DEVELOPING AN ENVIRONMENTAL ETHIC TO MOTIVATE THE CREATION OF A SUSTAINABLE CAMPUS

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by

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Marquette University needs a philosophy and ethic that will motivate the creation of an environmentally sustainable campus. Currently, our University is simply looking at how much a given initiative may cost, and how long it will take to realize a return on investment. This approach has resulted in limited efforts at energy efficiency, all with a quick payback. Naturalist Aldo Leopold, however, would argue that:

A system of conservation based solely on economic self-interest is hopelessly lopsided. It tends to ignore, and thus eventually to eliminate, many elements in the land community that lack commercial value, but that are (as far as we know) essential to its healthy functioning.¹

An environmental ethic is necessary to properly respect the Earth community, and to conserve it. We humans are moral agents. We know we are constituents of this planet who have emerged from the cosmo logical and biological evolutionary process. We have the ability to know and understand our radical dependence upon the environment. This ability places a sense of responsibility upon us that we cannot ignore.

In this report, I will assess the sustainability climate at Marquette University and point to successful efforts made on campus. Then I will examine theological and philosophical groundings for environmental sustainability from a Christian, and specifically Ignatian, perspective, as well as from the works of Aldo Leopold, Paul W. Taylor and Holmes Rolston III. Finally, I will propose sustainability measures underway at colleges and universities across the country that I believe are essential to Marquette becoming a truly sustainable campus.

**Current Sustainability Efforts at Marquette University**

Marquette University’s definition of sustainability, according the University website, reads: “Meeting the needs of the present without compromising the ability of future generations to meet their own needs.”² This is a pretty standard definition of sustainability that can be found on countless university sustainability pages across the country. The sustainability page on the University website also refers to the ‘Triple Bottom Line,’ which refers to “concentrating our sustainability efforts on social, economic and environmental

aspects.” Both of the above statements illuminate a weak anthropocentrism by alluding primarily to concerns for current human populations as well as to the concern for future generations. But where is the concern for the rest of the planet and for all the non-human entities that co-inhabit the Earth community? I suggest a stronger definition of sustainability:

Meeting the needs of the present without compromising the ability of future generations to meet their own needs, all while acknowledging, appreciating, and respecting the diversity, interconnectedness, and interdependence of the entire Earth community.

This definition is much more inclusive, and would better represent a University that was truly committed to environmental sustainability. Additionally, this definition would hold Marquette responsible, and would help to drive sustainability on campus. We need a stronger definition of sustainability because we still have a lot of room for improvement. For example, Marquette’s sustainability page states, “As with all higher education, Marquette has the opportunity to help facilitate positive change by educating our students, faculty and staff about living responsibly.” Are we truly living responsibly? Or are our efforts too few, and our vision too narrow?

Marquette University has a Sustainability Task Force, which was created in 2008. The task force consists of eight members who range from administrators, faculty, facilities representatives, and students. The task force includes the vice president of administration, the budget director, the vice president of student affairs, the MUSG president, a faculty member, the director of auxiliary services, the sustainability officer, and a dean. In addition to the Task Force, there are four working groups to tackle issues of recycling, natural resources and utilities, new buildings, and suppliers. According to the Sustainability website, each group consists of students, faculty members, an administrator, and the sustainability officer.

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3 Marquette University, About Sustainability, 2010.
4 Ibid.
Marquette University has done several things to promote sustainability on campus. For instance, according to the Marquette sustainability website, “Marquette has reduced its annual energy use by 1,547,000 kilowatt hours,” “reduced its water consumption by the equivalency of 13,462,000 gallons,” and “invested $7 million in energy and water efficiency improvements.” Marquette has also implemented single stream recycling, which has made recycling on campus much easier. And so far it has been successful, with a recycling rate increase of almost 3 percent so far. With the implementation of single stream recycling, the University has added several large outdoor receptacles to further simplify the recycling process. Marquette is also making great strides in the area of new buildings. First of all, Zilber Hall and Eckstein Hall will both be LEED certified. Both buildings utilize natural light via large windows, and reflectors to allow light in. Dual-flush toilets have also been implemented, as well as motion sensors for lights, steam heat, cold-water cooling, re-used furniture, and re-used construction materials. Marquette’s new Engineering building, the Discovery Learning Center, will be even more environmentally friendly, seeking LEED Gold certification. Though sustainability specifics are not clear yet, the building will possibly contain solar panels, wind power or biomass equipment. The building will essentially be a big lab, with exposed walls and ceilings, and energy monitors throughout the building.

Two recent sustainability developments that involved heavy student involvement were Green Week and the Native Tree Project. Green Week was a joint administrative and student effort involving the Sustainability Office, Student Government, and student organizations, among others. Events included a Sustainability Working Groups forum, a Soup with Substance student presentation on the Ignatian Solidarity Network Conference on Environmental Justice and Sustainability, a Sustainability panel, a free showing of The Garden Movie, a farmer’s market and a Native Tree Tour. The Native Tree Tour was the result of a prolonged effort by administrators, facilities services, faculty, and students,

8 Ibid.
9 Jahner, Mike, Project Manager in the Marquette Office of the University Architect, 2010.
11 Jahner, 2010.
including the organization Students for an Environmentally Active Campus (SEAC) to bring more biodiversity to campus via native trees. The project aims to plant as many native tree species on campus as possible and label them. Additionally, a brochure has been printed, complete with species descriptions and a map showing the locations of all the native plants on campus. During Green Week, a Native Tree Tour was led by Dr. Gail Schumann, showing some of the native tree species found on campus.

