

Report Summary: Bishop's University Campus Sustainability Audit.

June 2008.

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Executive Summary

This report is intended to be a detailed guide to accompany the data collected in the Bishop's University 2008 Campus Sustainability Audit, based on 30 indicators derived from the Sierra Youth Coalition's Sustainable Campus indicators. The indicators chosen represent a basic overview of sustainable Development and practices currently existing at Cegep and University campuses within the Province of Quebec. This initiative is based on Quebec's "Government Sustainable Development Strategy 2008-2013" (Strategie Gouvernementale de Developpement Durable).

This Sustainability Audit is intended as a means to assess the current level of sustainability at the Bishop's University Campus. This data and documentation will provide a reference point to which Bishop's can measure its future progress and implement change where necessary to improve overall sustainability.

The following report is divided into three components:

Component 1: Summary by Indicator.

This provides an explanation of all given sustainability indicators and the current level of sustainability on campus pertaining to each.

Component 2: Recommendations for Improvement.

Following each indicator, suggestions have been made which identify areas in need of improvement specific to the Bishop's University campus.

This section has been designed in substitution to the 'goals' section which accompanies the indicators. It was felt that a more detailed written document offering suggestions and goals would benefit the growth and development of the university's sustainability more so than simply the figures presented on the indicator copy. It was felt that the 'goal' figures in the indicator copy were somewhat ambiguous and abstract and needed to be substantiated by text to allow for a more comprehensive reference for future implementations and targets.

Appendices: Methods and Calculations/Indicator reference Appendices.

This final component provides several appendices providing details of the data collected. These appendices will detail the calculations made in order to achieve the results contained in the audit, as well as the appendices provided along with the original set of

indicators and several others documents which were used as references throughout the auditing process.

The calculations provide a quantitative base which can be referred to in order to gauge the future progress of sustainable practices as well as set target goals where action is required to improve or implement current practices. The methods included herein may be used to duplicate calculations for future audits to maintain consistency of data.

The appendices provided to accompany the indicators are included as reference for the particular indicators which they apply to. These pages explain the criteria required in order to accurately assess the given indicators.

This Sustainability Audit took into account many facets of campus life and practice in order to give a broad overview of the current state of sustainability at Bishop's. This audit, though by no means a definitive document providing the full scope of sustainability at Bishop's; will serve as a reference document as well as a more formal starting point for greater efforts into sustainable initiatives and development on the Bishop's University campus.

Please be advised, all numbers are approximate and are as accurate as possible based on the information provided. Also, the "goals" section which originally accompanied the indicators has not been included in this report, as determining a quantitative target for improvements is difficult to ascertain with the current level of data and information available in this early stage of Bishop's Sustainable Development.

Where data had to be collected over the course of an entire year to obtain accurate values, the year used as the reference was usually 2007, unless the data was incomplete or unavailable. In this case, figures from 12 consecutive months between 2006 and 2008 were used to collect the data.

Acronymes:

EEETP: Effectif Etudiant des Universités Québécoises en équivalence au temps plein.

MCU : Membres de la communauté universitaire

Summary by Indicator

Indicator A: Health and Wellness

A1:

A Health and Wellness	A.1 Sports and recreation	Recreation area	A.1.1 – INTERIOR: The number of square meters reserved for recreation indoors, divided by the total number of square meters of all interior areas, multiplied by 100.	19.46%
			A.1.2 – EXTERIOR: The number of square meters reserved for recreation outdoors, divided by the total number of meters squared of the campus, multiplied by 100 Note : improvements should not affect the amount of green space. <i>See ‘annexe 1’ for applicable areas.</i>	15.9%

A La santé et le bien-être	A.1 Loisir et sport	Espace de récréation	A.1.1 – INTÉRIEURE : Le nombre de mètres carrés intérieurs réservé aux loisirs, divisé par le nombre total de mètres carrés de la superficie intérieure, multiplié par 100	19.46%
			A.1.2 – EXTÉRIEURE : Le nombre de mètres carrés extérieurs réservé aux loisirs, divisé par le nombre total de mètres carrés du campus, multiplié par 100 N.B : L’amélioration ne doit pas s’effectuer au détriment des espaces verts <i>Voir l’annexe 1 pour les espaces admissibles</i>	15.9%

Purpose of Indicator

This section assesses the amount of space on campus dedicated sports indoor and outdoor to encourage healthy activity for students and staff. Areas are taken then divided by the total area (in meters) of the campus to give a percentage. Appendix 1 in the indicator copy is utilized as a reference.

A1.1:

This first section of indicator 'A' is intended to determine the total area on campus dedicated to indoor sports and recreation area. Bishop's has the Sports complex with diverse areas for activities such as cardio, free weights, a pool, running track, an indoor gymnasium, dance room, martial arts room and squash courts. The campus also has an indoor hockey arena which operates during winter months.

A1.2:

The second section of indicator 'A' aims to determine the total outdoor area for sports and recreation. On the Bishop's campus this includes Coulter field which is being newly renovated, several practise fields for soccer and football as well as an outdoor swimming pool and several tennis courts.

Bishop's is also unique in the fact that its has a campus golf course which provides close access to Bishop's students and staff, as well as student discounts. For the purpose of this audit, the bicycle path was not included in this audit.

Recommendations for Improvement

A1.1:

The Price Sports complex and hockey arena provide a variety of different sport opportunities for Bishop's and Champlain students on campus to access. However, the Sports complex was built when the student population was much smaller than it currently is and the size, interior and many workout materials reflect this. Students are often in competition for the very few cardio and weight machines, especially during peak workout times such as the lunch hour. **These machines are often broken or in poor working condition. Also many weights and equipment are out of date.**

The free weight room is unsupervised and would benefit from the experience of **a fitness professional** being on hand to advise students in the safe and appropriate use of these weights and machines.

The use of fitness and health professionals was included as a recommendation in the 2006 Health and Wellness Center Report for the Strategic Planning Committee.

A1.2:

Bishop's is very fortunate to have a large amount of land which students, staff and community members can make use of for sports and athletics.

The golf course is a unique feature of the Bishop's campus, which students and staff should be encouraged to utilize.

The new outdoor football field currently being built over the existing Coulter field will likely be a very positive factor for Bishop's students and future recruitment.

Indicator A.2: Environment

A.2 Environment	Accessibility to green space	A.2.1 - CAMPUS : The number of square meters of greenspace (<i>see definitions</i>) on campus accessible to the 'MCU', divided by the total number of square meters of the campus.	N/A%
		A.2.2 – RADIUS of 1km : The number of square meters of green space beyond the immediate campus, to a radius of 1km (estimated).	N/Am ²
		A.2.3 – OFF CAMPUS : The number of square meters of greenspace belonging to the university (owned or leased), off campus.	645449.2m ²

A.2 Environnement	Accessibilité aux espaces verts aménagés	A.2.1 - CAMPUS : Le nombre de mètres carrés d'espaces verts aménagés (<i>voir lexique</i>) sur le campus accessibles aux MCU, divisé par le nombre total de mètres carrés du campus.	N/A%
		A.2.2 – RAYON DE 1 Km : Le nombre de mètres carrés d'espaces verts aménagés, hors campus, dans un rayon de 1 Km (<i>estimation</i>)	N/Am ²
		A.2.3 – HORS CAMPUS : Le nombre de mètres carrés d'espaces verts aménagés appartenant à l'Université (propriétaire ou locataire), hors campus.	645449.2m ²

Purpose of Indicator

This section seeks to assess the amount of green space accessible to the campus community, on and off campus.

A2.1:

This indicator aims to determine the amount of green space accessible to the campus community as a percentage by dividing the amount of green space by the total campus size in Meters squared.

For the purpose of this audit, this was not calculated because the majority of the Bishop's campus can be considered to be 'Greenspace'. Obtaining a reasonable approximation for this indicator would have been very difficult and would have resulted in inaccuracy.

Also, the campus area considered as 'accessible to the MCU' is clearly different than the total area owned by Bishop's, and determining an appropriate cutoff to distinguish the two to ensure an accurate reading would have been very subjective. Most of the area owned by Bishop's can be considered as 'greenspace', as can a large portion of what would commonly be viewed as the immediate campus area.

A2.2:

Similar to the above indicator, this requires the calculation of all green space within a one kilometre radius around the immediate campus area.

A2.3:

This indicator requires the calculation of all green space owned by the university outside of the immediate campus area. This has been accomplished by calculating the areas of the lots owned by Bishop's which lie outside of the immediate campus area.

Recommendations for Improvement

A2.1:

Bishop's has a large amount of green space and forested land, much of which is accessible to students and staff. Determining what is to be considered as the 'true' Bishop's campus and the total land which is simply owned by Bishop's would be beneficial to any future audits to ensure accuracy of data. This is important to ensure that the areas being taken are accurate and consistent.

A2.2:

Bishop's has little influence on green space off the campus within this specified 1km range. Maps to determine this were not available. It is suggested that **accurate aerial maps of Bishops and the surrounding area** be obtained from the city of Sherbrooke for the accuracy of future audits.

A2.3:

The university own several pieces of land which can be considered 'Green Space'. There are **current plants to plant trees** and reforest areas as a part of a 'carbon sequestration' effort. This type of effort and **stewardship is encouraged**.

Indicator A.3: Nutrition

A.3 Nutrition	Healthy meals	<p>The number of healthy meals which adhere to certain values of nutritional elements divided by the total number of meals.</p> <p><i>See ‘annexe 2’ for the values of nutritional elements to be adhered to.</i></p>	See Report
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A.3 Alimentation	Repas-santé	<p>Le nombre de repas santé qui respecte certaines proportions d’éléments nutritifs, divisé par le nombre total de repas</p> <p><i>Voir l’annexe 2 pour les proportions d’éléments nutritifs à respecter</i></p>	See Report
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Purpose of Indicator

This section requires the calculation of the nutritional elements in the meals offered at Bishop’s. See Appendix 2 for specific criteria.

This data was not calculated in the audit as Bishop’s uses a buffet-style dining system. The choice of meal is at the discretion of the student, as is the amount consumed, making accurate calculation of the nutritional information impossible.

Students who live in residence are required to buy a meal plan which gives them access to Dewhurst dining hall, run by Sodexo. Out of several hundred recipes, a variety are chosen each day to provide breakfast, lunch and dinner options, including main meals, side dishes, deserts, vegetarian and vegan options, fruit and other snack choices.

All recipes are on hand for preparing the dishes; these include nutritional information, ingredients and specifically label any allergens which the dish may contain.

There is also a “Tim Horton’s” restaurant on campus which provides nutritional information on their website <http://www.timhortons.com/>. Upon requesting a pamphlet containing the nutritional information (required at every store location), the auditor was told that the Bishop’s location did not have any such pamphlets or information available.

Recommendations for Improvement

A3:

Taking into consideration the buffet style dining situation at Dewhurst Hall, it is very easy for students in residence to over eat. A recommendation is that **examples of portion sizes** should accompany the meals being served with nutritional information available upon

request for the options of the day or placed in a central location for easy reference. This information could very easily be kept on hand by having a laminated copy of the nutritional information for each recipe. This would also reduce concerns for students who have food allergies, as potential allergens are listed along with the ingredients.

Tim Horton's should be required to have on hand the pamphlets detailing the nutritional information in the food products offered.

Indicator A.4: Training

A.4 Training	Health and safety in the workplace training	The number of participants (staff and students) who have been involved in health and safety training divided by the, multiplied by 100 *Non credited course	0%
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A.4 Formation	Formation en matière de santé et de sécurité au travail	Le nombre de participants (personnel et étudiants) ayant suivis une formation* en matière de SST divisé par le EEETP, multiplié par 100 *Cours non-crédités	0%
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Purpose of Indicator

This indicator aims to assess the number of staff and students involved in Health and safety training in relation to the EEETP. This can not be a credit earning course.

