

PHENIX ENGINEERING

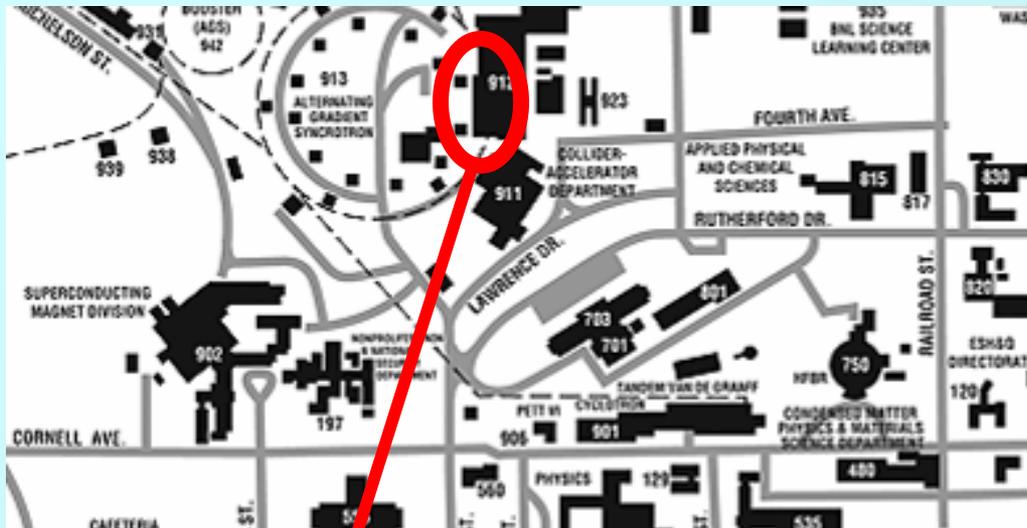
Long range plan

Warning: Subject to change without notice

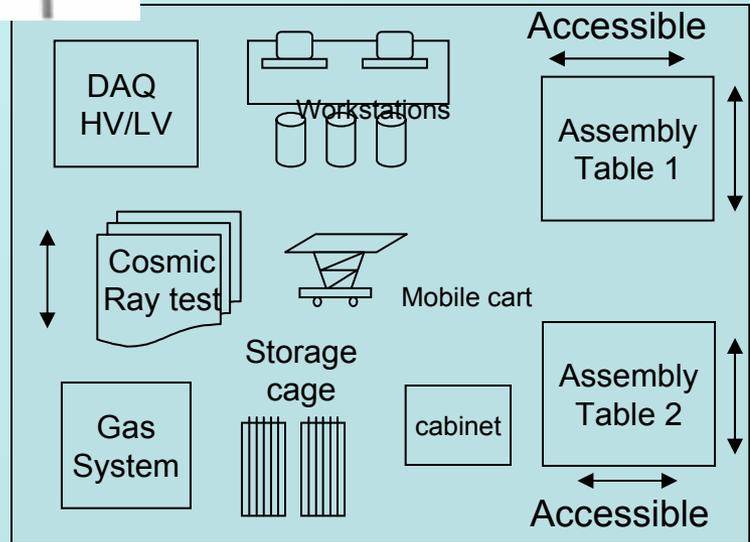
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RPC Assembly "Factory" at BNL

TEST-BEAM SUPPORT ROOM



C-A has suggested old PHENIX test beam area of BLDG 912 for factory



RPC Assembly "Factory" at BNL

TECHNICAL SUPPORT 2007



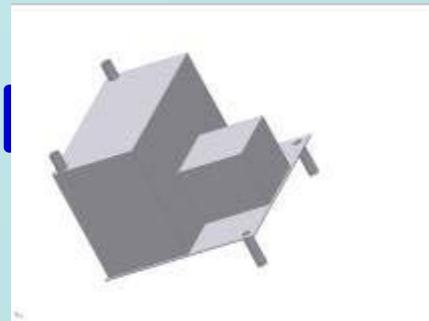
C-A to clean up, fix holes, paint floor?, etc.
Need a date for beneficial occupancy



Need tent, work tables, power, phone, internet, water & air utilities, jib crane, test gas storage and supply infrastructure, etc.

