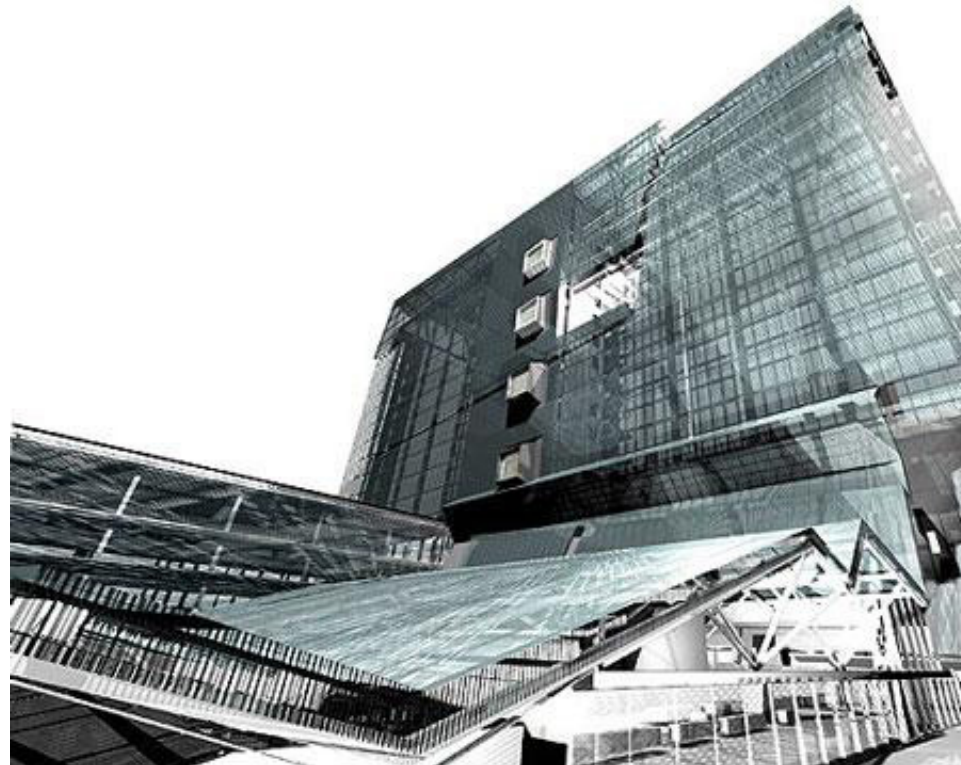


R A D I A T O R    S P E A K

## SMART BUILDINGS NEW BUILT WORK

Both Will Bruder's Phoenix Library and the Morphosis San Francisco Federal Building have pioneered different technologies, both new and old, to create what can be considered a "smart building." A smart building can be characterized in several ways. First, specific building components can be embedded with sensors that will have an input that can then be translated to an output, i.e. solar panels that track the sun. A smart building can also imply specific design choice, which is often a complex amalgam of material, orientation, cultural specificity, and context. Both these projects are examples of new built work that pioneer inventive approaches toward smart design.

