

STARS SUSTAINABILITY ANALYSIS FOR THE UNIVERSITY OF VIRGINIA SCHOOL OF ARCHITECTURE

Co-Curricular Education / Curriculum / Research

Global Sustainability, Fall 2011

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PROJECT STATEMENT

Our goal is to research, gather, and assess information necessary for the University of Virginia's School of Architecture's submission to the Sustainability Tracking Assessment & Rating System (STARS) put forth by the Association for Advancement of Sustainability in Higher Education (AASHE) within the category of "Education and Research". Analysis of present rating will shed light on areas that need improvement.

We intend to formulate an initiative to launch as a response to this analysis to introduce and implement sustainable resources to the School of Architecture.

Our community partner is the University of Virginia's School of Architecture Dean, Ms. Tanzer. Our partner came to us with the following needs: (1) collect the relevant information and make it accessible and organized, (2) deliver the information to someone who is approved for submission to STARS, (3) create more widespread recognition of STARS and work towards a more sustainable institution as a whole, (4) identify areas that need improvement based on analysis of current ratings, (5) provide resources to the School of Architecture to promote sustainable practices.

First, our group referenced the STARS Technical Manual 1.1 for categorization and grading of Education and Research in the UVA School of Architecture. See *Appendix 1* for STARS official Education and Research categories and points available. See *Documentation and Assessment* section for grading rubric, division of team members into categories for grading, and information that was collected for grading. Each team member was required to contact community partners and stakeholders for focused information in reference to their specific categories. Some categories required an official sign-off from a related person. As a team, we composed three formal emails to alert these people of our project, ask them to sign-off on our information, and thank them. The first emails were sent as soon as someone who could approve our data was identified.

Second, we compiled the information necessary to grade each credit. A format to present the information was generated to present our findings, and a second email was sent asking for a sign-off. Our group took it upon ourselves to create a Workshop blog so that we can all compile our grading, since the overall score for the institution requires an average of all categories' scores.

An institution's STARS score is based on the average of the percentage of applicable points it earns in each of the three categories. For example, if an institution earned 20 percent of applicable points in the Education and Research category; 30 percent of applicable points in the Planning, Administration & Engagement category; and 40 percent in the Operations category, the institution's overall score would be 30 (the average of the three percentages). (AASHE 10)

Third, we intend to improve some areas within our designated STARS categories that could benefit from positive change. We have identified schools with superior STARS ratings (i.e. Arizona State University, similar size, Gold ranking) and saw what they are doing within the categories where we might be lagging. Our thoughts on this matter are to initiate a Peer Educators / Eco Representative program within the School of Architecture; draft a sustainable material use and practices amendment to the School of Architecture's Studio Culture document (http://www.arch.virginia.edu/pdf/studio_culture.pdf); look into a formal "building sustainability" undergraduate and graduate degree programs; and designate material re-use heaps in studio.

As these questions indicate, the focus in allocating points [is] on the impact, not the difficulty, of earning the credit. Some sustainability initiatives may be very difficult to implement but yield negligible impacts. Conversely, some generally easier projects have significant impacts. (AASHE 10)

We would like to assess the most beneficial changes we could make and then work towards those. In our conversation with Dean Tanzer, she suggested that we "reach for the low-hanging fruit" because early successes are important. For this reason, our group has identified the amendment to the Studio Culture document as an initiative that is feasible and will be effective if we make it widely accessible. We are also looking to initiate a Peer Educators / Eco Representative program, in conjunction with the School of Architecture's Student Council's development of a committee on sustainability. We are looking at the University's broader Sustainability Advocacy program as a precedent, in hopes of streamlining the program to be as successful, if not more so. See *Project Timeline* for how we plan on implementing these initiatives. Ultimately, this project is intended to serve as an example for the rest of the University of Virginia and other institutions of higher education as to how to both collect STARS information and raise standards for sustainable colleges. In order to reach our overall goal, we intend to provide this transparent assessment of sustainability in the School of Architecture on our blog/website. As the information becomes available to STARS through our contact, we hope that eventually our university can become a STARS Gold Level member, a leader in sustainability. Most specifically, we want to assess the sustainability of the University's Architecture school in a way that allows change to be made. Having this information accessible will provide a quantitative guideline that gives a baseline for our sustainable improvements as a school. By undertaking these two projects as a response to our present ratings, we hope to encourage the School of Architecture community to continue revising our practices in sustainable directions.

After further investigation and research we have ranked out best management practices (BMPs) based on our Indices of Performance. This ranking system allows us to effectively choose the best options to suggest for implementation. Additionally, we have done a preliminary STARS rating assessment of the current sustainability levels of Campbell Hall and the potential sustainability levels assuming the implementation of our BMPs.

Finally, we plan to publicize our findings through extensive advertising (details in 'Dissemination' section below) so that we can increase sustainability awareness and in turn, hopefully increase the support of sustainability efforts.

TIMELINE

We have included a project timeline for our team to reference and follow in order to keep ourselves organized and on-track for project deadlines.

Task Description	Due Date	Team Participants	Completed/Notes
Project Definition due	09/21/11	All	Yes.
Conceptual Design due	10/05/11	All	Yes.
Identified contacts for sign-offs	10/06/11	All	Yes.
Composed formal standardized emails for preliminary contact, official sign-off, and follow-up	10/16/11	Jessica	Yes.
Sent preliminary email to sign-off contacts	10/18/11	All	Yes.
Meeting with Nina Morris, director of Sustainability Advocates program	11/01/11	Carter	Yes.
Preliminary Report due	11/05/11	All	Yes.
Create template for Final Report; contact workshop; discuss initiatives; contact webmasters of Sustainability@UVA and SustainaUnity.	11/06/11	All	Yes.
Meeting with Dean Tanzer to propose initiatives, discuss budget and faculty sponsors	11/09/11	Carter John	Yes.
Rank each BMP by Indices of Performance	11/13/11	All	Yes.
Draft of amendment for Studio Culture will be finalized and sent to Dean Tanzer for approval	11/13/11	All	Yes.
Review/Revise Report	11/07/11	Hannah	Yes.
Final Project Due	12/10/11	All	
Final Presentation	12/12/11	All	

BUDGET

Budget and funding has been discussed with Nina Morris, the Sustainability Outreach Coordinator for UVA. Although for her program the funds are divided out of a larger budget, she said that it has never been an issue because in the end, these practices save the University money. Furthermore, the only real costs she noted were things like food at events or flyers, etc. All of these costs could be either accumulated through fundraising, or other similar means. Discussing budget with our sponsor and Dean Tanzer is also an option if there are funds that come up that were unforeseen.

