



*Clinical Facilities Update
to the
Clinical Center Research Hospital Board
(CCRHB)*

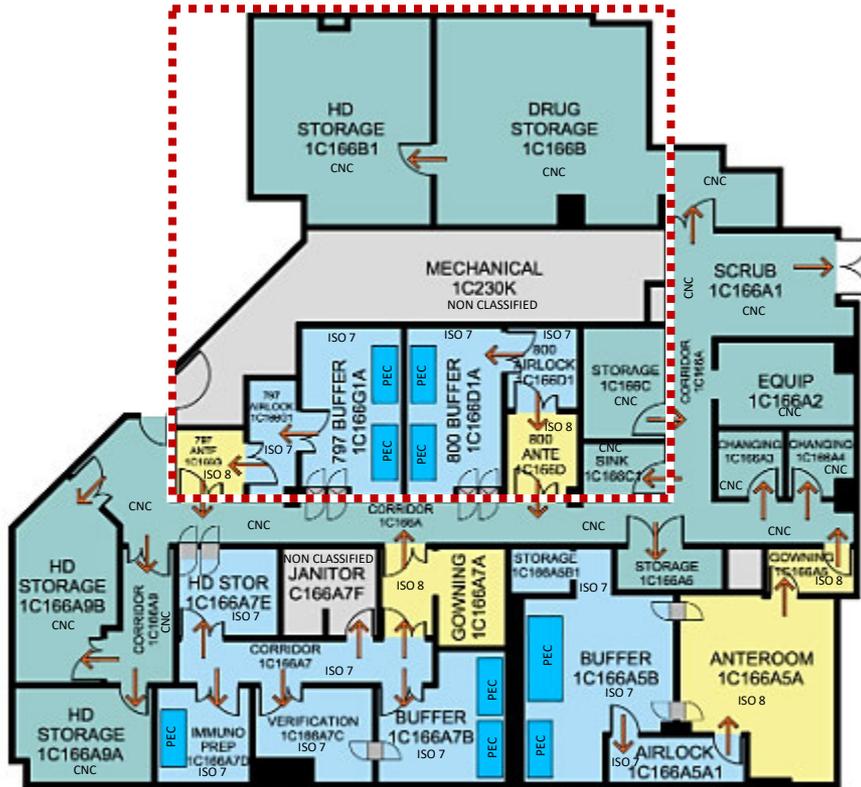
by
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Director, Office of Research Facilities
October 16, 2020



Recently Constructed Projects



C106585 Expansion of Interim Intravenous Admixture Unit (IVAU)



Identified Risk/Impact: Previous IVAU capacity was inadequate, and our legacy HD Storage area was not compliant with new USP-800 criteria.

Project Benefit / Risk Mitigation Strategy: Project provided interim increase in IVAU capacity until we complete P-IVAU. Project includes two ISO-7 clean rooms with two BSCs each. Addressed HD Storage compliance requirement. Project areas is shown inside red rectangle.

Schedule Status: Construction was completed on 06/30/2020; CQV completed on 07/31/2020. Occupancy permit approved on 09/10/2020, and space turned over to the Pharmacy Department.



C104935 Center for Cellular Engineering (CCE) Cell Processing Facility



Identified Risk/Impact: Inadequate quantity of cGMP-compliant space to accomplish critical research objectives.

Project Benefit / Risk Mitigation Strategy: New facility to support DTM with additional aseptic Cell Processing and Engineering.

Schedule Status: Design-Build contract awarded in September 2017. Design completed in August 2019. Construction started in January 2019. Modular units were delivered and installed in May 2020. Construction completion in October 2020. Commissioning, Qualification, and Validation (CQV) underway; anticipate CQV completion in February 2021.



C105122 NCI Tumor Infiltrating Lymphocytes (TIL) Cell Processing Modular Facility



Identified Risk/Impact: Lack of available facilities to accomplish critical research objectives.

Project Benefit / Risk Mitigation

Strategy: New facility to support NCI's Surgery Branch led by Dr. Rosenberg.