These measures are certainly a start, but they are not nearly enough. Much, much more needs to be done for Marquette to be considered a sustainable campus, and to live up to the lofty expectations of its students, faculty, staff and alumni. A theological vision is needed to both ground and motivate our thinking with regard to developing an environmentally sustainable campus.

**Theological Groundings for an Environmentally Sustainable Campus**

As a Jesuit university, Marquette needs to delve into its theological roots and foundations to discover and develop an environmental ethic that will help to foster an environmentally sustainable campus. To do so, I looked to perspectives of ecological consciousness found in theology, including Ignatian indifference and the concepts of justice, dignity, freedom, respect and solidarity.

*The Environment and Theology*

The environment may get left out of many theological discussions, but James Profit, S.J., Jesuit priest and executive director of the Ignatius Jesuit Centre of Guelph, argues that issues of sustainability must not be left out. Profit posits, “The root of the ecological crisis is a spiritual problem. Ecological destruction is the result of a dysfunctional relationship between us and God and the rest of Creation.”

As students, educators, and members of both the human community and the Earth community, we need to focus more of our attention on environmental sustainability, in order that we sustain these communities. We simply aren’t being honest with ourselves if we consider ourselves as apart from the Earth community. Profit points to feminist Christian theologian Sallie McFague’s concept of “paying attention,” meaning that we give “detailed, careful concrete attention to the world

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that lies around us.”\(^{13}\) This ‘paying attention’ includes an increasing understanding of the entire Earth community, its interconnectedness, and how we humans fit into, rather than stand above, this community. Through this understanding, we can truly come to love the Earth community, because, as Profit notes, “We cannot love what we do not know.”\(^{14}\)

In addition to ‘paying attention’ to the Earth community, Joseph A. Bracken, S.J., Jesuit priest, retired professor of theology and director emeritus of the Edward B. Brueggeman Center for Dialogue at Xavier University, and Robert T. Sears, S.J., Jesuit priest and former professor of theology at Loyola University Chicago, suggest that we follow Ignatius’ practice of indifference. Ignatian indifference doesn’t mean we should be indifferent toward the environment. Indifference is a position of selflessness in which one “generates strong feelings of compassion for one’s fellow creatures.”\(^{15}\) Through Ignatian indifference, we can develop a position of compassion and respect for every other member of the Earth community, including humans, animals, and plants, as well as abiotic entities such as water, air and land. Not only can we develop compassion and respect for the individual entities, but also for the Earth community as a whole and its web of interconnectedness.

*The Principle of Justice and Environmental Sustainability*

The idea of justice, and more specifically social justice, is strong at Marquette University. As students, we are encouraged to reach out to those less fortunate, to those that struggle under the weight of injustice. In this area, Marquette is a leader. But as a University, we need to promote a more encompassing idea of justice, one that includes what Denis Carroll calls “ecological justice.”\(^{16}\) Many scholars see an intimate relationship between social justice issues and environmental issues. One such scholar, Eduardo Gudynas, a Latin-American ecologist and environmental leader, argues, “Every step in environmental destruction has the effect of increasing social injustice, and every act of

\(^{13}\) Profit, “The Spiritual Exercises of St. Ignatius and Ecology,” 856.

\(^{14}\) Ibid, 855.


social injustice has the effect of increasing environmental destruction.”17 In a similar vein, the late Rev. David Toolan S.J., a theologian and former associate editor of America magazine, argues that social justice cannot be properly addressed without including environmental and ecological issues. He states, “You cannot defend defenseless embryos, have a ‘consistent ethic of life,’ or make a ‘preferential option for the poor’ without simultaneously deciding to do justice to the ravaged and defenseless ‘commons’ of the globe: Earth, water and air.”18 Justice needs to be afforded not just to fellow humans, but to the Earth as a whole. Carroll echoes the sentiments of Henryk Skolimowski, Polish eco-philosopher and professor emeritus of philosophy at the University of Michigan, who argued, “If the cosmic web embraces us all, if it is woven of the strands of which we are part, then justice to the cosmic web means justice to all its elements—to all brothers and sisters of creation.”19

Dignity, Freedom, Respect and Environmental Sustainability

Anne Primavesi, systematic theologian and Fellow of the Centre for the Interdisciplinary Study of Religion at Birkbeck College in London, recognizes the relationship between our freedom and the functioning of the Earth’s various ecosystems. She sees “freedom in interdependence,” and that our human freedom is not an isolated sentiment, but is interwoven in the relationships of all members of the “Earth household.”20 In the Christian tradition, the human is accorded a unique ‘dignity,’ which serves, in part, as a distinction from other members of the ‘Earth household.’ Our dignity, however, carries with it certain responsibilities. One such responsibility is the responsible use of the freedom our dignity affords us. Primavesi points out that the destruction of the environment is essentially dysfunctional behavior that represents an irresponsible use of our freedom, and our dignity.21 Primavesi also addressed another issue dealing with dignity and our relationships with other members of the Earth household. Some may have qualms with affording dignity to other members of the Earth household, because it

17 Ibid, 278.
18 Sears and Bracken, Self-Emptying Love in a Global Context, v.
19 Carroll, A Green Theology?, 282.
20 Primavesi, Anne, Ecology’s Appeal to Theology, 62.
21 Primavesi, Ecology’s Appeal to Theology, 62.
diminishes our dignity. Primavesi argues contrary to that notion, asking, “Is it not rather the case that by exercising our freedom to accord them their own dignity, the dignity of the whole Earth household is enhanced?”

