

AIAS | **FREEDOM  
BY DESIGN  
LIVE**



FREEDOM BY DESIGN

THE AMERICAN INSTITUTE OF ARCHITECTURE STUDENTS  
an independent, student-run, non-profit organization

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In honor of the 15th anniversary of the AIAS Freedom by Design Program, the 2019-2020 Freedom by Design Advisory Committee compiled every documented and completed Freedom by Design Project since 2004 and ranked them according to how ambitious the project was, the final quality of the project, and the project's impact on its community. In conjunction with the 2019 AIAS Honor Awards, we recognized 15 projects and their schools for their contribution to the history and legacy of Freedom by Design! Those awarded include:

- Bruner's Backyard by University of Kansas (2008)
- Ramp I and II by Syracuse University (2011)
- Garden of Hope from Roger Williams University (2014)
- Courtyard Renovation by New Jersey Institute of Technology (2014)
- Chantilly Montessori Elementary Playhouse by University of North Carolina – Charlotte (2015)
- Patrick Cole's Patio and Ramp by North Dakota State University (2017)
- Pendleton Ramp Project by Clemson University (2017)
- Uptown Baptist Church Signage by Illinois Institute of Technology (2018)
- Water Table Project by North Carolina State University (2018)
- Casa de Luz by University of Nevada – Las Vegas (2019)
- Cherie's Ramp by Texas A&M University (2019)

We invited our largest Freedom by Design Sponsors, NCARB and Benjamin Moore, and the Founder of Freedom by Design, Brad Buchanan, to choose their favorites:

- NCARB's Favorite Project: Brown Home Repair by University of North Carolina – Charlotte (2009)
- Benjamin Moore's Top Pick: Galaxy Garden by Ryerson University (2019)
- Founder's Favorite: Weatherization Kits by Carnegie Mellon University (2018)

The kicking off of more many years of incredible FBD Projects was made even more special by Ryerson University's FBD Program! Their team, led by Marwa Al-Saqqar and Kathleen Crisol, inspired everyone coming to FORUM to bring fabric with them so that we could all make pillows, quilts, and blankets for Yonge Street Mission (YSM), a non-profit that is working to end chronic poverty by responding to immediate needs and helping move from surviving to thriving. Check out the highlights on @fbdryerson on Instagram to see the full scoop! A huge thank you to everyone who participated in that effort; because of your work, Ryerson's FBD Program was able to donate 5 blankets and quilts and many pillows to YSM.

This season of celebration has given the National Office, the FBDAC, the FBD Live Task Force, and all of us, a chance to reflect on what we can learn from Freedom by Design and how we can make its spirit of service synonymous with our architecture. As we walk forward into a critical decade of climate and social change, we carry with us everything we've loved about this program and those who participate in it. It's hard to sum up such a journey that lies both behind and ahead of us, without rededicating ourselves to the ideal that we began with 15 years ago:

**"What do we live for if not to make life less difficult for each other?" – Mary Ann Oliver**

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In the summer of 2019, the AIAS hosted our first FBD Live: a year-long project that begins in the days before Grassroots and allows passionate students from across the country to work together on the designing and building of a real project. The theme of the inaugural event was aimed at educating students and the community about sustainable design.

Partnering with LEAFhouse, University of Maryland students, and AIA Potomac Valley, the goal was to expand their current site to grow into a demonstration facility. The hope is that the LEAFhouse site will turn into a place where the public, designers, and policymakers will be able to come and learn in real time about the design and implementation of systems such as rain barrels, native plantings, vegetative solar shades, and stormwater management. We hope to grow all these individual activities into a broader concept that would create a vibrant, full-time combination of scholarship, research, testing, discussion, and demonstration at the 3 ½-acre site LEAFhouse occupies, with a singular focus on answering the question, “What

is ‘sustainability’ and how can we achieve it?” This concept, which we refer to as SPARC - Sustainability Park and Academic Research Center, could be the first facility of its kind.

This space and the surrounding green area serve as a meeting and event place for the Sustainability Cooperative at the University of Maryland, known as SCoop, and the many different sustainability-oriented groups that comprise it like their AIAS chapter, Engineers Without Borders, the American Ecological Engineers Association, and more. It is their hope and vision to turn this area into a space where more people can come to learn more about sustainable lifestyles and technologies through demonstration sites and other features.

Mr. Bo Green, the president of PVAf, started the day off by giving a tour of the facilities and explaining the conception of SPARC and the vision for what it could be.

Our first of three charette sessions that day focused on reevaluating the 3.5 acres

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<b>7:30 AM</b>	Depart Fairmont DC Hotel
<b>9:00 AM – 9:30 AM</b>	SPARC Site Walk
<b>9:30 AM – 10:30 AM</b>	SPARC Site Charette
<b>10:30 AM – 12:30 PM</b>	Live Demonstrations from: Landscape Design SolarEnergy Water Collection Waste Management Rammed Earth Algae Studies Engineers Without Borders American Ecological Engineering Society (AEES)
<b>12:30 PM – 1:15 PM</b>	Lunch provided
<b>1:15 PM – 2:15 PM</b>	Small Group Charettes
<b>2:15 PM – 3:00 PM</b>	Charette Presentations and Discussion
<b>3:00 PM – 3:15 PM</b>	Break
<b>3:15 PM – 4:00 PM</b>	Large Group Charette & Discussion
<b>4:00 PM – 4:30 PM</b>	Next Steps & Wrap Up
<b>4:45 PM</b>	Depart for Hotel
<b>6:00 PM</b>	Arrive at Hotel

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of the site and the “rough draft” design plan that had been drafted by PVAF about a year prior. The group divided up naturally and proposed many interesting ideas for what could be added to the plan keeping in mind the environmental factors from a student perspective. Many of the ideas called for a community style arrangement while others focused on the interactive programs that could be implemented, but mostly, they were focused on the site’s access and appeal and how sustainability and architecture could be combined in.

Despite the heavy heat that day, the participants excitement to check out the various demonstrations put up around LEAFhouse was not burnt away. These demonstrations displayed different sustainable technologies and productivity of sustainable engineering and construction. Each vendor took a turn presenting their findings and products that are currently changing the face of sustainable practices and furthering their potential. The participants were inspired to learn about these new technologies and student investigations such as Living

Canopies, algal turf scrubbers, solar powered water fountains, ROCKWOOL, and other studies.

Following the demonstrations, we got back to designing the SPARC plan. The next phase was to brainstorm what exactly would be the most reasonable and strategic first phase to install within a year. The groups revisited ideas from the first charette in their proposals for this phase such as installing a pedestrian path, materials shed, water collection, a farmer’s market space, bus shelter, bird houses, information center, bee hives, community gardens, etc. as great first moves to really introduce the space to campus and community. Since the site is on the edge of campus and currently the most prominent obstacle is getting people to the LEAFhouse, we determined that the bus shelter and pedestrian path were the most sensible first moves and we proceeded to split up into two groups and create some rough conceptual sketches for both options. The group working on the bus stop imagined a trellis/gazebo type structure bus shelter that combines

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water and solar collection. The path group was curious about how to design an interactive shade structure that combines with bike storage and shading and seating. The conversation was clearly directed in structures and programs that are multifunctional and responsible to the environment. Each charette that day was packed with lots of creative thinking and energetic discussion as we considered sustainable methods for influencing the campus.