There was no data available for this.

Recommendations for Improvement

A4:

Considering the lack of accessibility to information regarding health and safety training at Bishop's, it is suggested that greater effort be taken to **implement educational initiatives** in this area **for staff and students** and **keep better record** of when these sessions take place, as well of what is discussed and who has participated.

Optional **training sessions to discuss sustainable initiatives and personal contributions** to home, local and global sustainability efforts can be offered.

Bishop's could offer **seminars, guest speakers and easily accessible information regarding sustainable projects and initiatives**, case studies and ways to introduce sustainability into one's own life.

Indicator B: The Community

B The Community	B.1 Community Services	Accessability to alternative transportation for free or at reasonable price.	The total number of the MCU who use alternative transport (<i>See definition in 'annexe 14'</i>) to get to the university divided by the total MCU X 100 (<i>as accurate an estimation as possible</i>). Transport users / divided by the total number of students X 100	65.14%
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B La communauté	B.1 Services communautaires	Accessibilité aux transports alternatifs gratuitement ou à prix abordables ÉU=étudiant utilisateur	Le nombre de MCU qui utilise les transports alternatifs (<i>terme définit à l'annexe 14</i>) pour venir à l'Université divisé par le nombre total de MCU X 100 (<i>estimation la plus précise possible</i>). ÉU / divisé par le nombre total étudiants X 100	65.14%
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Purpose of Indicator

This indicator aims to examine alternative transport options used by students. “Alternative transport” is defined in Appendix 14 as “A means of travelling other than by single use of a vehicle”. This leaves travelling by foot, bicycle, carpool and city bus.

As it would be especially difficult, especially in the quieter summer months, to get a reasonable figure of bus, bicycle or walking as a means of transportation, an alternative approach was used. To obtain a reasonable estimate of alternative transport for the school year, the total number of parking passes sold to Bishop’s University students and staff was taken for the 2007-2008 school year. This percentage was subtracted from 100% which provided the number of those staff and students who had to use means other than automobile to get to campus.

It was found that according to this method of calculation, approximately 65.14% of the MCU use alternative means of transportation.

Recommendations for Improvement

B1:

Though the current percentage of staff and students who use alternative transport is relatively high, the number of cars used on campus is also high as most carry only single drivers.

A simple suggestion for reducing the number of cars on campus is to reduce the number of parking spaces by **blocking off portions of roads on campus**. Lennoxville is a small community and the majority of students live within walking distance. This effort would encourage greater use of **alternative means of transport** or carpooling instead of single persons driving vehicles. This would in turn promote greater overall health by encouraging students to be more physically active.

Also, **parking pass costs could be increased** to encourage alternative means of transportation instead of cars.

Bus passes for the Sherbrooke bus system could be offered to Bishop's students at a discounted price or an additional student fee could be added to the cost of tuition in order to give students the benefit of **cheaper rates**.

Also, a greater number of **bicycle racks** would encourage students to bring bicycles to school.

Indicator C1: Knowledge

C Knowledge	C.1 Training of Staff	Training in sustainable development and/or environment for members of staff.	The total number of hours dedicated to training in sustainable development and/or the environment annually (see 'annexe 3' for applicable topics) (includes conferences, seminars etc on and off campus) for members of staff divided by the EEETP (as accurate as possible.)	h/employé N/A
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C Le savoir	C.1 Formation du personnel	Formation sur le DD et/ou l'environnement auprès des membres du personnel	Le nombre total annuel d'heures de formation vouées aux enjeux du DD et/ou l'environnement (voir l'annexe 3 pour l'admissibilité des enjeux) (y compris ateliers, colloques, conférences, etc., sur et hors campus) pour les membres du personnel, divisé par le EEETP (estimation la plus précise possible via les comités de perfectionnement et les finances).	h/employé N/A
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Purpose of Indicator

This section asks for the total number of hours dedicated to training in sustainable principles divided by the EEETP to give a ratio of the number of hours per employee/student dedicated to training. Bishop's does not have a training program for this, therefore the number of hours per employee is zero.

Recommendations for Improvement

C1:

Currently, there is no training for staff in the area of sustainable development on campus. It is suggested that **seminars in sustainability** be organized for staff to encourage wider use of sustainable practice, greater **consideration** of their current practice and **how changes can be applied** in their particular areas of profession on campus.

Having a **library section or showcase** dedicated specifically to sustainability would benefit both staff and students who would be interested in expanding their knowledge of sustainability on their own time.

Indicator C2: Curriculum

C.2 Curriculum	Courses with sustainable development or environmental content	C.2.1 – Sustainable Development: The total number of courses with «strong sustainability content» (at least 50%), divided by the total number of courses, multiplied by 100.	0.024%
		C.2.2 – Environmental: The total number of courses with «strong environmental content» (at least 50%), divided by the total number of courses, multiplied by 100.	0.028%
		C.2.3 – Revisions: The total number of courses revised from the previous year to include elements of sustainable development or the environment divided by the total number of courses, multiplied by 100.	N/A%
	*Credited courses only	<i>See 'annexe 4' for applicable course content.</i>	
C.2 Formation des étudiants	Cours* avec un contenu sur le DD et/ou l'environnement	C.2.1 – DD : Le nombre total de cours «à fort contenu en durabilité» (au moins 50%), divisé par le nombre total de cours, multiplié par 100.	0.024%
		C.2.2 – ENV. : Le nombre total de cours «à fort contenu en environnement» (au moins 50%), divisé par le nombre total de cours, multiplié par 100.	0.028%
		C.2.3 – RÉVISÉS : Le nombre total de cours «révisés au cours de la dernière année», pour inclure des notions de DD ou d'environnement divisé par le nombre total de cours, multiplié par 100.	N/A%
	*Cours crédités seulement	<i>Voir l'annexe 4 pour les cours admissibles</i>	

Purpose of Indicator

This section aims to establish the amount of environmental and sustainable course content currently being offered at Bishop's, as well as the number of courses revised since the previous school year to include greater emphasis on sustainable content. See appendix 4 for criteria which would qualify a course as having a high sustainable content.

C2.1:

This subsection asks how many courses have a strong emphasis in sustainable content (as per Appendix 4). The resultant number is divided by the total number of courses offered. To ensure greater accuracy of the calculation, the number of courses offered with sustainable content and the number of total courses was divided by three, as Bishop's has a rotating three year schedule of courses being offered.

C2.2:

This section is the same as above, however the focus is on the number of courses with strong environmental content. Again, the number of environmental courses and the number of total courses are divided by three to ensure a more accurate number.

C2.3:

Professors are responsible for updating their courses individually. Courses are updated on a frequent basis due to incorporation of new and constantly changing information with regards to sustainability. With this taken into account, it was found that aside from the customary updates regarding new developments, current events and teaching methods, there was little change from the previous year.

Recommendations for Improvement

C2:

Taking into consideration how wide ranging the scope of sustainability is, there are very few programs which would not benefit from the **inclusion of some sustainable aspects in the curriculum.**

C2.1:

Sustainable curriculum could easily be integrated into most programs of study. This suggestion could be brought up to the heads of the departments and they could be **encouraged to integrate sustainable materials into courses.**

The environmental studies and geography department could introduce a course focused specifically on sustainable practice and development.

C2.2:

Environmental content is currently focused mainly within the environmental studies and geography program. This type of content can also be applied and adapted to fit within the contexts of a variety of programs.

C2.3:

As professors are largely responsible for the revision of their own courses, it can simply be encouraged that professors take time yearly to revise and update their courses taking into consideration new studies and information regarding sustainability and the environment and how it relates to their particular field of study.

This would benefit the student population by providing up to date information and encouraging thought on topics relating to sustainability and the environment and their applications within their fields of study.

This would also provide a beneficial challenge to professors who have been teaching the same information in the same format for several semesters.

Indicator C3: Research

C.3 Research	Research on sustainable development or the environment	C.3.1 – Sustainable Development: Considering the research budgets and the human resources, estimate the % of research dedicated to sustainable development.	8.72%
		C.2.2 – Environment: Considering the research budgets and the human resources, estimate the % of research dedicated to the environment. See ‘annexe 4’ for applicable content.	8.72%

C.3 Recherche	Recherche sur le DD et/ou l'environnement	C.3.1 – DD : À l'aide des budgets pour la recherche (finances) ou du dénombrement des employés (ressources humaines), estimez le % de recherche dédié au DD.	8.72%
		C.2.2 – ENV. : À l'aide des budgets pour la recherche (finances) ou du dénombrement des employés (ressources humaines), estimer le % de recherche dédié à l'environnement. <i>Voir l'annexe 4 pour les secteurs admissibles</i>	8.72%

Purpose of Indicator

This indicator is used to determine the amount of funding being supplied to research projects which focus on sustainable topics.

C3.1:

Out of the 7 research projects which could be considered to be Sustainable and Environmental in nature, only three were receiving funding in the timeframe of the audit. These three projects received grants over several years, however only 2007 was taken into account to get an accurate estimate of the amount of funding which was allotted to sustainable and environmental research. The projects which received funding during the 2007 year were Civic Science, Sustainability and Environmental Decisions, by Darren Bardati; Abrupt Climatic Changes and Meltwater Discharges along the Eastern Canadian Margin and The Role of Weather Patterns on the Production of Allergenic

Airborne Pollen and Spores, both conducted by Dr. Elisabeth Levac. The total budget for research was \$700,000.

Dr. Bardati received \$15,000 and Dr. Levac received \$41,050 for her first project on Abrupt Climate Change and \$4967 for The Role of Weather Patterns on the Production of Allergenic Airborne Pollen and Spores.

For complete listings by discipline for research projects currently being conducted at Bishop's University please refer to <http://www.ubishops.ca/research/creativity.html>.

C3.2:

Same as above, as the research projects apply to both environmental and sustainable development, therefore the same figure has been applied.

Recommendations for Improvement

C3:

Of the recent/current research projects being conducted which would be considered environmental or sustainable in nature, only three have received funding in the past year from Bishop's. In the case of indicators C3.1 and C3.2, all three projects which received funding from the university were considered as both 'sustainable' and 'environmental' in nature.

C3.1:

Professors who are conducting research in these fields **should be encouraged to apply for funding from the University**, and initiatives for greater study in this area could be encouraged by providing greater opportunities to obtain funding.

C3.2:

See above.

Indicator D: Administration

D Administration	D.1 Policies	Environmental or Sustainable development policy as a central structure to the university.	D.1.1 : The university possesses an environmental or sustainability policy. D.1.2 : The number of elements (out of 19) which are included in this policy. <i>See ‘annexe 5’ for the 19 elements</i>	oui 11.5 /19
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D La gouvernance	D.1 Politiques	Politique de DD ou d’environnement au sein de l’Université	D.1.1 : L’Université possède une politique de DD ou d’environnement. D.1.2 : Combien d’éléments favorisant le DD (sur 19) sont inclus dans la politique. <i>Voir l’annexe 5 pour la liste des 19 éléments</i>	oui 11.5 /19
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Purpose of Indicator

The purpose of this indicator was to establish whether there is a current sustainable or environmental policy in place at the university and how many of the elements listed in Appendix 4 apply to each. For the purpose of consistency and accuracy of the audit, the previous 2003 policy was the one used to obtain the figures in this section, as it has been the one in force until the beginning of the auditing process. As an addition to the audit process and a further step towards increased efforts in sustainability, the Bishop’s Environmental Policy has been updated and renamed the “Bishop’s Sustainable Development Policy.”

D1.1:

The indicator first seeks to determine whether the University has a Policy for sustainability or the environment. Bishop’s does have a policy, as stated above.

