Ocupação Anchieta Avança!
Anchieta Occupation Forward!

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Participating University of Michigan Schools and Colleges

A. Alfred Taubman College Architecture and Urban Planning
School for the Environment and Sustainability
School of Public Health
Stamps School of Art & Design

São Paulo-based Partners

Instituto Anchieta Grajaú
Associação de Moradores Anchieta
Architect Marina Mindlin Loeb
Ocupação Anchieta Avança!  Ancheta Occupation Forward!
Executive Summary

The Ocupação Anchieta Avança! project addresses patterns of rapid informal urbanization of areas of environmental protection in cities’ peripheries in response to a lack of affordable housing options for the poor; a phenomenon emerging as one of the Global South’s most pressing issues. Through a site specific case, and in collaboration with a robust network of local partners, this project proposes new sustainable strategies of land stewardship to address the detrimental impacts informal settlements impose upon areas of environmental value in the urban periphery of São Paulo, Brazil. The lessons learned from examining the dynamics of urbanization can shed light on areas with similar trends across the Latin American geography.

This report builds on research developed during the 2017 winter semester that aims to empower residents to become agents of change in their own community and improve their quality of life. It also illustrates progress and prioritization in the project implementation in Ocupação Anchieta, a small occupation within the Grajaú District of São Paulo. The seed funding from the Dow Distinguished Award for Interdisciplinary Sustainability (the Dow Award) has been instrumental in the design and construction of the Anchieta Culture Shed in the very heart of this community. The Culture Shed is a multipurpose cultural and educational center intended to inspire residents in taking an active role in transforming their community.

In conjunction with the site’s landowner (Instituto Anchieta Grajaú, IAG), residents (represented by the Associação de Moradores Anchieta, AMA), and a larger network of local partners, our team is seeking an additional $50,000 to expand the scope of this project to include the development of a cluster of sustainable housing and infrastructure prototypes. As part of our applied research goals, we are interested in the replicability and transferability of our work. Therefore, we will allocate additional funding to host a website to disseminate a manual in making more resilient communities using sustainable practices. Our manual and website will illustrate a series of replicable principles that other social movements and associations may use to encourage citizens to actively participate in cultivating healthy environments in the context of informal settlements.

This report, Ocupação Anchieta Avança! (Ocupação Anchieta Forward!), summarizes the ongoing collaborative process, and targets interventions to improve residents’ quality of life while minimizing environmental impact and restoring the ecological functions of natural systems. The report is structured in five sections, illustrating the work in progress as well as future plans. First, we contextualize the larger urban dynamics present in the site, and offer an account of the complex network of partners involved in the project. The report describes the timeline and main achievements to date; with an emphasis on the initial component of the project, the Culture Shed. Last, we articulate the mechanisms we will use to advance and sustain the project. We also formalize our request for additional funding to the UM DOW Fellowship Program. The budget offers a detailed account of the different funding sources supporting the project so far, and plans for additional components.

The report includes letters of support from our local partners- Instituto Anchieta Grajaú (the Instituto, IAG), Associação de Moradores Anchieta, AMA), and architect Marina Loeb, all of whom are critical for the project’s development and success. Last, we include the Currícula Vitae of all team members; an interdisciplinary group representing architecture, landscape architecture, urban planning and design, art and design, and public health. We include a reference to faculty advisors, Pimentel Walker and Arquero de Alarcón, as their guidance and research continue to encourage and inspire us.
## POPULATION AND HOUSING STATISTICS

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<th>Grajaú</th>
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<tbody>
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<td>Dwellings (in millions)</td>
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<td>Dwellings in favelas</td>
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*Sources: IBGE Censos demográficos, 2010. | SMADS Secretaria Municipal de Assistência e Desenvolvimento Social*
Ocupação Anchieta (the Occupation), is a four-year old land occupation in the Grajaú district, 17 miles southwest of the São Paulo city center. This water-rich district is located between the Billings and Guarapiranga Reservoirs (key water supplies for the city) and also contains important Atlantic Forest reserves. Urban development is a primary threat to this region’s ecosystem. It has already impacted 70% of the original forest; resulting in an unstable hydrological cycle, decreased soil fertility, lack of protection from hazardous areas, and a loss of climatic balance and biological diversity. In recent decades, impoverished families migrating to São Paulo are not able to afford living near the city center. They are left with no option other than occupying available land in the city periphery. The rapid pace of urbanization strains the environment and compromises residents’ access to infrastructure and other urban services.