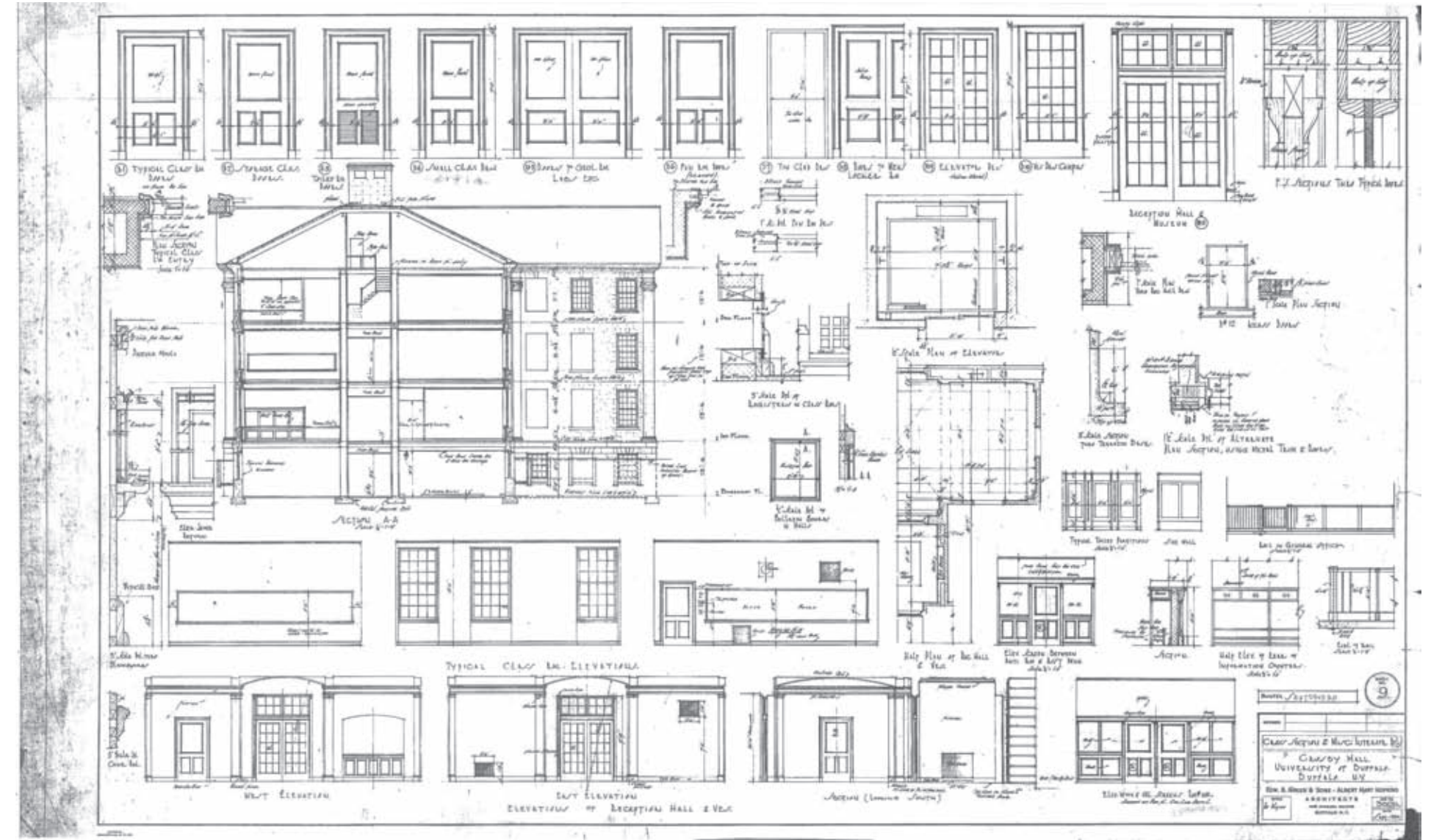
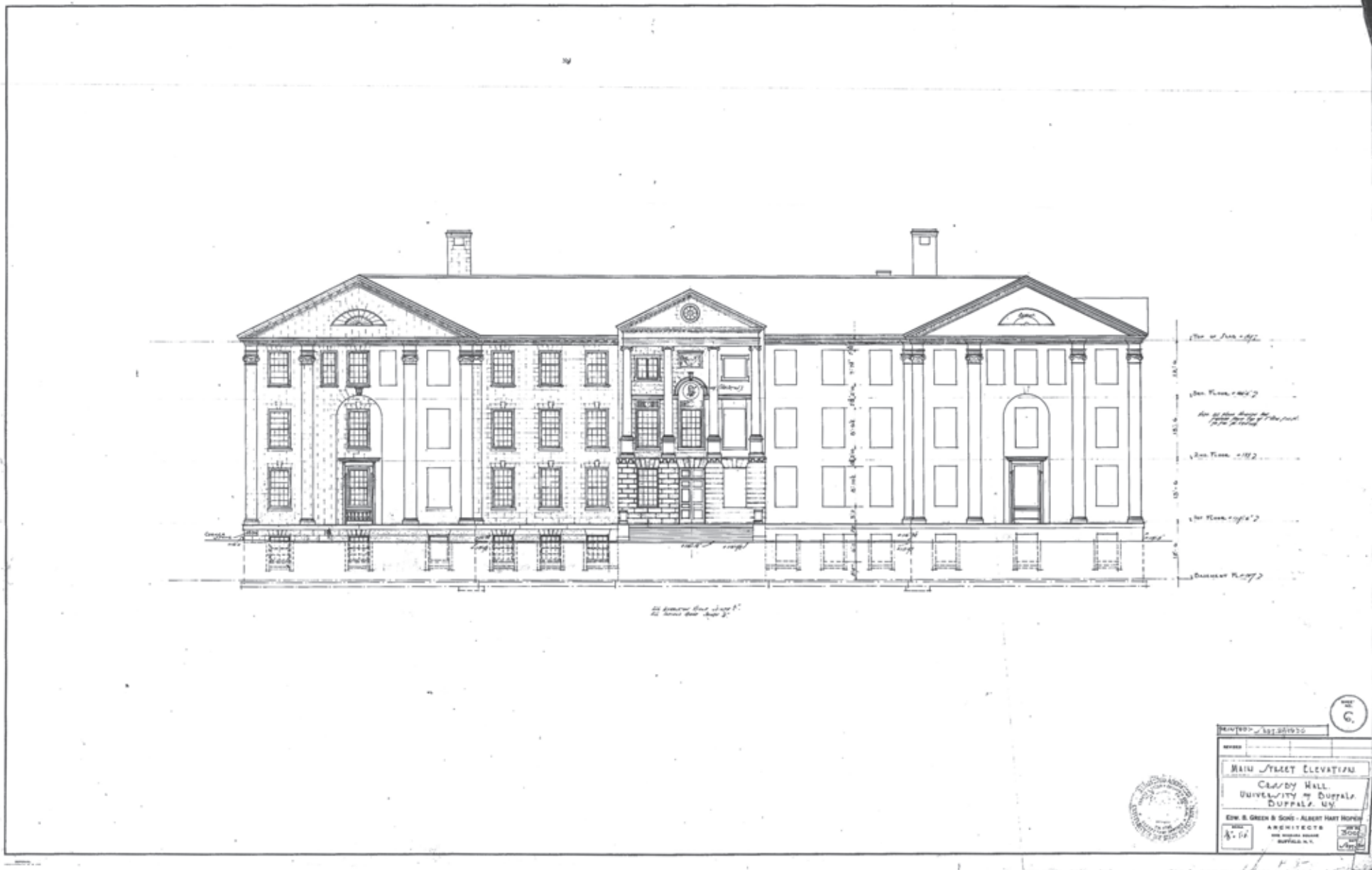


## SMART TECHNOLOGY EXISTING INFRASTRUCTURE

Radiator speak is an investigation that proposes to "listen" to steam radiators specifically in Crosby Hall located at the University at Buffalo South Campus. The methodology proposes a real-time audio analysis with a distributed network of microphones. Nuanced sounds of steam radiators, including moments when they are on, clank, hiss, and when they are off, can be analyzed and mapped. This particular approach to collective intelligence envisions data collected from various nodes that is then analyzed to study the rhythms and cycles of the overall whole. Intelligence is not specifically attributed to either human or machine but rather to the effective synthesis of both parties. This proposal also provides a specific approach to ambient intelligence where existing infrastructures become the site for intervention. The first step in this process for a more intelligent heating system is not to replace with more contemporary technology but to listen to existing infrastructure.