TECHNICAL SUPPORT 2007

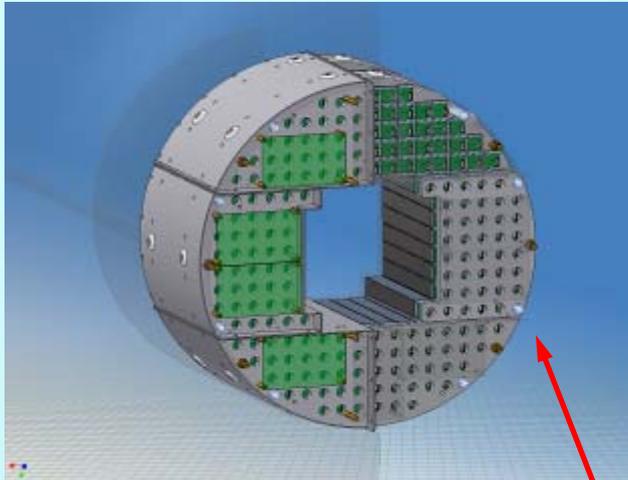
- End of Run 7(Run Length-start of Physics to run end) 3 months July 1
- Shutdown Prep weeks July 1 2
- DC Repair 1



West out July 1, East out ~July 9

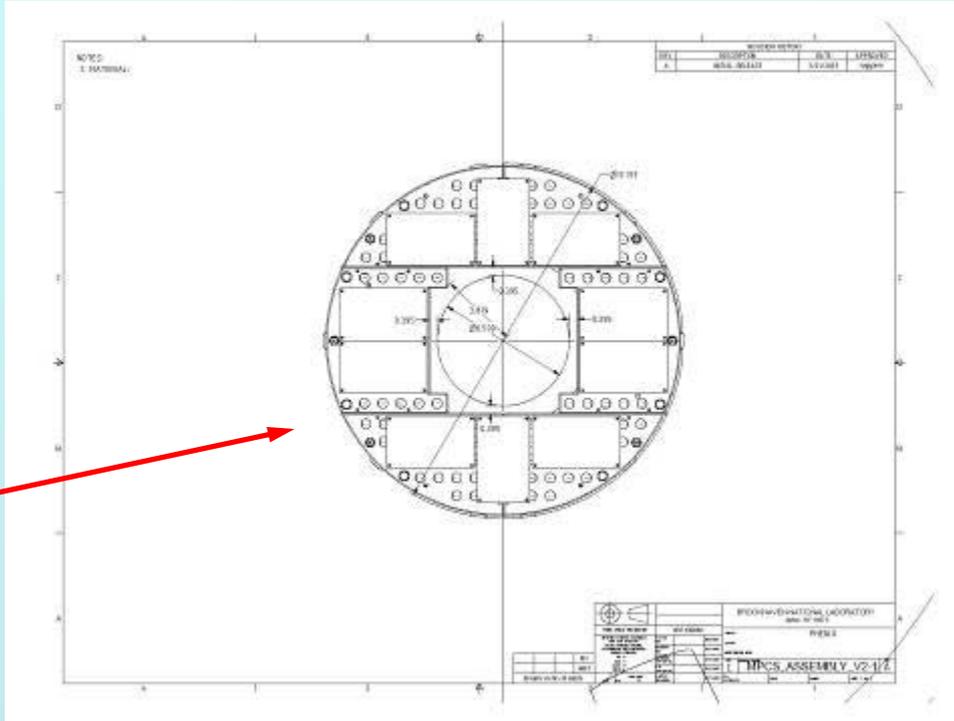
MPC Upgrades

TECHNICAL SUPPORT 2007



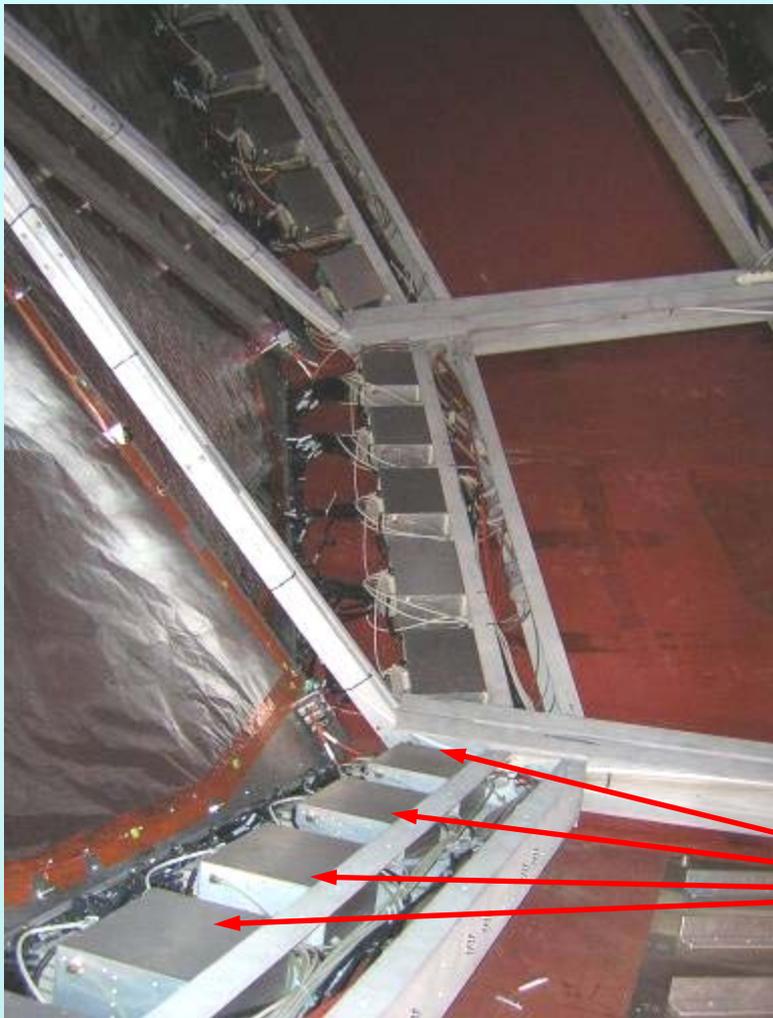
South: remove existing modules repair/replace crystals as necessary, change 8 module existing design to 6 module design, upgrade LED's to LED + homogenizer + fiber, reinstall.

