MAXIMIZING GRANT FUNDS FOR FACILITIES:

ACHIEVING REGUALTORY COMPLIANCE AND MAXIMIZING PROGRAMMATIC NEEDS

ABSA 54th Annual Biological Safety Conference

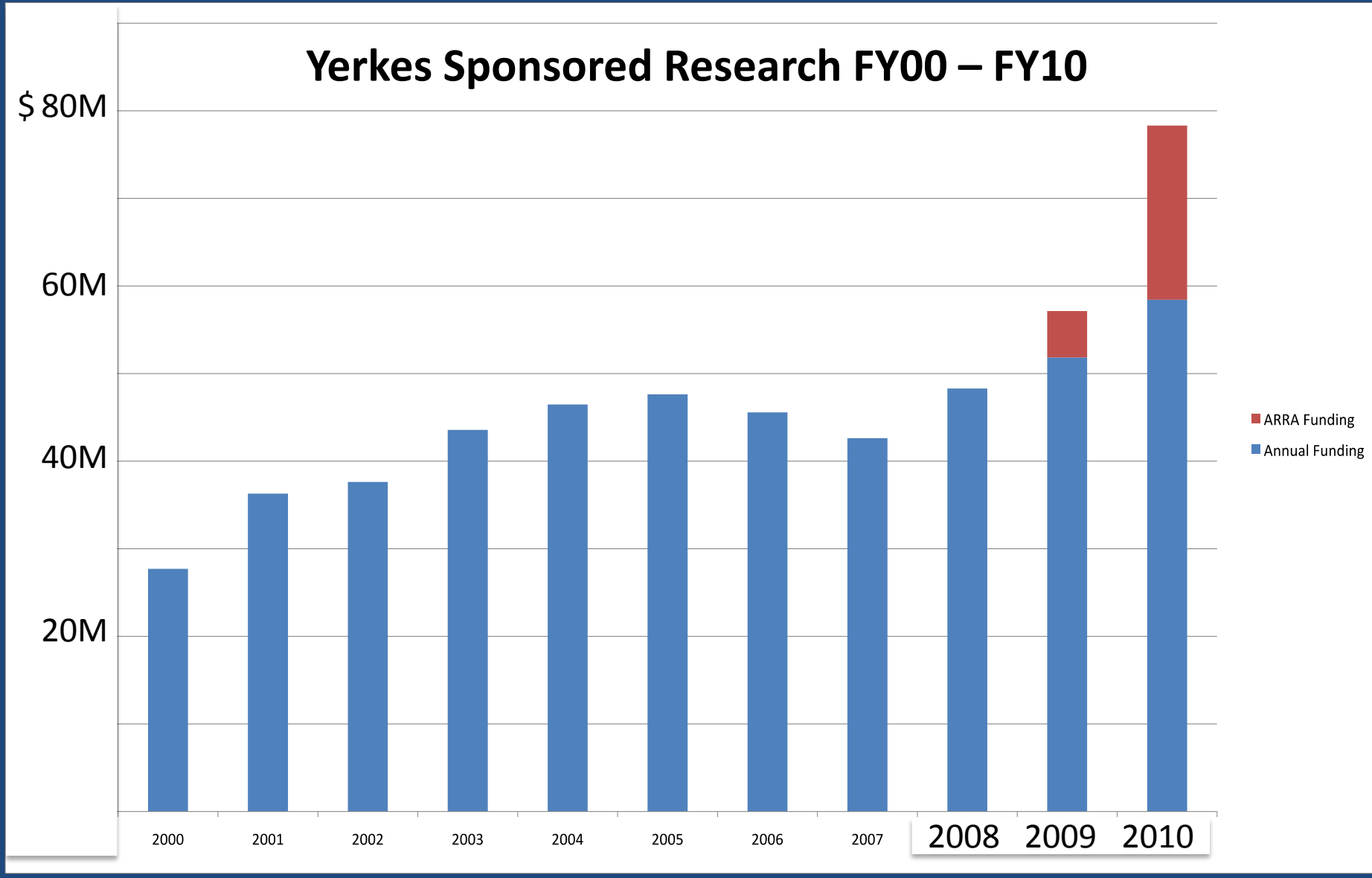
Yerkes National Primate Research Center

3400 nonhuman primates
10,000+ rodents
450 faculty, staff, students
59 postdocs, 77 grad students

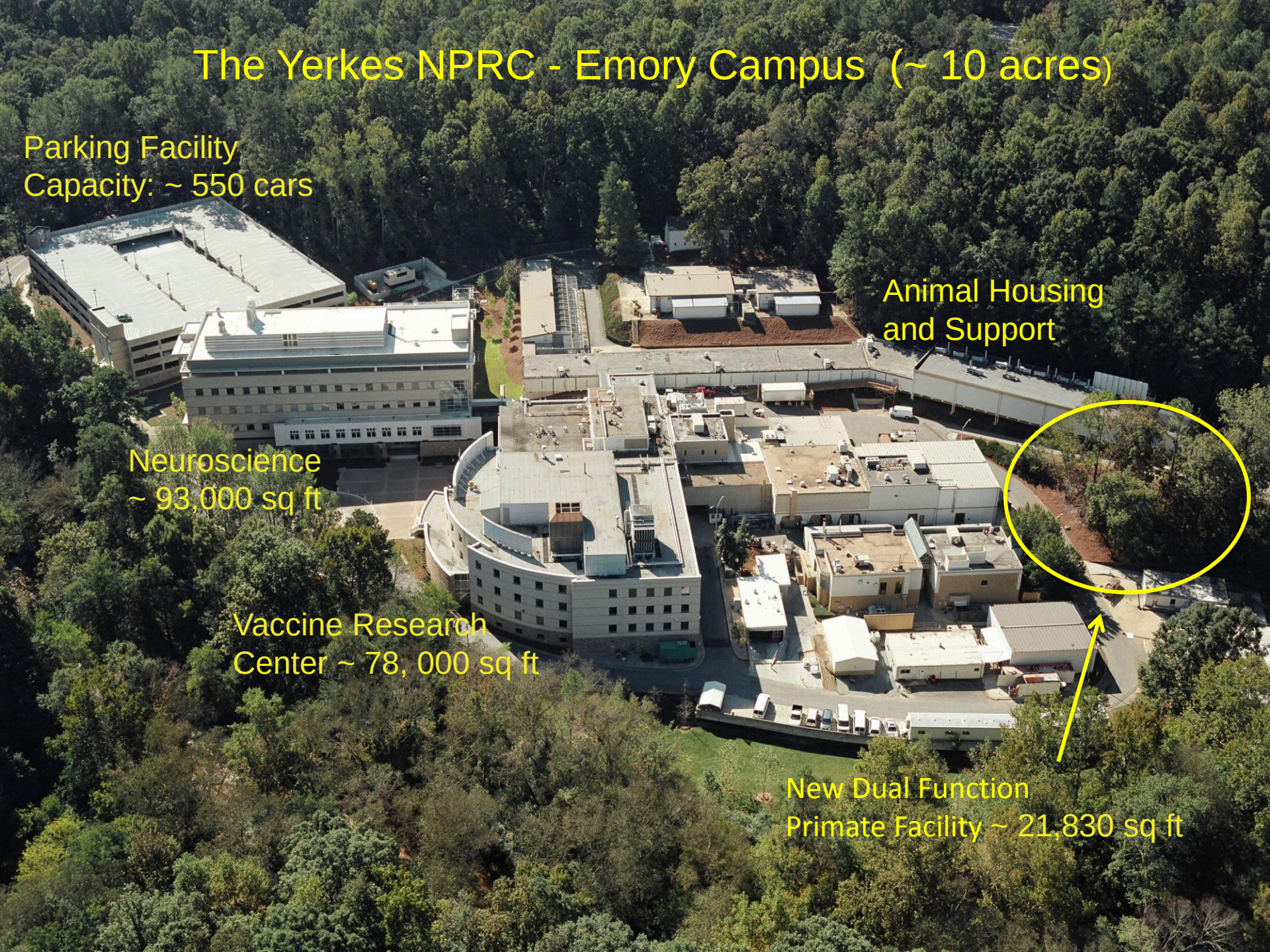
National Institutes of Health (NIH)
National Center for Research Resources (NCRR)

The 8 National Primate Research Centers:

