

# NSLS Hazard Removal Project

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BNL Community Advisory Committee Briefing  
5/14/15  
L. Hill, Project Manager

# Project Mission

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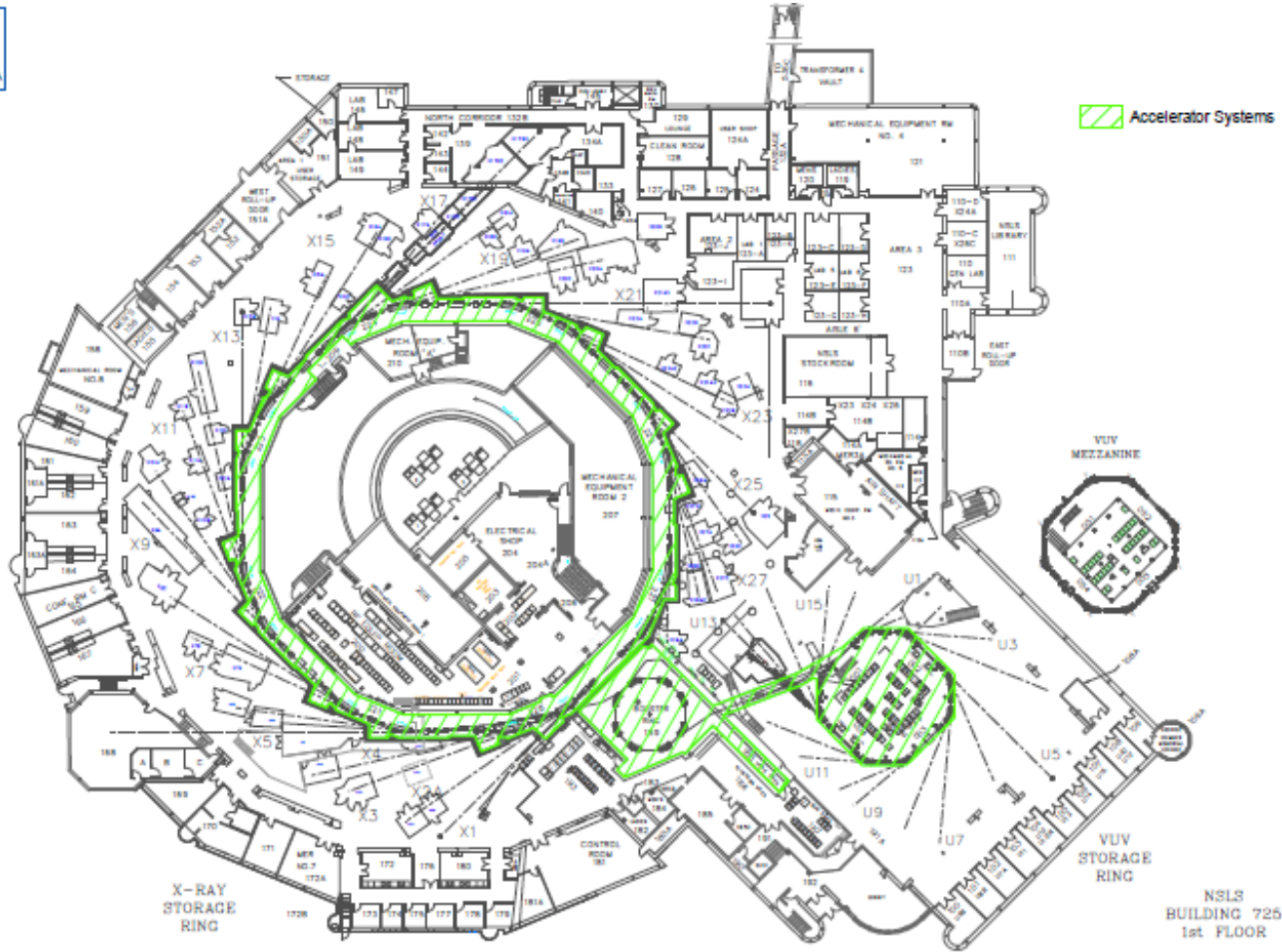
*To safely and efficiently remove hazards and hazardous conditions from the NSLS to prepare it for the next phase of the facility life cycle...either facility demolition or re-purposing.*

