

New Orleans, LA – Imaging Services Facility Site Visit Report

Site Visit Dates – March 14th, 15th, and 16th, 2018

Facilities Visited: Ochsner Medical Center
 Louisiana State University Medical Center
 New Orleans VA Medical Center

Consultants:

RADIOLOGY-Planning (RAD-Planning)
The Innova Group

Table of Contents

Introduction

1.0 Ochsner Medical Center

- 1.1 Exterior Image
- 1.2 Campus Plan
- 1.3 Critical Information
- 1.4 Analysis
- 1.5 MRI Department
 - 1.5.1 Plan of Ochsner MRI Suite
 - 1.5.2 Plan of 2008 VA MRI Design Guide
 - 1.5.3 Photo of Ochsner MRI Suite
 - 1.5.4 Photo of MRI Zone 3 Entry
- 1.6 Ultrasound Department
 - 1.6.1 Plan of Ochsner Outpatient Imaging Center Ultrasound Suites
 - 1.6.2 Plan of 2008 VA Radiology Design Guide Ultrasound Suite

2.0 University Medical Center (UMC)

- 2.1 Exterior Image
- 2.2 Campus Plan
- 2.3 Critical Information
- 2.4 Analysis
- 2.5 UMC Imbedded Patient Changing/Toilet Subwait Area
 - 2.5.1 Plan of Imbedded Patient Changing/Toilet Subwait Area
- 2.6 Equipment Alcoves
 - 2.6.1 Plan of UMC Dedicated Portable X-ray and Apron Storage Alcoves
 - 2.6.2 Photo of Equipment Storage Alcoves
 - 2.6.3 Photo of Deep Equipment Storage Alcove
- 2.7 Dedicated IV Prep Room
 - 2.7.1 Plan of UMC Dedicated IV Prep Room
- 2.8 Mammography Department
 - 2.8.1 Plan of UMC Mammography Sub-Suite
 - 2.8.2 Photo of Mammography Dressing Rooms
 - 2.8.3 Photo of Mammography Dressing Rooms
 - 2.8.4
- 2.9 Staff Work Core Vs. Patient Areas
 - 2.9.1 Plan of UMC Tech Back of House Work Core
- 2.10 Ultrasound Sub-Suites
 - 2.10.1 Plan of UMC Ultrasound Sub-Suite
 - 2.10.2 Plan of 2008 VA Radiology Design Guide
- 2.11 MRI Department
 - 2.11.1 Plan of UMC Shared MRI Suite
 - 2.11.2 Plan of 2008 VA MRI Design Guide

3.0 New Orleans (NOLA) VA Medical Center

- 3.1 Exterior Image
- 3.2 Campus Plan
- 3.3 Critical Information
- 3.4 Analysis
- 3.5 Radiology Department
 - 3.5.1 Plan of VAMC Radiography Room with Stretcher Storage Interior to Room
 - 3.5.2 Plan of 2008 VA Radiology Design Guide
 - 3.5.3 Photo of Multipurpose Fluoroscopy Procedure Room
- 3.6 CT Department
 - 3.6.1 Plan of VAMC CT Scanner Room and Control Room
 - 3.6.2 Plan of 2008 VA Radiology Design Guide
- 3.7 MRI Area Department
 - 3.7.1 VAMC MRI Scanner Rooms and Control Rooms
 - 3.7.2 Plan of 2008 VA MRI Design Guide
- 3.8 Ultrasound Department
 - 3.8.1 Plan of VAMC Ultrasound Suite
 - 3.8.2 Plan of 2008 VA Radiology Design Guide
- 3.9 Radiology Reading Rooms
 - 3.9.1 Plan of VAMC Bullpen Reading Room

New Orleans, LA VA Medical Center Site Visit Report

The site visits occurred on March 14, 15, and 16 of 2018 in New Orleans, LA. Representatives from VHA, RAD-Planning and The Innova Group were in attendance. The purpose of the site visits was to perform on-site surveys of representative VA and private sector facilities to establish a baseline of data on workload, staffing, facility layouts and operational requirements. The information gathered at the site visits will be used to revise, update and develop the next series of standards and guidelines that all VA healthcare facilities will follow to accomplish the VA mission. These guidelines will provide Space Planning Criteria, Equipment Guides and Design Guide Room Template Layouts for Nuclear Medicine, MRI and Radiology Services.

Site Visits

Ochsner Medical Center, 1514 Jefferson Highway, Jefferson, LA

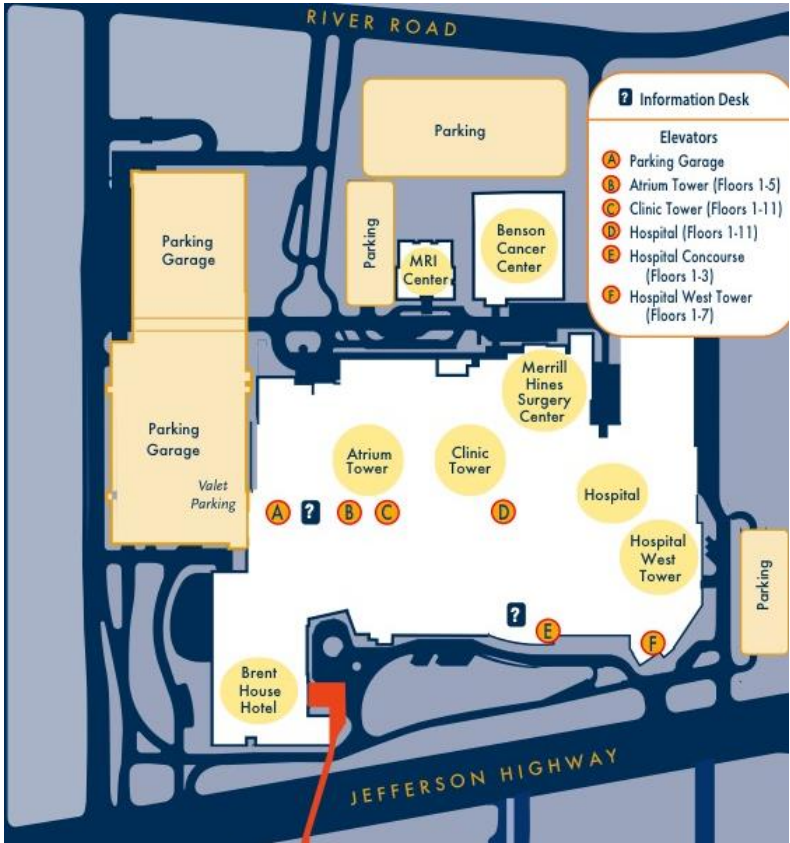
Louisiana State University Medical Center, 2000 Canal St, New Orleans, LA

