2010 Military Health System Conference

Evidence-Based Design/Transformation

The Fort Belvoir Community Hospital Experience

Sharing Knowledge: Achieving Breakthrough Performance

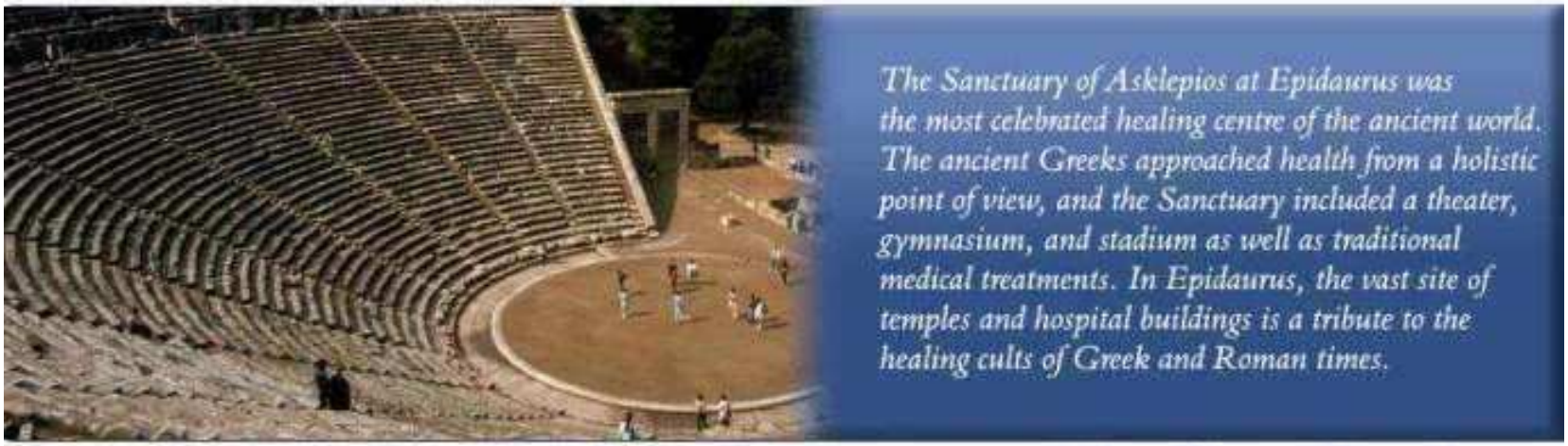
Mr Clay Boenecke, Dr Rick Repeta

26 Jan 2010

Agenda

- Evidence Based Design
- The Fort Belvoir Experience
  - Patient/Family Centered Care
  - Culture of Excellence
  - Sustainable Transformation
- Way Ahead

Healing Environments in the MHS



Epidaurus Project Symposium on Healing Design

What hospital architectural and design features embody patient-centered design?

Evidence-Based Design

Creating a New Generation of Military Health Facilities

"Evidence-based design is analogous to evidence-based medicine. Simply put, it is the process of making design decisions based on the best available research."

The New Community Hospital, Fort Belvoir, VA

Credit: HDR Architecture, Inc.

Following in the Footsteps of Evidence Based Medicine

Evidence Based Design

Evidence Based Medicine

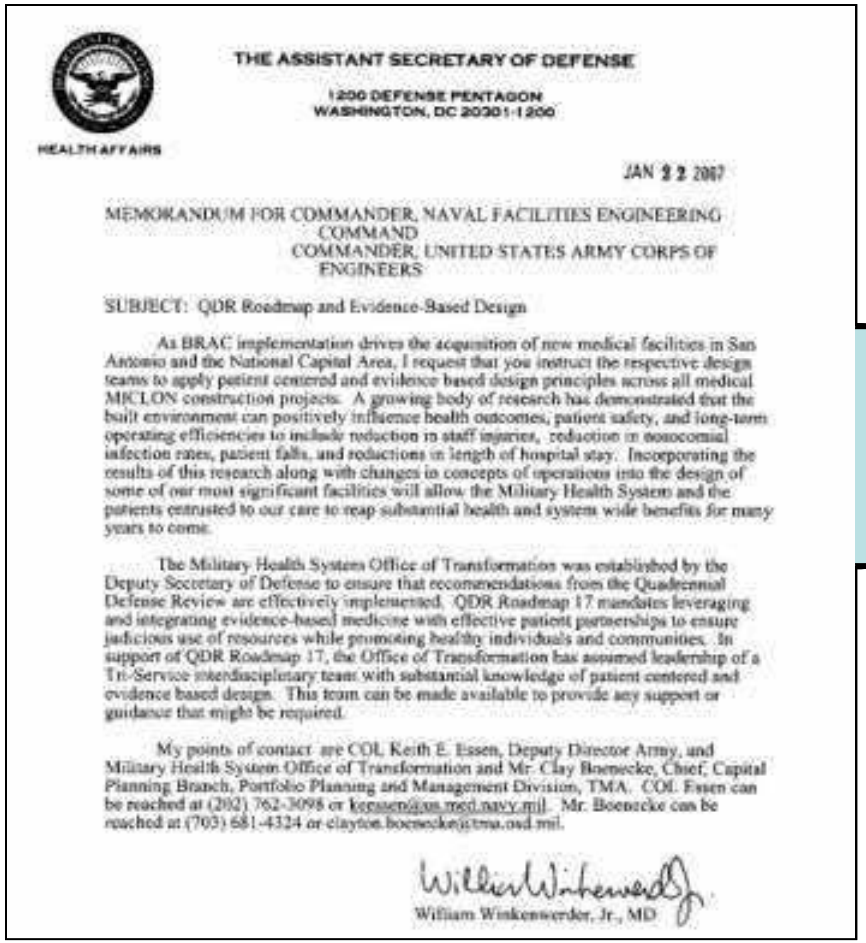
Evidence

- **Facts are stubborn things; and whatever may be our wishes, our inclinations, or the dictates of our passions, they cannot alter the state of facts and evidence.**