The Occupation began in 2013 on the property of a local non-profit, Instituto Anchieta Grajaú. Today, it is home to more than 800 families living in poverty. The property contains heavily disturbed natural springs and a seasonal creek in an area of environmental protection. To make room for the construction of the residents’ homes, the land was severely deforested. The housing units were built with a precarious sewage system, and at times illegally connected to the municipal network. These circumstances along with a lack of sufficient waste management services have posed environmental, health, and safety hazards.
Ocupação Anchieta Avança! is led by a diverse student team, and is supported by a robust partner-network in Brazil. In this setting, the collaboration between Instituto Anchieta Grajau (the Instituto, IAG) and the Associação de Moradores Anchieta (the Association, AMA) represents a unique partnership between landowner and land occupant. Their consistent dedication towards cultivating and strengthening this partnership has proven instrumental in securing the project’s future sustainability. The Instituto is a NGO founded in 1997 to provide educational, social, and cultural development services to children in need and their families. The Instituto currently runs a school for 600 children (200 of them from the occupation), hosts a wide range of social programs, and is expanding their campus onsite with the construction of a kitchen, restaurant, and health center. Through these services and their local influence, the Instituto has connected us to a wealth of local resources including volunteers, on-site managers, construction companies, and engineers. Similarly, the partnership with the Association has provided us with intimate knowledge of the residents’ needs, and strategies to prioritize components in the larger framework.

Together, Instituto and Association convene a larger network of partners addressing environmental, social and legal needs. The Instituto, as landowner, is in continuous dialogue with institutional and governmental associations to implement adequate standards of infrastructure and living conditions while also meeting environmental standards. Furthermore, the Instituto is in charge of coordinating and delegating future projects and growth that will benefit and support the development of a sustainable community. The dwellers’ Association has been an invaluable partner from the beginning because they represent the families that occupied and live on the site. The AMA has been the voice of the residents with state and civil society agents. They also coordinate educational, cultural, and health education events to build a stronger community. In this broad network, our student group is in constant conversation with the different actors to learn more about the different ways in which we can assist, and develop a strong vision for a sustainable community.

As the project develops, our team’s composition has changed to address the specific needs of our partners. The initial Dow Distinguished Award for Interdisciplinary Sustainability (the Dow Award) application was developed by 9 graduating urban planning capstone students, 11 continuing graduate architecture students, and 2 faculty advisors. During the summer, we completed a survey analysis and participated in community discussions intended to share and prioritize the recommendations developed by the original team members. To move forward, we have adapted towards an expanded network of team members, introducing multidisciplinary expertise and a unique set of skills critical to the project. Our team now includes graduate students in architecture, urban planning and design, art and design, public health, and landscape architecture. We also continue to engage our two faculty advisors as our work is connected with their larger research agenda.

We are in continuous communication with São Paulo’s local architect Marina Loeb, serving as construction manager and coordinating changes with local contractors. The Instituto’s adult educational program works with residents to teach them construction techniques. Through this program, the project is implemented by the very people who will use it and benefit from it. We also acknowledge the importance of Fluxus Ecological Design, the engineering firm coordinating plans for the decentralized sewage system. Complementing our partners’ extensive knowledge, our team brings integrated design services to advance the housing and environmental components of the project.
Tracing Time: Methods, Outcomes, and Outputs

This project began as part of graduate coursework in an interdisciplinary urban and regional planning capstone and architecture studio last Winter 2017. Led by faculty members and advisors Pimentel Walker and Arquero de Alarcón, the project builds on their research on the role of legal institutions in mediating the conflicts between citizens’ right to housing and their right to a healthy environment in the rapidly urbanizing periphery of São Paulo. Through the specific case of Ocupação Anchieta, the semester offered insights on the scale and intensity of the urban land development through informal occupations in and beyond Brazil. As we explored our agency as professionals in this process, our advisors encouraged us to take our project forward and find avenues to implement the recommendations of our initial framework.