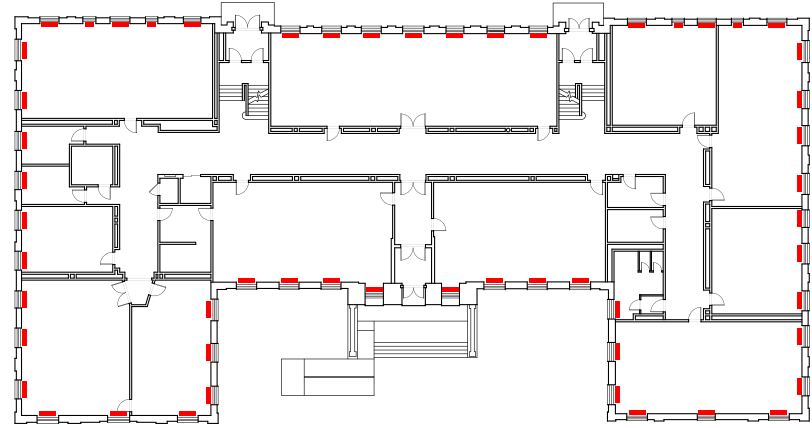


SITE  
CROSBY HALL

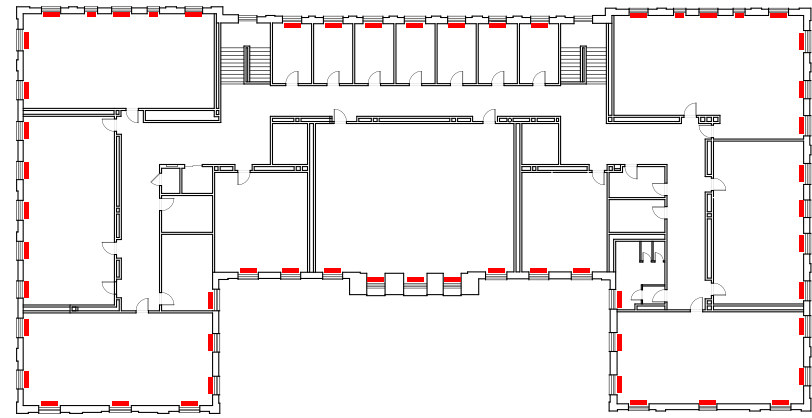


Section drawings from 1930

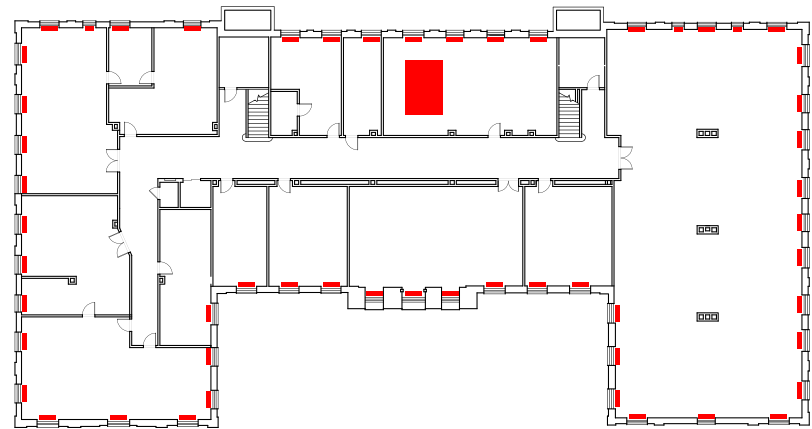
# LOCATION OF RADIATORS



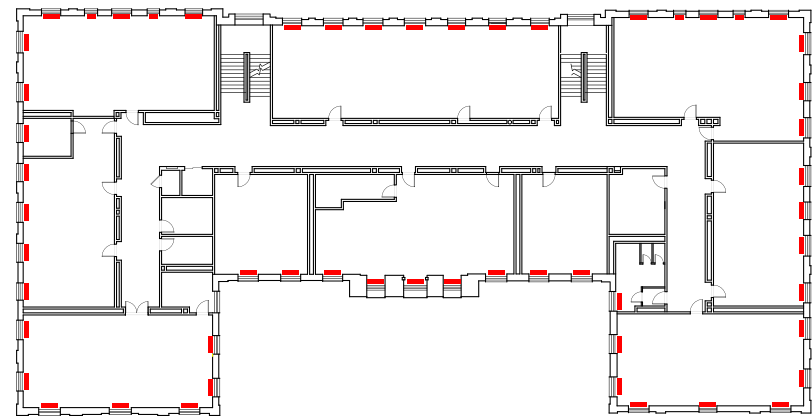
FIRST FLOOR PLAN



THIRD FLOOR PLAN

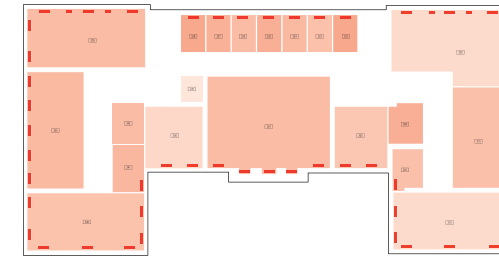


BASEMENT FLOOR PLAN

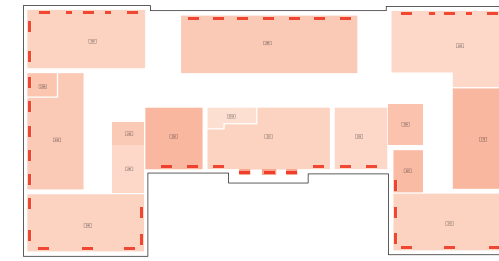
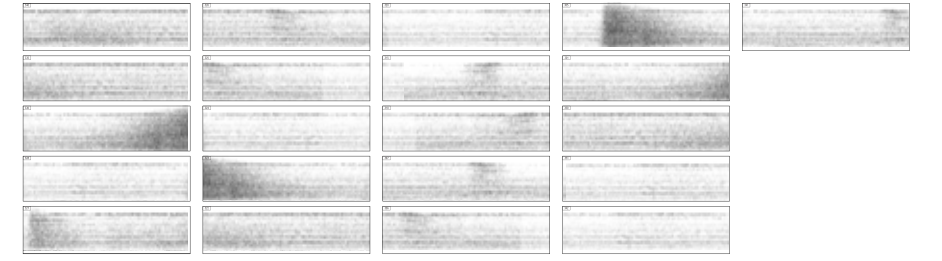


SECOND FLOOR PLAN

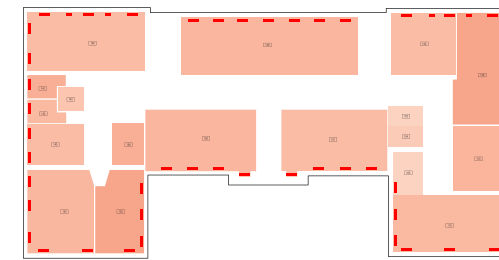
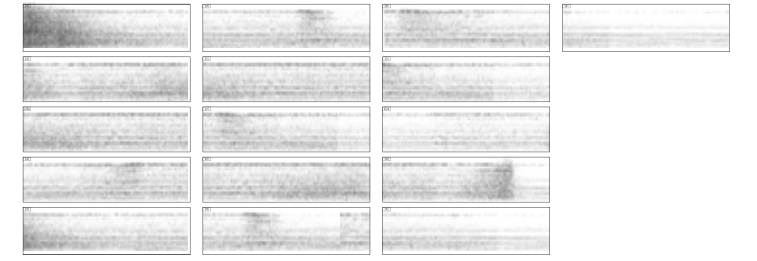
Collective mapping of frequency and amplitude of radiators.