D1.2:

For the detailed breakdown of each element of the policy as it relates to the criteria outlined in Appendix 4, please see the attached document labelled D. 1.2.

Recommendations for Improvement

D1:

The environmental policy used within the context of this audit was written in 2003 and had not been updated until this audit.

While conducting this audit, the policy was revised in order to focus on the growing need of the university to become more sustainable and environmentally conscious. The newly revised policy was written to conform to emerging standards of sustainability as set out by the Sierra Youth Coalition's sustainable campus indicators.

D1.1:

The university currently holds an *Environmental* policy (2003). The policy has been revised and rewritten as a Sustainability Policy and awaits approval from the SDLU Committee.

D1.2:

It is recommended that the policy be revised along with the Campus Sustainability audit and action plan every two to three years in order to ensure that it stays up to date with changing social and environmental concerns and emerging information on the topics of environment and sustainability. This frequent review will allow for the incorporation of new goals into the existing plan for the University.

D2.2:

For the detailed breakdown of each element of the action plan as it relates to the criteria outlined in Appendix 4, please see the attached document labelled D. 2.2.

Recommendations for Improvement

D2.1:

The university currently holds a sustainable development proposal awaiting approval by the SDLU Committee.

D2.2:

As above, it is recommended that the plan be revised along with the completion of a campus sustainability audit and University Policy every two to three years in order to ensure that it stays up to date and that goals are being set out for the University's advancement in a productive and positive direction toward greater sustainability.

Indicator D.3 : Human Resources for Implementation

D.3 Human Resources for implementation	University Employees responsible for sustainable development or environmental initiatives.	The total number of employees responsible for the implementation of sustainable development or environmental initiatives divided by the EEETP.	Ratio =.0022
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D.3 Ressources humaines pour la mise en oeuvre	Employés de l'Université responsables de mettre en application le DD ou l'environnement	Le nombre total d'employés responsables de la gestion des enjeux liés au DD, divisé par le EEETP.	Ratio =.0022
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Purpose of Indicator

This indicator aims to obtain the ration of employees who are involved in sustainable development on campus in relation to the EEETP. In this case, there are 5.

Michel Caron-Director of Facilities
 Steve Rowe-Facilities Foreman
 Jean Vaillancourt-Custodial Supervisor
 Astrid Grawehr-Student Intern
 Daphne Fisher-Student Auditor

Recommendations for Improvement

D3:

Considering there are only 5 employees of the university who deal with sustainable material and each only on a part time basis, it is recommended that, a permanent position be created. This position would focus on matters concerning the sustainable direction of the campus, in order to accommodate the growing needs for sustainable development on a campus as established as Bishop's.

Indicator D.4 : Financial Resources for Implementation

D.4 Financial Resources for implementation	Financing for Sustainable Development or environmental initiatives by the university.	Sustainable development funding through the institution (not related to operations costs, aimed at solid projects) divided by the EEETP* <i>See 'annexe 5' for the 19 sustainable development elements..</i>	N/A%
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D.4 Ressources matérielles pour la mise en oeuvre	Financement du DD ou de l'environnement par l'Université	Fond de développement durable institutionnel (destiné à des projets concrets de DD et non relatif aux opérations) divisé par le EEETP* <i>Voir l'annexe 5 pour se servir des 19 éléments du DD.</i>	N/A%
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Purpose of Indicator

This indicator serves to determine the total budget for sustainable initiatives within the university which are unrelated to the operations budget. In this assessment the Health and Wellness budget was taken into account (2008 budget, as this is the first year that the Health and Wellness committee has had a budget) as well as the employee assistance program, however, the financial figures provided were found to be incomplete and therefore were not used.

Recommendations for Improvement

D4:

This indicator focuses on the total amount of funding available for projects which are considered to be sustainable in nature. Excluded here is the funding provided for operations costs.

Taken into consideration were the budgets for the Health and Wellness committee as well as the Employee Assistance Program, however, as mentioned above, the figures provided were found to be incomplete and were therefore not used in this audit.

Improvement has already been made in this area in the 2008 budget, as the Health and Wellness Committee obtained a budget for the first time. It is **suggested that this funding**

be continued as it will encourage greater initiatives and focus on the health and wellbeing of staff and students.

It is also suggested that greater detail be available regarding funding for activities of this nature.

Indicator E1: Wealth and Economy

E Wealth and Economy	E.1 Student financial aid	University financial aid for students.	The total internal budget reserved for student aid, divided by the EEETP.	Ratio = \$434.83/ student
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E L'économie et la richesse	E.1 Aide financière aux étudiants	Aide financière universitaire accordée aux étudiants	Budget global interne de l'aide financière dédiée aux étudiants, divisé par le EEETP.	Ratio = \$434.83/ student
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Purpose of Indicator

This indicator determines the amount of financial assistance available to students, as expressed as a ratio. The total amount of funding available is divided by the EEETP. For the breakdown of finances dedicated to student assistance, see Appendix 1: Methods and Calculations.

The Total dollar amount of assistance available to students is based on the 2006 Operating Budget (p. 2, Bishop's University Annual Financial report Year Ended June 30, 2006): \$39,977,324.00.

Recommendations for Improvement

E1

Student financial aid is available to those who are eligible and to those who apply for it. Many bursaries and scholarships are applied automatically if the student has a sufficiently high average. Considering these bursaries and student aid packages are largely based on merit and achievement of the students themselves, the only suggestion to be made is to make the students better aware of the availability and requirements of these bursaries and scholarships and thus encourage greater effort toward achievement.

Indicator F1: Water

F Water	F.1 Potable Water	Potable water consumed	The total anual volume of water consumed by the campus (in litres) as a ratio by dividing by the EEETP.	L Ratio = N/A
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F L'eau	F.1 Eau potable	Eau potable consommée	Volume total annuel d'eau potable consommée sur le campus à toutes fins (en litres), et calculer le ratio en divisant par le EEETP.	L Ratio = N/A
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Purpose of Indicator

This indicator was intended to calculate the ratio of water consumed on campus by dividing the total amount of water consumed (in L) by the EEETP. However there was no way of obtaining this data, as Bishop's is not equipped with any form of water measurement meter by which to gauge water usage.

Recommendations for Improvement

F1:

It is currently impossible to measure the amount of water consumed on the Bishop's campus as there are no water meters to measure the volume of water coming in from the 4 water mains that supply the campus. As a result of this inability to measure, it is therefore impossible to set any quantitative goals for water reduction. The first step to greater water sustainability is to have **water meters installed**. Only after these installations will Bishop's gain the ability to monitor its water consumption and then take action to reduce it accordingly.

Indicator G1: Materials and Constructions

G Materials and Constructions	G.1 LEED constructions	LEED building Certification	Total number of square meters of buildings (new or renovated) which have been given LEED certification, divided by the total number of square meters of all the buildings on campus multiplied by 100. Also, calculate the level of LEED by multiplying your results by the LEED rating of each building. <i>See 'annexe 6' for the calculation tool</i>	0%
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G Les matières et les matériaux	G.1 Bâtiments LEED	Certification LEED pour les bâtiments	Nombre total de mètres carrés d'édifices (neufs ou rénovés) qui ont obtenu une certification LEED, divisé par le nombre total de mètres carrés d'édifices sur le campus, multiplié par 100. Calculer également le niveau LEED en multipliant vos résultats par la note LEED de chaque bâtiment. <i>Voir l'annexe 6 pour le calcul</i>	0%
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Purpose of Indicator

LEED certification is for new buildings only. No buildings on the Bishop's Campus have LEED certification.

It has been determined however, that all future constructions on the Bishop's Campus will be LEED certified, and there will be assessments of the feasibility of implementing the BOMA "Go Green" certification for existing structures.

According to the Canada Green building Council, 'LEED is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and

environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.’

Recommendations for Improvement

G1:

Currently there are no buildings on campus which are LEED certified. All future buildings will be LEED certified and existing buildings will be assessed for getting the BOMA ‘go green’ certification. These future initiatives have already been approved by the MELS as part of Bishop’s Energy Efficiency Action Plan.

Indicator G2: Wastes

G.2 Wastes	State of 3R's	<p>Total pounds of recyclable materials seperated annually by use of the 3R's (in Kilograms) divided by the total amount of wastes generated annually by the university, multiplied by 100.</p> <p><i>See 'annexe 7' for the calculation tool.</i></p>	N/A%
G.2 Matières résiduelles	Gestion des 3RV	<p>Poids total annuel des matières résiduelles déviées de l'enfouissement par les 3RV (en kilogrammes), divisé par le poids total des matières résiduelles générées annuellement par l'Université, multiplié par 100.</p> <p><i>Voir l'annexe 7 pour l'outil de calcul</i></p>	N/A%

Purpose of Indicator

This indicator aims to assess the total amounts of recycled material as a percentage of the total waste generated annually by the university. No data was available for this indicator. Bishop's has not kept record of the weights of garbage generated, nor the weights of recycled materials in any reliable sense. No effort to obtain an approximate value was possible during the course of this audit, as the summer months at Bishop's generate significantly less waste, therefore an accurate extrapolation for the full year would not have been possible.

Recommendations for Improvement

G2:

Though Bishop's does have recycling and composting programs, records have not been carefully kept in order to document volume. This form of documentation would allow the university to monitor progress in the implementation of these programs and make greater efforts if existing measures are not meeting expectations. It is suggested that in the future better records be kept.

Indicator G3: Paper

<p>G.3 Paper</p>	<p>Paper Usage</p>	<p>Amount of paper products purchased per year (all types), divided by the EEETP.</p> <p><i>See 'annexe 8' for the calculation tool.</i></p>	<p>Ratio =90.05</p>
<p>G.3 Fibres</p>	<p>Utilisation de fibres</p>	<p>Quantité de fibres (de tout type) achetées chaque année par toutes les unités de l'Université, divisé par le EEETP.</p> <p><i>Voir l'annexe 8 pour l'outil de calcul</i></p>	<p>Ratio =90.05</p>

Purpose of Indicator

Paper usage for the University was assessed by this indicator, using Appendix 8 as a tool to calculate the number of units, weight in Kg and quantity of paper in m2. This is to obtain a ratio of paper used per individual based on the EEETP. The total number of units ordered was divided by the EEETP.

Paper for printing, as well as paper for sanitary and bathroom were taken into account. These figures were obtained from the Bishop's Printshop and the custodial supervisor. Taking individual units presents a difficulty when dealing with different products. This calculation considers a single unit of printing paper as an individual package of paper, and a single unit of hand tissue or bathroom tissue as a case.

Recommendations for Improvement

G3:

Where paper products made of recycled materials are possible instead of standard non-recycled, these products should be ordered as alternatives for use on campus.

Indicator G4: Ecofriendly Paper

G.4 Ecofriendly Paper	Ecofriendly paper purchasing	Quantity of ecofriendly paper, per category of paper, divided by the total amount of paper purchased by the university, multiplied by 100. <i>See 'annexe 8' for the calculation tool</i>	40.90%
G.4 Fibres écologiques	Achat de fibres écologiques	Quantité de fibre à caractère écologique, par catégorie de fibre, divisé par le nombre total de fibres achetées chaque année par toutes les unités de l'Université, <i>multiplié</i> par 100. <i>Voir l'annexe 8 pour l'outil de calcul</i>	40.90%

Purpose of Indicator

Following Appendix 8 as in the previous section, this indicator aims to obtain the percentage of paper ordered which is considered to be ecological in relation to the total amount of paper products used by the school. The figures are calculated per unit in the same method as the previous indicator.

Recommendations for Improvement

G4:

The percentage of recycled paper products could easily be greater at Bishop's. If the previous suggested is followed, then this number will increase.