Note: use Go/No gage to test assembly fitup prior to installation.



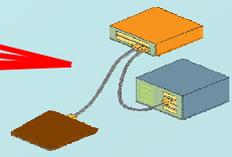
North (not shown): remove/repair/replace crystals as necessary, upgrade LED's to LED + homogenizer + fiber, reinstall.

MuTr FEE Upgrade



MuTr FEE prototypes and upgrade:

More info needed to plan for May prototype installation and summer installation of lower octant of stations 1 and 2 South



HBD Maintenance

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1. Remove west, then east for upgrading

2. Return to Stony Brook for electrical and mechanical improvements



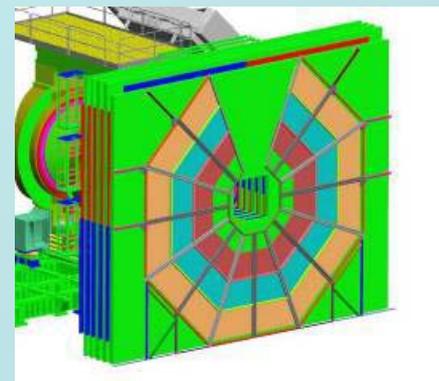
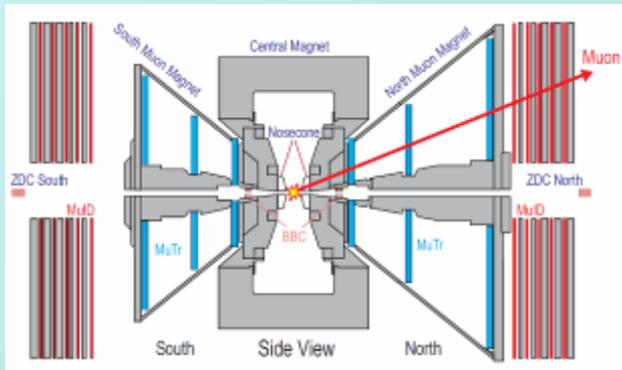
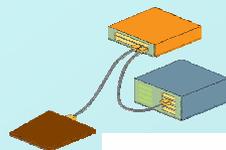
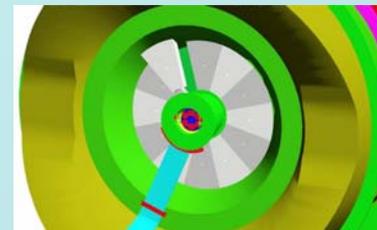
4. Re-install new & improved HBD for Run 8