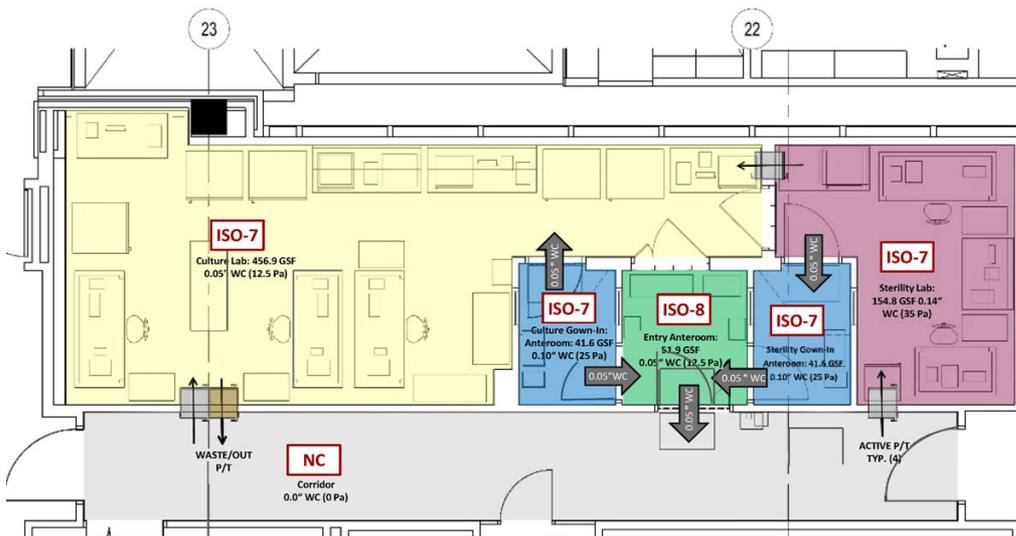
Schedule Status: Design-Build contract was awarded in September 2017. Construction is complete. Commissioning, Qualification, and Validation (CQV) underway; anticipate completion in November 2020.





Projects Under Construction

C104603 Department of Laboratory Medicine (DLM) Sterility Lab



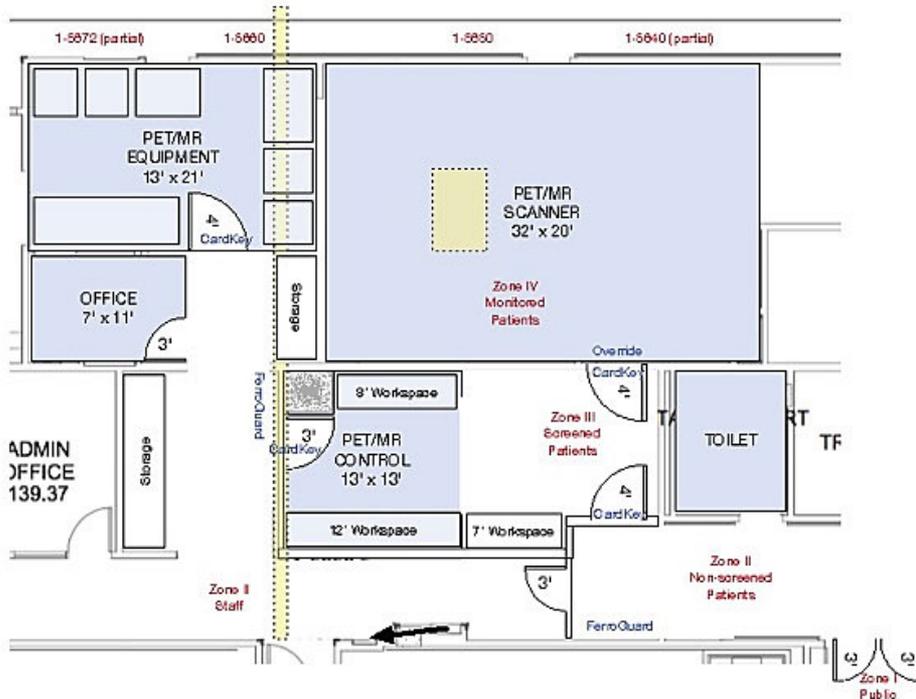
Identified Risk/Impact: Lack of sterility testing facility will affect patient safety.