VA Medical Center, 119 S Galvez St, New Orleans, LA

1.0 Ochsner Medical Center



1.1 Ochsner Medical Center Exterior



1.2 Ochsner Medical Center Campus Plan

1.3 Ochsner Medical Center Critical Information

- Full service teaching facility
- 575 beds currently operational
 - New tower under construction – 3 floors of ICU scheduled to open July 2018, rooms – net neutral bed count
 - Rest of tower opens 2019 – 130 new beds
- Staffing
 - Imaging total = 240 FTE
 - 24 RNs
 - Academic radiologists – Tier 1 = 42; Tier 2 = 14
 - 24 residents
 - 4 fellows
 - Academic affiliation with Queensland University (Australia)
- Modalities
 - 7 fixed Rad, 2 portable (in ED)
 - 5 rad/fluoroscopy
 - 5 CT
 - 6 MRI (5 @ 1.5T, 1 @ 3.0T)
 - 14 US
 - 6 Mammography
 - 3 EP lab
 - 1 PET
 - 3 Nuclear Medicine suites
- Lung cancer screenings – low dose CT; approx. 25/week
- Inpatient MRI
 - 2 scanners plus shell for 3rd unit,
 - 5 prep bays
 - 2 post bays for VIP
- Nuclear Medicine
 - 30 scans per day – 15 PET/15 SPECT
 - 5 days/week
 - Staff = 6 CNMT
 - 3:1 ratio uptake time/scan time – 60 min. uptake/20 min. scan

Outpatient imaging Center

- Opened in Dec. 2017
- 23K BGSF
- Modalities
 - (2) X-ray – oversized rooms
 - (1) EOS
 - (2) CT (64 slice)
 - (2) 3D Mammography with separate subwait
 - (8) US
 - (4) MRI

- Hours
 - M-F 6:00a-9:00p
 - Sat 8:00a-5:00p
 - Sun 8:00a-12:00p
- Busy day = 500 patients
 - 90-100 MRI
 - 115 X-ray
 - 85 CT
 - 65 US
 - 12 EOS
- MRI
 - 4 scanners
 - 4 dressing rooms plus VIP
 - One IV start room – 2 would be better

Women's Clinic

- Women's clinic still incorporates view boxes – minimal use, patients presenting with their own films
- (3) US
- (3) Mammography
- (1) Stereotactic Mammography
- (1) Prone Mammography

1.4 Ochsner Medical Center Analysis

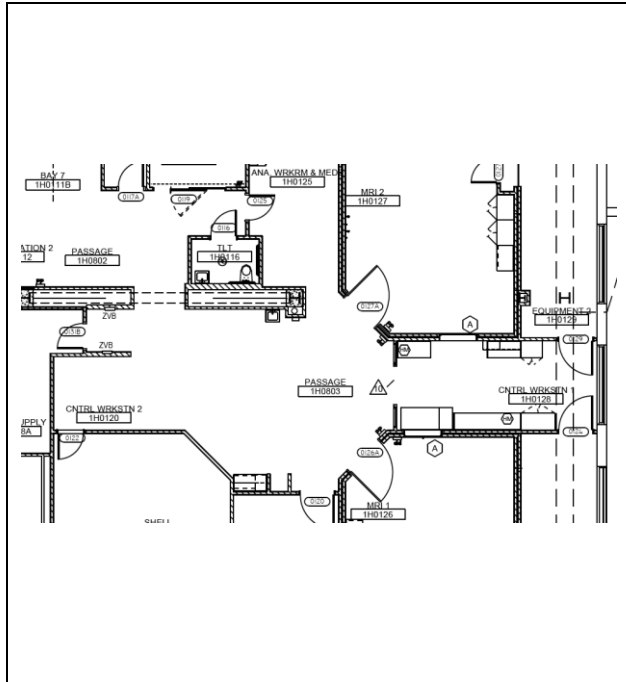
Following an introduction to the service and facilities by Joseph Savoie, the Director of Radiology, the group toured the facility's interventional radiology, diagnostic radiology, nuclear medicine, and MRI within the hospital, as well as outpatient imaging, and women's imaging areas, in dedicated outpatient facilities across the street.

At this facility, radiology did not 'own' all imaging resources. Cardiology managed some of the imaging services separate from the radiology department. Pain management was located both in IR and OR spaces. Ochsner was the only site that had an EOS (standing X-ray) system installed.

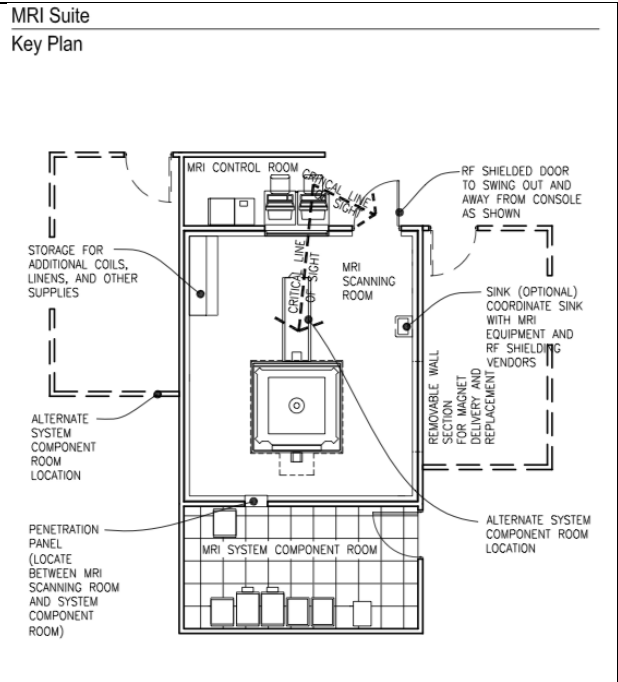
The oldest of the three hospital facilities visited, most of the imaging service spaces within the hospital were unremarkable in terms of space planning, suite planning, or layout / function.

1.5 MRI Department

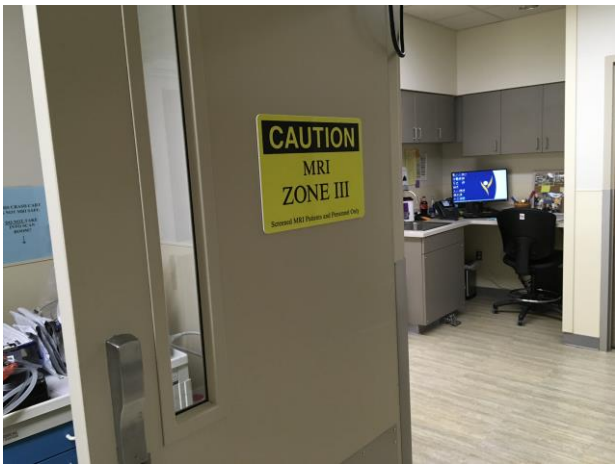
Within the hospital, one notable concern was identified in the inclusion of the MRI suite's inpatient holding / anesthesia prep within Zone 3. There were too many functions contained in the shared zone 3 space. Privacy was also a concern as the view was open (through the shared control room) between the two patient rooms. Ochsner had labeled this as a concern and were planning to create separation between these holding / prep areas and the shared control room.