Our first site visit took place during the 2017 Winter Semester, and was sponsored jointly by Taubman College and the UM International Institute Experiential Learning Fund. During our field studies, we documented the site and engaged with our clients, partners, and the residents to learn about the community, their aspirations, and needs. To ensure that field methods were recorded consistently throughout the project, we adopted the USAID Rapid Appraisal approach to field research, drawing on multiple evaluation methods to efficiently and systematically collect data (including door-to-door household surveys, interviews, community meetings, direct observation, soil and water testing, and drone imaging). Our team collectively interviewed the Instituto, the Association, and local architects and engineers. All of these insights were critical in our preliminary design recommendations and proposals. The engaged component of the course proved indispensable to understanding the resident’s lives, the capacity of our partners on site, and the potential for our contribution in the transformation of the site.
Throughout the rest of the semester, students developed a series of recommendations and design proposals, and the outcomes are illustrated in the framework plan of sustainable practices “inFORMA Housing and Environmental Conflicts in Informal Settlements,” available online at https://issuu.com/taubmancollege/docs/oa_book_spread. Building on the framework, we submitted the grant proposal Ocupação Anchieta Avança! to the Dow Award addressing four areas of focus: Creek and Springs, Housing and Infrastructure, Culture, and Waste Management. Concurrently with the support from the Dow Award seed grant, our team secured an additional US$25,000 from the FORD College Community Challenge. With this additional support, this past summer we have continued to work in collaboration with our local partners to establish a strategy to prioritize the implementation of critical components from the larger framework. With one of our team members in São Paulo, and the support of the rest of the team in Ann Arbor, we held a series of meetings with our local partners and further surveyed the site. Together, we have worked on co-designing the culture pavilion and its programming, budgeting, and construction supervision. We are currently in the process of transferring funds to cover the material costs of the Anchieta Culture Shed construction, which is the first component of the Ocupação Anchieta Avança’s overall initiative.

Concurrently to these efforts, we are invested in giving visibility to our project. Together with our partners, we have submitted the project to the 11ª São Paulo Bienal of Architecture and Urbanism, under the call of City Imaginary. Last, we are already planning the second phase of the project targeting housing, infrastructure and environmental stewardship with our local partners. The additional support of the Dow Award will be critical to advance this component and the creation of the platform for dissemination of the project sustainable innovations.

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<th>SITE</th>
<th>INFRASTRUCTURE</th>
<th>WASTE</th>
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<td><img src="image3.png" alt="Waste Image 1" /></td>
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<td><img src="image2.png" alt="Infrastructure Image 3" /></td>
<td><img src="image3.png" alt="Waste Image 3" /></td>
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1994
Instituto Anchieta Grajaú (renamed after Grupo Itápolis Ação e Reintegração Social) is founded inspired on Janusz Korczak

1997
IAG starts activities as educational and social services NGO working with vulnerable families through education, community development and socio-environmental integration

1997
Cyrella Real Estate Company donates the site, a 62 acres site, for the implementation of the Ancieta Project

2001
IAG serves 600 children onsite and 1,200 families in their homes

2001-2013
IAG develops educational and recreational facilities on plot, leaving area of environmental protection undisturbed

Oct 2016
Through Center Gaspar Garcia for Human Rights, Taubman College faculty Pimentel Walker and Arquero de Alarcón meet with coordinators of Associação Ocupação Anchieta on site

July 2013
Families occupy the site of Instituto Anchieta Grajaú (IAG)

1997
1st meeting for needs assessment and initial co-design

2013
Taubman College attend joint Informa Workshop with students from Escola da Cidade in São Paulo

2017
Community-wide meeting with residents to gather data on needs and preferences. Share preliminary design drafts

2018
Awarded $5,000 Dow Distinguished Award Seed Grant

2015
Awarded $25,000 Ford C3 Grant

2014
São Paulo Municipality vacates portion of the occupation for the construction of an Elementary School on the site (EMEF)

2016
IAG serves 600 children onsite and 1,200 families in their homes

2013
Construction of kitchen and restaurant facilities at IAG Campus underway

2017
Use and impact analysis of housing cluster and biodigester

2013
Co-design of additional project components

2017
Field research in São Paulo

2013
Joint Urban and Regional Planning Capstone and Architecture Studio initiate semester: background research and case study development

