

tahoe center for environmental sciences

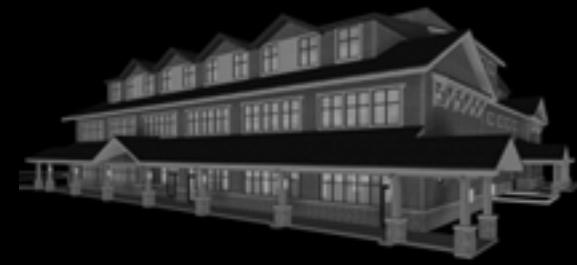


name • dave maino

option • lighting/electrical

date • 12.06.05

building overview



location · incline village, nv

size · 3 stories, 45,000 sf

cost · \$24,000,000

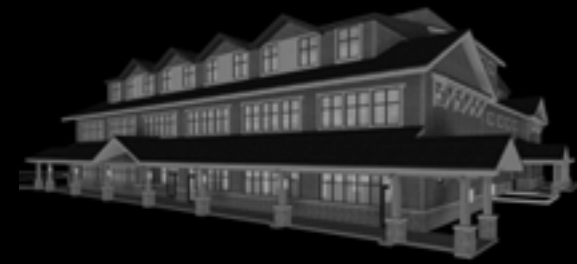
architect · lundahl & associates

electrical · integrated design associates

lighting · david nelson and associates

considerations · currently 5 points over LEED platinum

building overview



electrical · 208Y/120V main service

lighting · 120V, fluorescent & metal halide

daylight · atrium provides daylight to central circulation spaces

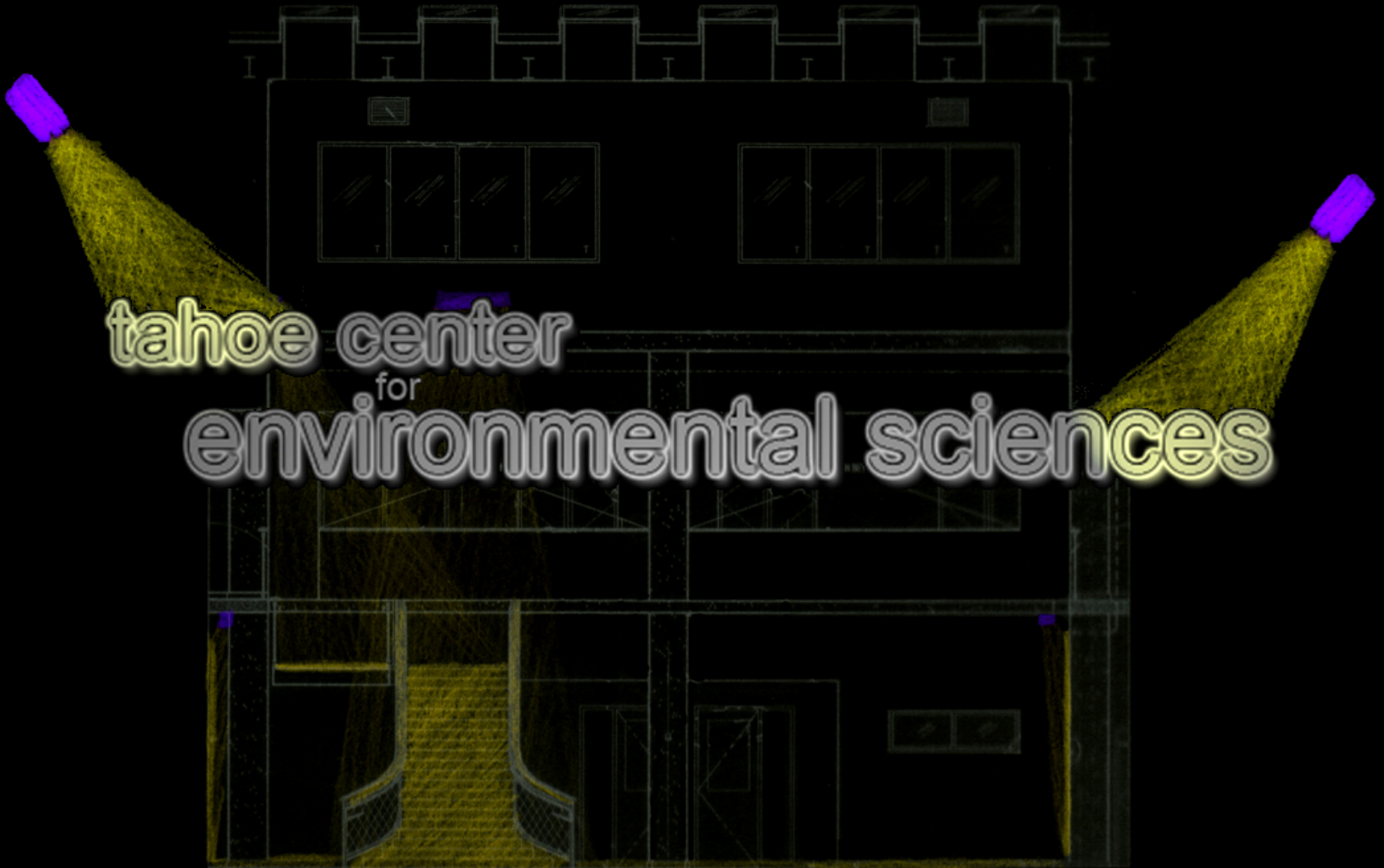
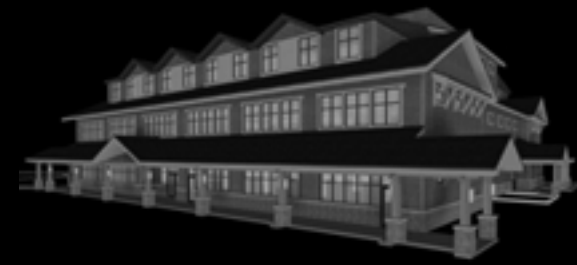
photovoltaics · 30kW of installed photovoltaics

cogeneration · 30kW capstone microturbine

heating/cooling · radiant ceiling panels and floors

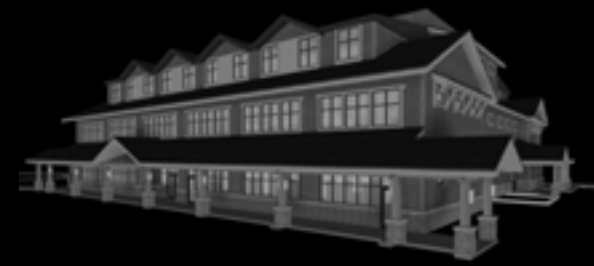
hot water · solar hot water collectors located on roof
+ cogen unit output

lighting



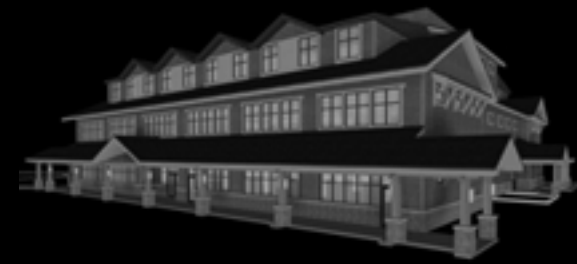
tahoe center
for
environmental sciences

lighting



...beauty in simplicity...