1.5.1 Ochsner Hospital MRI Suite



1.5.2 2008 VA MRI Design Guide



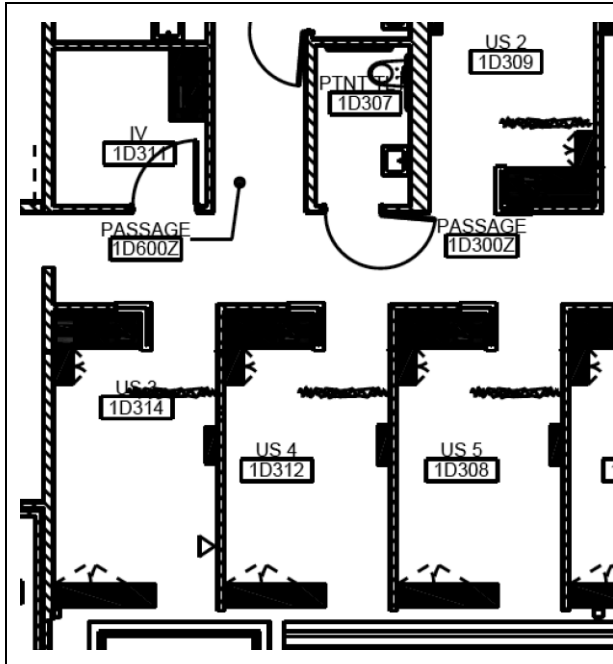
1.5.3 Ochsner Hospital MRI Suite



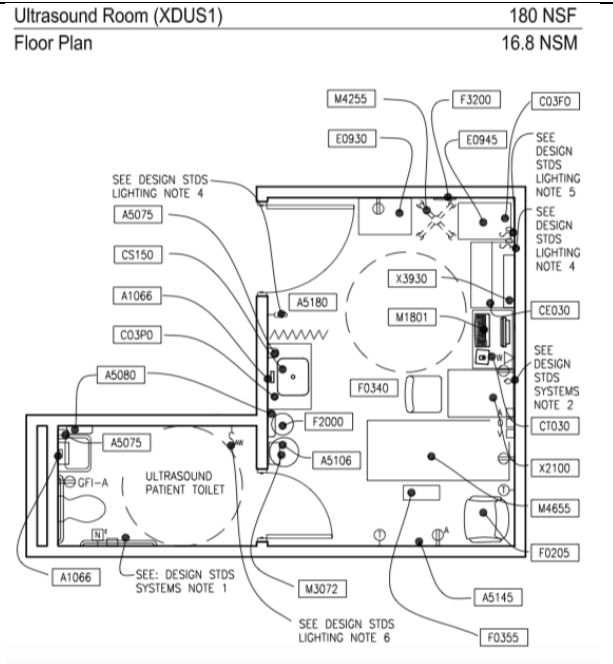
1.5.4 Ochsner Hospital MRI Suite

1.6 Ultrasound Department

In the new outpatient imaging center (across the street), the space was much more inviting, but wayfinding was an issue. A mammography 'sub suite' was reviewed favorably. Curtained end-wall ultrasound exam rooms, however, were thought to be very compromising for patient privacy.



1.6.1 Ochsner Outpatient Imaging Center
Ultrasound Suites



1.6.2 2008 VA Radiology Design Guide
Ultrasound Suite

2.0 Louisiana State University Medical Center (UMC)



2.1 UMC Exterior



2.2 UMC Campus Plan

2.3 Louisiana State University Medical Center Critical Information (UMC)

- Open 2 ½ years – replaced Charity after Katrina
- Designed for 450 beds, opened at 200, currently has 300
- Owned by state of LA, operated by private company
- Level 1 trauma center
 - (2) X-ray and (1) CT in ED
 - Would like larger presence - prefer (2) CT and (4) X-ray
 - Two trauma rooms with overhead imaging
- Cohesive Imaging department located on third floor – contains all imaging spaces other than ED support
 - OP
 - (3) rad
 - (3) MR – 1.5T, 3.0T, open magnet
 - (2) R/F
 - (4) US plus Breast US
 - (2) CT
 - Mammography suite
 - Sub wait
 - (3) Mammography
 - (1) Stereotactic Reading room immediately adjacent
 - (2) Radiology
 - (2) R/F
 - (2) Ultrasound
 - Shell space for MRI
 - (1) CT
 - (1) PET/CT
- Nuclear Medicine Suite
 - 3 cameral sized rooms – one is treadmill, one is multi-head camera, one is holding
 - SPECT/CT
 - (5) prep bays / (4) post bays
- IV Prep room
 - 5 bays, toilet,
 - P-tube station
- Mammography suite
 - (11) portable x-ray units on floor, only 4 are operational
 - (6) portable C-arms in department
 - No cyclotron – contract through local provider – just-in-time delivery
- Rad rooms
 - Organized in pairs, connected by vestibule
 - (2) changing rooms
 - Shared patient toilet
 - Storage lockers
- Similar arrangement for US – vestibule with changing/lockers. Toilets accessed from scan room.
 - Radiology from LSU

- Cardiology from LSU and Tulane
- PET/CT – 1-3 scans per day, want to grow to 10/day
- Approx. 100 total staff for Imaging including
 - 19 radiologist
 - 12 residents
- Angio suites on 4th floor, run by Cardiology
 - 2 suites shared between IR and Cardiology
 - Growing number of people in room during procedures – TAVR requires about 13 people
 - No dedicated imaging transportation staff, uses ‘centralized’ transportation

2.4 University Medical Center Analysis

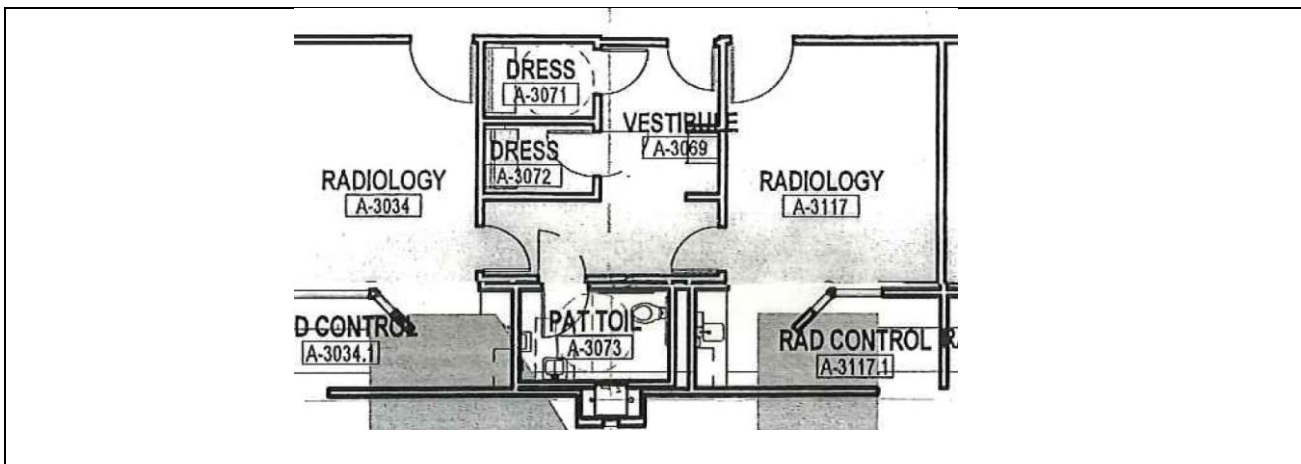
Following a brief introduction to the facility and operations (including the unique funding structure established for the facility), the group toured the facility. The UMC facility was oversized, in anticipation of future internal growth. The result is that facilities are spread out, and travel distances could get significant.

The presence of light wells was identified as being a very appealing aesthetic feature to the site. The facility design, with noted absence of inpatient holding areas or supply areas, was designed based on a ‘just in time’ delivery of both patients and materials, eliminating holding and storage space needs. Operationally, however, the facility has not been able to achieve JIT operations for either patients or materials.

The site was designed based on daytime operating, but with 24 / 7 operations, they typically scale back services for overnights, but the department isn’t laid out to efficiently shrink or condense based on a lower nighttime patient load.

2.5 UMC Imbedded Patient Changing/Toilet Subwait Area

The facilities at UMC included several favorable and not-so-favorable reactions from the collected visitors.