  -- John Adam

- **One death is a tragedy; a million deaths is a statistic.** *-- Joseph Stalin*

Leadership Support



THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

JAN 22 2007

MEMORANDUM FOR COMMANDER, NAVAL FACILITIES ENGINEERING COMMAND
COMMANDER, UNITED STATES ARMY CORPS OF ENGINEERS

SUBJECT: QDR Roadmap and Evidence-Based Design

As BRAC implementation drives the acquisition of new medical facilities in San Antonio and the National Capital Area, I request that you instruct the respective design teams to apply patient centered and evidence based design principles across all medical MILCON construction projects. A growing body of research has demonstrated that the built environment can positively influence health outcomes, patient safety, and long-term operating efficiencies to include reduction in staff injuries, reduction in nosocomial infection rates, patient falls, and reductions in length of hospital stay. Incorporating the results of this research along with changes in concepts of operations into the design of some of our most significant facilities will allow the Military Health System and the patients entrusted to our care to reap substantial health and system wide benefits for many years to come.

The Military Health System Office of Transformation was established by the Deputy Secretary of Defense to ensure that recommendations from the Quadrennial Defense Review are effectively implemented. QDR Roadmap 17 mandates leveraging and integrating evidence-based medicine with effective patient partnerships to ensure judicious use of resources while promoting healthy individuals and communities. In support of QDR Roadmap 17, the Office of Transformation has assumed leadership of a Tri-Service interdisciplinary team with substantial knowledge of patient centered and evidence based design. This team can be made available to provide any support or guidance that might be required.

My points of contact are COL Keith E. Essen, Deputy Director Army, and Military Health System Office of Transformation and Mr. Clay Boenecke, Chief, Capital Planning Branch, Portfolio Planning and Management Division, TMA. COL Essen can be reached at (202) 762-3098 or keessen@us.med.navy.mil. Mr. Boenecke can be reached at (703) 681-4324 or clayton.boenecke@tma.osd.mil.

William Winkenwerder, Jr., MD

*"…I request that you instruct the respective design teams to **apply patient-centered and evidence based design principles across all medical Military Construction projects.** A growing body of research has demonstrated that built environment can positively influence health outcomes, patient safety and long-term operating efficiencies to include reduction in staff injuries, reduction in nosocomial infection rates, patient falls and reduction in the length of hospital stay…."*

MHS Evidence Based Design Principles

- ***Create a Patient-and Family-Centered Environment Reflecting the MHS Culture of Caring and Enhance Care of the Whole Person***

- ***Improve the Quality and Safety of Healthcare***

- **Create a Positive Work Environment**

- ***Design for Maximum Standardization, Future Flexibility & Growth***

The MHS Commitment to Healing Environments

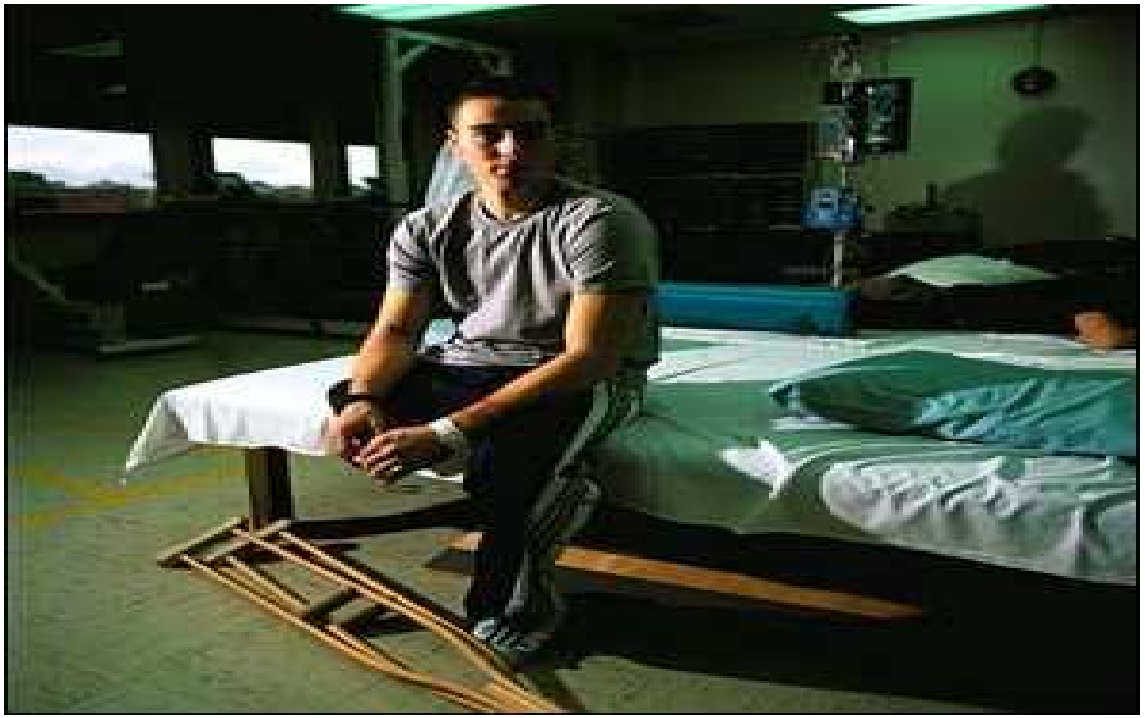
2010 MHS Conference

"I want you to imagine how our future military hospitals look, feel, and act. … we will create spaces that:

- **are quiet, organized and filled with light, where patients get few if any infections,**
- **minimize the possibilities of falls,**
- **are designed to reduce errors caused by hand-offs and transfers**
- **where families feel welcome and are provided generous and comfortable space**
- **and where the hospital staff can provide care without undue stress…."**

S. Ward Casscells, MD
(Former) Assistant Secretary of Defense, Health Affairs

Survey of Wounded Warriors and Spouses - *Spring 2008*



Main Themes

- Active Duty (AD) and spouse respondents strongly endorsed the idea of ***providing a comfortable space where visitors or loved ones could spend the night***.
  - This feature received the highest ranking of all options: 79% of AD and 83% of spouses rated this as “Important” or “Very Important.”
- AD expressed ***a desire for more privacy.***
  - 52% of AD rated having a private room as “Important” or “Very Important.”
- AD also expressed a strong ***desire to communicate with friends and family outside the facility*** via email or telephone.
  - AD commented on the difficulty of making telephone calls, especially to long-distance numbers, and difficulties accessing email.