Indicator H1: Air

H Air	H.1 Plants	Live indoor plants	Total number of live indoor plants, without blooming period, divided by the total indoor space, in meters squared.	0.0019Plante/ m²
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H L'air	H.1 Plantes	Plantes vivantes d'intérieure	Nombre total de plantes vivantes, sans période de floraison, dans les espaces intérieurs, divisé par l'espace intérieur total, en mètres carrés.	0.0019Plante/ m²
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Purpose of Indicator

This indicator aims to calculate the total number of indoor plants per meter squared of the university.

To obtain this information most accurately, and to overcome potential issues of accessibility to offices and certain areas of the University, a campus wide email to staff and students was sent requesting the number of plants and the room where they can be found. This system of documentation ensures that no plant is counted more than once, however with this method, there stands the possibility that many plants were not counted due to staff and students not replying to the email request for information, therefore this number is only a rough estimate.

Recommendations for Improvement

H1:

The total number of indoor plants compared to the amount of indoor space at Bishop's is very low. This could easily be remedied by encouraging staff to bring plants into their offices and classrooms. These plants could easily be taken home for summer and longer holidays. Plants can be placed in common areas such as the library, study areas, sub building and the upstairs Pub area, as well as lower traffic areas such as the Centennial Theatre Lobby and box office area. Non-flowering and non-pollinating plants would be necessary as to not be detrimental to the indoor air quality for staff and students.

Indicator H2: Cleaning Products

H.2 Cleaning Products	Use of ‘green’ cleaning products.	Percentage of ‘green’ cleaning products used for upkeep. <i>See ‘annexe 9’ for criteria</i>	63.64%
H.2 Produits sanitaires	Utilisation de produits sanitaires écologiques	Pourcentage des produits sanitaires écologiques utilisés en permanence pour l’entretien <i>Voir l’annexe 9 pour les critères</i>	63.64%

Purpose of Indicator

The ‘ecological’ or ‘green’ certification of cleaning products was calculated as a percent in order to show the proportion of environmentally sound cleaning chemicals used on campus. Appendix 9 indicates that certification must be verified by consulting the Greenseal website: <http://www.greenseal.org/certification/standards/gs37.pdf>, however this website was no longer available and as such an alternate approach had to be taken. The products designated as “green” in this case have been approved by Environment Canada and stamped with the “Environmental Choice” logo, as such they are considered to be sufficiently ‘green’ for the purposes of this audit.

Recommendations for Improvement

H2:

Currently, the majority of cleaning products being used are considered to be “green”, however with the number of eco-friendly products being marketed currently, it would be very simple to **change the remaining products over for green alternatives.**

Indicator H3: Trees

H.3 Trees	Number of Trees on campus	Total number of live trees on campus (including natural and manicured areas), divided by the total surface area of the campus (in square meters).	Ratio = N/A
H.3 Arbres	Nombre d'arbres sur le campus	Nombre total d'arbres vivants sur le campus (incluant tous les espaces naturels et aménagés), divisé par la surface totale du campus (en mètres carrés).	Ratio = N/A

Purpose of Indicator

The intent of this indicator was to determine the number of trees on campus, however, considering the amount of forested area and the varying ages, tree varieties and densities of the surrounding forests, making an accurate estimate for the campus is near impossible. Considering this restriction and the largely unspecified boundaries of the campus being considered, this indicator has not been calculated, as the final result would be very inaccurate and would be compromising to the overall audit.

Recommendations for Improvement

H3:

Though the university has no shortage of trees, the overall health of the trees and forests on the B.U campus should be maintained. The “Carbon sequestration” project currently being contemplated for a lot owned by Bishop’s would be a good addition to the health of the forests around the Bishop’s area.

Section H4: Gaz à effet de serre (GES)

H.4 Green house gases (GHG's)	Quantity of GHG's generated by the university.	Total quantity of GHG's generated by the university. Calculate the ratio by dividing by the EEETP. <i>(annexe 10)</i>	4229325.3/2234.5 GES Ratio =1892.74
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H.4 Gaz à effet de serre (GES)	Quantité totale de GES générée par l'Université	Quantité totale de GES générée par l'Université. Calculez également le ratio en divisant par le EEETP. <i>(annexe 10)</i>	4229325.3/2234.5 GES Ratio =1892.74
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Purpose of Indicator

This indicator seeks to assess the total amount of greenhouse gasses produced by the university by using Appendix 10 as a calculation tool.

The figure for this indicator is based on the individual calculation of the various energy sources on campus: oil, natural gas and hydroelectricity. These were calculated using conversion factors from the MELS (Ministere de Loisirs et de Sport). A value for Gasoline was not included in this report as a reliable conversion factor could not be found, nor was one available through the MELS to ensure consistency of data. Also, Greenhouse gases were not taken into consideration regarding the use of vehicles driven by students and staff, nor for the decomposition of waste materials (garbage, compost etc) generated by the university. Bearing these deficiencies in mind, the ratio given is an approximation of the total Greenhouse Gases generated by the campus taking into consideration only the three aforementioned energy sources.

Recommendations for Improvement

H4:

The amount of greenhouse gases currently being consumed by Bishop's could be reduced, though at a cost, by replacing older outdated systems of heating and circulation. A call for tender is currently being conducted to seek out the services of an Energy Service Company to assist in this area.

Section I1: L'énergie

I Energy	I.1 Energy for buildings	Use of energy for buildings of all types (heating systems, air conditioning, ventilation, and electricity)	Total quantity of energy consumed (in Gigajoules) each year, divided by the total indoor space in meters squared. Taking consideration of the areas which consume greater energy (<i>annexe II</i>). Calculate the ratio by dividing by the EEETP.	$\frac{113143\text{GJ}/82756\text{m}^{2=}}{1.37}$ $1.37/2234.5$ Ratio =.000613
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I L'énergie	I.1 Énergie pour les immeubles	Utilisation d'énergie pour les immeubles (de tous types : systèmes de chauffage, climatisation, ventilation et d'électricité)	Quantité totale d'énergie (en GJ) consommée chaque année, divisé par l'espace intérieur total en mètres carrés. Mettre également en relation la superficie d'espace plus énergivore (<i>annexe II</i>). Calculer finalement le ratio en divisant par le EEETP.	$\frac{113143\text{GJ}/82756\text{m}^{2=}}{1.37}$ $1.37/2234.5$ Ratio =.000613
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Purpose of Indicator

This indicator serves to determine the amount of energy (in GJ) used indoors (area calculated in m²) divided by the EEETP to obtain a ratio.

Recommendations for Improvement

I1:

Updated heating facilities would reduce much of the energy being spent on campus. A more detailed assessment of the heating, ventilation, electrical and air conditioning systems would be beneficial as more detailed records would allow for greater goal setting and improvement. This would be facilitated by the continued efforts to engage an Energy Service Company.

Section I2: Sources d'énergie

I.2 Energy Sources	Use of alternative energy (other than hydroelectricity)	Total annual quantity of energy in GJ originating from renewable sources (geothermal, wind, solar...), divided by the total amount of energy 100.	1.58%
I.2 Sources d'énergie	Utilisation d'énergie renouvelable (autre que l'hydroélectricité)	Quantité totale d'énergie annuelle, en GJ provenant de sources d'énergie renouvelables locales (géothermie, éolien, solaire ...), divisée par la quantité totale d'énergie (pour les mêmes usages), multiplié par 100.	1.58%

Purpose of Indicator

The total amount of “renewable” energy is assessed in this section. “Renewable” is defined as being either geothermal, wind, solar etc. Bishop’s has some smaller projects which are considered to be of a renewable nature. These include a “Solar Wall” in Patterson Hall, as well as a thermal wheel.

Recommendations for Improvement

I2:

Considering Bishop’s only has two very small means of alternative energy, **greater emphasis could be put on increasing the number of alternative energy sources in future building constructions**. Where possible, though an expense, the option of gradually introducing solar panels to existing buildings or wind turbines to field areas, this could be beneficial to the environmental sustainability as well as hold educational benefits for the campus and community.

Section I3: Énergie pour les équipements non fixes

I.3 Energy for non-stationary equipment.	Use of energy for vehicles and non-stationary equipment	Total amount of energy (of all types) consumed by campus vehicles and equipment as a ratio by dividing by the EEETP. <i>See 'annexe 12' for the calculation tool.</i>	622.45GJ Ratio =.2785
I.3 Énergie pour les équipements non fixes	Utilisation d'énergie pour les véhicules et les équipements non fixes	Quantité totale d'énergie (de tous types) consommée par le parc de véhicules et les équipements de terrains et ratio en divisant par le EEETP. <i>Voir l'annexe 12 pour l'outil de calcul</i>	622.45GJ Ratio =.2785

Purpose of Indicator

This indicator simply calculates the amount of fuel consumed by vehicles used on campus. This does not include students' or staffs' personal vehicles. To obtain the result of this indicator, all gasoline and diesel fuel deliveries were calculated in Litres from December 2006 until December 2007. Please note that in the summer months the Lennoxville golf course uses diesel fuel from the Bishop's holding tank to fuel the golf carts.

Appendix 12 was used as a calculation tool to obtain the number of gigajoules for each type of fuel.

Recommendations for Improvement

I3:

Taking into consideration the **fuel efficiency of campus vehicles** when purchasing would improve the amount of fuel consumed.

Section J1: Sol et Territoire

J Turf and Terrain	J.1 Fertilizers for upkeep of greenspace	Use of inorganic fertilizers	Total weight (in Kg) of inorganic solid or liquid fertilizers used anually, divided by the total area of the campus in meters squared. (Densité de 1, soit : 1 L = 1 Kg)	N/A Kg / m²
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J Sol et Territoire	J.1 Engrais pour la gestion des espaces verts	Utilisation d'engrais inorganique	Poids total (en kilogrammes) d'engrais inorganiques solides et liquides utilisés annuellement, divisé par la superficie totale du campus en mètres carrés. (Densité de 1, soit : 1 L = 1 Kg)	N/A Kg / m²
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Purpose of Indicator

The area that is for this audit considered as the Bishop's University campus itself uses no fertilizers, however there is use on the Lennoxville golf course, the land being under the ownership of Bishop's University. As this land is in very close proximity to the campus area and Bishop's physical and financial resources are used by the golf course (see section I3), this area has been considered when performing this audit. However, no data was available to calculate the total amounts of fertilizers used by the Lennoxville Golf Course.

Recommendations for Improvement

J1:

No fertilizers are used on campus other than at the golf course. Records however, were not available. It is suggested that better records be kept regarding things of this nature to

improve the accuracy of future audits as well as keep track of annual use of fertilizers on the course.

Section J2: Pesticides pour la gestion des espaces verts

J.2 Pesticides for upkeep of greenspace	Use of pesticides	Total volume (in litres) of solid or liquid pesticides (including all manner of poisons for plants and animals) used annually, divided by the total area of the campus. (Density per unit: 1 Kg = 1 L)	26.3821/1245436m2 .0000212L / m²
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J.2 Pesticides pour la gestion des espaces verts	Utilisation de pesticides	Volume total (en litres) de pesticides solides et liquides (incluant à la fois les poisons de tous types pour plantes et animaux) utilisés annuellement, divisé par la superficie total du campus en mètres carrés. (Densité de 1, soit : 1 Kg = 1 L)	26.3821/1245436m2 .0000212L / m²
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Purpose of Indicator

As stated above, the Lennoxville Golf Course lands are taken into consideration in this audit. As with section J1, no pesticides are used on Bishop's Campus-proper, but are employed as a means of control on the golf course.

Recommendations for Improvement

J2:

Use of pesticides is very low at the Bishop's golf course and has been drastically decreasing over the last several years. It is suggested that the types of pesticides used could be reviewed to assess how environmentally sound they are and from that determine if improvements could be made on the choices of chemicals used.