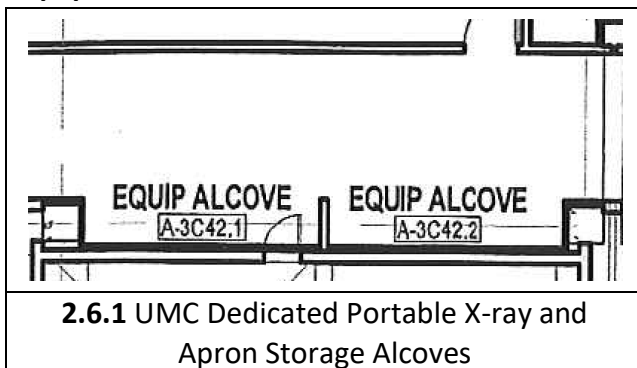


2.5.1 UMC ‘Imbedded’ Patient Changing / Toilet / Subwait

One of the most favorably reviewed design features at UMC was the inclusion of ‘imbedded’ patient changing, toilet, and subwait areas. These areas allowed for the ‘on deck’ patient to be immediately accessible to the imaging room. Versions of this setup were used for radiology rooms (shown) as well as for CT, SPECT/CT, and PET/CT.

Imbedded subwait area included changing rooms, patient belongings lockers (outside the dressing room), linen storage, and a patient toilet. Some on the visit felt that the arrangement would be improved if the patient could go directly from the waiting room into the imaging room (two doors to / from the dressing room). Occupancy-indicating hardware was also used on the changing / dressing rooms, which was seen as very useful.

2.6 Equipment Alcoves



Also viewed very favorably were dedicated equipment alcoves for apron storage and portable X-ray parking.

The apron racks were such that aprons were clearly visible (not piled atop one another).

The portable X-ray parking came complete with electrical outlets at easily accessible / plainly visible heights.



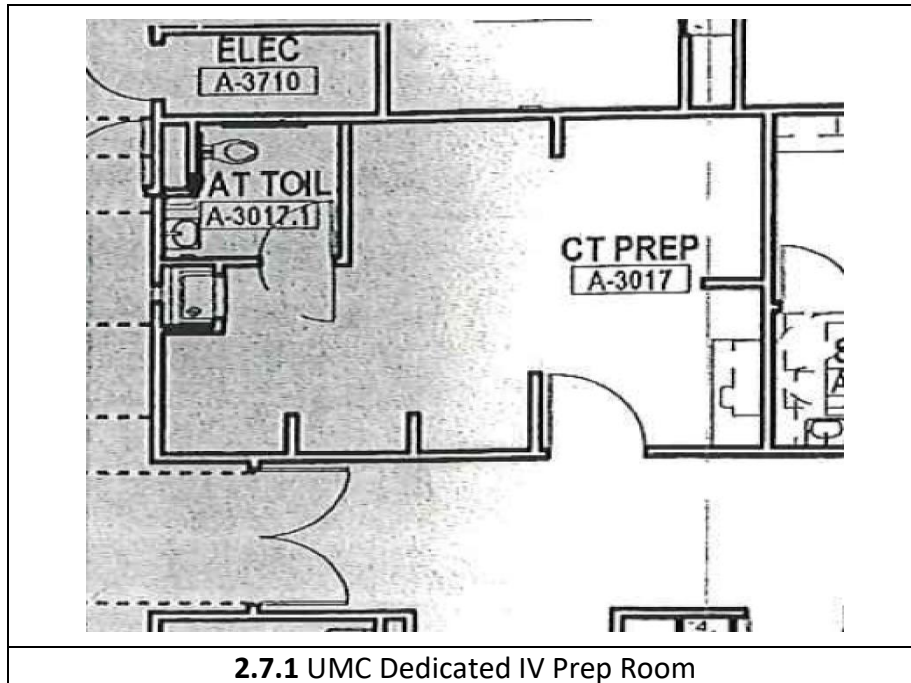
2.6.2 UMC Equipment Storage Alcoves



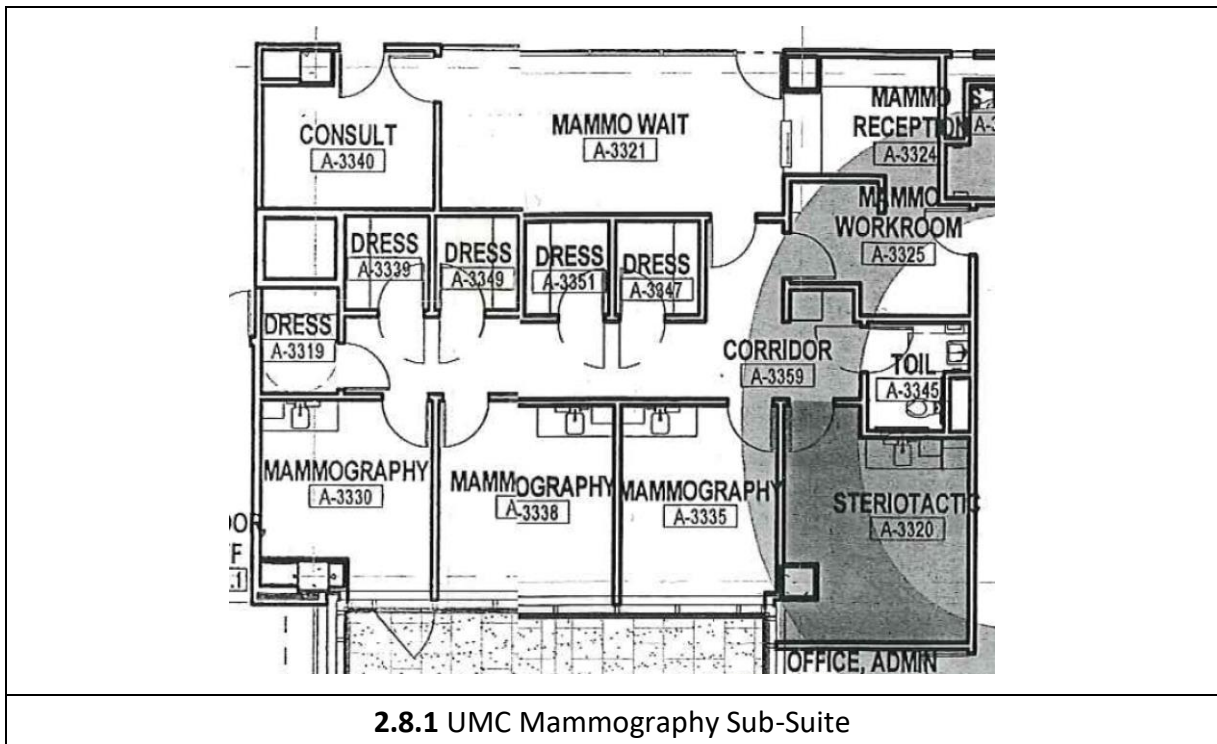
2.6.3 UMC Deep Equipment Storage Alcove

2.7 Dedicated IV Prep Room

The touring group felt that a dedicated IV prep area was very useful and reduced the potential burden for individual modality IV prep areas (and a potential more efficient centralization). Unfortunately for UMC, the IV prep area (identified on the plans as 'CT Prep', but used as IV prep for all outpatient imaging services) was outside the direct path of travel for imaging patients.