This day inspired our visiting FBD leaders to come back to their campuses with the enthusiasm to create and emphasize sustainable movements on campus and in their local communities through architecture. The team continued to operate as a task force to work towards accomplishing their project goals: a pedestrian/bike path and bus shelter.

The AIAS had hoped to continue FBD Live during the 2020-2021 academic year with a similar day-long event where students from across the nation and those from UMD would come together to install the

first phase of the SPARC project and continue planning and designing the next phase.

# THE TEAM

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Elizabeth Ott  
University of Tennessee Knoxville

Max Skoglund  
University of Maryland

Adam Gregory Fogel  
2019-2020 AIAS Vice President

Alex Pena  
University of Maryland

Alison Katz  
Carnegie Mellon University

Annaelle Arnold  
University of Maryland

Carlos Bucio-Marin  
University of Maryland

Dania Darra  
UAE - Dubai

Emilie Berman  
University of Maryland

Jake Mast  
University of Maryland

Jennifer Pineda  
University of Maryland

Justin Trammell  
University of Colorado Denver

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Katherine White  
University of Texas Arlington

Lauren Craig  
University of Arizona

Nada Aziz  
Mississippi State University

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AIAS National Office

# TESTIMONIALS

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The FBD Live event was inspiring. It was great to see so many people interested in being a part of the project. I think had there been more work done ahead of time to better understand what we could actually do, this energy could have been harnessed to create a very clear plan for what the next steps should be.

The FBD Live team was much smaller. From my perspective, those who were actually at UMD were our most useful assets, but it seemed that at times this project was put on the back burner (I am definitely guilty of this), and therefore super important details like who actually owns the land, and the politics of the university slipped through the cracks. Since there is an FBD at UMD, I think they should have been directly involved with this project, the fact that they were not was a red flag to me. I think those who were constantly involved already had a lot on their plate, and the involvement of others whose main focus was FBD Live would have been helpful. In the future I think a local FBD chapter should be involved and be responsible for the boots on the ground work. I think FBD Live should be an augmentation of their efforts, not separate from the local chapter altogether.

I think the experience was really helpful, and we all learned a lot through the mistakes that have been made. I hope that in the future we can build off of the progress we have made, do a better job at engaging the large student body at UMD (for this project specifically) and retain more general AIAS members within the FBD Live team so that we have more perspectives involved. I think this project was ambitious, but I would have preferred to see something more community based as a project. I think the FBD Live project should be an example of the impact one can have on the community, and I think there were aspects of this that were really exciting but maybe not doing it on a college campus would have more potential for impact. (Any FBD group who has asked me if they should focus on campus vs. off campus knows I push hard for off campus community engagement.)

**Alison Katz**  
**Carnegie Mellon University**

# TESTIMONIALS



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Going into the one day charette at SPARC and seeing LEAFhouse and reACT, I was eager to learn about the sustainable design strategies employed at the campus and was optimistic about the wide range of projects that could be designed to make SPARC and LEAFhouse more accessible. As the day went on we heard all the great visions, AIA Potomac Valley, SCOOP, and the University of Maryland had for SPARC. So many great ideas, but some people kept gravitating towards a bus stop which didn't make a lot of sense given the mission and goals of the park. In a few months, I would find out why this was "so important".

The charette was fun (the heat not so much, but we got through it) informative and different from anything I had ever participated in before. Just being able to connect with 9 other students from across the world who initially only shared the connection of being an architecture students and being a part of FBD.

When the meetings started during the school year it seemed like we were starting from scratch, no solid ideas as to what should happen but a bus stop kept coming up and for that reason we went with it. But it seemed clear that no one believed what we were designing was the right thing for this park or campus. To me, FBD is all about building communities and not projects and this task force seemed very focused on building projects just so an organization can say they did it. When all the information came out about the bus having to be a temporary, not for sustainability and re-purposing reasons but so SPARC/SCOOP could utilize the

structure in a different way made me lose all faith in our committee and what we were charged to do. Reflecting on the committee itself, I feel that we let members slide too much when it came to participation. We'd have a great conversation with 5 people and have a solid direction to go but the next meeting there would be members who hadn't shown up in a long time arguing about the decisions the group made when they chose not to be a part of the discussion.

With all of that aside, I believe we accomplished a tremendous amount of work given that this was an additional project on top of studio, our own FBD Projects, and that it was all done remotely from one another. I think this task force can serve as a prime example of the do's and don'ts of conducting FBD online as chapters across the country contemplate how to conduct meaningful discussions, charettes and projects while battling the COVID-19 effects on our organization's mission.

I would like to see FBD Live to continue but instead I think it needs to be partnered with a different client, one that has a larger target group. Even if the committee just met to do live streams for FBD teams and chapters to tune into to learn about a new way to serve in this new world we are creating. I believe that this could be a really strong way to move forward, and encompass the FBD Live name in a more literal way.

**Quinlan McFadden**  
**University of Nebraska, Lincoln**

# TESTIMONIALS



# FREEDOM BY DESIGN LIVE



Over the past year, being part of the Freedom By Design Task Force was a unique experience for me. As a Canadian student living and studying in the UAE, I got the opportunity to travel to the U.S. for the first time to attend the workshop in Washington D.C., and then communicate digitally with the team for the rest of the year. I gained a great insight on the approach of students from various universities and a new understanding of the struggles of implementing a built project. It has been a pleasure working with the passionate FBD team and I've made some new friends abroad!

**Dania Darra**  
American University of Sharjah

# TESTIMONIALS



# FREEDOM BY DESIGN LIVE

We began our day with an air of giddiness and anticipation and eagerness for a day of learning and experimentation and introductions of new friends. We shuttled swiftly to the site of LEAFhouse and reACT on the University of Maryland's campus to meet student leaders, leaders of professional organizations in the area, and members of the AIAS office. The day was swift, thought-provoking, refreshing from the summer's drought of thought and creativity. There were many exhibits of new inventions, new theories, new conversations under the roof of a revolutionary building. Our conversations produced many concepts and initial ideas of how to proceed during the year. We left feeling confident and empowered to make design change, no matter the circumstances. The students from across the world had many questions and were curious how we would proceed. I wondered the same things.

From there, we had a delayed reconnection a few months later and didn't kick off our group until September. We met once a month, with a clear discussion objectives and ending with deliverables for the next meeting. We had a handful of dedicated individuals who helped push the design and were active during the entire year.