Project Benefit / Risk Mitigation

Strategy: Sterility testing on a wide-range of investigational new drugs will contribute to patient safety.

Schedule Status: Design-build contract awarded. Construction in progress. Construction completion in December 2020.

C108095 PET MR Scanner Turnkey Upgrade



Identified Risk/Impact: The current nursing and PET space will be renovated to accommodate a new PET/3T-MR scanner, that permits simultaneous PET and MR imaging.

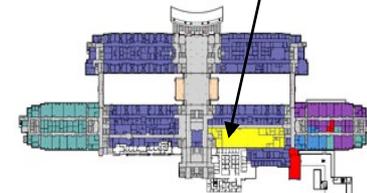
Project Benefit / Risk Mitigation Strategy: For patients who need both PET and MR scans, there is easier scheduling and only one rather than two separate visits for imaging.

Schedule Status: CC awarded turnkey contract in May 2020. Construction is estimated to start in November 2020, and complete in May 2021.



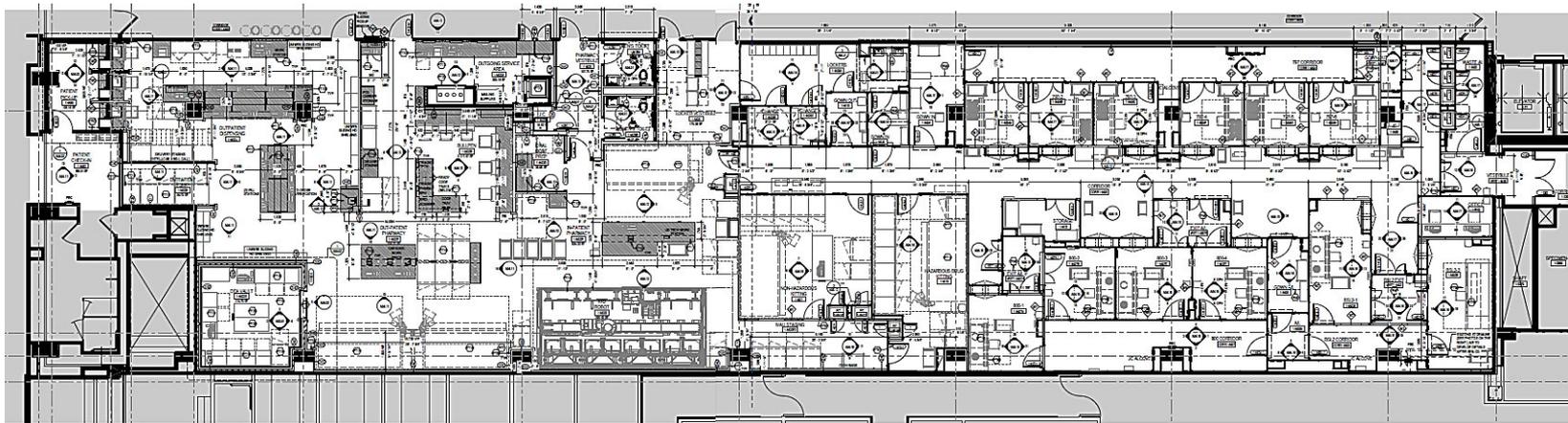
C105559 Pharmacy and Permanent Intravenous Admixture Unit (P-IVAU) Renovation

Renovated Space Highlighted in Yellow.



Western Portion

Eastern Portion



Identified Risk/Impact: Interim IVAU is only temporary, is inadequate in size and there is no backup plan in case of a facility emergency. Will involve a new penthouse to house dedicated air handling equipment.

Project Benefit / Risk Mitigation Strategy: Improved patient safety and compliance.

Schedule Status: Constructed Swing Space for Inpatient and Outpatient Pharmacy functions in order to vacate existing Pharmacy Department. Design-Build contract awarded to DPR Construction in Sep 2019. Completed majority of pre-design demolition work in July 2020. Design to be completed in Dec 2020. Large crane and new penthouse mechanical room construction above Pediatrics Clinic starts late Jan 2021. Estimated completion of construction in Nov 2021. Followed by CQV in Dec 2021 and operational shortly thereafter.