façade

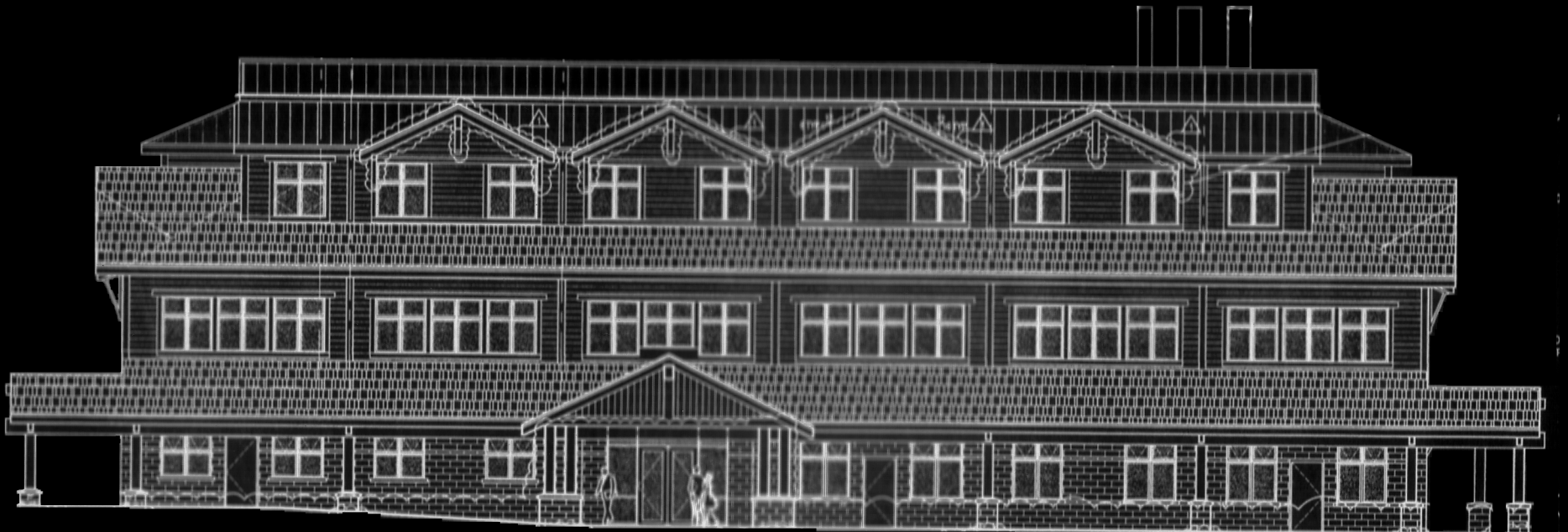


criteria · meet code requirements

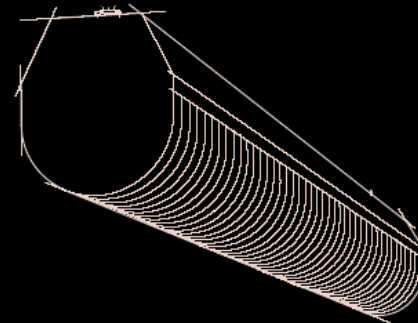
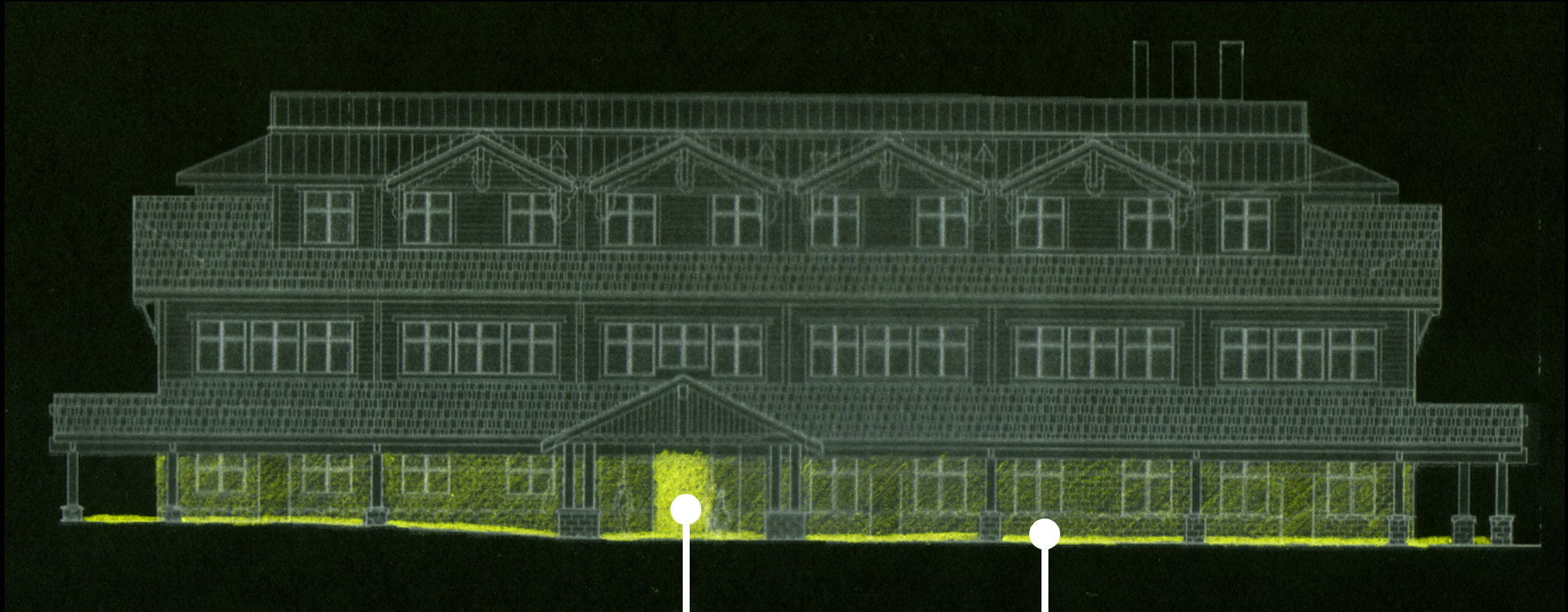
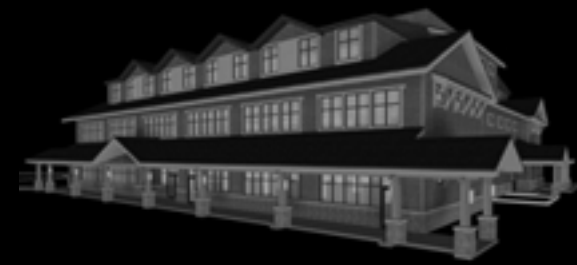
criteria · “green,” LEED platinum design