Overall, it was challenging to get off the ground, as we did not leave Grassroots with a clear design goal. Therefore, we spent a couple of months debating what to complete this year; that was a difficult decision as we had way to many opinions at the beginning of our regular meetings and as our group thinned out, decisions became easier. However, we did not reach the decision of the bus stop until November, when we buckled down to produce presentation material for AIAS's Forum conference. Furthermore, the students

of UMD confessed that we had missed a couple of applications for permissions to even build by next summer's FBD Live and needed to be in touch with various leaders on campus to approve the project.

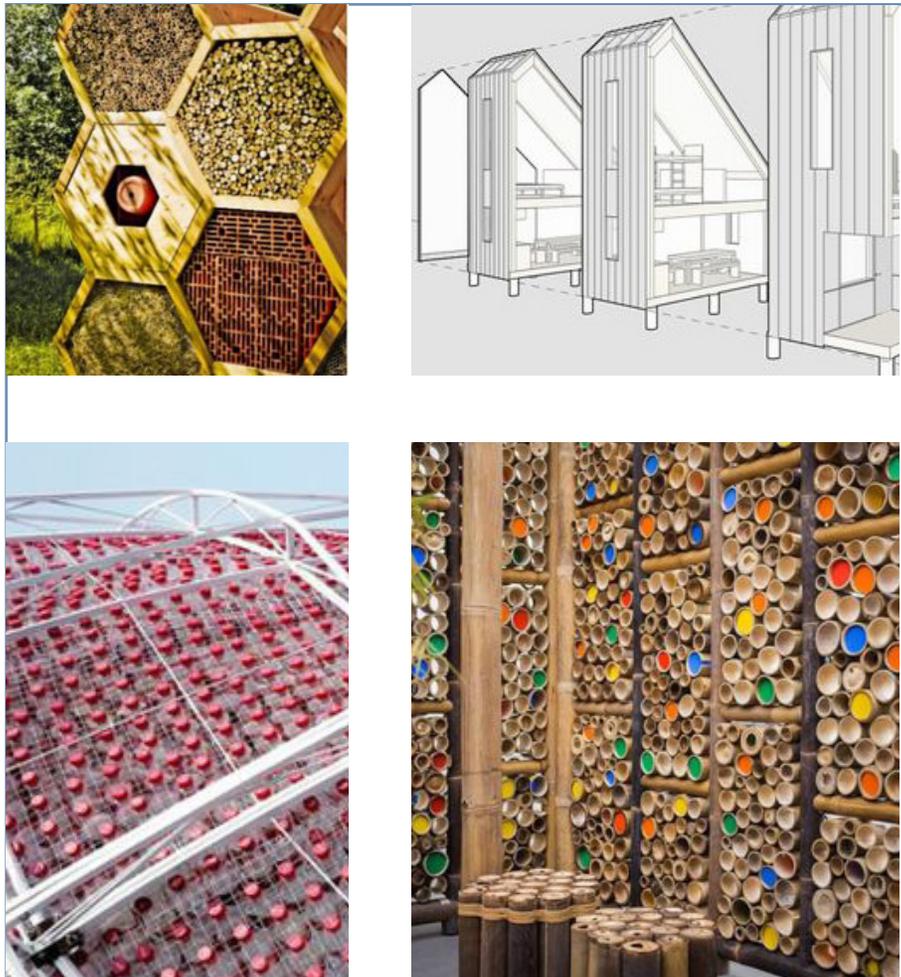
For these reasons, we realized that our project probably wouldn't be built in the summer of 2020. We decided to design to completion and have as much clear instruction and drawing as we could. And then Covid-19 hit the United States and it was clear that both the Grassroots Conference and the FBD Live design-build project would not come to fruition.

It was also unclear of the future of the project. Regardless, we wanted to be most optimistic and decide to push the design as far as we can take it. It was a great experiment and exercise to research possibilities, construction methods, concepts for paneling design, and traditional drawings. We have delivered this project as far as it can go based on the circumstances and are excited with the possibilities it presents.

In reflection, it would have been vital for those who initiated the project and canonized the concept of Freedom By Design Live in celebration of the 15th year of FBD to have specified clear objectives for the group and establish and introduce us to the key contacts for the progression of an otherwise theoretical project.

**Elizabeth Ott**  
**FBD Live Co-Chair**  
**University of Tennessee**

# PRECEDENTS



# PRECEDENTS

The initial objective once we settled on the concept of a bus stop/welcome entry was to begin looking for concepts we wanted to emulate. We looked at construction method options and ways to incorporate sustainable methods in a visible fashion.

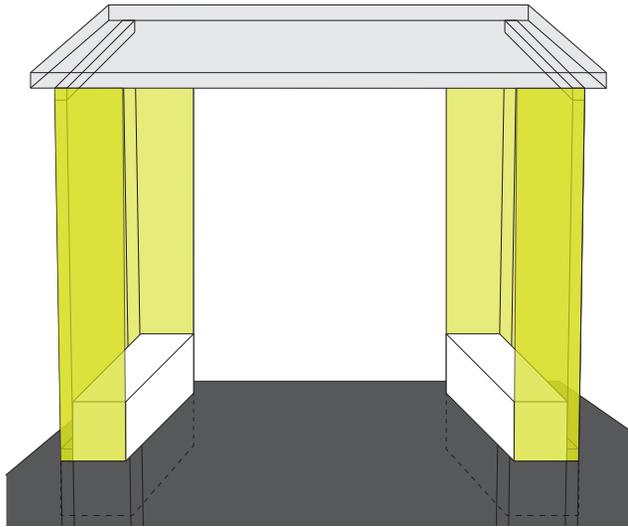
We looked at representation and methods of building installations in a modular manner. For instance, to the left you see a stackable honeycomb structure that forms a wall and visible transparency. Furthermore, we looked at examples of installations that look at repeating the same construction to form a space.

Other studies and research included methods of maximizing the panels between the structure. The images to the left represent ways of infilling the voids between the columns by using repurposed glass or cardboard. Other considerations and theories look to

using solar panels or water collection methods or corkboard newsletter space or a visible recycling space. Regardless, the panels on the walls and roof are customizable based on the changing needs or expression of the campus.

Finally, we considered options for the structure itself. Metal, lumber, concrete, or further technological construction methods were considered. For efficiency and feasibility, we are envisioning to use lumber with concrete footers and pad.