Sample Comments

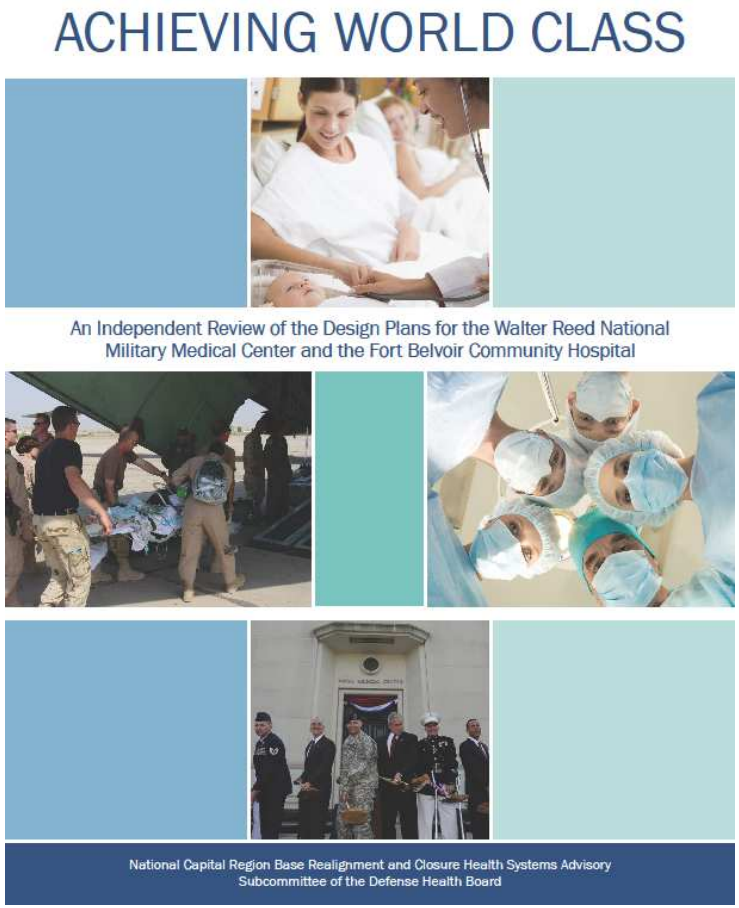
- **Place for family/loved ones to stay overnight**
  - "Anything that makes it more comfortable for family members would be helpful."
  - "you have to have [a crib] to put your kid in. It's my family. They have to be there for me. That was the biggest thing. It was hard for my wife and daughter to stay there. We were told they weren't supposed to be there all night."

- **Communication with friends/family outside the facility**
  - "about the internet. It's extremely important, because when you arise you can't use the telephone, because you don't have the code or a calling card. The best form of communication has been e-mail."
  - "Importance of a telephone in each and every room along with the ability to dial long distance especially since family, friends, and others may be far away."

- **Access to the world outside the facility**
  - "upgrade television systems"
  - "T.V.s are rather old and limited in terms of what you can watch"
  - "Access to a national newspaper"

The Defense Health Board

Are we building "world class medical facilities in the NCR?



The Six Domains of "World Class"

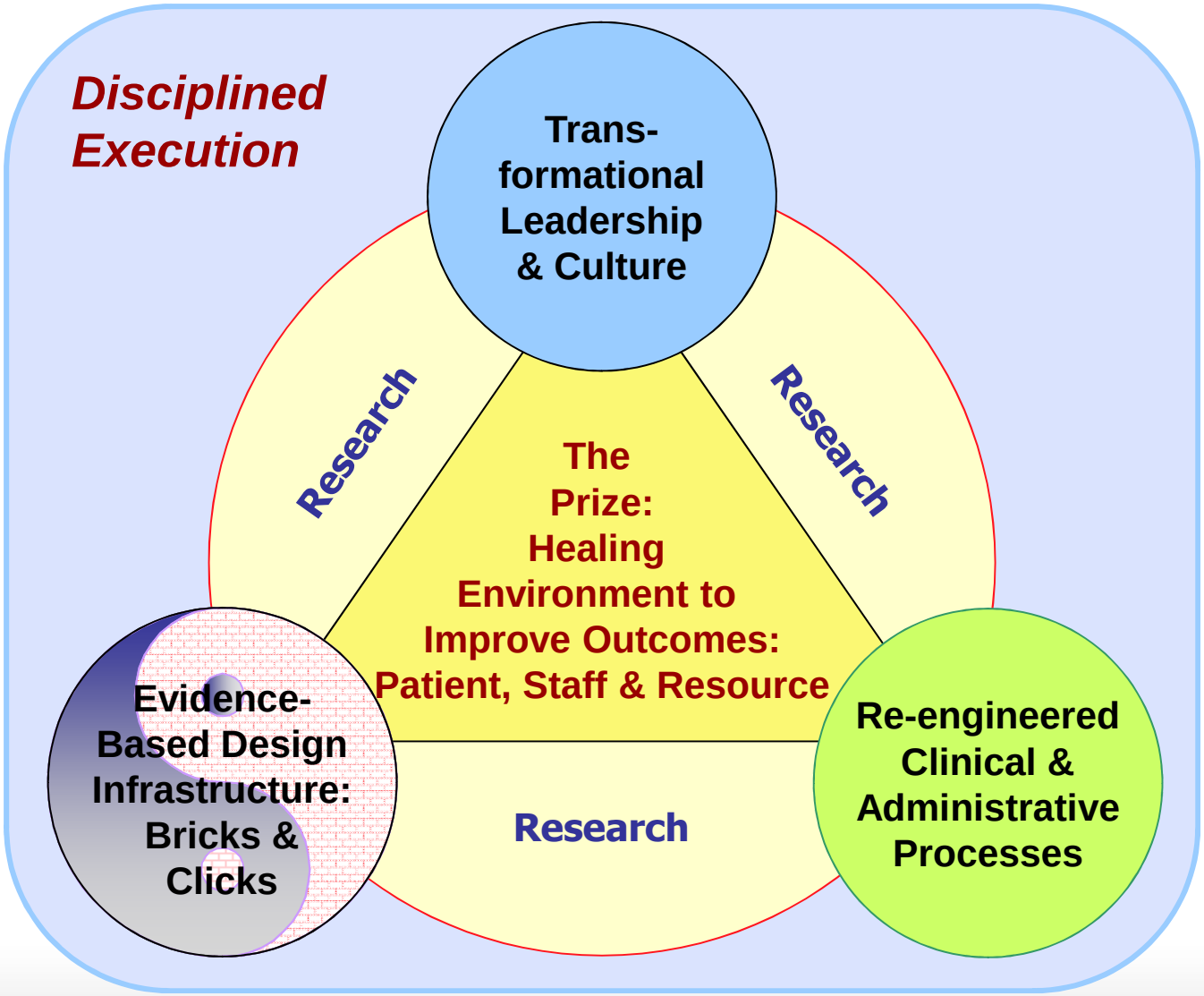
1. ***Basic Infrastructure***
2. ***Leadership & Culture***
3. ***Processes of Care***
4. ***Performance***
5. ***Knowledge Management***
6. ***Community & Social Responsibility***