Ocupação Anchieta Association organizes the relocation of households outside of Area of Environmental Protection

15
21
30
1
2
11
13
18
2012
2013
2014
2015
2016
2017
2018
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

1997
2013
2017
2018

- Construction of Culture Shed
- Use and impact analysis of Culture Shed
- Construction of housing cluster and biodigester
- Use and impact analysis of housing cluster and biodigester
- Co-design of additional project components

2014-2016

- Construction of kitchen and restaurant facilities at IAG Campus underway
- Build and launch website to disseminate outcomes and a manual on green practices in informal settlements

Instituto Anchieta Grajaú
Taubman College Graduate Students
Ocupação Anchieta Association and Residents
Co-Design Process

Annals:
Uplifting Culture, Management.

Co-design with IAG President and
Anchieta Association

Receive bid from local contractor for
Culture Shed construction

Apply for 2nd phase Dow Fellowship
Distinguished Award Seed Grant

Through Center Gaspar Garcia for Human Rights,
Taubman College faculty
Pimentel Walker and
Arquero de Alarcón meet with coordinators of
Associação Ocupação Anchieta on site

Ocupação Anchieta of Area of Environmental Protection
Construction of Culture Shed

IAG develops educational and
recreational facilities on
plot, leaving area of
environmental protection
undisturbed

IAG starts activities as
educational and
social services NGO working with
vulnerable families through education,
community development and
socio-environmental integration

São Paulo Municipality vacates portion of the
occupation for the construction of an
Elementary School on the site (EMEF)
IAG serves 600 children onsite and
1,200 families in their homes

Construction of kitchen and restaurant facilities at IAG Campus underway

Field research in São Paulo
Co-design of additional project components

Sao Paulo

Instituto Anchieta Grajaú (IAG)
With the support of the Dow Award seed funding, our team has developed the first component of the Ocupação Anchieta Avança! framework. The Anchieta Culture Shed is a small pavilion that gives agency to residents as proponents of change for their community. With a small footprint and a central location, the project touches the lives of the youngest members of the community, and serves as a daily anchor of activity. The successful design and current construction of the Culture Shed is a testament to the strength of the collaboration between the Ocupação Anchieta Avança! team, the Instituto, and the Association. The Pavilion has undergone an iterative co-design process, showing how important it is to engage residents in the project’s conceptualization and development. During the summer, we co-developed a series of iterations and their input is a major key to its success, helping shape the Pavilion to meet the residents’ needs while also aligning with the landowner’s vision.

The Culture Shed hosts a wide range of recreational, educational, and social activities targeting children, teenagers, and women. It is located adjacent to the Association’s headquarters to maximize resources and respond to the varied texture of the occupation; serving as an instigator of the culture shed’s design development. This is part of a larger agenda to raise awareness and educate residents on the importance of incorporating environmentally sound everyday practices. Part of this effort is the system to collect rainwater from the Shed’s roof in barrels and repurpose it to flush toilets. A water tower provides additional storage to offset shortages during the dry season. Innovation around sewage is a top priority on the site. Our pilot decentralized sewage initiative works to end the practice of illegally discharging sewage into the Area of Permanent Environmental Protection while also providing a better sanitary standard of living for the residents. With this biodigester system, wastewater is processed and cleaned within a chamber; generating a small quantity of methane gas to be stored and later used for cooking. The remaining clean water flows into the existing sewage system. The system is designed in collaboration with Fluxus, a local ecological engineering design firm. To explain all these components and their functioning, the culture shed will also incorporate a sustainability board with additional material on public health knowledge, sanitation and safety precautions.

The Culture Shed concept is straightforward to maximize resources and respond to the varied texture of the occupation; serving as an instigator of momentum and the first of many site interventions. The diagram of the shed can be expanded upon as more space and resources become available, while the construction techniques and details tested here may be applied to future site constructions. The $5,000 Dow Award together with the $25,000 FORD College Community Challenge grant provides enough funding to feasibly design and construct the Culture Shed, and it is scheduled for completion at the end of September, while documentation and post occupancy analysis will continue afterwards.
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<th>LABOR</th>
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**LEGEND**

1. Kitchen & Bathrooms
2. Multipurpose Floor
3. Gathering Space
4. Playground
5. Existing Community Space

**Culture Shed Plan and Section**
Culture Shed Renderings

Ocupação Anchieta Avança!  Anchieta Occupation Forward!
Culture Shed Axonometric
Gabion Wall to be buried min 5 cm.