# Background

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- NSLS was a large user accelerator facility dedicated to the production and utilization of synchrotron light...supported the development and use of electron-based radiation sources and new applications in the physical and biological sciences
  - Began operation in 1982
  - Consisted of four interconnected accelerators and more than 60 "beamlines" used for conducting research
- NSLS supported extensive user program...typically 2300 users from - 400 university, government laboratory, and industry institutions annually
- NSLS II started up and placed in operation in 2014
- NSLS permanently removed from service on September 30, 2014

# Facility Overview



# Facility Stabilization

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- NSLS research systems permanently shut down
  - Electrical systems de-powered
  - Cooling systems (deionized water) systems vented and drained
- Chemicals, compressed gases, research samples, etc. removed from facility
- Equipment removed for re-use at NSLS II and elsewhere at BNL or other research facilities
  - Approximately 3,000 individual components
  - Total value of almost \$50 Million
- Systematic process being used to look at further opportunities to re-use NSLS assets

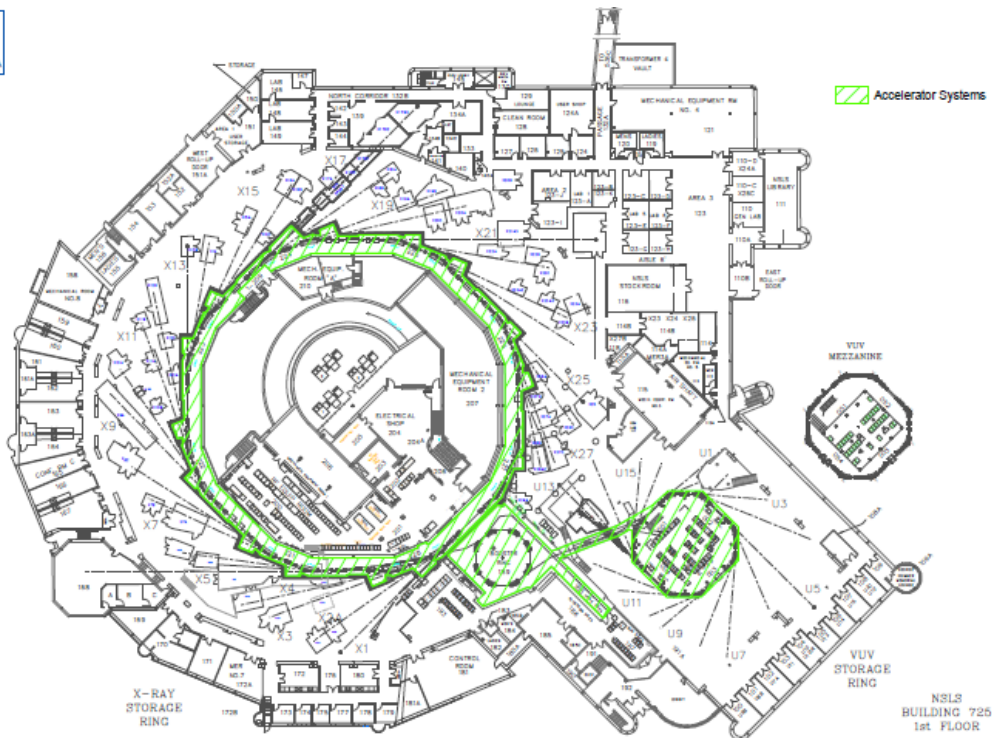
# Characterization Summary

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- Hazards confined to Building 725 interior, and almost exclusively to experimental areas on 1<sup>st</sup> Floor
- Electrical equipment throughout the facility must be systematically and permanently isolated
- Over 600,000 pounds of lead shielding must be removed
- Lead dust must be cleaned up if the facility is to be re-used
- Depleted uranium “safety shutters” must be removed
- A small number of pieces of accelerator equipment are activated as a result of NSLS operation
  - Confined to small number of “high beam loss” areas in the accelerator enclosures
  - Radiation dose rates measured in the micro-Rem per hour or “background” range