William J Mayo, MD

Commencement Address, Rush medical College, 1910

As we men of medicine grow in learning we more justly appreciate our dependence on each other. The sum total of medical knowledge is now so great and wide spreading that ***it would be futile for any one man... to assume that he has even a working knowledge of any part of the whole***... ***The best interest of the patient is the only interest to be considered,*** and in order that the sick may have the benefit of advancing knowledge, ***union of forces is necessary***... It has become necessary to develop medicine as a cooperative science; the clinician, the specialist, and the laboratory workers uniting for the good of the patient, ***each assisting in elucidation of the problem at hand, and each dependent upon the other for support.***

"It is, and it isn't, about the building…"



Looking Back:
Recent History of Hospital Design in the U.S.

In the 1950's

- Wards shrunk to 4 bed rooms, there were semi-private rooms with 2 beds and there were still private rooms with 1 bed.
- **"The emphasis was on functionality of the space from the perspective of the hospital staff, particularly the physicians."** (Sloane, 1994. p. 89)

In the 1960's

- "…most hospitals reeked of disinfectant and **utilized sterile designs and materials** almost exclusively, harsh lighting, and the color white; they became cold, impersonal environments that disaffected even caregivers." (Kopec, 2006. p.211)

In the 1970's

- "…community and individual complaints about the **impersonality of the hospital** were pervasive." (Sloane, 1994. p. 89)