C100663 Building 10 E-Wing Renovation



Identified Risk/Impact: The Department of Transfusion Medicine (DTM), in a 2011 study regarding the five Clinical Center Departments housed in legacy facilities, had the worst scores in terms of space quantity and quality. This project was developed in response to these findings. Involves renovation from Level B3 all the way to the roof (Level 15 and Mezzanine). Area is illustrated by plywood covering over window openings.

Project Benefit / Risk Mitigation

Strategy: Improved patient safety, improved environment of care, improvements in DTM staff productivity, recruitment, retention, and morale.

Schedule Status: In Construction. Experienced challenging number of unforeseen conditions that have impacted budget and schedule. Estimated completion: 2022.



C100663 E Wing Cross Section and Housing Plan

Mechanical

Mechanical

CC-DTM cGMP Suite

NIAID

NIDDK

NIDDK, Mechanical

NHLBI

NHLBI, NIMH

NHLBI

NINDS, NIDDK

NIMH, Mechanical

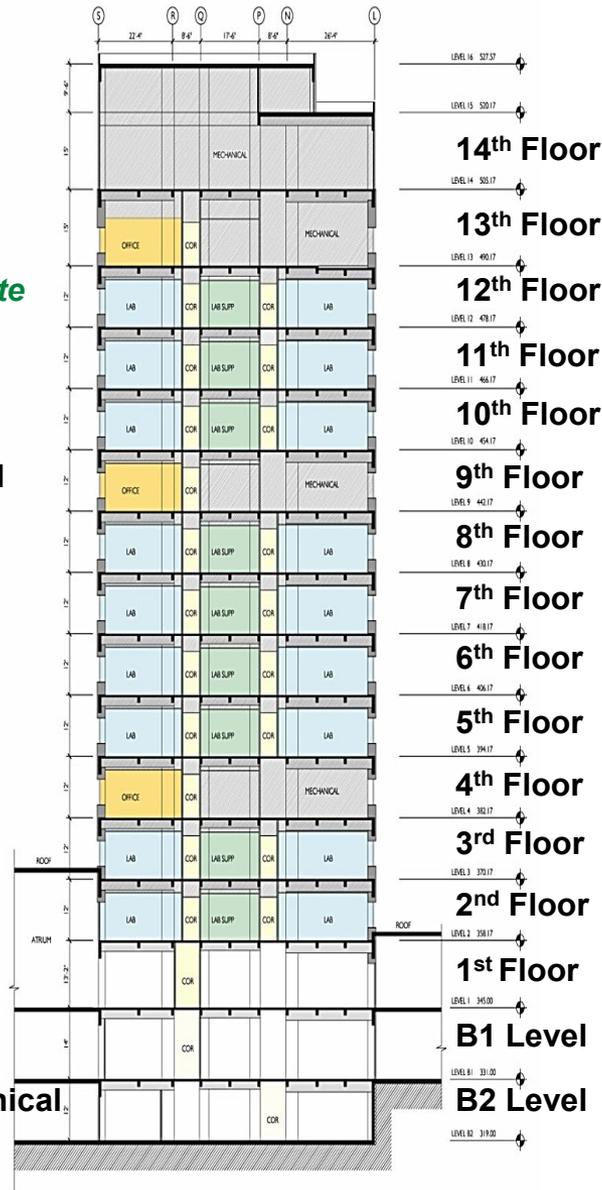
CC-DTM

CC-DTM

CC-DTM, WALS

FAES, DFOM

Cagewash, Mechanical



C104771 Utility Vault and Patient Parking Garage



Patient Parking
Garage

Utility Vault

Identified Risk/Impact: Security Risk – power supply components (normal and emergency) for Building 10/Hospital Complex are currently vulnerable due to unprotected location. The current structure offers no space to accommodate additional electrical equipment needed to support planned hospital expansion. Parking under hospital poses a security threat.

Project Benefit / Risk Mitigation Strategy: Protects vital power supply components, for current and future loads, in reinforced structure. Also, decreases parking load in current lot under Building 10.

Project/Schedule Status: Design-Build (D-B) contract awarded in September 2019. Phase 1 (Electrical Power Bypass Feeders) underway. Construction Completion Date: March 2022.

