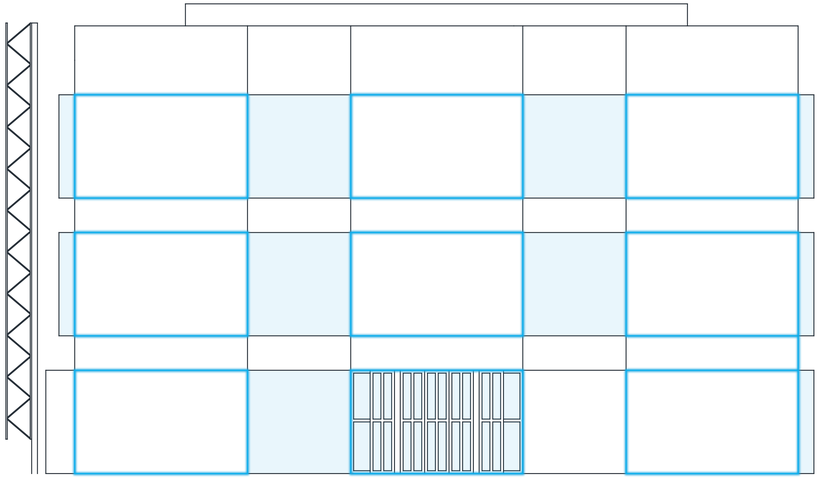
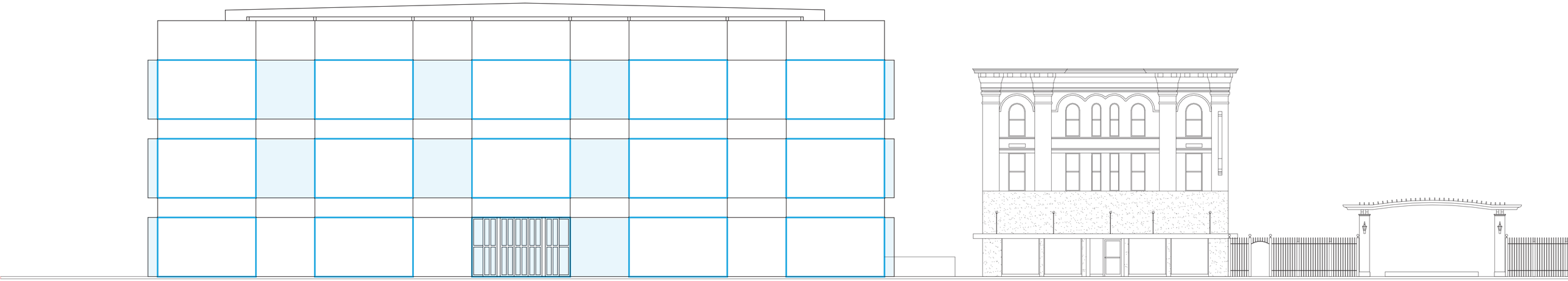


To construct the tartan grid – alternating in spans of 20 feet and 12 feet – we chose steel as our structural material. Our grid was conceptualized to create hidden space between inhabitable volumes to house our mechanical systems and structure. Steel enabled us to do this because of its high strength to size ratio. Concrete or wood would not have allowed for our intermediate mechanical spaces – a crucial element of our design. Although the use of steel makes it possible to achieve our design goals, the amount and types of steel we are using will result in higher construction costs relative to timber or concrete construction. Using as many prefabricated members and connections as possible will minimize this cost.
Steel members being used in our Cybernarium will be hollow structural sections (HSS) and typical W-sections for girders and beams. Our 20' x 12' grid that will be shown in the exterior and interior façades of the building has been altered to achieve structural e ciency. Columns (HSS) are placed every 32 feet with a couple odd instances of 12-foot and 20-foot spans. Girders make the spans just mentioned and beams are spaced halfway between each of the 32-foot spans, creating 16-foot spans for the decking. The unbraced length of our columns will alternate between 12 feet and 4 feet. Using steel for our structural system ultimately enabled us to minimize the footprint of our structure, allowing for more inhabitable space for our buildings users.