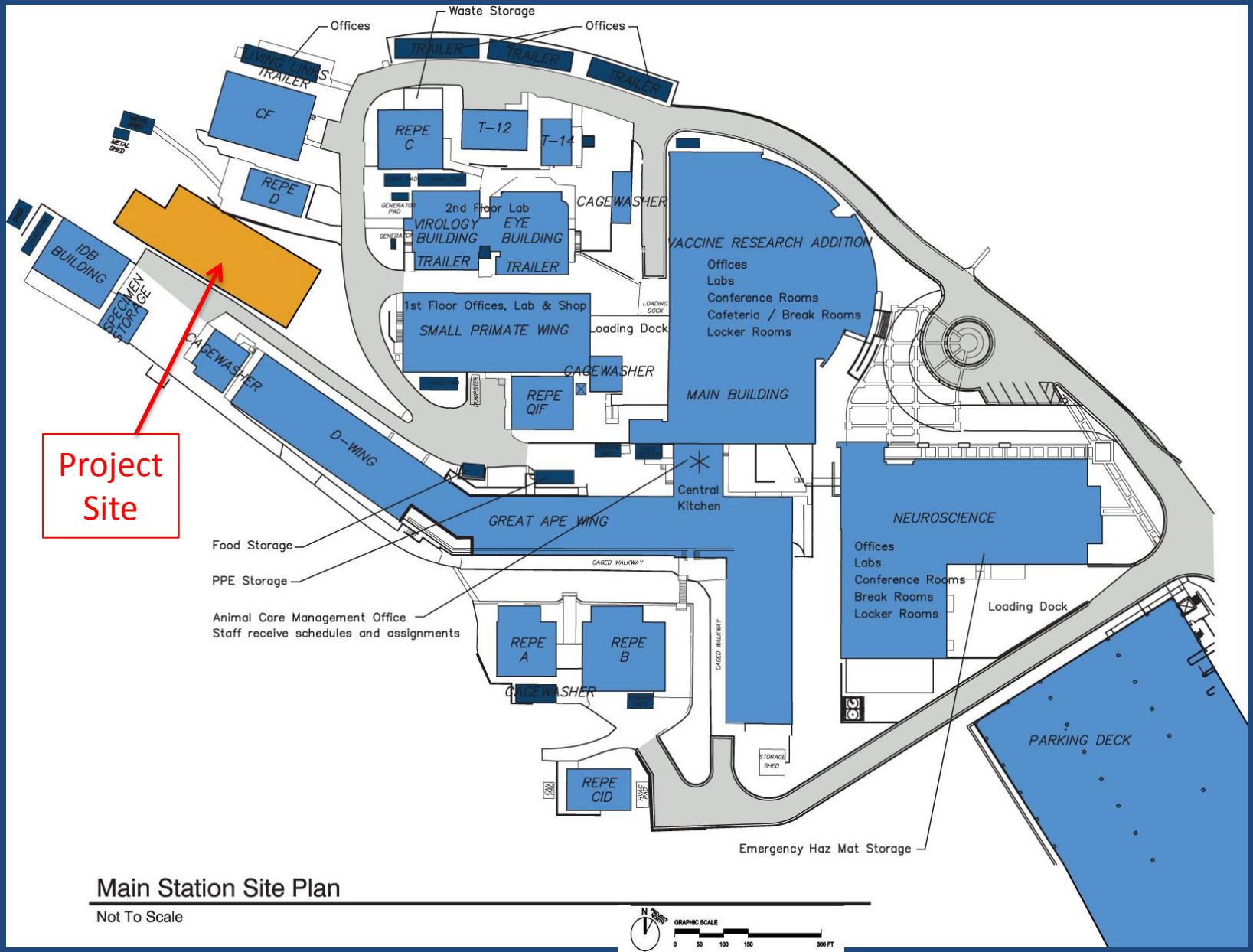
Yerkes/Emory
University of Washington
Oregon Health Sciences University
Tulane
Univ. of Wisconsin
Univ. of California (Davis)
New England (Harvard)
Southwest Foundation (Univ. of Texas)



FY 2009 -2010
199 funded projects
248 refereed publications
NIA PPG, Udall Grant, HIVRAD PPG, 3 Institutional Training Grants


The Yerkes NPRC - Emory Campus (~ 10 acres)
Parking Facility
Capacity: ~ 550 cars
Animal Housing
and Support
Neuroscience
~ 93,000 sq ft
Vaccine Research
Center ~ 78, 000 sq ft
New Dual Function
Primate Facility ~ 21,830 sq ft

Site Plan


Offices
Waste Storage
Offices
TRAILER
TRAILER
TRAILER
TRAILER
LIVING LINKS
CF
REPE C
T–12
T–14
REPE D
METAL SHED
GENERATOR PAD
2nd Floor Lab
VIROLOGY BUILDING
EYE BUILDING
TRAILER
TRAILER
CAGEWASHER
VACCINE RESEARCH ADDITION
Offices
Labs
Conference Rooms
Cafeteria / Break Rooms
Locker Rooms
IDB BUILDING
SPECIMEN STORAGE
1st Floor Offices, Lab & Shop
SMALL PRIMATE WING
Loading Dock
LOADING DOCK
CAGEWASHER
DUMPSTER
REPE QIF
MAIN BUILDING
CAGEWASHER
D–WING
Central Kitchen
GREAT APE WING
NEUROSCIENCE
Offices
Labs
Conference Rooms
Break Rooms
Locker Rooms
Loading Dock
CAGED WALKWAY
Food Storage
PPE Storage
Animal Care Management Office
Staff receive schedules and assignments
REPE A
REPE B
CAGEWASHER
CAGED WALKWAY
STORAGE SHED
REPE CID
HVAC PAD
PARKING DECK
Emergency Haz Mat Storage
Project Site
Main Station Site Plan
Not To Scale
N
GRAPHIC SCALE
0 50 100 150 300 FT

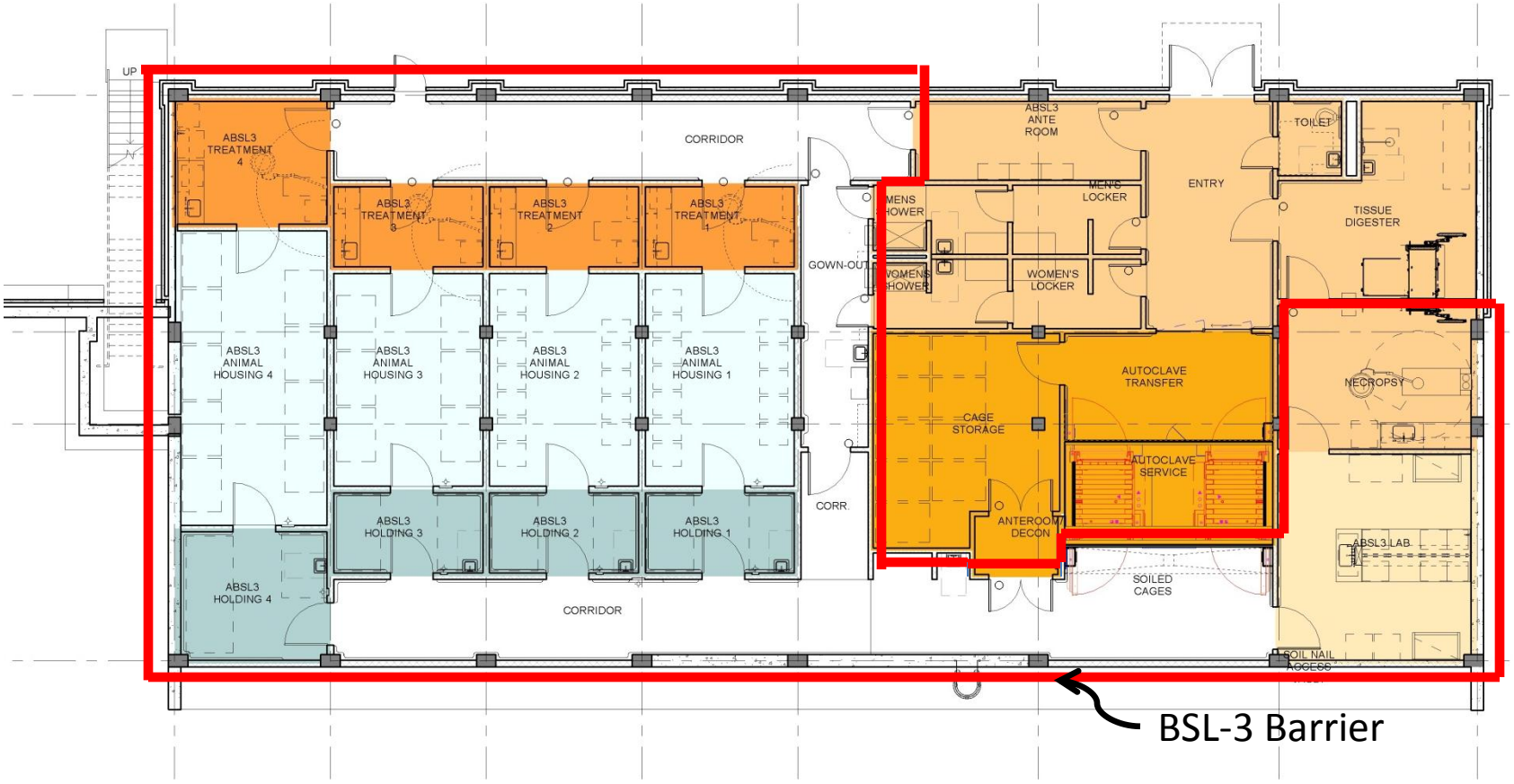
Yerkes Dual Function Facility
Transplant Medicine and ABSL-3 Facility