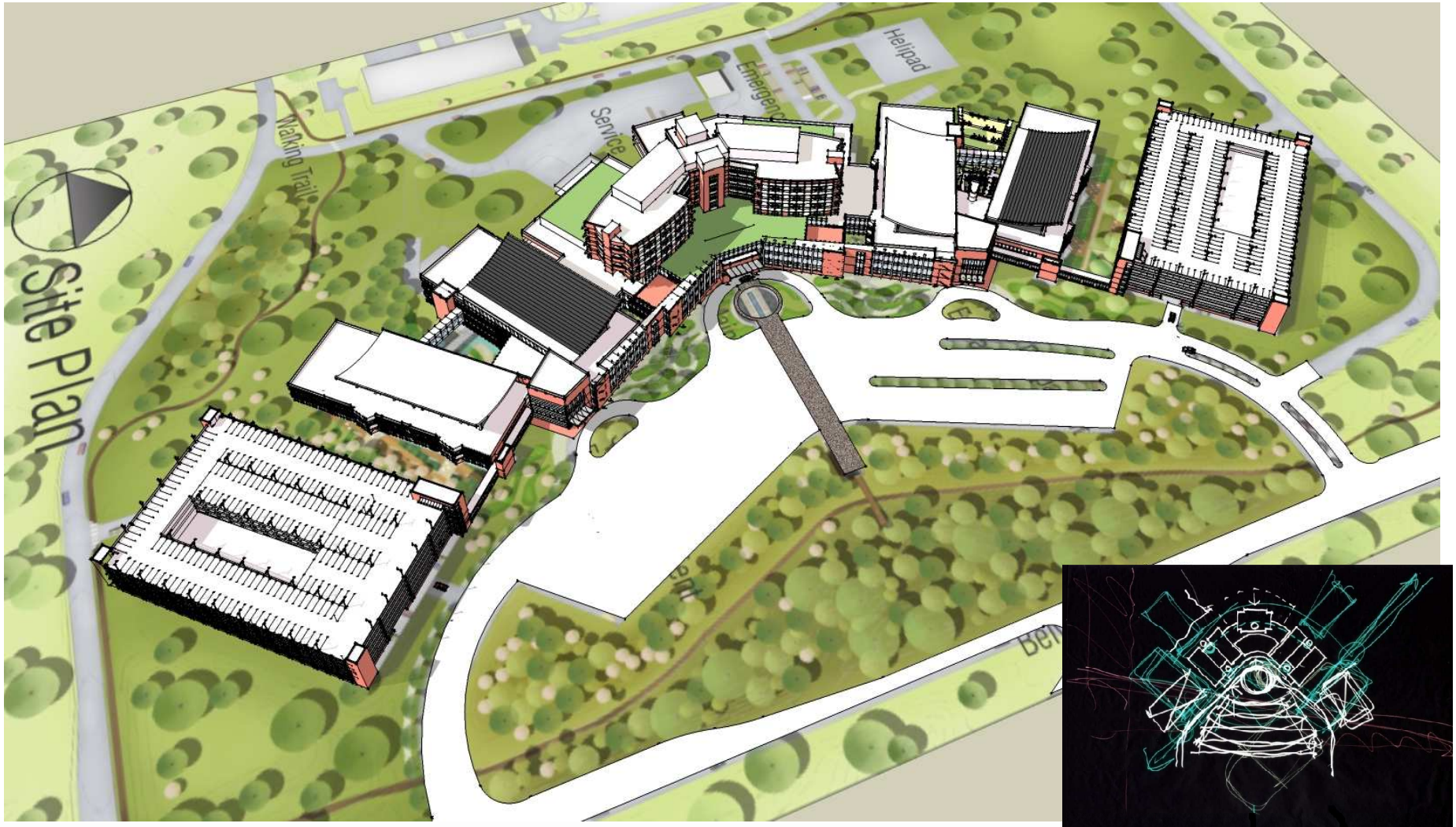
In the 1980's

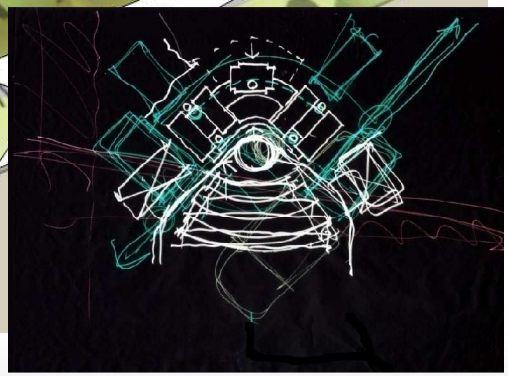
- "…administrators turned again to designers and architects to redefine the hospital's image and relationship with it's customers. The challenge was to **retain the aura of competence provided by the scientific and technical excellence of the hospital while supplementing it with a new, more open, more welcoming atmosphere**." (Sloane, 1994. p. 89)

Design Charrette – Feb 2007

Fort Belvoir Community Hospital (FBCH)

Final Design – FBCH





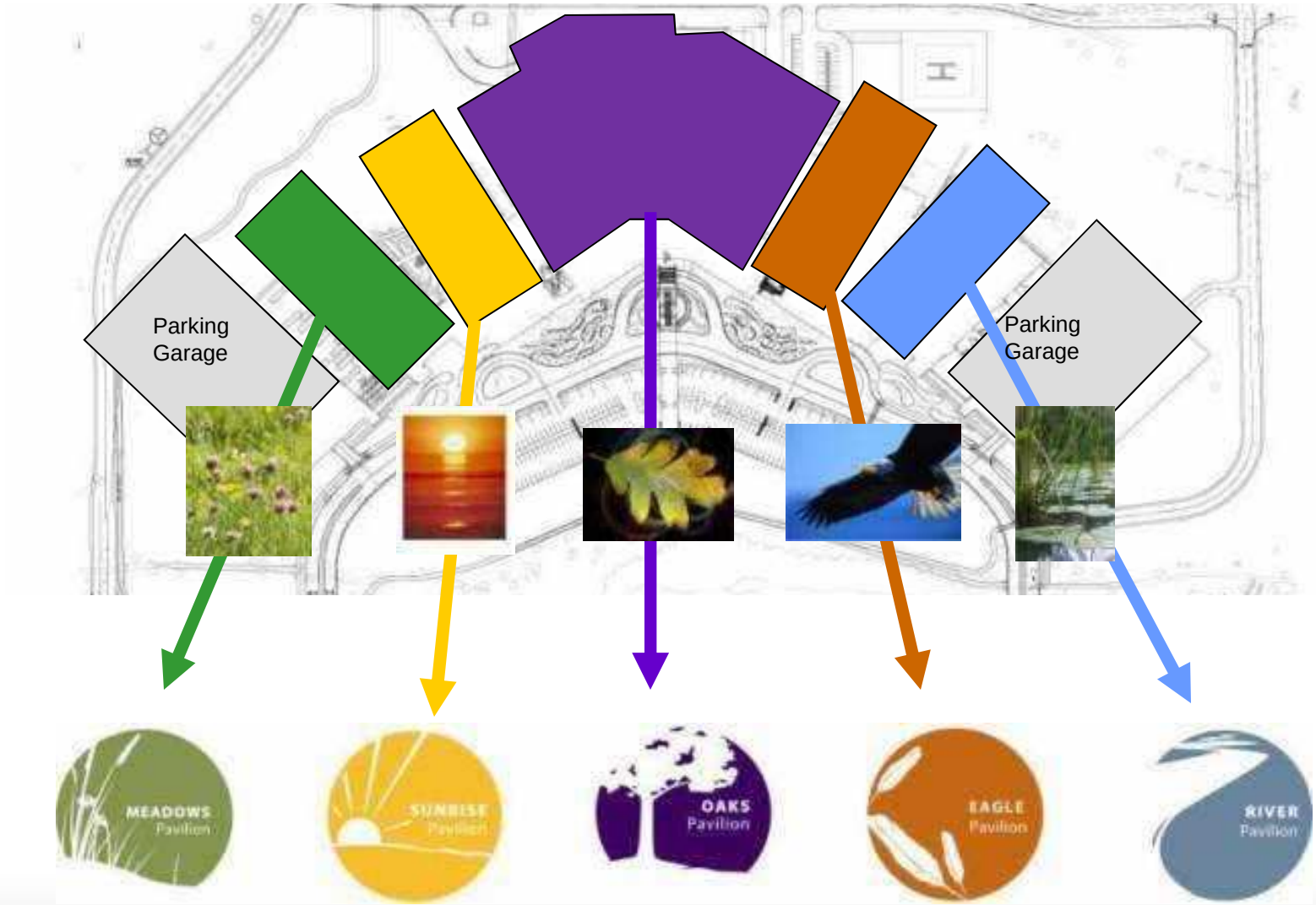
Visioning Session – June 2007

100 multidisciplinary team members, including patients, who spent the day creating the image and message to brand the design