Double Gabion wall to be stacked and tilted for proper holding

Single Gabion wall to start after first container

Excavate planar ground for proper gabion wall position

Sustainable Garden, made out of CMU Blocks and Bottles

GABION WALL DETAILS

SECTION BB

Double Gabion wall to be stacked and tilted for proper holding

Gabion Wall to be buried min 5 cm.

Single Gabion wall to start after first container

Excavate planar ground for proper gabion wall position

Sustainable Garden, made out of CMU Blocks and Bottles

DECK FLOOR DETAIL

Steel Angles to Fasten Joists to Ledgers

Wood Nailing Block with moisture Protection

Concrete Footing 25 cm x 25 cm x 30 cm

10 cm x 10 cm Double Wood Ledger

5 cm x 10 cm Wood Joints 6/4 in.o.c.

Wood Decking TBD

Maximum Overhang 5 cm

ELEVATED WOOD DECK DETAILS

Elevated wood decking to match adjacent building's level

20 cm x 20 cm x 30 cm

Concrete Footing with Wood Nailing Block

5 cm x 20 cm

Double Wood Ledger

Concrete Footing, 25 cm x 25 cm x 30 cm

Wood Nailing Block with moisture Protection

Steel Angles to Fasten Joists to Ledgers

Wood Joists 0.40 m o.c.

Wood Decking TBD

Maximum Overhang 5 cm

TBD. Maximum Overhang 5 cm

GABION WALL DETAILS

SECTION AA

Ocupação Anchieta Avança! Ancheta Occupation Forward!
**BIO-DIGESTOR SYSTEM DETAIL**

**Construction Budget**

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<th>Description</th>
<th>Unit</th>
<th>Cost per unit</th>
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Culture Shed Construction Details

- Purlins, 1.20 m o.c.
- Cantilever structure at 1.20 m over container
- Metal Roof Cap, To fasten to Corrugated Metal
- Flashing
- Corrugated metal Cover, to fasten to Fascia
- Metal Fascia, 3.5 cm min
- Metal Beams, to fasten to container structure

Ocupação Anchieta Avança!  Anchieta Occupation Forward!
Overlap Corrugated Metal Sheets and secure with Butyl tape

Fasten Corrugated Metal Roof with Gasketed Screw

Sheet metal overhang to drain in gutter 6 - 10 cm

PVC Gutter Cap

PVC Gutter, Slope at 2%

Downspout, secure to container with metal ties

Connect Downspout to Rain Barrel

Connect Overflow Pipe from one Rain Barrel to another

Connect Downspout to Rain Barrel

Purlins, 1.20 m o.c.

Angle Fasteners to tie Purlins to Truss Structure

Flashing

Fasteners to tie Channel to beam, for Roller Connection

C Channel Steel Beam Supports, to tie to Container Structure

Metal Fascia, 3.5 cm min

Metal Beams, to fasten to container structure
Culture Shed Co-design Process

OPTION 1

Single Shed

Ocupação Anchieta Avança!       Anchieta Occupation Forward!
Sustaining Efforts: Request for Additional Funding Support
Expanded Scope of Work, Milestones, and Tentative Timeline

With the additional support by the Dow Distinguished Award for Interdisciplinary Sustainability, the team will further develop a project that combines collaborative research and design of sustainable practices, sustained community engagement, incremental implementation, and knowledge dissemination. The goal is to improve the quality of life of the residents and inspire young land occupations such as Ocupação Anchieta to become agents in bettering their lives and surrounding environments. Building on the lessons learned in the Culture Shed institutional project, this next stage in the project will focus on the development of a cluster of upgraded housing prototypes connected to a sewage biodigester and a set of landscape strategies addressing storm water management. The “neighborhood cluster” offers a relevant unit of analysis and design engaging the private and the collective spheres, thus raising awareness on behavioral aspects towards the implementation of resilient community practices and the related public health benefits. In service to the documentation and dissemination of the proposal’s physical components, the team will develop a blog with educational material illustrating ecologically sustainable techniques related to the team’s physical prototypes. The blog is anticipated to launch in January 2018 and will continuously be updated with the project’s progress.