RANKING

Please see aforementioned Indices of Performance table in Executive Summary for scoring guidelines.

Co-Curricular Education BMPs

1. Create a student sustainability educators program		
<p>The School of Architecture does not currently have a program that meets the criteria of this credit, which is separate from student groups (discussed later). The A-school's student council has been contacted and has already begun a campaign to formalize something like this, potentially in collaboration with Green Grounds, the student group within the A-school. Nina Morris, the Sustainability Outreach Coordinator at UVA, who leads the Eco-Rep organization on Grounds has lent her expertise to this endeavor as well. This program has already been implemented at all of the on-grounds and off-grounds dormitories, dining halls, and libraries. The proper information has been consulted, regarding how the program is run, budgets, applications, successes and failures, and the type of training that is required (etc).</p>		
Index of Performance	Score	Reasoning
STARS Rating	5	There are 5 potential points here and the current total is 0.
Cost	5	Instituting a program like this would cost very little, if anything at all. The leader of Sustainability Advocates for dorms/libraries/ etc., reported that her program (which is much larger) has very few actual costs.
Feasibility	4	It would only take a few students per grade and maybe one faculty member, and could easily be incorporated into already existing programs.
Infrastructure	4	It would only require minor changes into the infrastructure; Design Council could take over the development of an application, etc. Once the program was installed it could become its own self-perpetuating system.
Total Score	18	

2. Add a sustainability amendment to the Studio Culture document		
<p>The itinerary for orientation has no section on sustainability, however, faculty have addressed that it because it is infused throughout the system. Specifically, it would be covered in the Dean's address, as well as in each of the department overviews. Additionally, last year in particular, the guest lecture topic was that of sustainability. While credit is received, additional measures to include sustainability more directly can be considered, as well as issues like our proposed amendment to the studio culture document. Suggestions like placing a poster of studio culture document in studios so as to more prominently include sustainability.</p>		
Index of Performance	Score	Reasoning
STARS Rating	1	While technically a 2 out of 2 was awarded in this category, it is definitely possible to more clearly reach the mark.
Cost	5	It would cost next to nothing to do this; if anything it would only cost the amount to print onto a large poster to display in studios.
Feasibility	4	This would only involve one or two faculty members, and one or two students, if any.
Infrastructure	5	Nothing would change the actual infrastructure of anything.
Total Score	15	

3. Publish more informative materials		
Institution produces outreach materials and/or publications that foster sustainability learning and knowledge. The publications and outreach materials can include things like websites, newsletters, brochures, green guides, and walking maps. This is an area of great possibility, as the School of Architecture could be able to organize a newsletter etc. to be sent out monthly. The Eco-rep program that we are proposing could manage this issue, in cooperation with Green Grounds, StudCo, Delta Force Process (currently and recently working with Campbell), or any combination/additional outside forces.		
Index of Performance	Score	Reasoning
STARS Rating	5	There are 3 possible points for this category, with each publication/material being allotted .25 points.
Cost	3	The cost would depend on the methods of publications, but since each one can only be awarded .25, the costs could add up.
Feasibility	2	Each publication would probably have at least a staff of 5, and (again) since there would be many possible different publications this could become a lot of student workers.
Infrastructure	2	Since there is not an extensive basis on which to add, these publications would probably have to start from scratch and create their own infrastructure.
Total Score	12	

4. Establish an outdoors program		
Although the Student Planners' Association (SPA) and the Student Association of Landscape Architects (SALA) hold outdoors events, along with other potential programs, there is not a program within the A-school that is dedicated to the outdoors.		
Index of Performance	Score	Reasoning
STARS Rating	1	There is a possibility for .25 points in this category.
Cost	3	It depends on the particular type of outdoors program installed, and what it asks of its members, but the costs could become pricey if the trips are often and take place far away.
Feasibility	4	It would probably only take a few faculty members and students to set up the program, and then, based on interest; the numbers of students would probably grow.
Infrastructure	4	There would not be any major changes in the infrastructure of the school, potentially just scheduling conflicts.
Total Score	12	

5. Establish a themed semester or year		
The school of architecture does not utilize a themed year system, and therefore this is definitely an area of potential improvement.		
Index of Performance	Score	Reasoning
STARS Rating	1	.25 points would be received.
Cost	5	There would not be many costs associated with this, depending on to what extent the theme is implemented.
Feasibility	4	It would only take a few faculty members to coordinate this, and the perhaps a few students to help implement it.
Infrastructure	2	Again, since there is no such existing program on which to base this, it would definitely require some infrastructure changes to get started.
Total Score	12	

Curriculum BMPs

1. Identify courses that are sustainability-focused and sustainability-related		
Identifying courses that are offered as sustainability-focused and sustainability-related on the course inventory that is available online would encourage students to enroll in these courses, especially if they already have an interest in sustainability. By using symbols to demarcate which classes are sustainability-focused and which are sustainability-related, students would have a better understanding of the extent to which sustainability issues are brought into the curriculum of these courses.		
Index of Performance	Score	Reasoning
STARS Rating	2	One point is earned for identifying sustainability-focused and sustainability-related courses for ER Credit 5
Cost	5	There is little to no cost associated in revising the course inventory online
Feasibility	3	Many staff and faculty would be required to update the course descriptions of the classes they offer
Infrastructure	5	There would be no change to the infrastructure outside of the webpage itself, which would only change in the slightest by the addition of symbols and a key
Total Score	15	