criteria · highlight the entrance

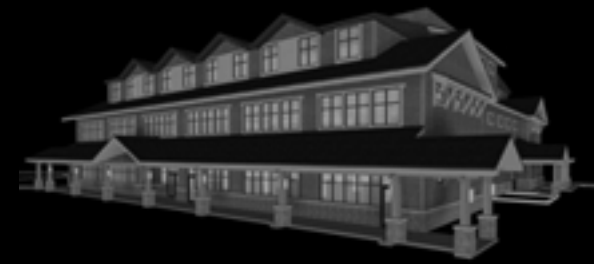
criteria · dark sky compliant fixtures



façade



lobby



criteria · highlight receptionist

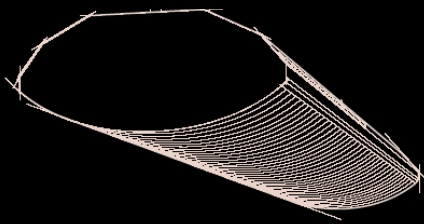
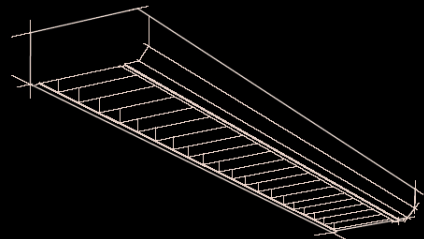
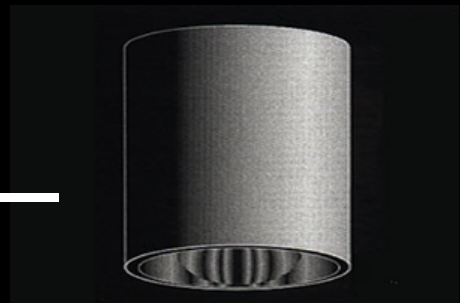
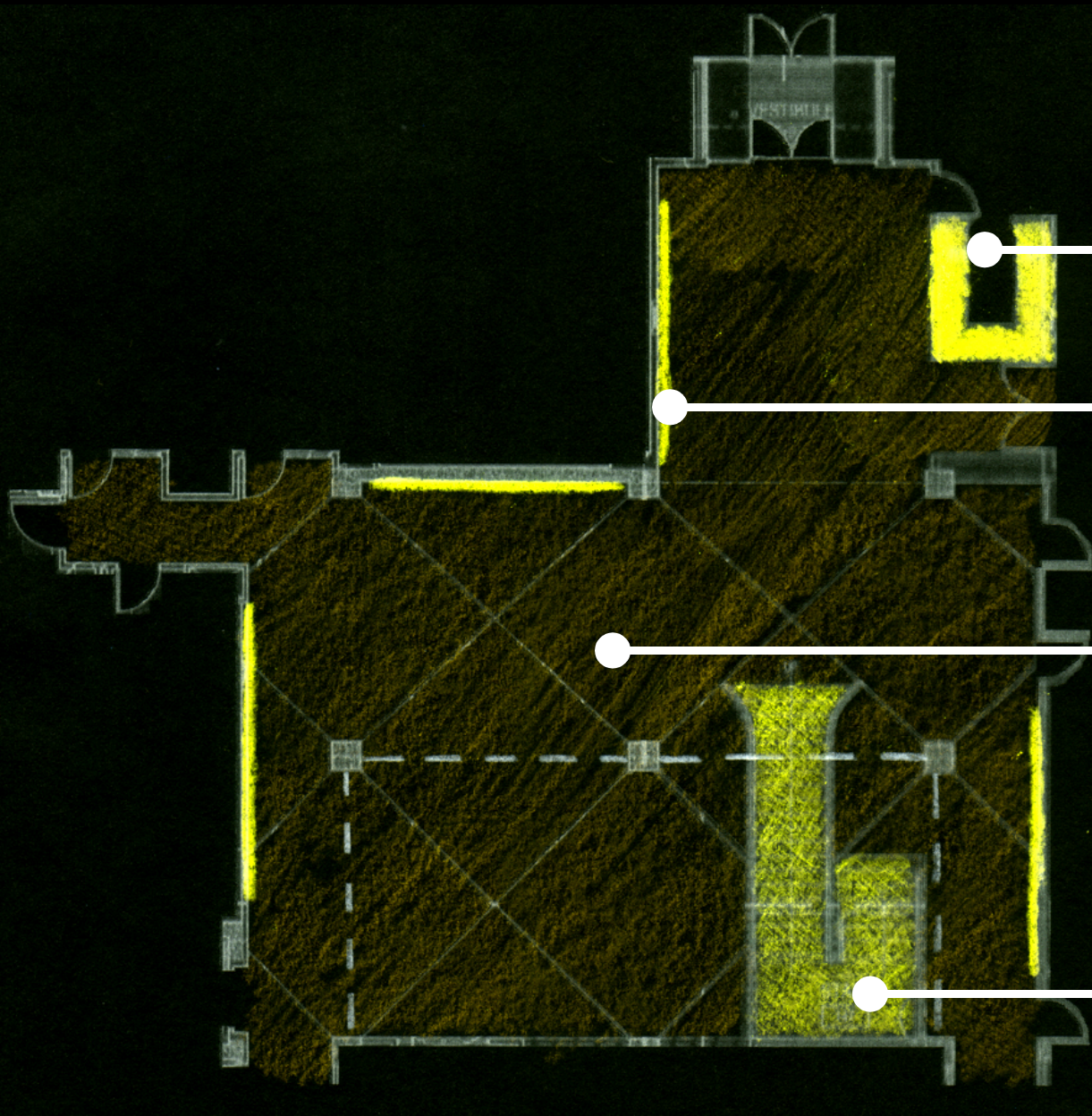
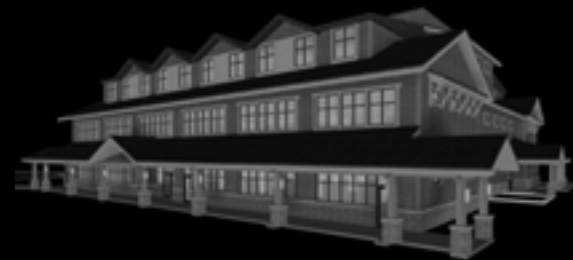
criteria · highlight stairs