Prototyping Home and Infrastructure, Healing the Landscape

The first step in creating the housing and infrastructure cluster will be to implement and strengthen the collaborative co-design strategies initiated during the development of the Culture Shed. With the help of recommendations provided by the Instituto and the Association, the team will co-design a series of housing prototypes from October 2017 - April 2018 intended to offer flexible floor plans and diversity for a multitude of family structures and sizes. The prototypes will also use standardized, practical construction techniques, ensuring their replicability in future site development by the residents. The aggregation of individual houses into clusters allows the team to efficiently retain greywater and stormwater to be recycled within the clusters. Similar to the systems used in the Culture Shed, rain water will be stored in barrels and later supply water for flushing toilets. The exterior spaces created by clustering houses together provide a valuable opportunity to test environmentally and socially sustainable elements that extend living space and provide extra amenities to residents. They will also be used to develop landscaping intended to provide infrastructural components, re-greening the site with native plantings, assisting in depolluting the natural springs and creek, and managing storm water. We anticipate implementing these physical components through May 2018 – July 2018.

In collaboration with the engineering firm Fluxus Ecological design, the team will engage the residents in constructing and connecting a biodigester to the clusters with the capacity to serve 20+ homes. The team will assist Fluxus in further incorporating this technology into Ocupação Anchieta’s residents’ daily lives by educating them on its use and maintenance. The biodigester is a critical piece of innovative infrastructure used to address the site’s water pollution as well as more generally testing the capacity and versatility of decentralized systems. The proposed system directs sewage into a chamber that hosts microorganisms that digest waste into a sludge that residents will periodically remove. Clean water is expelled and later used for irrigating the landscape. Any unused water enters into the existing municipal sewage system. The team will implement a few additional features used to increase the biodigester’s efficiency. These additions include the planting of vegetation such as

...
hayneedle, papyrus, and cattail. Their root systems assist in the digestion process. Additionally, the pilot system will incorporate low energy compressors and fans to further accelerate digestion. A primary benefit of this anaerobic bacteria digestion process is the production of biogas (methane) that residents can use for cooking. Through these additions, the biodigester design minimizes electricity consumption as well as maintenance and operating costs while also maximizing treatment efficiency.

**Assessment and Communication**

During the design and implementation phases, the team will work closely with residents and our local partners to develop methods for assessing the performance of the housing, sewage system and landscape infrastructure. These indicators can be used to improve the design, implementation, and maintenance of future constructions, continuing to build community resiliency. Initial assessments will gauge the housing prototypes’ abilities in serving a range of diverse family needs. Fluxus will continually monitor the biodigester’s capacity and efficiency, analyzing the potential for increased capacity and the inclusion of additional systems in the future as development on the site continues. The team will also study the landscape strategies’ effects on the incremental site reforestation. The transformations and their eventual effects will be incorporated as a tool for public health education; informing families about the risks of inadequate sewage, improper waste management practices, and the impacts that they inflict on the community’s most vulnerable members.

The final component of the project acknowledges the importance of accessibility to information. The team will develop a blog to disseminate the project, allowing other informal settlements to benefit from this initiative. Spreading environmentally conscious occupation strategies is imperative to protecting citizens’ rights to housing and to a healthy environment. We will design clear and compelling graphic material of actionable ideas that serve a community’s personal, social, and environmental needs. We will develop a series of pamphlets describing best environmental practices for young land occupations with fact sheets, figures, and visualizations outlining safety procedures about sewage, storm water, and waste management. The audience for these pamphlets is both new occupations looking to develop and existing occupations at risk of eviction due to environmental degradation. All pamphlets will be available within the blog by May 2018, along with the prototype plans and budgets, information on biodigesters, case studies of other initiatives, and the implemented designs and associated outcomes. Dispersing this knowledge through the internet – in the form of techniques, designs, and drawings – eases accessibility to information, exponentially increasing the project’s impact. It also offers a platform for other communities to communicate through the blog to share ideas and support.