2.8 Mammography Department



The touring group reacted favorably to mammography sub-suites. This plan is from UMC (though one was also seen at the Ochsner outpatient imaging facility). No specific mention was made of the individual mammography imaging room(s) (size, layout, equipment, etc...). Of note was the dedicated mammography patient subwaiting with enhanced visual privacy. It was noted that a separate entrance, potentially directly into one of the exam rooms, was desired for male patients who may feel uncomfortable / stigmatized entering through the 'women's' entrance. While providing privacy to both male and female mammography patients, the space should not convey an overly feminine environment.

Operationally, it was suggested that the mammography sub-suite be located close to the patient waiting area. Since the majority of mammography volumes are as a screening exam, quick patient access will help facilitate compliance with screening regimes.

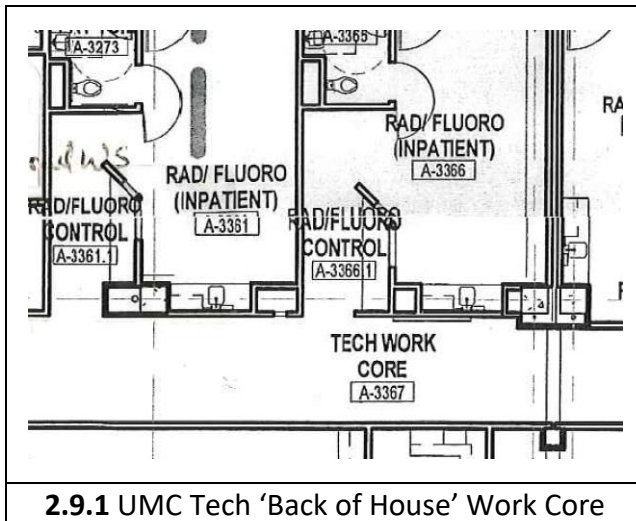


2.8.2 UMC Mammography Dressing Rooms



2.8.3 UMC Mammography Dressing Rooms

2.9 Staff Work Core Vs. Patient Areas



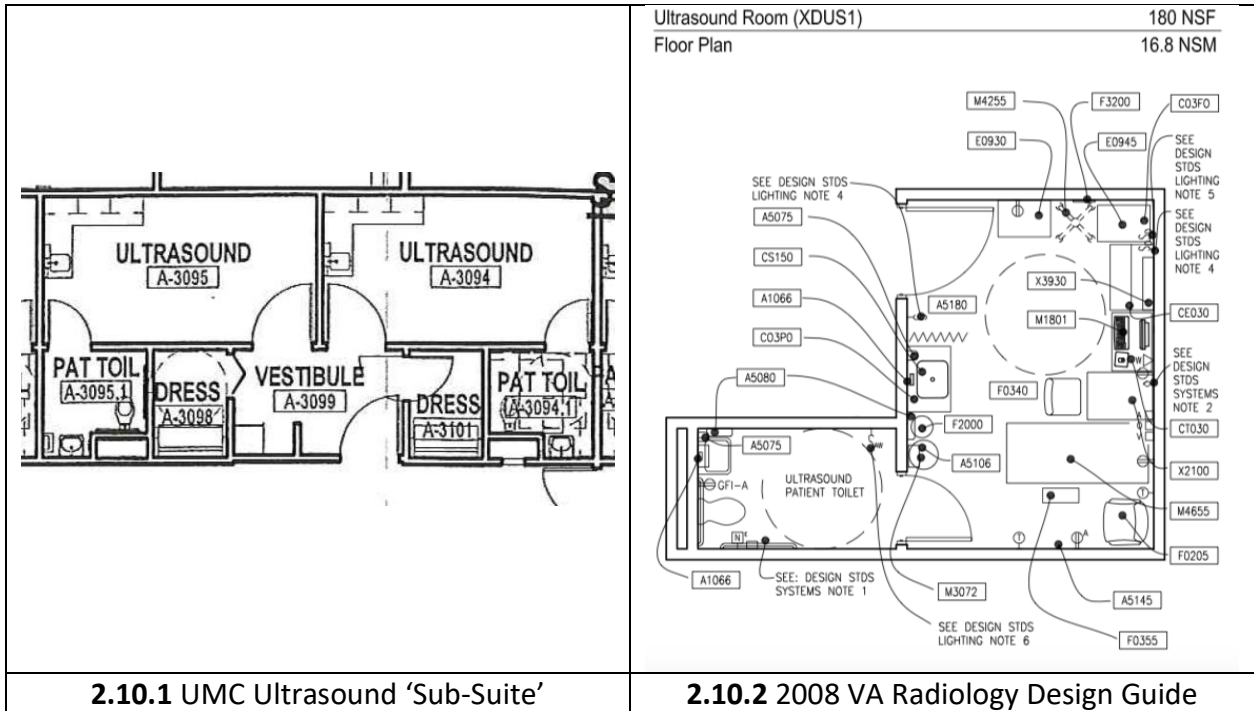
2.9.1 UMC Tech 'Back of House' Work Core

Also reviewed favorably was the distinct 'back of house' staff work core that was present for some of the imaging modalities.

The segregation of patient and staff access, plus an area for staff administrative work and materials storage (out of the line of sight of patients) were seen as very favorable.

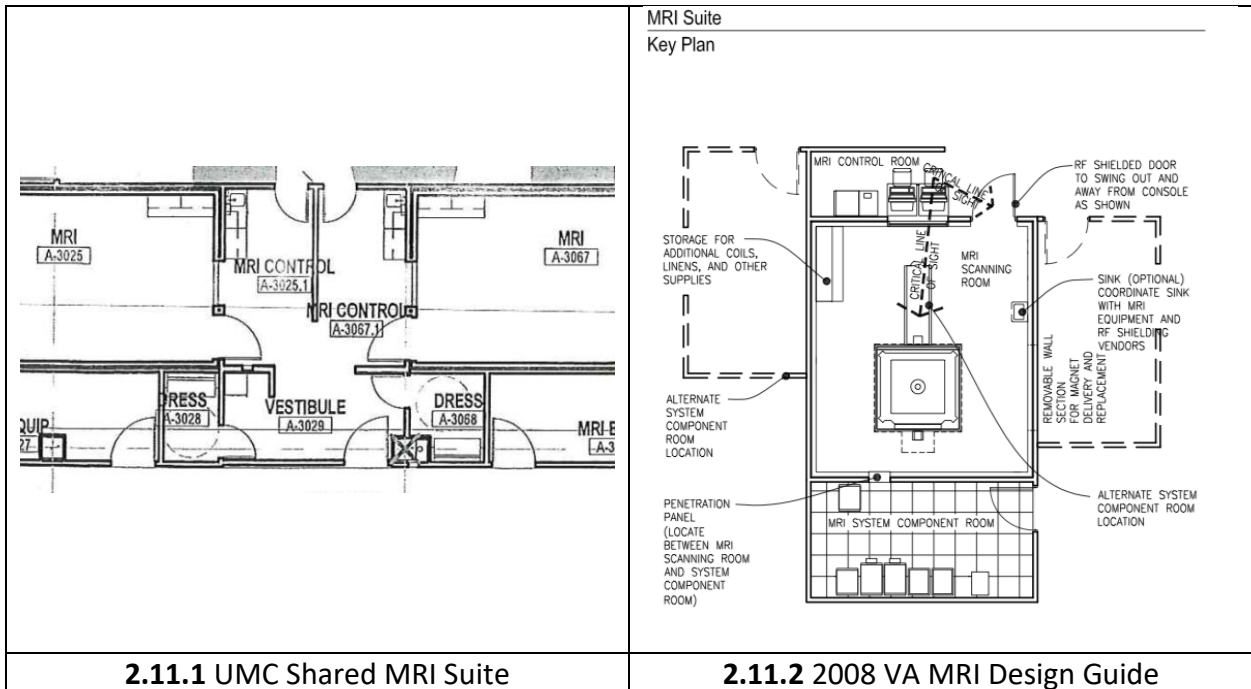
2.10 Ultrasound Sub-Suites

Another of the UMC design features that was received very well was the sub-suite creation for ultrasound exam rooms. This was similar to the imbedded patient changing / subwait areas seen for radiography and CT, and created semi-private ultrasound sub-suites, with private exam rooms. Each sub-suite had two exam rooms (each with its own private toilet), and a shared vestibule with two change rooms and storage for linens and supplies. The level of privacy in the Ultrasound rooms at UMC was favored, however a door for direct access from the dressing room to the scan room was needed.