2. Introduce sustainability topics to more courses		
Most courses offered by the School of Architecture are sustainability-related to some extent, but the course descriptions for these courses infrequently bring up sustainability as a topic that is discussed. Course descriptions should be revised to reflect how sustainability is brought into the course and to what extent it is a part of the curriculum. This would complement the initiative to demarcate sustainability-focused and sustainability-related courses in the course inventory available online.		
Index of Performance	Score	Reasoning
STARS Rating	5	Up to 5 more points could be earned if more courses were identified as sustainability-related
Cost	5	There is little to no cost associated in revising the course descriptions
Feasibility	4	Revising the course inventory would require a few members of the staff and faculty
Infrastructure	5	There would be no change to the infrastructure outside of the webpage itself, which would only change in the slightest by the revisions to the course descriptions
Total Score	15	

3. Create a sustainability literacy assessment

Sustainability Literacy Assessment can give up to two points to an institution, one point if it conducts an assessment of the sustainability literacy of its students and one point if the institution conducts a follow-up assessment of the same group of students using the same assessment instrument. The assessment could be given to all first year students in the Architecture school and then they could be given the same assessment their fourth year.

Index of Performance	Score	Reasoning
STARS Rating	4	This could allow the school to have both points available from this credit.
Cost	5	Instituting the power save modes on all electronic devices within Campbell Hall would be of zero additional monetary cost to the school.
Feasibility	1	All students and faculty in the Architecture school would have to be involved.
Infrastructure	5	No change in infrastructure needed.
Total Score	15	

4. Create incentives for faculty to create courses involving sustainability

There are three points available to institutions that offer incentives to faculty to develop new sustainability courses or incorporate sustainability into existing courses. These incentives would most likely be in the form of more pay.

Index of Performance	Score	Reasoning
STARS Rating	4	Three points are available.
Cost	2	The incentives would probably have to include payments between \$25,000 and \$100,000.
Feasibility	4	The Dean of the Architecture school, along with other key faculty members could implement this.
Infrastructure	5	No change in infrastructure is needed.
Total Score	15	

Research BMPs

1. Create more incentives for sustainability-focused faculty research		
Currently, faculty in the School of Architecture do not find themselves being given particular incentives to focus their research on sustainability. The majority of their research projects do focus in some part on sustainability, though. However, more incentives could be given, monetary or otherwise, to encourage more sustainability-focused research. In order to do so, we propose discussing these measures with		
Index of Performance	Score	Reasoning
STARS Rating	5	This is a plan that would provide many incentives for faculty that would also garner 3 STARS points.
Cost	2	Assuming a grant would be provided, the cost might be upwards of \$25,000 in order to be intriguing to faculty.
Feasibility	4	More people might need to be involved due to the financial matters involved.
Infrastructure	3	This plan would involve more benefactors to create a pool for additional grant money. This might be difficult to impliment.
Total Score	14	

STARS RATINGS

Co-Curricular Education				
Credit Number	Credit Title	Points Available	Current Score	Potential Score
ER Credit 1	Student Sustainability Educators Program	5	0	5

The School of Architecture does not currently have a program that meets the criteria of this credit, which is separate from student groups (discussed later). We are currently in communication with organizations that could help achieve this credit, such as the School of Architecture's Student Council, who has already begun a campaign to formalize something like this, as well as Green Grounds, the student group within the school. We have also met with Nina Morris, the Sustainability Outreach Coordinator at UVA, who leads the Eco-Rep organization on Grounds. It has already been implemented at all of the on-grounds and off-grounds dormitories, dining halls, and libraries. We have access to the information regarding how the program is run, budgets, applications, successes and failures, and the type of training that is required (etc). We are in the process of streamlining all of this information to understand how to implement this program in the A-school.

ER Credit 2	Student Sustainability Outreach Campaign	5	5	5
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The A-school as an institution does not hold a sustainability outreach campaign, however, Green Grounds (which began in the A-school and is now campus-wide) has impacted the A-school in many ways. I have spoken with their faculty advisor, John Quale, as well as emailed their current student leader. I am in the process of gathering their facts and figures on their outreach campaigns, but examples of campaigns that G.G. has held are:

- River clean-ups
- Light Switch Labels
- Green Fair
- and many more

As the credit only requires one, we receive full credit in this area.

ER Credit 3	Sustainability in New Student Orientation	2	0	2
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I have corresponded with Erica Spangler, Kirk Martini, John Quale, and Sharon McDonald about this issue. I have reviewed the itinerary for orientation, and although there is no section on sustainability, as the faculty notes, it is infused throughout the system. Specifically, it would be covered in the Dean's address, as well as in each of the department overviews. Additionally, last year in particular, the guest lecture topic was that of sustainability. While we receive credit, additional measures to include sustainability more directly can be considered, as well as issues like our proposed amendment to the studio culture document.

ER Credit 4	Sustainability Outreach and Publication	4	1	4
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As the scoring states that 0.5 points will be awarded for each material, this is how we stand to the best of my knowledge:

- Green Grounds does not have a organized newsletter, etc., but they have a listserve and a website so I awarded .5 points for this.
- Sustainaunity puts out a weekly newsletter, and also maintains a blog: .5
- This is counted as .5 points because Sustainaunity is not strictly Architecture, similar to above.

-Collonade, the Architecture Foundation's publication, includes sustainability issues but currently is not sufficient for points: 0 pt

This is an area of great possibility, as the School of Architecture could be able to organize a newsletter etc. to be sent out monthly. The Eco-rep program that we are proposing could manage this issue, in cooperation with Green Grounds, StudCo, Delta Force Process (currently and recently working with Campbell), or any combination/additional outside forces.