By extending dignity, and the respect that comes with dignity, to all members of the Earth household, one simply recognizes the inter-relatedness and interdependence of all members, and acknowledges that such relationships elicit a deep and true respect. In this way, by destroying a part of the Earth community, we are destroying a part of ourselves.

**Solidarity and Environmental Sustainability**

An intriguing way to look at environmental sustainability is through the idea of solidarity. Augustine, in *City of God*, wrote, “The rightful relationship of humanity with nature is solidarity and peace rather than disjunction and domination.” Indeed, Carroll argues for what he calls a “logic of solidarity,” arguing that such logic is necessary for understanding our relationship with the rest of the Earth community. Bracken and Sears propose in their work, *Self-Emptying Love in a Global Context: The Spiritual Exercises and the Environment*, that we must enter into solidarity with plants, animals, and other humans, and that such solidarity requires selflessness and sacrifice, as well as the contemplation of the interests of all those with whom we are in solidarity. As human beings, we need to align ourselves in solidarity with the rest of the Earth community. We are the only ones acting out of line. One only needs to look out the window to see this. The trees you see reaching toward the sky, the grass you see carpeting the soil, the squirrels you see frolicking across that grass and up those trees, and the birds you hear singing from the branches, they are all living in solidarity with one another. As we destroy the world around us, we continue to avoid solidarity. We are, so to speak, the odd man out.

**Conclusion**

By acknowledging and accepting a theological view of environmental consciousness outlined through paying attention, Ignatian indifference, and subscribing to the ideals of

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22 Ibid, 70.
justice, dignity, freedom, respect and solidarity, we can commit to “a passionate commitment to protect and care for all creation as the temple of God’s presence.”

Philosophical Groundings for an Environmentally Sustainable Campus

Science has made enormous strides in advancing our understanding of the world around us. One area of such advancement has been in the area of ecology, where we have learned about ecosystems and of the inter-relatedness and interdependence of all living things, as well as abiotic entities like air, water and land. But with all of this new knowledge, there is still a lack of what Aldo Leopold, the famous ecologist, forester and former professor at the University of Wisconsin, calls ‘kinship.’ Leopold pointed out in his monumentally influential work, A Sand County Almanac, that, “[t]his new knowledge should have given us, by this time, a sense of kinship with fellow-creatures; a wish to live and let live; a sense of wonder over the magnitude and duration of the biotic enterprise.”

Leopold penned this observation in the 1940s, but it still rings true today. We need an environmental ethic that incorporates an understanding of ecology and biology, a respect for all the members of the Earth community, and a sense of obligation toward the environment.

The Good of the Earth Community: Intrinsic Value, Inherent Worth

For many environmental philosophers, the first step of an effective environmental ethic is the acknowledgement of the value of all members of the Earth community. Paul Taylor splits the valuing of the Earth community into two concepts. The first concept is the good of a living thing. Taylor posits, “Every organism, species population, and community of life has a good of its own which moral agents can intentionally further or damage by their own actions.” This ‘good’ is without reference to any other entity. It is good in and of itself. Additionally, what is ‘good’ for each entity is what enhances or preserves its life and well-being, while the good of a population or community lies in “maintaining itself from generation to generation as a coherent system of genetically and

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26 Sears and Bracken, Self-Emptying Love in a Global Context, 83.
27 Leopold, A Sand County Almanac, 117.
29 Ibid, 84.
ecologically related organisms whose average good is at an optimum level for the given environment.” 30 The second of Taylor’s concepts regarding value is the idea of an entity possessing inherent worth. For Taylor, an entity has inherent worth when “its good is deserving of the concern and consideration of all moral agents, and that the realization of its good has intrinsic value, to be pursued as an end in itself and for the sake of the entity whose good it is.” 31 This concept rests on the idea of intrinsic value, as opposed to instrumental value. Holmes Rolston III, University Distinguished Professor of Philosophy at Colorado State University, defines these values: “Instrumental value uses something as a means to an end; intrinsic value is worthwhile in itself.” 32 By acknowledging the goodness and inherent worth of all entities of the Earth community, we acknowledge their importance, outside of any personal use and enjoyment.

One may ask: Where does this value come from? From where is it derived? Mark Sagoff, professor and Acting Director and Senior Research Scholar at the Institute for Philosophy and Public Policy at the University of Maryland, offers one perspective regarding the value of non-human entities, arguing, “What gives these creatures value lies in their histories, wonderful in themselves, rather than any use to which they can be put.” 33 Sagoff looks to each entity’s evolutionary history as evidence of its intrinsic value. Other environmental philosophers look to the interests of an entity to derive their intrinsic value. Robin Attfield, Professor of Philosophy at Cardiff University in Wales, uses the example of trees to illustrate the interest perspective, and questions why some people are so hesitant to afford moral concern to trees, and other entities of the Earth community. He argues, “Trees have interests, yet we have no obligation to protect those interests in themselves. And this is a position uncomfortably close to unreason; for, in other cases, what has interests of its own becomes ipso facto of moral concern, whereas in this case we are

30 Ibid.
31 Ibid, 86.
prepared to disregard a large set of interest and treat them as morally irrelevant.”

Because trees have interests regarding nutrition, growth, respiration and self-protection, to name a few, they are deserving of respect, moral concern, and the affording of intrinsic value. Taylor addresses the derivation of intrinsic value in the third point of his 'Biocentric Outlook on Nature', stating, “Each individual organism is conceived of as a teleological center of life, pursuing its own good in its own way.”

A teleological center of life is defined as “an entity whose “world” can be viewed from the perspective of its life.”