Results:

- "Caring for Our Own"
- The Eagle (National symbol)
- Importance of history and military medicine
- The peaceful energy of nature

Interior and Way Finding Design: Inspired by Nature



Evidence Based Design: FBCH Application

- People feel more comfortable and have been shown to heal more quickly in environments that feel like home
- Private patient rooms:
  - reduce noise
  - decrease patient transfers
  - increase levels of sleep
  - increase patient satisfaction
  - reduce risk of cross-infection

- Natural daylight/views of nature:
  - speed recovery times
  - decrease perception of pain and need for pain medications
- The more attractive the environment, the higher the perceived quality and the lower the anxiety

EBD Principles:

Patient and Family Centered Care & Care of the Whole Person

EBD Goals:

- Decrease stress
- Increase social support
- Provide light
- Provide positive distractions
- Improved wayfinding

EBD Principles:

Patient and Family Centered Care & Care of the Whole Person

EBD Goals:

Greater sense of control

Large windows for natural light

Family Zone

Improve rest and sleep

Provide positive distractions

EBD Principle:
Improve Healthcare Quality and Safety

EBD Goals:

Decrease hospital based infections

Prevent patient falls

Reduce medication errors

Reduce noise stress to improve speech intelligibility

EBD Principle:

Design for Maximum Standardization, Future Flexibility and Growth

EBD Goals:

Facilitate care coordination and patient service

Provide flexibility for change and growth

EBD Principle:
Provide a Positive Work Environment

EBD Goals:

Decrease back pain and work related injuries

Reduce staff fatigue

Increase team effectiveness

Eliminate noisy and chaotic environments

First Impressions

Arriving for Care

Light-filled, color-driven signage with
"You are Here" campus maps to inform your way finding

EAGLE PAVILION
EAGLE PAVILION
DIRECTORY

MAIN RECEPTION DESK LOCATION EXAMPLE

01-20-2009

8B- RED/YELLOW/ORANGE

Inpatient Vistas

How Far We've Come

DeWitt

- Narrow central corridor
- Challenging Wayfinding
- Limited natural light

FBCH

- Light filled central corridor
- Plush furniture for comforts of home
- Ease of access to outpatient clinics
- Opportunity to display military artifacts
- Decorative artwork

Lobby

DeWitt

- Limited daylight – only from front doors
- Seating not conducive for gathering
- Limited to overhead flourescent lights
- Not meant to be an area of interaction

FBCH

- Ample use of daylight
- Nature-themed, color specific wayfinding elements
- Seating to foster communication in private groupings
- Variety of lighting elements

Patient Room

DeWitt

- Several Dual Occupancy rooms
- Limited Privacy
- No defined Family Zone
- Black and white t.v.
- Institutional appearance of walls

FBCH

- All inpatient rooms private
- Furnished to look residential
- Art on walls
- Pull out sofas for overnight guests
- Flat screen t.v., internet access, temp control

Dining Facilities

DeWitt

- Only area designated for visitor meals
- Located on basement level, limited daylight
- No elements of nature
- Limited food choice
- Not representative of a quality dining experience

FBCH

- Well appointed area demonstrates the importance of a quality dining experience
- Natural elements include exterior dining courts and sweeping views of the wooded hospital grounds
- Variety of lighting including ample daylight

Meditative Areas

DeWitt

- Hospital chapel located on 2nd floor
- No exterior access
- No healing garden
- Relatively small

FBCH

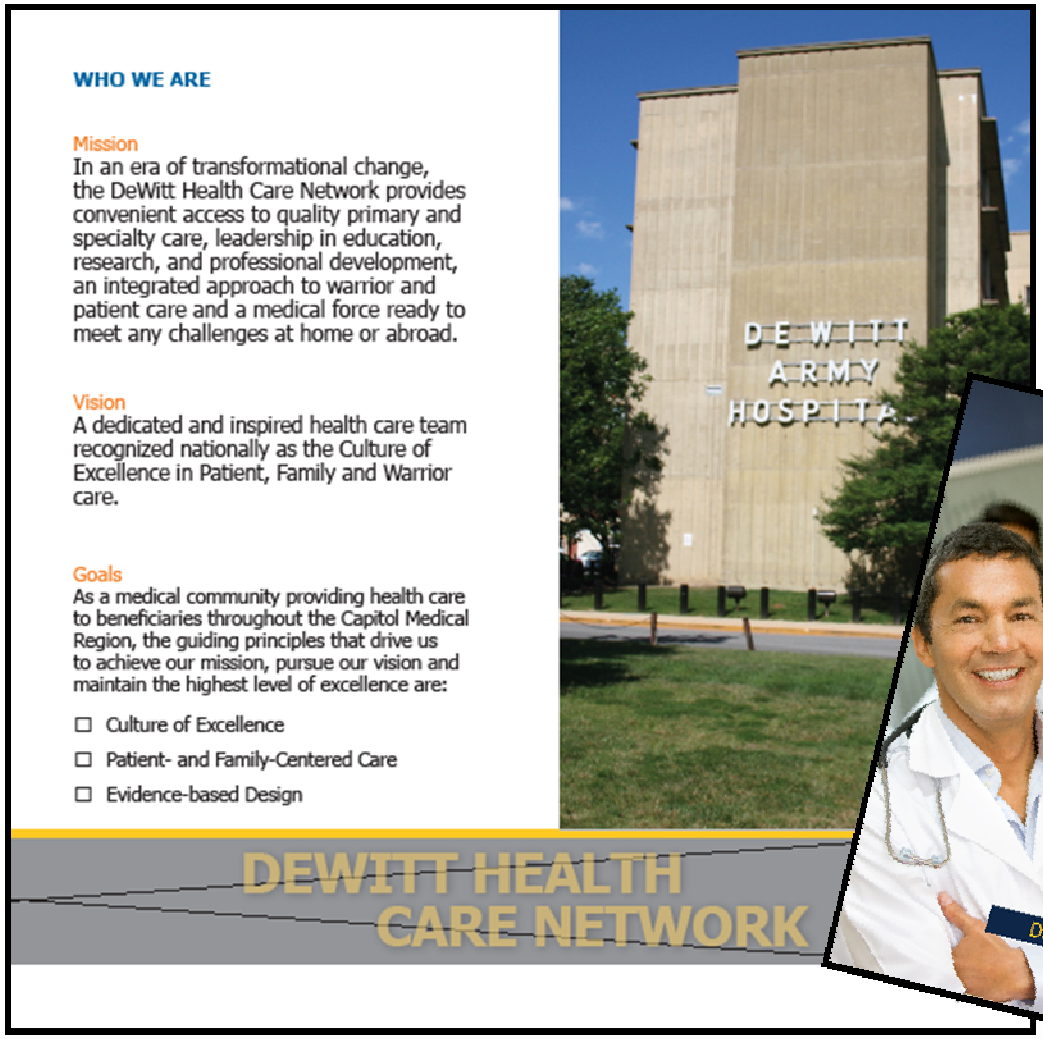
- Chapel – 1st floor with abundant natural light
- Healing garden adjacent to chapel
- Sliding glass doors for garden use during services
- Stained glass feature accentuates design