<i>Tier Two</i>	<i>Co-Curricular Education Tier Two Credit</i>	1	1	2
ER T2-1	Student Group	.25	.25	.25

This credit calls for an "active student organization focused on sustainability." We have many organizations with sustainability incorporated, but Green Grounds is the only group through the A-school that is sustainability-concentrated. Although the group has expanded to include more than just the A-school, I have awarded .25 points in this category.

Further work could be accomplished in this category, however, especially with the implementation of the Eco-Rep Program.

ER T2-2	Organic Garden	.25	.25	.25
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This credit requires that the institution has an on-campus garden where students are able to gain organic farming and/or gardening experience. This criteria is satisfied because of the existence of two organic gardens on Grounds, both of which are run by either Architecture/Planning/Landscape faculty or students.

ER T2-3	Model Room in Residence Hall	.25	0	0
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This credit does not pertain to our particular analysis but could be considered for incorporation in the future. For now, we receive a score of 0.

ER T2-4	Themed Housing	.25	0	0
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Again, this does not apply to the School of Architecture.

ER T2-5	Sustainable Enterprise	.25	.25	.25
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The school of architecture achieves this category with the enterprise of EcoMod, led by John Quale. As Professor Quale notes, this program teaches students how to work with existing sustainable programs, as well as take them off campus to learn about sustainability in many respects. Because of the availability to students to join a team and learn how to work with sustainable practices, the .25 points are achieved.

ER T2-6	Sustainability Events	.25	.25	.25
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The school of architecture receives full credit in this category because of the various lectures, speakers, events, etc. that take place throughout the year.

ER T2-7	Outdoors Program	.25	0	.25
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Although the Student Planners' Association (SPA) and the Student Association of Landscape Architects (SALA) hold outdoors events, along with other potential programs, there is not a program within the A-school that is dedicated to the outdoors. Therefore, zero points are awarded.

ER T2-8	Themed Semester or Year	.25	0	.25
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The school of architecture does not utilize a themed year system, and therefore receives no points. This area is a potential area of improvement and could be considered in the future.

Curriculum				
Credit Number	Credit Title	Points Available	Current Score	Potential Score
ER Credit 5	Sustainability Course Identification	3	2	3

The three points possible for this credit are contingent on the institution developing a definition of sustainability, and making it available to the public online. Two points were earned because the School of Architecture has developed a definition of sustainability in the curriculum, and has made its sustainability course inventory publicly available online. However, it has not identified its sustainability-focused and sustainability-related course offerings, so not all points could be earned for this credit.

ER Credit 6	Sustainability-Focused Courses	10	10	10
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This credit compares the number of sustainability-focused courses offered against the total number of courses. 26 of the 241 courses offered by the School of Architecture are sustainability-focused. The points earned were calculated based on the function:

$$100 \times (\# \text{ of sustainability-focused courses}) / (\# \text{ of courses offered})$$

ER Credit 7	Sustainability-Related Courses	10	4.3	10
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This credit compares the number of sustainability-related courses offered against the total number of courses. 31 of the 241 courses offered by the School of Architecture are sustainability-related. The points earned were calculated based on the function:

$$33.33 \times (\# \text{ of sustainability-related courses}) / (\# \text{ of courses offered})$$

The score could be improved by introducing a topic related to sustainability into the curriculum of more classes, or classes that do incorporate sustainability into their discussion but do not mention it in the course description could be more explicit about it.

ER Credit 8	Sustainability Courses by Department	7	7	7
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There are seven possible points that can be rewarded for this credit, based on the number of departments that offer at least one sustainability-related or sustainability-focused course. Because each of the four departments of the School of Architecture has defined how sustainability has been incorporated into their

curriculums, and all four departments offer one or more sustainability-related or sustainability-focused course, all points were earned. They were calculated based on the function:

$$7.78 \times (\# \text{ of departments that offer a sustainability course}) / (\# \text{ of departments})$$

ER Credit 9	Sustainability Learning Outcomes	10	10	10
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This credit is based on the percentage of students who graduate from programs that have at least one sustainability learning outcome (SLO). Each department that offers an undergraduate and/or graduate program has incorporated sustainability learning outcomes into their curriculum. This means that all students graduating from a program in the School of Architecture have at least one sustainability learning outcome. Thus, all points were earned for this credit. The points were calculated based on the function:

$$10 \times (\# \text{ of students who graduated from a degree program with an SLO}) \times (\# \text{ of graduates})$$

Credit 10	Undergraduate Program in Sustainability	4	4	4
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The four possible points are available to institutions that have undergraduate-level degree programs on sustainability.

Credit 11	Graduate Program in Sustainability	4	4	4
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ER Credits 10 and 11 were obtained by the Architecture school because of the same program offered at the undergraduate and at the graduate level: Urban and Environmental Planning. This program is very sustainability based; in its own website's words: "city planning, regional planning, environmental planning, community development planning, health planning or transportation planning. The link between each of these, and the trademark of our program, is an abiding concern for creating sustainable communities. The breadth of this view is signified by our inclusive urban AND environmental planning title. Our faculty values environments where the countryside is productive and appropriately protected, where cities have vital centers and efficient means of movement, and where neighborhoods offer opportunities for all to live affordably and safely. We are as much concerned with the economy and issues of equity as we are with the environment. We strive to inspire our students to have the same enthusiasm the faculty feel for addressing the planning needs of sustainable communities." It covers the social, economic, and environmental dimensions of sustainability through the lens of planning, in its four year bachelor's and its two year master's programs.

Credit 12	Sustainability Immersive Experience	2	2	2
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As for ER Credit 12, Dean Tanzer has informed us of a sustainability focused study abroad program that satisfies this credit. There is was a Carr's Hill class, a three-credit seminar, that focused on making the President's residence more sustainable. There is a class similar to this every year.

Credit 13	Sustainability Literacy Assessment	2	0	2
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This credit can give up to two points to an institution, one point if it conducts an assessment of the sustainability literacy of its students and one point if the institution conducts a follow-up assessment of the

same group of students using the same assessment instrument. There is no sustainability literacy assessment system and there are no plans to develop one, leading to no points for Credit 13.