Objectives

- Support and expand Yerkes Mission and Goals as related to research and training
- Maximize effectiveness of funding dollars
- Consider protocols and operational responses to regulatory facility design requirements

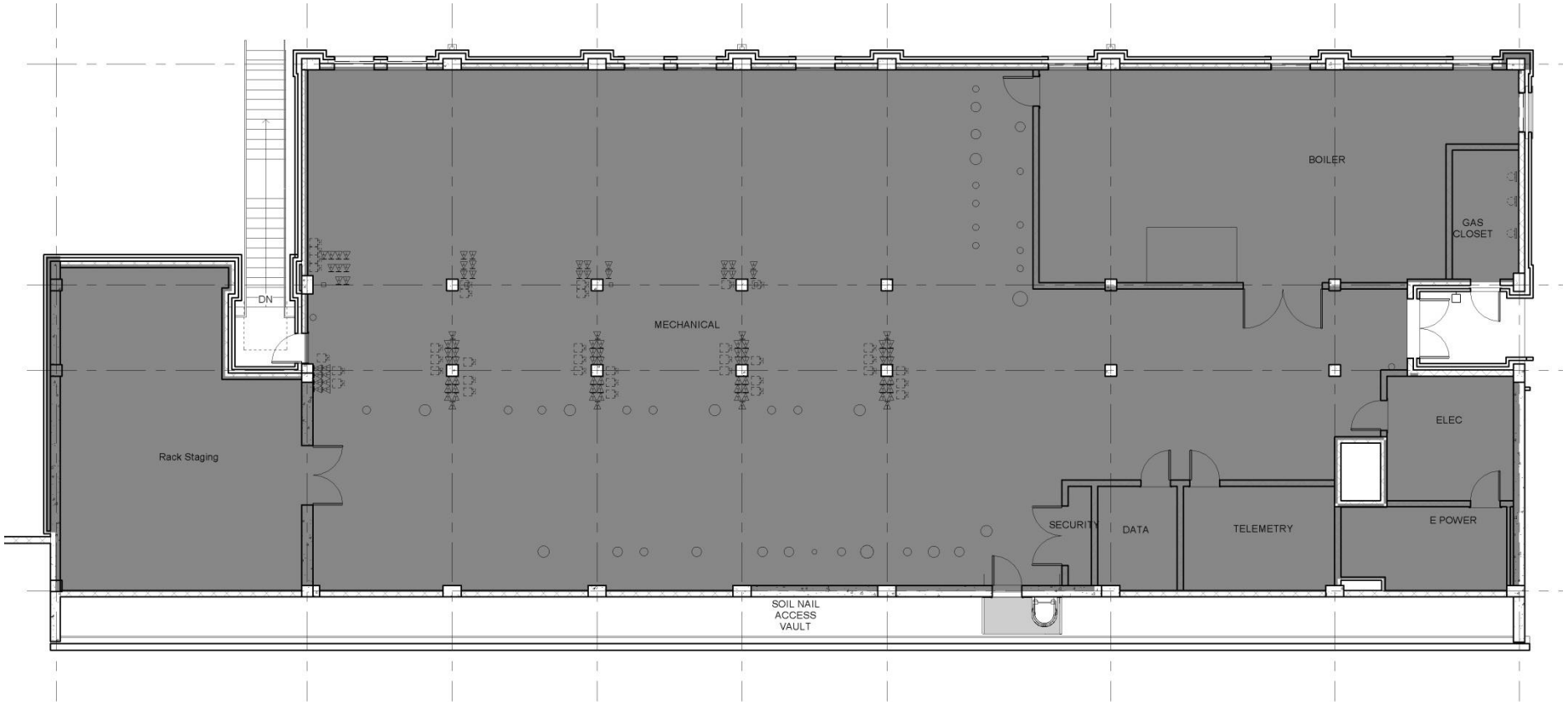
Building Plans – First Floor Plan

ABSL-3 SUITE



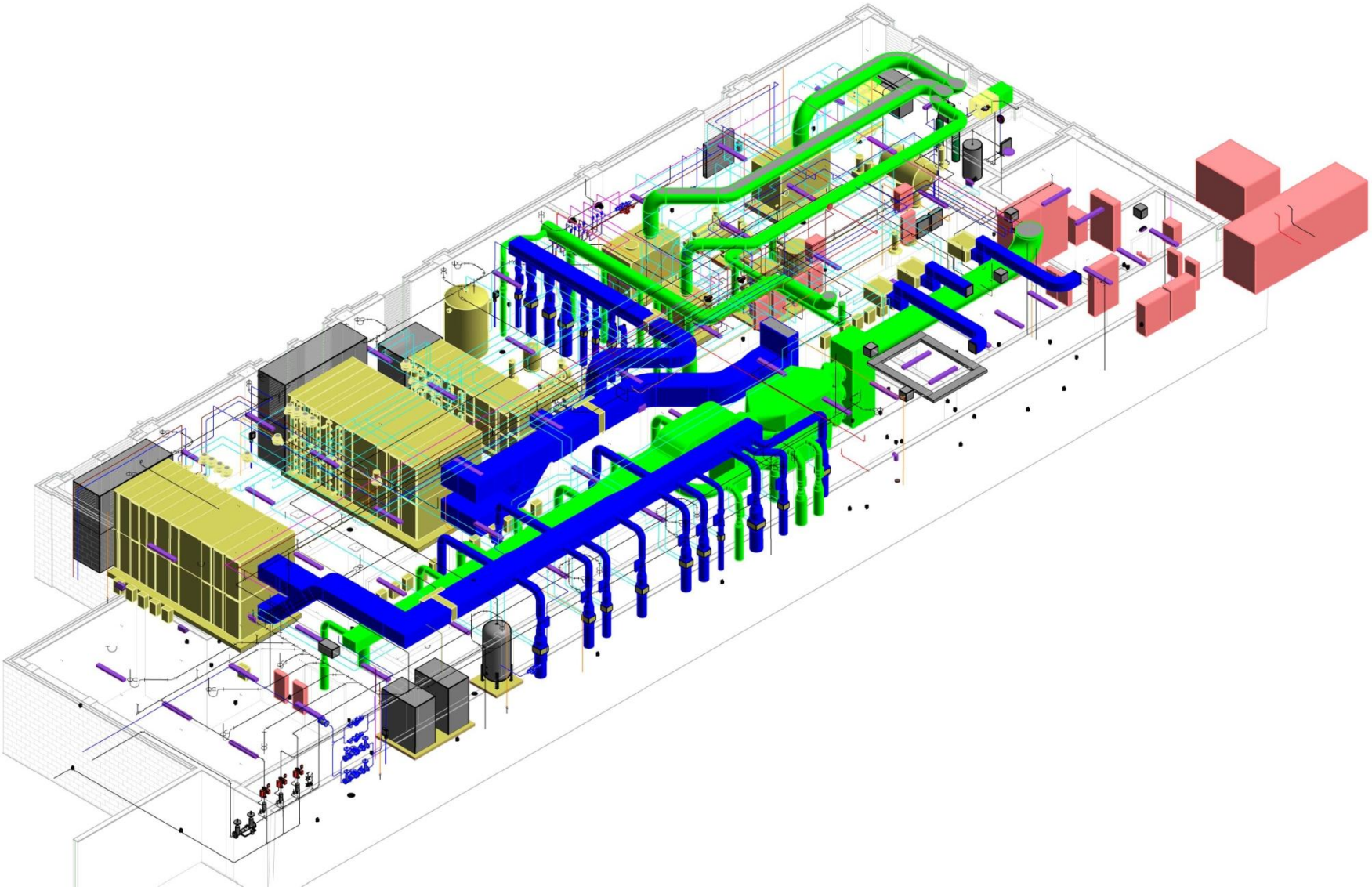
- BSL 3
- BSL 3 Holding
- BSL 3 Support
- Lab
- Vivarium
- Vivarium Support

