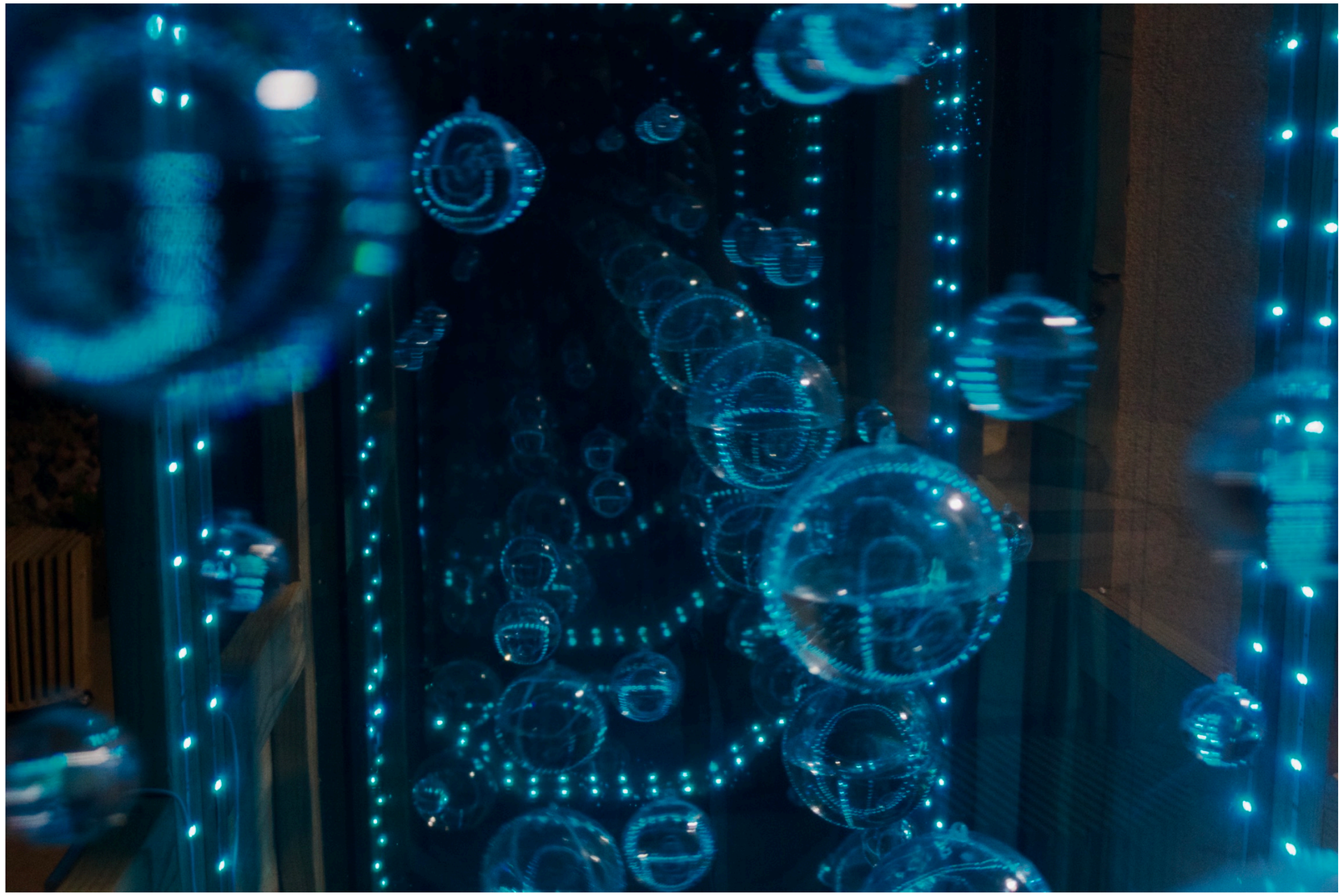

Country /City: USA / Las Vegas

University / School: University of Nevada, Las Vegas

Academic year: 2022-2023

Title of the project: FUTURE INNOVATIONS: BIOLUMINESCENT ALGAE & PARAMETRIC SEATING