criteria · deemphasize elevator

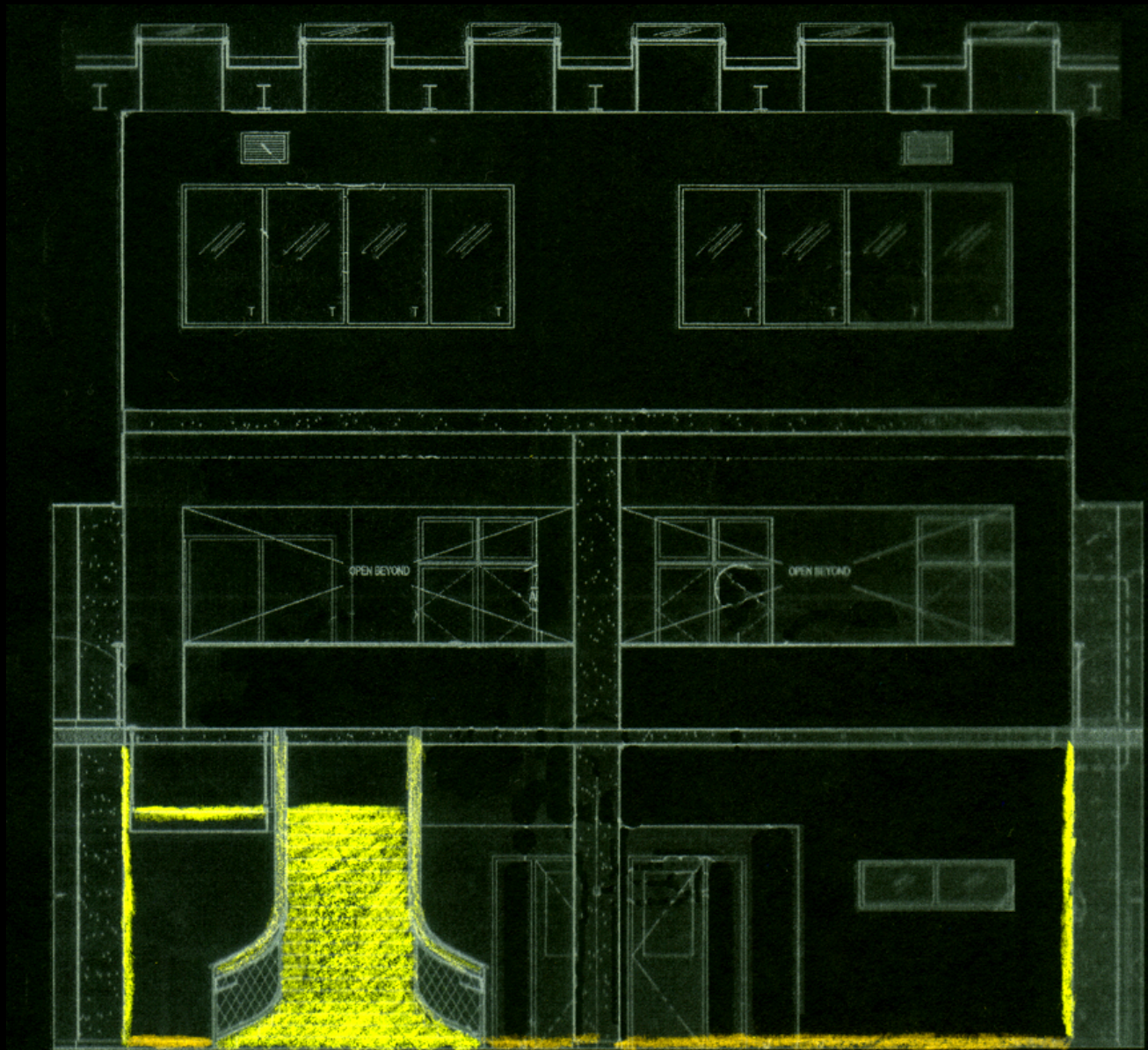
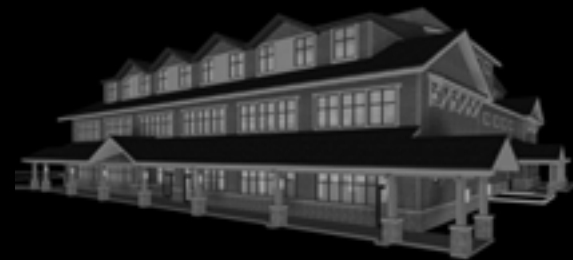
criteria · “green,” LEED platinum design