*The Good of the Earth Community: Truly a Community*

The next step in a truly meaningful environmental ethic is to understand and accept the inter-relatedness and interconnectedness of ecosystems, and of the Earth community as a whole. The basis of ecology rests on what Taylor describes as “the interdependence of all living things in an organically unified order whose balance and stability are necessary conditions for the realization of the good of its constituent biotic communities.”

Aldo Leopold was one of the first to really hark upon this idea of interdependence. Leopold stated, “The land is one organism. Its parts, like our own parts, compete with each other and co-operate with each other.” In order for this ‘one organism’ to survive, there needs to be balance. The second point in Taylor’s ‘Biocentric Outlook on Nature’ stresses this idea of interconnectedness. His second point states, “The Earth's natural ecosystems as a totality are seen as a complex web of interconnected elements, with the sound biological functioning of each being dependent on the sound biological functioning of the others.”

*Human Beings and An Environmental Ethic*

What is crucial at this juncture in the development of an environmental ethic is not to forget about human beings. This is not to say that humans are in any way apart from, or outside, the Earth community we have been discussing above. In fact, this is the point that needs to be remembered. Human beings are indeed a part of the Earth community.

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36 Ibid, 89.
37 Ibid, 86.
first point in Taylor’s ‘Biocentric Outlook on Nature’ states, “Humans are thought of as members of the Earth’s community of life, holding that membership on the same terms as apply to all the nonhuman members.” Human beings are often viewed as keepers of the planet, as stewards, when we should view ourselves as members, as part of the community, rather than above it and outside of it. Personally, stewardship conjures up images of the Earth as a giant garden that we humans are simply tending.

Based on a firm understanding of humanity’s place in the Earth community, Aldo Leopold developed his ‘Land Ethic’ over a half century ago. Leopold acknowledged that ethics in general rest on the premise that “the individual is a member of a community of interdependent parts.” His land ethic was simply an extension of the boundaries of traditional, human-centered ethics, incorporating what he called ‘the land,’ which included soil, water, plants and animals. Leopold’s land ethic sought to change the role of Homo sapiens to citizens and members of the Earth community, rather than conquerors. With this role change comes a necessary respect for all members of the Earth community, as well as respect for the community as a whole. What is perhaps the most important aspect of Leopold’s ‘Land Ethic’ is the idea of obligation. Leopold argues that with a proper land ethic comes an obligation to respect the Earth community, as well as an obligation to conserve it. And the acknowledgement of such obligations necessitates action. One cannot claim an obligation, and then not act on that obligation. I feel that Marquette University has just such an obligation, and that we must openly acknowledge this obligation and act towards it.

**What Needs to Be Done At Marquette University**

The groundings for an environmental ethic, both theological and philosophical, that I explored above are the first step in the process of creating a sustainable campus. The second step is action. After developing an environmental ethic to illuminate the path to sustainability, Marquette University needs to take positive steps to become sustainable. Below I outline several distinct areas of sustainability, including the Mission Statement,
environmental education, funding initiatives, audits, energy and water efficiency, alternative energy, landscaping, transportation and developing a sustainability plan. I also explore what other colleges and universities are implementing that could be done at Marquette.

Addressing Marquette’s Mission Statement

The Mission Statement declares what Marquette, as a University, believes, strives for, and hopes to instill in its students. It is for this reason that Marquette needs to include an environmental ethic in its Mission Statement. The Marquette Mission is “the search for truth, the discovery and sharing of knowledge, the fostering of personal and professional excellence, the promotion of a life of faith, and the development of leadership expressed in service to others.” This sounds great. However, it is very anthropocentric. The next line in the Mission Statement reads, “All this we pursue for the greater glory of God and the common benefit of the human community.” Why stop at the human community? Especially when talking about the ‘greater glory of God,’ why not include a commitment to all of God’s creation, to the entire Earth community, as Jesuits like Profit, Bracken and Sears call for.

Many other Catholic universities have included reference to environmental sustainability and conservation in their Mission statements. For example, Loyola University New Orleans has taken a step in the right direction regarding the University’s expectations of its students. Their Mission Statement states, “They should develop a determination to work for justice and to preserve God’s creation for the benefit of present and future generations.” Though the statement is still anthropocentric, it includes ‘God’s creation,’ as well as a concern for future generations, which would be considered a ‘weak’ anthropocentrism. The University of San Francisco also includes concern for future generations in its Mission Statement, stating a commitment to “Advancing social responsibility in fulfilling the University’s mission to create, communicate and apply

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44 Ibid.
knowledge to a world shared by all people and held in trust for future generations.”

Another way that Catholic Universities are incorporating environmental sustainability into their Mission Statements is through the idea of stewardship. I have already touched upon why I dislike the concept of stewardship, mainly because it implies a disassociation and separation with regard to humans and the rest of the Earth community. However, it is still notable that universities are including environmental stewardship in their Mission Statements. For example, Loyola University Chicago’s Mission Statement states, “We act as responsible stewards of creation with a special care for our environment.” An additional example of the inclusion of stewardship can be found in Villanova University. Its Mission Statement declares that they “Respect a worldview that recognizes that all creation is sacred and that fosters responsible stewardship of the environment.