Through these interrelated components, Ocupação Anchieta Avança! proposes innovative land stewardship strategies that will increase community resiliency, inspire other occupations, benefit the watershed, and reflect back on the relevance of instigating more sustainable urban practices in the Global South. The incremental nature of this project throughout a 12-month effort is adaptable to being partially funded by the Dow Award. While the full design would touch the lives of more families and have a higher impact testing the potential capabilities of the infrastructural system’s performance, the project has been designed to address funding limitations. The project budget included in the next section of the report addresses design strategies that may be implemented with the support of both half and full funding.
### Budget

#### Design Component

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<tr>
<th>Culture</th>
<th>Unit Cost</th>
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<tr>
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<td>Structure + Roof + Flooring</td>
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<tr>
<td>Infrastructure: Electric + Water</td>
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<tr>
<td>Groundwork + Sewage + drainage</td>
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<td>Play Structures</td>
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#### Infrastructure + Waste

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#### Housing

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#### Dissemination + Media

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#### Funding

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<tr>
<td>FORD</td>
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<tr>
<td>DOW [ 2nd phase ]</td>
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**CUMULATIVE TOTAL**

Ocupação Anchieta Avança!  Anchieta Occupation Forward!
<table>
<thead>
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| $ 1,000               |          |          |         |          |

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<tr>
<td><strong>Cost</strong></td>
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Local System
Low Cost, Low impact
(low maintenance)

Integrated Biosystem
Permaculture + Cradle to Cradle
(frequent maintenance)

Bio-digester systems and initial site studies, provided by Fluxus
Initial work on housing prototypes during winter 2017 to be redesigned during next phase in conversation with our partners.
Appendix

Culture Shed location and Area of Study for Phase II

Ocupação Anchieta Avança!  Anchieta Occupation Forward!
To the DOW Review Committee Members:

This letter, on behalf of the Instituto Anchieta Grajaú, demonstrates our appreciation and partnership with University of Michigan’s Ocupação Anchieta Avança! team. The group visited our installations during their site visit in São Paulo last March, and learned about our mission. We were happy to welcome them as partners in our “Anchieta Project” framework. In the next few lines, we share with you some important details about our organization and its larger mission, and we frame the relevance of this sustained partnership with students at UM.

The Instituto Anchieta Grajaú was founded in 1997 with a clear intention to provide educational and social opportunity to its surrounding community. Since its founding, the Institute has worked diligently to protect and shelter children, teenagers, and families living in states of economic and social vulnerability. The Institute’s educational process is based on the teachings of polish doctor and pedagogist, Janusz Korczak. Its main objective is to educate children and teenagers; guiding growth through their individual personalities and encouraging them to become responsible and independent citizens.

The informal occupation of the land started in 2013, compromising the operation of the Instituto and severely disturbing the area of environmental protection at the heart of the property. After the initial impulse to reclaim the land, it soon became clear that the 800 families occupying the site are precisely in the situation that the IAG has sought to help and support. As a result, this emergent community has been named “Assentamento Anchieta,” and the IAG and a larger network of partners are working together with the residents to improve the precarious conditions of the infrastructure and housing, and restore the ecological functions of the land.

The energy, funding, and innovative designs the students bring to our site are invaluable to further our mission. The first component developed in collaborations is the Culture Shed, to provide critical social, recreational, and educational space within the community, inspiring the residents to continue to build community. Moreover, the different cultural perspective brought by the students has generated valuable ideas and proposals to the site.

Additional funding through the second phase of the Dow Seed Grant would allow for our unique collaboration to have further transformational impacts within the community. Taking on the most challenging project to address living conditions and environmental impacts, we are planning the development of a group of houses connected to a sewage biodigester. To advance this project component, the UM team will be working with our engineering and the design partners in the development of site studies and housing prototypes.

With this letter we offer full support to the Ocupação Anchieta Avança! Team, and look forward to working with them in the next steps.

Sincerely,

Roberto Loeb – President
Celso Garvarz – Educational Coordinator
Instituto Anchieta Grajaú
São Paulo, 01 de setembro de 2017.

Assunto: Carta de Recomendação para o Prêmio Dow de Sustentabilidade de US$ 50.000

Através desta, a Associação dos Moradores do Movimento Anchieta vem, com grande prazer e entusiasmo, recomendar o grupo de estudantes da Universidade de Michigan para que receba o prêmio da Dow e execute o projeto Ocupação Anchieta Avança.