2.11 MRI Department

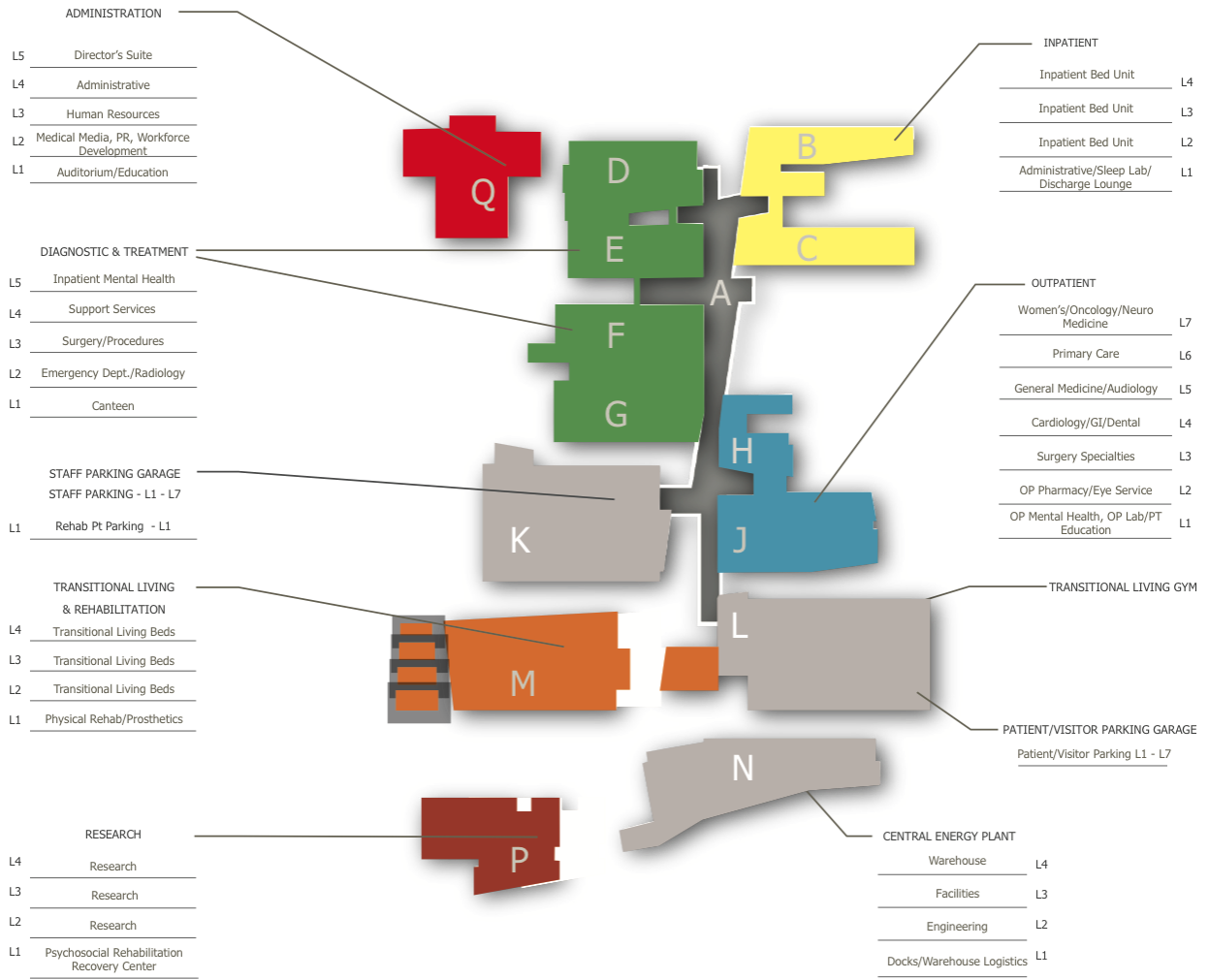
From a layout / configuration perspective, the shared MRI suite was identified as being particularly problematic, without a functioning distinction between Zone II and Zone III. Upon entering the MRI suite, the only separation of space was the tape line on the floor. While there seemed to be a perceived benefit associated with individual (private) control rooms for most of the imaging modalities, the wall that divided the MRI control areas was seen as being a hindrance. Shared MRI operations were more collaborative than other shared imaging operations.



3.0 NOLA VA Medical Center



3.1 New Orleans VA Medical Center Exterior



3.2 New Orleans VA Medical Center Campus Plan

3.3 VA Medical Center Critical Information

- VA patients still returning to NOLA after Katrina
- Expected to become a regional center
- Approx. 44K uniques right now
- 56K total tests (all modalities) in 2017
 - No mammography/breast care at this facility
 - No Radiation Oncology either
- 35-40 active beds – target 200 active by end of 2018
- Modalities
 - Nuclear Medicine
 - PET/CT
 - SPECT/CT
 - SPECT
 - Cardiac chairs
 - MRI
 - (1) 1.5T
 - (1) 3.0T
 - CT
 - Ultrasound
 - (3) units, one is CT/Fluoroscopy
 - (6) units on department floor
 - (3) units in bed units
- General Radiology
 - (8) units
 - (1) dedicated chest
 - (2) Rad/Fluoroscopy
 - (1) multipurpose – fluoro/C-arm/tilt-rotate table
- IR
 - (1) single plane
 - (1) bi-plane
 - C-arm/mobile X-ray stored in ED and on bed floors
 - PACS workstations on level 3 for IR support
 - (3) C-arm units for pain management – not part of IR
- Workload from ED/UC/Fast Track:
 - 2-3 MRI/day
 - 15 CT/day
 - Approx. 50% of general rad volume
- Teleradiology support from Little Rock weekdays between midnight/8:00am, and all weekend with staff on call
- Staffing
 - 12.6 Radiologists
 - 5 US techs
 - 7 MR techs
 - 6 CT techs
 - 14 gen. rad. Techs
 - 7 CNMT