Section J3: Aménagement du territoire

J.3 Upkeep of Terrain	Various terrains on campus.	Total surface area (m²) : - Natural space - Manicured greenspace - Constructed areas -Parking space Divided by the total area of the campus, multiplied by 100. <i>See 'annexe 13' for the calculation tool.</i>	N/A% N/A% 2.18% 2.21%
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J.3 Aménagement du territoire	Surface des différents types d'aménagement sur le campus.	Surface totale (m²) : - des espaces naturels - des espaces verts aménagés - des espaces aménagés (construits) -des aires de stationnement divisée par la surface totale du campus, multiplié par 100. <i>Voir l'annexe 13 pour l'outil de calcul</i>	N/A% N/A% 2.18% 2.21%
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Purpose of Indicator

This indicator aims to calculate the percentages of the various ground types at Bishops: parking areas, green space, natural areas and constructions. The areas of these spaces are calculated individually and each is divided by the total area of the campus. This provides the percentages of the various areas.

Recommendations for Improvement

J3:

It is difficult to make suggestions regarding the layout of the campus in terms of how much area is dedicated to parking, green space, natural space and buildings. These things are already solidly established, therefore little change can be made, however a **campus master plan** would be beneficial to the planning of any future development.

Indicator J4: Building Density

J.4 Building Density	Density of constructed area	Total area (m²) of constructions (all floors of all buildings), divided by the overall imprint of the buildings on campus (m2).	Density = 2.6904
J.4 Densité d'immeubles	Densité de l'espace construit	Superficie totale (m²) de l'espace construit (tous les étages de tous les édifices), divisée par l'empreinte totale (m²) de tous les édifices sur le campus.	Densité = 2.6904

Purpose of Indicator

This final indicator serves to determine the total surface density (in m2) of the buildings on campus. The area of all building levels is calculated and divided by the total space used by the buildings.

Recommendations for Improvement

J4:

As above, the buildings are already established and therefore no suggestions can be made for the current placement and density of buildings on campus, though a Campus Master Plan and a Buildings Master Plan would be useful for further development.

Appendix 1: *Methods and Calculations*

A1:

A1.1:

Loisir et Sport

Price Sports Center:

Total Area: 8133.1

*Includes: pool, gym, jogging track, squash courts, dance studio, martial arts room, weight room, cardio room

W.B. Scott Arena:

Total Area: 3301.5

Golf Clubhouse:

Total Area: 614.53

Centennial Theatre:

Total Area: 3315.7

Turner Studio Theatre/ Foreman Art Gallery: (considered part of Centennial building)

Bandeem Hall:

Total Area: 738.28

Total Recreational Building area: 16103.11m²

Total building area as per MELS: 82756m²

Calculation Section A.1.1: $16103.11 / 82756m^2 * 100 = 19.46\%$

A1.2:

Total Campus area:

Consider as Golf course (lot: 2446780) and Immediate B.U Campus (lots: 2446789, 2447357):

Golf Course: Area: 524,753 m²

Campus: 720,683 m²

TOTAL: 1,245,436m²

Total outdoor recreation area: 197,974.00

$(197,974.00/1,245,436m^2)100=15.9$

A2:

A2.1:

N/A

A2.2:

N/A

A2.3:

Lots belonging to Bishops:

2447080	area: 267701.5
2446769	area: 7195.4
2447081	area: 42863.4
2444506	area: 203909.8
2447245	area: 65536
2447246	area: 1096.9
2446785	area: 2140.3
2447084	area: 21650.9
2446787	area: 10709.7
2446147	area: 22645.3

Total: 645449.2

A3:

Tim Horton's Nutrition Calculator

<http://www.timhortons.com/en/menu/nutrition-calculator.html>

A4:

0%

B1:

Alternative Transportation:

of total parking passes sold this year. Subtract from total population= # of students/staff/faculty who get here other than driving.

503 parking permits sold to Bishop's students

452 Faculty and staff

Total: 955

MCU (Membres de la Communauté universitaire)

MCU calculated as: EEETP (2234.5) + all staff and faculty listed in the B.U online Directory (455) + 50 (estimation of those staff who are not listed in the directory to create a more accurate overall estimate)

TOTAL: 2739.5

Final calculation: $955/2739.5 * 100 = 34.86\%$ (The number that drive to school, therefore needs to be subtracted from 100% to obtain # of MCU who use alternative transport.)

TOTAL # of BU campus community who use alternative transport.= 65.14%

C1:

N/A

C2:

Course Content:

Total Courses: 1432 (on a rotating three year schedule)

To give an appropriate approximation of the ratios all numbers were divided by three to illustrate the 3 year rotation:

C2.1:

Total courses with high 'sustainability content': 34

$34 \times 1432 = .024$

$(34/3=11.33) / (1432/3=477.33) = 0.024$

C2.2:

Total courses with high 'environmental content': 40

$40 \times 1432 = .028$

$(40/3=13.33) / (1432/3=477.33) = 0.028$

C2.3:

N/A.

C3:

Research concerning Environmental sustainability conducted on campus 2007-2008:

<http://www.ubishops.ca/research/creativity.html>

Civic Science, Sustainability and Environmental Decisions

\$45,000

Darren R. Bardati

Department of Environmental Studies and Geography

Abrupt Climatic Changes and Meltwater Discharges along the Eastern Canadian Margin

\$128,250

The Role of Weather Patterns on the Production of Allergenic Airborne Pollen and Spores

\$4967

Elisabeth Levac

Environmental Studies and Geography

This year, Dr. Bardati received \$15,000

Dr. Levac, 41,050 for her first project on Abrupt Climate Change and \$4967 for The Role of Weather Patterns on the Production of Allergenic Airborne Pollen and Spores.

The research funding (external and internal) this year is around \$700,000.

$61,017 / \$700,000 \cdot 100 = .0871 = 8.72\%$

D1:

Total score of 11.5/19

See appendix: Section D1.

D2:

Total score of 13/19

See appendix: Section D2.

D3:

Total employees dedicated to Sustainable Development: 5

- Michel Caron
- Steve Roe
- Astrid Grawehr
- Jean Vaillancourt
- Daphne Fisher

$5 / EEETP\ 2235.5 = 0.002237$

D4:

Information available at <http://www.ubishops.ca/facultystaff.html>

Financial figures not reliable. N/A

E1:

Projected Foundation Contributions 2007-08

	Total
Scholarships.	
Prizes. Bursaries	831,000
Harvey Memorial	
Internship	2,000
Janyne Hodder	
intern in music	1,300
Student	
Enrichment	61,320
Athletic Awards	
and Bursaries	45,000
SEED	
Project	31,000
	971,620

Calculation **971,620** / EEETP **2234.5** =434.8
5 **3**

F1:

N/A

No meters available to measure water usage.

G1:

0%.

LEED is for new buildings only. All new buildings will be built to LEED specifications. As of the present time, there are no LEED buildings at B.U.

G2:

N/A

G3:

Total units paper purchased yearly 3227/ EEETP 2234.5=90.05
See Section G3 in appendix section.

G4:

Total units paper with recycled content: $(1320/3227)100=40.90$

See Section G3 in appendix section.

H1:

According to Email responses:

154 plants / total floor area 73115.2 m² = 0.0021

H2:

11 products total, 7 'green' products.
 $(7/11)100=63.64\%$

See product flyer.

H3:

N/A

H4:

Below is the total energy consumption as found in the auditor's report;

Here is the calculation for GHG using MELS Conversion Factors:

For 2006-2007

Electricity = 31,821 GJ = 8,839,167 kWh \Rightarrow X 0.000 kg of GHG per kWh \Rightarrow 0 kg (the MELS is considering hydro-electricity for universities).

Oil #2 = 6,261 GJ = 161,782.95 litres \Rightarrow X 2.840 kg of GHG per litres \Rightarrow 459,463.6 kg of GHG.

Natural Gas = 75,061 GJ = 1,981,024.0 m³ \Rightarrow X 1.903 kg of GHG per m³ \Rightarrow 3,769,888.7 kg of GHG.

459,463.6 kg of GHG. + 3,769,888.7 kg of GHG = 4229325.3 / EEETP 2234.5 = 1892.74

I1:

Total energy consumption: Calculation for GHG using MELS Conversion Factors 2006-2007:

Electricity = 31,821 GJ = 8,839,167 kWh \Rightarrow X 0.000 kg of GHG per kWh \Rightarrow **0 kg** (the MELS is considering hydro-electricity for universities).

Oil #2 = 6,261 GJ = 161,782.95 liters \Rightarrow X 2.840 kg of GHG per liters \Rightarrow **459,463.6 kg of GHG.**

Natural Gas = 75,061 GJ = 1,981,024.0 m³ \Rightarrow X 1.903 kg of GHG per m³ \Rightarrow **3,769,888.7 kg of GHG.**

Calculation (GJ / Total indoor space m²):

$$113143 \text{ GJ} / 82756 \text{ m}^2 = 1.37 \text{ GJ/m}^2$$

Ratio:

$$1.37 / 2234.5 \text{ (EEETP)} = .000613$$

I2:

Section I2:

Calculation for renewable energy: GJ/yr

Solar wall and thermal wheel:

Patterson Solar wall: 2300 sq/ft

We save 03 GJ/yr/sqft

Total annual savings of 690 gj/yr

Thermal Wheel:

Total annual savings of 1100Gj/yr

Total both: 1790 Gj/yr

Total Gj/yr of university: 113146

$$(1790/113146)*100 = 1.58\%$$

I3:

Section	Gasoline and Diesel Fuel			Dec. 06-Dec. 07	
I.3	Date	Litres	Type	\$/L	Total
	m/d/y		(D/G)		Cost
			Unleaded		
December	12.20.06	1545.9	Gas	0.8333	1467.9
			Unleaded		
April	04.26.07	2162.6	Gas	0.8908	2195.18
			Unleaded		
June	06.07.07	2198.7	Gas	0.8908	2231.83
			Unleaded		
July	07.03.07	2015.3	Gas	0.8908	2045.66
			Unleaded		
August	08.15.07	2037.6	Gas	0.8908	2068.3
			Unleaded		
October	10.26.07	1835.4	Gas	0.917	1917.84
Total		11795.5			11926.71
February	02.13.07	1205.9	Diesel	0.8021	1102.19
February	02.27.07	1259.6	Diesel	0.7879	1130.89
July	07.19.07	400.1	Diesel	0.8211	374.35
September	09.18.07	1653.8	Diesel	0.8211	1547.38
December	12.10.07	1077.9	Diesel	1.018	1250.38
Total		5597.3			5405.19

Calculation: GJ

Gas	11926.71*0.03466=	413.38
Diesel	5405.19*0.03868=	209.07
Total GJ		
consumed:		622.45

Total Ratio: 622.45/EEETP 2234.5=.2785

J1:

N/A

J2:

Campus area:

Consider as Golf course (lot: 2446780) and Immediate B.U Campus (lots: 2446789, 2447357):

Golf Course: Area: 524,753 m²

Campus: 720,683 m²

Total area: 1,245,436m²

Total Qty. (kg) pesticides used 2003: 44.64

Total Qty. (kg) pesticides used 2004: 97.41

Total Qty. (kg) pesticides used 2005: 116.92

Total Qty. (kg) pesticides used 2006: 16.80

Total Qty. (kg) pesticides used 2007: 26.38 < number used in calculations

$26.38/1,245,436\text{m}^2 = .0000212$

J3:

Calculations:

Natural Space: N/A

Greenspace: N/A

Parking (See map in Appendix section J3).

of spaces total: 1145

spaces with given m² area (as per map): 1050

spaces with estimated m² area using average of parking space sizes (area not given on map): 95

(Space size average estimated as 9x15 = 135ft² x .0283 (conversion to m²)= 3.8205m²)

3.8205 m² x 95 spaces= 362.95m²

Total area of given spaces: 27188 m²

Total area of estimated spaces: 362.95m²

Total area of parking Spaces: 27550.95m²

Constructions Refer to map:

Total area Indoor (all floors): 73115.2 m²

Total area (surface Imprint): 27176.76 m²

*Excludes:

Champlain

Panda Daycare

Substations (not covered)

Harold Dr. (#3, #6, #7)

Mackinnon Dr. (#2-#7)

Champlain Storage

Secondary Bishops Storage buildings (2/3)

Total Campus area:

Consider as Golf course (lot: 2446780) and Immediate B.U Campus (lots: 2446789, 2447357):

Golf Course: Area: 524,753 m²

Campus: 720,683 m²

TOTAL: 1,245,436m²

Total Parking Spaces: 27550.95m²/1,245,436m²= 0.0221*100= 2.21%

Buildings:

Total area (surface Imprint): 27176.76 m²/1,245,436m²= 0.0218*100= 2.18%

J4:

Constructions (see map in appendix Section J4).