Patient/Family Centered Care

Patient/Family Centered Care Principles

- Dignity and Respect
- Information Sharing
- Participation
- Collaboration

Human Capital:
Creating a "Culture of Excellence"



WHO WE ARE

Mission
In an era of transformational change, the DeWitt Health Care Network provides convenient access to quality primary and specialty care, leadership in education, research, and professional development, an integrated approach to warrior and patient care and a medical force ready to meet any challenges at home or abroad.

Vision
A dedicated and inspired health care team recognized nationally as the Culture of Excellence in Patient, Family and Warrior care.

Goals
As a medical community providing health care to beneficiaries throughout the Capitol Medical Region, the guiding principles that drive us to achieve our mission, pursue our vision and maintain the highest level of excellence are:

- ☐ Culture of Excellence
- ☐ Patient- and Family-Centered Care
- ☐ Evidence-based Design

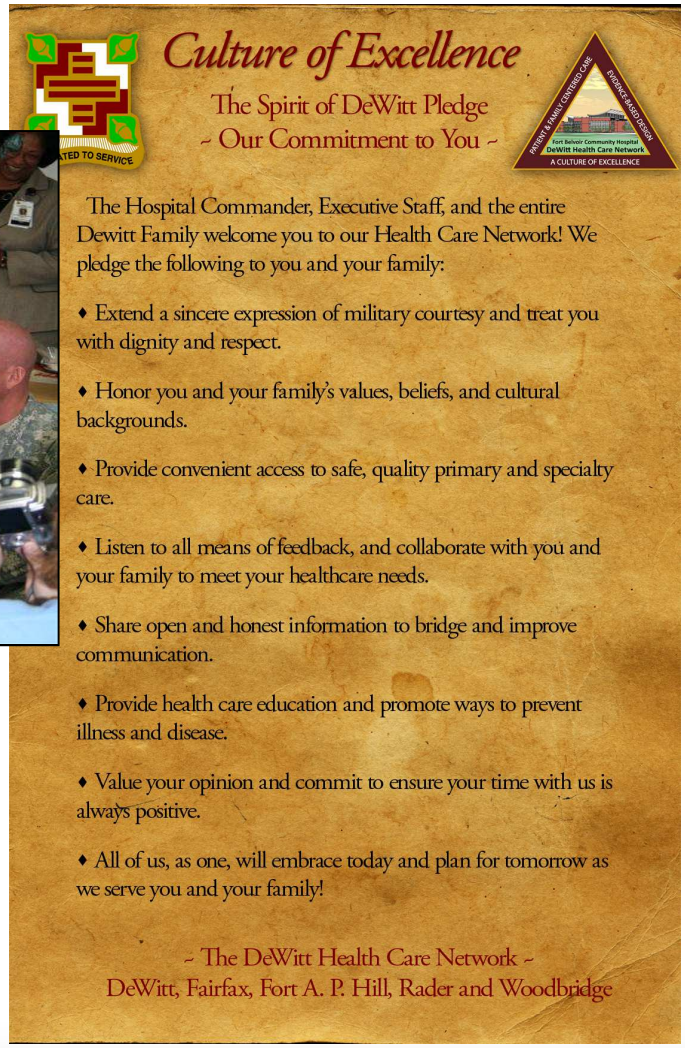
DEWITT HEALTH CARE NETWORK

"Take don't Tell"

"Greet by Name"

"Theme Scripting"

Human Capital:
Creating a "Culture of Excellence"



Culture of Excellence

The Spirit of DeWitt Pledge
~ Our Commitment to You ~

The Hospital Commander, Executive Staff, and the entire Dewitt Family welcome you to our Health Care Network! We pledge the following to you and your family:

- Extend a sincere expression of military courtesy and treat you with dignity and respect.
- Honor you and your family's values, beliefs, and cultural backgrounds.
- Provide convenient access to safe, quality primary and specialty care.
- Listen to all means of feedback, and collaborate with you and your family to meet your healthcare needs.
- Share open and honest information to bridge and improve communication.
- Provide health care education and promote ways to prevent illness and disease.
- Value your opinion and commit to ensure your time with us is always positive.
- All of us, as one, will embrace today and plan for tomorrow as we serve you and your family!