Building Plans – Second Floor Plan



Mechanical

Second Floor HVAC

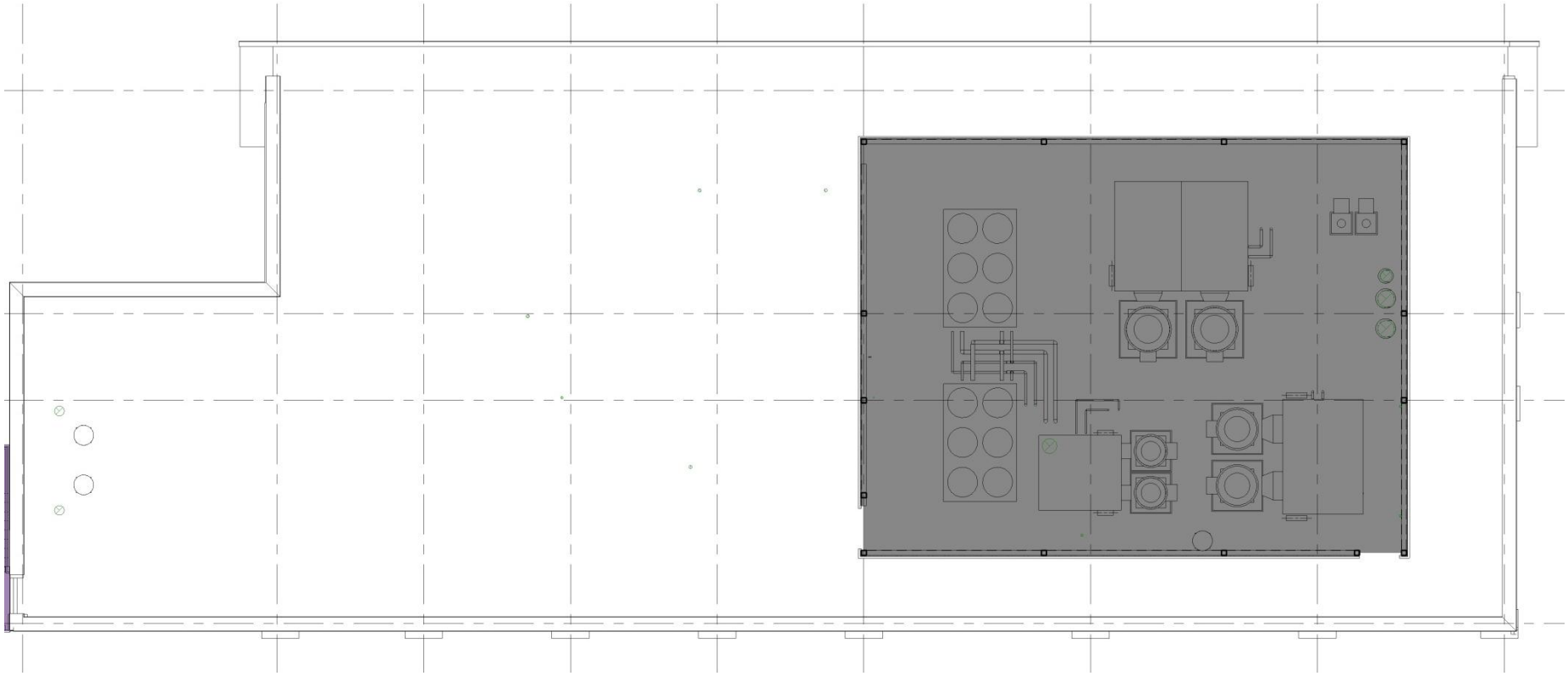


Building Plans – Third Floor Plan

TRANSPLANT MEDICINE

- Cage Wash
- Lab
- Surgery Suite
- Building Support
- Mechanical
- Animal Holding
- Treatment