Total area Indoor (all floors): 73115.2 m²

Total area (surface Imprint): 27176.76 m²

*Excludes:

Champlain

Panda Daycare

Substations (not covered)

Harold Dr. (#3, #6, #7)

Mackinnon Dr. (#2-#7)

Champlain Storage

Secondary Bishops Storage buildings (2/3)

$73115.2 \text{ m}^2 / 27176.76 \text{ m}^2 = 2.6904$

Annexe 1 Précision sur les espaces de récréation admissibles (A.1)

A.1.1 Espace de récréation intérieur :

Description COBA pour le MEQ :

Ceux qu'on utilise pour le calcul :

07XX	Gymnase
07XX	Palestre
07XX	Salle d'activités physiques
07XX	Piscine
07XX	Stade couvert
07XX	Salle polyvalente
07XX	Aréna (surface de jeu)
	(Aréna et bâtiment de sports extérieurs – Aréna)
06XX	Auditorium (spectacle)
06XX	Salle théâtre et/ou concert
06XX	Musée et salle d'exposition

A.1.2 Espace de récréation extérieur :

Espace de jeu seulement

Annexe 2 Critères pour les repas santé (A.3)

Éléments nutritifs	Proportions
Protéines	10 g / portion du mets principal. L'apport total ne dépassant pas 35 % de la valeur calorique du repas
Fibres alimentaires	8 g
Glucides	45 à 65 % de la valeur calorique du repas
Lipides totaux	20 et 35 % de la valeur calorique du repas
Gras saturés et gras trans combinés	Ne dépassant pas 7 % de la valeur calorique du repas
Sodium	Ne dépassant pas 25 % de la valeur calorique du repas

<p style="text-align: center;">Annexe 3 Liste des enjeux admissibles reliés au développement durable et/ou l'environnement (C.1 et D.2)</p>

1. Gestion de l'énergie (mesures d'efficacité, réduction des gaz à effet de serre, utilisation de sources renouvelables à perpétuité)
2. Gestion de l'eau (mesures d'efficacité et de réutilisation)
3. Air pur (intérieur comme extérieur)
4. Santé et sécurité
5. Achats éthiques et écologiquement rationnels
6. Gestion des déchets solides (mesures de réduction, de réutilisation et de recyclage)
7. Gestion des déchets dangereux (mesures de réduction, de réutilisation et de recyclage)
8. Gestion de la demande en transport
9. Engagement de la communauté au processus décisionnel du campus (communautés sur et hors campus)
10. Investissements éthiques et écologiquement rationnels
11. Éducation pour la durabilité (cours à contenu en durabilité pour tous les diplômés, stratégies à cet effet)
12. Recherche pour la durabilité
13. Équité (genre, handicaps, ethniques)
14. Bien-être (forme physique, milieu de travail sécuritaire, spiritualité, nutrition, régime de travail optionnel)
15. Planification à long terme de l'aménagement du terrain du campus (principes de croissance intelligente, protection des espaces verts, conception pour l'efficacité, engagement de la communauté)

<p style="text-align: center;">Annexe 4 Précision sur les cours ou secteurs de recherche admissibles (C2)</p>
--

C.2.1 Critères pour sélectionner les cours (ou secteurs de recherche) avec « un fort contenu en durabilité ».

- diversité (sexuelle, religieuse, etc.)
- multiculturalisme ou diversité culturelle ou sujets interculturels
- globalité ou inclusivité (inclusion par rapport que personne ne doit être rejetée)
- études comparatives des approches culturelles
- gestion environnementale
- intendance écologique
- éthique
- équité
- démocratie
- gouvernance

C.2.2 Critères pour sélectionner les cours (ou secteurs de recherche) avec « un fort contenu en environnement ».

- Enjeux environnementaux : Eau, Air, Sol, Impacts sur les êtres vivants
- Évaluation des impacts environnementaux
- Qualité de l'environnement
- Gestion environnementale
- Politique et environnement
- Droit de l'environnement
- Gestion environnementale des ressources naturelles
- Santé et environnement
- Écotoxicologie
- Histoire de l'environnement
- Économie et environnement
- Biodiversité et conservation
- Gestion des matières résiduelles (domestiques et dangereuses)
- ISO 14 000 et autres normes ou certifications

<p style="text-align: center;">Annexe 5</p> <p style="text-align: center;">Liste des 19 éléments de développement durable (D.1, D.2, D.3 et D.4)</p>
--

1. Gestion de l'énergie (mesures d'efficacité, réduction des gaz à effet de serre, utilisation de sources renouvelables à perpétuité)
2. Gestion de l'eau (mesures d'efficacité et de réutilisation)
3. Air pur (intérieur comme extérieur)
4. Santé et sécurité
5. Achats éthiques et écologiquement rationnels
6. Gestion des déchets solides (mesures de réduction, de réutilisation et de recyclage)
7. Gestion des déchets dangereux (mesures de réduction, de réutilisation et de recyclage)
8. Gestion de la demande en transport
9. Engagement de la communauté au processus décisionnel du campus (communautés sur et hors campus)
10. Investissements éthiques et écologiquement rationnels
11. Éducation pour la durabilité (cours à contenu en durabilité pour tous les diplômés, stratégies à cet effet)
12. Recherche pour la durabilité
13. Équité (genre, handicaps, ethniques)
14. Bien-être (forme physique, milieu de travail sécuritaire, spiritualité, nutrition, régime de travail optionnel)
15. Planification à long terme de l'aménagement du terrain du campus (principes de croissance intelligente, protection des espaces verts, conception pour l'efficacité, engagement de la communauté)
16. Mission de l'Université (engagement général envers la durabilité)
17. Plan stratégique à long terme (planification et positionnement académique et administratif)
18. Privilège accordé à l'achat de biens et services locaux
19. Méthode de résolution de conflits et de différends (pour problèmes internes et externes)

**Annexe 6
Bâtiments LEED (G.1)**

Bâtiments LEED (nom)	Superficie en m ²	Note LEED du bâtiment
1-		
2-		
3-		
TOTAL	N/A m²	N/A points



CALCUL 1 : Superficie en m² / divisé par le nombre total
 (pourcentage) de mètres X 100 = %
 campus carrés d'édifices sur le

$$\frac{\text{_____}}{\text{_____}} \times 100 = \text{N/A \%}$$

CALCUL 2 : Superficie en m² X Note LEED
 (niveau LEED) = pointage du niveau LEED

$$\frac{\text{_____}}{\text{_____}} \times \text{_____}$$

Annexe 7
Outil de calcul des matières résiduelles (G.2)

Traitement	Matières	Quantité (Kg)
Réduction à la source (au cours de la dernière année)	- Herbicides	
	-	
Réutilisation	- Mobilier	
	- Cartouches d'encre	
	- Téléphones cellulaires	
	- Palettes de bois	
	-	
Recyclage	- PVM (plastique/verre/métal)	
	- Papier	
	- Carton	
	- Canettes consignées	
	- Métaux	
	- Fluorescents	
	- Matériels informatiques	
	- Batterie automobile (plomb)	
	-	
	-	
Valorisation	- Matières organiques (compost)	
	- Solvants et Huiles	
	- Débris de construction	
	-	
TOTAL 3RV		
Élimination	- Déchets ultimes (enfouissement ou incinération)	
	- Déchets dangereux (chimiques, biologiques et radioactifs)	
TOTAL Élimination		
TOTAL 3RV-E		

Annexe 8
Outil de calcul de l'achat annuel de fibres (G.3 et G.4)

Types de fibres	Écologique (Oui = <input checked="" type="checkbox"/>)	Nombre d'unité	Quantité en Kg	Quantité en m ²
Papier pour l'impression	<input checked="" type="checkbox"/>			N/A
Papier à mains	<input type="checkbox"/>			N/A
Papier hygiénique	<input type="checkbox"/>			N/A
Carton	<input type="checkbox"/>			N/A
Papier pour l'impression	<input type="checkbox"/>			N/A
	<input type="checkbox"/>			
	<input type="checkbox"/>			
TOTAL			Kg	N/A m²

Annexe 9
Critères pour les produits écologiques (H.2)

Utilisez l'outil développé par M. Champagne de l'École Polytechnique de Montréal Ou consultez ce site pour certains spectres
<http://www.greenseal.org/certification/standards/g37.pdf>

**Veillez noter que les produits certifiés « EcoLogo » sont considérés
comme étant écologiques**

Annexe 10

Outil de calcul pour les GES et les polluants atmosphérique (H.4 et H.5)

Utiliser le logiciel Clean air – Cool Planet pour obtenir les facteurs de conversion et faciliter les calculs

H.4 Quantité totale de GES générée par l'Université

Sources d'émissions	GES Émis			Total de GES (t CO2 éq)
	CO2 (kg)	CH4 (kg)	N2O (kg)	
Électricité achetée				
Vapeur achetée				
Huile distillée (non cogénérée)				
Gaz naturel (non cogénéré)				
Diesel (non cogénéré)				
Déchets (total: non incinérés)				
Véhicules du campus				
Compensation: compostage				
Total des émissions				

H.5 Quantité totale de divers polluants atmosphériques générée par l'Université

Bilan total des émissions		
Substances	Seuil de déclaration À l'INRP (tonnes)	Émissions totales (tonnes) (Utiliser le logiciel Clean air – Cool Planet)
Oxyde de carbone	20	
Dioxyde de soufre	20	
Oxydes d'azote	20	
Composés organiques volatils	10	
Particules totales	20	
Particules < 10 microns	0,5	
Particules < 2.5 microns	0,3	

Annexe 11
Critères de calcul pour la superficie d'espace plus énergivore
(I.1)

I.1 Espace intérieur « nécessitant plus d'énergie »:

Le nombre de mètres carrés réservé aux laboratoires d'enseignement et de recherche pouvant nécessiter plus d'énergie ou autres endroits énergivores.