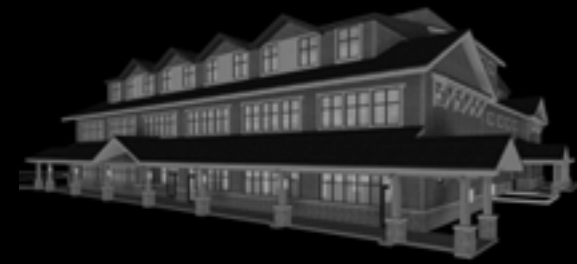
lobby



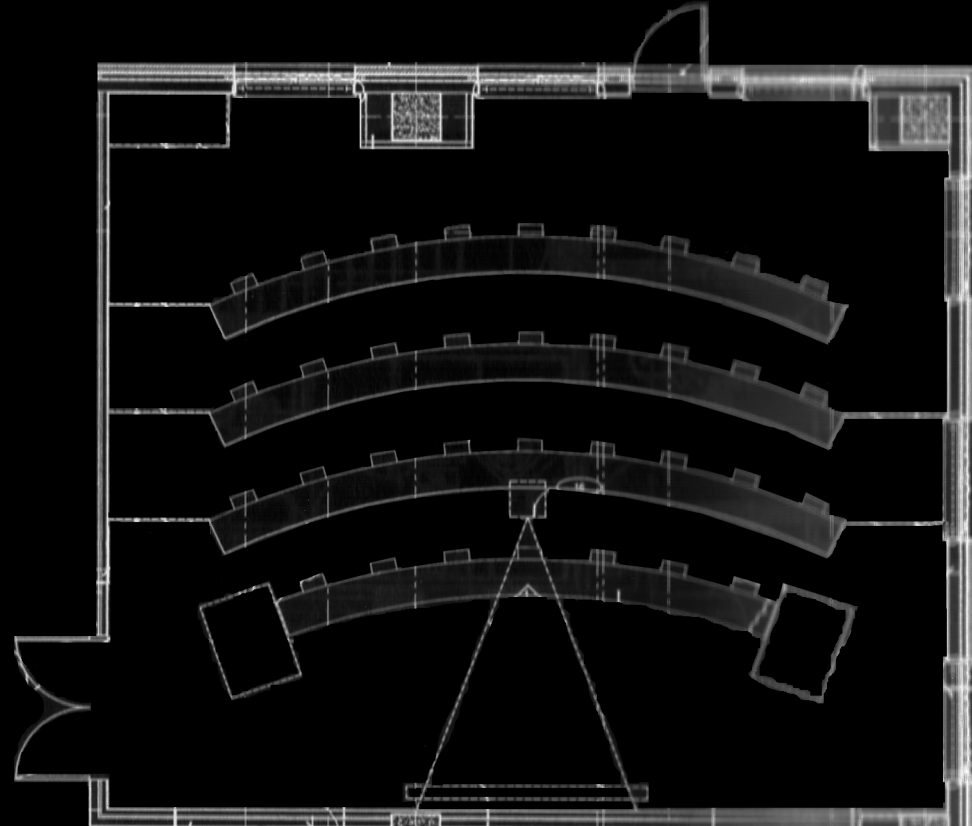
lobby



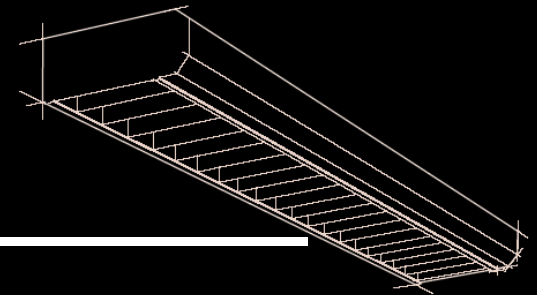
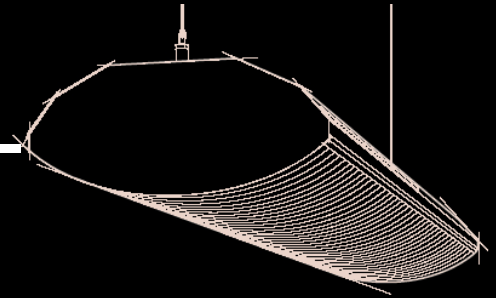
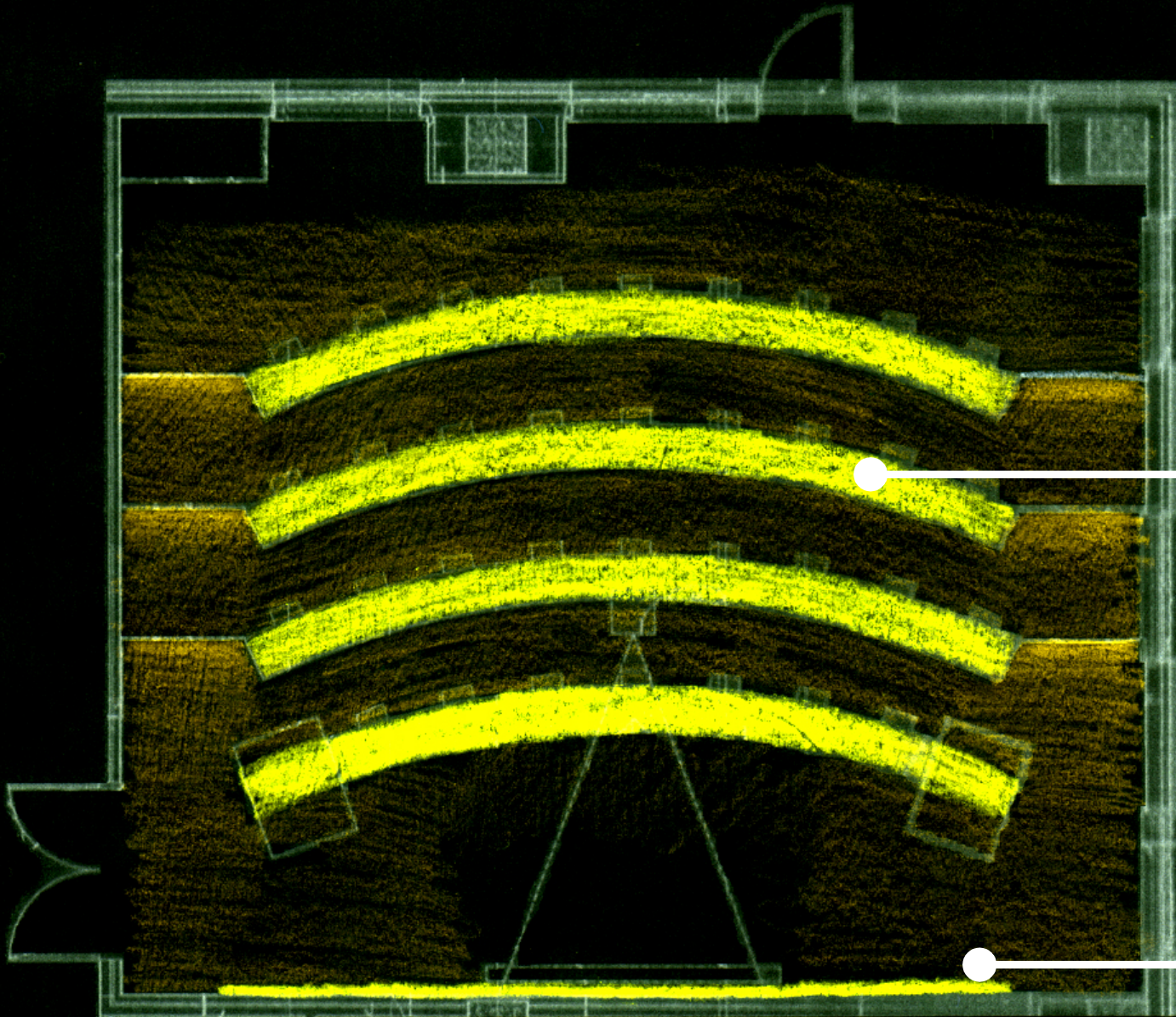
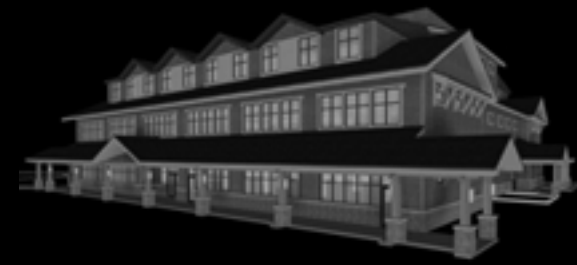
case study room