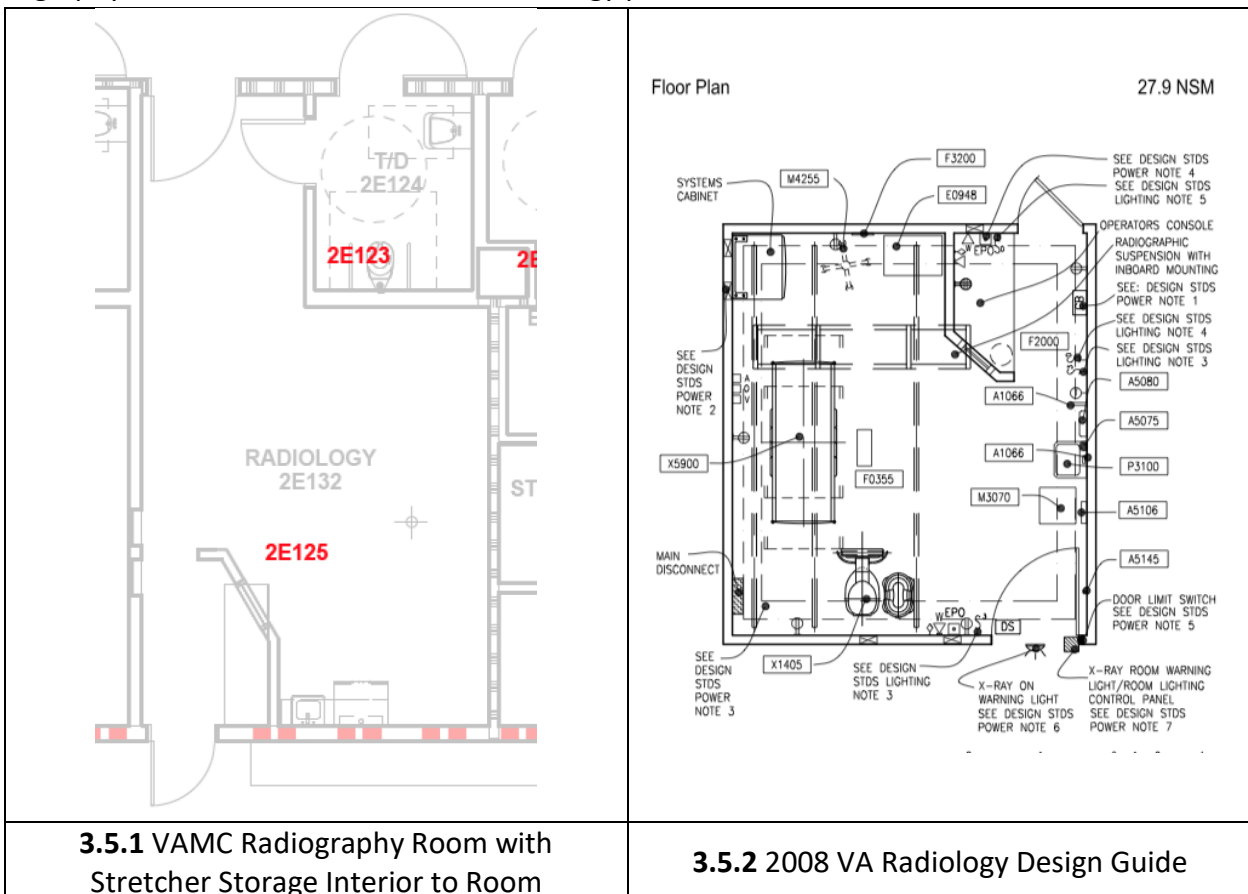
- 1 supervisor Nuclear Medicine tech
- 5 NM techs with certification
- 2 nuclear cardiac
- No RN or tech aides
- Residents from LSU
 - Target is 5-7 over next 2-3 years
 - Additional 1 or 2 from Tulane
- 30 min. exam schedule for CT/MRI/US
 - Appointments start at 6:30am through 8:00pm
 - On call during weekends
- Ultrasound rooms generously sized, 225 SF plus entry alcove and private toilet

3.4 VA Medical Center Analysis

Similar to UMC, the New Orleans, LA (NOLA) VA Medical Center (VAMC) is also an overbuilt facility, constructed in anticipation of growth within its existing walls. The VAMC also suffered from the travel distance concern that UMC had.

3.5 Radiology Department

The VAMC radiography rooms appeared to be generously sized. Some of this appeared a bit excessive, but one feature was that the entryways provided a space within the room (not in the corridor) for the temporary parking of patient beds. This feature was not unique to the radiography rooms, but also the R/F and radiology procedure rooms.



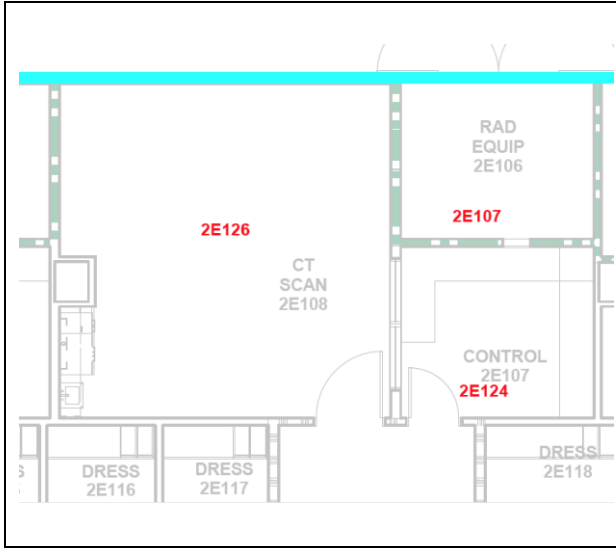


3.5.3 VAMC Multipurpose Fluoroscopy Procedure Room

3.6 CT Department

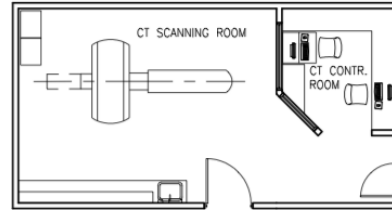
CT suites were designed in a manner that conflicted with the design guides, where there was no direct passage from the control room to / from the CT examination room. The 2008 Design Guides contained an excessively minimalist design that made the CT control area similar to a radiography exposure control alcove, but provided easy movement from the console to the patient. The NOLA VAMC designs, however, all had the technologist having to exit to a hall to move from one room to another.

While there were not complaints of room temperature concerns with imaging equipment electronics / power cabinets in the exam room, invariably they wound up becoming storage surfaces for positioning aides, phantoms, supplies, etc...