# EARLY CONCEPTS



slanted roof - repurposed material

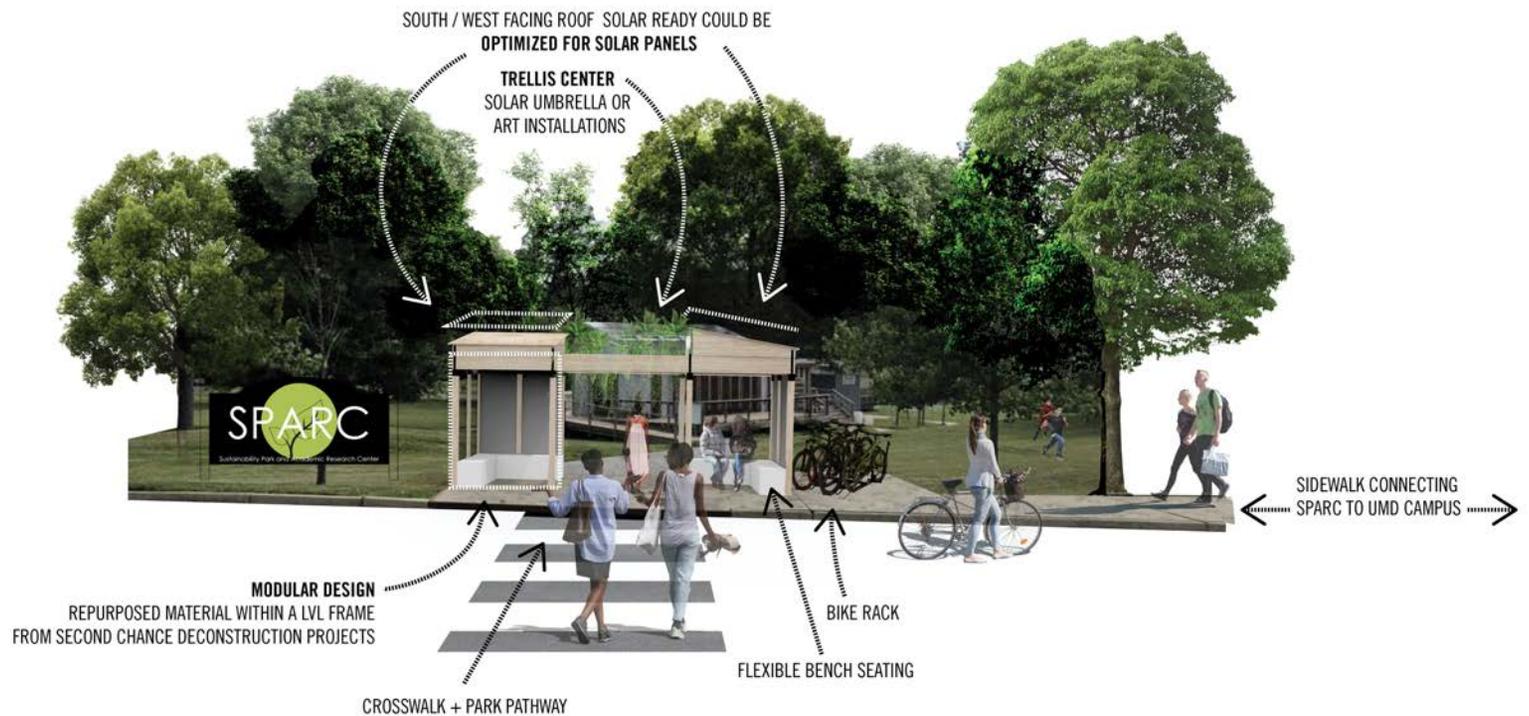
framed "bookends" - recycled panels

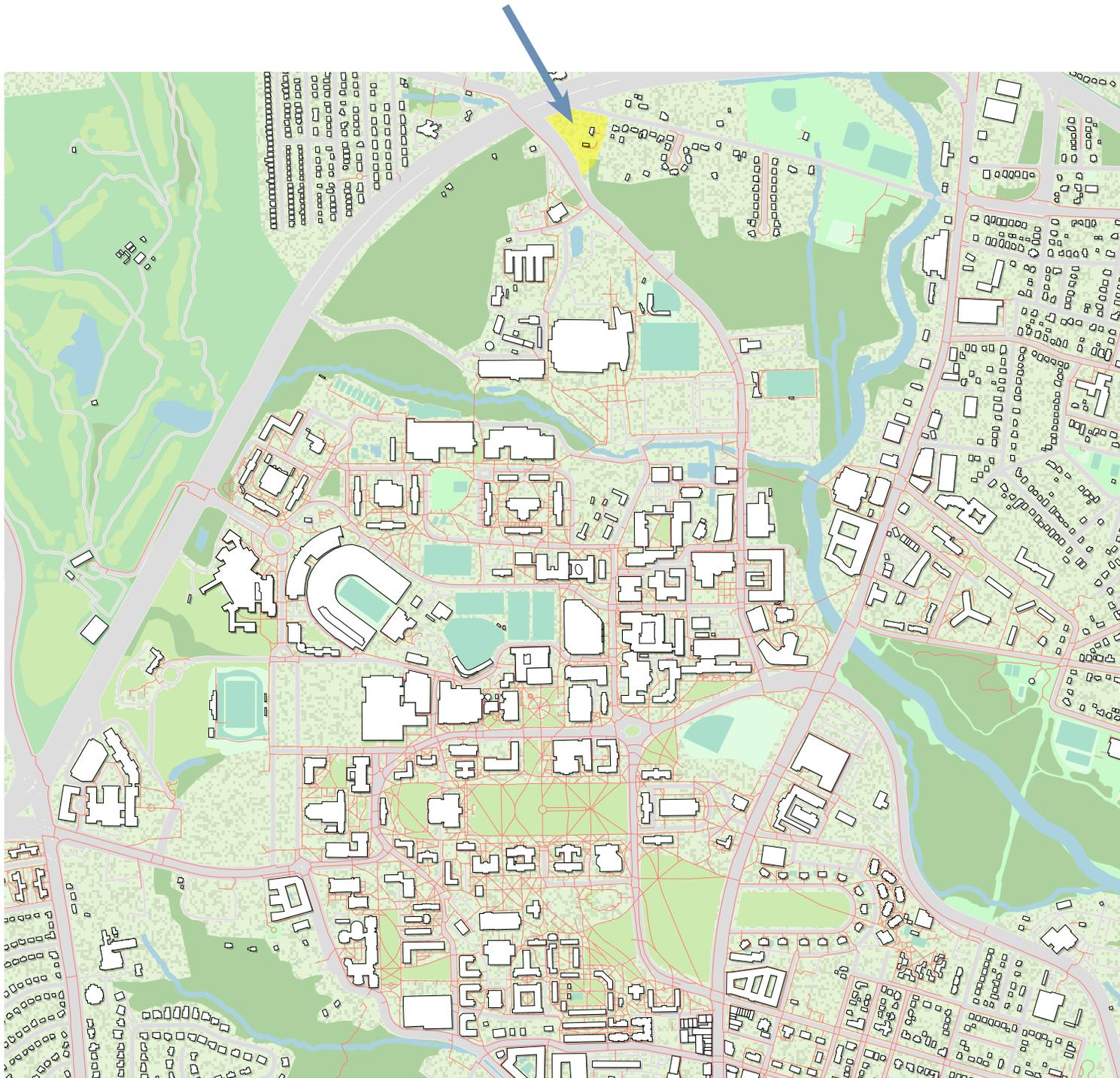
framed-in seats - anchored by formwork

some sort of layered floor substrate

# EARLY CONCEPTS

Our initial concept explored how modularity works out and how it interacts with the existing context. We strived to be non-specific but generic in our form. We wanted to understand the shape of the object and see how its potential may meet our needs.