# Radioactive Materials Controlled Areas

- Accelerator enclosures highlighted on map
- Small amount of equipment in enclosures is radioactive
- All equipment removed from the enclosures is radiologically surveyed



# Project Scope

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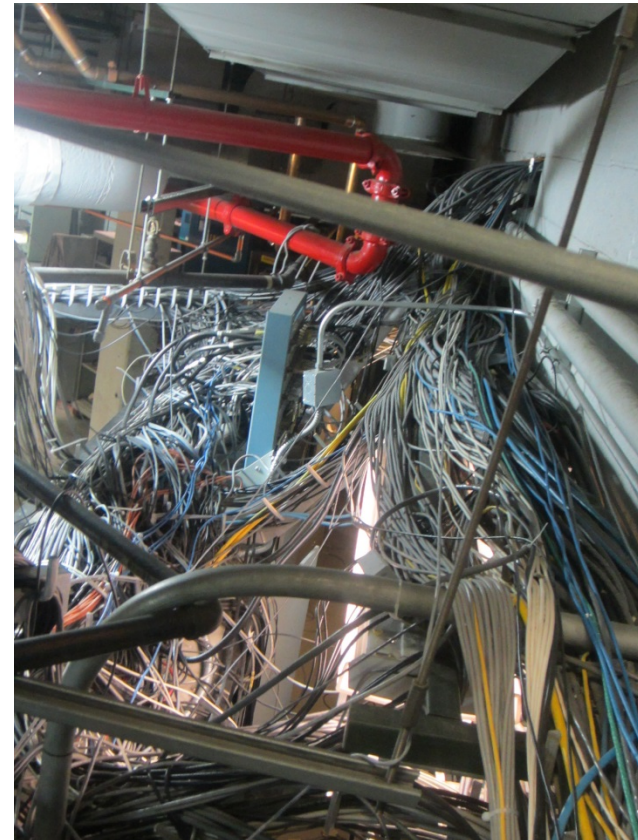
*Presently includes some of the hazards found during characterization:*

- Facility characterization to identify hazardous materials and conditions that may be present in the NSLS facility (*complete*)
- Project mobilization including the selection and training of workers and procurement of required tools, equipment and materials (*complete*)
- Electrical isolation of research equipment (*in progress, about 50% complete*)
- Removal/disposition (i.e. recycling) of over 600,000 pounds of lead shielding including radiological survey of 400,000 pounds removed from accelerator enclosures
- Review/documentation of as-left conditions

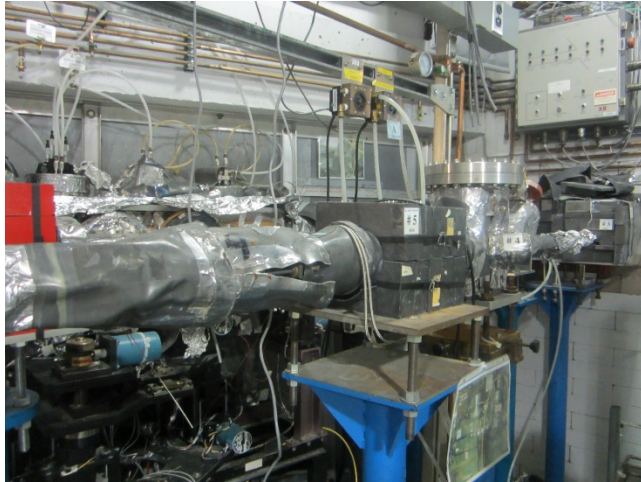


# Research Equipment Electrical Isolation- Examples

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# Typical Lead Shielding Arrays



# Project Summary

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- Project executed by BSA, supported by subcontractors
- Electrical isolation work started in late February
- Lead removal to commence this month
- Expect to be done with electrical isolations and lead removal by end of calendar year
- Evaluating timing of future actions to complete hazard removal