Credit 14	Incentives for Creating Sustainability Courses	3	0	3
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There are three points available to institutions that offer incentives to faculty to develop new sustainability courses or incorporate sustainability into existing courses. At this time, we have no points for Credit 14, incentives for creating sustainability courses. But, we have the Associate Dean of Research, Phoebe Crisman, exploring options for creating incentives for the development of new sustainability courses.

Research				
Credit Number	Credit Title	Points Available	Current Score	Potential Score
ER Credit 15	Sustainability Research Identification	3	3	3

The School of Architecture has achieved full points in this STARS category for having a definition of sustainability research, having identified its sustainability research activities and initiatives, and for making this information available online. It is noted that having better, clearer access to this information online would be beneficial, though will not earn any more points.

ER Credit 16	Faculty Involved in Sustainability Research	10	10	10
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Much more than the required 25% of faculty who do research in the School of Architecture are involved in sustainability-focused research.

ER Credit 17	Departments Involved in Sustainability Research	6	6	6
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The School of Architecture has achieved full points in this category for having all four academic departments (Urban Planning, Architecture, Landscape, and Architectural History) involved in some form of sustainability-focused research.

ER Credit 18	Sustainability Research Incentives	6	3	6
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Though several ongoing grant programs exist for students, faculty in the School of Architecture do not have as many incentives to partake in sustainability-specific research, aside from knowing that it is supported as an ethical choice. No ongoing program exists to encourage this. To gain points, we would need a program that provides faculty with incentives that may include, but are not limited to, fellowships, financial support, and faculty development workshops. This is highly feasible.

ER Credit 19	Interdisciplinary Research in Tenure and Promotion	2	2	2
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The School of Architecture has achieved all points in this category for having a policy regarding interdisciplinary research. It is well known among faculty that sustainability-focused research is highly commended.

FUTURE WORK / DISSEMINATION

In order to obtain publicity for our project, we will be creating a Wordpress website (<http://uvaarch-sustainability.wordpress.com>) and getting in contact with the webmasters of the Sustaina-Unity website (<http://sustainaunity.com/>) and Sustainability@UVA website (<http://www.virginia.edu/-sustainability/>) to request that a link to our Wordpress is added to each website. We will also be sending a follow-up email to thank those who signed-off on the information used to grade the School of Architecture and provide them with access to our complete study. Additionally, we will be collaborating with the other teams in our workshop to compile our data and send out a concise email to the listserv for undergraduate and graduate students in the School of Architecture as means to raise awareness of how we are currently performing and what areas we can all work towards improving.

As far as the initiatives we will be undertaking as a group, our plan is to send out emails to these listservs with details about getting involved as a Peer Educator / Eco Representative. We plan on communicating when an interest meeting will be held and how to complete the application process. Furthermore, the Studio Culture document will be sent out in email form once it has been approved by Dean Tanzer. Another strategy we will take to publicize our initiatives will be through the distribution of fliers throughout Campbell Hall. Finally, we will be pinning up posters with the revised Studio Culture document in each studio. We hope that our efforts to disseminate our findings and these opportunities to improve our habits so that they are sustainability-conscious will be effective by maximizing our outreach through emails and print sources.

LESSONS LEARNED

The goal of obtaining necessary information in order to accurately and strategically assess the potential results of the project was the primary focus throughout the weeks. While certain areas have become more developed than others, the overall acquired information is a crucial tool in progressing the Architecture School's sustainable practices and impacts. The only barriers beyond getting in touch with the appropriate faculty members were logistical. Budget, time, and staff availability all factored in to the plausibility of some aspects of the project, including sustainable project incentives and the addition of student groups. Another difficulty was the differentiating of certain points where the School did not technically have the requirements to obtain a point as stated in the STARS manual, but did have enough evidence to make a solid case for attaining said point. This occurred in multiple categories in the Co-Curricular section, such as New Student Orientation and many of the Tier Two categories. These were handled on a case-by-case basis, and the majority of decisions were guided by faculty advisement.

All goals were met with some degree of success; the most central goal was completing an extensive compilation of data to serve as a basis to direct future endeavors. All criteria were addressed in the most comprehensive method possible and all misfires were noted and accounted for. The goals that did not achieve full success were the more minor objectives, which were simply serving as suggestions to areas lacking in points. The most developed example of this is the implementation of an "Eco-Rep" program, a program already utilized by the University in its libraries and dormitories. The success of this effort rests in the months following the semester's end, as the School of Architecture's student-council group is in the process of executing and integrating the Eco-Rep program into the preexisting infrastructure. One idea that was less developed was the amendment to the Studio Culture document, and consequently the thoughts of making the document more prominent visually and therefore mentally. While this idea has not been realized yet, the appropriate faculty members have been contacted and further development could be easily instated, potentially as a task for an Eco-Rep.

Creating change in a preexisting fully functional infrastructure such as the Architecture School is clearly a very complicated matter; however, the flexibility of the A-school student body, faculty, and staff has proved staggeringly above and beyond what was expected. The potential of students changing the system seems much more plausible in this institution as opposed to other similar areas around Grounds because of the progressive and connected community existing in the Architecture School. Because of this, the resulting movement is not to be perceived as unfinished or unsuccessful, but as a necessary step towards a potential change. Most challenges were resolved as best as can be anticipated, so not much about the process would require change if this project were to be repeated. Starting earlier would definitely yield better results so some ideas could be more developed, but overall most of the procedure moved along smoothly. If a class next semester or year picked up where this class left off, those students would be in a very good place to really change and benefit the School.