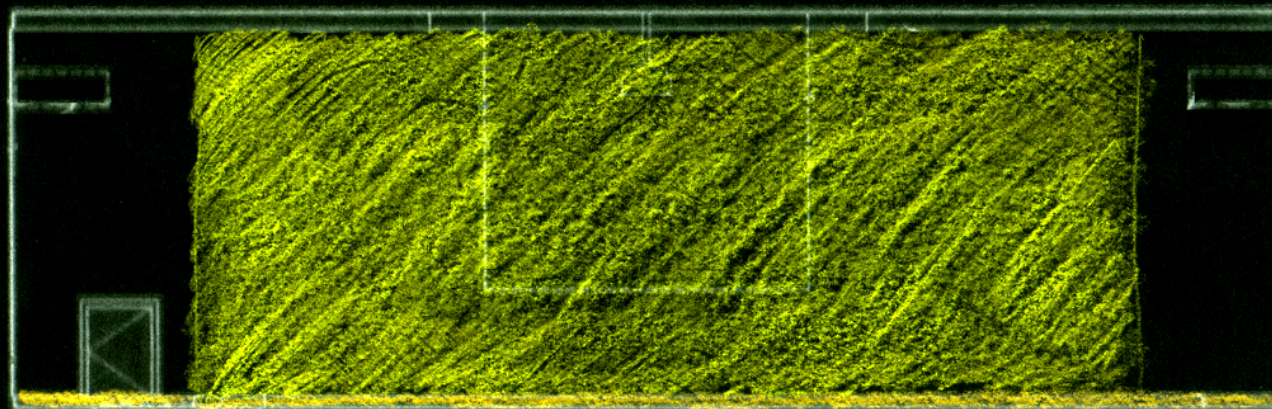
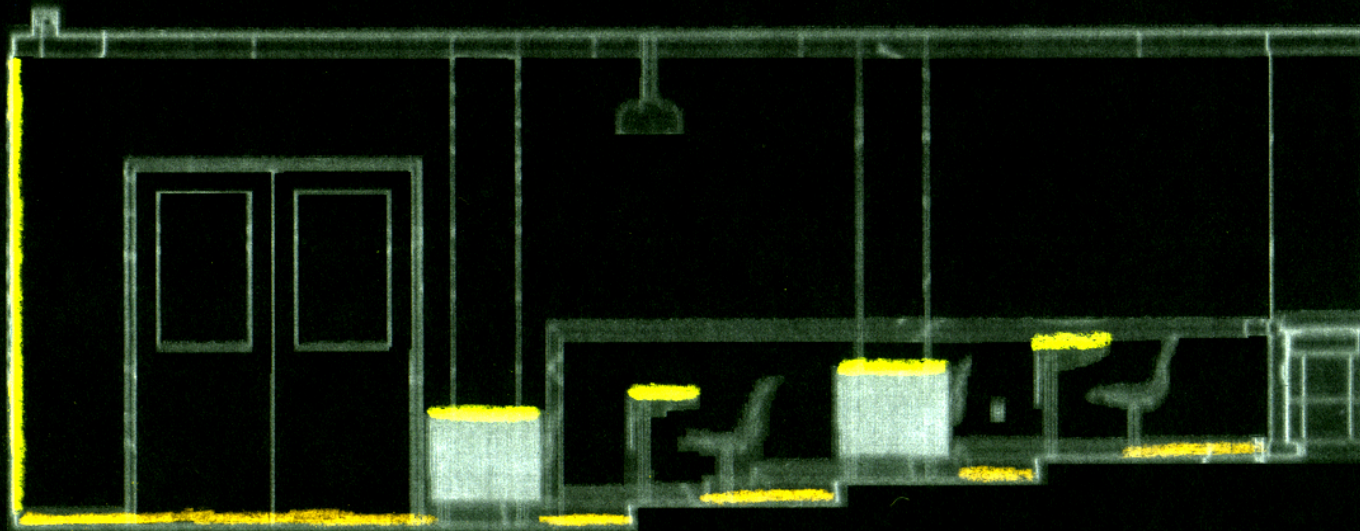
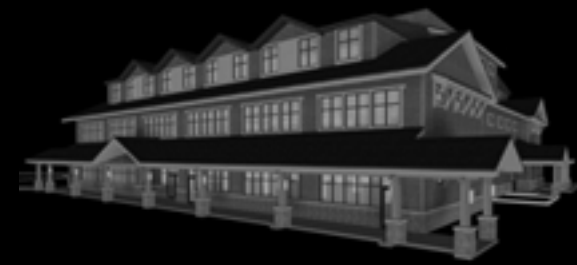
- criteria** · versatile controls (dimming, wallwashers)
- criteria** · light desks, not surroundings
- criteria** · “green.” LEED platinum design