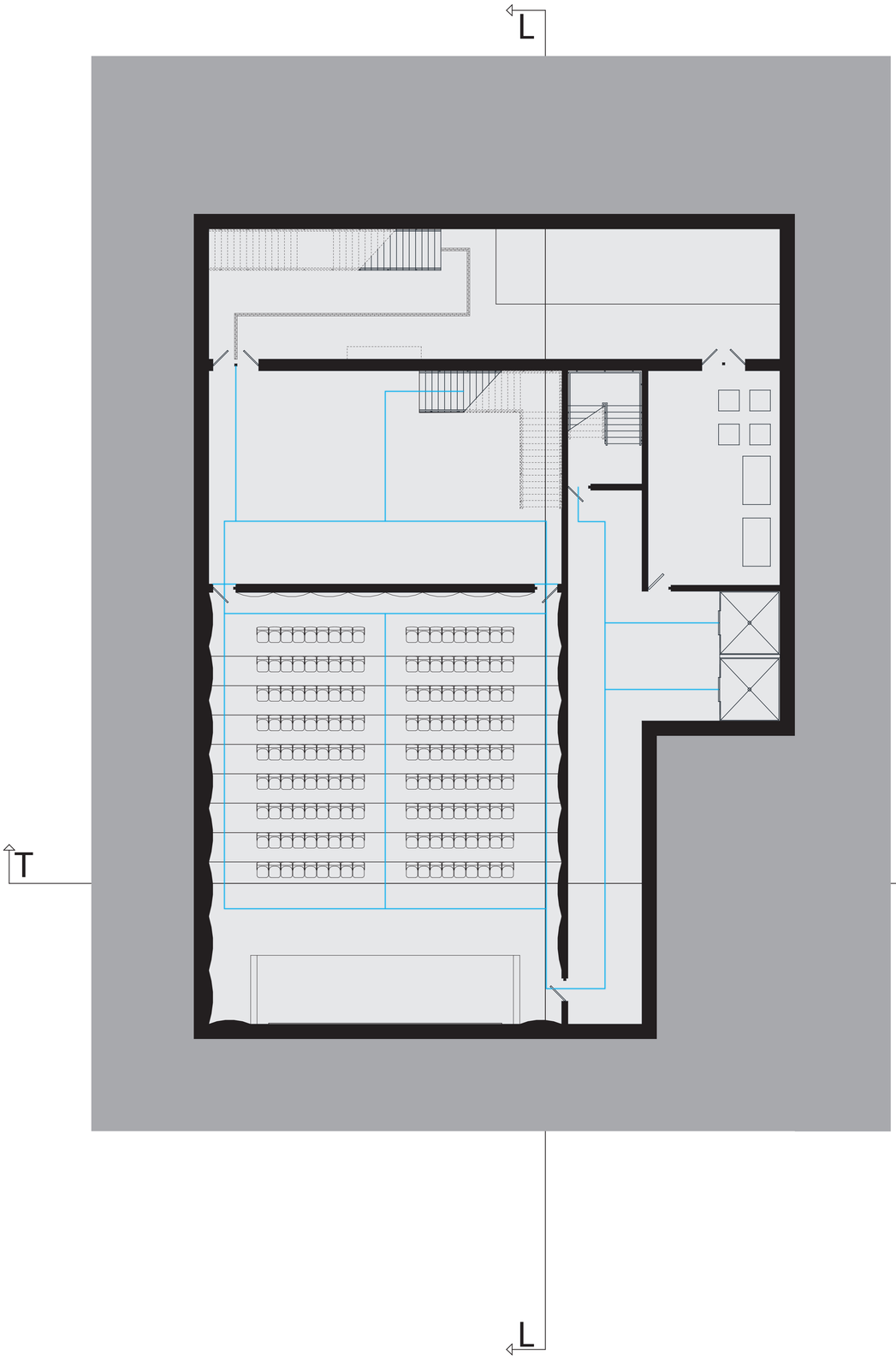


The Cybernarium

East Elevation 1/8” : 1’ 0”

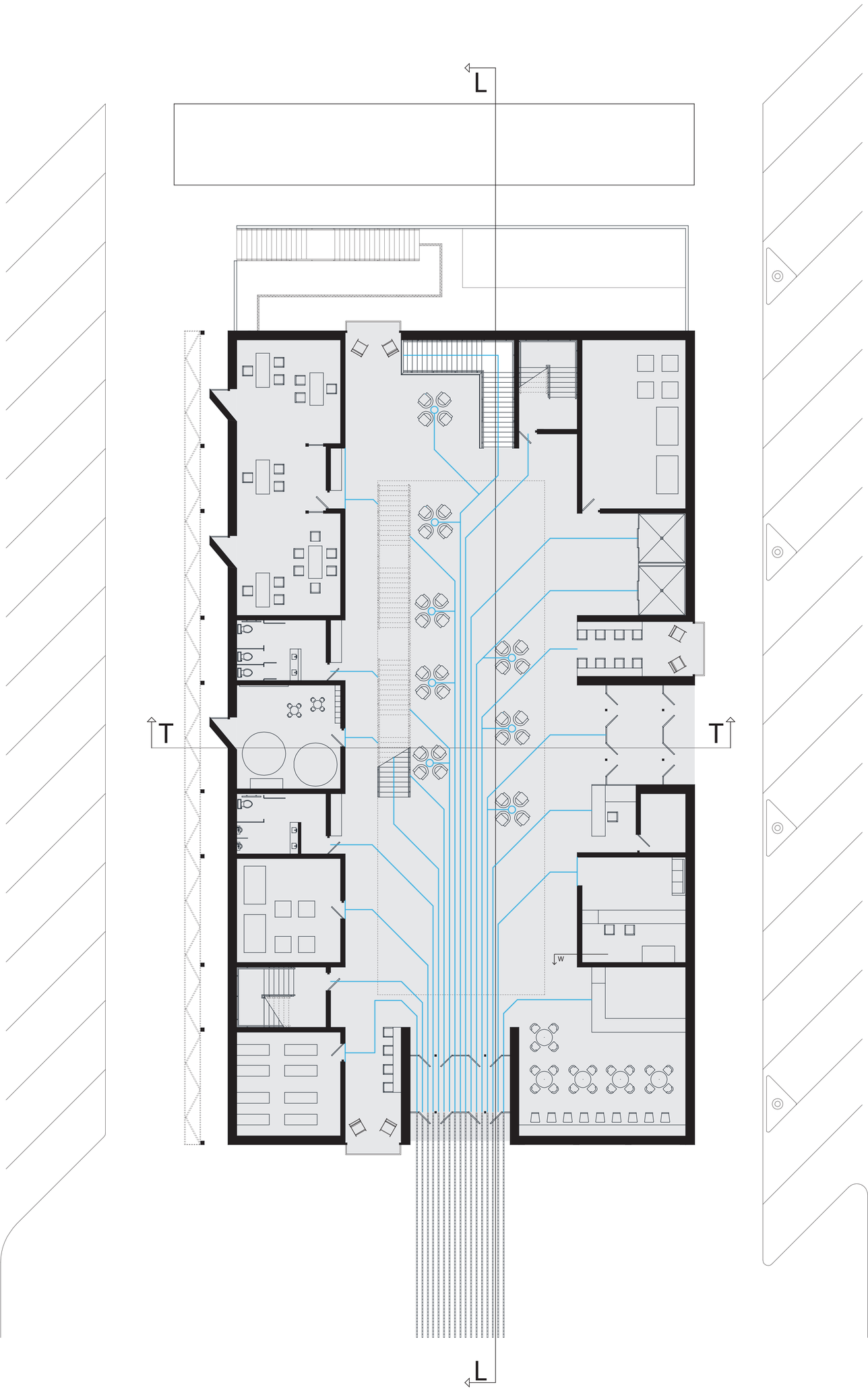
0’ 5’ 15’ 30’