What is perhaps an even greater step in the right direction, past the ideas of weak anthropocentrism and ‘stewardship,’ is the idea of ‘sustainable living.’ The University of San Francisco states, “As a Jesuit and Catholic University, we have the responsibility to provide leadership in developing a more sustainable way of living.” Santa Clara University echoes this sentiment, stating, “As a Jesuit and Catholic University, we have the responsibility to provide leadership in developing a more sustainable way of living. By embracing sustainability, the University furthers its mission to act as a voice of reason, conscience, and service to society.” Gonzaga University and Seattle University have perhaps the most comprehensive, environmentally inclusive Mission Statements. The Gonzaga Mission Statement reads, “From Vatican II to encyclicals and apostolic letters by Pope Paul VI and Pope John Paul II, as well as statements issued by the U. S. Conference of Bishops, citizens of the Earth have been called to value life and issues of social justice and

49 University of San Francisco, Mission Statement.
to seek solution to the ecological crisis through solidarity and shared responsibility.”\textsuperscript{51} The Gonzaga Mission Statement mentions many of the ideas outlined above, including justice, solidarity and responsibility. Similarly, Seattle University’s Mission Statement proclaims, “The Jesuit educational tradition promotes independent critical thinkers informed by the humanities, open to finding and serving God in all things, and challenged by the Jesuit priority of “the service of faith and the promotion of justice” to address issues of poverty, injustice, discrimination, violence, and the environment in knowledgeable, committed, and effective ways.”\textsuperscript{52} Again, we see an inclusion of working against issues of injustice, with the environment being a specific example, as well as a way to ‘serve God in all things.’ Seattle’s statement goes on to state, “Inspired by the Catholic intellectual tradition, we encourage and assist all students to explore their relationship with humanity, nature, and God.”\textsuperscript{53} This statement reflects an effort to mend the “dysfunctional relationship between us and God and the rest of Creation” that Profit discusses.

The four pillars of Marquette University's mission are Faith, Excellence, Service and Leadership. Sustainability should have a place in all four of those pillars. We have already discussed how environmental sustainability and Catholic faith intertwine, via Ignatian indifference and a dedication to the ideals of justice, dignity, freedom, respect and solidarity. We strive for an excellent educational experience, one that must "encompass the whole person: spiritual and moral as well as intellectual."\textsuperscript{54} Environmental sustainability needs to be a part of the spiritual, moral and intellectual excellence that all members of the Marquette community strive for. In this way we, as a University, can work to serve others, throughout the Earth community, throughout our lives, as we actively enter “the struggle for a more just society.”\textsuperscript{55} This brings us to the final pillar: Leadership. Not only do we, as members of the Marquette community, need to become environmental leaders in our own lives, but the University itself needs to become a leader. Marquette University is on the

\textsuperscript{51} Gonzaga University, \textit{Stewardship}, http://www.gonzaga.edu/Campus-Resources/sustainability/stewardship.asp.
\textsuperscript{52} Seattle University, \textit{Mission}, http://www.seattleu.edu/about_seattle_university/mission/.
\textsuperscript{53} Ibid.
\textsuperscript{54} Marquette University, \textit{Mission Statement}, 2010.
\textsuperscript{55} Ibid.
cusp of becoming a leader in environmental sustainability. We just need to make some concerted efforts to make a sustained step forward. An example of a statement, enlightened by the theological and philosophical groundings addressed above, would read:

Our Mission is the search for truth, the discovery and sharing of knowledge, the fostering of personal and professional excellence, the promotion of a life of faith, the development of leadership expressed in service to others, and the obligation to live sustainably, grounded in the ideals of justice, respect, dignity and solidarity. All this we pursue for the greater glory of God and the common benefit of the human community and, more broadly, the Earth community in which we hold membership with the totality of Creation.

Though this is simply one example of what the Marquette Mission Statement could include, it is an integral step in the sustainability process. The Marquette Mission statement needs to reflect our recognition of, and commitment to, environmental sustainability.

Environmental Education

As a Jesuit University, we need to continually maintain an evolving curriculum that incorporates a full and complete educational experience. As part of this experience, we need a more comprehensive environmental program. Yes, we have the Interdisciplinary Minor in Environmental Ethics. This is a great minor that incorporates many disciplines and provides a well-rounded environmental education. But Marquette University needs to move one step further by creating an Environmental Studies major, which would provide an even stronger environmental education. Again, this would be a multi-disciplinary major, but one that provides a deeper level of knowledge. Additionally, I would love to see an Environmental Science major here at Marquette University. Personally, I considered double majoring in Biology, but decided against it because a minor incorporated the necessary environmental classes that interested me without also incorporating many of the biology courses geared toward pre-med students. The bottom line is that a biology major simply doesn’t focus enough on environmental science. An Environmental Science program would be a great way to incorporate Biology, Chemistry, Physics, and even Environmental Engineering into a comprehensive major.
**Funding for Environmental Initiatives**

One problem that has plagued Marquette’s sustainability efforts, according to administrators, has been how to fund sustainability efforts on campus. One way to broaden funding efforts toward sustainability that is beginning to be adopted across the country is the idea of a ‘Green Fund’ that accrues money specifically for sustainability initiatives. A great example of such a fund can be found at the University of Notre Dame. They have what they call a Green Loan Fund. According to Notre Dame’s sustainability webpage, the University started the fund through the Office of Sustainability, and started out by giving $2 million to the fund. This fund is open to faculty, staff, and students by application.\(^56\) The catch is that financial payback is required of any initiatives that receive this funding. Therefore, this fund only contributes toward measures that will save the University money in a measurable way. In addition to the Green Loan Fund, Notre Dame also has what it calls an Eco-Fund. This fund was created by the Class of 2008 Senior Class Gift, and it is open to alumni donations. The Eco-Fund provides grants to students to spearhead sustainability initiatives, and there is no requirement of financial payback, although students must match the grant funding via another source, which encourages a broadened effort.\(^57\) There are two principally striking aspects of the Eco-Fund that make it particularly intriguing. The first is that such grants are open to students. This is a great way to encourage student involvement, as well as incorporate sustainability initiatives into curriculum. The second striking aspect is that the fund is open to alumni donations. This is a great idea, in that it brings together current students and alumni in a collective effort to make the University more environmentally sustainable. Sustainability funds, such as Notre Dame’s Green Loan Fund and Eco-Fund, are innovative ways to finance campus sustainability efforts. Such funds would be great additions to the sustainability effort at Marquette University, and would encourage the inclusion of current students, faculty, staff, administration, and alumni in campus sustainability initiatives.