Description COBA pour le MEQ :
Ceux qu'on utilise pour le calcul :

02XX	Labo. d'enseig. Spéciaux (Laboratoire d'enseignement – Humide)
02XX	Chambre contrôlée (Laboratoire d'enseignement - Chambre contrôlée)
02XX	Salle équipement spécialisé (Laboratoire - Équipement spécialisé et instrumentation)
04XX	Lab. rech. type expérimental (Laboratoire de recherche – Humide)
04XX	Chambre contrôlée (Laboratoire - Chambre contrôlée)
04XX	Animalerie
04XX	Chambre d'équipement spécialisé (Équipement spécialisé et instrumentation)
07XX	Piscine
07XX	Aréna (surface de jeu) (Aréna et bâtiment de sports extérieurs – Aréna)
XXXX	Stationnements intérieurs

Annexe 12 Outil de calcul pour convertir la consommation de produits pétrolier en GJ (I.3)

Votre consommation d'ESSENCE : 11926.71 Litres X 0,03466= 413.38 GJ

Votre consommation de DIESEL : 5405.19 Litres X 0,0386= 209.07 GJ

TOTAL :
622.45 GJ

Annexe 13 Outil de calcul pour l'aménagement du territoire (J.3)

	Définition	superficies (m²)
Aires naturelles	Superficie de l'espace naturel n'ayant subi aucune modification anthropique.	
Aires aménagées	Superficie de l'espace vert qui est un espace aménagé par des éléments horticoles (arbres, arbustes, plantes, gazon, etc.).	
Aires construites	Superficie de l'empreinte des bâtiments des campus au sol.	27176.76
Aires de stationnement	Superficie de l'empreinte des stationnements sur la superficie totale de l'Université.	27550.95
Surface totale	Superficie de toutes les propriétés de l'Université incluant l'empreinte des bâtiments et les terrains qui entourent ceux-ci.	
% de surface des différents types d'aménagement sur le campus	Surface totale des aires naturelles, Surface total des aires aménagées, Surface total des aires construites, Surface total des aires de stationnement, divisée par la surface totale du campus, multiplié par 100.	% % % %

Annexe 14

Lexique

Bâtiments « vert » : Bâtiment construit selon des critères précis et stricts (normé) qui mènent à un environnement bâti permettant un avenir durable.

Développement durable : C'est un développement qui répond aux besoins du présent, sans compromettre la capacité des générations futures de répondre à leurs besoins, sur la base du respect entre tous les membres de la communauté.

Environnement : Ensemble, à un moment donné, des conditions physiques, chimiques et biologiques qui régissent la vie d'un organisme, d'une population.

Espace de récréation : Espace où les loisirs, les moments de détente et les sports peuvent être pratiqués.

Espace naturel : Espace n'ayant subi aucune modification anthropique.

Espace vert : Un espace vert aménagé.

Repas santé : est un repas comportant les 4 groupes alimentaires selon le guide alimentaire canadien en plus d'être faible en gras saturés, en glucide et riche en fibres.

Surface à l'état naturel : Est une surface de territoire ayant subie aucune ou presque aucune modification anthropique.

Transports alternatifs : Une manière de se déplacer autrement que par l'utilisation d'un véhicule en solo. Habituellement les transports alternatifs sont le transport collectif (autobus, train, taxi collectif, etc.) et les transports actifs (marche, le vélo, le patin à roues alignées, trottinette, etc.).

Section D1: Sustainable Development Audit Criteria.

Points assigned based on:

BISHOP'S UNIVERSITY ENVIRONMENTAL POLICY

Approved by Executive Committee, November 21, 2003.

<p style="text-align: center;">Annexe 5 Liste des 19 éléments de développement durable (D.1, D.2, D.3 et D.4)</p>

1. Gestion de l'énergie (mesures d'efficience, réduction des gaz à effet de serre, utilisation de sources renouvelables à perpétuité)

Section 2.3 Bishop's University Environmental Policy : Energy Efficiency

B.U. will endeavour, in conjunction with the Facilities Department, to minimise energy consumption, reduce emissions and reduce the consumption of fossil fuels and other non-renewable energy sources.

Section 4.3 Energy Efficiency

4.3.1 Establishment of a baseline as a standard against which improvement in energy consumption can be measured.

4.3.2 Undertaking projects to increase energy efficiency or decrease pollution wherever there are acceptable payback periods of the costs involved.

4.3.3 Using an integrated approach to facilities management. An integrated approach implies that energy costs should be analysed by taking into account all energy types rather than examining individual systems or energy types in isolation.

4.3.4 Exploring government initiatives to ensure participation in relevant programs in the areas of pollution reduction and energy efficiency.

4.3.5 Incorporating energy efficiency and renewable energy technologies in all building projects.

Section 2.4 Transportation

B.U. will endeavour, in conjunction with the Facilities Department, to minimise vehicular energy consumption and to reduce emissions and the consumption of fossil fuels.

Note: Bishop's has only one measure which could be considered to be a renewable energy resource, that being the "Solar Wall" in Patterson Residence.

***No point given**, as specific efforts still have to be decided upon and implemented.

2. Gestion de l'eau (mesures d'efficience et de réutilisation)

Section 2.5 Bishop's University Environmental Policy : Water Consumption

B.U. will endeavour, in conjunction with the Facilities Department, to minimise water consumption.

Section 4.5 Bishop's University Environmental Policy : Water Consumption

4.5.1 Installing water efficient models when replacing any water fixtures on campus.

4.5.2 Undertaking projects to decrease water usage.

4.5.3 Using longevity and water efficiency as primary considerations when purchasing water fixtures

***No point given**, as there is no point of reference for water consumption. Bishop's is not equipped with water meters.

3. Air pur (intérieur comme extérieur)

Air filtration for indoor air quality are present in buildings.

*** No point given.** No current policy exists for improvement of air quality.

✓ 4. Santé et sécurité

A Standard Health and Safety policy exists.

✓ 5. Achats éthiques et écologiquement rationnels ¹

Section 2.7 Bishop's University Environmental Policy : Purchasing

B.U. will endeavour, in conjunction with the Vice-Principal Finance and Administration to minimise the ecological impact of the products and services purchased in support of campus operations.

Section 4.7 Bishop's University Environmental Policy : Purchasing

4.7.1 Minimising the required use of paper by photocopiers and printers.

4.7.2 Favouring the purchasing of unbleached, recycled and post-consumer paper.

4.7.3 Having unbleached recycled paper in the Bookstore.

4.7.4 Taking the following factors into account in purchase of products:

- a) reduced packaging;
- b) environmental performance (*i.e.* energy saving);
- c) reduced consumption;
- d) construction (*i.e.* recycled materials rather than tropical hardwoods);
- e) longevity.

¹ Note: Bishop's is a member of the RGAUQ and makes purchases by which the Bishop's Campus environment benefits from the RGAUQs Sustainability initiatives.
See: RGAUQ annual Report 2006-2007. p.6.

4.7.5 Providing information to departments comparing the environmental performance of different products. (*i.e.* Fax machines that can use recycled paper, etc).

✓ **6. Gestion des déchets solides (mesures de réduction, de réutilisation et de recyclage)²**

Section 2.6 Bishop's University Environmental Policy : Waste Reduction: Solid, Organic and Hazardous Materials

B.U. will endeavour, in conjunction with the Facilities and other departments, through recycling, composting and other waste management projects, to minimise solid and organic waste production and to limit and monitor the use of hazardous materials on campus grounds, in cleaning and in laboratories.

Section 4.6 Bishop's University Environmental Policy : Waste Reduction: Solid, Organic and Hazardous Materials

4.6.1 Having an effective paper waste reduction program.

4.6.2 Limiting solid waste generated by the university.

4.6.3 Maintaining an effective recycling program (paper, glass, plastic, metals, computers and other materials) across campus.

4.6.4 Offering furniture for sale or donation prior to disposal.

4.6.5 Using yard waste as mulch on campus grounds.

4.6.6 Implementing a food composting program.

4.6.7 Using effective, environmentally friendly cleaning supplies when appropriate.

There have recently been increased efforts in terms of composting, separating recyclable materials from garbage, hazardous waste disposal, batteries and ink cartridge disposal.

✓ **7. Gestion des déchets dangereux (mesures de réduction, de réutilisation et de recyclage)**

Section 2.6 Bishop's University Environmental Policy : Waste Reduction: Solid, Organic and Hazardous Materials

B.U. will endeavour, in conjunction with the Facilities and other departments, through recycling, composting and other waste management projects, to minimise solid and organic waste production and to limit and monitor the use of hazardous materials on campus grounds, in cleaning and in laboratories.

Section 4.6 Bishop's University Environmental Policy : Waste Reduction: Solid, Organic and Hazardous Materials

² See Paperless initiative. Presented By the Sustainable Development Action Group (S.D.A.G).

4.6.8 In accordance with Provincial and Federal regulations, monitoring the safe use and storage of hazardous and toxic materials on campus and carrying out their disposal.

There have recently been increased efforts in terms hazardous waste disposal, batteries and ink cartridge disposal.

✓ **8. Gestion de la demande en transport**

Section 4.4 Bishop's University Environmental Policy : Transportation

4.4.1 Making bike racks available at academic and residence buildings.

4.4.2 Taking emission levels into consideration in the purchase of vehicles.

The Sherbrooke Bus system could stand for much improvement as an alternative method of transportation for Bishop's, especially in summer months, weekends. Only two bus routes available.³

.5 of a point given.

9. Engagement de la communauté au processus décisionnel du campus (communautés sur et hors campus)

The greater Lennoxville/Sherbrooke community was involved in a Public consultation process regarding the 410 Highway extension which has been proposed to run through the Bishop's Property.

***No point Given.** No current policy exists which implements greater community involvement in sustainable development initiatives.

10. Investissements éthiques et écologiquement rationnels.

***No point Given.** No Current policy on environmental or sustainable investment initiatives.

✓ **11. Éducation pour la durabilité (cours à contenu en durabilité pour tous les diplômés, stratégies à cet effet)**

Section 2.2 Bishop's University Environmental Policy : Curriculum

B.U. encourages faculty and Senate to consider, where appropriate, taking steps to incorporate environmental content throughout existing curriculum, increasing environment related course offerings and programs seeking more resources to dedicate to environmental research.

Section 4.2 Bishop's University Environmental Policy : Curriculum

4.2.1 Where appropriate, incorporating cases and examples derived from the Campus Environmental Audit Project or other on-campus environmental projects into course-work.

4.2.2 Where appropriate, using local community environmental resources, and integrating local and regional issues into course work.

³ See Sherbrooke Bus Route map.

4.2.3 Where appropriate, using speakers, presentations, debates and other such methods to educate students on environmental topics.

(Refer to section C.2 of the 2008 Sustainable Development Audit for Academic courses with Environmental/Sustainable content).

✓ **12. Recherche pour la durabilité**

Section 2.2 Bishop's University Environmental Policy : Curriculum

B.U. encourages faculty and Senate to consider, where appropriate, taking steps to incorporate environmental content throughout existing curriculum, increasing environment related course offerings and programs seeking more resources to dedicate to **environmental research**.

Research Projects with environmental and sustainable content are currently being conducted.

(Refer to section C.3 of the 2008 Sustainable Development Audit for Research Projects with Sustainable content.)

✓ **13. Équité (genre, handicaps, ethniques)**

Bishop's is a multicultural Campus. Wheelchair access is available.

“Located in the bilingual setting of the Eastern Townships, Bishop's offers students from Quebec, Canada, and the International community the opportunity to exercise the rights and responsibilities of good citizenship and to engage in the tolerant and informed dialogue that sustains democracy.”⁴

✓ **14. Bien-être (forme physique, milieu de travail sécuritaire, spiritualité, nutrition, régime de travail optionnel)**

Though Bishop's had its beginnings as an Anglican seminary teaching theology, the campus is now secular and open to all religions and beliefs. However, Spiritual outlets available on Campus include St. Marks Chapel and prayer rooms Also, counselling is available on campus.

(Refer to section A1 of the 2008 Sustainable Development Audit for Indoor and Outdoor recreational facilities on the Bishop's University campus).

Security on Campus, frequent patrols to ensure safety.

(Refer to Section A3 of the 2008 Sustainable Development Audit for Nutrition and Healthy meals).

✓ **15. Planification à long terme de l'aménagement du terrain du campus (principes de croissance intelligente, protection des espaces verts, conception pour l'efficience, engagement de la communauté)**

⁴ Bishop's Mission Statement. Retrieved May 10, 2008 from <http://www.ubishops.ca/mission.html>.