Gearhart+Rowe



The Cybernarium Level -01 1/8” : 1’ 0”

0’ 5’ 15’ 30’

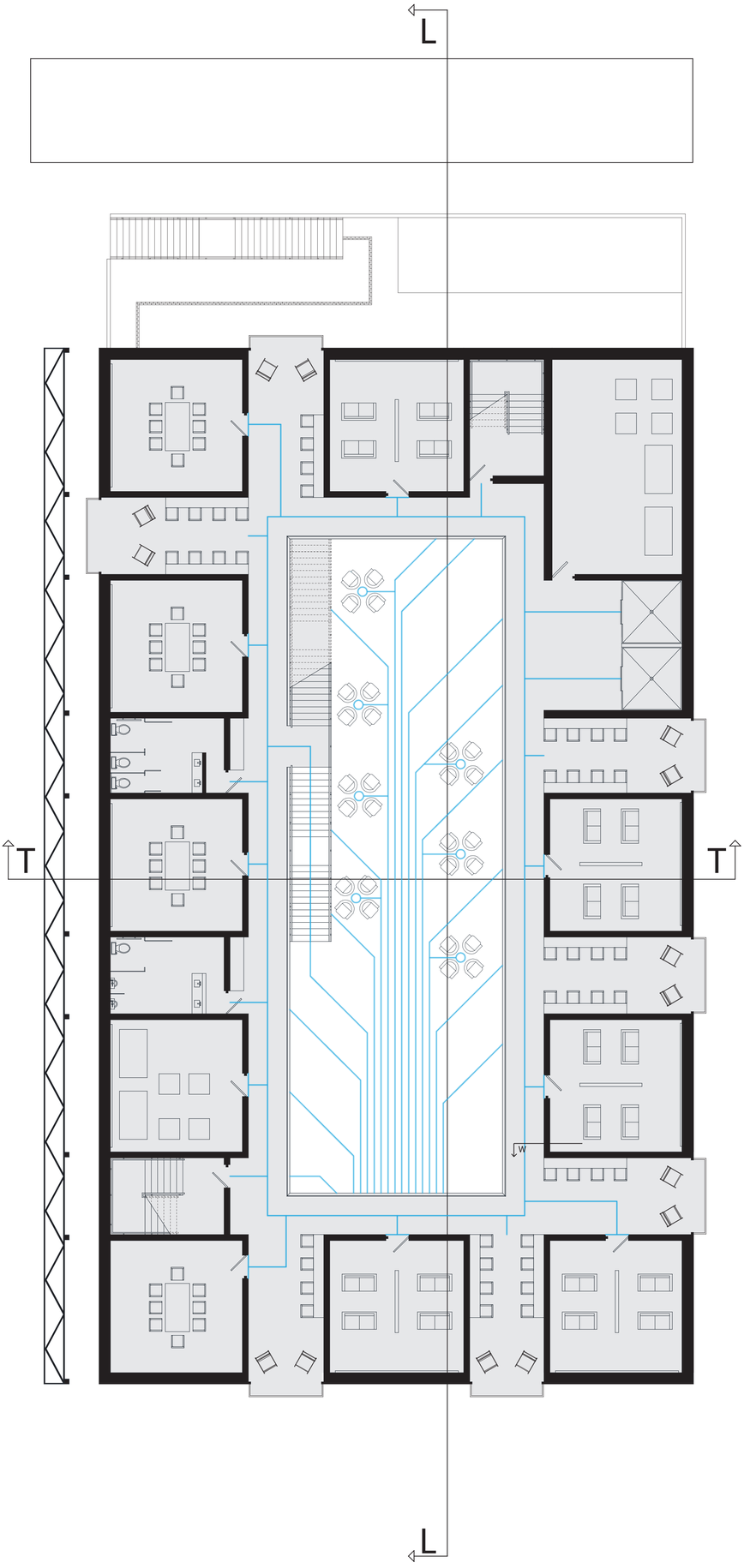


The Cybernarium

Level 00 1/8” : 1’ 0”

0’ 5’ 15’ 30’