3.6.1 VAMC CT Scanner Room and Control Room

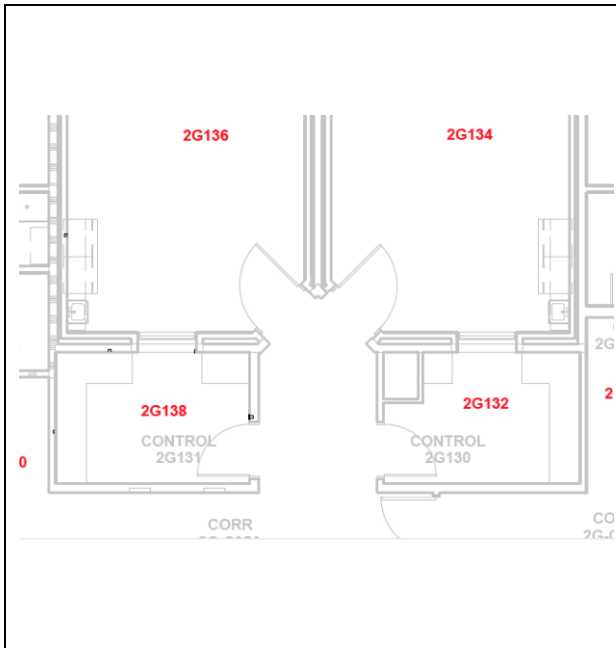
CT Suite
Key Plan



3.6.2 2008 VA Radiology Design Guide

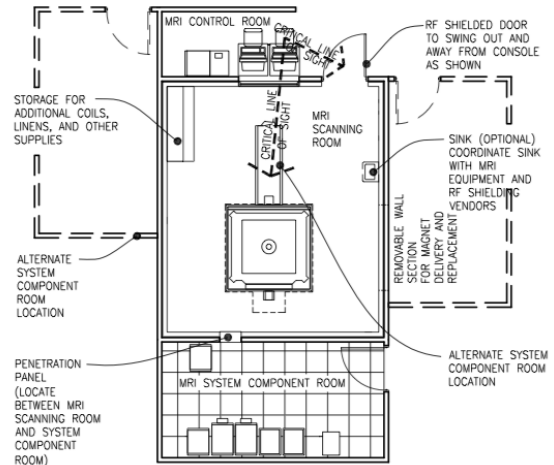
3.7 MRI Department

While the VA radiology staff favored ‘private’ CT control, the MRI techs said that they would have preferred a shared work area between the two MRIs. The ‘closed in’ control rooms also resulted in the need for closed circuit video monitoring of the Zone 3 area and the entry to the two MRI scanner rooms.



3.7.1 VAMC MRI Scanner Rooms and Control Room

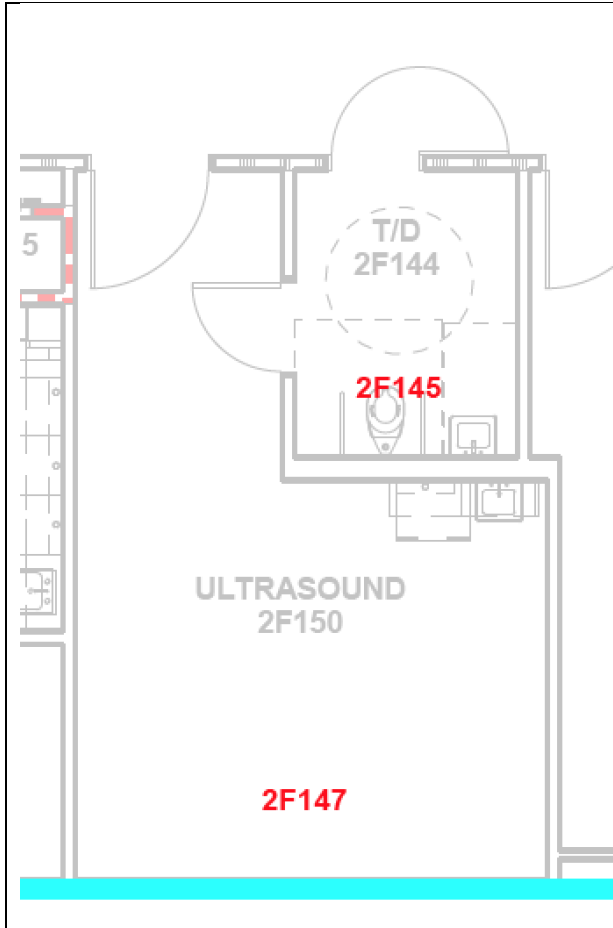
MRI Suite
Key Plan



3.7.2 2008 VA MRI Design Guide

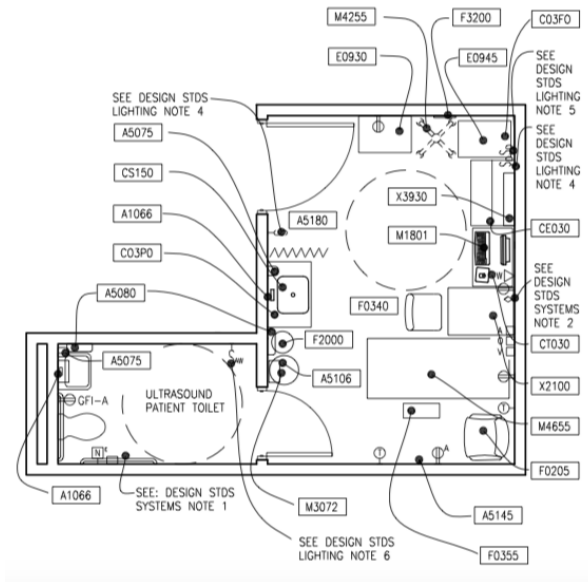
3.8 Ultrasound Department

Viewed as preferable to the existing VA Design Guide template, but not as desirable as the UMC layout, the VAMC ultrasound suites were seen as good designs. Similar to the X-ray rooms, the entryway allowed enough space to park a patient bed and still have adequate patient care space.

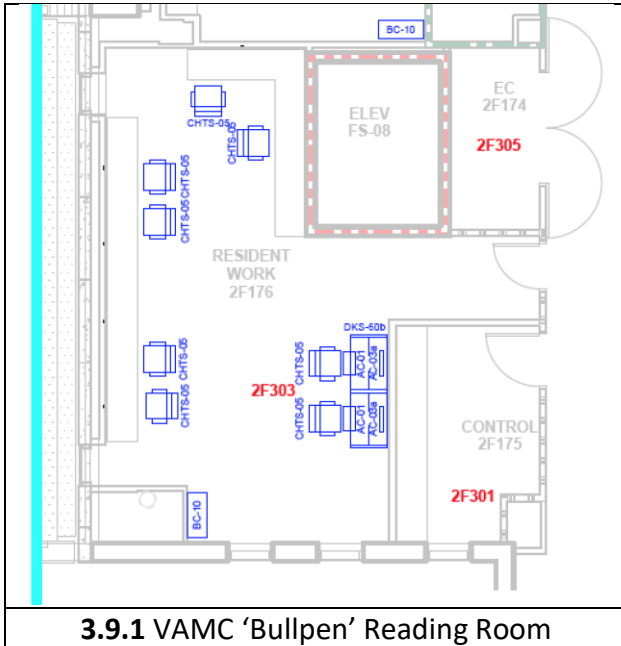


3.8.1 VAMC Ultrasound Suite

Ultrasound Room (XDUS1) 180 NSF
Floor Plan 16.8 NSM



3.8.2 2008 VA Radiology Design Guide



3.9 Radiology Reading Rooms

The radiologists were supportive of reading within offices (provided that offices were appointed with separate reading station and desk / work area), as per the 2008 Design Guide. For services with residencies, however, it was felt that a communal 'bullpen' reading room was very beneficial. The NOLA VAMC was in the process of converting a shared office for schedulers into a shared reading room.

Indicated as a 'control' room on this plan, the adjacent area would serve as an attending radiologist reading room, close to the resident shared reading room for consults.

VHA project team representatives on the tour made specific mention of how this space was

exceptionally well laid out for this type of reading room, with wide spacing between PACS workstations.

Conclusion

The information collected at the site visits will be applied to the revision of the 2008 VA Imaging Standards Design Guidelines. The use of suites and sub-suites, in all departments, to provide privacy, space and functional needs of the patient and staff should be incorporated in each imaging facility. Adjacencies and proximities of shared spaces need to be considered for each department. Imbedded patient changing/toilet sub-wait areas are favorable to a functional environment. Adequate sizing of space to maneuver equipment as well as equipment storage alcoves are important to each facility. Separation of patient and staff function should also be considered. Each facility visited provided an opportunity to find examples of what works and what does not work.