responsive frameworks

polyfunctional space for dynamic stimulus
problem statement

how does a building respond to dynamic stimulus?
a diverse program informs flexible patterns of organization that can be modified as needs change over time.
typology

performing arts
performing arts requires various lighting, spatial qualities and diverse programming to be created and recreated within the same space. (tisi paredes)
similarities and differences between program elements inform combined design solutions.
a flexible framework yields space that can adapt to user modification.
unifying idea

creating polyfunctional space through the use of kinetic components and flexible design solutions.
project justification

conserving the embodied energy of the built environment by maximizing the effectiveness of space.
embodied energy
design recycling
effectiveness?
client minnetonka center for arts
site orono, mn
site location: roughly 350,00 sq.ft
grand forks
fargo
st cloud
orono
minneapolis
st paul

100 mi
200 mi
300 mi
live performance

“music, dance and the spoken word” (weathersby)
history of live performance
1919 - bauhaus movement
1930 - beatniks
1970 - song and dance / performance art
1980 to present - new media
performing arts architecture

“performing arts architecture is like storytelling, a text with a dramatic effect that contributes to the goal of heightening the imagination of theatergoers” (kolleeny)
economic precedents

“few cities besides washington, new york, and los angeles can support the single purpose, shoebox theater...the dollars are astronomical.” (russell cooper)
“cities attuned to the benefits of the arts look for landmark architecture to make maximum impact” (Russell Cooper). This approach to architectural design, although credited for their economic benefit made famous by architect Frank Gehry (the Bilbao effect) does not belong to theatrical design amidst current the economic status.
financial support

“for smaller cities that can’t afford to build stand alone facilities, universities can successfully merge town and gown.” (russell cooper)
so where does that leave us?
not here...
wyly theater
dallas, texas
rex | oma

Corporate sponsor (AT&T)
350 million dollar project
80,300 square feet
132 foot tall tower
575 seat theater
12 levels
research summary
-intimate and versatile design
-non-profit & education clients
-dynamic program requirements
site reconnaissance
dense tree cover - tall grass - mowed grass - swamp conditions - drainage
slope calculation: slopes across the site never exceed 12 percent grade. A majority of the site, nearly 73%, has a slope between 0-6 percent. This is an easy grade to build on, and fine for casual pedestrian movement.
above - winter solstice

below - summer solstice
figure & ground study
point & linear noise source
residential & commercial buildings

overhead powerlines every 130-170'

dakota regional train

minnetonka center for the arts

POST OFFICE

creative kids academy

POST OFFICE

residential & commercial buildings
private & public circulation
RR-1B
PRD planned residential development
L1-RA one-family lakeshore-residential
RR-1B one-family rural-residential
summer & winter winds
shadow coverage
point of interest - rain garden: This element found across the street from the site location is a rain garden collecting runoff from the parking lots at the Minnetonka Center for the Arts. Its strong visual axis will play a strong role in the identity and site design of the performing arts center.
THRUST STAGE

audience

stage
PROSCENIUM STAGE

stage

audience
BLACK BOX | anything goes!

? — audience

? — stage

?
function | classroom, dispersed classroom, recital, etc...
lvl01 | two thrust stage
lvl01 | round stage
lvl01 | two proscenium stage
lvl01 | opposed stage
process | variation of a theme
lvl01 | auditorium, set, mechanical, props, locker rooms, public bath, reception, lobby, lounge

lvl02 | changing rooms, offices, rehearsal studios, audio/visual

lvl03 | fly tower “bridge”
PROCESS | facade study
computer crashed (x 3) 
process lost...
level one
2 x thrust stage
level one
box stage
level one
thrust stage
level one
2 x proscenium stage
level one
round stage
This thesis investigates the question 'how does a building respond to dynamic stimulus over time?' A performing arts center at the non-profit Minnetonka Center for Arts is the vehicle for research. As the building program and users change throughout the day, this solution responds through a flexible framework enabling the client to modify the central space to suit their needs. The goal of this research is to produce a model that addresses efficiency of space and embodied energy in addition to satisfying current trends in theater design.
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