\(^57\) Ibid.
Sustainability Audits and Assessments

A great first step in a greater sustainability effort at Marquette University would be to perform carbon, energy and water audits in order to determine where the University stands and identity areas of improvement. This is an effective way to find problems and inefficiencies, as well as to prioritize goals. Fordham University audited energy use in all buildings and facilities.\(^5\)\(^8\) From this audit, Fordham officials were able to identify projects that would reduce energy consumption and greenhouse gas emissions. Loyola University Chicago has also gone through an audit, or rather, a ‘sustainability assessment.’\(^5\)\(^9\) At Santa Clara University, a greenhouse gas emissions inventory was completed in 2007 and 2008, and the University is currently participating in the STARS Program (Sustainability Tracking, Assessment and Rating System), which is a self-assessment through the Association for Advancement of Sustainability in Higher Education.\(^6\)\(^0\) In a similar vein, Seattle University has undergone, and plans to continue to undergo, regular energy and water usage audits in order to identify inefficiencies and reduce consumption.\(^6\)\(^1\) Such audits would be a great step for sustainability efforts at Marquette University, and would be a straightforward way to identify areas to improve. Additionally, taking advantage of the AASHE’s STARS Program would also be a great way to develop an annual assessment regiment, in order to maintain sustainability efforts.

Energy Efficiency and Water Efficiency

Energy efficiency is an area of sustainability that has great potential for savings. According to *Unlocking Energy Efficiency in the U.S. Economy*, a report done by McKinsey Global Energy and Materials, total energy savings in the American commercial sector could total near $1.2 trillion dollars, despite only a total initial investment of roughly $520

\(^6\)\(^0\) University of Santa Clara, *University Participating in Sustainability Tracking Program*, \(http://www.scu.edu/sustainability/sustainabilityupdate.cfm\).
\(^6\)\(^1\) Seattle University, *Conservation*, 2008, \(http://www.seattleu.edu/sustainability/energyconserve.aspx\).
billion. Scaling that down, Marquette University stands to save a great deal of money by implementing energy efficiency measures on campus.

A great place to start on energy efficiency measures is with lighting. Marquette University has been working to incorporate energy efficient lighting on campus. The problem is that it is taking much too long for efficient lighting to spread across campus. Lighting is something that many universities are tackling, and it is something that Marquette University can certainly do more of. Another relatively straightforward energy efficiency measure is to make sure windows are properly sealed and buildings are properly insulated. These simple measures can save a great deal of money. And again, Marquette is already doing some of this. It is the strategy that needs to be changed. This needs to be part of a campus-wide initiative, rather than simply one building at a time. In terms of HVAC systems, it is important to closely monitor the functioning of these systems so that problems can be avoided and buildings can be heated and cooled efficiently. Marquette needs to develop a policy of proactive, rather than reactive, maintenance. If we can avoid major malfunctioning of HVAC systems due to close, proactive monitoring and maintenance, the University will save money.

The next level of energy efficiency measures deals with automation and monitoring of energy systems. One way to reduce energy use is with light and ventilation sensors. Marquette utilizes sensors in some places, such as certain parts of Raynor-Memorial Libraries. However, some schools are implementing sensors across campus. Two examples are Seattle University and the University of Dayton. Both universities are implementing sensors in any buildings that can successfully utilize them. This is an area that Marquette could definitely expand. Another area within energy automation and monitoring is through energy monitoring and read-out systems. As mentioned above, there is talk of incorporating energy monitors in the new Discovery Learning Center. This is an intriguing way to add a level of transparency to energy use on campus, and can help to raise red flags if there are any inefficiencies. Boston College has implemented energy dashboards in their larger residence halls so that students can view their electrical usage in

real time. These energy dashboards can be great sustainability tools because they can raise the level of awareness of energy use throughout the campus community. Beyond energy dashboards, some universities have gone one step further and essentially created campus energy centers. For example, at Creighton University, they have an Energy Management office, from which they can control the temperature of almost every building on campus. They can also monitor and control the HVAC systems for these buildings. This energy centralization system streamlines the control of campus energy usage and makes monitoring much easier. Seattle University uses a similar system, called an Energy Management System, that allows for the “centralized control of all building systems, lighting controls, and energy conservation.

Water efficiency is another important area of sustainability, and one that definitely possesses room for improvement. The most straightforward option is to utilize low-flow fixtures in bathrooms. For example, Santa Clara University uses water-free urinals and low-flow dual-flush toilets across campus. Seattle University also utilizes these water efficiency fixtures. For Marquette, water efficiency is a matter of retrofitting, just like many other energy efficiency measures. Such retrofitting is plausible, and needs to be undertaken in order to be a truly efficient campus.

