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| C:\Users\bjaco\AppData\Local\Microsoft\Windows\INetCache\Content.Word\SLS-Teaching-Toolkit-Logo_Stacked-Initials.jpg | Kendeda Building Participatory Design Game  |
| **Discipline:** All | **Type:** Reading Assignment; In-Class Activity; Discussion | **Time Commitment:** In-Class Activity: 1–2 Hours | **Category**: Equitable Development  |
| **Big Ideas:** [Design Thinking](http://serve-learn-sustain.gatech.edu/big-idea/design-thinking); [GT as Living Lab](http://serve-learn-sustain.gatech.edu/big-idea/gt-living-lab); [Managing the Commons](http://serve-learn-sustain.gatech.edu/big-idea/managing-commons); [Social, Cultural, and Environmental Context](http://serve-learn-sustain.gatech.edu/social-cultural-environmental-context); [Voice & Agency](http://serve-learn-sustain.gatech.edu/voice-agency) |
| **OVERVIEW:**This tool adapts the [Smart Cities Kit](https://serve-learn-sustain.gatech.edu/smart-cities-kit) to Georgia Tech’s Living Building, the Kendeda Building for Innovative Sustainable Design. The activity prompts students to imagine stakeholder experiences in specific situations throughout the Kendeda Building. The goal is to translate the equity objectives of Serve-Learn-Sustain’s Equity Petal Work Group into the concrete experiences of their everyday lives at Georgia Tech.This adaptation includes an activity series that focuses on the relationship between equity and sound in the layout and use of the Kendeda Building. However, you can easily revise the assignment to teach any aspect of the Living Building Challenge (LBC), for example: any of the seven LBC Petals; the sustainability objective relevant to your discipline/course; the formal or social concept of your choice. Suggested follow-up assignments guide students toward leveraging the insights of the activity for further research and analysis.This tool was contributed by Lauren Neefe. |
| **INSTRUCTIONS:** This tool includes a pre-class reading and writing assignment, followed by an in-class activity and an optional take-home writing assignment. See below for detailed instructions. |
| **SLS STUDENT LEARNING OUTCOMES & ASSESSMENT:**The Serve-Learn-Sustain toolkit teaching tools are designed to help students achieve not only SLS student learning outcomes (SLOs), but the unique learning outcomes for your own courses. Reflection, concept maps, rubrics, and other assessment methods are shown to improve student learning. For resources on how to assess your students’ work, please review our [Assessment Tools](http://serve-learn-sustain.gatech.edu/tool-category/assessment). **This tool achieves SLOs 1 and 3. See the end of this tool for further details.** |

**Want Help?**

SLS is the contact for this tool. You can reach us at serve-learn-sustain@gatech.edu

Kendeda Building Participatory Design Game

**Instructions**

1. The Kendeda Building Participatory Design Game adapts the [SLS Smart Cities Kit](https://serve-learn-sustain.gatech.edu/smart-cities-kit) to the equity and sustainability objectives of the Kendeda Building for Innovative Sustainable Design. Download and read the Smart Cities’ [Instructors Guide](http://serve-learn-sustain.gatech.edu/sites/default/files/images/smart_cities_guide.docx), [Student Activity Instructions](http://serve-learn-sustain.gatech.edu/sites/default/files/images/student_activity_instructions.docx), and [Kit Building Resources](https://www.dropbox.com/sh/2v19d5ntmjj0jnc/AAAZaim-eSvvSHoHVE1lyyQea?dl=0), located at the link above. Note that in place of neighborhood maps, you will use floor plans of the building for this game, available from SLS.
2. Adapt the “Student Activity Instructions” to the sustainability focus of your Kendeda Building lesson. This will require changing language and focus: for example, reframe discussion of traffic and streets to fit a sustainability focus, you can likely take out discussion about the weather, etc.
3. Allow 2-3 class periods to prepare, play, and reflect on the Kendeda Building Activity. Additional assignments will require additional class periods.
4. Ask students to study and respond to the LBC Equity Petal readings below. Instructors can prepare by reading an overview of these documents, provided below. If you’re interested in examining sound and equity, a brief introduction to the relationship between sound and equity follows.
5. Distribute your adaptation of the Student Activity Instructions (or use the [KB Sound and Equity Game Instructions](http://sls.gatech.edu/sites/default/files/documents/Toolkit-Docs/kb_sound_and_equity_game_instructions.pdf)) before game day. Ask students to characterize themselves as stakeholders, either in class or for homework.
6. Adapt the Smart Cities Kit Discussion Questions to your class objectives. Or download the [KB Sound and Equity Discussion Questions.](http://sls.gatech.edu/sites/default/files/documents/Toolkit-Docs/kb_sound_and_equity_discussion_questions.pdf)
7. To prepare for game day, e-mail SLS at serve-learn-sustain@gatech.edu to request and check out the Smart Cities Activity Kit and the building floor plans for game day. Also, if your room doesn’t have large tables for laying out the floor plans of the building, you’ll need to find a different room for game day – or have floor space in your room to do the activity. You may also want to take out some aspects of the Smart Cities Kit that don’t have wider applicability – for example, the stakeholder card about the runner, most of the weather cards (as you’ll be looking at indoor floor plans), etc.
8. After game day- Optional: Assign an individual or group project that requires students to research and test the insights that emerged during the game.

**Overview: Kendeda Building and the Equity Petal**

The Living Building Challenge (LBC) is the first green-building certification to make the social and economic dimensions of sustainable development explicit requirements of its framework. Structured as a flower, the [*Living Building Challenge 3.1 Standard*](https://living-future.org/product/lbc-3-1-standard/) designates Place, Health + Happiness, Equity, and Beauty as distinct Petals, or, in architecture speak, “areas of specification.” In other words, these three Petals are as important to sustainable architecture as the three more predictable areas of specification: Water, Energy, and Materials. This framework reflects the International Living Future Institute’s (ILFI’s) ambition to reorient the standard approach to the built environment. ILFI wants the built environment to recognize the “symbiotic relationship between people and all aspects of community” (ILFI).

In keeping with this ambition, the *LBC Standard* establishes the “intent” of the Equity Petal: “to transform developments to foster a true, inclusive sense of community that is just and equitable regardless of an individual’s background, age, class, race, gender or sexual orientation.” Here the *Standard* singles out a number of identity aspects that have historically and persistently been used to deprive individuals and groups of people from access to civil rights and essential resources. The *Standard* goes on to clarify that “universal access” necessarily addresses the needs of people with disabilities as well as those underserved by the transportation infrastructure that leads to a given building. The root of inequity, by ILFI’s *Standard,* is the privatization of infrastructure and “ingrained cultural attitudes about the rights associated with private ownership and the varying rights of people.”

**The Kendeda Building and the Equity Petal Workshop**

Among the seven Petals of the *LBC Standard*, the Equity Petal is widely recognized as the loosest set of performance requirements. Ken Edelstein observes as much in the [*Living Building Chronicle*](https://livingbuilding.kendedafund.org/2017/06/26/georgia-tech-living-building-challenge-equity-petal/)*,* a journalistic blog sponsored by the Kendeda Fund to document the process and efforts of the building. Even though sustainability projects call out the “three-legged stool of ‘people, profit, and planet,’” he writes, the “people” leg tends to get short shrift. He reasons: “Typically … nobody on the design team is trained to advance issues like justice, fairness, and social responsibility” (Edelstein). The [Kendeda Fund](https://kendedafund.org/our-programs/atlanta-equity/) wants to change the Equity Petal’s orphan status by pushing the Kendeda Building for Innovative Sustainable Design to pioneer a new habit of prioritizing equity in sustainable development.

The Center for Serve-Learn-Sustain therefore assembled a team of campus and community stakeholders called the [Equity Petal Work Group](https://serve-learn-sustain.gatech.edu/living-building-challenge-equity-petal-work-group). Together that group has set a more focused equity agenda specific to the history, needs, and challenges faced by Georgia Tech and its Midtown neighbors. As of summer 2018, the group has completed two white papers, outlining equity recommendations for [course programming](https://drive.google.com/file/d/1nn6VUTTb1apj5NMoRmvbsnybfcWYcg6n/view?usp=sharing) and [staffing](https://drive.google.com/file/d/16ks-HxaGZpEdURAUmae90pZ71fu9Wi7E/view?usp=sharing) in the building, built around four primary equity objectives:

“1) prioritizing local hiring, 2) creating a welcoming building culture, 3) building safe physical pathways to neighboring communities, and 4) formally engaging hourly staff in our student development and education work as part of their jobs” (Center for Serve-Learn-Sustain).

Two initiatives have already launched to meet these objectives:

1. the [Living Building Equity Champions](http://www.csdi.gatech.edu/living-building-equity-champions), a group of undergraduate ambassadors for the building
2. a [Sustainable Undergraduate Research Fellowship](http://sustainability.gatech.edu/surf) (SURF) dedicated to conceiving projects that highlight the Kendeda Building’s sustainability objectives, efforts and achievements.

**Sound and Equity in the Kendeda Building**

If you are interested in using the KB Sound and Equity adaptation of the Smart Cities kit, you should begin by familiarizing your students with issues of visual and hearing impairment. Accessibility for people with a hearing or visual impairment is the primary connection between sound and equity in any building: visual signage, for example, should communicate with equally compelling sound; every major sonic event in the building should be translated into an equally compelling visual form. Even the complex menu navigation on interactive screens should have a sonic equivalent. Indeed, that is the focus of Georgia Tech psychology professor Bruce Walker and his [Sonification Lab](http://sonify.psych.gatech.edu/).

Though it points to the most direct connection between sound and equity, accessibility is not the only significant connection between the two. A hearing person’s brain processes sound so quickly that sound influences all the other senses (“[How Sound Shaped](https://www.npr.org/sections/health-shots/2015/09/10/436342537/how-sound-shaped-the-evolution-of-your-brain)”). It follows that for a hearing person, the sounds in a given space—for example, a room or area in a Living Building—shape their experience of that space. As soon as they cross from one space into another, they ask and answer a series of unconscious questions: Is this the right place? Am I safe? Do we belong here? These last two directly address two of the Equity Petal Work Group’s objectives for creating a welcoming building culture and ensuring safe pathways to and from surrounding communities.

Before playing the KB Sound & Equity Game, make sure to familiarize your students with the concepts of [soundscape](http://www.simonandschuster.com/books/The-Soundscape/R-Murray-Schafer/9780892814558) and “[acoustic arenas](https://mitpress.mit.edu/books/spaces-speak-are-you-listening).” Paying close attention to these aspects in the Kendeda Building is a powerful tool for working toward the Equity Petal objectives.

**References**

Center for Serve-Learn-Sustain. “Living Building Challenge—Equity Petal Work Group.” Serve-Learn-Sustain, Georgia Tech, 2018, serve-learn-sustain.gatech.edu. Accessed 7 Aug. 2018.

Center for Student Diversity and Inclusion. “Living Building Equity Champions.” Institute Diversity, Georgia Tech, 2018, www.csdi.gatech.edu/living-building-equity-champions. Accessed 7 Aug. 2018.

Edelstein, Ken. “Georgia Tech Aims to Exceed Living Building Equity Goals.” Living Building Chronicle, Kendeda Fund, 26 June 2017. livingbuilding.kendedafund.org. Accessed 7 Aug. 2018.

International Living Future Institute. Living Building Challenge 3.1 Standard. International Living Future Institute, 2016.

“Living Building Dashboard Pilot Project.” Brook Byers Institute for Sustainable Systems, Georgia Tech, 2018, sustainability.gatech.edu/surf. Accessed 7 Aug. 2018.

McQuay, Bill. “How Sound Shaped the Evolution of Your Brain.” Health News from NPR, NPR, 10 Sept. 2015.

**Activity Instructions and Optional Pregame Assignment**

Ask students to study and respond to the LBC Equity Petal readings below. Response can take the form of group/small group discussion, a writing assignment, or some other activity of your design.

* Living Building Challenge “[Equity Petal Intent](https://living-future.org/lpc/equity-petal/)”
* SLS [Equity Petal Work Group](https://serve-learn-sustain.gatech.edu/living-building-challenge-equity-petal-work-group)
* [Living Building Chronicle](https://livingbuilding.kendedafund.org/) by Ken Edelstein

Download the [Smart Cities Activity Instructions](https://serve-learn-sustain.gatech.edu/sites/default/files/images/student_activity_instructions.docx) or [KB Sound and Equity Game Instructions](http://sls.gatech.edu/sites/default/files/documents/Toolkit-Docs/kb_sound_and_equity_game_instructions.pdf). If you are creating your own Kendeda Building game, adapt the Smart Cities Activity Instructions to your course needs. Distribute the Instructions to students *before* game day.

**Optional Assignment: Make Stakeholder and Scenario Cards**

1. Divide the class into **groups of 3–5 and distribute the Smart Cities Kit’s digital templates for Stakeholder and Scenario cards.**
2. Task each group with researching Tech’s strategic plan and the Kendeda Building’s program and certification parameters as well as pertinent environmental, architectural, or policy aspects of equity that interest the group.
3. Based on this research and using the Smart Cities and Living Building Kit decks as a model, each group must c**reate one set each of nine (9) Stakeholder Cards and nine (9) Scenario Cards for the game.** Using the digital templates provided (nine cards per page), create simple but evocative visual icons for the stakeholders and scenarios your group has chosen. Students must print their cards on card stock and cut the cards out.
4. Groups may draw/design their own icons or take advantage of free icon libraries such as (but not limited to) [Flat Icon](https://www.flaticon.com/) or [Iconfinder](https://www.iconfinder.com/free_icons).
5. Groups submit a References list of the sources they consulted in researching stakeholders and scenarios. Include citations of the icon libraries you use.
6. **Instructors: Select out the usable cards and shuffle them together in two decks for distribution on game day.**

**Discussion Questions**

Download the [Smart Cities or Kendeda Building Discussion Questions](http://sls.gatech.edu/sites/default/files/documents/Toolkit-Docs/kb_sound_and_equity_discussion_questions.pdf) and adapt them to the sustainability focus of your course.

Discuss in class after game play or assign as written homework to continue discussion in the following class period.

**Optional Postgame Research Assignments**

**Abstract and Annotated Bibliography**

Here are two versions of this assignment, which emphasizes the process stages of research and composing an argument. The first version prepares students to recognize equity issues in the scenarios they build during the game. The second asks students to test their insights against research about the issues they identified while playing the game. A third option is to assign the second version as an extension of the first.

**Version 1: The LBC’s Equity Petal Track Record**

Research a Living Building project other than Georgia Tech’s [Kendeda Building](http://livingbuilding.gatech.edu/) or the Tūhoe’s [Te Kura Whare](http://www.ngaituhoe.iwi.nz/te-kura-whare). Use the Price Gilbert Library’s databases as well as authoritative sources on the web.

Compose a 200- to 250-word abstract for an essay that develops a claim about whether the chosen building successfully meets the Equity Petal performance requirements of the *Living Building Challenge 3.1 Standard*.

**The abstract** should:

* establish the field of debate around the specific equity issue;
* assert a claim as a position in that field of debate;
* preview the sources and methods the projected essay will use to support the claim;
* assert the significance of the position by applying it to the equity objectives of Georgia Tech’s Kendeda Building.

Supplement the abstract with an **annotated bibliography** that cites, paraphrases, and assesses the value of three (3) sources previewed in the abstract. These sources do not have to be directly related to the building your claim is about but can address any aspect of the argument.

* One (1) of your sources must be taken from the course readings; one (1) must be selected from the resources page; one (1) must be a secondary peer-reviewed source located via the library’s collections.
* Each bibliographical entry should follow MLA style for Works Cited documents.
* Each annotation should consist of a 250- to 300-word paragraph that: 1. strategically paraphrases the source’s argument and methods; and 2. asserts the value of the source to the argument described in the abstract.

**Version 2: Equity Scenarios in the Kendeda Building**

Based on the insights and questions that arise from the equity scenarios you built on game day, single out one scenario as a case study in an equity issue you are particularly interested in. Use the Price Gilbert Library’s databases as well as authoritative sources on the web to research that issue and its application in the Kendeda Building, Georgia Tech, and its Midtown neighbors.

Compose a 250- to 300-word abstract for an essay that develops a claim about the equity issue your case study reveals in the Kendeda Building.

The **abstract** should:

* establish the field of debate around the equity issue your case study illustrates;
* assert your position on the issue raised by the case study;
* preview the sources and methods the projected essay will use to support the position;
* declare the significance of the position for achieving a specific equity objective in the Kendeda Building.

Supplement the abstract with **an annotated bibliography** that cites, paraphrases, and assesses the value of three (3) sources previewed in the abstract.

* At least one (1) source must be a scholarly secondary source located using the library’s collections, databases, and resources.
* Each bibliographical entry should follow MLA style for Works Cited documents.
* Each annotation should consist of a 250- to 300-word paragraph that: 1. strategically paraphrases the source’s argument and methods; and 2. asserts the value of the source to the argument described in the abstract.

**Interactive Equity Tour of the Living Building (Note: this assignment requires a Georgia Tech-hosted WordPress website).**

**For instructors:**

1. Divide the class into groups of 4-5 and task the groups with creating a multimodal tour of opportunities and obstacles to fostering equity for specific stakeholders throughout the Kendeda Building. Sample tours can be found [here](http://blogs.iac.gatech.edu/archsound/) and [here](http://blogs.iac.gatech.edu/soundarch/).
2. If your course already uses a WordPress site, change your students’ user status to “editor” from the User menu (person icon) on your site’s WordPress Dashboard. Students then create their Draw Attention tours by navigating to the Draw Attention icon on the Dashboard. Otherwise, students can create their own WordPress blogs specifically to host their Draw Attention tour. Students may create their own WordPress blog [here](http://blogs.iac.gatech.edu/wp-signup.php).
3. Contact Steve Hodges, director of IT for Ivan Allen College, with questions about installing and using DrawAttention.

**For students:**

In your groups, create a multimodal tour of opportunities and obstacles to fostering equity for specific stakeholders throughout the Kendeda Building. Sample tours can be found [here](http://blogs.iac.gatech.edu/archsound/) and [here](http://blogs.iac.gatech.edu/soundarch/).

Select a specific Kendeda Buliding equity objective to organize and focus the tour. Take the objective from the LBC Standard, the Equity Petal Work Group, or one of your group’s choosing.

Develop and compose a complex claim that takes a position on the Kendeda Building’s potential to achieve that chosen equity objective.

Support that complex claim by mapping five (5) case studies, or scenarios, throughout the Kendeda Building that illustrate the opportunities or obstacles to meeting the chosen equity objective. Use the participatory design game as a foundation and draw on insights from your own research, course readings, and in-class lectures.

Present your argument in the form of a (modestly) interactive 5-stop tour using the Draw Attention plug-in in WordPress (either on your course website or by creating your own site [here](http://blogs.iac.gatech.edu/wp-signup.php).

On the Draw Attention image home page, frame the tour with a 250-word introduction that:

* defines key terms;
* establishes the field of debate around the group’s chosen equity objective;
* cite at least one primary or secondary source to authorize the key terms and field of debate;
* asserts the group’s position on the potential for achieving that objective in the Kendeda Building;
* speculates an appropriate stakeholder response to the opportunities and obstacles presented in the group’s tour;
* append a Works Cited list that gives in alphabetical order every source referenced throughout the tour (introduction and stops).

Annotate each tour stop with a 200- to 250-word description of the case study/scenario that takes place at that location.

* Draw on at least one (1) authoritative primary or secondary source to support the group’s analysis of the equity issue represented by the case study/scenario.
* Include an appropriate image at each tour stop: either a photograph of a similar location elsewhere on campus OR a screen shot from the [Network Dynamics Lab](http://ndl.gatech.edu/?page_id=69)’s 360-degree tour app of the Kendeda Building. Contact [Dr. Neda Mohammadi](http://ndl.gatech.edu/?page_id=69) in the NDL to coordinate a time for the students to take the tour and gather screen shots.

All groups members submit their work by pasting the link to the published tour on Canvas.

**Resources for Further Reading and Listening**

Blesser, Barry, and Linda-Ruth Salter. Spaces Speak, Are You Listening? Experiencing Aural Architecture, MIT Press, 2007.

Boyer, David. North Shoreline and Space Park Way. *[The Intersection](http://www.theintersection.fm/%22%20%5Ct%20%22_blank)****,* season 2,** KCRW and NPR, 2017–18, <http://www.theintersection.fm/mountainview>. Podcast.

 “Georgia Tech—Living Building Species.” iNaturalist, 2018, <http://www.inaturalist.org/projects/georgia-tech-living-building-species>.

Horowitz, Seth. “Spaces and Places: A Walk in the Park.” The Universal Sense: How Hearing Shapes the Mind, Bloomsbury, 2013, pp. 24–46.

Kimmelman, Michael. “Dear Architects: Sound Matters.” New York Times, The New York Times Company, 29 Dec. 2015.

Krukowski, Damon. Ways of Hearing. Showcase, season 2, Radiotopia, 2017, <http://www.radiotopia.fm/showcase/ways-of-hearing>. Podcast.

Rasmussen, Steen Eiler. Experiencing Architecture. 2nd ed., MIT Press, 1964.

Thompson, Marie. “Acoustic Ecology, Aesthetic Moralism, and the Politics of Silence.” Beyond Unwanted Sound, Bloomsbury, 2017, pp. 87–126.

SLS Student Learning Outcomes

1. Identify relationships among ecological, social, and economic systems.
2. Demonstrate skills needed to work effectively in different types of communities.
3. Evaluate how decisions impact the sustainability of communities.
4. Describe how to use their discipline to make communities more sustainable.\*

\* *Note:* SLO 4 is intended to be used by upper division, project-based courses such as Capstone.