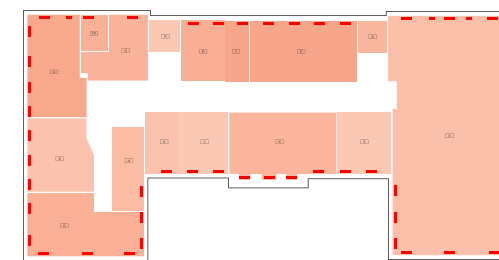
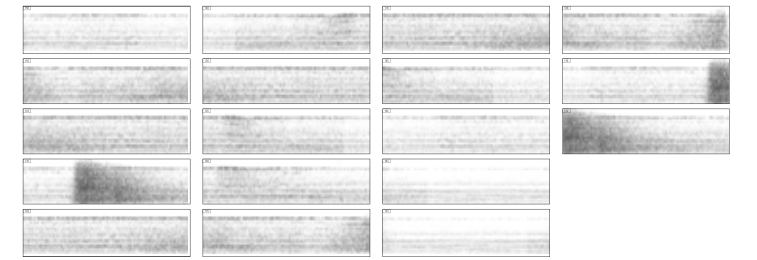
THIRD FLOOR PLAN



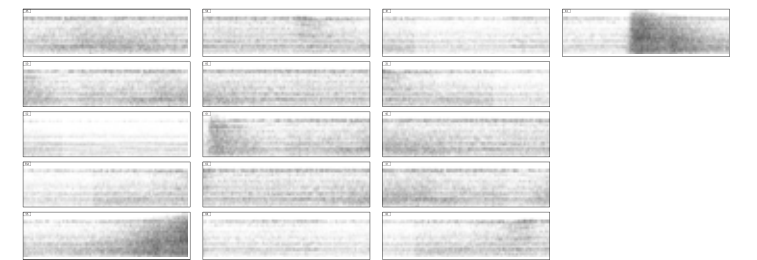
SECOND FLOOR PLAN

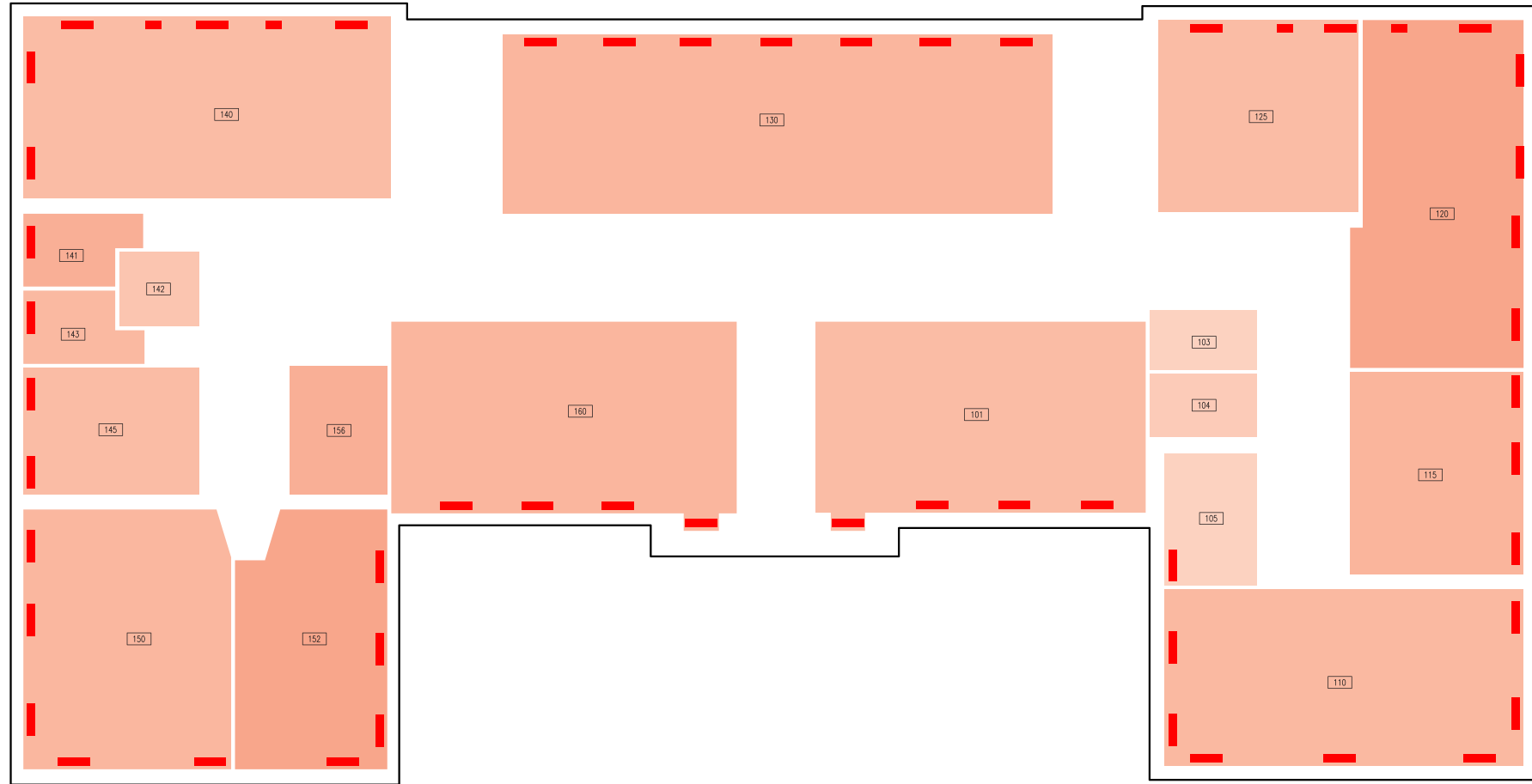


FIRST FLOOR PLAN

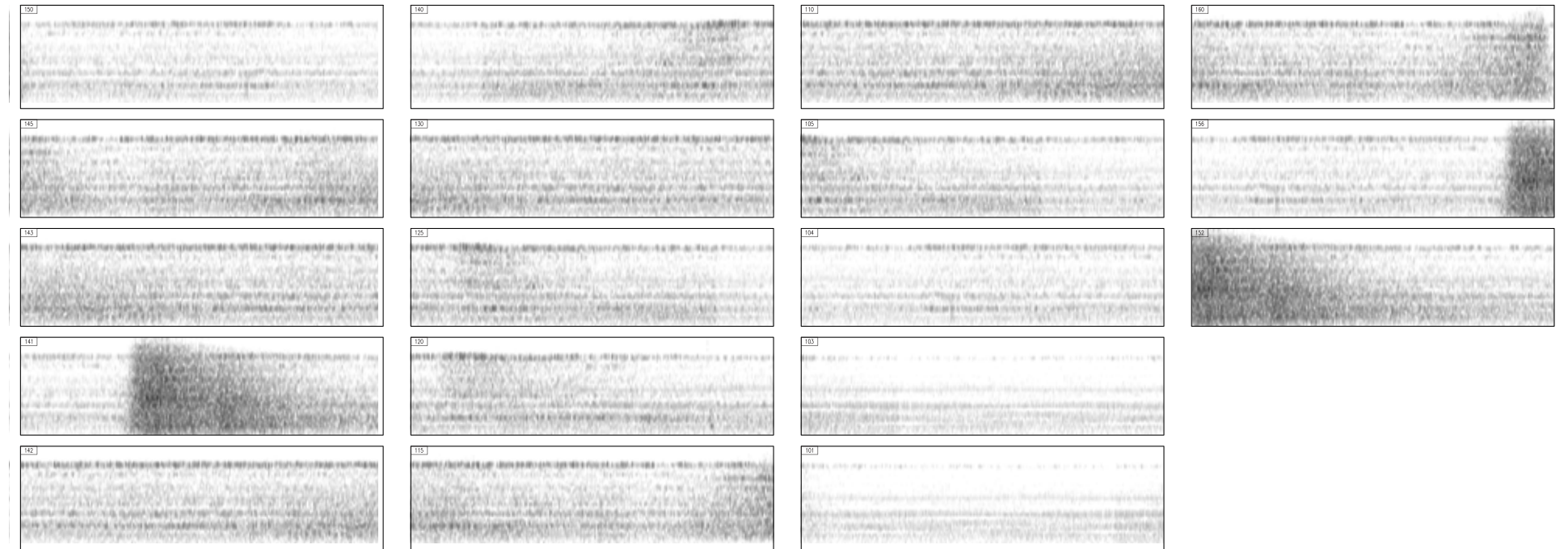


BASEMENT PLAN

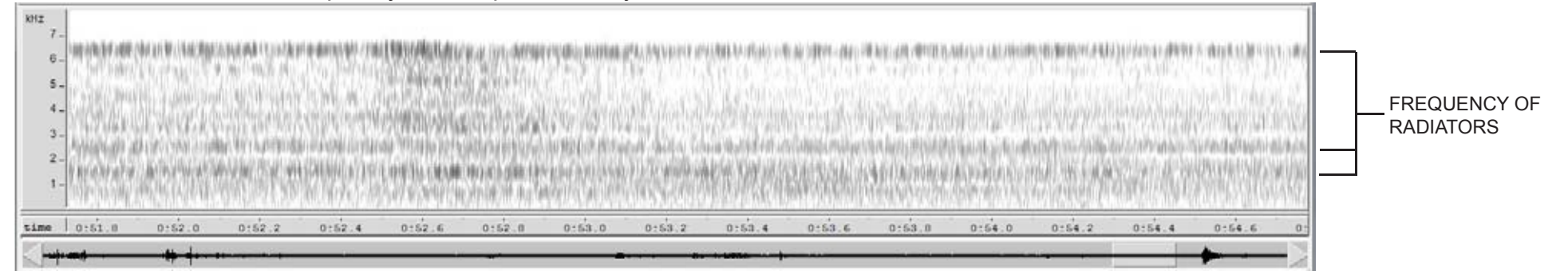


