for students, and act in conjunction with the McGill and Montreal climate action and resilience plans, which emphasize green architecture.

Part One of this proposal is to replace the roof with what is determined to be the most suitable and sustainable rainwater management solution, which we believe includes a green roof. Normally, rainwater is managed by large concrete cisterns placed underground, rather than employing natural solutions such as green roofs. This project aims to intervene SHHS' norm and replace the use of a concrete cistern with a sustainable alternative for rainwater management. A green roof, if well-implemented, also has the capacity to moderate temperatures in the building due to its insulating properties, which reduces heating and cooling, meaning energy consumption reduction overall. The best combination of rainwater management systems (rain gardens, bioswales etc.) and green architecture options for the property is to be identified by a consultant.

Additionally, this same middle section of the Annex roof is accessible, with a door, from the student residence. This has prompted interest over the past several years from students and senior admin at SHHS because that means a green roof could be made accessible to students and staff (with the only additional costs being guardrails / fencing). Consequently, regardless of the variety / type of roof solution proposed by consultants, it is a SHHS priority for the roof any garden infrastructure to be accessible to and used by students. Students, SHHS staff, academic staff, and Residence Life are all interested in providing opportunities for students to relax, study, and learn in a green common space and in developing student opportunities in urban agriculture. Support of student programming has been confirmed with SSMU Sustainability and Residence Life, as has support for the potential food system integration component with the Director of SHHS.

Part Two of this proposal involves the addition of bioswales, rain gardens, urban trees or other similar sustainable rainwater management systems to the landscaping of the property, to ensure the entirety of the property is designed to efficiently and sustainably manage rainwater runoff.

This project, if successful, would be the first in a series of projects at other SHHS buildings to convert currently underutilized space into green common space that serves the purpose of student leisure, rainwater management, and/or food production. This aligns with McGill University's climate resilience plan, emphasizing green infrastructure and proactive adaptation initiatives. The project also addresses internal SHHS priorities to further expand their sustainable best practices beyond the reach of their cafeteria network, and into their facilities and maintenance operations.

As it is currently unclear which runoff management systems are most suitable for the property, immediate next steps would involve a feasibility study to determine which of the green roof, rooftop greenhouse, rain garden

2. **What will be the impact of your project? If applicable, have you considered scaling the project to create impact at the university level? Note: Big Wave projects should have a significant impact on the McGill community and/or operations. Limit ~200 Words**

This project will create important positive impacts that touch on all three pillars of sustainability: environmental, economic and social.

1) Climate resilience: Green infrastructure is critical to climate resilience at McGill and in the Sud-Ouest. City and university planning highlights the need for green spaces, urban agriculture and rainwater management to mitigate

heat waves and heavy rainfall events to which the Sud-Ouest, and Solin Hall, are vulnerable. Green roofs are effective tools against these impacts. They: minimize sealed surfaces and are a useful outlet for harvested rainwater; mitigate urban heat island effect; provide pollinator habitat; and decrease energy consumption through improved insulation.

2) Circular economy for food production & consumption: Circular economies are vital for sustainable communities, shielding against supply chain risks and increasing resource efficiency. A priority for the green roof - to be researched during feasibility study - is to grow and harvest food. This food would then be consumed by students at Solin or included in McGill Feeding McGill through distribution to cafeterias.

3) Educational opportunities: Fundamental to the project are our relationships with SSMU Sustainability and Residence Life. The roof will be student accessible and will be available not only for student life, but also for academic programming, contributing positively to student life overall.

3. **Identify 3 key stakeholders that will be involved in or impacted by the project. Please attach a letter from these stakeholders indicating that they support your work towards developing the project. These stakeholders must be diverse and should include at least one student group and one university staff/faculty group.** *Note: Projects involving modifying a campus space, making an installation, hiring a full-time staff member, etc. must seek permission from the appropriate stakeholder(s) in advance. (e.g. Building director, Campus Planning and Development Office, supervisor, etc.)*

Stakeholder's Name	Title	Role in the Project
Marisa Albanese	Senior Director of Student Housing and	Manages all SHHS buildings; provides institutional
Ali Rivers	Climate Officer for the Office of	Strategic alignment with McGill's climate risk &
Kate Ellis	Student Residence Life Facilitator	Representative of support of Environmental Residence

4. **What is your estimated total project budget? Briefly list the main categories of expenditure and the corresponding funding amounts.** *Limit ~200 Words*