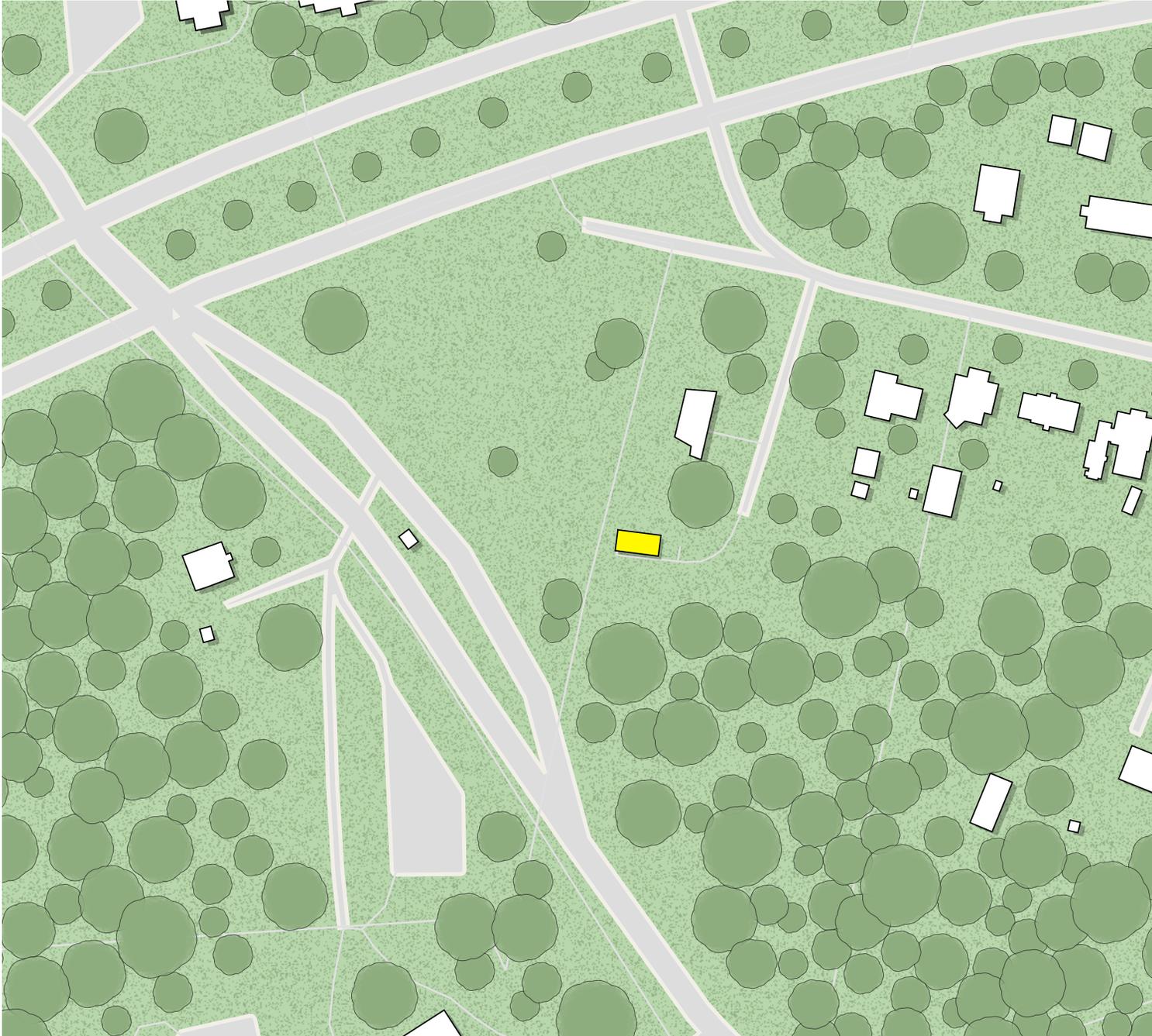




The highlighted region shows where the proposed SPARC location is in relationship to the University of Maryland's campus and surrounding neighborhoods.