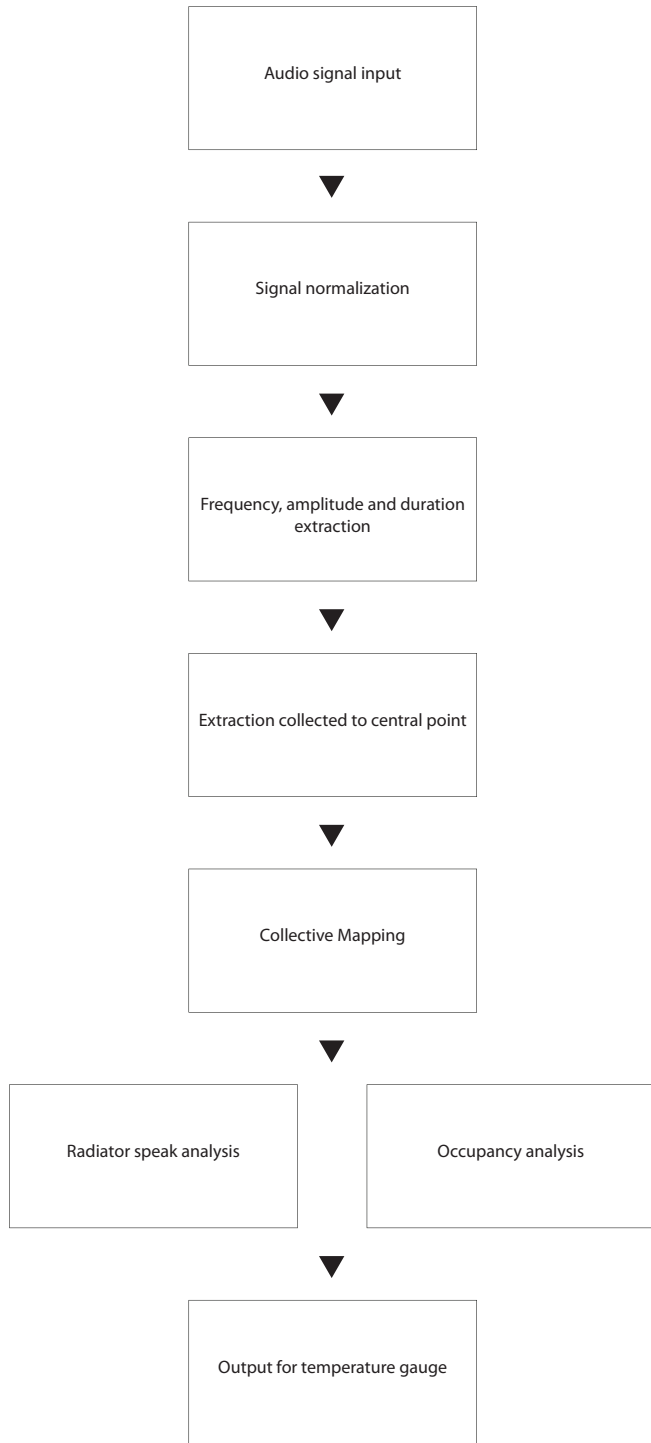


FIRST FLOOR PLAN



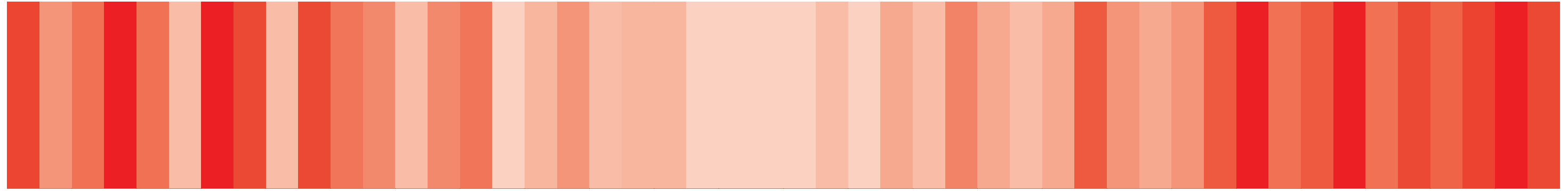
CROSBY ROOM 120 - Frequency and amplitude analysis



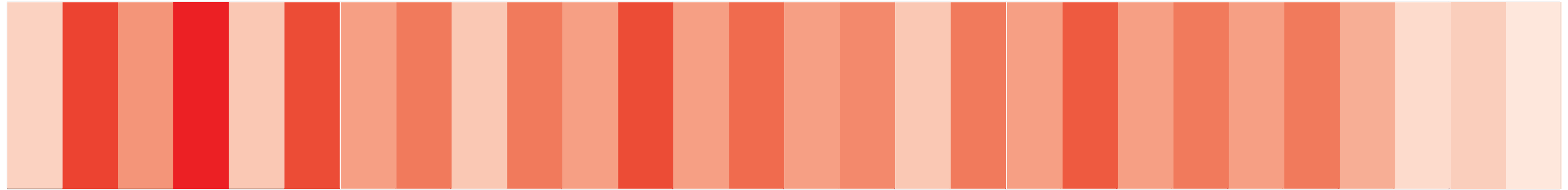


RHYTHMS  
(SINGLE ROOM)  
The darkness of the hue is determined by the duration of the radiators sound.