Building Plans – Roof Plan

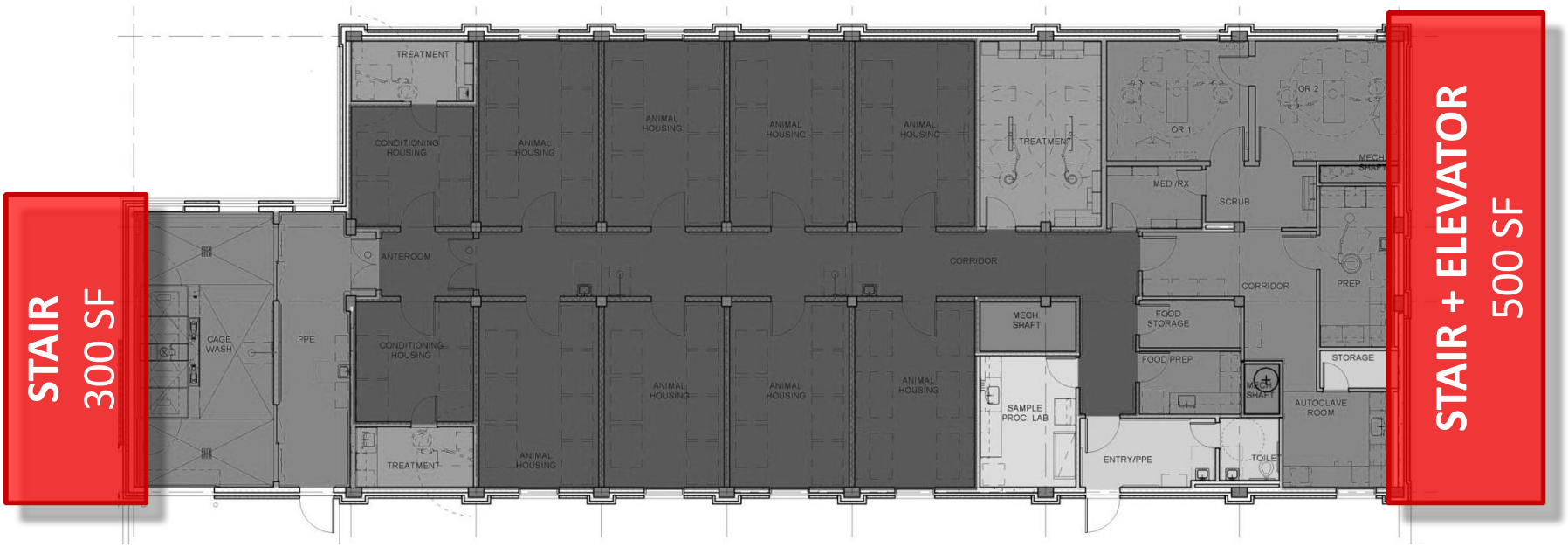


Mechanical

Building Organization

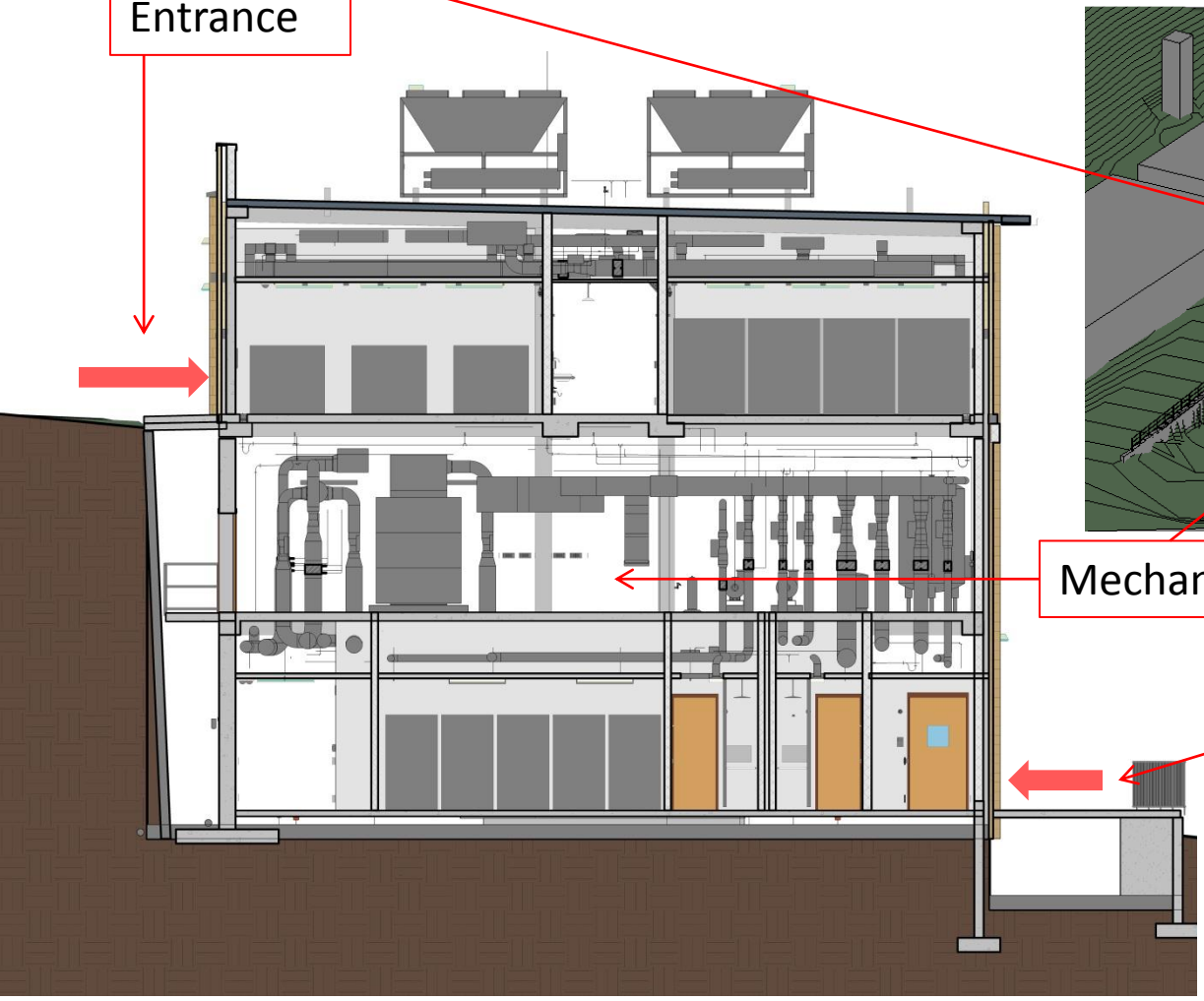
- Programmatic separation exists between Transplant Medicine and ABSL-3
- Challenging site actually provides an opportunity to eliminate need for vertical circulation elements
- Cage wash facility is shared, but operational inconvenience associated with exterior access to cage wash from lower level is worth the added program space.

Vertical Circulation



Approx. 800 sf per floor (2400 sf total)
+ Cost of Elevator

Building Section



West

East

Savings to the project:

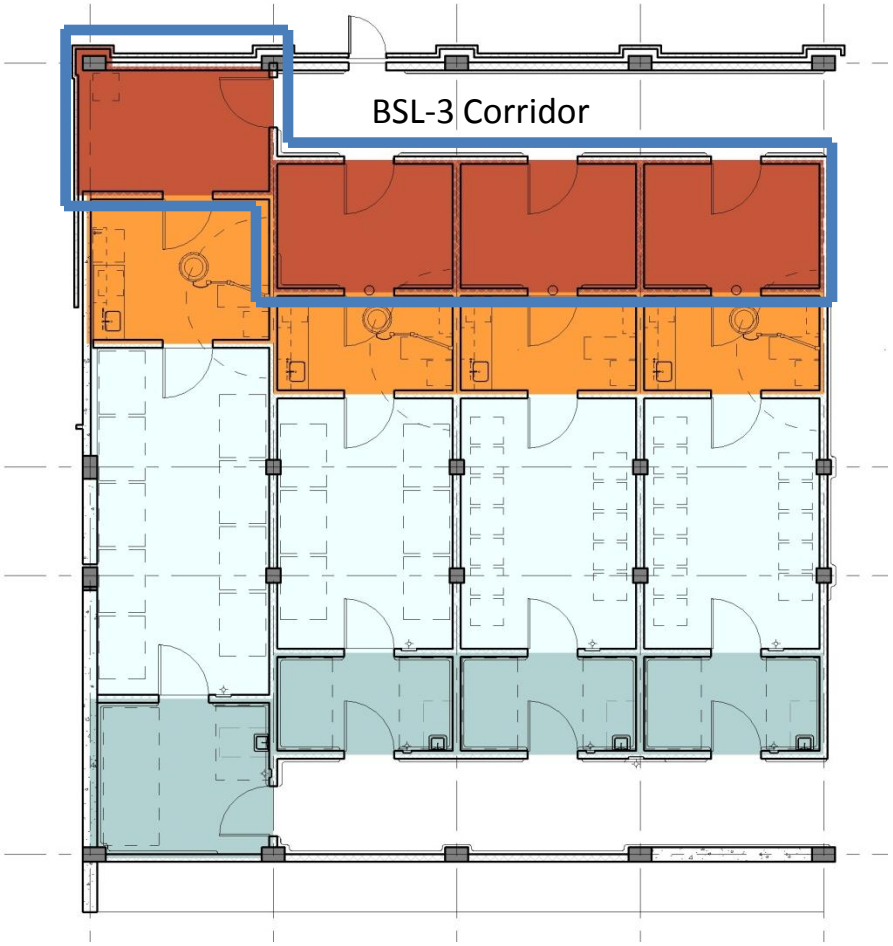
$525,000

(**OR** loss of significant program space)

BSL-3 Air-Lock Strategy

- Each of the 4 suites operate independently
- Need ability to study different BSL-3 pathogens (pathogen specific criteria)
- Typically rooms will be able to operate at lower containment levels (to reduce costs)
- Shared cage washing

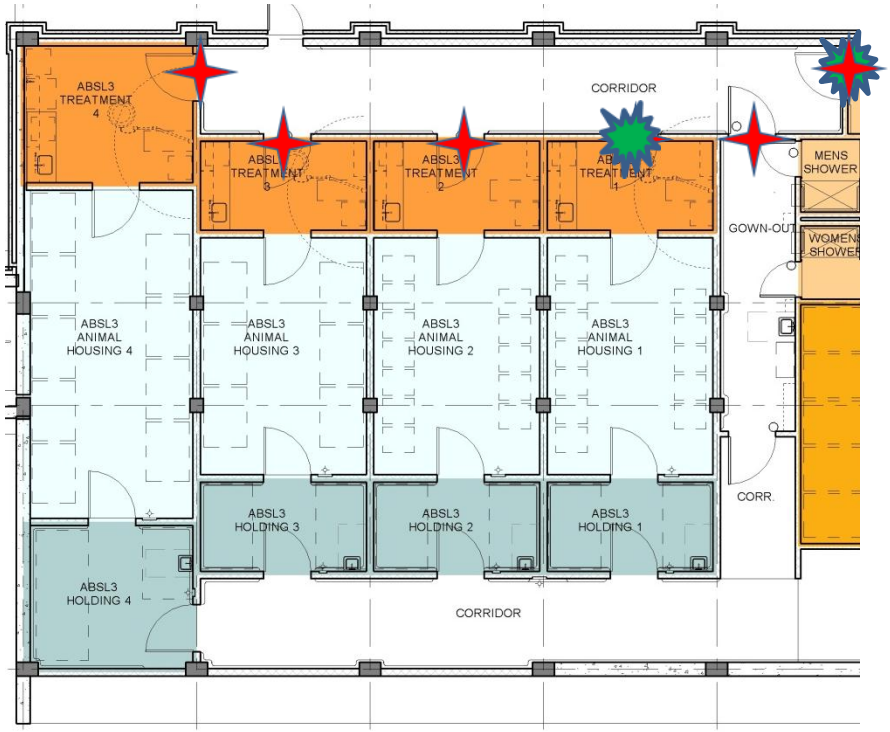
NIH Recommended Plan



Adds nearly 700 S.F.; adds another pressure drop, and an additional door to further complicate operations