619K total estimate

400k - standard roof replacement

134k - green roof modification of roof replacement

50k - extra roof design fees for green modification

35k - feasibility study

5. **Why is funding needed from the SPF? Have you requested or do you anticipate requesting funding from other sources? If applicable, please list the sources and the estimated amounts in your response.** *Note: if your project involves cost savings or reductions for future years, a financial model will be required in the full application. Limit ~200 Words*

Standard practice at SHHS is to replace roofs as 'like for like' (factoring in any new regulatory considerations) and to select cheapest solutions which will last the longest. We're looking to intervene at this norm and suggest a more sustainable alternative, with a longer-term view. In the case of rainwater management at Solin, a standard solution would entail a traditional tar and gravel roof, with thermal performance improvements, and a concrete cistern to manage runoff. Sustainable solutions, while more effective long-term, also have higher upfront costs which would normally exclude them from consideration by SHHS. SPF funding would make it financially viable for SHHS integrate a more sustainable solution into this project and could also contribute more broadly to shifting norms in construction and renovation at SHHS and at McGill to integrate more holistic and sustainable solutions, which are more in line with McGill and Montréal's climate action plans.

We will not anticipate funding from other sources for the feasibility study.

PROJECT PLANNING

Criteria assessed in this section: **ALL ELIGIBILITY & EVALUATION CRITERIA**

While most projects do not need financial support for the planning phase, as part of the Big Wave funding stream, you may request funding for project planning in addition to implementation. Please note an approval of planning funding does not guarantee funding for project implementation. After your planning is complete, you will either be required to complete a report or submit a full application, which is required to access implementation funding. Additionally, planning funding is considered part of the total project funding; therefore, the total combined funding requested should be less than or equal to \$400,000.

6. Is your project ready to be reviewed in a full application by the SPF Governance Council if requested? You will have a maximum of one year to complete a full application after receiving a request.

- Yes, we have already assessed the project thoroughly and would like to submit a full application at this time.
- No, we haven't yet fully designed the project and need to further plan the project (e.g. through a community consultation process, design phase, feasibility study, or other project planning activities.) before submitting a full application.

7. If you answered no to question 6 and need support to complete the planning process, please detail the following:

- a brief explanation of the need for project planning funding,
- a plan for this phase with key activities and timeline,
- the main expenditures for this phase along with their corresponding amounts, and
- the expected outcome from this phase of the project.

Limit ~600 Words

There is a significant financial risk for SHHS to build a green roof, since they have never done something similar on a SHHS building. In order to ensure the project will meet our sustainability goals, we need professional consultation to test the conclusions we have come to about a) rainwater management b) the structural capacity of the roof to use it as a student space c) the structural capacity to use the roof to grow plants and d) the potential for energy savings. We are looking to expand beyond SHHS's norms to emphasize sustainability, but are looking for financial support for the initial risk in doing so.

As a result, we are seeking funding for a feasibility study. This would involve hiring architectural and 'green roof' consultants, receiving their recommendations, and making a final decision on the direction of the project (vis-à-vis rainwater management / green architecture variations, compliance with municipal regulations).

The consultants would be hired by the end of March, then we would work with them through the summer, then make our final decision and submit the final project proposal to the second SPF Big Wave deadline of the year in October 2020. The main expenditure for Phase I would be the cost and associated fees for these consultants.

The approximate cost of the consultant would be \$35 000.

At the end of Phase I, we will be informed about which options are feasible for the Solin Hall building and the extent to which our goals for rainwater management, social space, and urban agriculture can be met with different options. Additionally, we will have more information to plan around phasing to replace other sections of the roof, ideally also with sustainable alternatives to the 'like-for-like' standard.

APPENDIX

Relevant Support Documents

List any appendix documents in order in the table below.

Please keep the total number of pages as low as possible (recommended max 10). Please include any relevant support letters.

Doc #	Appendix Document Title	# of Pages
1	Letter of Support - Senior Director of SHHS , Marisa Albanese	1
2	Letter of Support - Climate Officer, Ali Rivers (MOOS)	1
3	Letter of Support - Residence Like Environmental Residence Council Advisor, Kate Ellis	1
4	Letter of Support - SSMU Sustainability Commissioner, Dasha Gousseva	1
5	Annotated roof diagram of Solin Hall	1