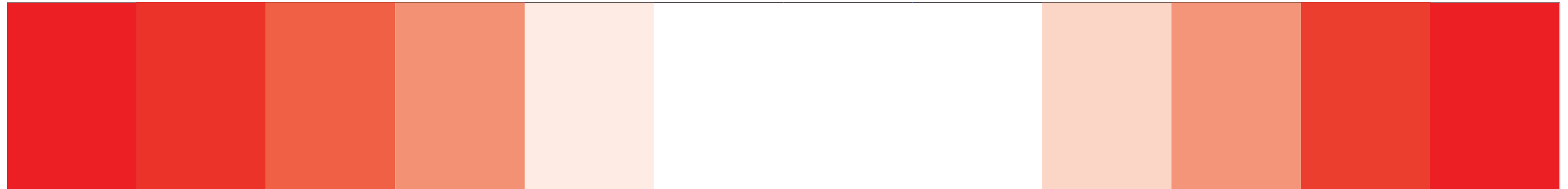
DAY



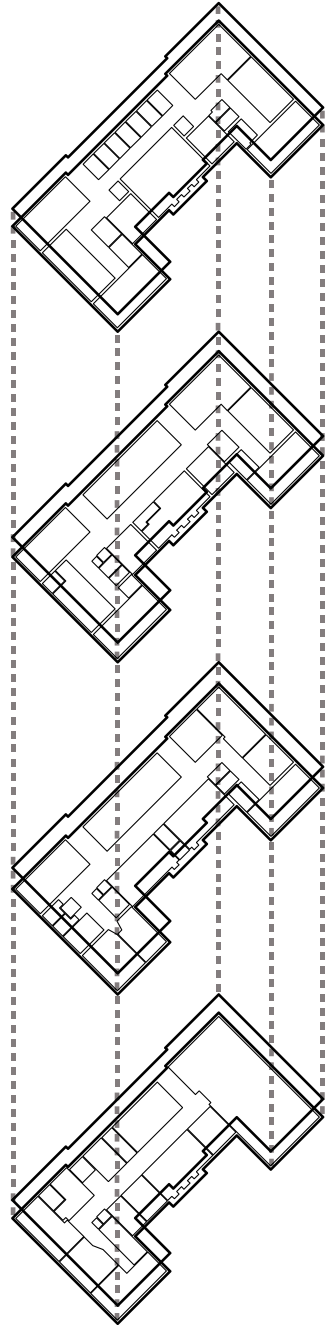
WEEK



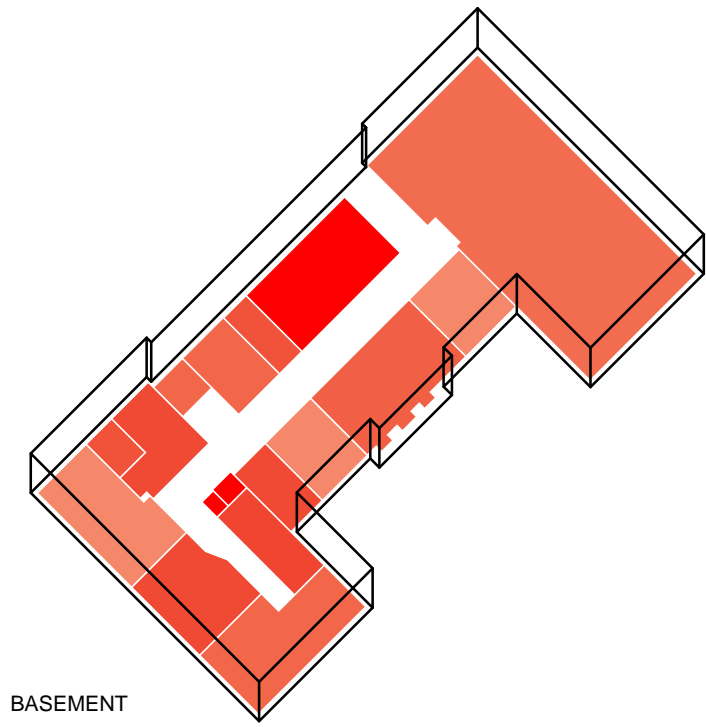
SEASON



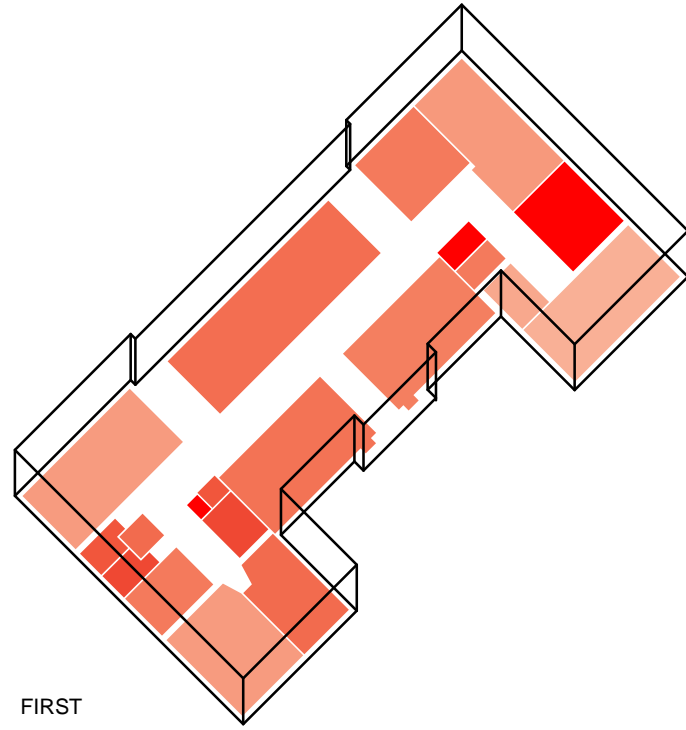
RADIATOR SPEAK  