BSL 3
BSL 3 Holding
BSL 3 Treatment
BSL 3 Vestibule

YERKES Building Plans – First Floor Plan



Corridor entry is activated

Interlocked doors on 5 – minute delay; allowing for a complete air change with-in corridor

BSL 3
BSL 3 Holding
BSL 3 Treatment
Lab
Vivarium
Vivarium Support

Savings to the project:

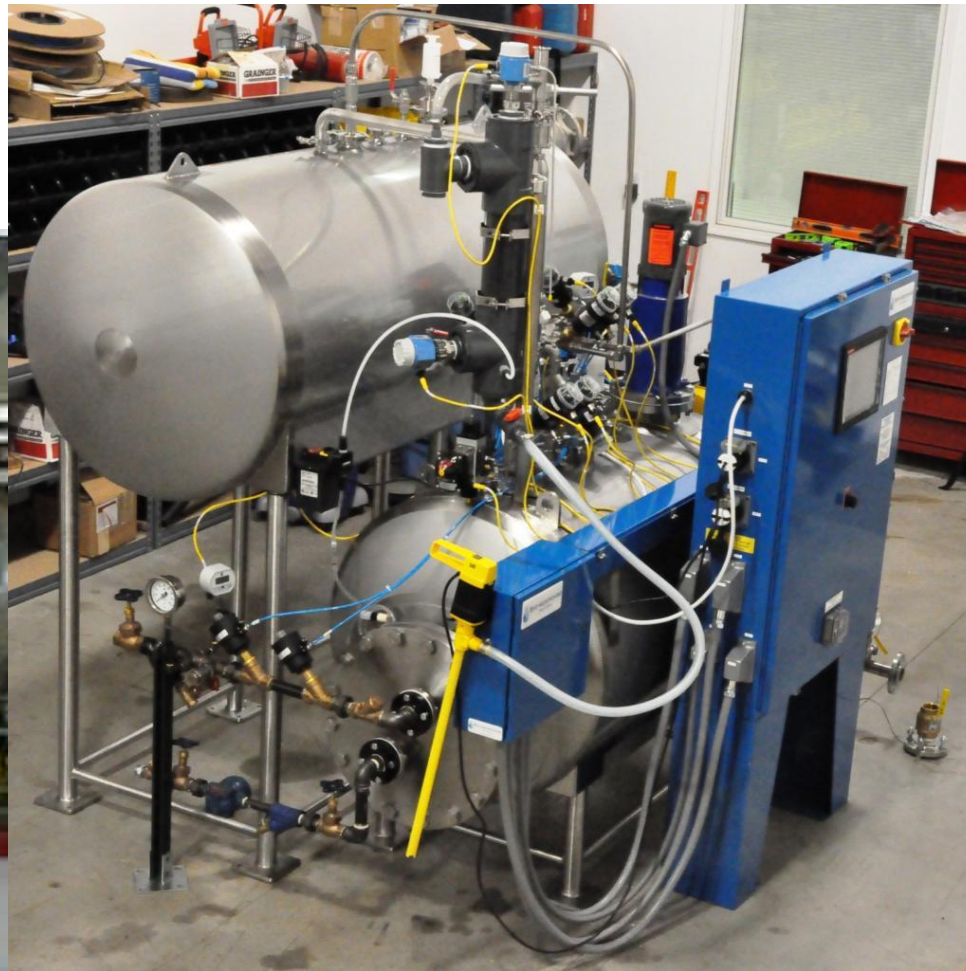
$ 500,000

Effluent Decontamination

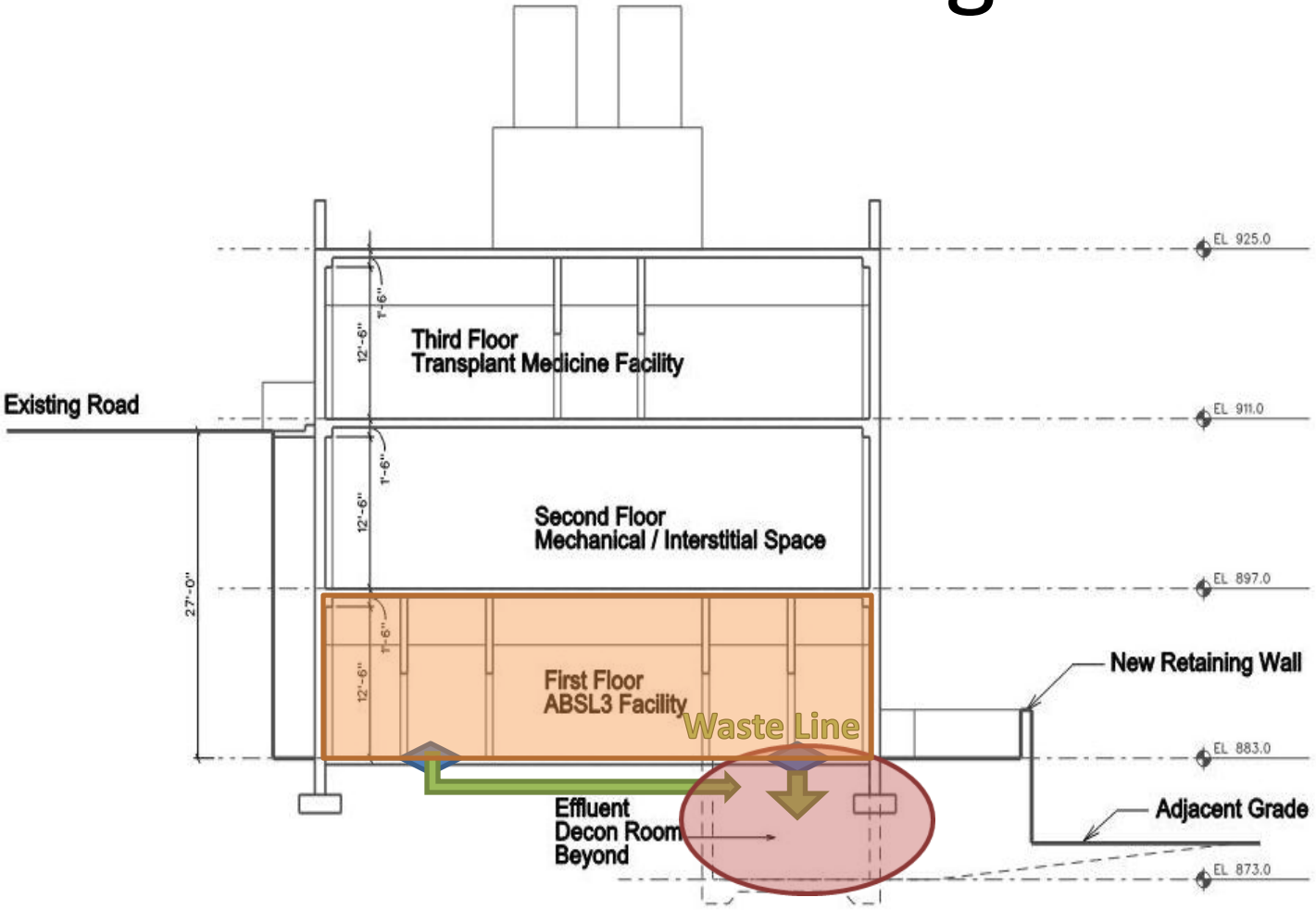
NIH/DRM requires that all contaminated liquids be decontaminated prior to release.

In wet areas, washed down animal holding rooms and other support areas; all effluent is captured and then cycled through cook tanks that are heat activated to proven kill levels prior to cool down and release.