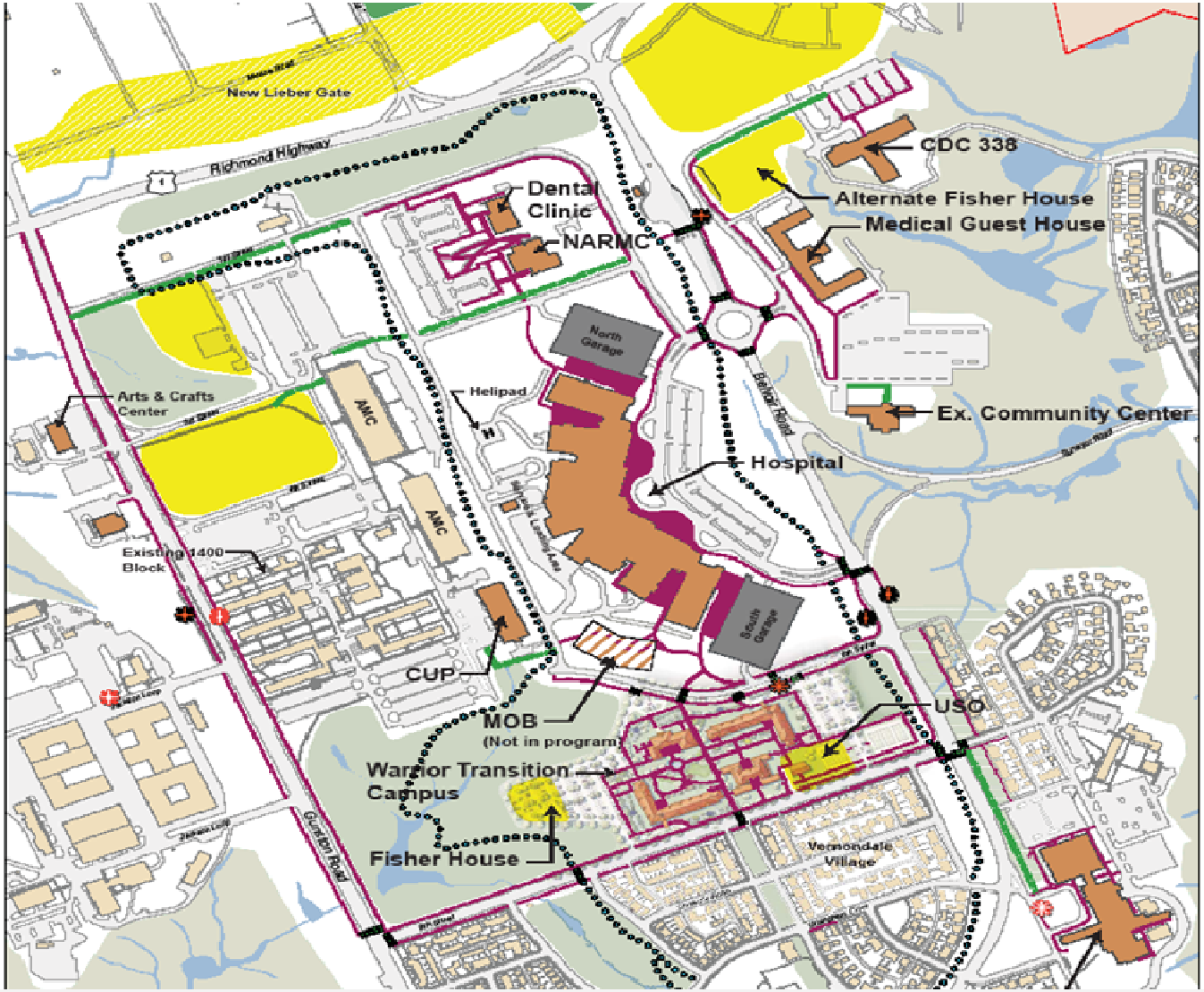
~ The DeWitt Health Care Network ~
DeWitt, Fairfax, Fort A. P. Hill, Rader and Woodbridge

“From Ink bottle to Champagne bottle”

Sustainable Transformation

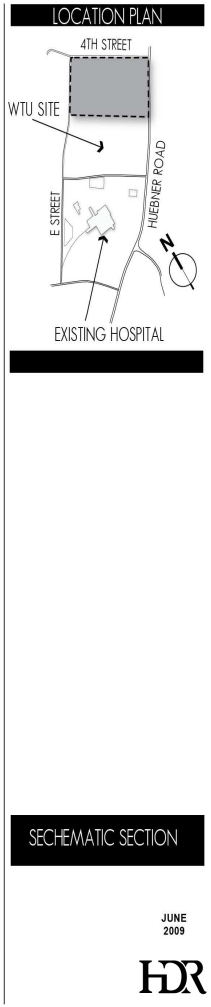
"a rope with 3 strands is hard to break" – Ecclesiastes 4:12

Fort Belvoir Medical Campus



The Fort Belvoir Community Hospital

The Way Ahead



Potential Application of Ft. Belvoir Design Principles to Other Hospitals?

Post Occupancy Evaluations & Research Lead to Continuous Improvement

A New Generation of Facilties

- Ft. Belvoir
- WRNMMC
- SAMMC-North
- Ft. Benning
- Guam
- Ft. Hood
- Ft. Riley
- Camp Lejeune
- Wright-Patterson
- Camp Pendleton
- Landstuhl
- Lackland
- Andrews
- *and more….*

Challenge and Opportunity

"We have an unprecedented opportunity now to take the first steps in modernizing many of our key facilities … We can ensure our hospital designs promote integrity during the clinical encounter, empower our patients and families, relieve suffering, and promote long-term health and wellness. Hospitals that say we care and are not satisfied with anything but excellence"

-- S. Ward Casscells, MD,