A final aspect of energy efficiency regards student awareness and participation. In the fall of 2009, two dorms on campus participated in an energy efficiency challenge to try to reduce energy usage. This is a great idea and should be continued, either annually or every semester. It is a great way to raise the consciousness of students regarding sustainability issues, and can provide a way for students to become a part of the process. The University of Portland ran a similar Dorm Energy Challenge, which was deemed very successful. Marquette has also implemented other programs, such as Trash for Cash,
which have also been successful in raising awareness about recycling. It is essential that students are a part of the sustainability solution, and programs like these are great ways for students to get involved.

**Alternative Energy**

Marquette University needs to move more into the area of alternative energy. This can be done by generating our own alternative energy, in the case of solar and wind. Or this can be done by purchasing energy from clean sources. Boston College purchases what are called Terrapass offsets, which allow them to offset the equivalent of 200 metric tons of carbon emissions a year.\(^{69}\) And Seattle University has pledged to buy new renewable energy to offset 15 percent of campus electricity consumption.\(^{70}\) WE Energies has a program, called Energy for Tomorrow, that allows individuals and businesses to “choose to have 25, 50 or 100 percent of your monthly electricity usage come from renewable energy sources such as wind, solar, hydro and biomass.”\(^{71}\) This would be a great way for Marquette University move closer to carbon neutrality.

In terms of producing our own alternative energy, solar power seems like a plausible option. Solar power is being utilized at Santa Clara University, Loyola Marymount University and the University of San Francisco. But it is not just a California thing. Fordham University has begun a solar panel initiative that includes a 50-kilowatt array.\(^{72}\) And at Seattle University, they utilized Facilities Services and Engineering students to make solar power a reality on campus. According to their sustainability webpage, “The students determined the best location for the solar panels, sized the system, designed the mounting system and electrical connections and provided engineering support to Facilities who installed the system.”\(^{73}\) This is a great example of wedding sustainability efforts and environmental education. And anyone that argues that we don't get enough sunlight in Milwaukee needs only look about 90 miles south to Loyola University Chicago. They have

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installed a photovoltaic array on Cudahy Library. Solar panels can definitely work at Marquette, could serve as a great way to get students involved in the process, and can even help with technologies that will be encountered in their careers.

**Landscaping and Water**

Dr. Daniel Zitomer, Professor of Civil and Environmental Engineering and Director of the Water Quality Center at Marquette University, suggested that of the three types of water (potable, waste, and storm), storm water is the type that would be most conducive to improvement on our campus, from a sustainability perspective. This is where green roofs, rain gardens and pervious pavement come into play. Green roofs have many benefits, including sound insulation, storm-water run-off mitigation, air quality improvement, and reduction of 'heat island' effect. Seattle University has created a green roof on top of its Banna Biology building. And at Loyola Marymount University, they have the largest green roof of any university in the world. It is actually the roof to a parking structure, and the roof functions as one of the university's athletic fields. And finally, Loyola University Chicago has pledged to have green roofs for all new buildings. Green roofs can definitely be implemented at Marquette. However, some legwork needs to be done to ensure that such projects are possible from an engineering perspective. The first step in green roofs is to check out the buildings to make sure they are structurally able to support the added weight of the vegetation, soil and water on the roof. From there, it would be great to integrate education into the project. When asked about possible student involvement in green roof implementation, installation, and upkeep, Dr. Zitomer said that it was definitely

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74 Loyola University Chicago, *Department of Facilities Management Report, November 2007.*
79 Dr. Zitomer, 2010.
possible, and that such activities could easily be incorporated into Engineering curriculum.\textsuperscript{80}

Another intriguing use of sustainable landscaping is through rain gardens. Rain gardens collect rain, and can be used to grow food for the campus. Marquette already has a rain garden, but it is small, and few people know where it is (off Clybourn, behind Helfaer Theater). Creighton University, Seattle University and the University of Dayton all utilize rain gardens on campus. And at the University of Portland, they have developed a Student Organic Garden. The project, called the Student Led Unity Garden (SLUG), is supported by several academic departments on campus, and the harvests are used for University dining services, as well as for the students who grow them.\textsuperscript{81} Rain gardens could certainly be further integrated into Marquette’s campus landscaping, and could provide yet another way to generate student involvement in campus sustainability efforts.

Another strategy in mitigating water run-off is utilizing pervious pavement. Pervious pavement is an alternative paving material that allows water to slowly filter through the pavement, through stones below the pavement, and finally the soil before entering the sewer system.\textsuperscript{82} The use of pervious pavement is effective in storm-water mitigation, and can significantly lighten the load on Milwaukee’s sewer system. According to Dr. Zitomer, pervious pavement doesn’t necessarily cost more upfront, but it may be more costly to maintain, in order to keep the pores from becoming clogged.\textsuperscript{83} In this way, traditional and pervious pavements are probably comparable in terms of cost. Loyola University Chicago uses semi-permeable paving material for all campus roads.\textsuperscript{84} And the Milwaukee School of Engineering has a pervious pavement parking lot located near the intersection of Broadway and Highland.

Marquette University has already taken great strides with regard to trees on campus. The Native Tree Project is doing a great deal to increase the biodiversity of campus trees. Along with biodiversity, it is important to realize some of the other benefits

\textsuperscript{80} Zitomer, 2010.
\textsuperscript{81} Portland University, \textit{Sustainability}, 2010.
\textsuperscript{82} Zitomer, 2010.
\textsuperscript{83} Ibid.
\textsuperscript{84} Loyola University Chicago, \textit{University Sustainability}. 
of trees, particularly in urban settings. Trees can reduce our reliance on air conditioners in the summer by shading buildings. According to the U.S. Department of Agriculture, “The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day.” Trees also help reduce water run-off by soaking up more water, reducing the impact on sewers. Trees have positive psychological benefits as well. According to Dr. Roger S. Ulrich of Texas A&M University, laboratory research has found, “Visual exposure to settings with trees has produced significant recovery from stress within five minutes, as indicated by changes in blood pressure and muscle tension.” In general the city of Milwaukee is already utilizing trees. According to Greening Milwaukee, a non-profit organization, “Milwaukee’s tree canopy reduces storm water flow by 22% (savings of $15.4 million for the city) takes 1,677 tons of carbon dioxide out of the air per year, and provides direct summer energy savings valued at $650,000.”