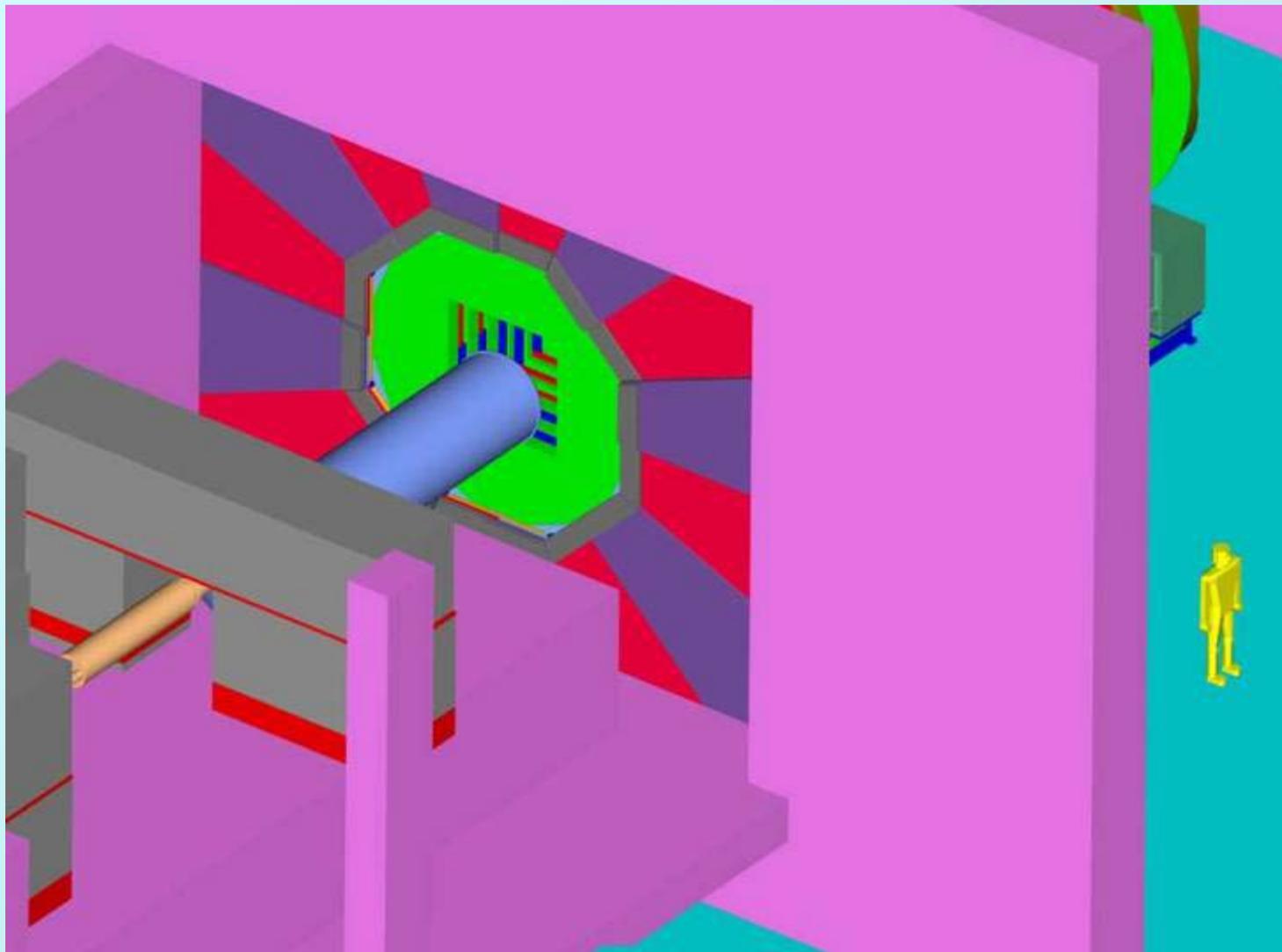
3. Return to PHENIX

TECHNICAL SUPPORT + NOON

- Run 8 Length (start of physics to run end) 7 months
- Shutdown Prep 2 weeks
- TBD detector maintenance and repair 0-3 months
- Install Cu absorber for 1 South octant, 1 week
- Install RPC 3 South 6 months?
- Install FEE Repairs & Upgrade MuTR 1, 2 South all octs 4 months
- Install LL1 South 3 months
- Commissioning and run prep 1 month
- Shutdown length (End of run 8 to run 9 cooldown start) TBD months

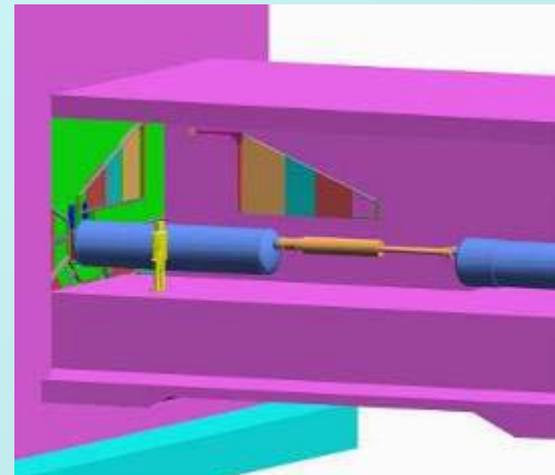
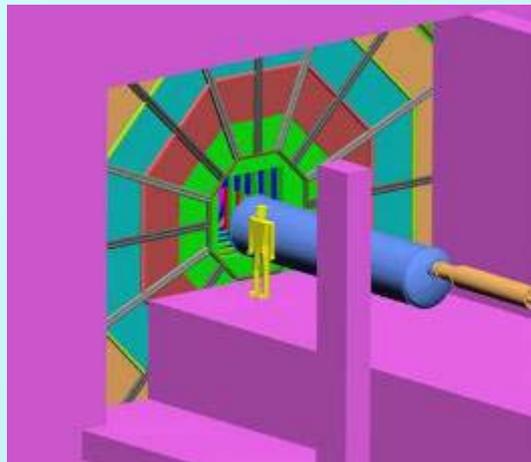