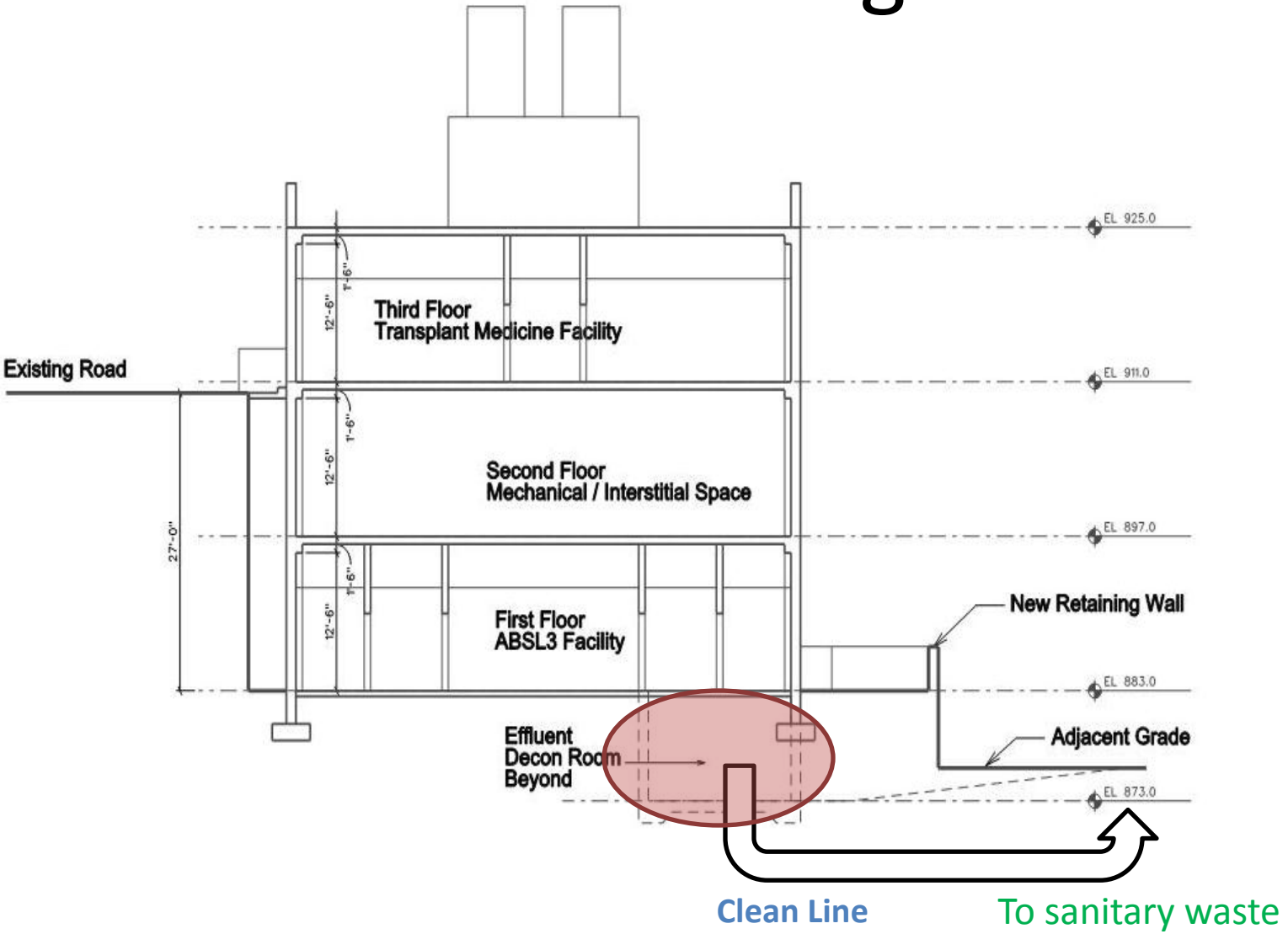
Effluent Decontamination Systems



Effluent Decon Diagram



Effluent Decon Diagram

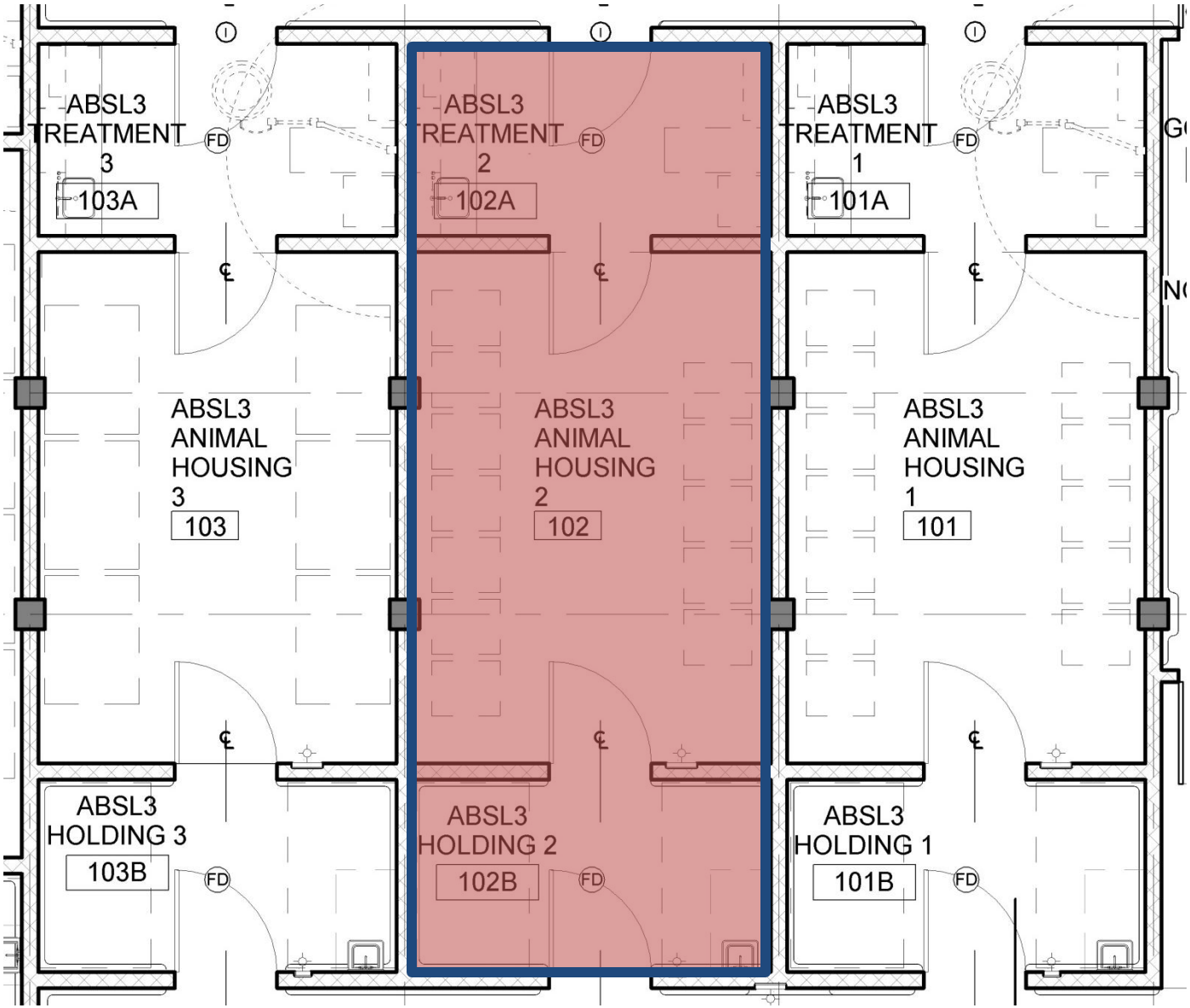


Effluent Decontamination

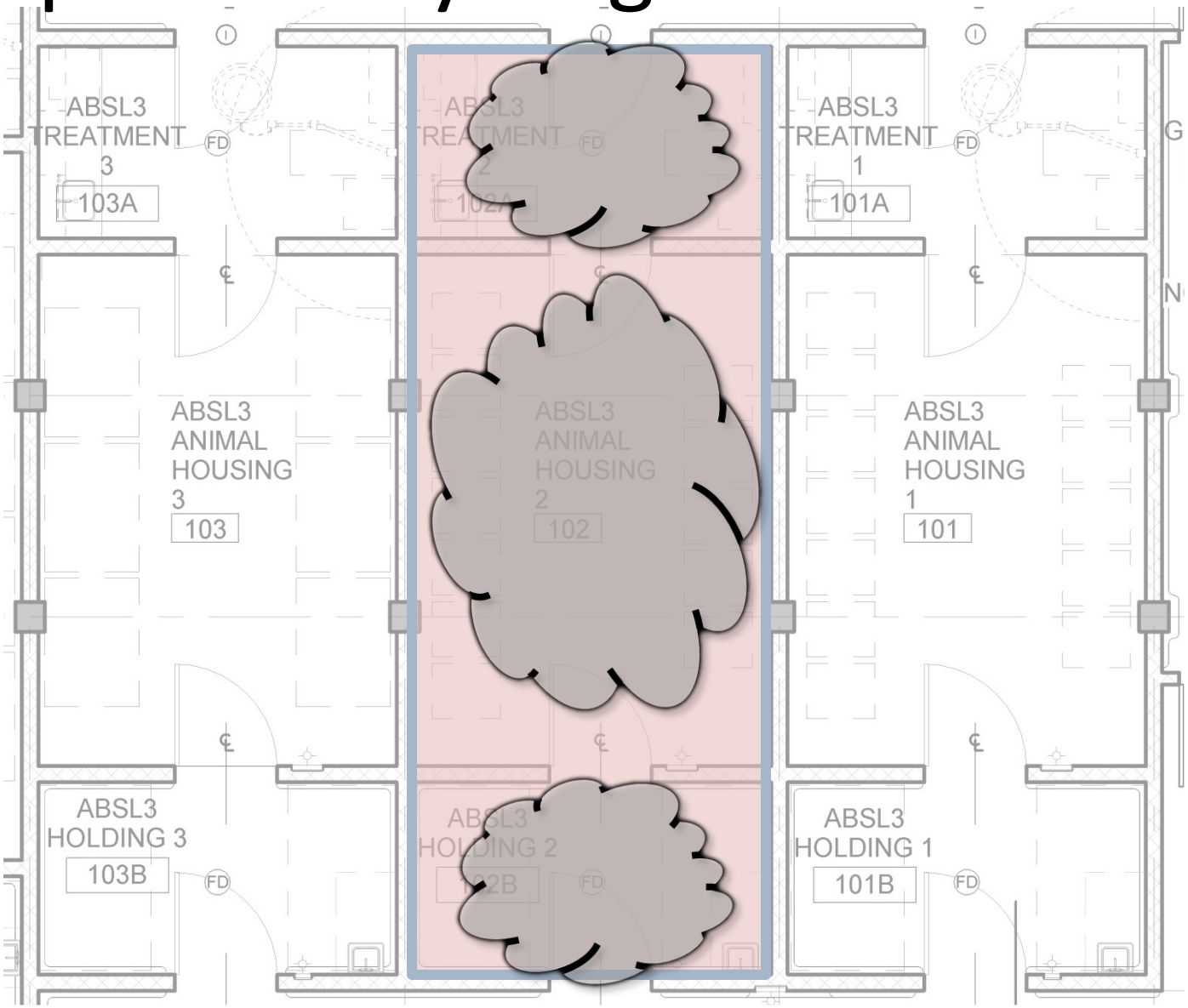
Approach at Yerkes:

1. Discontinue wash down while in BSL3 mode.
2. All rooms exposed to pathogenic material will be decontaminated with a vaporized hydrogen peroxide system.
3. Upon completion of decon cycle drains are un-sealed
4. Room is washed down using traditional procedures.

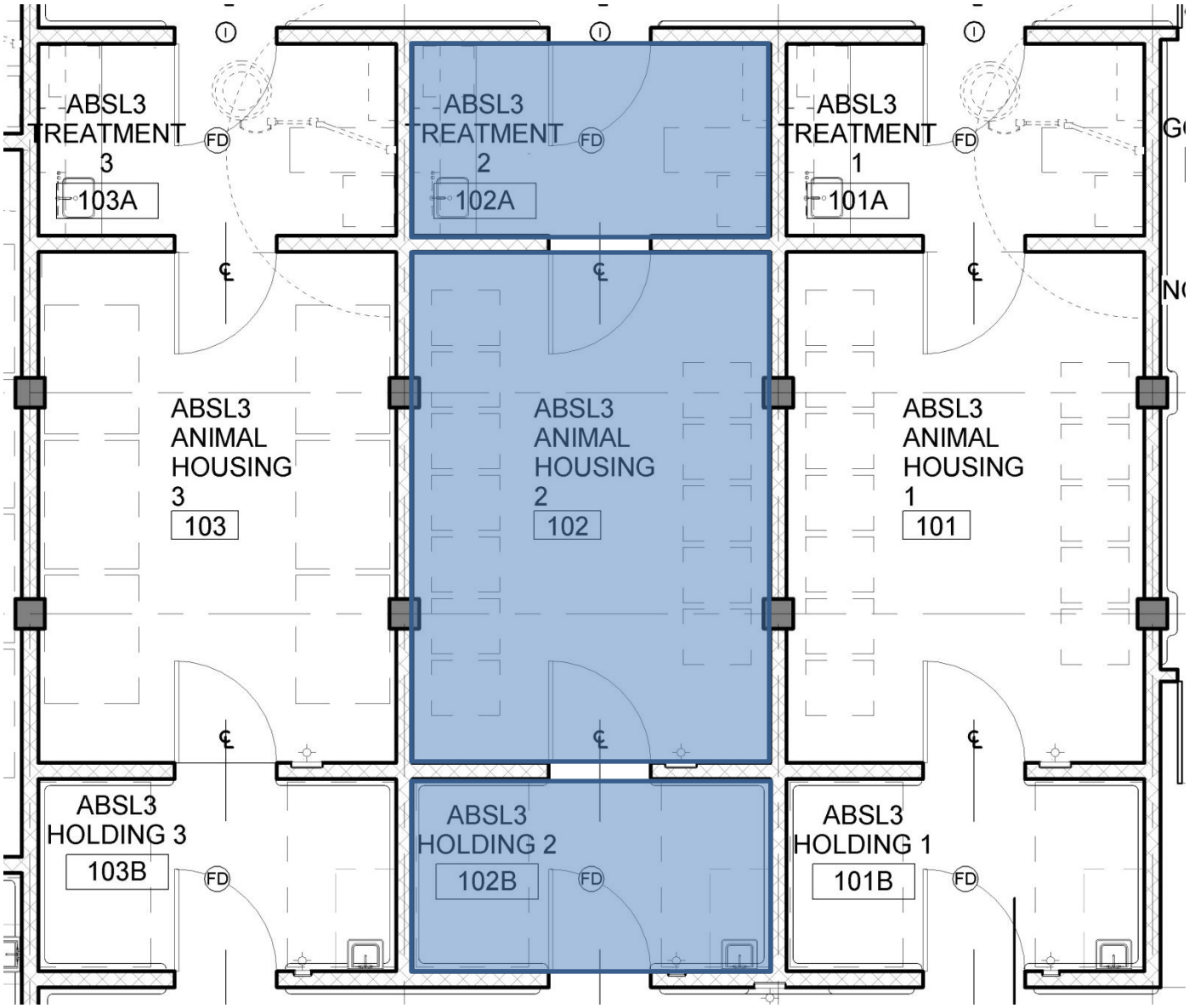
Seal Rooms


ABSL3
TREATMENT
3
103A
ABSL3
TREATMENT
2
102A
ABSL3
TREATMENT
1
101A
ABSL3
ANIMAL
HOUSING
3
103
ABSL3
ANIMAL
HOUSING
2
102
ABSL3
ANIMAL
HOUSING
1
101
ABSL3
HOLDING 3
103B
ABSL3
HOLDING 2
102B
ABSL3
HOLDING 1
101B
FD

Vaporized Hydrogen Peroxide



Unseal & Wash Down



Savings to the project:

$ 900,000

SAVINGS RECAP

BUILDING ORGANIZATION	$525,000
ABSL-3 AIRLOCK	$500,000
EFFLUENT DECON	$900,000
TOTAL	**$1,925,000**

“TAKE AWAY” IDEAS

- **Collaborate** – Collaborative work between Yerkes and the Design Team, particularly at the planning stage, resulted in an in-depth understanding of the fundamental needs and more creative solutions to how these needs could be addressed.

- **Communicate** – Open dialogue between Yerkes, Design Team and NIH has been important in achieving project objectives.

- **Ask Questions** – Essential to understand the INTENT of the DRM relative to prescriptive requirements. There may be a way to address the requirements that better suits the specific project needs.