# SITE

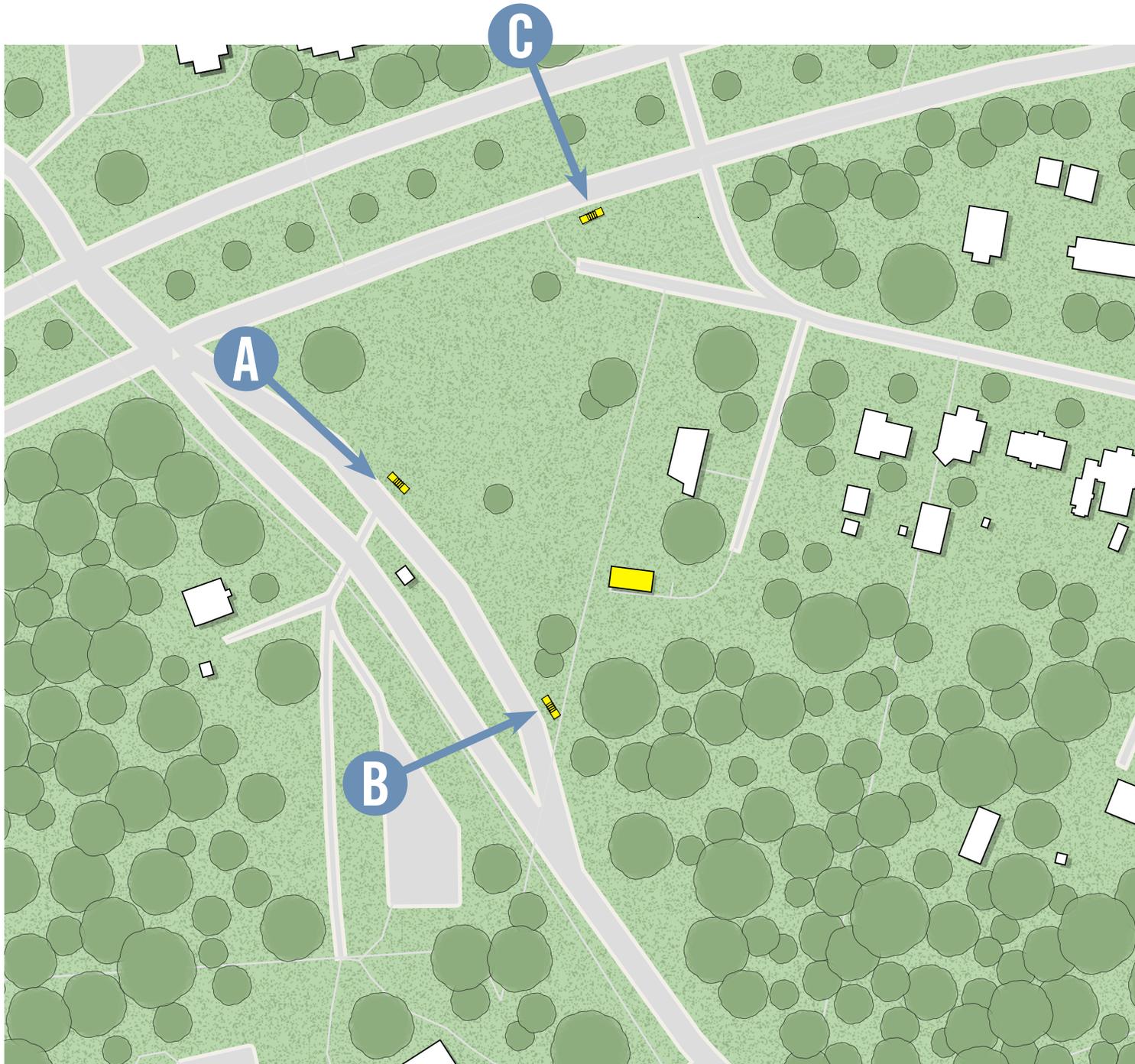
# SITE



This is a closer look on the previously highlighted space. This time, the highlighted square represents the placement of LEAFhouse - the place where we spent our FBD Live session and learned about different sustainability methods.

# PROPOSED PLACEMENTS

# SITE



Furthermore, this map explores options for the bus stop/welcome entry onto the SPARC site.

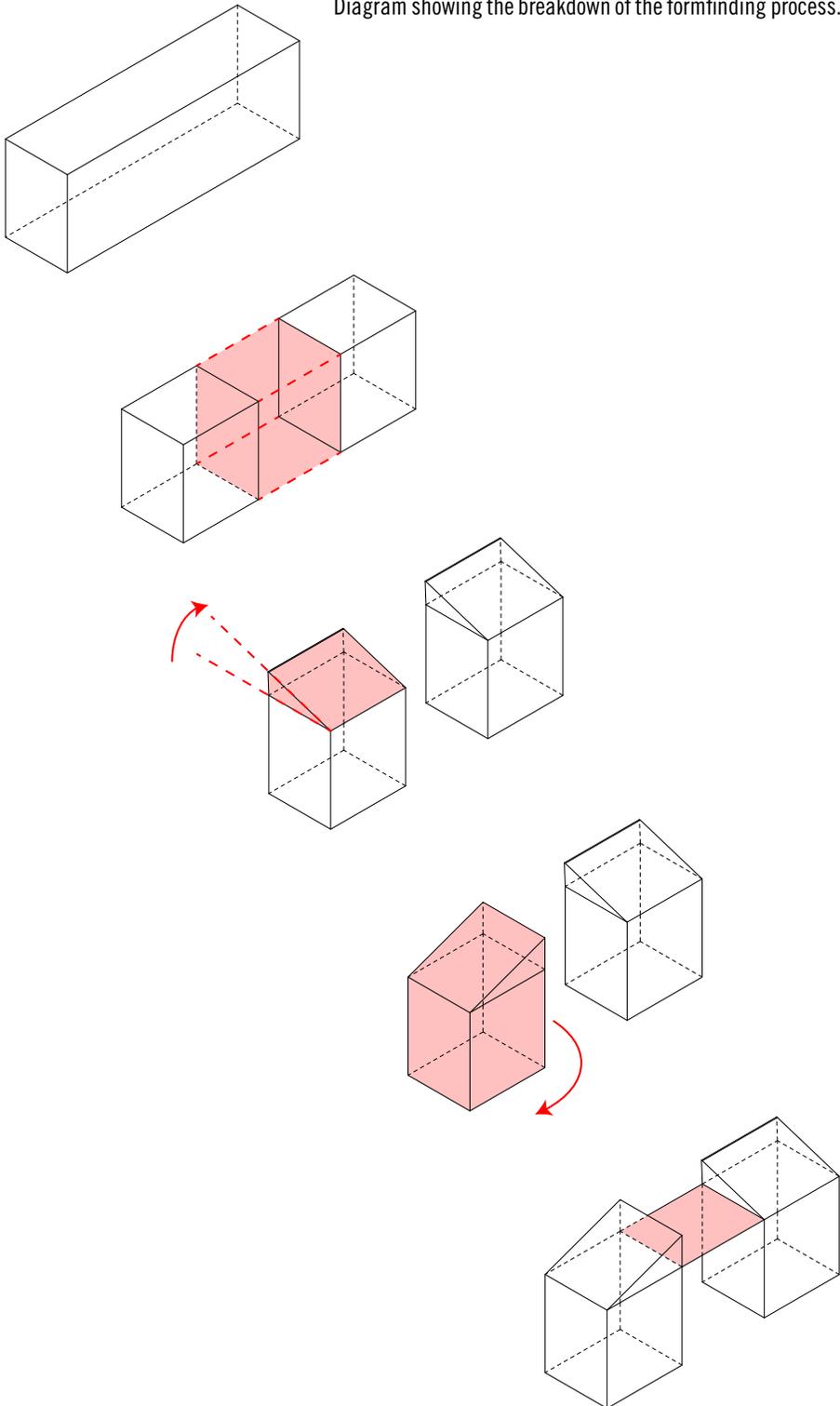
“A” is convenient to the campus parking lot across the boulevard street. This is problematic however because we would have to do serious intervention on traffic control.

“B” is placed at a natural entryway by the tree line on the existing SPARC site. However, this is far from existing street infrastructure and accessibility.

“C” is closer to the entry to the park itself where visitors can come and park. It is placed on a major thoroughfare and could be easy to incorporate into bus routes.