Finally, Marquette can use its landscaping waste to create mulch and compost that can then be used again on campus. Many universities across the country have implemented composting programs on their campuses. At Gonzaga University, over 35 tons of leaves and needles get composted annually. And at the University of Notre Dame, their Landscape Services Department composes 100 percent of all yard waste. Composting utilizes another form of recycling, and can bring back vital nutrients to the soil and plants.

**Transportation**

Marquette University needs to move further in the direction of sustainable transportation. Marquette already promotes public transportation, and encourages bicycle use, but needs to do more in terms of hybrid and electric vehicles. At Seattle University, 33

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86 Ibid.
87 Ibid.
88 Ibid.
89 Ibid.
percent of the facilities services vehicles are electric, and they have two hybrid shuttle vehicles.\textsuperscript{92} Having hybrid or electric shuttle vehicles is a great idea considering how much use they get and how much gas a traditional shuttle uses up. In a similar fashion, St. John’s University has purchased 10 hybrid vehicles for Public Safety.\textsuperscript{93} This is also a great idea considering the amount of time is spent in Public Safety vehicles patrolling the campus. And Loyola Marymount University, Loyola University Chicago, the University of Notre Dame and the University of Dayton all utilize electric or hybrid vehicles for facilities vehicles, service vehicles, or other university vehicles. Hybrid or electric vehicles would be a great way for Marquette to save some money in the long run, as well as cut carbon emissions.

\textit{A Campus Sustainability Plan}

Marquette University is making many improvements in the area of sustainability on campus. However, I feel we need a transparent Statement of Purpose or Plan that can both guide our efforts, and hold us, as a University, responsible. Creighton University is in the process of approving a sustainability policy, stating, “As a Jesuit and Catholic University, Creighton University affirms its moral obligation to practice ecological responsibility and social justice to work towards creating a better, more sustainable world for us and for those that come after us.”\textsuperscript{94} Additionally, part of Creighton’s sustainability policy pledges to “purchase 20% of electrical power generated from green fuels like wind a solar generation.”\textsuperscript{95} Loyola University Chicago is also in the process of developing a plan. Their plan involves a CO\textsubscript{2} reduction plan as well.\textsuperscript{96} In 2009, Santa Clara University drafted a Climate Neutrality Action Plan.\textsuperscript{97} And at Villanova University, they created a Climate Action

\textsuperscript{92} Seattle University, \textit{Facilities}, 2008, \url{http://www.seattleu.edu/sustainability/fleet.aspx}.
\textsuperscript{93} St. John's University, \textit{What Is St. John’s Doing To Help?}, 2010, \url{http://www.stjohns.edu/about/general/programs/stjsi/what.stj}.
\textsuperscript{94} Creighton University, \textit{Draft Version of Sustainability Policy}, 2010, \url{http://www.creighton.edu/about/sustainability/policy/index.php}.
\textsuperscript{95} Ibid.
\textsuperscript{96} Loyola University Chicago, \textit{Department of Facilities Management Report, November 2007}.
\textsuperscript{97} Santa Clara University, \textit{Climate Neutrality Action Plan Timeline}, 2010, \url{http://www.scu.edu/sustainability/climateneutrality.cfm}.
Plan (CAP) in 2010 that sets the year 2050 as the target date for climate neutrality. Marquette University cannot make a wholehearted effort at campus sustainability without a formal recognition of the issue and a formal Plan or Policy regarding sustainability. Marquette needs to establish environmental sustainability as an obligation. And, as Aldo Leopold would remind us, an acknowledgement of obligation necessitates action.

**Conclusion**

As members of the Marquette community, the Milwaukee community, and indeed the Earth community, we need co-operation. This does not simply mean working together. Co-operating means recognizing and being aware of how we live on this planet. We need to avoid disrupting the function of our co-inhabitants in the Earth community. Though we may never see or come into contact with every member of our shared community, we still need to co-operate with it. We need to make sure we’re not negatively impacting it and keeping it from performing its functions. As humans, we can actively co-operate, based on our philosophical groundings. However, humans are often the only beings not co-operating. As previously mentioned when discussing the concept of solidarity, we humans are often ‘the odd man out.’ Other entities co-operate by being themselves when performing the functions that sustain both their population as well as the balance of the entire community. They practice a sort of passive co-operation. We humans possess the ability to actively co-operate, to understand what we are doing, how it affects other members of the Earth community, and how it affects the Earth community as a whole. At this point, we are the only members of the Earth community not co-operating.

Marquette University can begin to co-operate when guided by a concrete environmental ethic. By adopting Ignatian indifference, ‘paying attention,’ and the concepts of justice, dignity, freedom, respect and solidarity, Marquette will have the theological groundings for an environmental ethic. Joining Aldo Leopold’s ‘Land Ethic,’ as well as the ideas of intrinsic value and inherent worth to these theological groundings should compel us to acknowledge the obligation we have to our Earth community to live sustainably. With this environmental ethic, we can begin to live in peace and solidarity with the rest of the planet.

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