TEST-ROOM SUPPORT ROOM



RPC3 SOUTH

TEST-COR-SUPPORT-2007



Problems: Piping, cables thru sq. hole, crystal palace, large shielding blocks, access, crane coverage, services



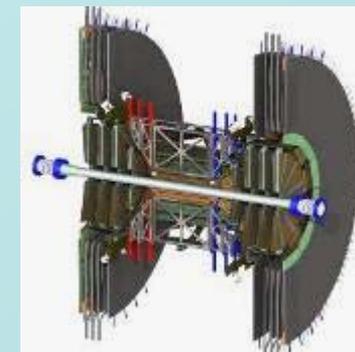
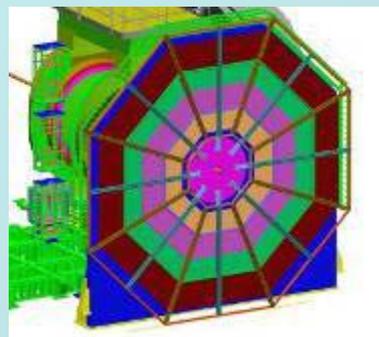
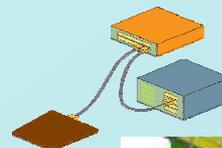
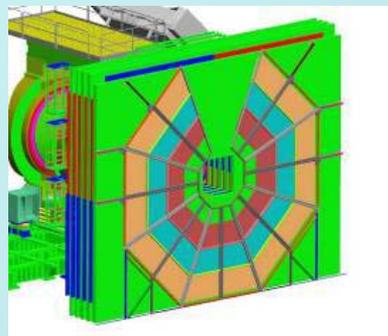
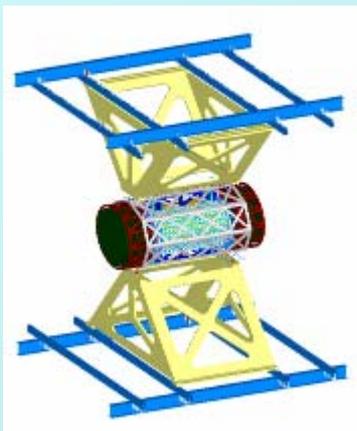
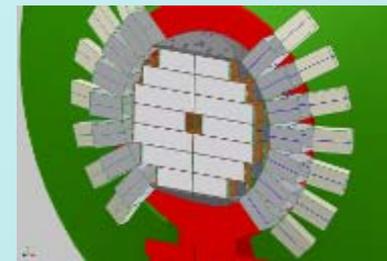
2009-2011 (& Beyond?)

TECHNICAL SUPPORT + NOON

- TBD detector maintenance and repair
- Install new beampipe
- Install VTX
- Install RPC 3 North
- Install RPC 2 South and North
- Install FEE Upgrade MuTR 1, 2 North (all octants)
- Install LL1 North
- Install Full Cu absorber + NCC tungsten
- Install FVTX
- Install NCC N & S
- Remove Cu Shielding
- Install RPC 1AB North and South
- Install FEE Upgrade MuTR 3, South and North

TBD months, each year

- 1 month
- 4 months
- 3 months
- 6 months
- 6 months
- 3 months
- 2 months
- 2 months
- 2 months
- 1 month
- 3 months
- 6 months