APPENDIX 1: STARS RATINGS INFORMATION

ER Credit 1 – Student Sustainability Educators Program	Score: 0/5
<p><i>Description of credit</i></p> <p>This credit recognizes institutions with programs that engage students to serve as educators in peer-to-peer sustainability outreach. Such initiatives, sometimes known as "Eco-Reps" programs, help disseminate sustainability concepts and a sustainability ethic throughout the campus community.</p>	
<p><i>Criteria</i></p> <p>In order to meet this criteria, there would need to be a program that:</p> <ul style="list-style-type: none"> · Selects or appoints students to serve as educators and formally designates the students as educators, · Provides formal training to the educators in how to conduct outreach, and · Offers staff and/or other financial support to the program. 	
<p><i>Achievement</i></p> <p>The A-school does not currently have a program that meets the criteria of this credit, which is separate from student groups (discussed later). We are currently in communication with organizations that could help achieve this credit, such as StudCo, who has already begun a campaign to formalize something like this, as well as Green Grounds, the student group within the A-school. We have also met with Nina Morris, the Sustainability Outreach Coordinator at UVA, who leads the Eco-Rep organization on Grounds. It has already been implemented at all of the on-grounds and off-grounds dormitories, dining halls, and libraries. We have access to the information regarding how the program is run, budgets, applications, successes and failures, and the type of training that is required (etc). We are in the process of streamlining all of this information to understand how to implement this program in the A-school.</p>	
ER Credit 2 – Student Sustainability Outreach Campaign	Score: 5/5
<p><i>Description of credit</i></p> <p>This credit recognizes institutions that hold sustainability outreach campaigns that yield measurable, positive results in advancing the institution's sustainability performance (e.g. a reduction in energy or water consumption). Campaigns engage the student body in sustainability issues and can help raise student awareness about sustainability. In addition, campaigns encourage students to adopt or try sustainable practices and lifestyles</p>	
<p><i>Criteria</i></p> <p>The criteria are met if the institution holds at least one sustainability-related outreach campaign directed at students. The campaign must yield measurable, positive results in advancing sustainability.</p>	
<p><i>Achievement</i></p> <p>The A-school as an institution does not hold a sustainability outreach campaign, however, Green Grounds (which began in the A-school and is now campus-wide) has impacted the A-school in many ways. I have spoken with their faculty advisor, John Quale, as well as emailed their current student leader. I am in the process of gathering their facts and figures on their outreach campaigns, but examples of campaigns that G.G. has held are:</p>	

<ul style="list-style-type: none"> - River clean-ups - Light Switch Labels - Green Fair - and many more <p>As the credit only requires one, we receive full credit in this area.</p>	
<p>ER Credit 3 – Sustainability in New Student Orientation</p>	<p>Score: 2/2</p>
<p><i>Description of Credit</i> This credit recognizes institutions that include sustainability in orientation activities and programming. Including sustainability in student orientation demonstrates that sustainability is an institutional goal and encourages students to adopt sustainable habits in their new school environments.</p>	
<p><i>Criteria</i> Institution includes sustainability prominently in its new student orientation activities and programming.</p>	
<p><i>Achievement</i> I have corresponded with Erica Spangler, Kirk Martini, John Quale, and Sharon McDonald about this issue. I have reviewed the itinerary for orientation, and although there is no section on sustainability, as the faculty notes, it is infused throughout the system. Specifically, it would be covered in the Dean’s address, as well as in each of the department overviews. Additionally, last year in particular, the guest lecture topic was that of sustainability. While we receive credit, additional measures to include sustainability more directly can be considered, as well as issues like our proposed amendment to the studio culture document.</p>	
<p>ER Credit 4: Sustainability Outreach and Publication</p>	<p>Score: 1/4</p>
<p><i>Description of Credit</i> This credit recognizes institutions that produce outreach materials and publications that enhance student learning about sustainability outside of the formal classroom.</p>	
<p><i>Criteria</i> Institution produces outreach materials and/or publications that foster sustainability learning and knowledge. The publications and outreach materials can include things like websites, newsletters, brochures, green guides, and walking maps.</p>	
<p><i>Achievement</i> As the scoring states that 0.5 points will be awarded for each material, this is how we stand to the best of my knowledge: <ul style="list-style-type: none"> -Green Grounds does not have a organized newsletter, etc., but they have a listserve and a website so I awarded .5 points for this. -Sustainaunity puts out a weekly newsletter, and also maintains a blog: .5 - I counted this as .5 points because Sustainaunity is not strictly Architecture, similar to above. -Collonade, the Architecture Foundation’s publication, includes sustainability issues but currently is not sufficient for points: 0 pt <p>This is an area of great possibility, as the School of Architecture could be able to organize a</p> </p>	

newsletter etc. to be sent out monthly. The Eco-rep program that we are proposing could manage this issue, in cooperation with Green Grounds, StudCo, Delta Force Process (currently and recently working with Campbell), or any combination/additional outside forces.	
Co-Curricular Education Tier Two Credit: The institution will receive .25 points for every credit accomplished.	Total Score: 1/2
Co-Curricular Education Tier Two Credit 1: Student Group	Score: .25/.25
This credit calls for an "active student organization focused on sustainability." We have many organizations with sustainability incorporated, but Green Grounds is the only group through the A-school that is sustainability-concentrated. Although the group has expanded to include more than just the A-school, I have awarded .25 points in this category. Further work could be accomplished in this category, however, especially with the implementation of the Eco-Rep Program.	
Co-Curricular Education Tier Two Credit 2: Organic Garden	Score: .25/.25
This credit requires that the institution has an on-campus garden where students are able to gain organic farming and/or gardening experience. This criteria is satisfied because of the existence of two organic gardens on Grounds, both of which are run by either Architecture/Planning/Landscape faculty or students.	
Co-Curricular Education Tier Two Credit 3: Model Room in a Residence Hall	Score: 0/.25
This credit does not pertain to our particular analysis but could be considered for incorporation in the future. For now, we receive a score of 0.	
Co-Curricular Education Tier Two Credit 4: Themed Housing	Score: 0/.25
See above.	
Co-Curricular Education Tier Two Credit 5: Sustainable Enterprise	Score: .25/.25
The school of architecture achieves this category with the enterprise of EcoMod, led by John Quale. As Professor Quale notes, this program teaches students how to work with existing sustainable programs, as well as take them off campus to learn about sustainability in many respects. Because of the availability to students to join a team and learn how to work with sustainable practices, the .25 points are achieved.	
Co-Curricular Education Tier Two Credit 6: Sustainability Events	Score: .25/.25
The school of architecture receives full credit in this category because of the various lectures, speakers, events, etc. that take place throughout the year.	