BUILDING SCALE



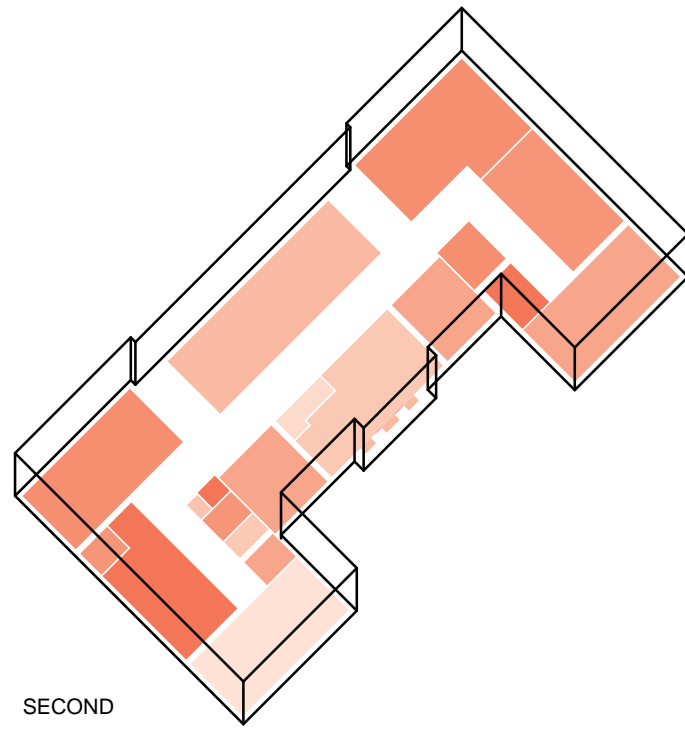
3 minutes when  
steam turns on



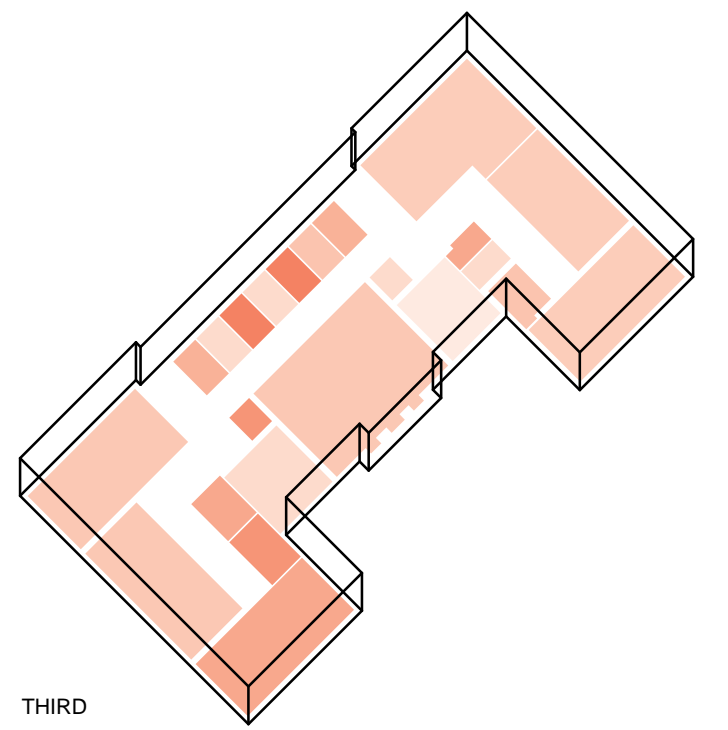
BASEMENT



FIRST

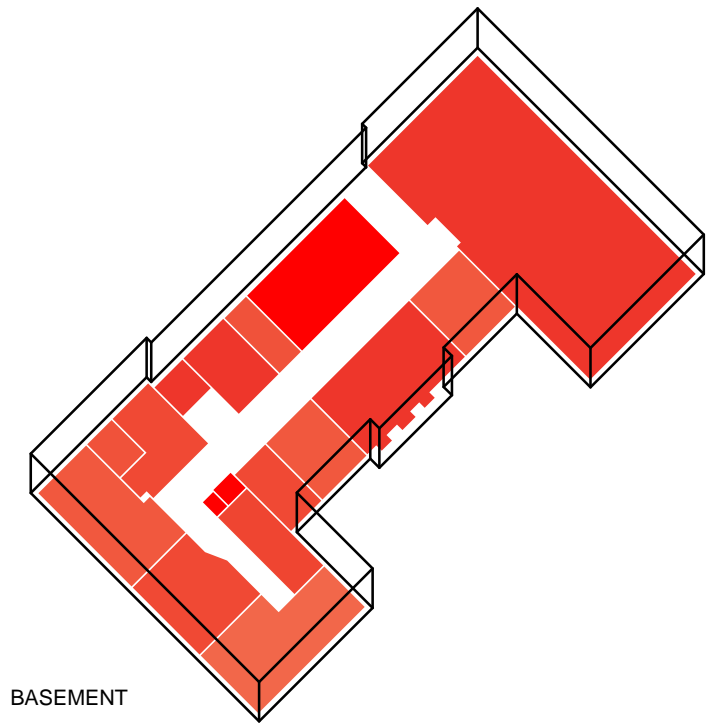


SECOND