# KIT OF PARTS

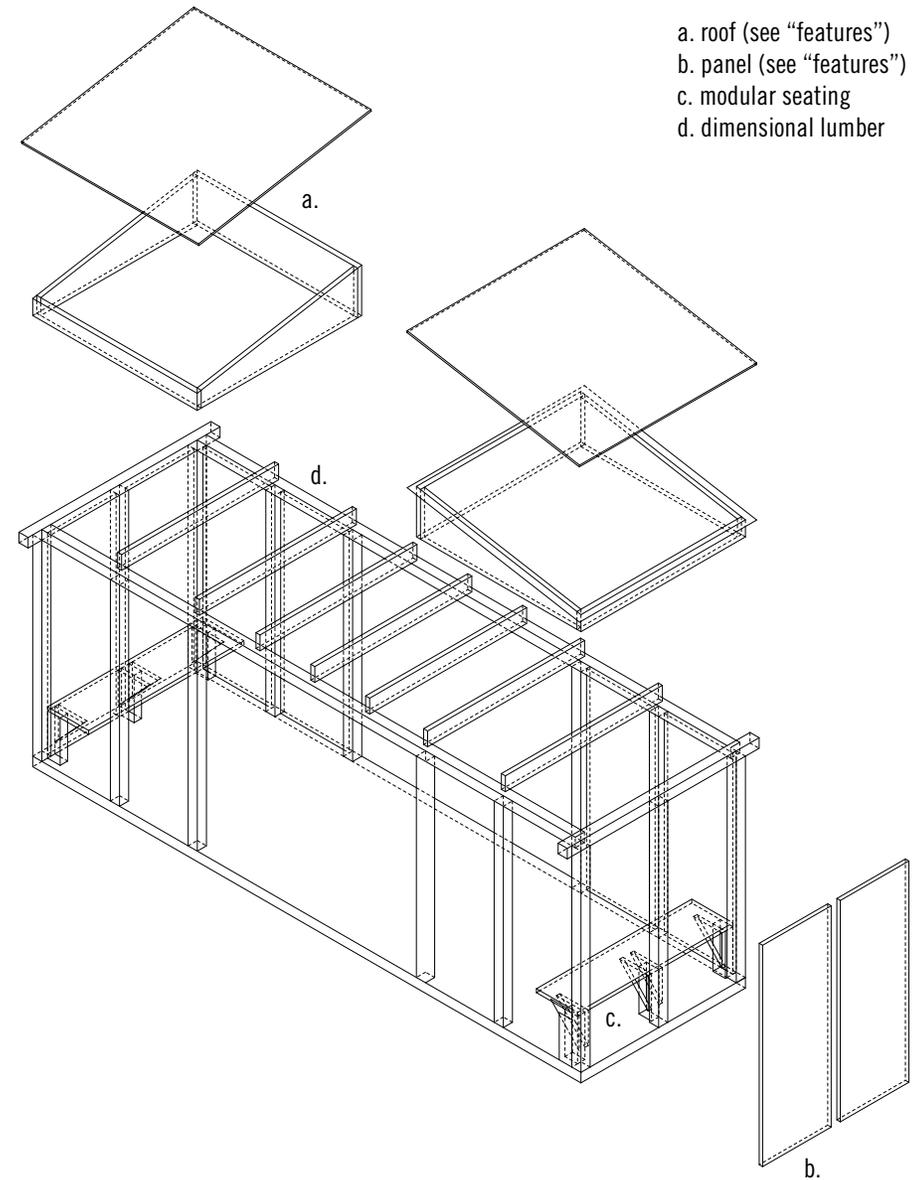
Diagram showing the breakdown of the formfinding process.



# FINAL DESIGN

KIT OF PARTS

- a. roof (see "features")
- b. panel (see "features")
- c. modular seating
- d. dimensional lumber



PANEL FEATURE OPTIONS



a. only

b. only

# FINAL DESIGN

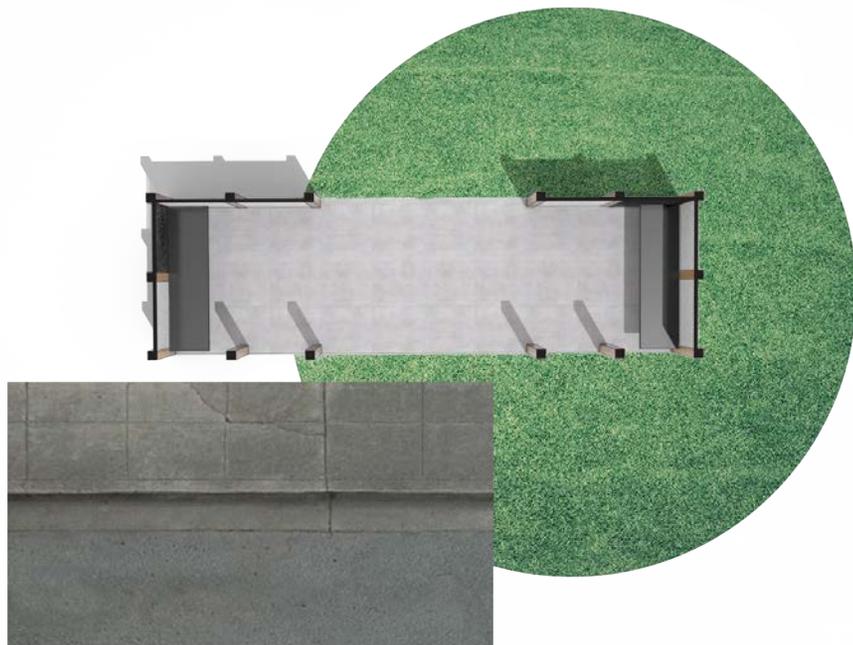
# FINAL DESIGN



Our product emerged as a modular piece with three zones. The middle zone is a pathway framed by seating and congregation points. This is with the intention that this piece becomes both a welcome entry and eventually a bus stop for the city and/or UMD's campus.

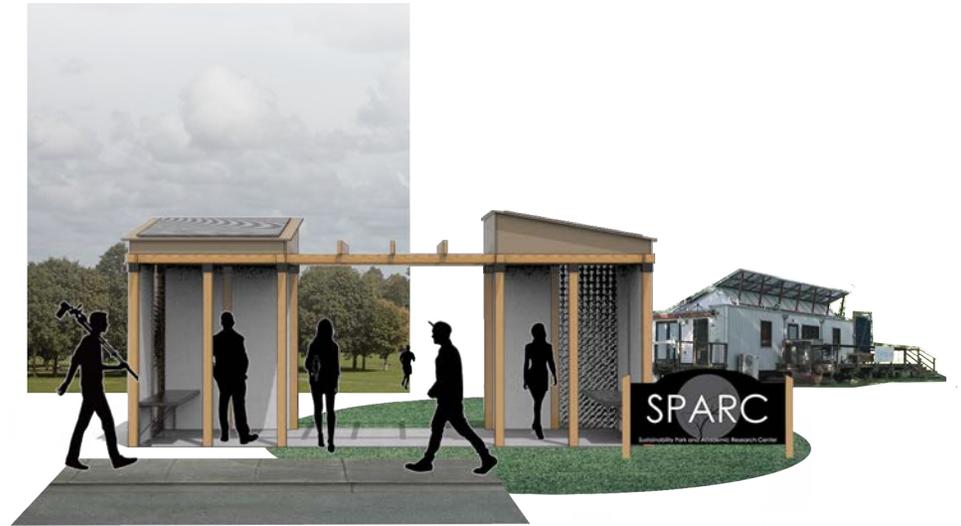
Furthermore, there are panels to infill the structure which are composed of various materials and techniques as studied in the precedent phase. For instance, one of the panels maybe corkboard to post listings and announcements. Another panel maybe composed of various recycled materials or a trellis with a climbing vine plant. These panels are also true for the roof technique, although we would prefer the roof to be more active in sustainable methods such as solar collection or water collection.