Co-Curricular Education Tier Two Credit 7: Outdoors Program	Score: 0/.25
Although the Student Planners' Association (SPA) and the Student Association of Landscape Architects (SALA) hold outdoors events, along with other potential programs, there is not a program within the A-school that is dedicated to the outdoors. Therefore, zero points are awarded.	
Co-Curricular Education Tier Two Credit 8: Themed Semester or Year	Score: 0/.25
The school of architecture does not utilize a themed year system, and therefore receives no points. This area is a potential area of improvement and could be considered in the future.	

ER Credit 5 – Sustainability Course Identification						Score: 2/3
The three points possible for this credit are contingent on the institution developing a definition of sustainability, and making it available to the public online.						
Part 1: The institution has developed a definition of sustainability in the curriculum (1) Part 2: The institution has identified its sustainability-focused and sustainability-related course offerings (0) Part 3: The institution makes its sustainability course inventory publicly available online (1)						
ER Credit 6 – Sustainability-Focused Courses						Score: 10/10
This credit compares the number of sustainability-focused courses offered against the total number of courses offered.						
Factor	x	# of Sustainability-Focused Courses Offered	÷	Total # of Courses Offered	=	Total Points Earned
100	x	26	÷	241	=	10
ER Credit 7 – Sustainability-Related Courses						Score: 4.3/10
This credit compares the number of sustainability-related courses offered against the total number of						

courses offered.						
Factor	x	# of Sustainability-Related Courses Offered	÷	Total # of Courses Offered	=	Total Points Earned
33.33	x	31	÷	241	=	4.3
ER Credit 8 – Sustainability Courses by Department						Score: 7/7
There are 7 possible points that can be rewarded for this credit, based on the number of departments that offer at least one sustainability-related or –focused course.						
Factor	x	# of Departments that Offer a Sustainability Courses	÷	Total # of Departments	=	Total Points
7.78	x	4	÷	4	=	7
ER Credit 9 – Sustainability Learning Outcomes						Score: 10/10
This credit is based on the percentage of students who graduate from programs that have at least one sustainability learning outcome.						
Factor	x	# of Students who Graduated from a Degree Program with at Least One Sustainability Learning Outcome	÷	Total # of Graduates	=	Total Points Earned
10	x	168		168	=	10
ER Credit 10 – Undergraduate Program in Sustainability						Score: 4/4
The four possible points are available to institutions that have undergraduate-level degree programs on sustainability.						
Major in Urban and Environmental Planning						

ER Credit 11 – Graduate Program in Sustainability					Score: 4/4
This credit offers four points for having at least one program in sustainability. The degree program does not have to include sustainability in its name to count for these credits; it just has to cover the social, economic, and environmental dimensions of sustainability.					
Masters in Urban and Environmental Planning					
ER Credit 12 – Sustainability Immersive Experience					Score: 2/2
There are two points available for meeting the criteria of Sustainability Immersive Experience. There must be a sustainability-focused educational study program, but this program may take place off-campus, or be offered in partnership with an outside entity.					
Summer sustainability program					
ER Credit 13 – Sustainability Literacy Assessment					Score: 0/2
This credit can give up to two points to an institution, one point if it conducts an assessment of the sustainability literacy of its students and one point if the institution conducts a follow-up assessment of the same group of students using the same assessment instrument.					
No assessment					
ER Credit 14 – Incentives for Creating Sustainability Courses					Score: 0/3
There are three points available to institutions that offer incentives to faculty to develop new sustainability courses or incorporate sustainability into existing courses.					
None at this time, hopefully some this semester					

ER Credit 15 - Sustainability Research Identification

The three possible points are awarded to institutions that have identified their sustainability research and associated faculty scholarship.

Part 1: The institution has developed a definition of sustainability research (1)

Part 2: The institution has identified its sustainability research activities and initiatives (1)

Part 3: The institution makes its sustainability publicly available online (1)

Has the institution developed a definition of sustainable research?:

Yes.

A copy of the institution's definition of sustainable research:

For the most part, the School of Architecture's values of sustainability are embedded in all that is done in the school. Additionally, at the fall 2009 gathering of faculty, staff, and student, Dean Kim Tanzer led the School in the effort to identify six research themes that best capture our ongoing research, teaching, and innovative projects.

DESIGN + HEALTH - To pursue research enabling design professionals, administrators, educators, and medical professionals to CREATE AND SUSTAIN more effective environments for HUMAN HEALTH AND WELL BEING.

ADAPTIVE INFRASTRUCTURES (Personal. Public. Planetary) - To search for INNOVATIVE STRATEGIES that consider not only alternative means to meet needs but also ALTERNATIVE CONCEPTIONS OF NEED; that EXPAND THE SCOPE OF INFRASTRUCTURE to include public spaces, civic places and the settlement patterns and lifestyles reflected in our communities and regions.

REGENERATE (Preservation + Sustainability Collaborative) - Our pedagogy inculcates a critical perspective on PLACE--one that gleans key lessons from the past and present, from historical patterns and ecological processes, in order to imagine how to REGENERATE places for the future.

DESIGN + PUBLIC SERVICE - To act as a hub for multidisciplinary collaboration focused on projects and pedagogy that engage COMMUNITIES IN DIALOGUE and the DESIGN PROCESS TO SOLVE PROBLEMS.

DESIGN REPRESENTATION + MATERIAL PRACTICES - Design intelligence, critical thinking, and the inherent spatial intuitions fundamental to design are too important to apply only to traditional professional areas. ... In this profound era of change, processes once thought independent are now understood as densely interconnected natural and social ecologies.