Authors: Brenden Berry, Danthai Dimalanta, Cloudia Wooten, Alyssa Gainey, Kiayna Ford, Kaulupali Makaneole, Julian Thomas,Irina Koleva,Rejndi Hylviu,Saul Cardenas-Meza,Nicholas Saito,Blaise Madayag,Yuxuan Cai,

## TECHNICAL DOSSIER

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**Title of the course** Lndsacape Architecture STUDIO 486

**Academic year** 2022-2023

**Teaching Staff** Professor: Xiwei Shen

**Department / Section / Program of belonging** School of Architecture/STUDIO 486

**University / School** University of Nevada, Las Vegas

**Written statement, short description of the project in English, no more than 250 words**

This has widely changed the perspective on the importance of outdoor recreation—and its connections to health, productivity, and success—across all demographics. This project aims to set a precedent to develop the site beyond its necessary requirements, but to also celebrate the work of the student body and promote mental, physical, and emotional wellness for all users passively or actively engaging with the site. This will consequently have a positive impact on the interaction architecture students have amongst each other, and other disciplines. Given the site's proximity to two different student housing buildings, this will also increase opportunities for non-architecture students to engage with the space and its users without feeling daunted by entering through the building's main doors.The students using digital pamametric techqiue to design and built the site furniture in order to fit the ergonomic human engineering consideration.This project conducted an examination of the VOC emitted by local housing plants to identify suitable plants that can effectively enhance air quality.Utilizing bioluminescent algae creates an innovative opportunity in lighting amenitiy applications and also ulitize the CO2 and temperature.

For further information

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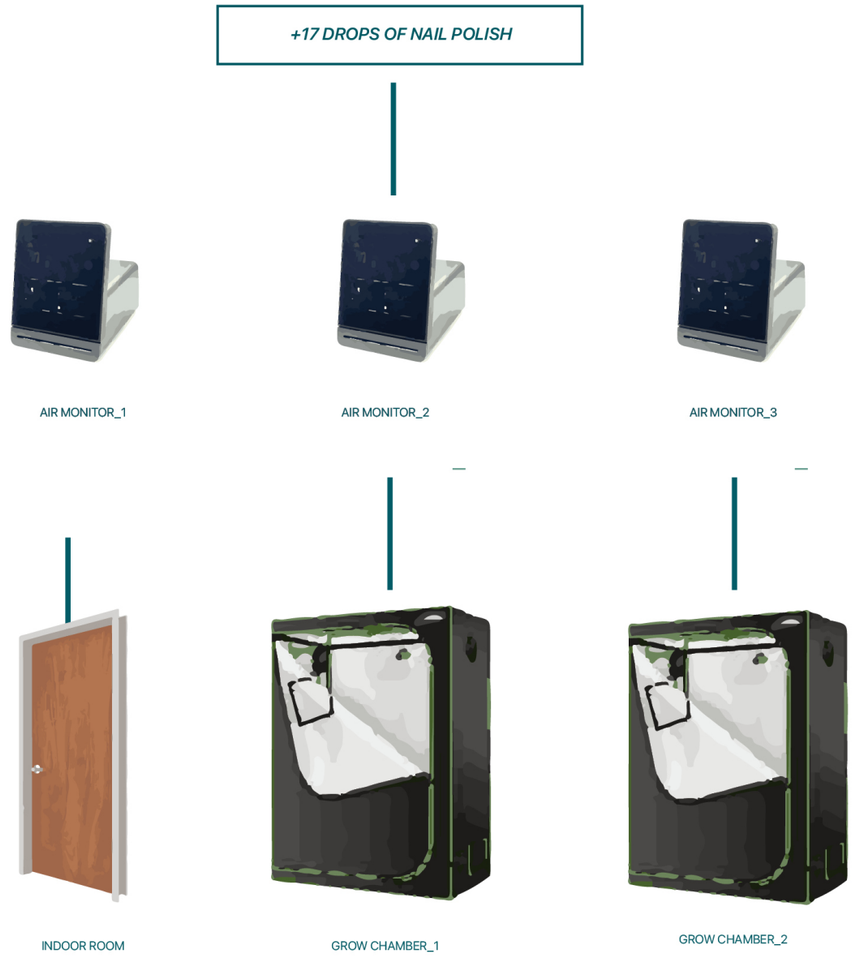
**12th International Biennal Landscape Barcelona**