N

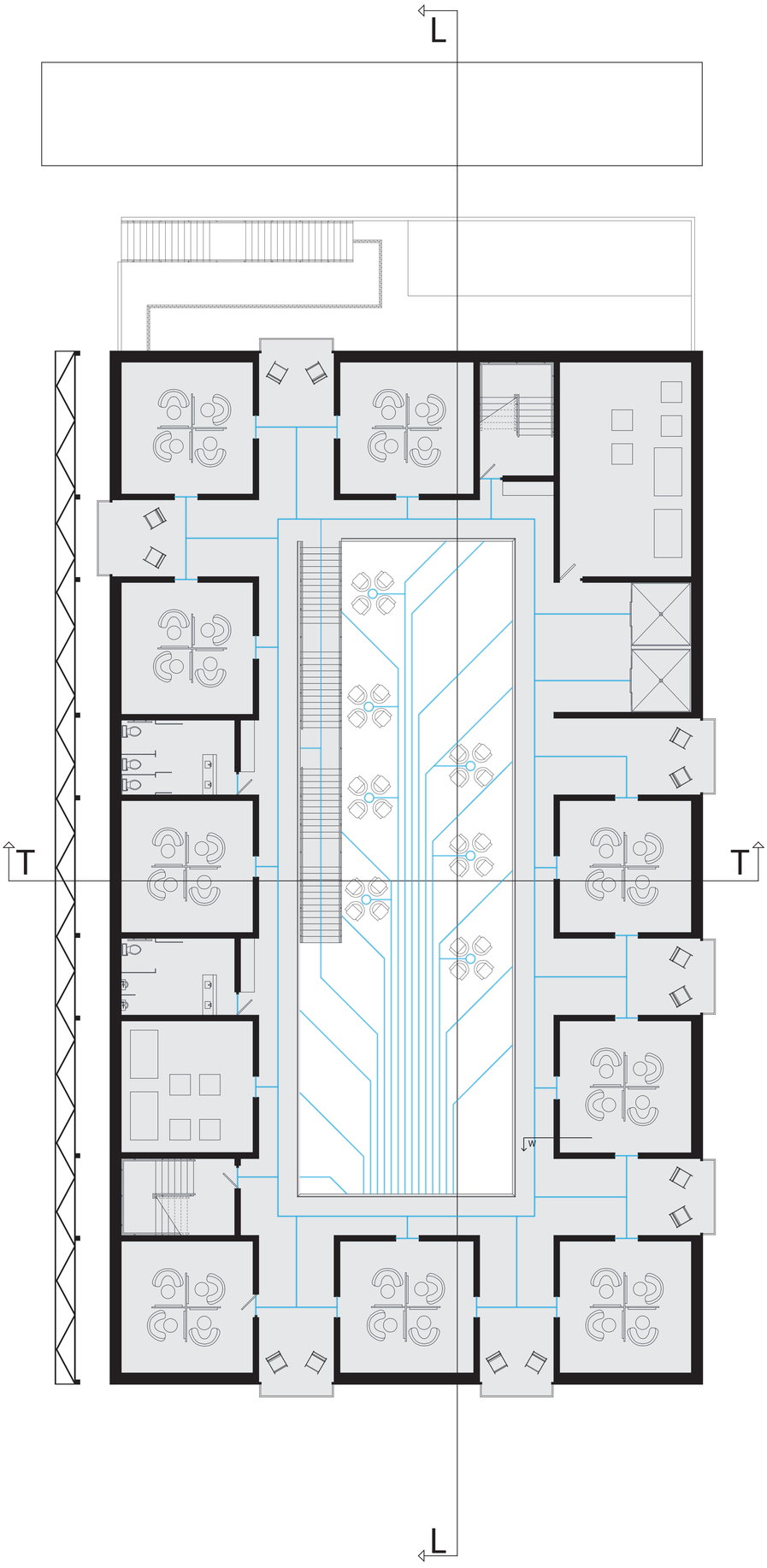


The Cybernarium

Level 01 1/8” : 1’ 0”

0’ 5’ 15’ 30’

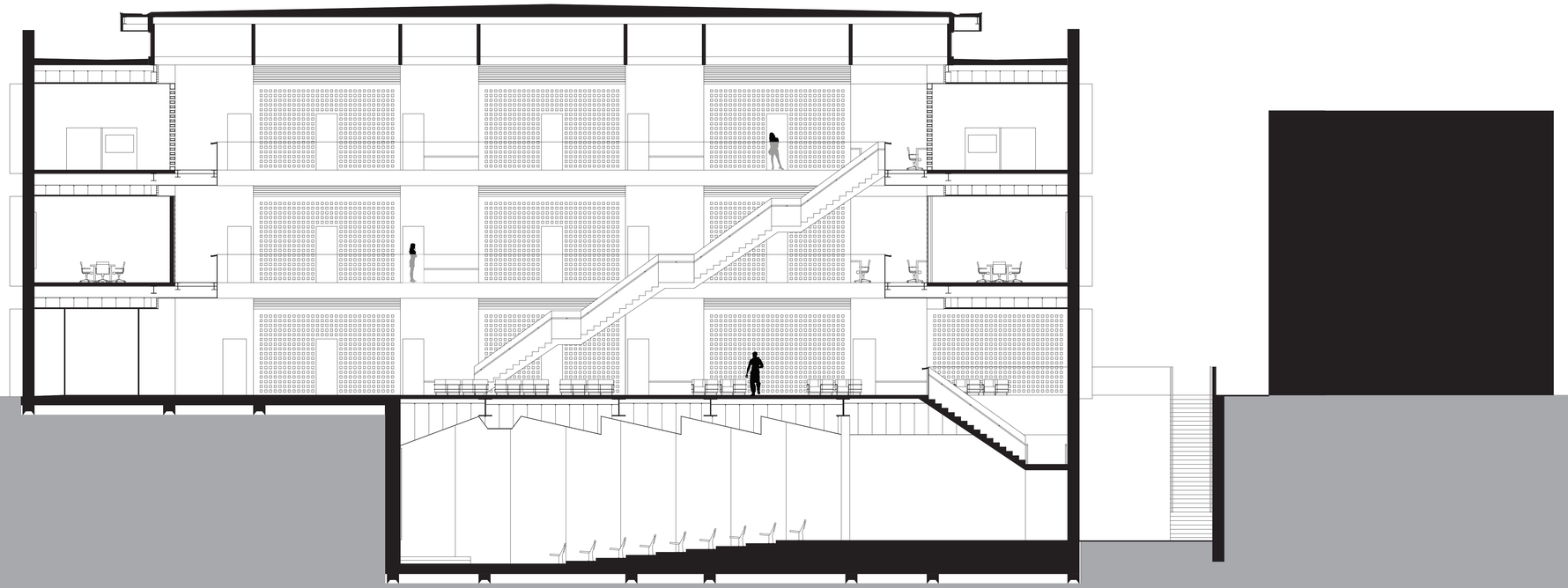
N



The Cybernarium Level 02 1/8” : 1’ 0”

0’ 5’ 15’ 30’

N

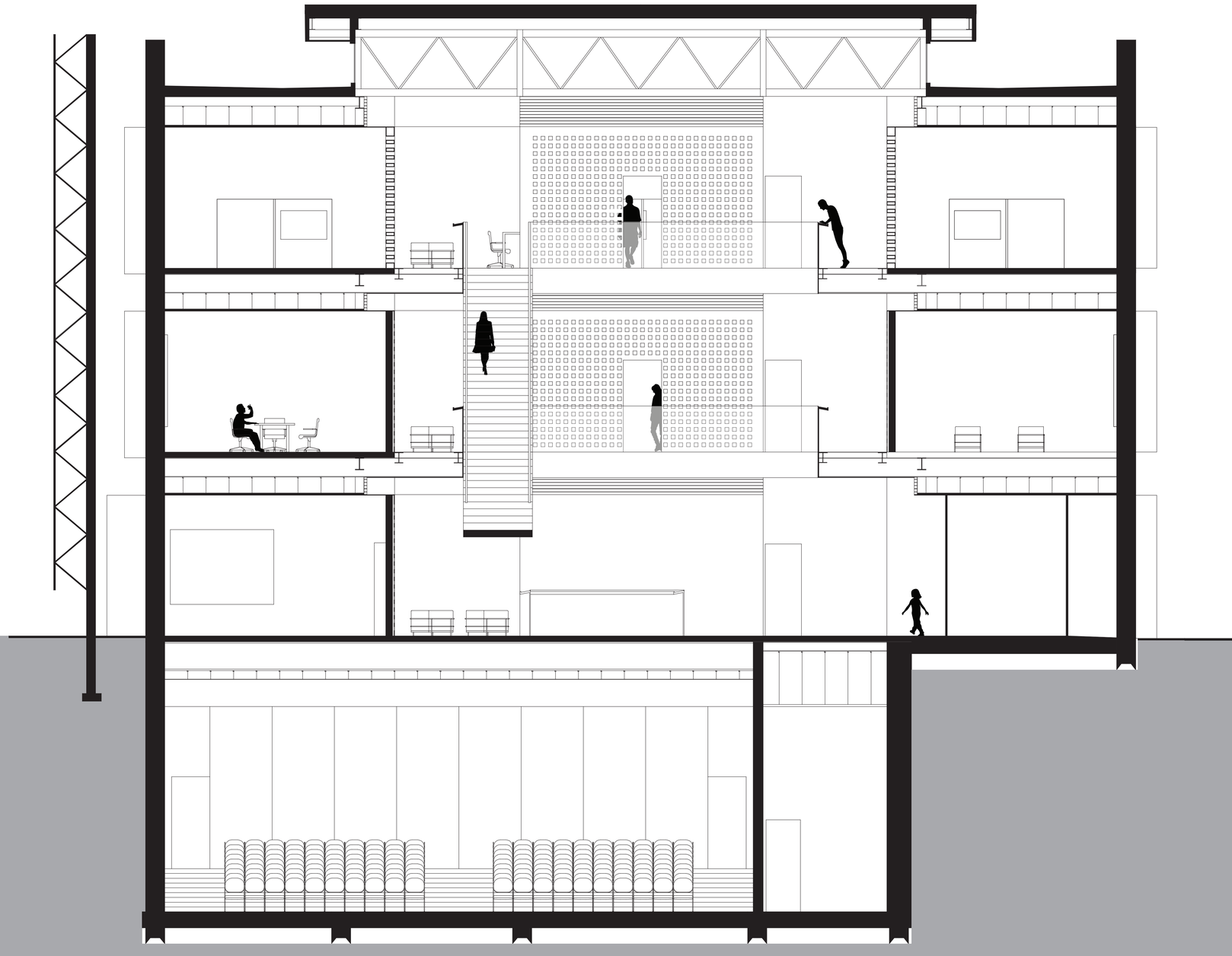


The Cybernarium

Longitudinal Section 1/8” : 1’ 0”

0’ 5’ 15’ 30’

Gearhart+Rowe

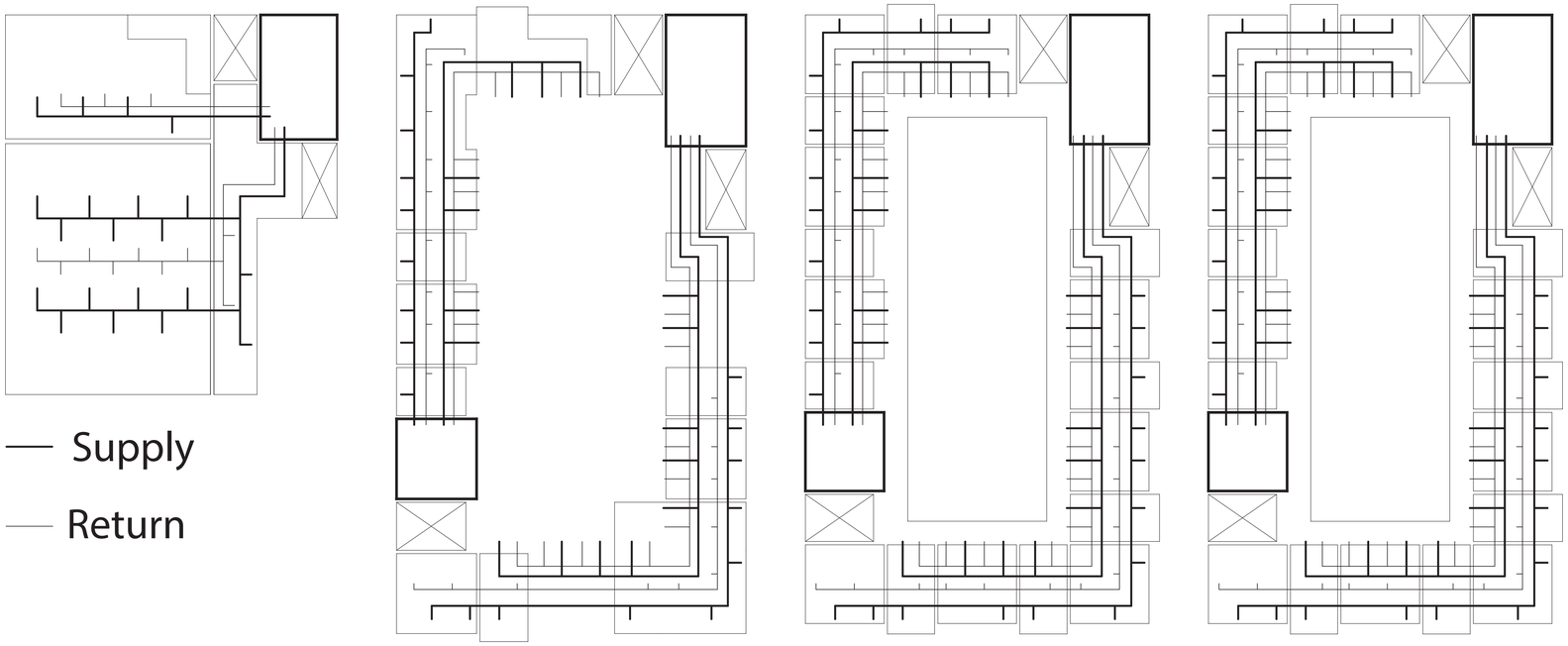


The Cybernarium

Transverse Section 1/4” : 1’ 0”

0’ 5’ 15’ 30’

Gearhart+Rowe

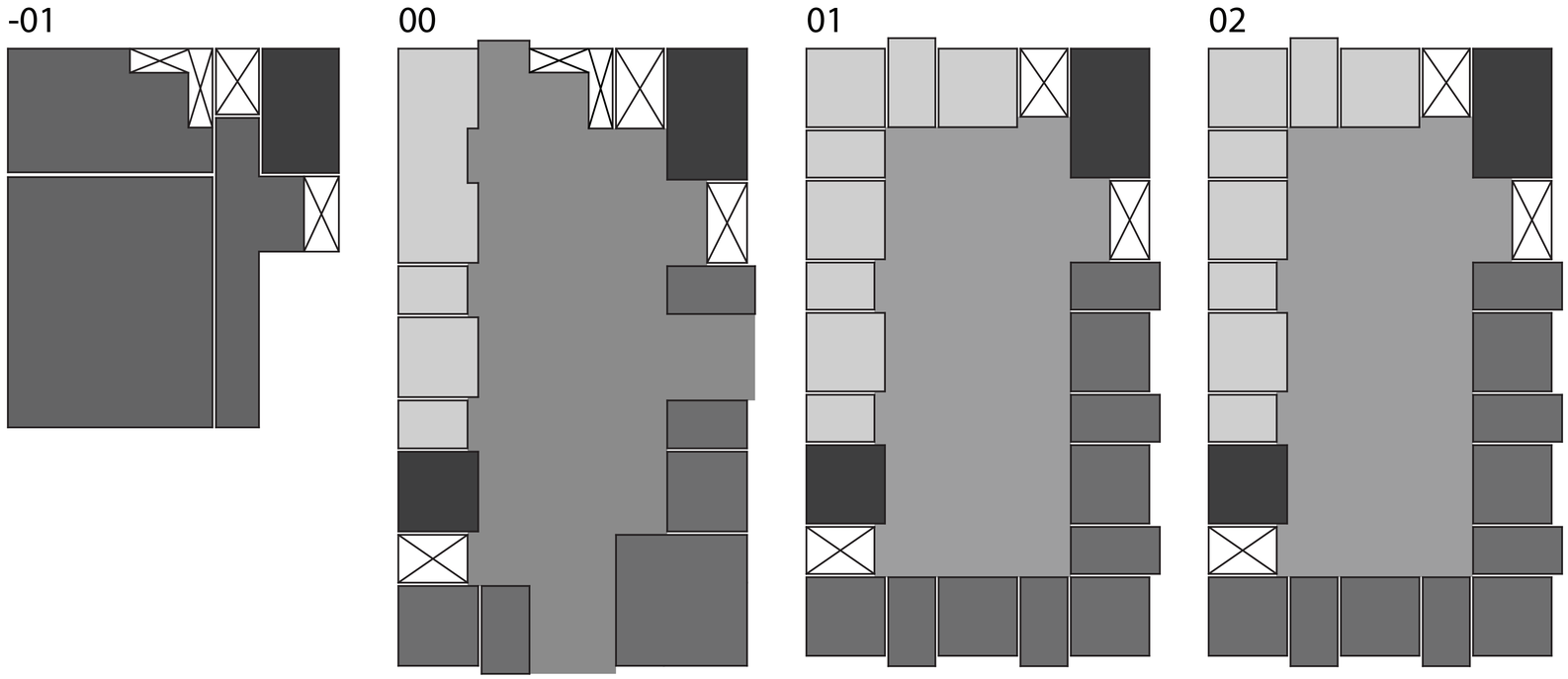


The Cybernarium

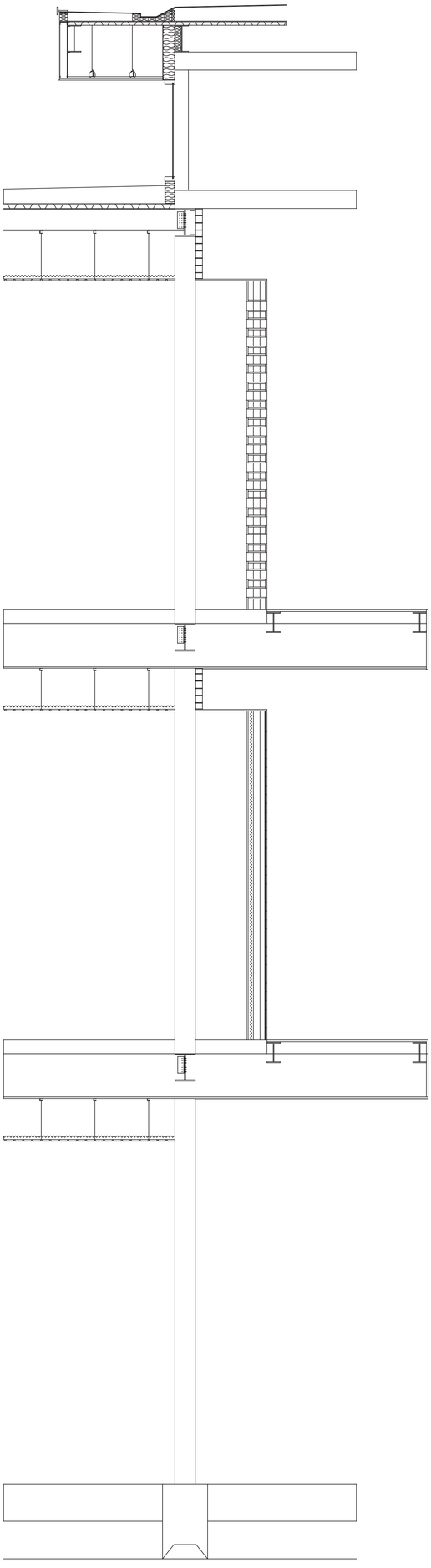
Mechanical Distribution 1/8” : 1’ 0”

0’ 5’ 15’ 30’

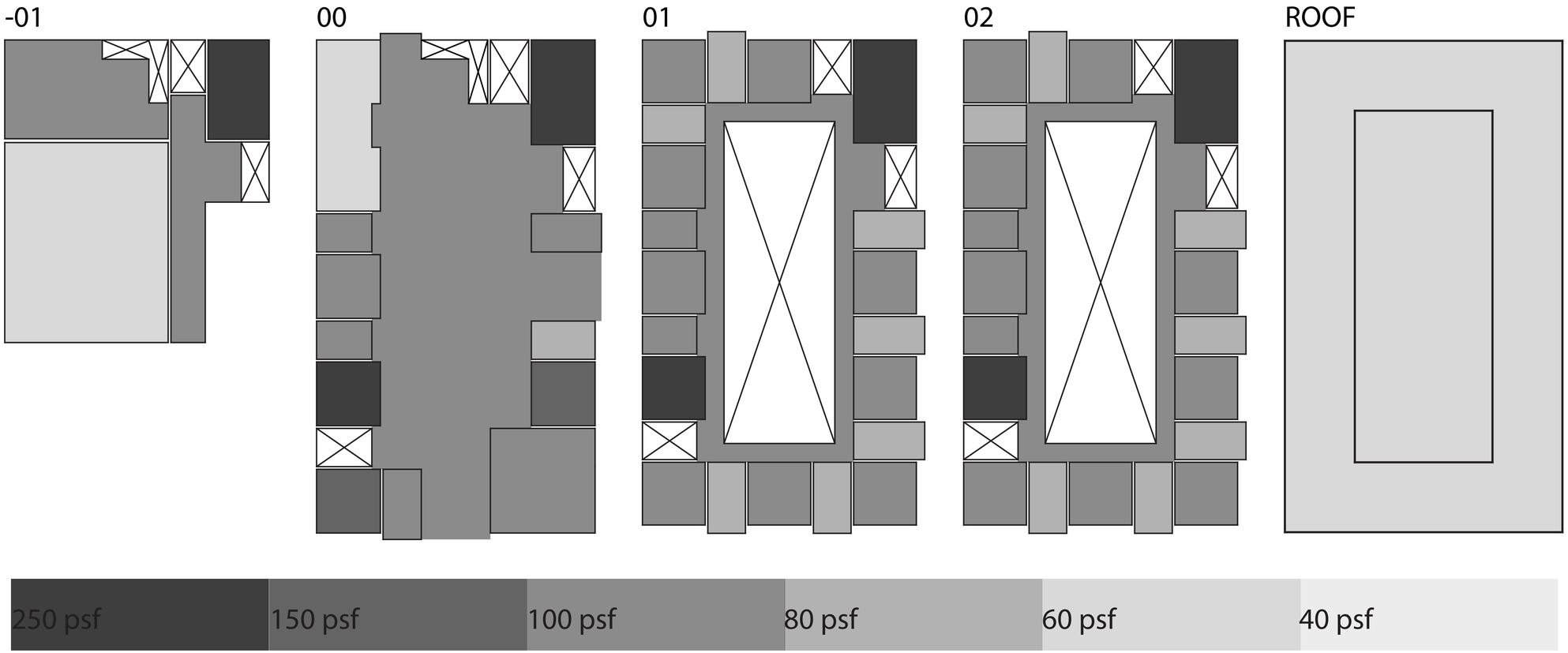
Gearhart+Rowe

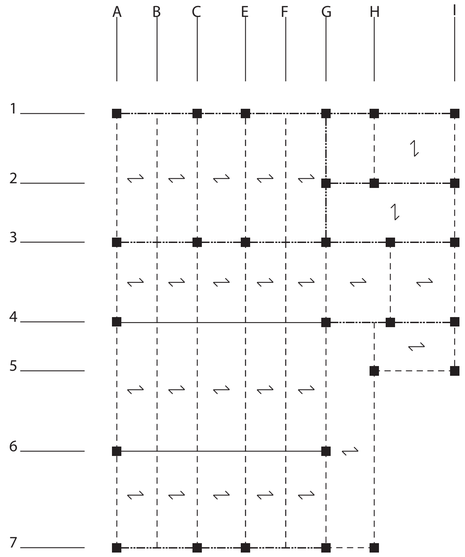


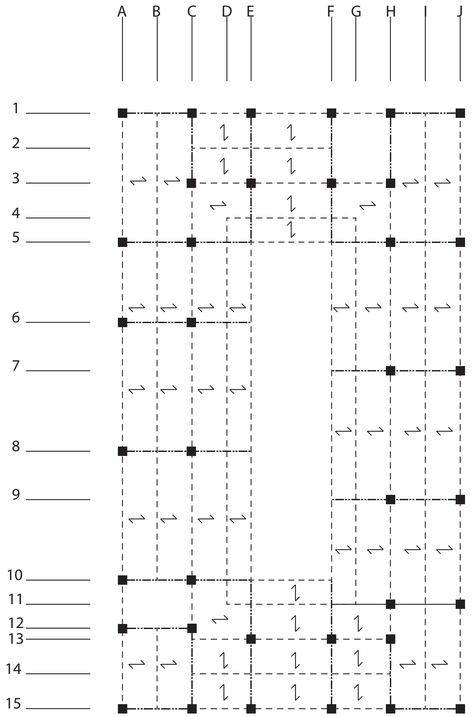
MECHANICAL+ Fan ROOM
Eastern Zone
Atrium Zone
Western Zone