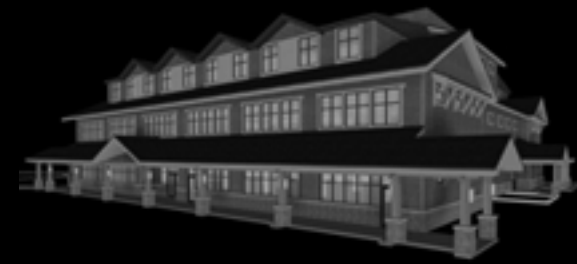
case study room



case study room



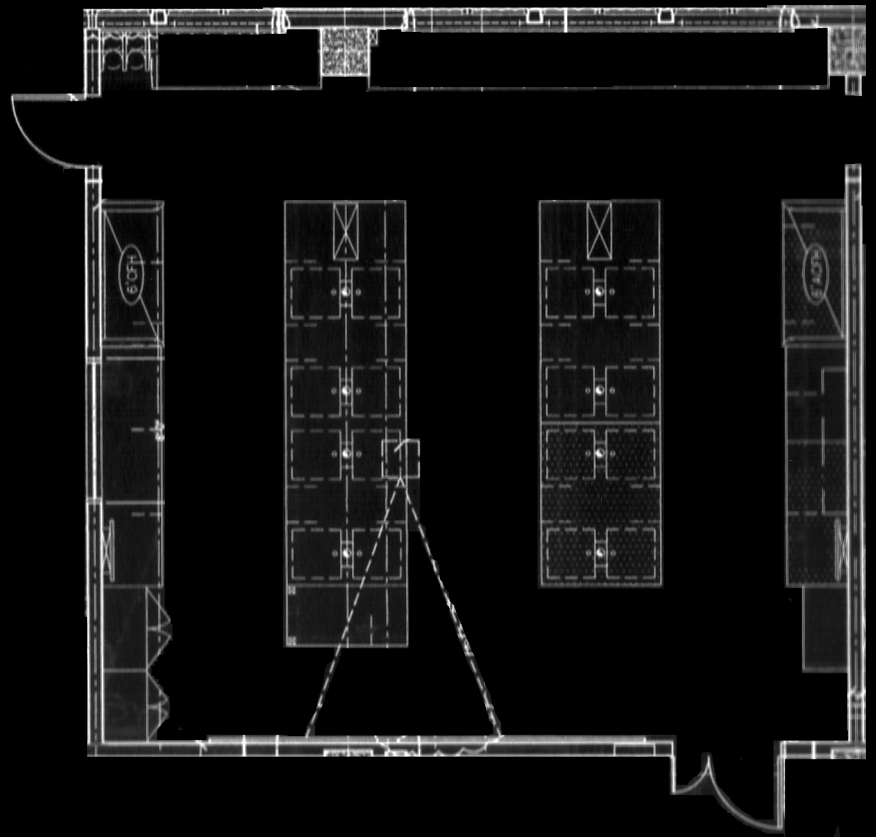
chemistry lab



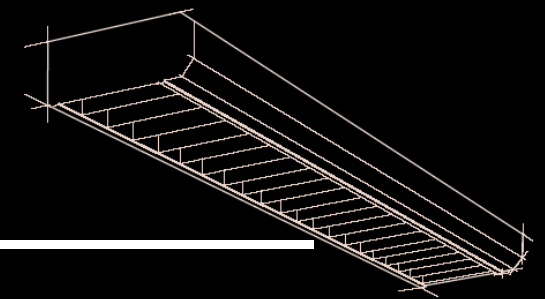
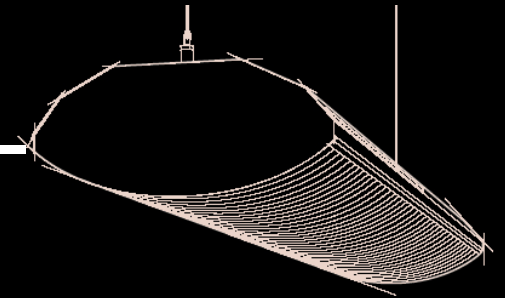
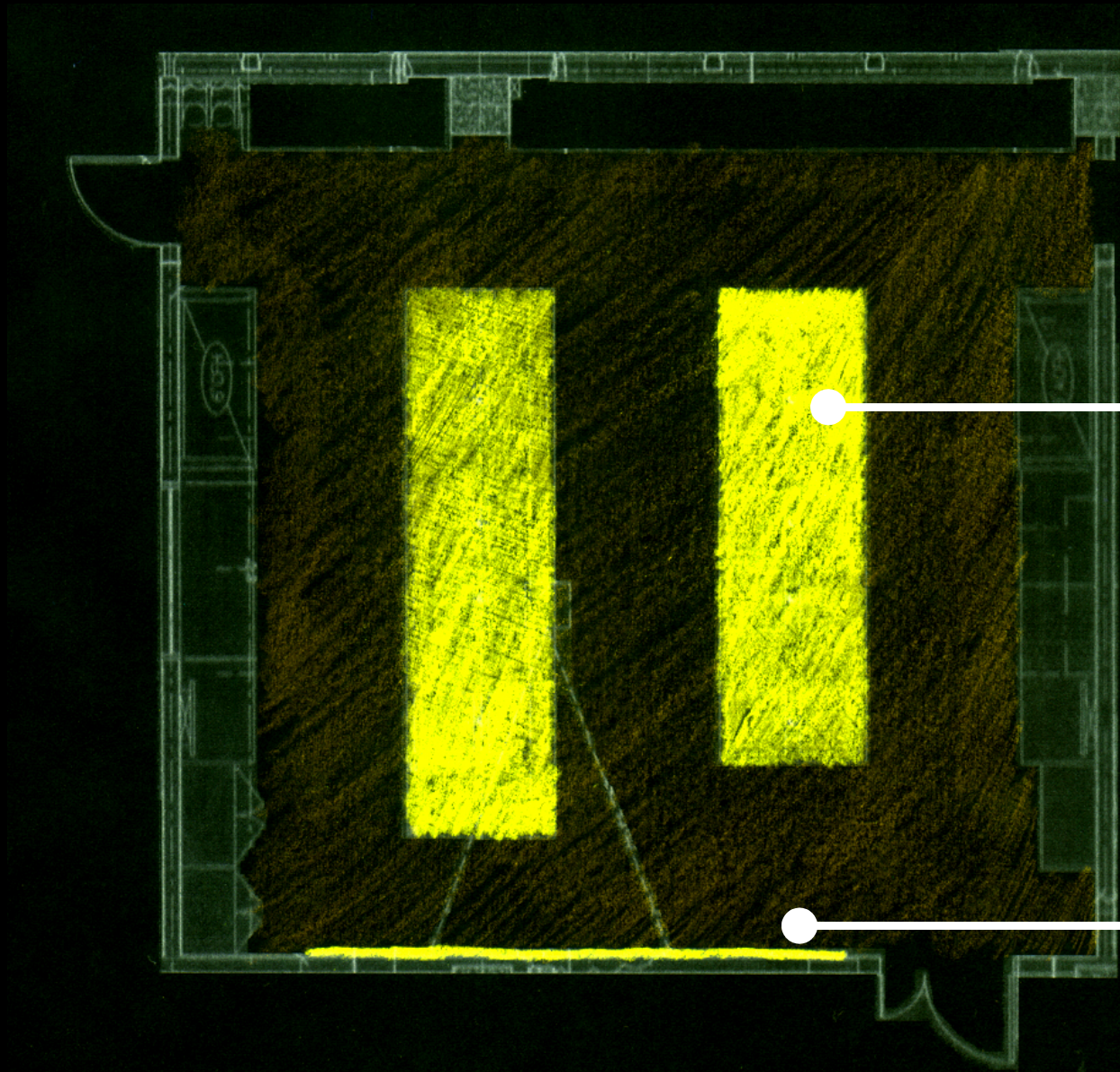
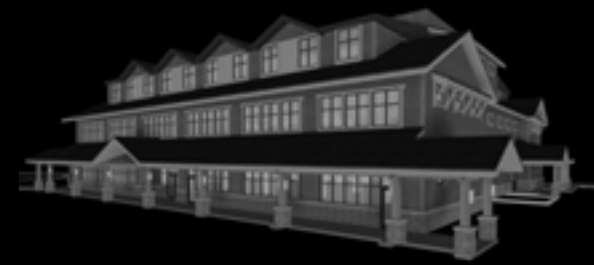
criteria · safety, appropriate light levels