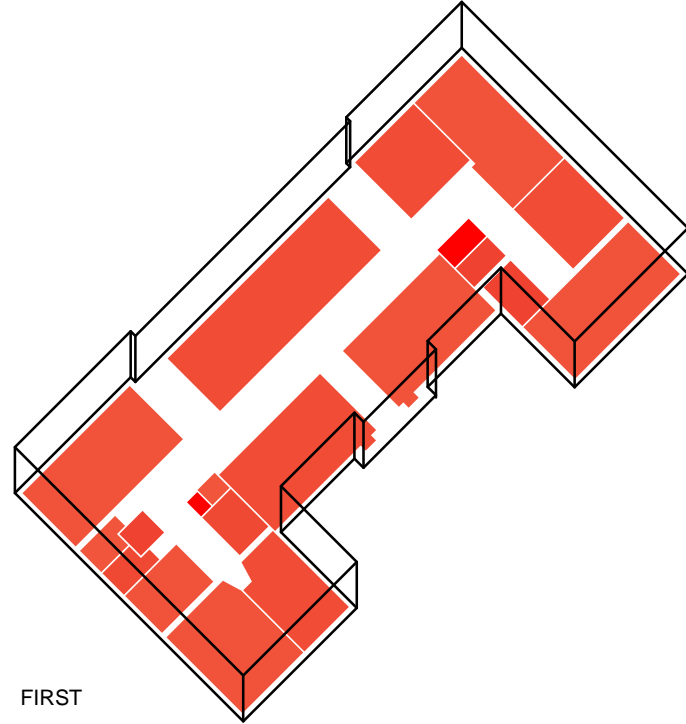


THIRD

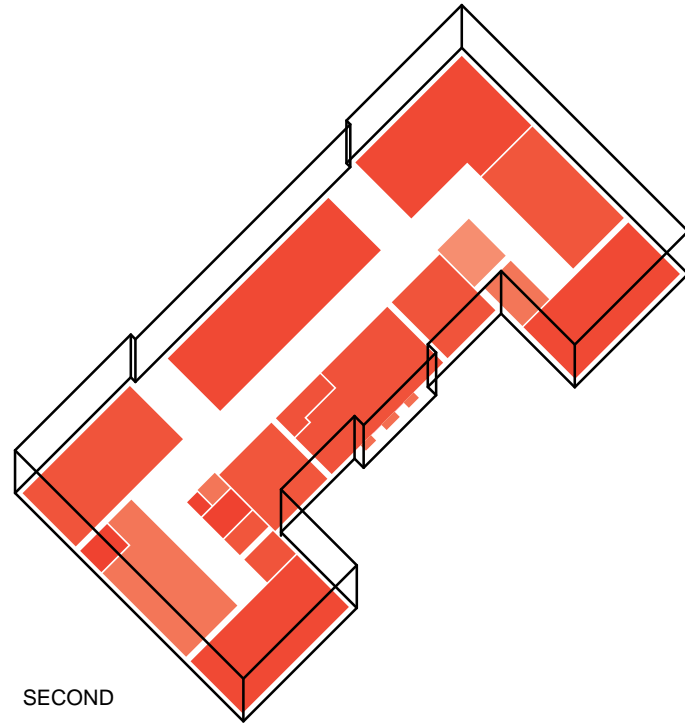
15 minutes when  
steam turns on



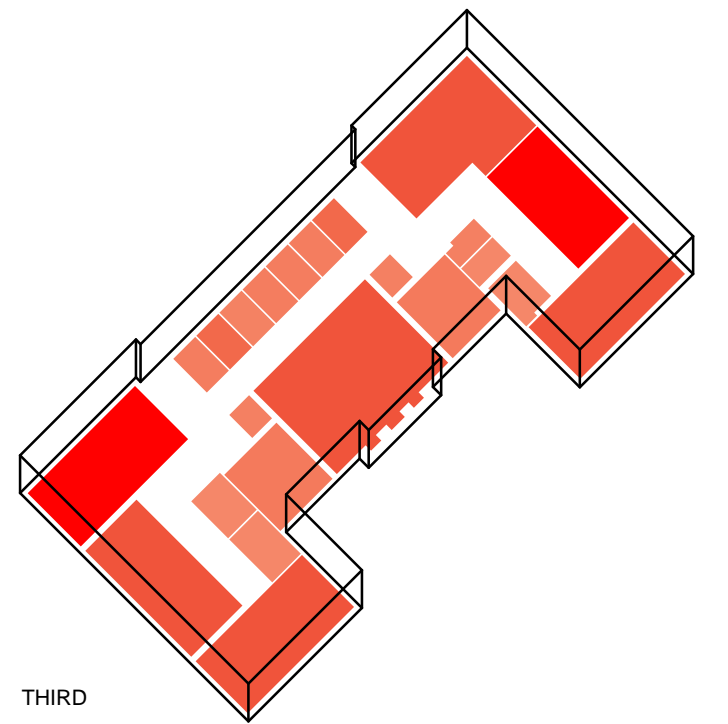
BASEMENT



FIRST



SECOND



THIRD