# FINAL DESIGN



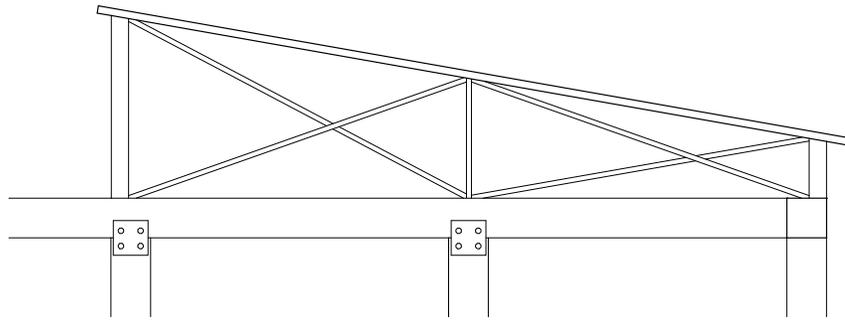
Perspective plan illustrating context relationship with surface materials

# FINAL DESIGN

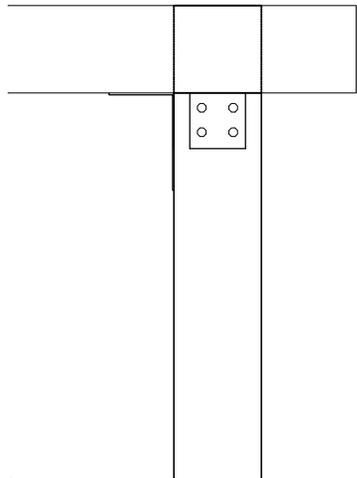


Perspective elevation with supporting context

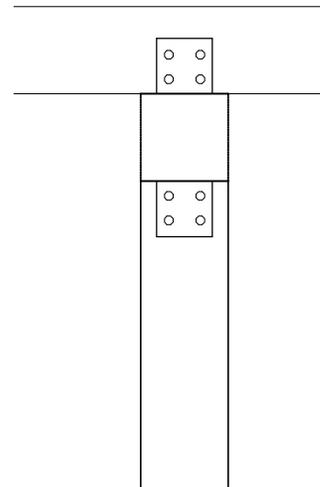
# FINAL DESIGN



a.

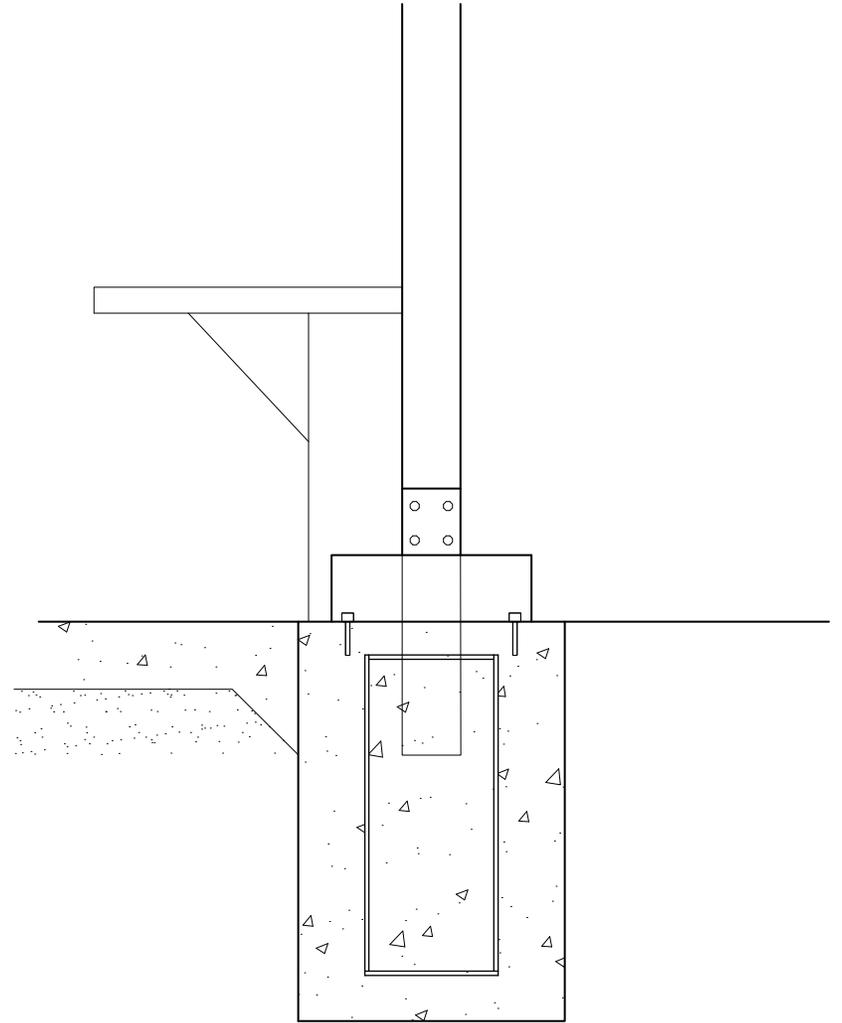


b.



c.

# FINAL DESIGN



d.

- a. Detail illustrating roof assembly and bracing techniques
- b. Detail representing the end connection of an outside column and beam construction
- c. Detail of inner column and beam construction connection
- d. Study of footing design, foundation pad and its relationship to the seating

# KEY TAKEAWAYS

# KEY TAKEAWAYS



FBD LIVE was an inspiring experiment – regardless of its success. We tested a new frontier in the Freedom By Design’s mission by exploring the possibilities of assembling a Freedom By Design team on the national scale.

We were constantly hit with problems from the project and lifestyle. For instance, we had to design and meet through digital conferencing rather than in-person charrette. This posed problems in keeping ourselves accountable and deliverable expectations for each meeting. Secondly, partly due to keeping ourselves accountable, we had difficulty holding true to a schedule and calendar. We had optimistic outlooks but proved that it was troublesome to manage realistic deadlines. This was further aggravated by the impending COVID19 quarantines and lack of

communication with leaders of University of Maryland’s campus and AIAPV. However, the most rewarding part of this was the ability to design and work with students all across the world in efforts of developing a singular project for the enrichment of a community. The conversations were profound and rigorous, looking at all sides of the impact of a design installation. We saw various precedents, representation styles, arguments for purpose of the site.

We are all grateful for the year’s study and examination and hope that this project may continue in the future.

## **The 2019-2020 Freedom By Design Live Task Force**

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an independent, student-run, non-profit organization