In addition, we are currently constructing an underground electrical ductbank to ensure reliable normal and emergency power while excavating for this project



Projects Awaiting Funding



C103157 Surgery, Radiology and Laboratory Medicine (SRLM) Building, including Interventional Radiology and Catheterization Lab



View from North to South



View from West to East

Identified Risk/Impact: Clinical Center Departments of Perioperative Medicine, Laboratory Medicine, Radiology and Imaging Sciences, and the NHLBI Cardiac Catheterization Program are housed in 1980-era obsolete space with mechanical, electrical and plumbing infrastructure that cannot be economically upgraded.

Project Benefit / Risk Mitigation Strategy: Safe, compliant, maintainable and flexible facilities to support cutting edge research and optimal patient care.

Funding Status: Partially funded: FY2020 NEF Carryover and B&F FY2020 Carryover funds allocated to project; balance of funding requested via FY2021 B&F/NEF/TA (Transfer Authority) for design-build award of SRLM. IC funded medical equipment procurement, installation and activation FY 2025-2027.

Schedule Status: Preparing Bridging Documents and Construction Logistics Plan, to render project shovel-ready, for the anticipated award of a Design-Build contract in FY2021.



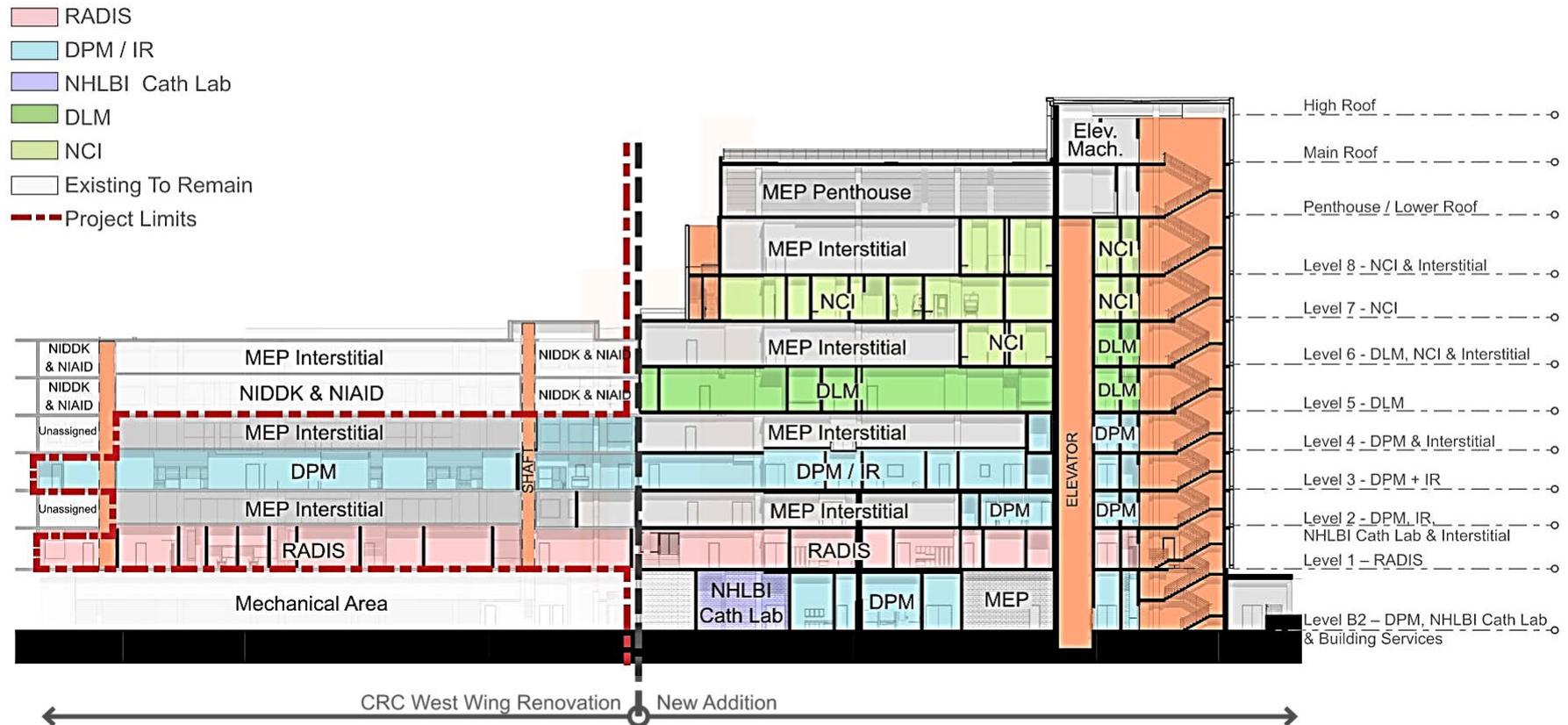
SRLM Future Conditions: View from North to South

A Few of the Key Outcomes for the Clinical Center:

Department of Radiology and Imaging Services (RADIS) Has Contiguous Space on First Floor

Department of Perioperative Medicine (DPM) and Interventional Radiology Have Contiguous Space on Third Floor

Department of Laboratory Medicine Has Contiguous Space on Fifth Floor



630,000 Gross Square Feet (GSF) Total:
 527,000 GSF New Space
 103,000 GSF Renovated Space

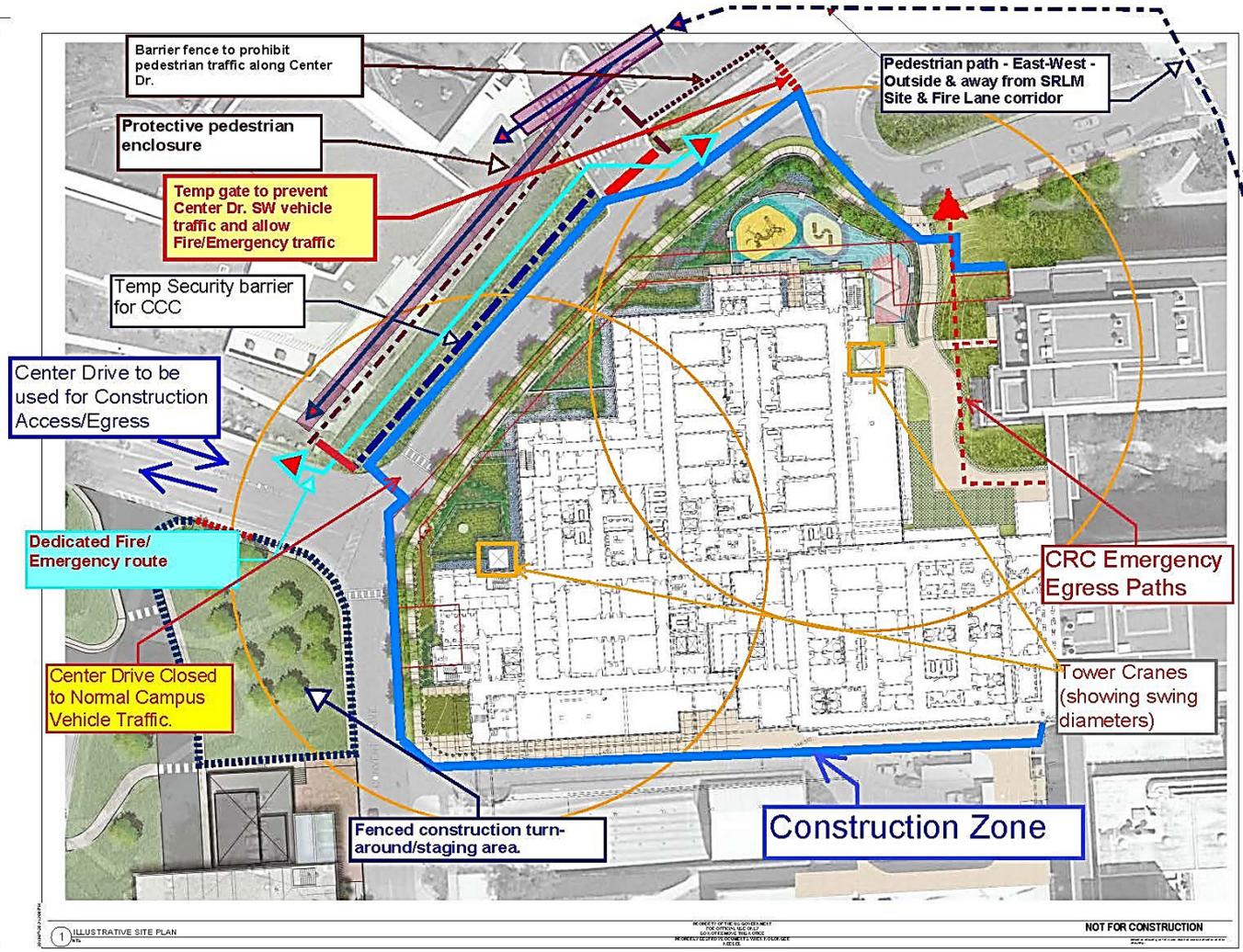


Surgery, Radiology, and Laboratory Medicine (SRLM) Project Numerous Completed Milestones

- Completed soil borings and incorporated results into bridging documents
- Completed National Environmental Protection Act (NEPA) Review
- Completed National Capital Planning Commission (NCPC) Review of Revised Bethesda Campus Master Plan, which includes the SRLM and the Utility Vault/Parking Garage
- State of Maryland Department of Environment Advance Clearance for Stormwater Management
- Registered project with U. S. Green Building Council – goal is to achieve LEED Gold Certification
- Clinical Research Center West Lab occupants from NCI, NIDDK and NIAID (currently adjacent to construction site) will have temporary offices in Building 10 so that we don't have to curtail noisy operations
- Security and construction worker access measures to reduce inefficiencies while ensuring access to firefighters, police, staff, patients, visitors
- Rectilinear building form reduces material and labor costs
- Factored in construction logistics (crane placement, excavation areas, truck deliveries) to ensure that the area we provide to contractor is feasible
- Option selected is not close to existing surgery procedures, thereby avoiding vibration-related delays

SRLM Building – Construction Logistics Planning

- Patient & Staff Pedestrian Safety, Including Ingress and Egress
- Emergency Vehicle Circulation
- Construction Worker Access
- Construction Material Deliveries
- Crane Placement



PROJECT NAME	SRLM BUILDING
PROJECT NUMBER	L0002
DATE	10/10/14
SCALE	AS SHOWN
DESIGNED BY	ARCHITECTURAL SERVICES UNIT
CHECKED BY	ARCHITECTURAL SERVICES UNIT
APPROVED BY	ARCHITECTURAL SERVICES UNIT

C106418 Electrical Power Supply (Normal and Emergency) Replacement and Upgrade Buildings 59 and 59A



Identified Risk/Impact:

- CRC Emergency Generators and Clinical Center Switchgear are over 20 years old. Switchgear equipment is no longer manufactured; thus, replacement parts have to be custom-made.
- Technology of 480V generators stepped up to 13.8 kV distribution is outdated, requiring transformers, which pose additional power supply system failure points.
- Current location is prone to flooding and poses a security risk.

Project Benefit / Risk Mitigation Strategy:

- Increased reliability of power supply by upgrading to 13.8KV generators
- Minimized failure points and improved reliability
- Generators and switchgear housed in reinforced structure in proposed new Utility Vault.

Funding Status: Unfunded. ORF has requested FY2021 funds for this project.

Schedule Status: Preparing design; construction award anticipated in 2021, pending funding approval (27-month construction schedule).





Summary

- Completed and ongoing projects will result in significant enhancements in patient safety and patient care, including:
 - Pharmacy: E-IVAU provided a stabilizing effect, and swing space projects are enabling efficient renovation of entire Pharmacy, with dedicated mechanical equipment to fully comply with all criteria.
 - Cell Therapy: On the brink of providing DTM a step function improvement in both quantity and quality of space
 - Imaging: Hybrid PET/MR scanner will improve patient experience and improve efficiency in diagnostics
 - Lab Medicine: Sterility Lab will provide a dramatically enhanced capability in support of aseptic manufacturing, both in terms of safety and compliance
- Surgery, Radiology, Laboratory Medicine, Interventional Radiology, Catheterization: Cautiously optimistic regarding likelihood of funding in this fiscal year, and (depending on timing) perhaps the award of the Design-Build Contract in this fiscal year as well
 - Will be challenging to construct 527,000 square feet of new space, relocate NCI to new building, renovate 103,000 square feet of existing space, and activate the new space in proximity to ongoing patient care operations and in a tight jobsite.
 - The electrical feeder project currently underway has given us a taste of the challenges to come, in terms of pedestrian safety, vehicular circulation, etc.
 - However, having investigated over twenty options, this is the most feasible and suitable solution.
- Thanks for your support.



SRLM - Additional Information/Graphics

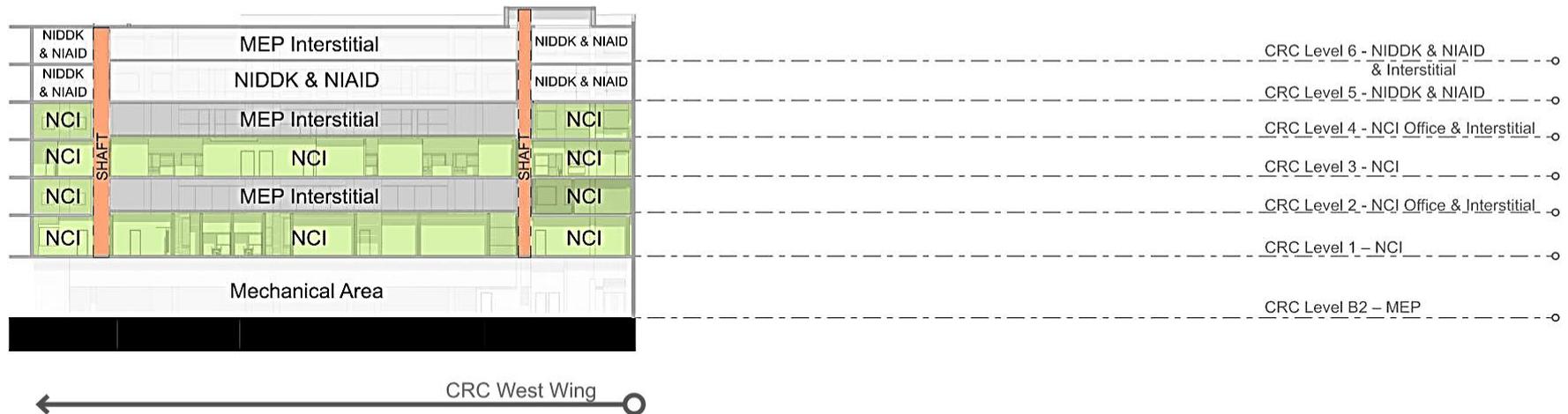
Surgery, Radiology and Lab Medicine Building Design Concept View from Northwest to Southeast





CRC West Wing Existing Conditions View from North to South

- NCI
- Existing To Remain





Surgical Procedure Room Analysis

	Existing DPM Operating Rooms	Proposed Rooms in SRLM	Room Size*
General Operating Rooms	11	6	800 SF
Hybrid OR (MRI Access)	--	4	1,000 SF
Minor Procedure Rooms	--	4	500 – 600 SF
Cath Lab Program (MRI Access)	2	2	850 SF
IR Rooms	Currently, IR Procedures are conducted in RADIS space.	3	600 SF
Total Rooms	13	19	

*All Procedure Rooms over-sized for flexibility to accommodate future trends and protocols.



Radiology Procedure Room Analysis

	Existing Rooms	Existing space NSF	Proposed Rooms in SRLM	Program space NSF	Notes
CT	2	3,845	4	4,842	
MRI	5	6,857	7	9,422	All rooms are sized for 3.0T for flexibility.
General Radiology	2	5,661	3	6,643	
Radio-Fluoroscopy	2	5,661	2		
Ultrasound	5	5,661	5		Existing service has three ultrasound and two mammography rooms. New space has five ultrasound rooms.
Totals	16	16,363	21	20,907	