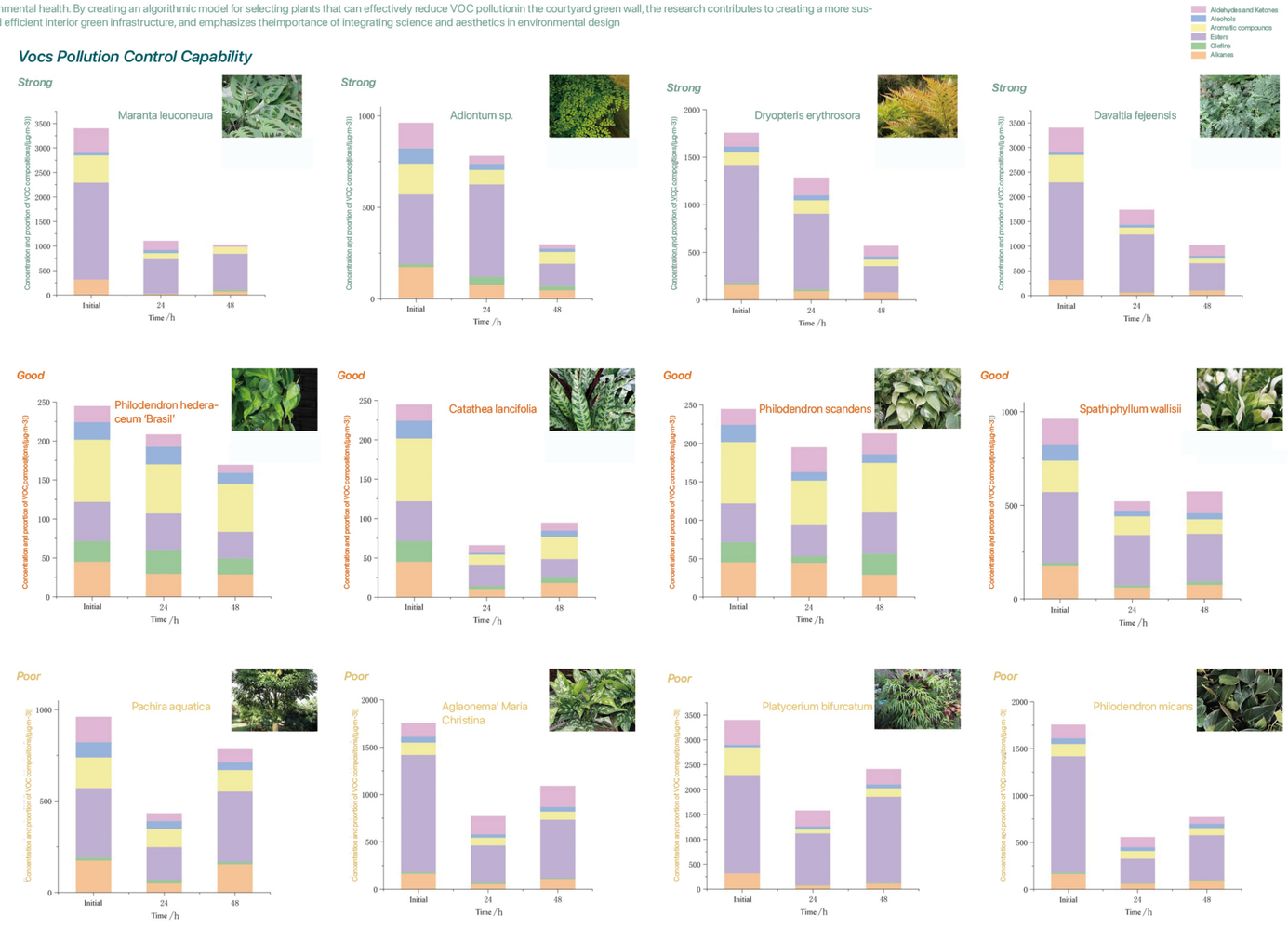
**Barcelona** **November 2023**

**SCHOOL PRIZE**

# AIR QUALITY STUDIES FOR PUBLIC ENVRIONMENTAL HEALTH

The study examines the ability of two plant species in UNLV's green wall design to absorb and break down volatile organic compounds (VOCs), with the aim of improving environmental health. By creating an algorithmic model for selecting plants that can effectively reduce VOC pollutionin the courtyard green wall, the research contributes to creating a more sustainable and healthier green infrastructure. The study provides approaches and workfow to assist landscape, interior, and environmental designers in creating more scientific and efficient interior green infrastructure, and emphasizes theimportance of integrating science and aesthetics in environmental design



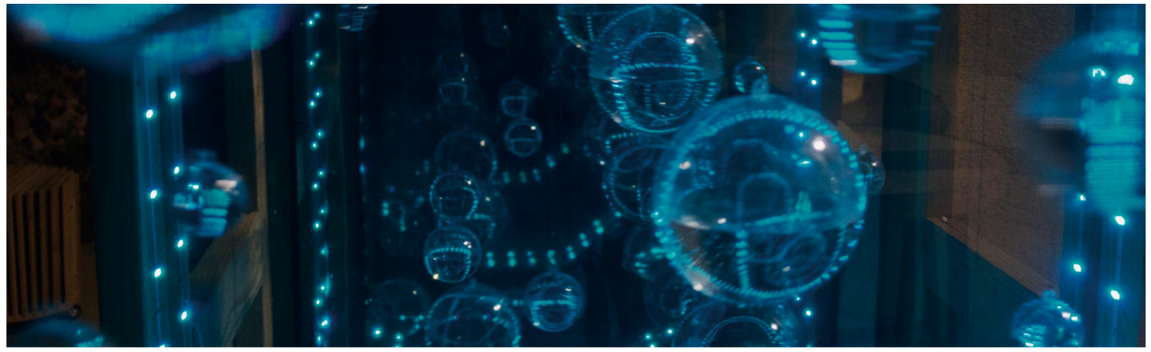



# FUTURE INNOVATIONS: BIOLUMINESCENT ALGAE

### *Interactive Art Installation Representing Applications of Bioluminescent Algae*

Utilizing bioluminescent algae creates an innovative opportunity in lighting amenitiy applications. Within this research, we aredeveloping a comparative analysis on the mitigation of CO2 levels and temperature control at the University ofLas Vegas, Nevada campus from different species of bioluminescent algae and methods of amenity production incorporating the medium.

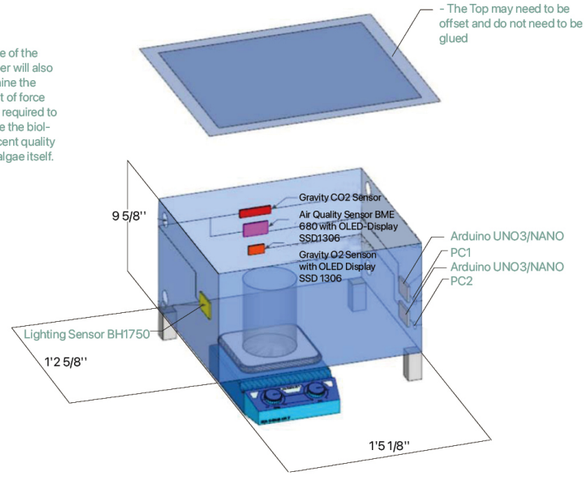
As society embarks further into sustainable means of climatecontrol, our research centers the exploration of bioluminescent algae, which previous studies suggest to be more effective than raw plant material.



### *Technical Details*

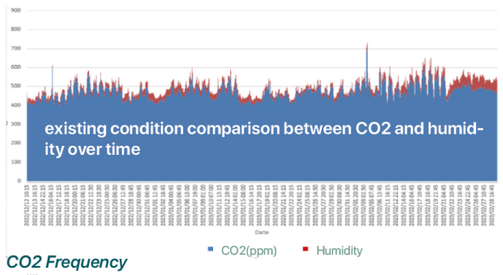
By measuring the algae in a controlled space, we will be able to conclude the difference between CO2, humidity, and temperature conditions and interior conditions of the courtyard site.

The use of the chamber will also determine the amount of force (ma) is required to activate the bioluminescent quality of the algae itself.

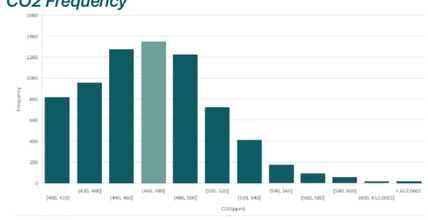



### *Comparison Of Environmental Parameters*

At the moment, our conclusions remain theoretical, however, within the semester we were able to set the basis of our future research and applications that increase the aesthetic and interactive value of space.

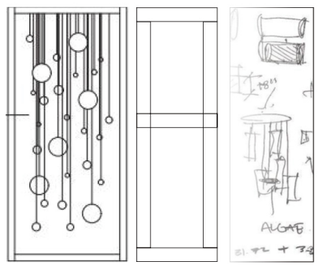


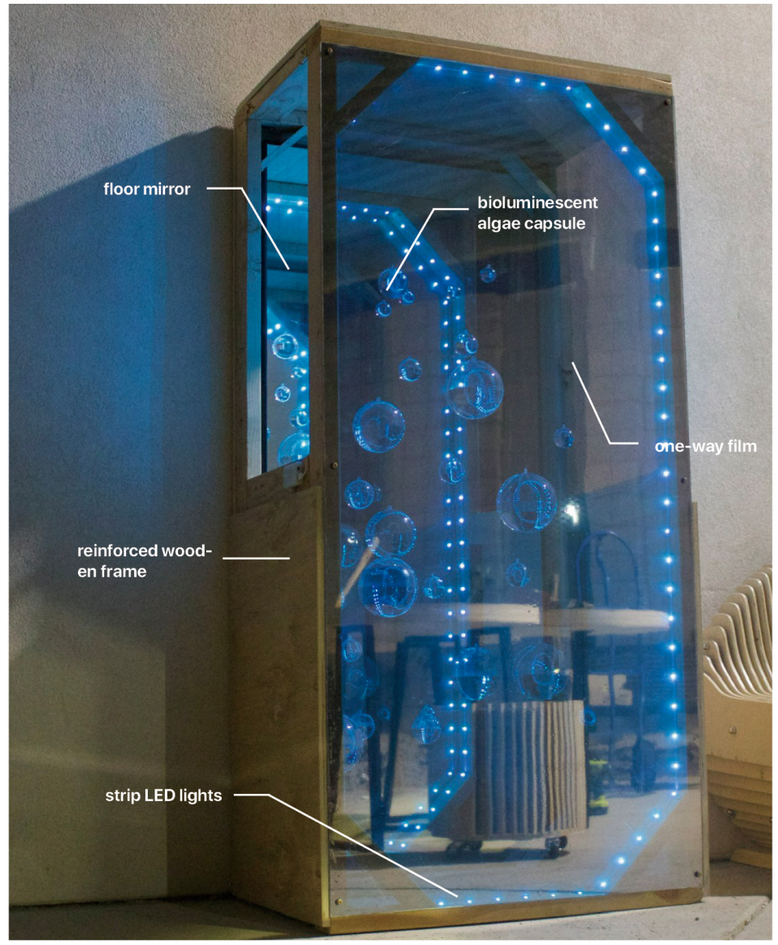

### *CO2 Frequency*



### *Installation Frame*

1. Depicted ornament quantities are for representation purposes only
2. Acrylic screen in the front will have one way film along inside face
3. Backing mirror to be fastened to the frame by existing hardware



# FUTURE INNOVATIONS: PARAMETRIC SEATING