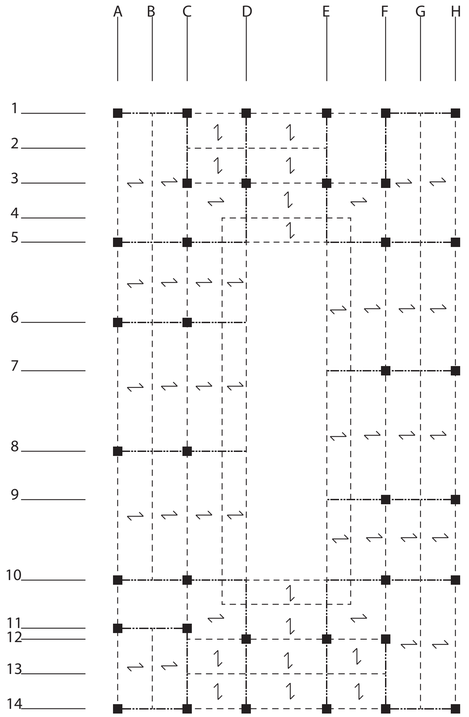


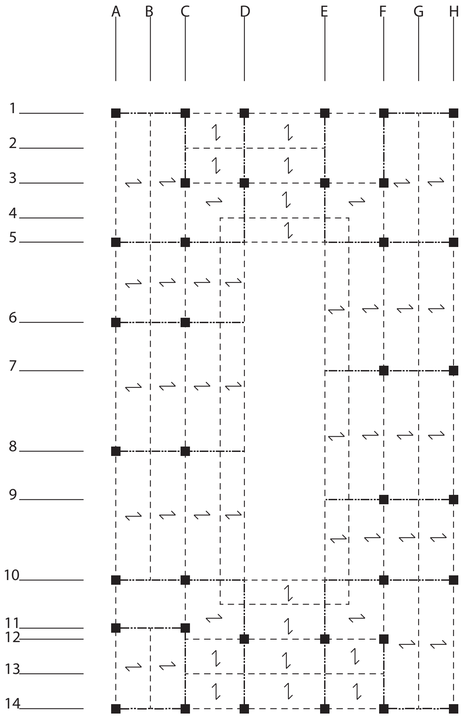
The Cybernarium Wall Section 1/2” : 1’ 0”


-01
00
01
02
ROOF
250 psf
150 psf
100 psf
80 psf
60 psf
40 psf





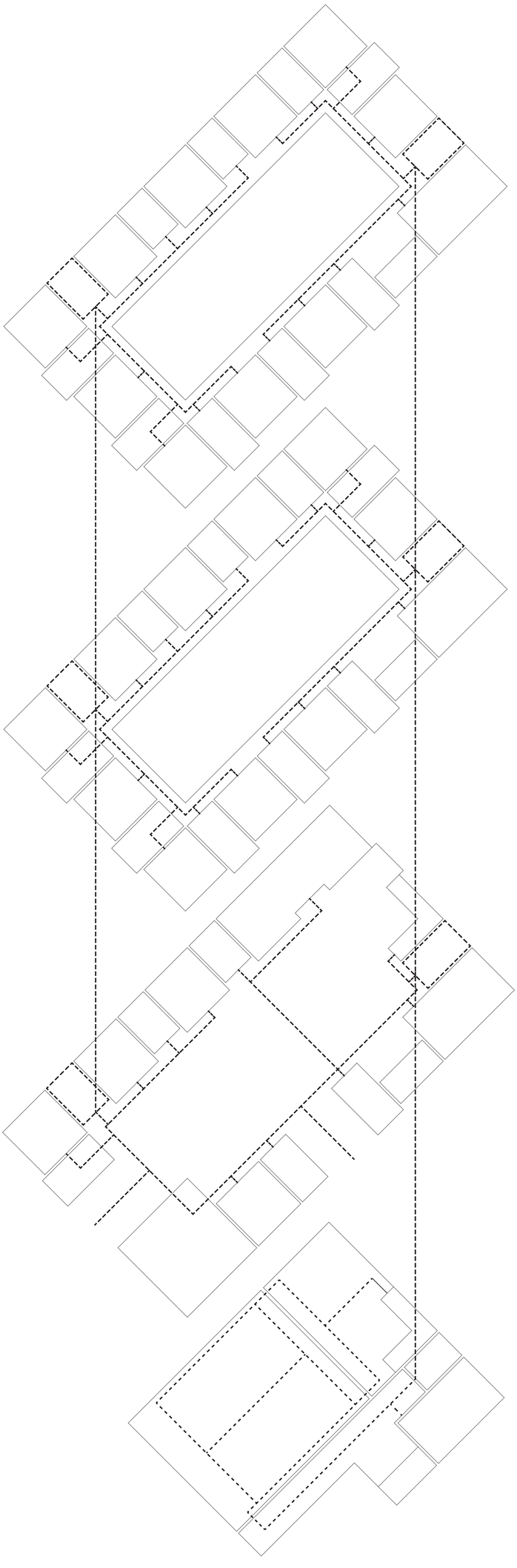




Girder

Beam

Column



The Cybernarium

Egress 1/8” : 1’ 0”

0’ 5’ 15’ 30’