Current plans include a Carbon sequestration initiative for portions of Bishop's Property which could benefit from trees being planted to offset a portion of the Carbon emissions created by the campus and community;⁵ a Community Garden; creation of a paid intern position to focus on the implementation of sustainable initiatives for the Bishop's campus.

✓ **16. Mission de l'Université (engagement général envers la durabilité)**

Section 2.1 Bishop's University Environmental Policy : Environmental Awareness

B.U. will endeavour to enhance awareness of campus environmental projects and the activities of the Environment and Land Use Committee (ELU).

Section 4.1 Bishop's University Environmental Policy : Environmental Awareness

4.1.1 Maintaining a webpage (www.ubishops.ca/elu) containing the minutes and associated documentation of the Environment and Land Use Committee (ELU).

4.1.2 Developing an annual campus-wide "Environmental Awareness Campaign", with the involvement of students, faculty and staff, aimed at raising awareness of campus environmental projects.

The Sustainable Development Intern will increase awareness and participation in sustainable development initiatives on campus and focus on improving the efficiency and success of existing efforts, such as battery disposal, recycling, composting etc.

✓ **17. Plan stratégique à long terme (planification et positionnement académique et administratif)**

Bishop's University Environmental Policy: ENVIRONMENT AND LAND USE COMMITTEE

The Environmental Policy will be monitored regularly and evaluated by a standing sub-committee of the Executive Committee, the Environment and Land Use Committee, with the following membership:

Three (3) Community members appointed by the Chair of the Executive Committee

The Principal

The Vice Principal Finance and Administration

The Director of Facilities

Two (2) members of the continuing faculty, elected by Faculty Council

One (1) BUSA representative, elected by BUSA

One (1) student, appointed by the Student Representative Council

One (1) Champlain Regional College representative

18. Privilège accordé à l'achat de biens et services locaux

⁵ See Projet de sequestration de carbone, Presented to Bishop's University by Ken Dube ing.f. June 2007. Groupement Forestier Cooperative St. Francois.

***No point given.** Some local purchasing is done (building materials, stock ordering etc) however no policy or plan exists for the consistent purchase of local goods.

19. Méthode de résolution de conflits et de différends (pour problèmes internes et externes)

***No point given.** No current policy or plan exists for resolving internal or external conflicts.

<p style="text-align: center;">Annexe 5 Liste des 19 éléments de développement durable (D.1, D.2, D.3 et D.4)</p>

Points assigned based on the analysis of the following documents:
Sustainable Development Action Plan Proposal, M. Caron, L.Hyde, 2007.
Le Développement Durable à l'Université Bishop's, Benoit Tanguay, 2007.
Bishop's University Energy Efficiency Action Plan, M. Caron, L.Hyde, 2008.

✓ **1. Gestion de l'énergie (mesures d'efficacité, réduction des gaz à effet de serre, utilisation de sources renouvelables à perpétuité)**

Bishop's University has created the Energy Efficiency Action Plan in an effort to implement greater initiatives to conserve energy, and meet the three levels of sustainable development: social, economic and environmental. The plan states that it aims to achieve the following goals:

- A cleaner environment for the campus and local community
- Attract more students and
- Realize mid and long term financial savings.⁶

2. Gestion de l'eau (mesures d'efficacité et de réutilisation)

***No point given.** There is currently no system of measurement for water usage on the Bishop's campus. There is currently no defined plan to rectify this situation. Ville de Sherbrooke regulations do not require water meters in most buildings, therefore Bishop's has not had any installed over the years. To monitor water consumption, several meters would have to be installed in existing buildings.

3. Air pur (intérieur comme extérieur)

Air filtration for indoor air quality are present in buildings.

*** No point given.** No current policy exists for improvement of air quality.

4. Santé et sécurité

A Standard Health and Safety policy exists, however there no current plans to expand on it or to include sustainable elements in the training.

⁶ Bishop's University Energy Efficiency Action Plan, 2008.

✓ **5. Achats éthiques et écologiquement rationnels**⁷

Section 2.7 Bishop's University Environmental Policy : Purchasing

B.U. will endeavour, in conjunction with the Vice-Principal Finance and Administration to minimise the ecological impact of the products and services purchased in support of campus operations.

Section 4.7 Bishop's University Environmental Policy : Purchasing

4.7.1 Minimising the required use of paper by photocopiers and printers.

4.7.2 Favouring the purchasing of unbleached, recycled and post-consumer paper.

4.7.3 Having unbleached recycled paper in the Bookstore.

4.7.4 Taking the following factors into account in purchase of products:

- a) reduced packaging;
- b) environmental performance (*i.e.* energy saving);
- c) reduced consumption;
- d) construction (*i.e.* recycled materials rather than tropical hardwoods);
- e) longevity.

4.7.5 Providing information to departments comparing the environmental performance of different products. (*i.e.* Fax machines that can use recycled paper, etc).

✓ **6. Gestion des déchets solides (mesures de réduction, de réutilisation et de recyclage)**⁸

Section 2.6 Bishop's University Environmental Policy : Waste Reduction: Solid, Organic and Hazardous Materials

B.U. will endeavour, in conjunction with the Facilities and other departments, through recycling, composting and other waste management projects, to minimise solid and organic waste production and to limit and monitor the use of hazardous materials on campus grounds, in cleaning and in laboratories.

Section 4.6 Bishop's University Environmental Policy : Waste Reduction: Solid, Organic and Hazardous Materials

4.6.1 Having an effective paper waste reduction program.

4.6.2 Limiting solid waste generated by the university.

4.6.3 Maintaining an effective recycling program (paper, glass, plastic, metals, computers and other materials) across campus.

4.6.4 Offering furniture for sale or donation prior to disposal.

⁷ Note: Bishop's is a member of the RGAUQ and makes purchases by which the Bishop's Campus environment benefits from the RGAUQs Sustainability initiatives.

See: RGAUQ annual Report 2006-2007. p.6.

⁸ See Paperless initiative. Presented By the Sustainable Development Action Group (S.D.A.G).

4.6.5 Using yard waste as mulch on campus grounds.

4.6.6 Implementing a food composting program.

4.6.7 Using effective, environmentally friendly cleaning supplies when appropriate.

There have recently been increased efforts in terms of composting, separating recyclable materials from garbage, hazardous waste disposal, batteries and ink cartridge disposal.

Currently, a paperless initiative is being devised to reduce paper usage by students when submitting assignments.

✓ **7. Gestion des déchets dangereux (mesures de réduction, de réutilisation et de recyclage)**

Section 2.6 Bishop's University Environmental Policy : Waste Reduction: Solid, Organic and Hazardous Materials

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Section 4.6 Bishop's University Environmental Policy : Waste Reduction: Solid, Organic and Hazardous Materials

4.6.8 In accordance with Provincial and Federal regulations, monitoring the safe use and storage of hazardous and toxic materials on campus and carrying out their disposal.

There have recently been increased efforts in terms hazardous waste disposal, batteries and ink cartridge disposal.

✓ **8. Gestion de la demande en transport**

Section 4.4 Bishop's University Environmental Policy : Transportation

4.4.1 Making bike racks available at academic and residence buildings.

4.4.2 Taking emission levels into consideration in the purchase of vehicles.

The Sherbrooke Bus system could stand for much improvement as an alternative method of transportation for Bishop's, especially in summer months, weekends. Only two bus routes available.⁹ Discussion regarding the improvement of transportation is part of the Sustainable Development Action Plan Proposal. This part of the B.U Sustainable Development initiative will occur through work with the Sustainable Development Partners of the Sherbrooke area.

✓ **9. Engagement de la communauté au processus décisionnel du campus (communautés sur et hors campus)**

⁹ See Sherbrooke Bus Route map.

As per the Sustainable Development Action Plan Proposal, a goal is to “work with the Sustainable Development Partners of the Sherbrooke area. It has been agreed to work on four areas of sustainable development:

- management of waste
- transportation
- purchasing policies
- internal and external communication.

The greater Lennoxville/Sherbrooke community was involved in a Public consultation process regarding the 410 Highway extension which has been proposed to run through the Bishop’s Property.

11. Investissements éthiques et écologiquement rationnels.

***No point Given.** No Current policy on environmental or sustainable investment initiatives. Investments of time and human resources are being implemented.

✓ **11. Éducation pour la durabilité (cours à contenu en durabilité pour tous les diplômés, stratégies à cet effet)**

Section 2.2 Bishop's University Environmental Policy : Curriculum

B.U. encourages faculty and Senate to consider, where appropriate, taking steps to incorporate environmental content throughout existing curriculum, increasing environment related course offerings and programs seeking more resources to dedicate to environmental research.

Section 4.2 Bishop's University Environmental Policy : Curriculum

4.2.1 Where appropriate, incorporating cases and examples derived from the Campus Environmental Audit Project or other on-campus environmental projects into course-work.

4.2.2 Where appropriate, using local community environmental resources, and integrating local and regional issues into course work.

4.2.3 Where appropriate, using speakers, presentations, debates and other such methods to educate students on environmental topics.

(Refer to section C.2 of the 2008 Sustainable Development Audit for Academic courses with Environmental/Sustainable content).

B.U would like to “Encourage faculty to include more sustainable development concepts within their curriculum/courses.”¹⁰

✓ **12. Recherche pour la durabilité**

Section 2.2 Bishop's University Environmental Policy : Curriculum

¹⁰ Sustainable Development Action Plan Proposal, M. Caron, L.Hyde, 2007.

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✓ **14. Bien-être (forme physique, milieu de travail sécuritaire, spiritualité, nutrition, régime de travail optionnel)**

Though Bishop's had its beginnings as an Anglican seminary teaching theology, the campus is now secular and open to all religions and beliefs. However, Spiritual outlets available on Campus include St. Marks Chapel and prayer rooms. Also, counselling is available on campus.

Currently, a new synthetic turf football field is being constructed over the previous existing Coulter Field.

(Refer to section A1 of the 2008 Sustainable Development Audit for Indoor and Outdoor recreational facilities on the Bishop's University campus).

Security on Campus, frequent patrols to ensure safety.

(Refer to Section A3 of the 2008 Sustainable Development Audit for Nutrition and Healthy meals).

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Current plans include a Carbon sequestration initiative for portions of Bishop's Property which could benefit from trees being planted to offset a portion of the Carbon emissions created by the campus and community;¹² a Community Garden; creation of a paid intern position (called the “Harvey memorial Sustainable

¹¹ Bishop's Mission Statement. Retrieved May 10, 2008 from <http://www.ubishops.ca/mission.html>.

¹² See Projet de Sequestration de Carbone, Presented to Bishop's University by Ken Dube ing.f. June 2007. Groupement Forestier Cooperative St. Francois.

Development Internship”) to focus on the implementation of sustainable initiatives for the Bishop’s campus.

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4.1.2 Developing an annual campus-wide "Environmental Awareness Campaign", with the involvement of students, faculty and staff, aimed at raising awareness of campus environmental projects.

The Harvey Memorial Sustainable Development Intern will promote and co-ordinate student sustainable development initiatives.

Bishop's University is committed to developing a sustainable development communication strategy which would involve and awareness plan for on and off campus groups such as CREPUQ and the sustainable development partners of the Sherbrooke area.¹³

✓ **17. Plan stratégique à long terme (planification et positionnement académique et administratif)**

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One (1) student, appointed by the Student Representative Council

One (1) Champlain Regional College representative

In the Sustainable Development Action Plan Proposal, it has been decided that the existing ELU will be transformed into the Sustainable Development Committee.

¹³ Sustainable Development Action Plan Proposal, M. Caron, L.Hyde, 2007.

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