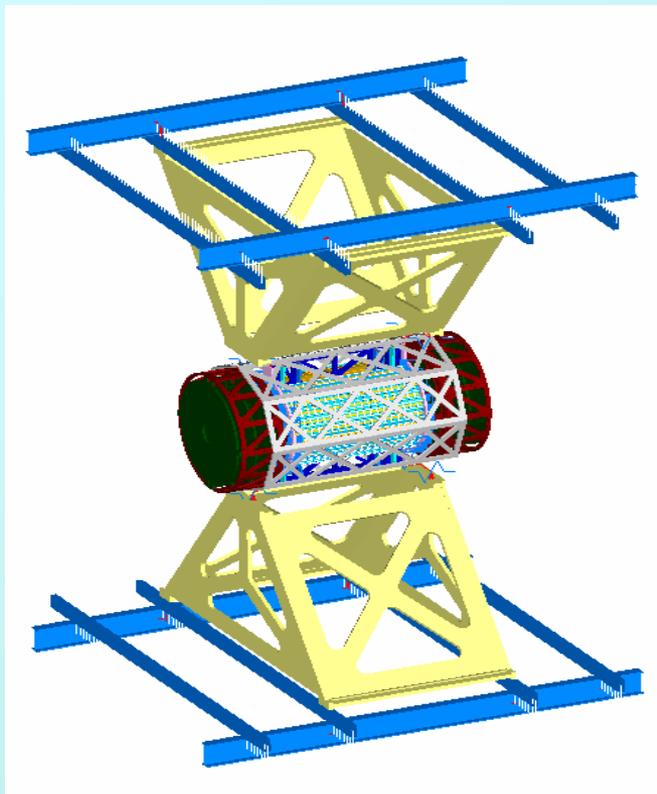
New Beampipe

40 mm ID 800 mm long Be section.

- Design considerations:
- Bakeability
- Structural support when CM is in run position & moved south for maintenance
- Protection during maintenance periods/ removeable for Runs
- Location of joints to minimize interference with detector performance



VTX



Design and prototype efforts
underway
At LANL, Columbia and Japan

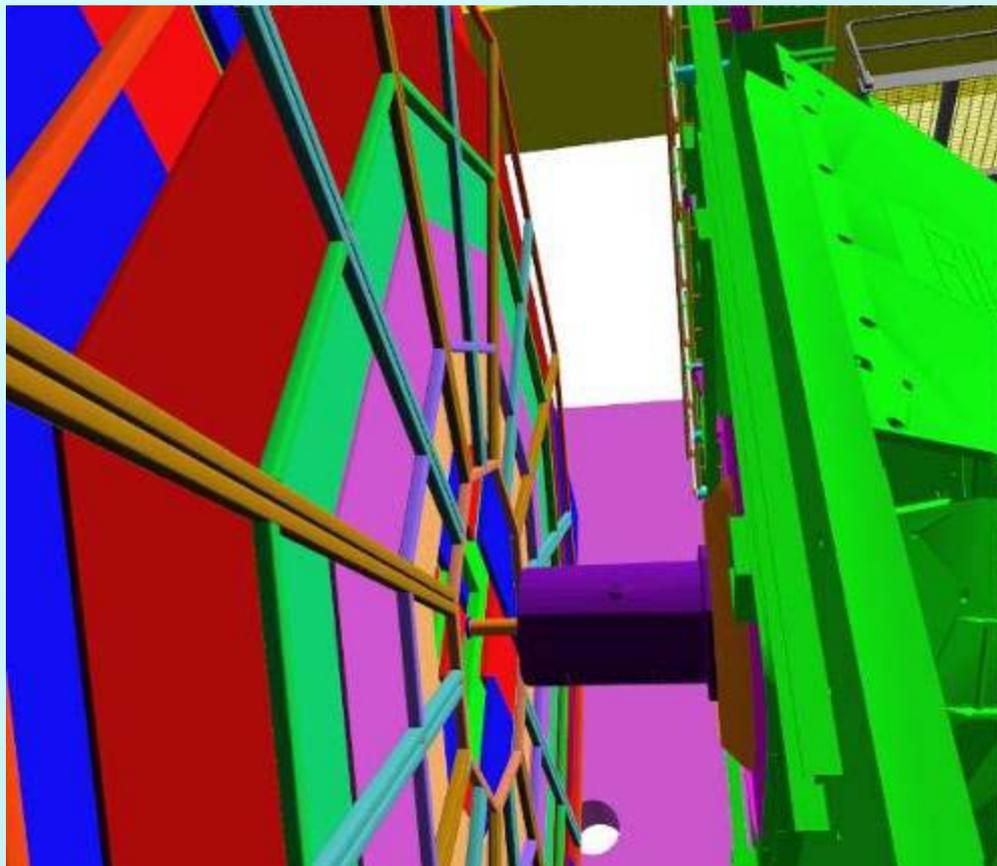
Will replace HBD and utilize HBD
support infrastructure

Thermal management, ambient
environment and electrical design are
ongoing.