Nós conhecemos os estudantes por meio das professoras Ana Paula e Maria que em Outubro de 2016 visitaram a Ocupação Anchieta junto ao Centro Gaspar Garcia de Direitos Humanos que nos prestou assistência e consultoria sobre questões de uso do solo urbano. Entre os meses de fevereiro e março de 2017, a nossa comunidade recebeu e trabalhou junto com vinte estudantes de Michigan. Juntos, nós administramos questionários, conversamos com os moradores, realizamos reuniões e reaparelhamentos comunitários com a maioria dos moradores. Essas informações serviram para que o grupo de estudantes desenvolvesse um plano de ação. Nós da ocupação acreditamos que esse plano de ação vai melhorar muito nossa qualidade de vida, pois estaremos aprendendo melhores métodos de construir saneamento.

As famílias somente ocupam terra quando já não conseguem mais pagar aluguel. Não é nossa intenção desmatar ou poluir as fontes de água. Somos um grupo de ocupantes dispostos a construir um asentamento sustentável. Um exemplo disso foi que em colaboração com a ONG Teto (TECHO), conseguimos retirar mais de cem casas das beiras das nascentes e realocá-las em lugares de menor impacto ambiental na ocupação. Esperamos agora poder trabalhar com nossos parceiros em reparar parte da floresta atlântica na área das nascentes. Concretamente, com o projeto Ocupação Anchieta Avança, esperamos descobrir novas maneiras de construir casas sustentáveis e aprender novas técnicas de disponibilizar água do eletrônico.

Enfim, esperamos que Dow possa financiar o projeto Ocupação Anchieta Avança!

Gratos,

Diretoria da Associação de Moradores do Movimento Anchieta
Presidente - Meaor dos Santos Medeiros

ASSOCIAÇÃO DE MORADORES ANCHIETA
CNPJ: 21.984.647/0001-75
Rua: Bilac, 471 - CEP: 04440-610

The team will gladly provide the English translation of the letter if requested by the reviewers.
To the DOW Review Committee Members:

I am delighted to write this letter of recommendation in support of the Ocupação Anchieta Avança project. I am the principal at MMLoeb Architetetura, a São Paulo based architecture firm, with active practice in the city. As part of my work with Instituto Anchieta Grajaú (IAG), I have gotten to know and collaborate with the University of Michigan team during the year. I first interacted with them during their visit in March, and we have continued our collaboration over the summer. In this letter, I share the nature of my involvement with the team and offer my strong support to their project and its transformational impact in the community.

I am currently part of a design team leading the construction of a community kitchen and a restaurant, part of the expansion of the IAG Campus. These facilities, together with a future health center, will provide much needed service to the impoverished communities living in the area. As part of my role as an architect in the larger “Anchieta Project” scheme, I got to meet the University of Michigan group during their site visit to the occupation in March and introduce them to the work IAG was planning on the site. During our initial interaction, we exchanged ideas to shape a future collaboration integrating the University of Michigan team in our network of partners. Their energy and resourcefulness has been quite inspiring, and we are delighted to support this application and count on them for the development of our housing and infrastructure clusters in the occupation area.

Through this past summer, we have held multiple meetings with the Ocupação Anchieta Avança Team (here in São Paulo and now remotely), to manage next steps. As you will see in the project proposal documentation, we are working on the implementation of the first component, the “Anchieta Culture Shed.” I am personally engaged in this step, working in the capacity of project manager, in close collaboration with the student team, our builder and the residents. There is swift progress and I anticipate construction to be completed within a month. When complete, it will provide space for the community to play and learn together, a critical component to set next stages in the partnership.

It is in this spirit that I write this letter of support to the students’ application to the 2nd phase of the DOW Fellowship grant. As part of that project, we are working together to co-design a cluster of houses linked to a collective, decentralized sewage system. With the support of the DOW to the UM team, and the extended network of partners onsite, we are committed to the realization of a transformative project for the Anchieta Settlement. I am impressed with the professionalism and dedication of the UM students to this initiative, and know their skills and talents will be a great benefit to our project. I am personally inspired by their commitment to enhance the residents’ quality of life and I am very excited to continue my collaboration through this next phase.

Sincerely,

Marina Mindlin Loeb