Has the institution identified its sustainability research activities and initiatives?:

Yes.

A brief description of the methodology the institution followed to complete the inventory:

Colonnade (publication of the University of Virginia School of Architecture) produced approximately once yearly. Ellen Cathey edits. Also available online.

Does the institution make its sustainability research inventory publicly available online?:

Yes

The website URL where the sustainability research inventory is posted (required if claiming Part 3 of the credit):

http://issuu.com/sarc/docs/2010summer_colonnade

ER Credit 16 - Faculty Involved in Sustainability Research

Factor	x	Faculty Members Conducting Sustainability Research	÷	Total Faculty Members Engaged in Research	=	Total Points Earned
40	x	19	÷	20	=	10

The number of faculty members engaged in sustainability research:

Minimum of 19.

The total number of faculty members engaged in research:

Absolute minimum of 20.

No matter what we definitely have more than 25%, which gives us full points.

Names and department affiliations of faculty engaged in sustainability research:

- Nisha Botchwey - Urban Planning
- Karen Firehock - Urban Planning
- John Quale - Architecture
- Phoebe Crisman - Architecture
- A. Bruce Dotson - Urban Planning
- Karolin Moellmann - Architecture
- Jorg Sieweke - Landscape
- Scot French - Architectural History
- Frank Dukes - Urban Planning
- Michael Petrus - Architecture
- Beth Meyer
- Eric Field
- Anselmo Canfora
- Daniel Bluestone
- Sanda Iliescu
- William Sherman
- Michael Petrus
- Nancy Takahashi
- Louis Nelson

The website URL where the sustainability research inventory that includes the names and department affiliations of faculty engaged in sustainability research is posted:

<http://www.arch.virginia.edu/research/>

The website URL where information about sustainability research is available:

<http://www.arch.virginia.edu/research/>

ER Credit 17 - Departments Involved in Sustainability Research

Factor	x	Departments Conducting Sustainability Research	÷	Total Departments Conducting Research	=	Total Points Earned (max of 6)
8		4		4		6

The total number of academic departments that conduct research:

4

The number of academic departments in which at least one faculty member engages in sustainability research:

4

A list of academic departments in which at least one faculty member engages in sustainability research:

Architecture, Architectural History, Urban Planning, Landscape.

The website URL where the sustainability research inventory that includes the departments engaged in sustainability research is posted:

<http://www.arch.virginia.edu/research/>

A copy of the sustainability research inventory that includes the departments engaged in sustainability research:

SAMPLING:

- Nisha Botchwey - Urban Planning
- John Quale - Architecture
- Jorg Sieweke - Landscape
- Beth Meyer - Architectural History

ER Credit 18 - Sustainability Research Incentives

The six possible points are awarded to institutions that have identified their sustainability research incentives.

Part 1: Institution has an ongoing program to encourage students in multiple disciplines or academic programs to conduct research in sustainability. The program provides students with incentives to research sustainability. Such incentives may include, but are not limited to, fellowships, financial support, and mentorships. (3)

Part 2: Institution has an ongoing program to encourage faculty from multiple disciplines or academic programs to conduct research in sustainability topics. The program provides faculty with incentives to research sustainability. Such incentives may include, but are not limited to, fellowships, financial support, and faculty development workshops. (0)

- Jefferson Public Scholars grants apply to both students AND professors / grad students
- Harrison Undergraduate Research award with student (not specific but could be)
- faculty summer research grants (sustainability programs tend to be more supported)
- International Research Fellowships - 9 faculty with grants - competitive - several sustainability with international focus
- research themes meeting - not workshop or incentive

Does the institution have a program to encourage student sustainability research that meets the criteria for this credit?:

Yes.

A brief description of the institution's program(s) to encourage student research in sustainability:

Many available scholarships and grants are awarded in the School of Architecture for projects benefiting communities across the world in the realm of sustainability. Jefferson Public Scholars, for example, has granted money to the ecoMOD project.

The website URL where information about the student research program is available:

<http://www.virginia.edu/jpc/>

Does the institution have a program to encourage faculty sustainability research that meets the criteria for this credit?:

No.

A brief description of the institution's program(s) to encourage faculty research in sustainability:

n/a

The website URL where information about the faculty research program is available:

n/a

ER Credit 19 - Interdisciplinary Research in Tenure and Promotion

This credit applies to all institutions where research is considered during faculty tenure and promotion decisions.

Does the institution's treatment of interdisciplinary research meet the criteria for this credit? (Institution gives positive recognition to interdisciplinary, trans-disciplinary, and multi-disciplinary research during faculty promotion and tenure decisions.):

Yes.

A brief description or a copy of the institution's policy regarding interdisciplinary research:

EXPANDING CANONS (Built + Human Environment) - Our shared goals of designing sustainable communities, fostering integrated approaches to design, and understanding the diversity of built landscapes across cultures and history will require NEW WAYS OF UNDERSTANDING.

The website URL where information about the treatment of interdisciplinary research is available:

<http://www.arch.virginia.edu/research/canons/>

Expanding Canons Research Projects

- Richard Guy Wilson — architecture of Thomas Jefferson
- Phoebe Crisman — Environmental and Social Action in the Studio
- John Quale — Falmouth / ecoREMOD2 Project: Preservation and Addition to Historic Home in Jamaica
- Phoebe Crisman — Istanbul: City at the Threshold
- John Quale — The European Housing Industry: Searching for Synergies in Sustainability, Affordability and Prefabrication
- John Quale — The Japanese Housing Industry: Searching for Synergies in Sustainability, Affordability and Prefabrication

APPENDIX 2: WORKS CITED

Association for Advancement of Sustainability in Higher Education (AASHE). *STARS Version 1.1 Technical Manual*. AASHE, 2011. PDF file <<https://stars.aashe.org/pages/about/technical-manual.html>>.