Requires new 40 mm ID beampipe

Funding delays may impact installation
plan (currently plan to install in '09)

RPC 2 South

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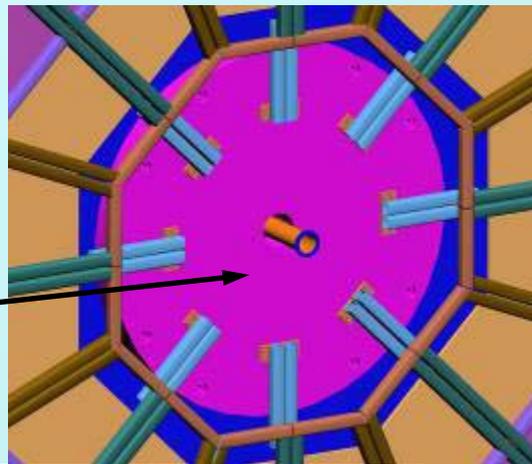
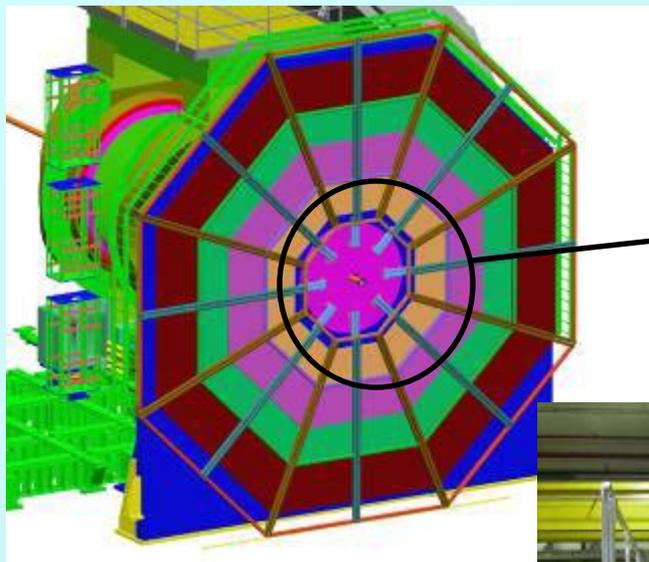
Probably most accessible location of the RPC's, but may interfere with ability to move MMS for maintenance of internal detectors (MPC and BBC).

Plans for electrical/gas/cooling services not yet available

Current Fast Muon Trigger plans slot this detector for installation in summer '09... seems a bit optimistic

RPC 2 North

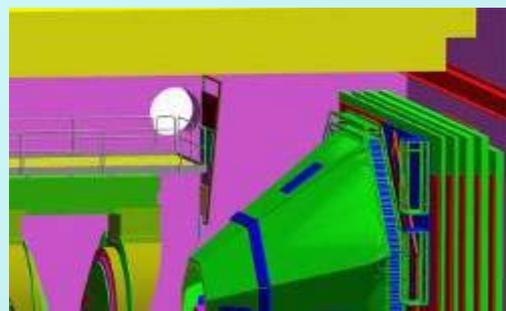
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Most difficult of all RPC's to install. Will require extensive efforts before and after installation to move access infrastructure, electrical and gas services for other detectors and reinstall afterward.

Extreme difficulty expected for installing support structure and routing services.

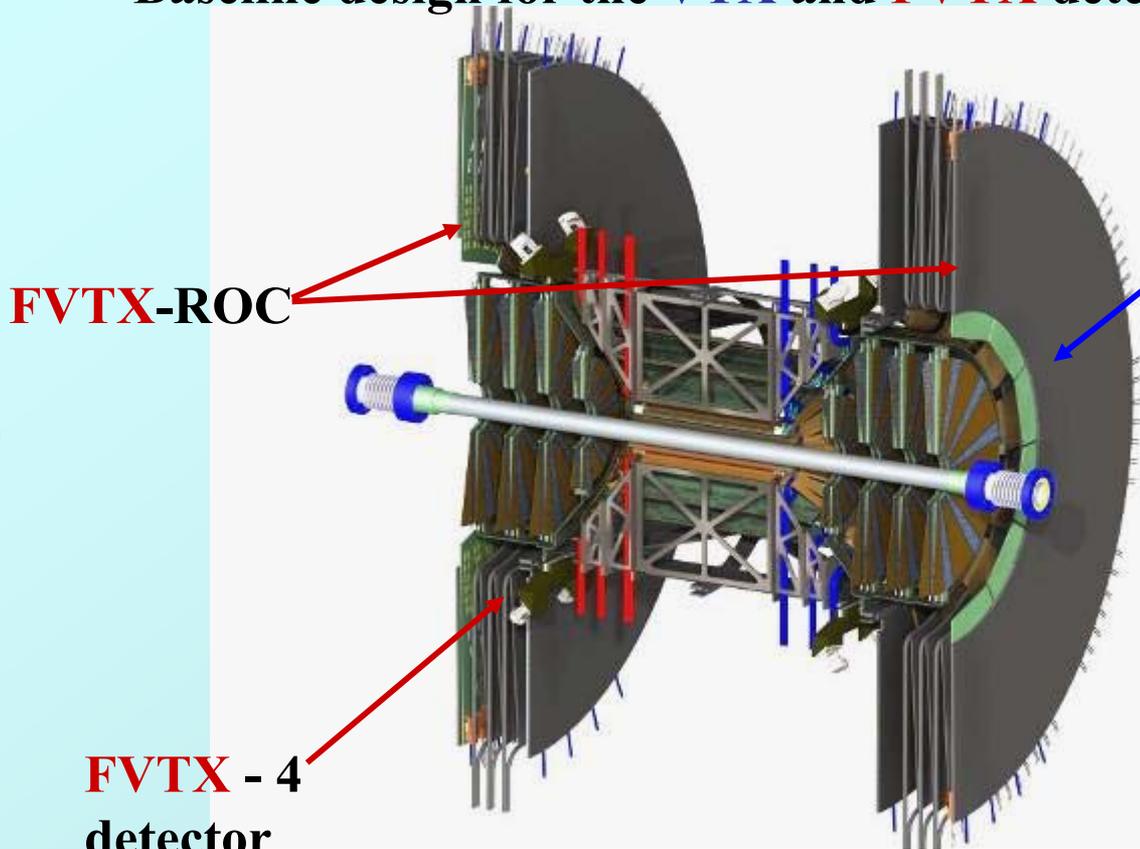
Current Fast Muon Trigger plans slot this detector for installation in summer '09... seems unrealistic



