



SYNERGY

Integrating Performing and Fine Arts



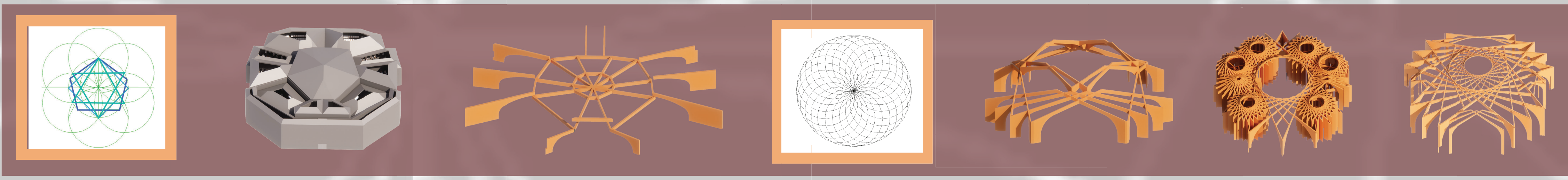
Abstract

Music has proven to be beneficial to students, both academically and socially, as has general education in the fine arts. Over the years, the arts have proven to take giant strides when the artists are a part of an environment that encourages collaboration within and between artistic disciplines and social backgrounds. This design strives to create an environment that encourages an enjoyable, collaborative, and educational experience for performance and fine arts students of various backgrounds and nationalities. This includes designing a performance and fine arts facility as well as revamping current lodging for campers and staff at the International Music Camp along the United States-Canada border.

Creating this environment involves understanding the core of the arts, both culturally and aesthetically. One can say that from the knapping of stones came variations of the savored, of tone, and of order – and with these varying preferences of varying peoples. Although vastly different, the core is the same, though primarily forgotten in our world. All are bound together in the realm of proportion and harmonious order. The design uses these proportions to create a space for the arts' variations to exist in and around their similar core and for the people to do the same.

Process

The project began with a grid comprising of shapes found frequently in the connections within different art fundamentals, such as the color wheel and circle of fifths. Circles, being the most common in art, dance, and music, comprise most of the grid and help to create the remaining shapes, most notably a pentagram and Star of David, which are frequently found in the mentioned fields and the realm of harmonics, which is present everywhere. The intersections of this grid created the form of the auditorium.



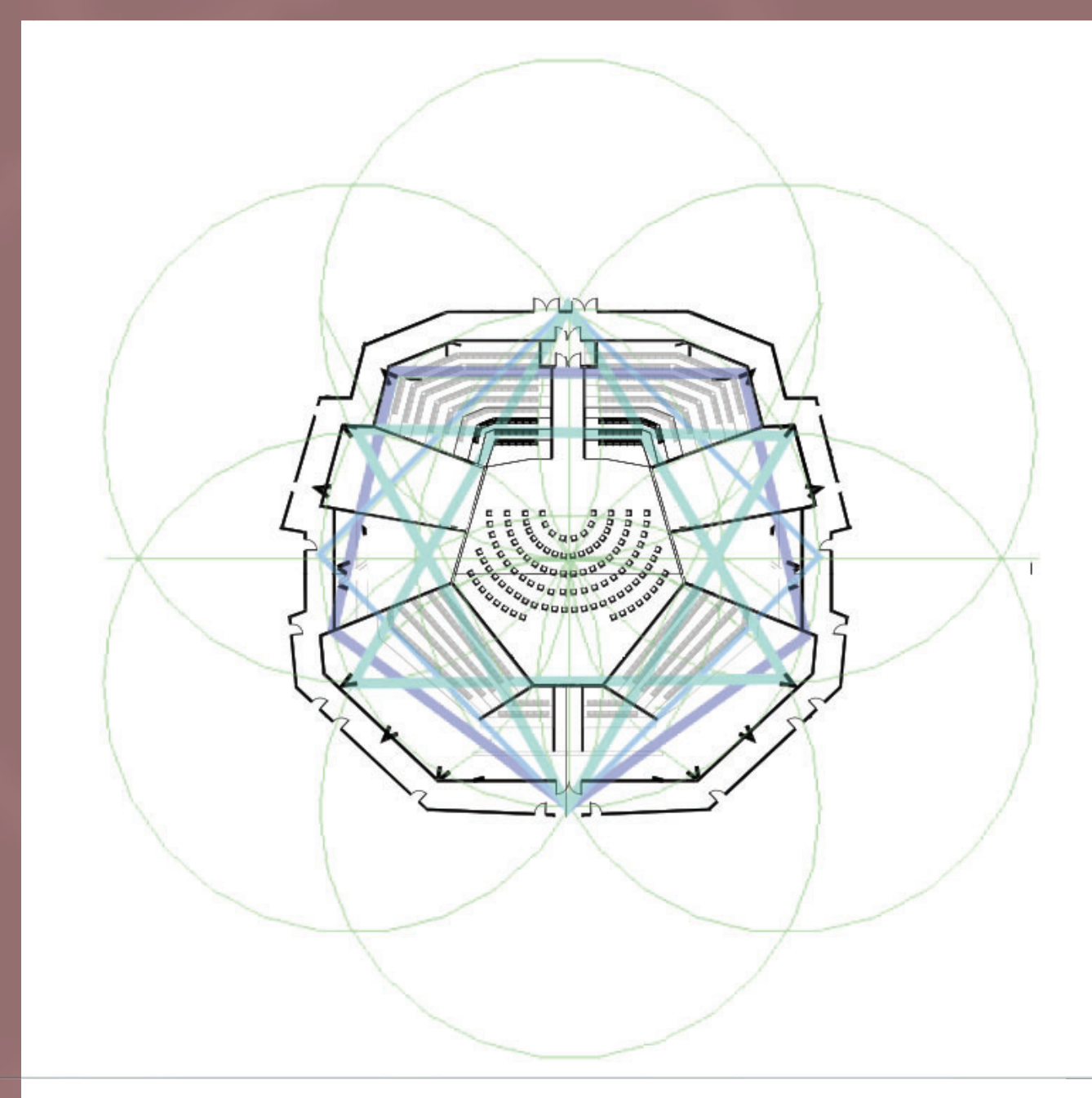
Keystone

Due to the unique shape of the auditorium, it required a structural system that could span the auditorium without hindering the view. The turtle shape was adopted, however the keystone arrangement did not accommodate well for the shell-like "bumps".

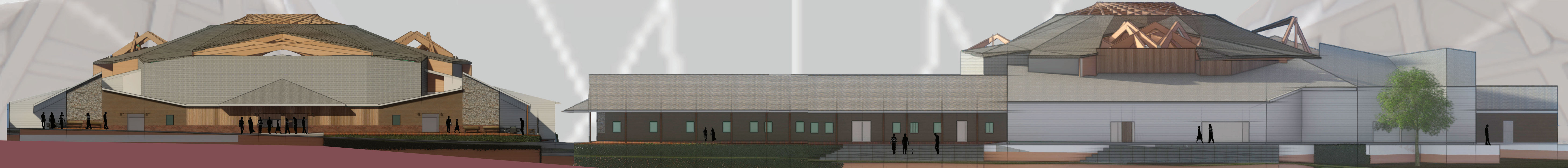
Karbandi

Karbandi is a structural system used in Persian architecture. It involves placing arches on a grid (see above) and rotating them so that they intersect. This structural system created multiple possible solutions and allowed for the "shell" to be more prominent. Arches were also chosen due to the glulam structures seen in most buildings throughout the site.

Process Grid



Elevations



North

West

Significance of the Arts

The Achulean hand axe is frequently brought up in the visual art world as the origin of making something for no purpose other than display. The development of these axes required that there be leisure as well as skill. This has been discussed as beneficial for the sexual selection process, as well as the stones just being nice to look at. Spitzer expands on this theory and adds that the knapping, the physical act of hammering away the edges, would have created a rhythmic experience via movement and the sound of rock hitting rock. Therefore music, art, and rhythmic movement could have all started here, as a result of, and resulting in, leisure and skill.

Over our years on this planet, both as a species and as individuals, we as humans separate what is intrinsically knitted together, especially in the western world. Much of this is due to language and the development of writing systems, including musical notation.

Effects of the Arts

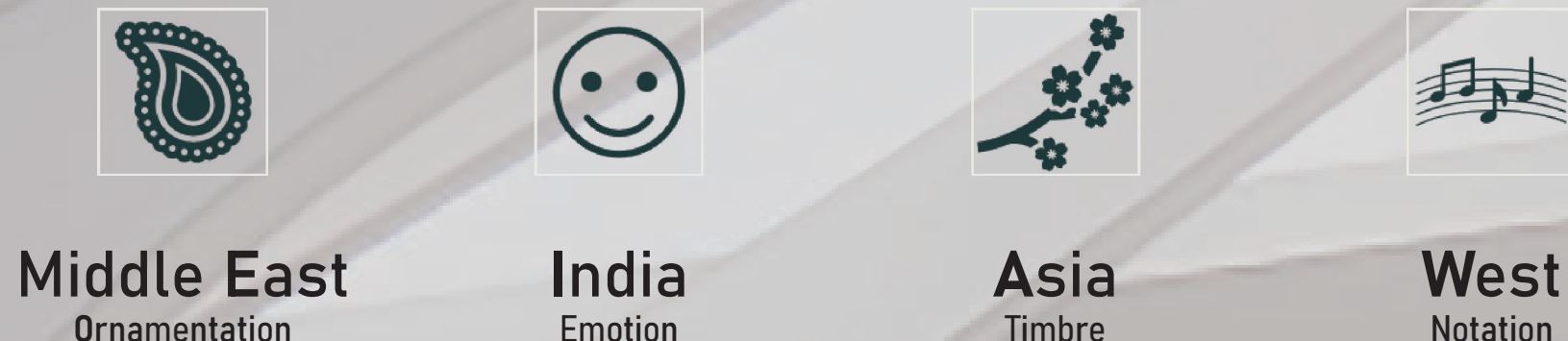


Synesthesia

Those with synesthesia can experience sound as color, shapes as taste, or any other combination of the senses. There are many different types, however, most center around color. Synesthesia is hypothesized to exist because of a genetic predisposition to excess connections in the brain. These connections create a more memorable and meaningful life experience for those with the condition. Creating a memorable and meaningful space is the goal of this project, as well as integrating all of these different senses involved in experiencing both life and the arts to their fullest.

Cultural Diversions

Access and the portability of music after written notation is the biggest factor in how the West diverged from the rest of the world, where traditions were passed down via apprenticeship.



Ratios

Several shapes are found throughout the fundamental portions of the arts, all of which are bound by the following ratios:

- Octave 2:1
- Fifth 3:2
- Fourth 4:3
- Major third 5:4
- Minor third 5:6
- Minor seventh 5:9
- Major second 8:9
- Major seventh 8:15
- Minor second 15:16
- Unison 1:1
- Tritone 32:45

NDSU Music Courses

Ensembles:
 Gold Star Marching Band
 Pep Band
 University Band
 Saxophone Quartet/Quintet
 Saxophone Choir
 Lab Jazz
 Jazz Ensemble
 Wind Symphony
 Cantemus

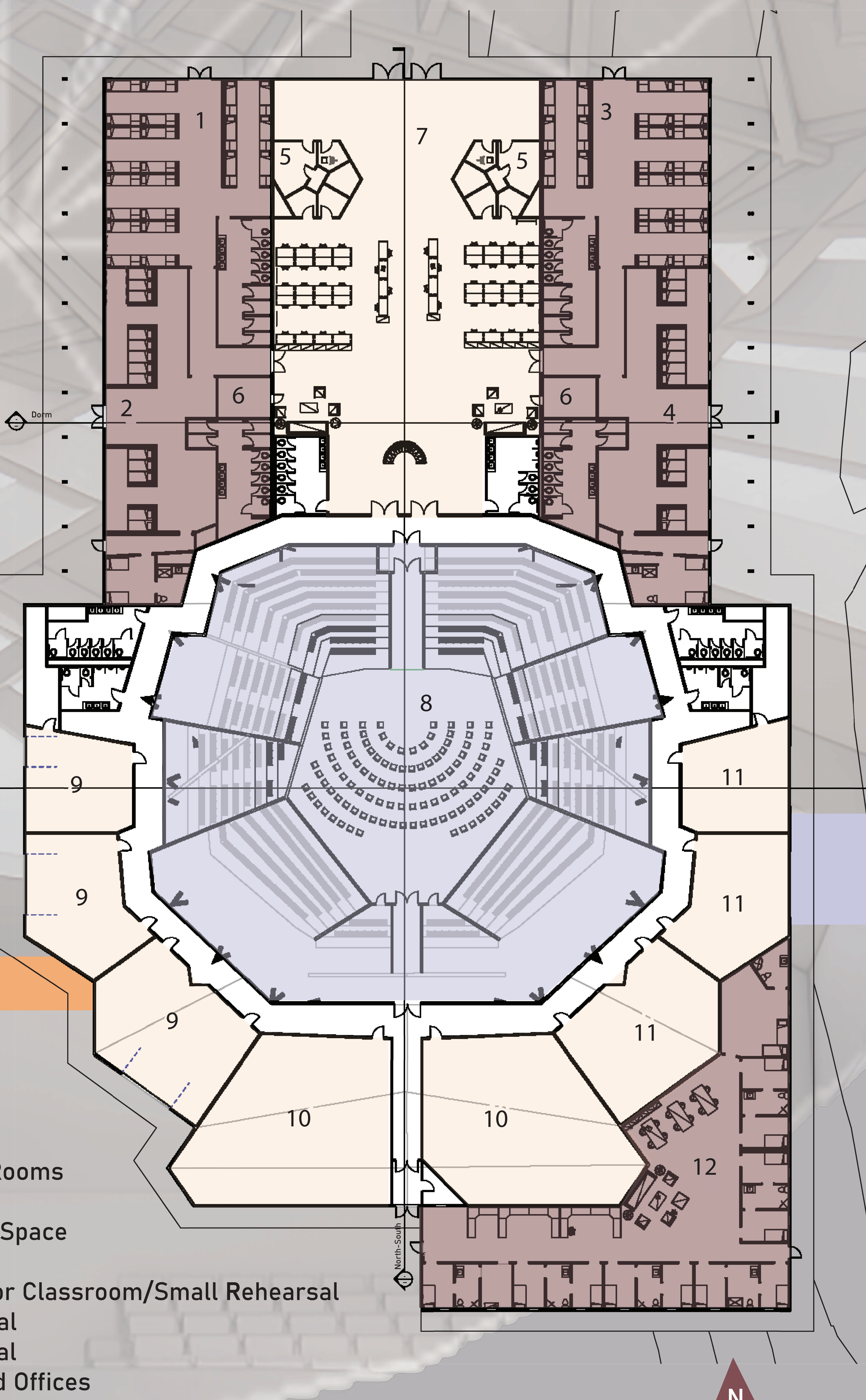
Curriculum:
 Introduction to Music History
 Theory and Analysis I & II
 Ear Training and Site Singing I & II
 Applied Lessons

Completed Minor in Music in May 2021

ARCH 772 Design Thesis
 Revit | Primary Software
 SketchUp | Secondary Software
 Enscape & Lumion | Rendering Software
 Odeon | Acoustic Software

Floor Plan

- 1 Hauglen Hall
- 2 Solberg Hall
- 3 Dow Hall
- 4 Pollock Hall
- 5 Solo Practice Rooms
- 6 Multipurpose
- 7 Studio/Gallery Space
- 8 Mikinaak Hall
- 9 Large Rehearsal
- 10 Large Rehearsal
- 11 Small Rehearsal
- 12 Staff Lodge and Offices



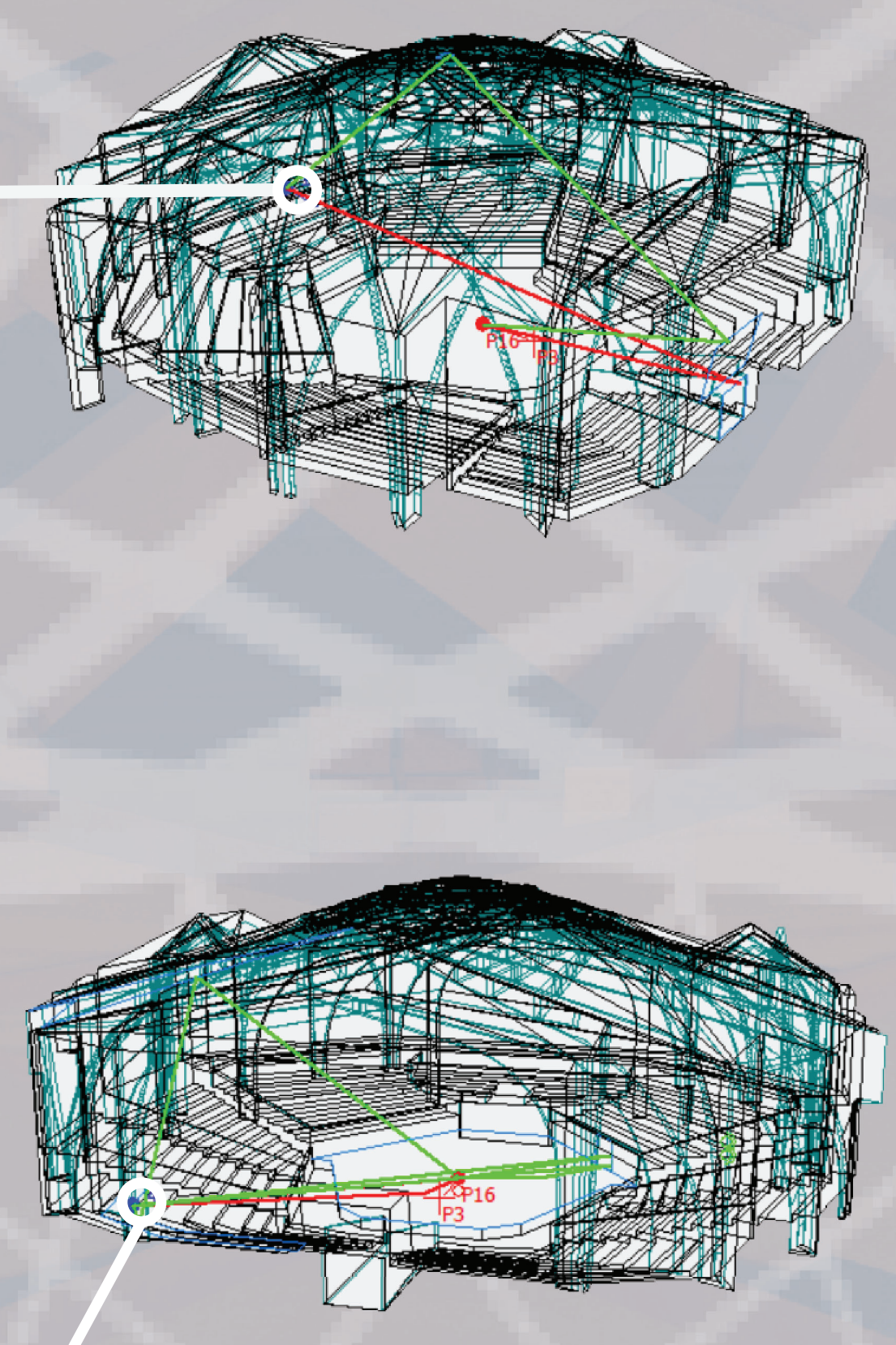


Acoustic Simulation

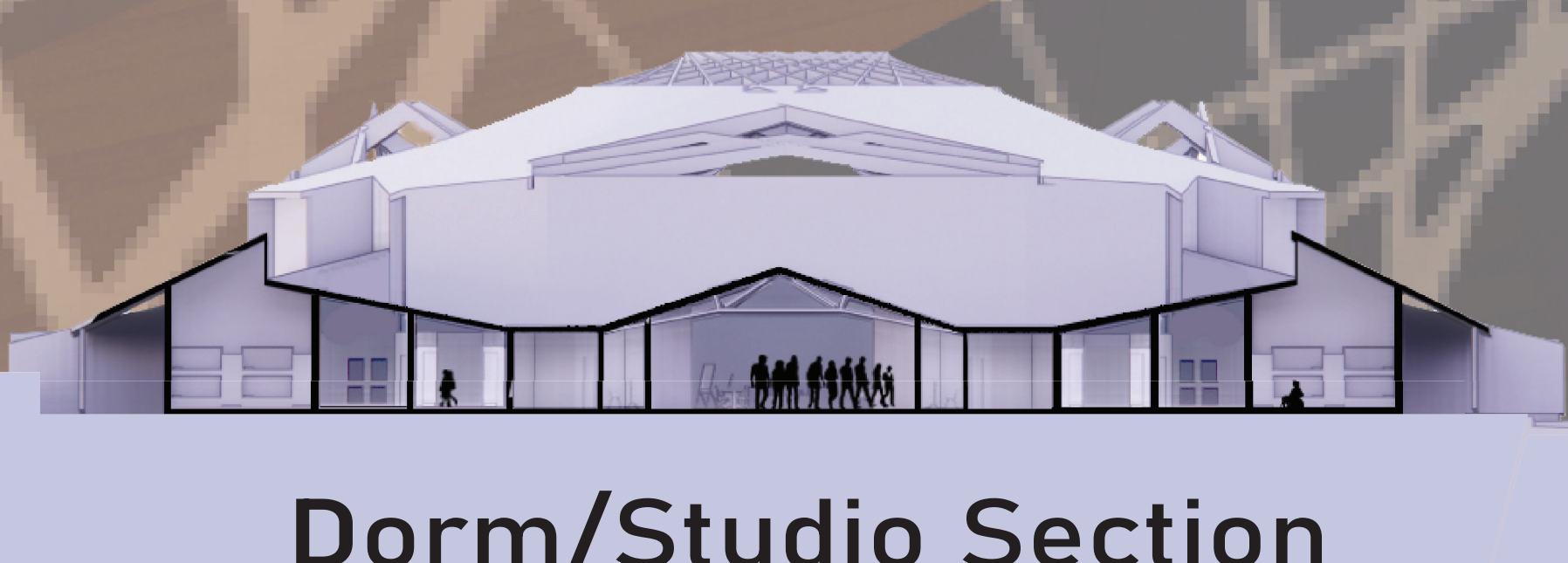
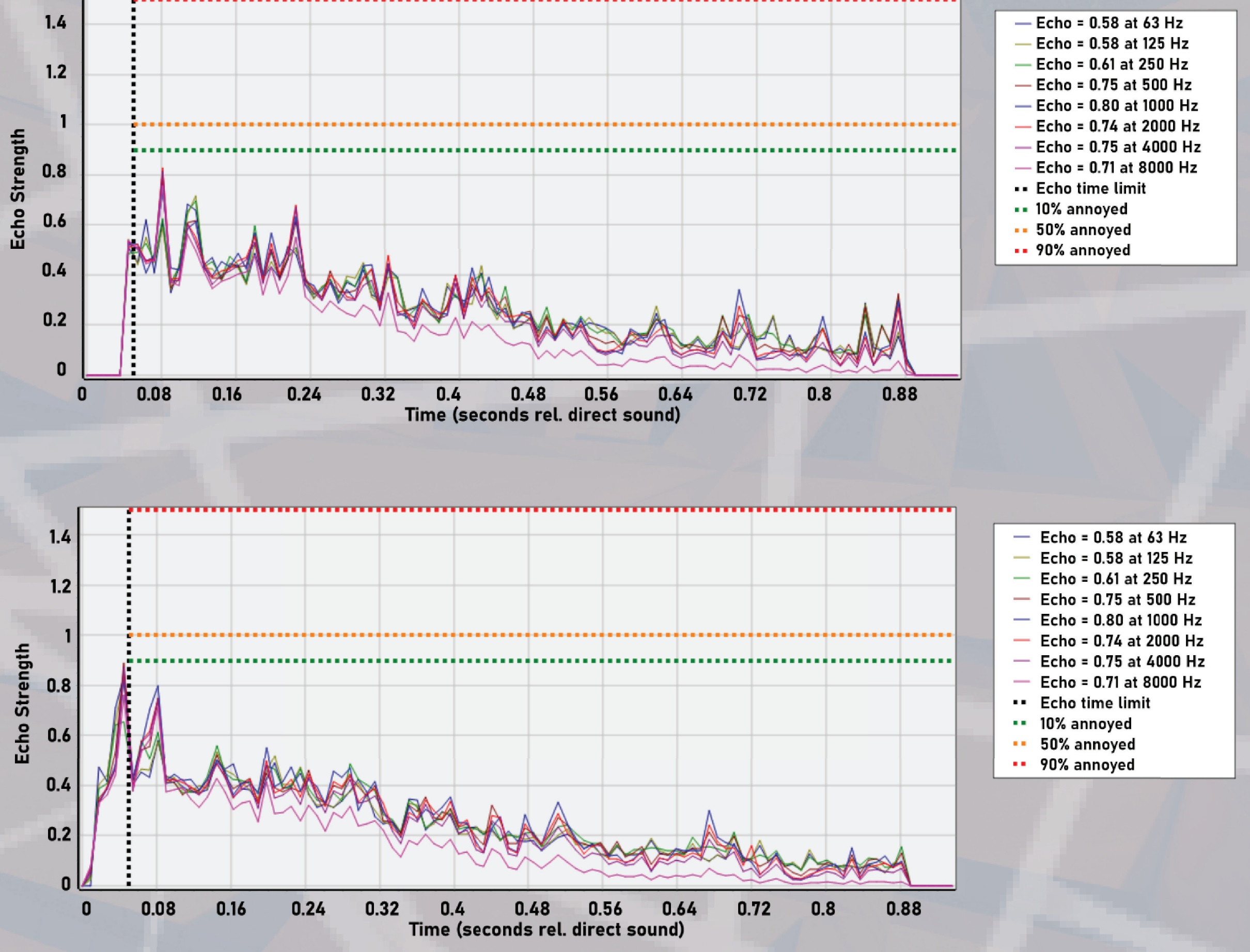


Below is a diagram of the auditorium set up for Gustav Mahler's Symphony No. 1. The two audience members' sound experience are shown to the right. The reflectograms demonstrate the path sound takes from the performer to the audience. The Dietch echo curves determine the quality of audio.

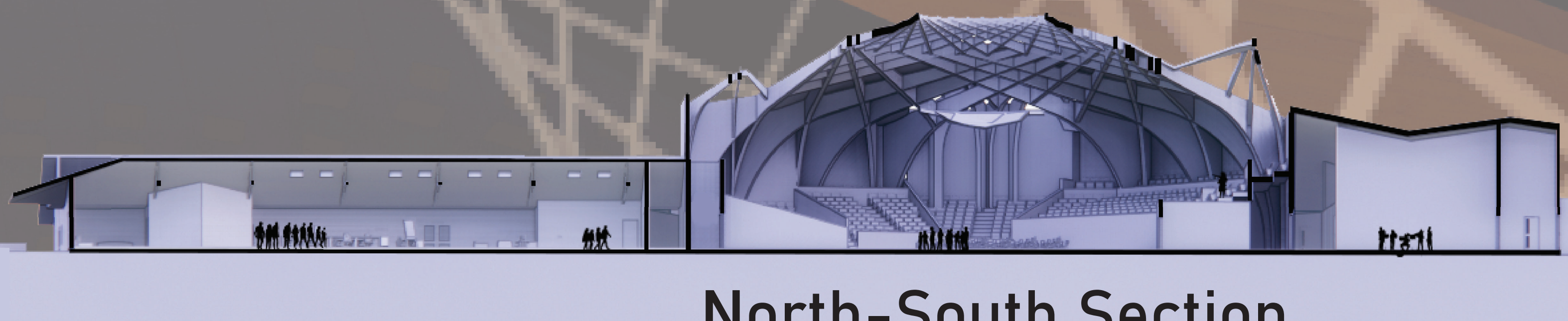
Reflectograms



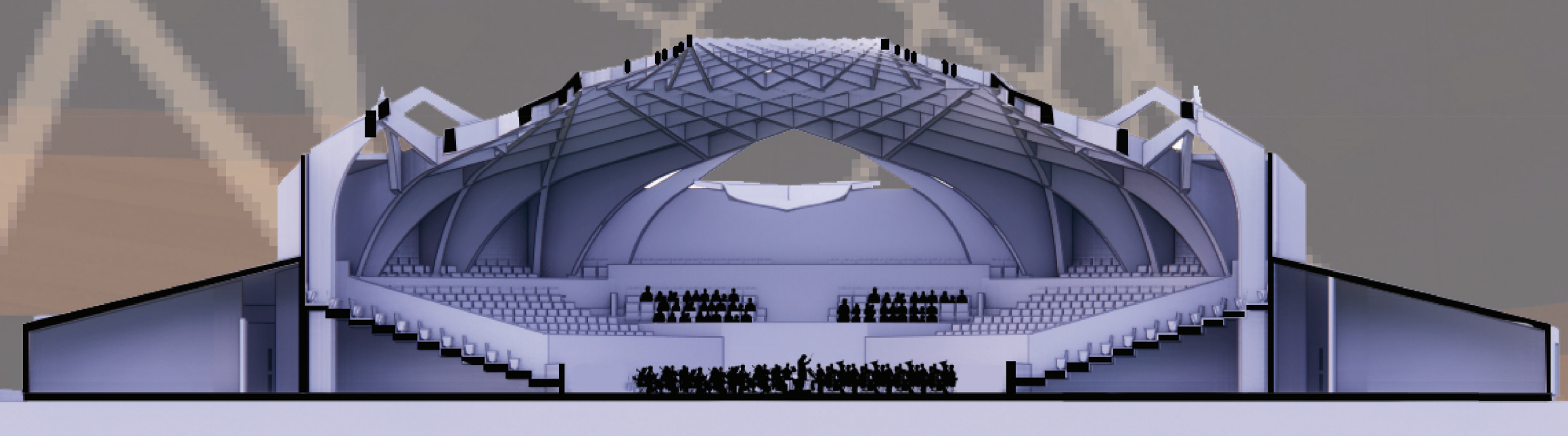
Dietch Echo Curves



Dorm/Studio Section



North-South Section

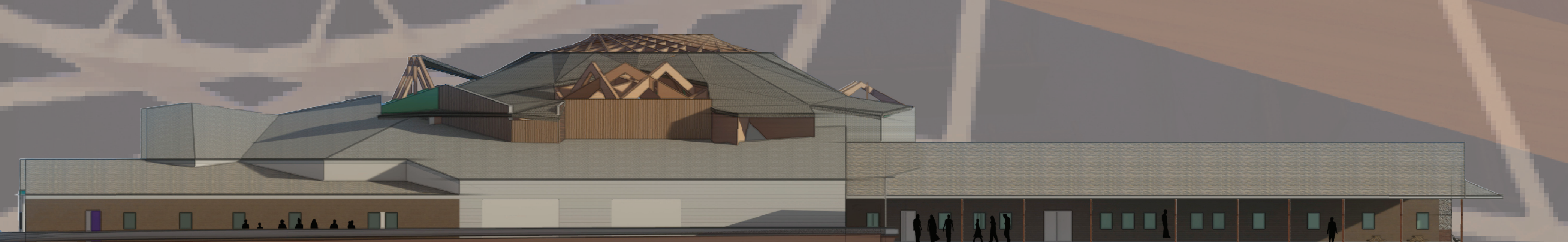


Auditorium Section

Sections

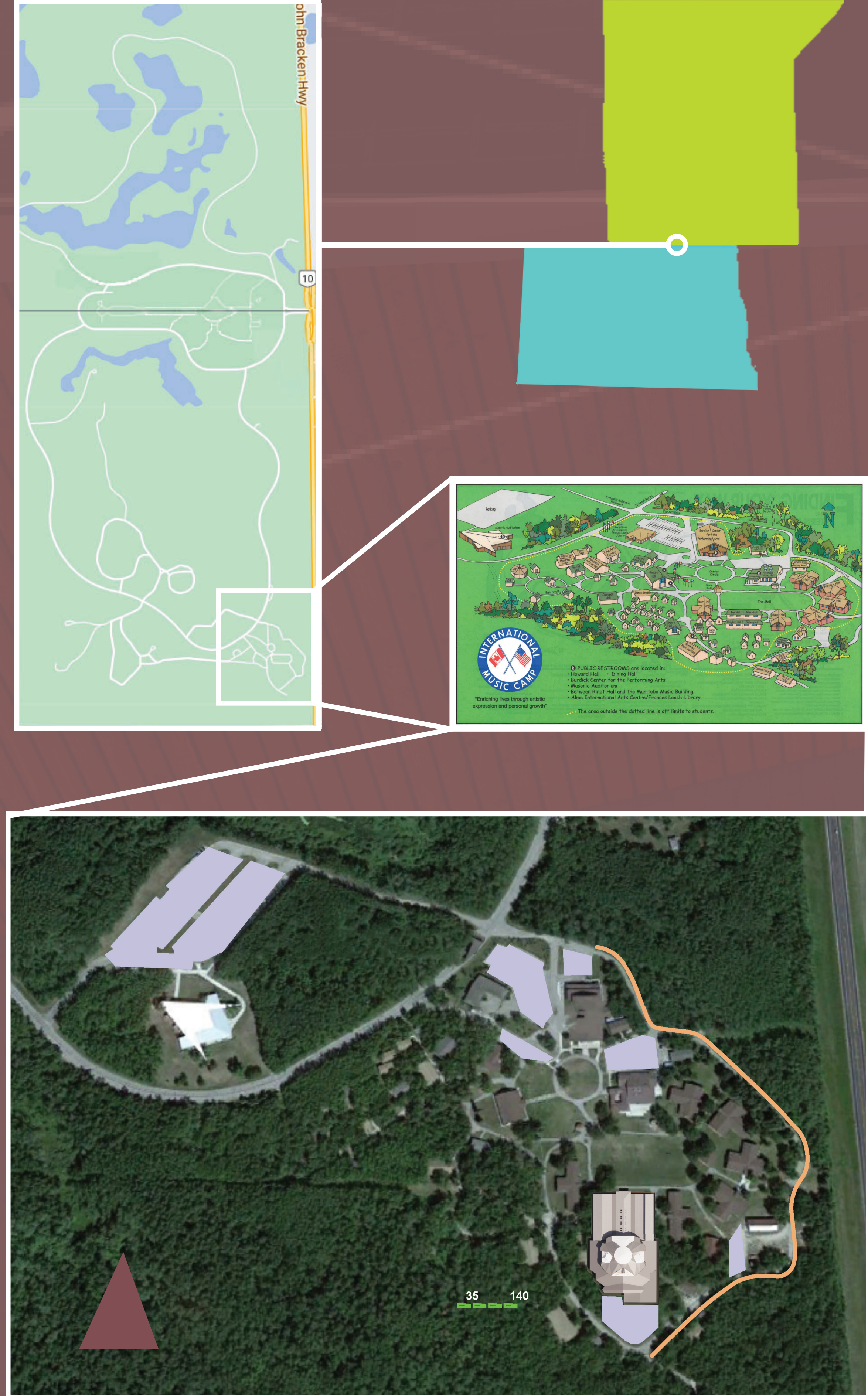


South



East

Site



International Music Camp Summer School of Fine Arts, International Peace Garden, U.S.-Canada Border
Region: Turtle Mountains of North Dakota and Manitoba

The International Music Camp (IMC) was chosen as a site due to the programs already in place. It incorporates all ages, all nationalities, and many forms of art, making it an ideal environment for interdisciplinary artistic collaboration. The Peace Garden promotes similar thoughts, encouraging the intermingling of people and ideas. Having the site embody all these ideas was the main basis for the selection.

Parking (see left map) will consist of shuttles from the Peace Garden lots, as well as limited parking on site. A lot was added to the South of the complex and the East road was widened to accommodate for streetside parking.

Site History: What's with the Turtle?

While designing this project using the harmonic grid, a turtle "emerged" from the lines. As insignificant as a turtle may seem to be, this is not the case when it comes to the premise of this project. Firstly, the location of the site is in the Turtle Mountain Region. This area was named by the local Native American tribes whose creation story involves a turtle that "emerged" from the depths of the sea during the great flood. This created a mound of land, hence "Turtle Mountain". In Ojibwe legend, the turtle's name was Mikinaak, which is also the Ojibwe word for "snapping turtle". This seemed a fitting name for the hall, as the Peace Gardens are on what was significant land for the native tribes.

Turtles also make frequent appearances in many different creation stories, such as in Hinduism, further accentuating the connections between cultures and the arts internationally - fitting for an international camp in an international peace garden.



Site Photos