criteria · versatile controls (wallwashers, tasklight)

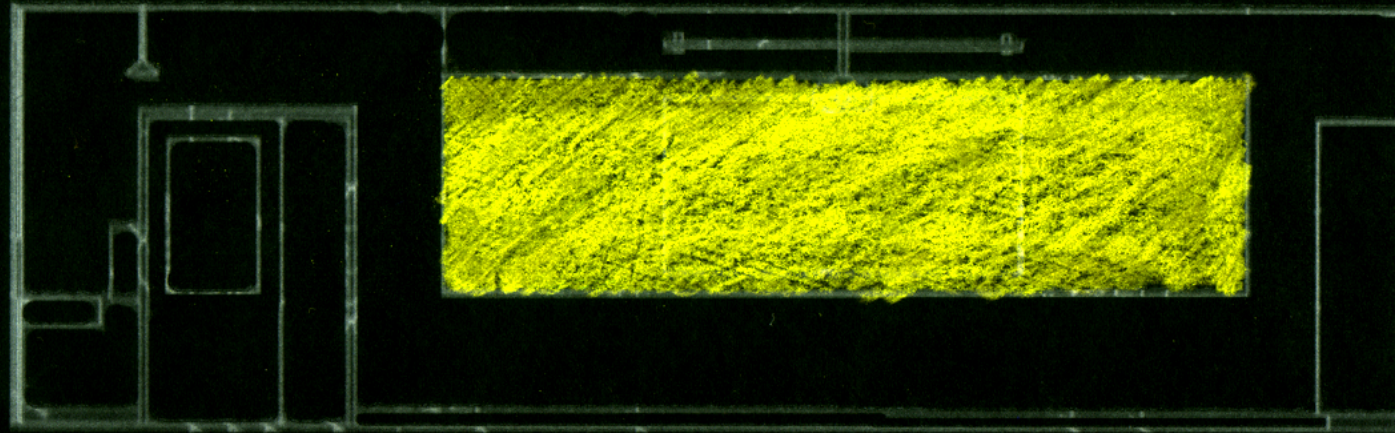
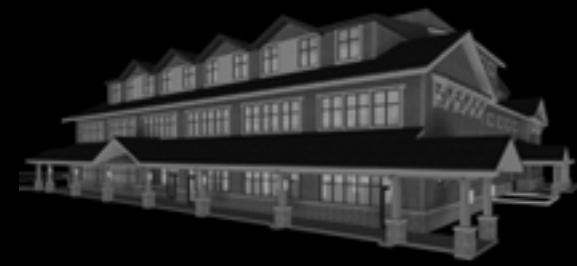
criteria · “green,” LEED platinum design



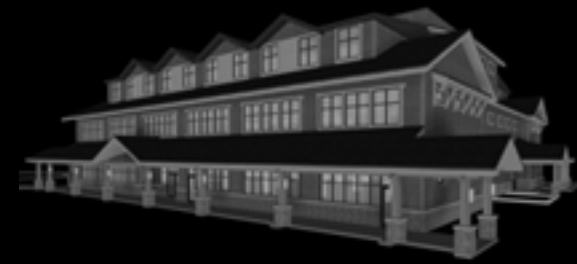
case study room



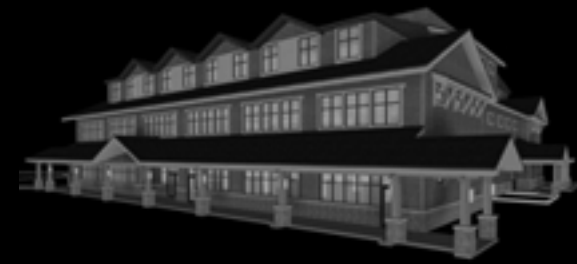
case study room



electrical



cogeneration



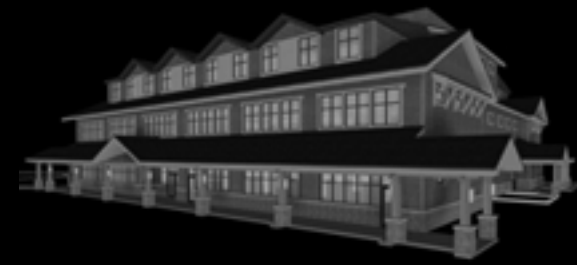
proposed · switch main service from 208V to 480V

benefits · system more efficient

benefits · can “reuse” transformer from cogen unit

problem · verify all equipment will work at
480Y/277V

photovoltaics



proposed · increase to 60kW (20% of bldg load)

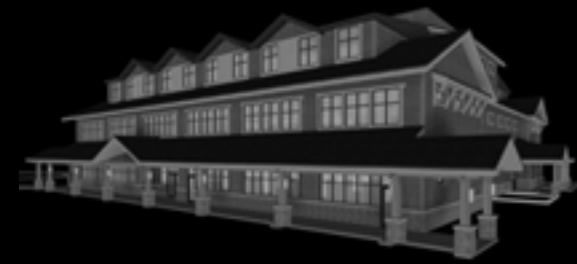
benefits · one more LEED point

benefits · additional available energy

problem · upfront cost

problem · “incentive” disappears

cogeneration



proposed · replace emergency generator with cogen

benefits · eliminate need for emergency generator

benefits · can still use grid as back-up source

problem · load analysis of emergency systems

problem · solar hot water heating load + cogen

problem · additional uses for hot water: absorption cooling, dessicant dehumidification, etc

questions