FVTX

Baseline design for the **VTX** and **FVTX** detectors;

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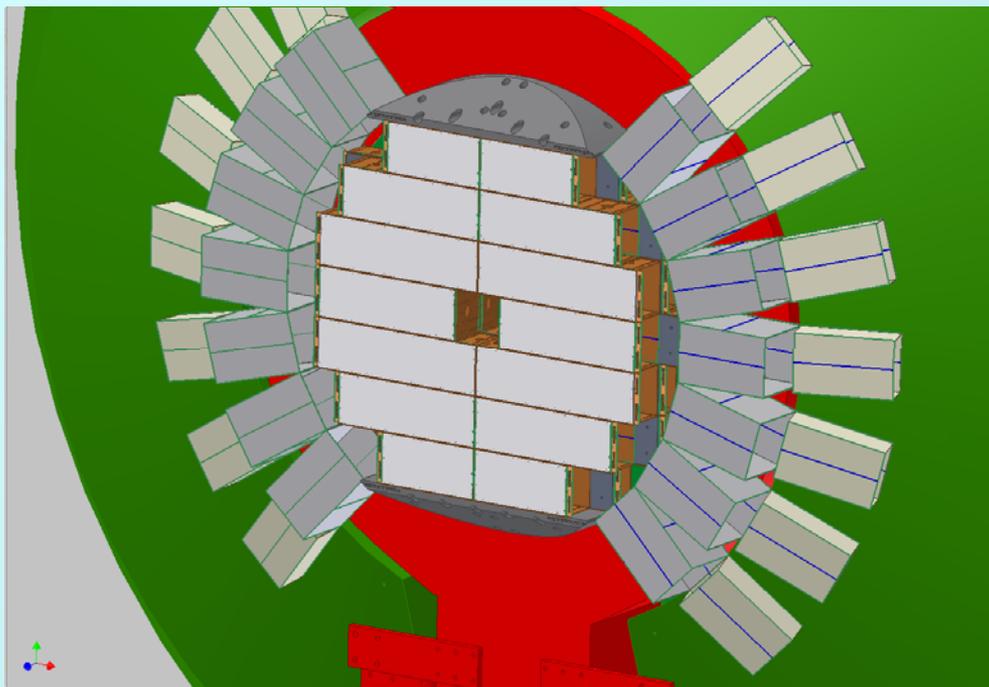


Each big wheel will have 5 planes of read-out electronics, with one cooling plate for each plane

This detector is in the President's FY08 budget. Detector augments and attached to the VTX. Will share support and services infrastructure with VTX.

Current plans have us installing summer '10

FVTX - 4
detector
planes
each end



This detector (one arm) is in the President's FY08 budget. (Other arm funding TBD). Requires new CM Crane (To Be installed summer '07) for removal of existing brass nosecone and installation of NCC modules. Mechanical and electrical design of modules is well along. Electrical a

Current plans have us installing summer '10

RPC 1 a & b, N & S



Requires some creative installation fixturing, services routing and support structure, but doesn't seem to have any major roadblocks.

Installation of 1a N & S planned for summer '11, 1b for same time but currently a "wishlist" item. 1b would require removal of copper shields.

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Where To Find PHENIX Technical Info

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Links for the weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found on the web site:



http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm