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Managing Metamorphosis, Building for Change

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Managing Metamorphosis,
Building for Change

Session: 100216

Date: Thursday, October 2, 2014

Time: 3:15 pm – 4:15 pm

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Managing Metamorphosis, Building for Change

Cultivating Change: A Campus' Story About Innovation And Collaboration

Presented by:

- **Richard Miller, Principal - Perkins+Will**
- **Ed Cordes, Principal – Perkins+Will**
- **Jim Kephart, Assistant Vice Provost for Research - Baylor University**

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Cultivating Change:
A Campus' Story About Innovation & Collaboration

Association of Texas College and University Facilities Professionals
October, 2014

Richard Miller, FAIA, LEED AP BD+C
Perkins+Will

Jim Kephart
AVP for Research
Baylor University

Ed Cordes, AIA, LEED AP
Perkins+Will

Learning Objectives

(1) How to build upon the shared values of various state and local organizations to produce funding opportunities that will benefit everyone.

(2) How can collaborative partners further promote higher education and research in the state of Texas.

(3) How the General Tire Building, once the area's strongest industrial icon, later a vacant symbol of unemployment, is assessed for adaptive reuse for a high technology research laboratory environment.

(4) How to plan, program and design a facility to provide for the collaborative group requirements and the individual's needs while staying true to the overarching strategic vision.

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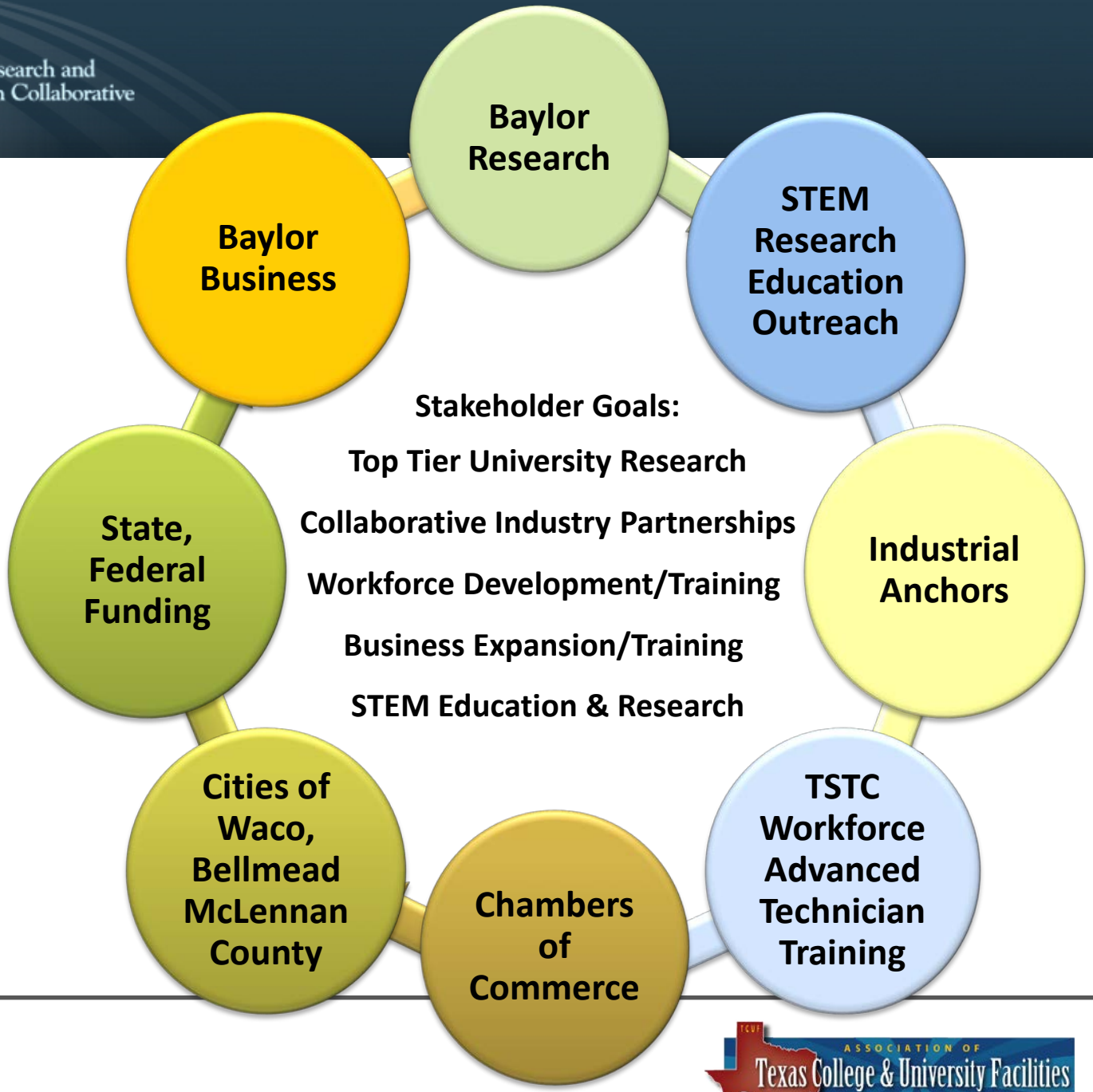
Building on Shared Values

Jim Kephart
Assistant Vice Provost for Research
Director, Technology Commercialization & Industry Engagement
Baylor University

What is the BRIC?

- Baylor Research and Innovation Collaborative in Waco, Texas
- Former WWII era General Tire plant, vacant since 1985
- Re-purposed and opened in 2013 as:
  - university/industry research collaborative, international research center
  - workforce training, STEM research and outreach, and business accelerator
- 305,000 SF available under roof
- 170,000 SF occupied, 110 Full Time Equivalent (May 2014)
- 30,000 SF symposia and meeting space (6,578 visitors as of June 2014)

Partnerships



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The BRIC discovery park provides a unique setting which:

combines cutting-edge interdisciplinary university research

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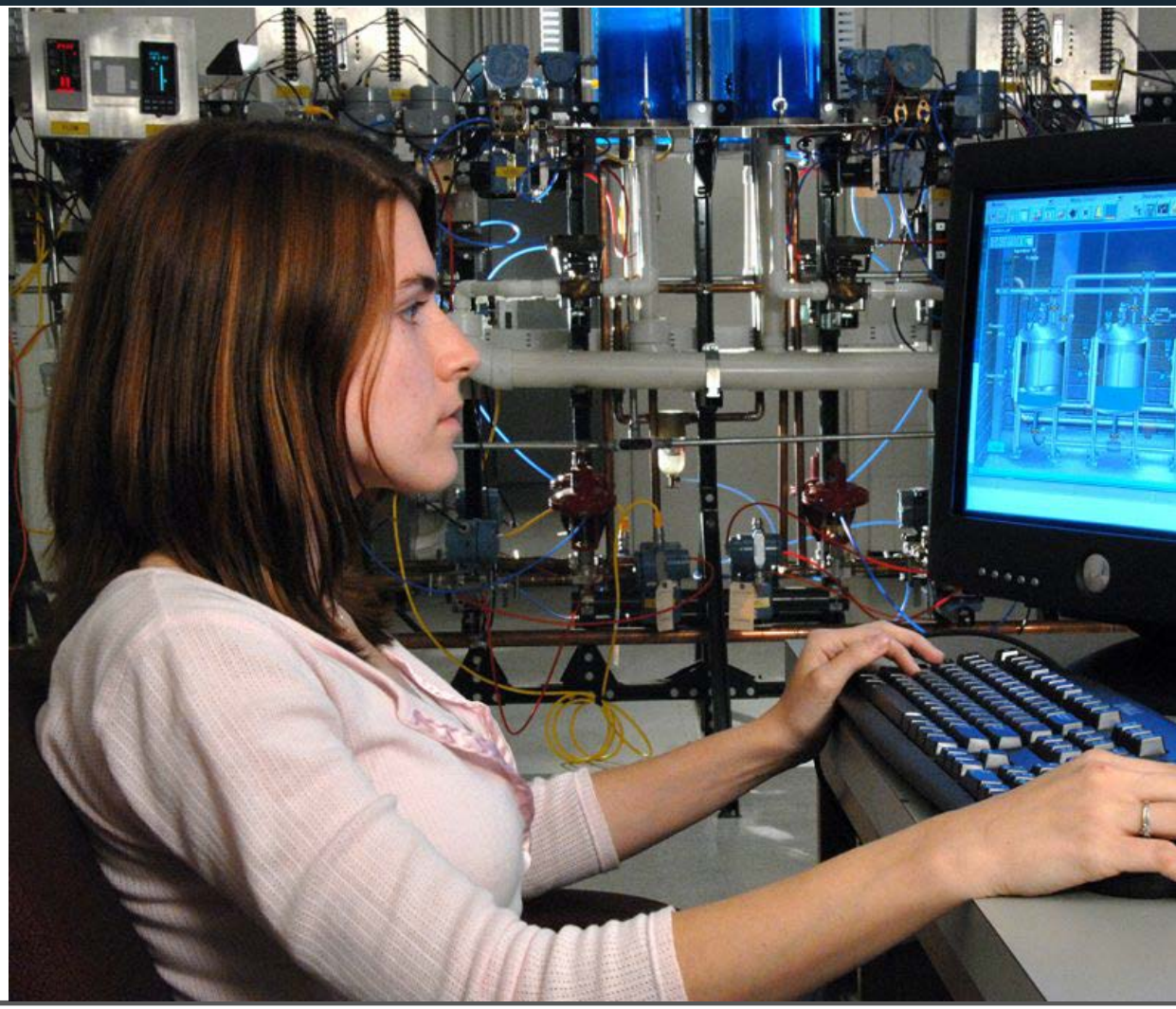
The BRIC discovery park provides a unique setting which offers:

advanced technical workforce development & training



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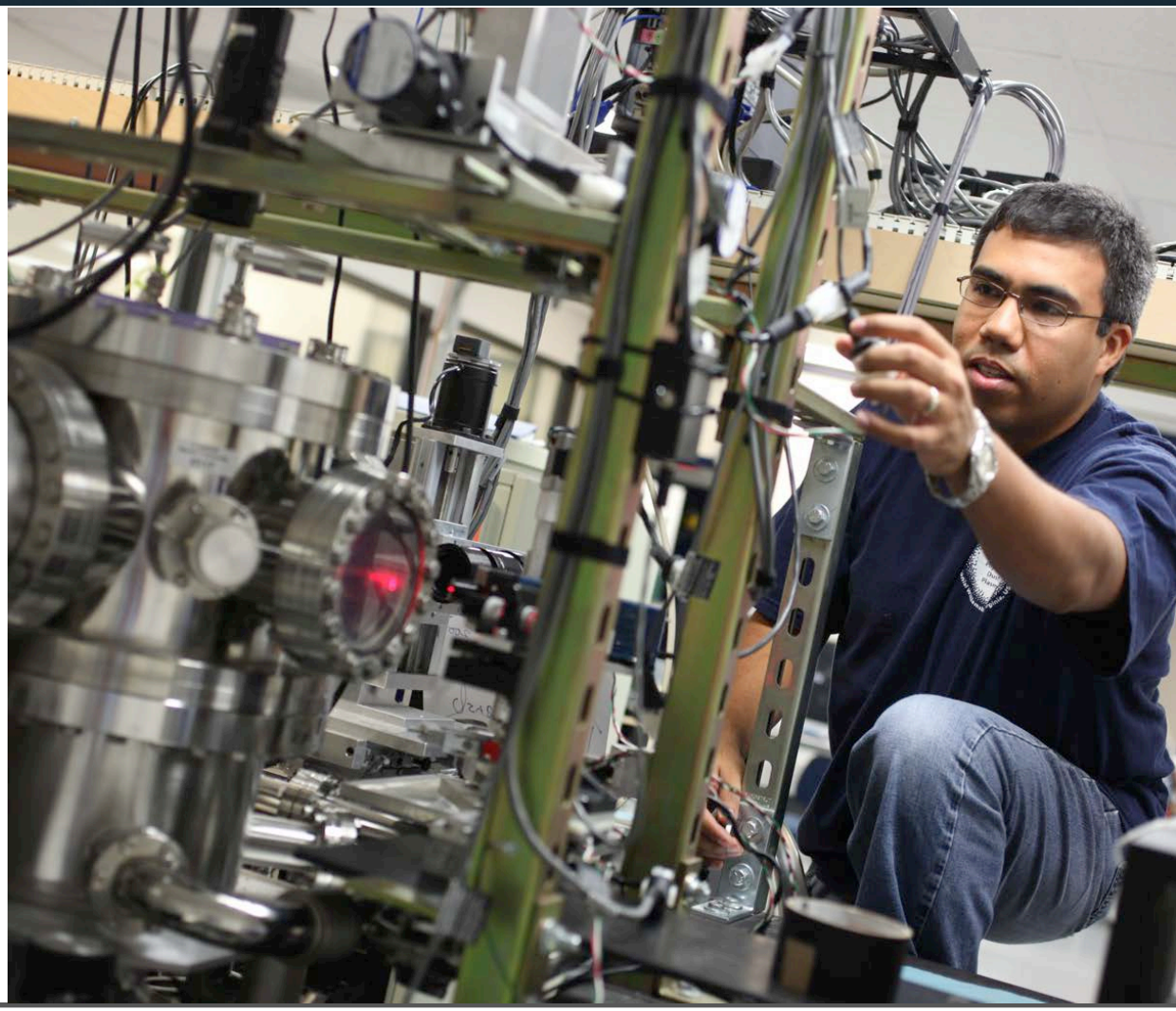
The BRIC discovery park provides a unique setting which offers:

international research partnerships and industry collaborations



The BRIC discovery park provides a unique economic development engine for the region:

- 15 public & private partners
- Financial, technical & community support
- Early private sector commitments for technical & economic validation
- Public sector funding from multiple regional communities
- Post-graduate university research and 2-year technical training collaboration

Coordinating & Building on Shared Values: Take-aways

- Space allocation/approval and master planning is critical to success
  - Initial success depends on utilizing regional industry strengths
  - Must determine if research strengths of university match industry candidate needs
  - Must conform to “Criteria for Locating “ document

Coordinating & Building on Shared Values: Take-aways

- Manage stakeholder expectations, which invariably are too high, too immediate – full operations is a ten to fifteen year (or more) effort
  - Make BRIC a regional, national, international meeting place for public and university stakeholders
  - Keep active and current media focus (press releases, websites, blogs, speakers)

Coordinating & Building on Shared Values: Take-aways

- Continue investments which will yield further long term economic development gains:
  - Continue expansion of industry research collaborations and industry presence
  - Attract nationally known research faculty and best graduate students
  - Continue community and private investment in BRIC goals – “Skin in the Game”

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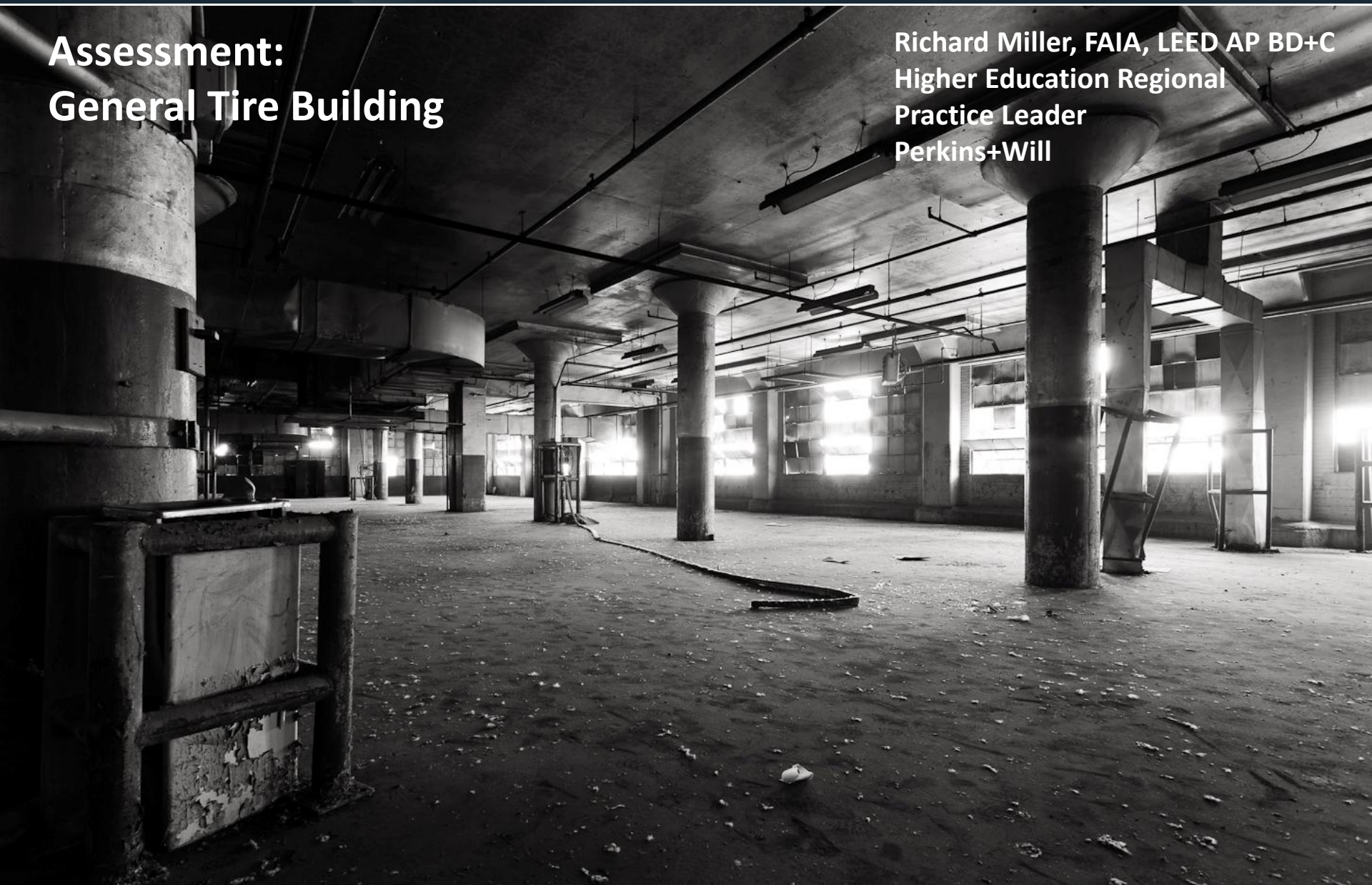
Assessment:
General Tire Building



Richard Miller, FAIA, LEED AP BD+C
Higher Education Regional Practice Leader
Perkins+Will

General Tire Property:

1944 – Opened in Waco with 1400+ employees

1986 – Plant closed

2008 – Abandoned for 22 years

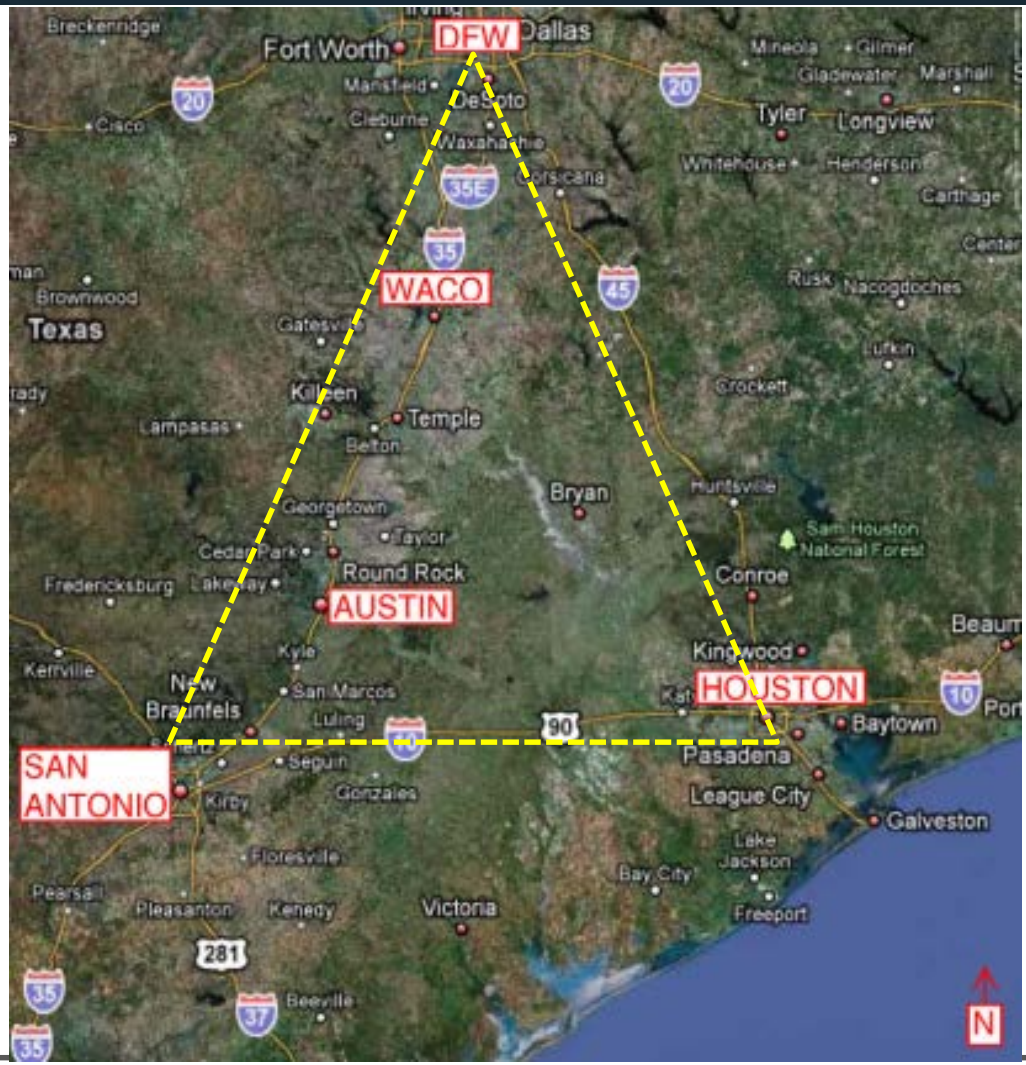
2009 – 300,000 GSF + 21 acres donated to Baylor University

Capitalizing on a Prospective Gift?

- Assess the abandoned 300,000 gsf building
- Determine adaptive re-use potential
- Applicable for a mixed use academic, community, and collaborative research environment
- Confirm structural integrity, bay sizes, floor-to-floor heights, vibration isolation
- Incorporate sustainable design principles
- Cost effectiveness

Regional Assessment

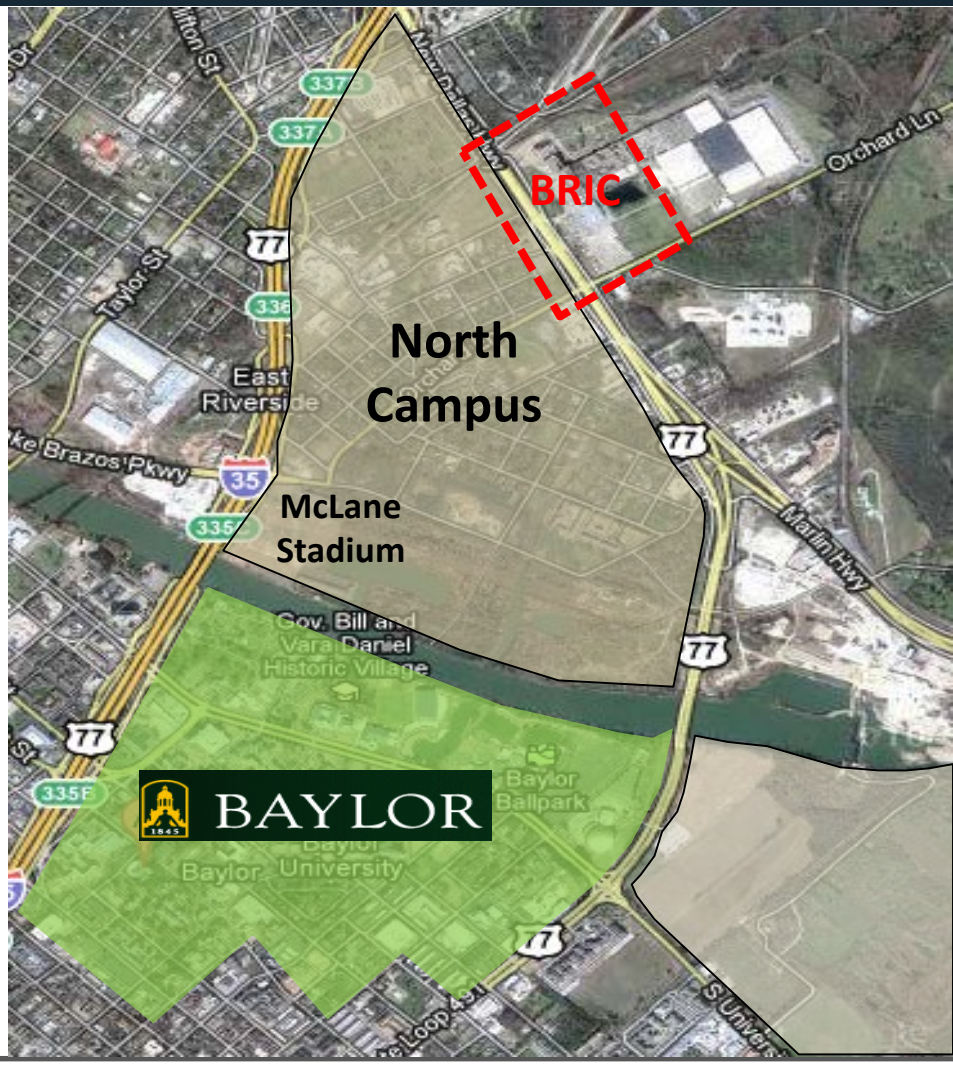
- Golden Triangle-DFW/SA/Houston
- Geographically well positioned
- Metro areas – 15.6m people
- Access to major airports



Growth Opportunities

Future Growth

- 10 years,
- 20 years,
- 30 years,
- 50 years?!



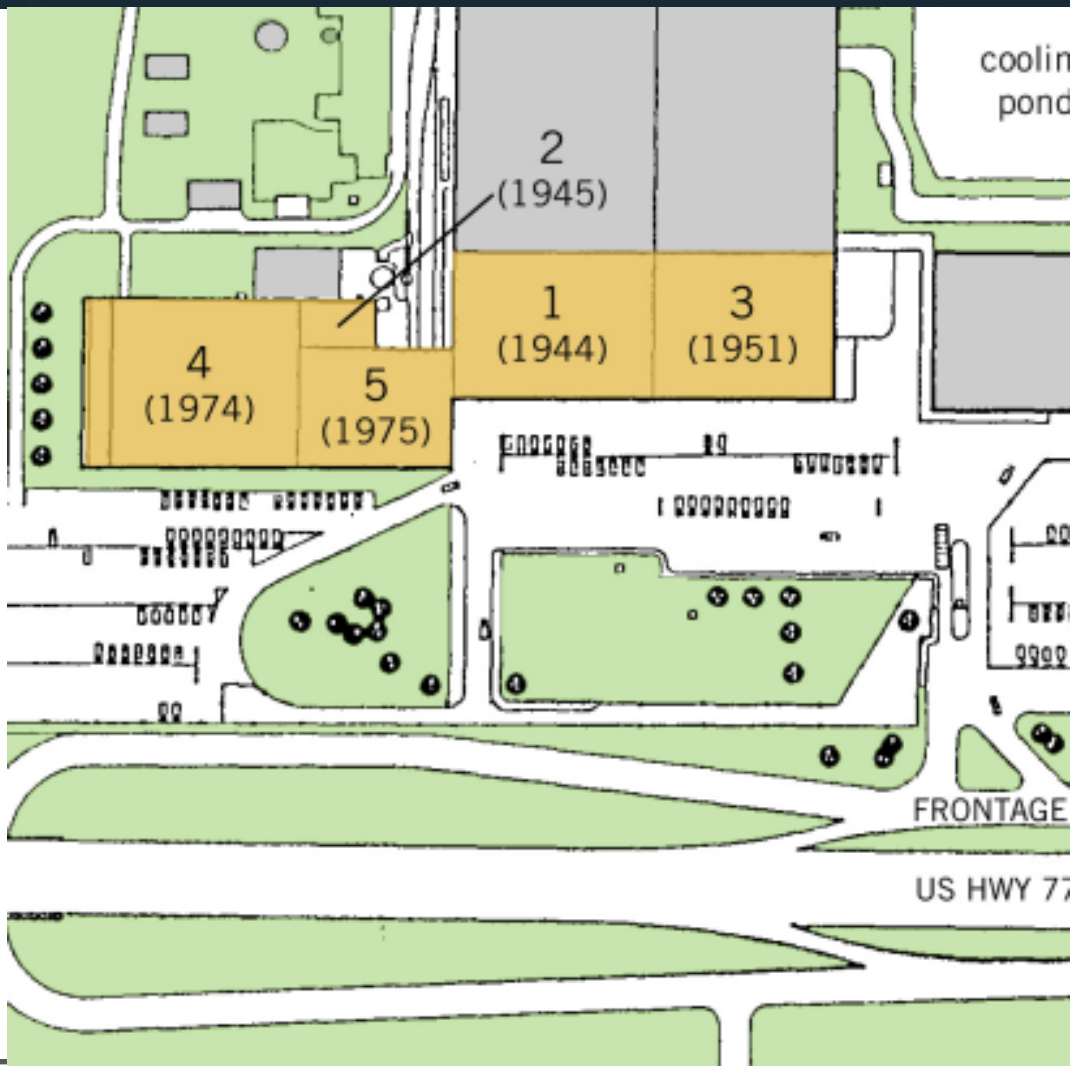
Site Location & Access

Opportunities

- Access to major metro areas
  - Located on Hwy 77 near I35
  - Proximity to Airport
- Future expansion
- Land acquisition
- Support from public entities: Waco, Bellmead, TSTC

Building Assessment

- Site
- Building configuration
- Utilities
- Hazardous material abatement
- Life safety
- Sustainability



Adaptive Re-use: Assessment For Intended Use

Envelope

- Skin & Roof

Infrastructure & Structural System

- Foundation
- Concrete & steel super frame
- Slab – ease of penetrations
- Column spacing - bay & lab module
- Floor-to-floor heights
- Stair towers, code & ADA implications
- Future Loading on slab, columns, piers
- Vibration isolation requirements
- MEP systems & utilities

Suitable for the program

- Lab space planning & modules

Building Assessment

- Realistic life span of renovated building: 50 years
- Cost / value of renovation vs. new construction
- Adaptive reuse potential
- Historical / cultural value of building?
- Image compatible with research initiative
- No value in the existing envelope -“where’s the brick in the BRIC”

Establish a Green Agenda – *positive impact*

- LEED 2009 Core & Shell Development
- Building re-use existing walls, floors & roof - 75%
- Construction waste management – 75% recycle or salvaged
- Maximize daylighting & views
- Classified as Brownfield site due to asbestos
- Remediation - asbestos & carbon black
- Robust structure & vibration isolation
- Existing envelope – no vapor barrier, single glazing, no insulation or R value, brick beyond its useful life, asbestos abatement.

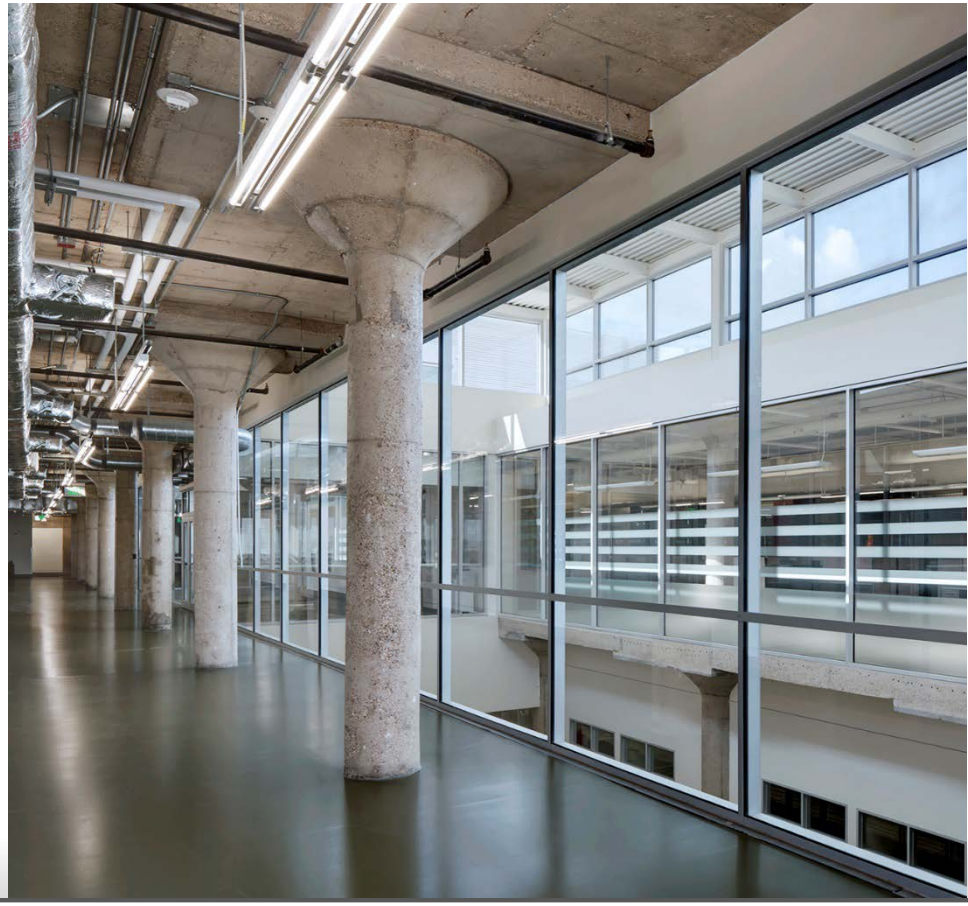
Building Assessment Findings

Appropriate for Research Mission?

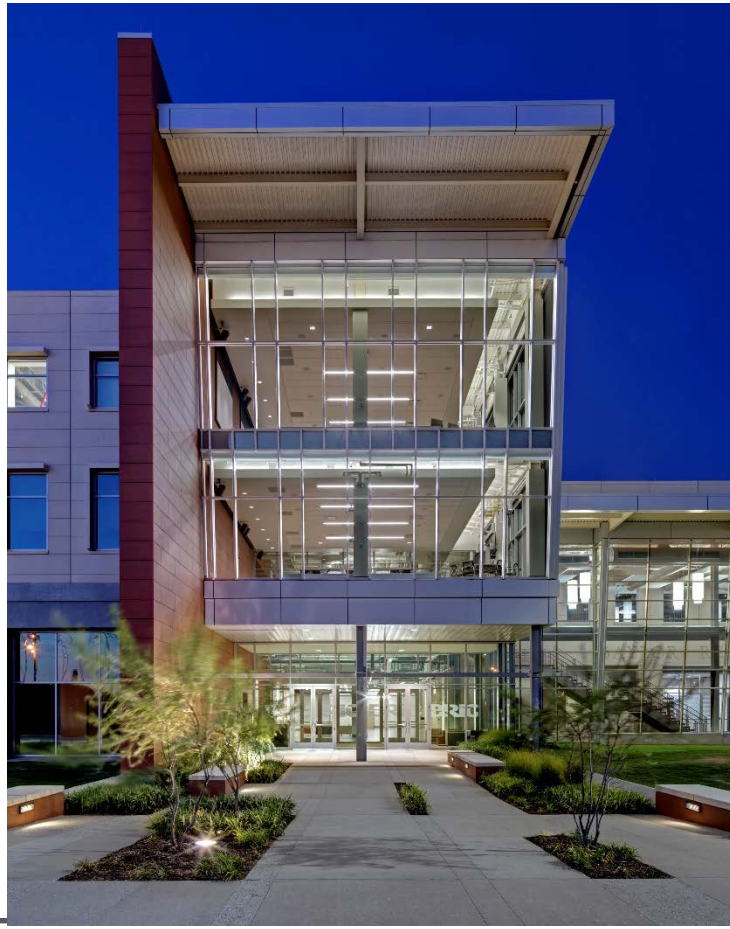
- Adequate floor-to-floor, (20’, 18’, 12’)
- Functionally flexible and adaptable
- Workable column modules (20’x20’ most common, 20’x25’ and 40’x40’ in some areas)
- Health, and comfort opportunities (daylighting throughout)
- Opportunities for sustainable design

Gift is acceptable to receive!

Daylighting & Space Utilization

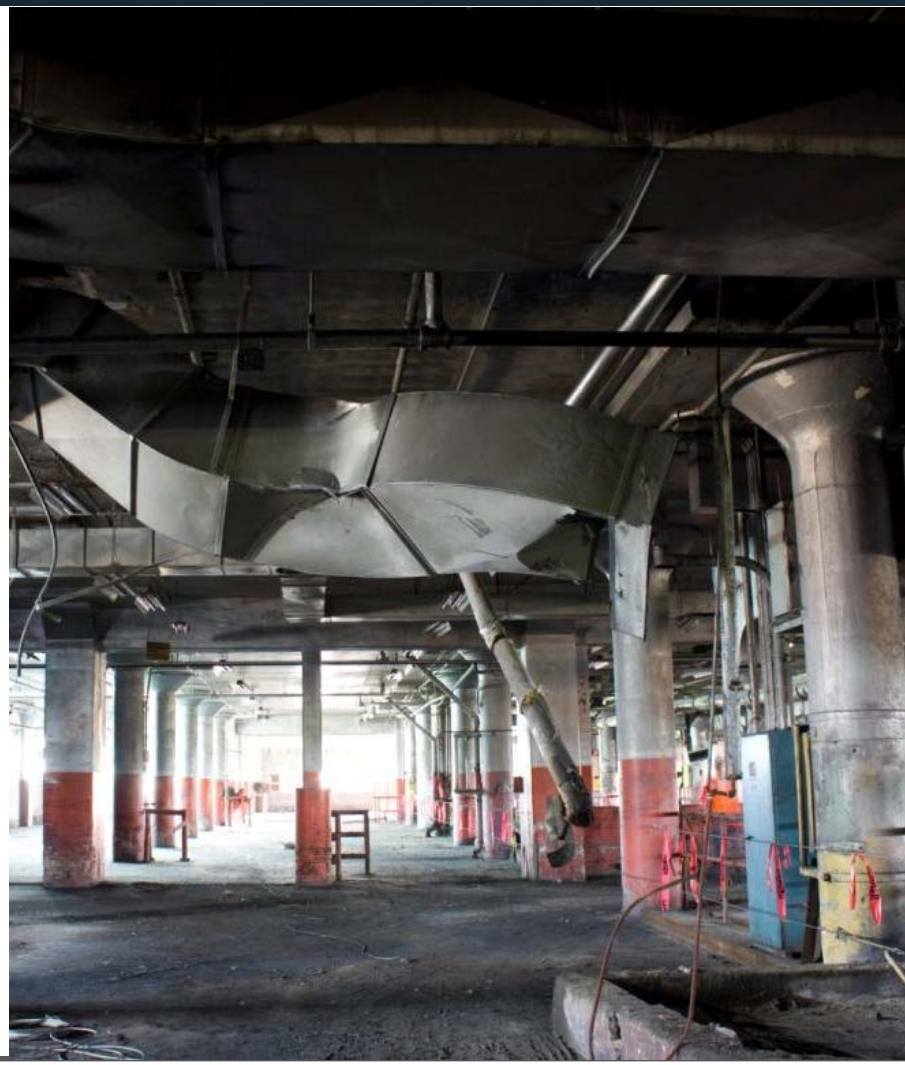


Open Gathering Space & Visual Connectivity



Adaptive Re-use: Lessons Learned

- Do your homework on existing building
- Green Agenda - resist urge of knocking it down
- Look under every stone - fully understand cost, schedule and construction techniques
- Careful budgeting = success, 30% contingency
- It's a team effort – must be agile & flexible
- Not as easy as a new building – complex project
- Plan on extra time for unforeseen conditions
- Be prepared for numerous code and zoning issues
- Structural frame approximately 20-25% savings
- Don't underestimate the value of existing building to the community



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Realization of Design

Ed Cordes, AIA, LEED AP
Science +Technology Regional Practice Leader
Perkins+Will

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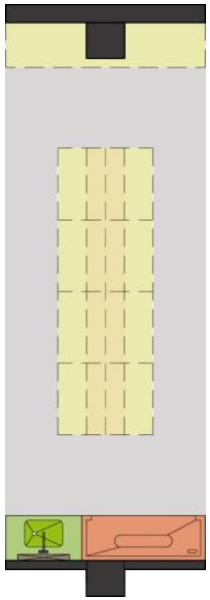
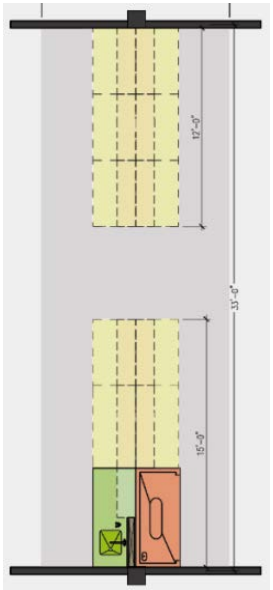
Laboratory Planning Best Practices

21’x30’ = Ideal Lab Planning Module

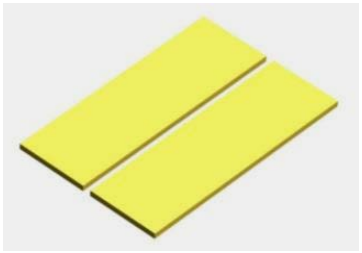
20’x25’
20’x30’
40’x40’

General Tire Bay sizes

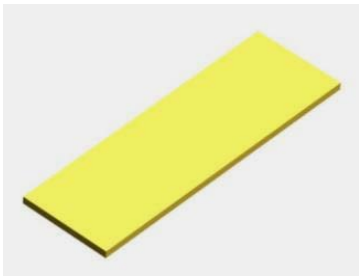




2 Lab Module
=
Typical Bay



10’x30’ = Lab Module



Encourages Change, Affordable and Effective

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Overview:

- 320,000 square feet of new research space
- Engineering, Physics, Space Sciences Composites, Advance Manufacturing, STEM, Focuses
- Unique Regional & National Capabilities (Core Labs)
  - Reduced Gravity Simulation
  - Microscopy and Visualization
  - Composites
  - Lasers
  - Advance machining
  - Tech Business Start-up support
- Facility focus will evolve and develop over 10-15 years

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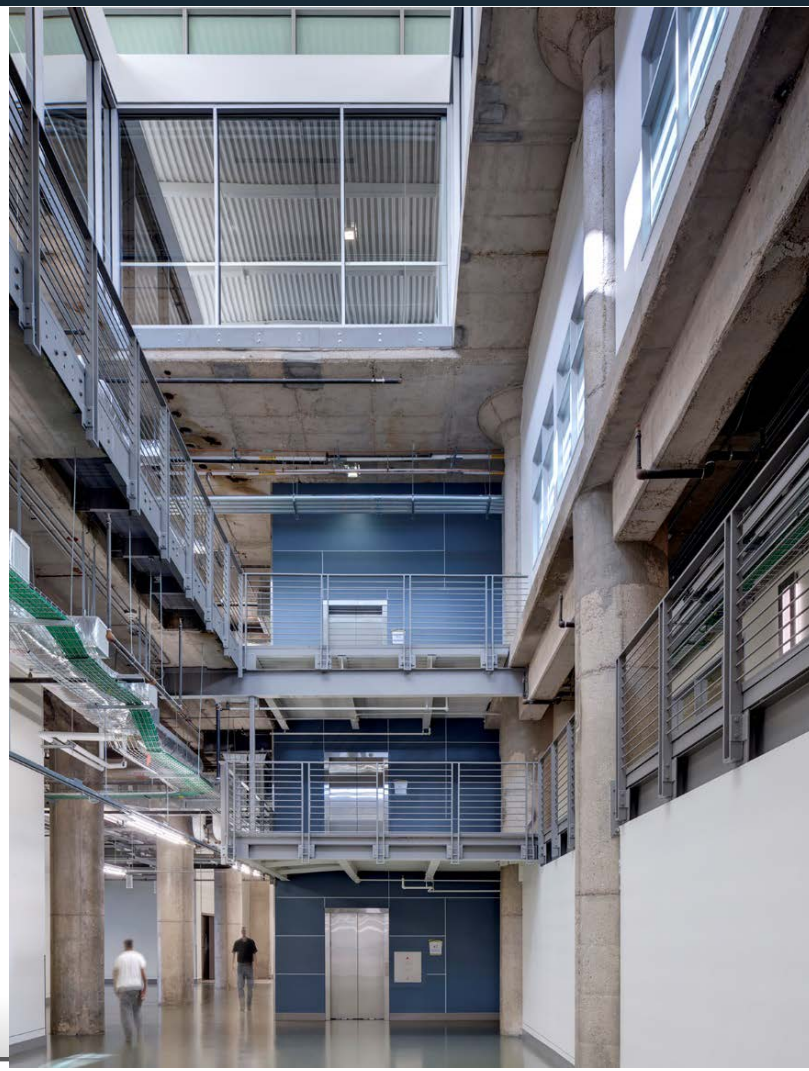
Facility Design Considerations:

- Organizational Concepts utilize “Mall Occupancy” code designation
- Laboratories are designed and located to promote “Research on Display”, with a “Building Tour Route”
- Structure permits unique lab configurations
  - Mezzanines
  - High-Bays
  - Research Lofts
- Treat the Building as a Laboratory
  - USGBC LEED certification
  - Roof access to PV’s, Antennas, etc.
  - Unique technology – Chilled Beams

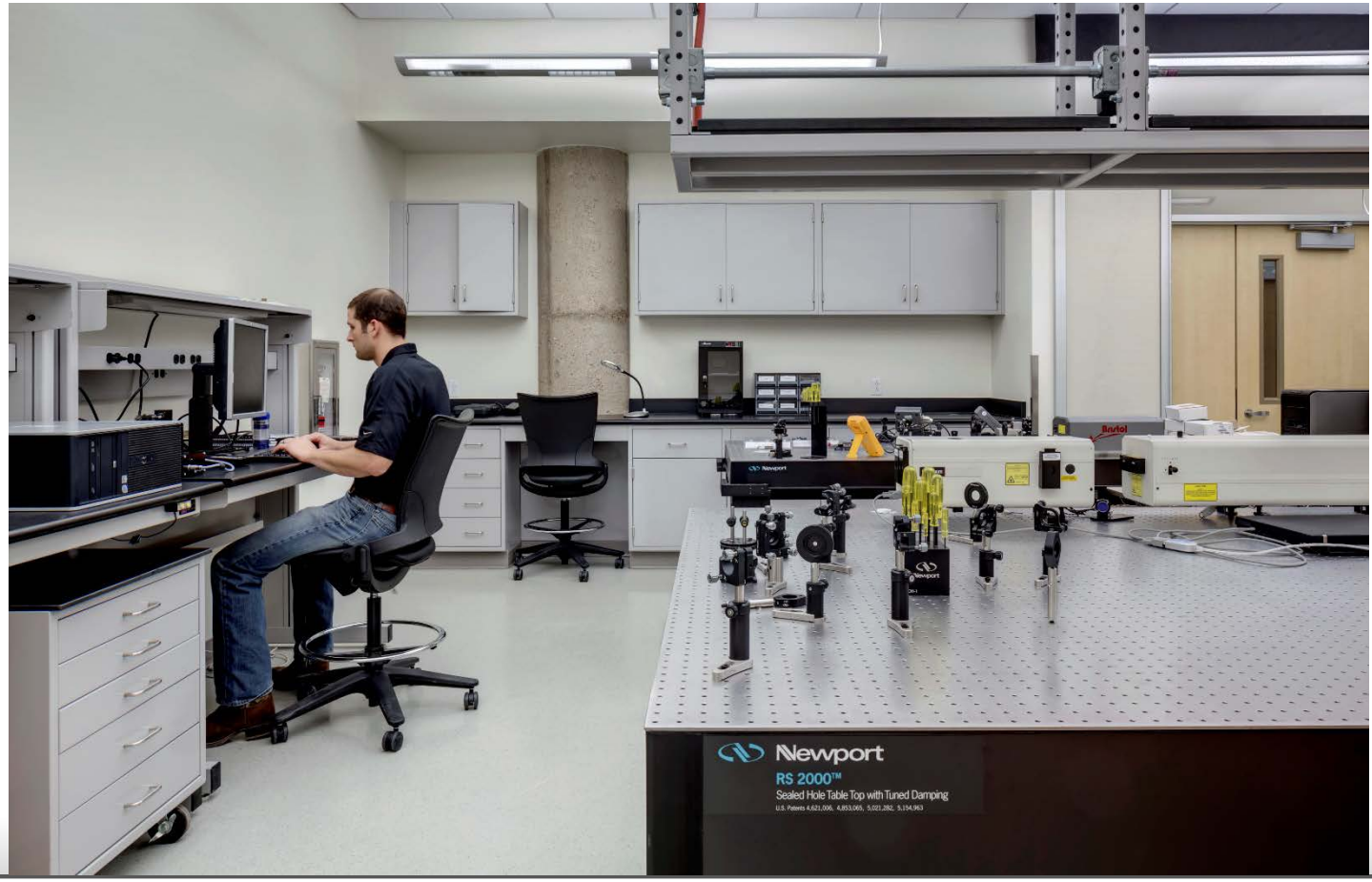


Amenities:

- Significant space dedicated to Symposiums, Conferences and Meetings
  - Regional Center for Technology and Science Gatherings
  - K-12 STEM Dedicated Support – “Classroom of the Future”
- Integrated Baylor, TSTC and Industry research, and training
  - Technicians embedded in Research Labs
  - Industry Sponsored Research & Equipment
  - Flexible Modular configurations, large footprints
- Public Spaces which support “Chance Encounters”

Atrium with Adjacent Symposium Spaces

Superior environmental control



Program

BAYLOR RESEARCH & INNOVATION COLLABORATIVE

FLOOR PLAN - LEVEL 01

Master Plan

Program

BAYLOR RESEARCH & INNOVATION COLLABORATIVE

FLOOR PLAN - LEVEL 02

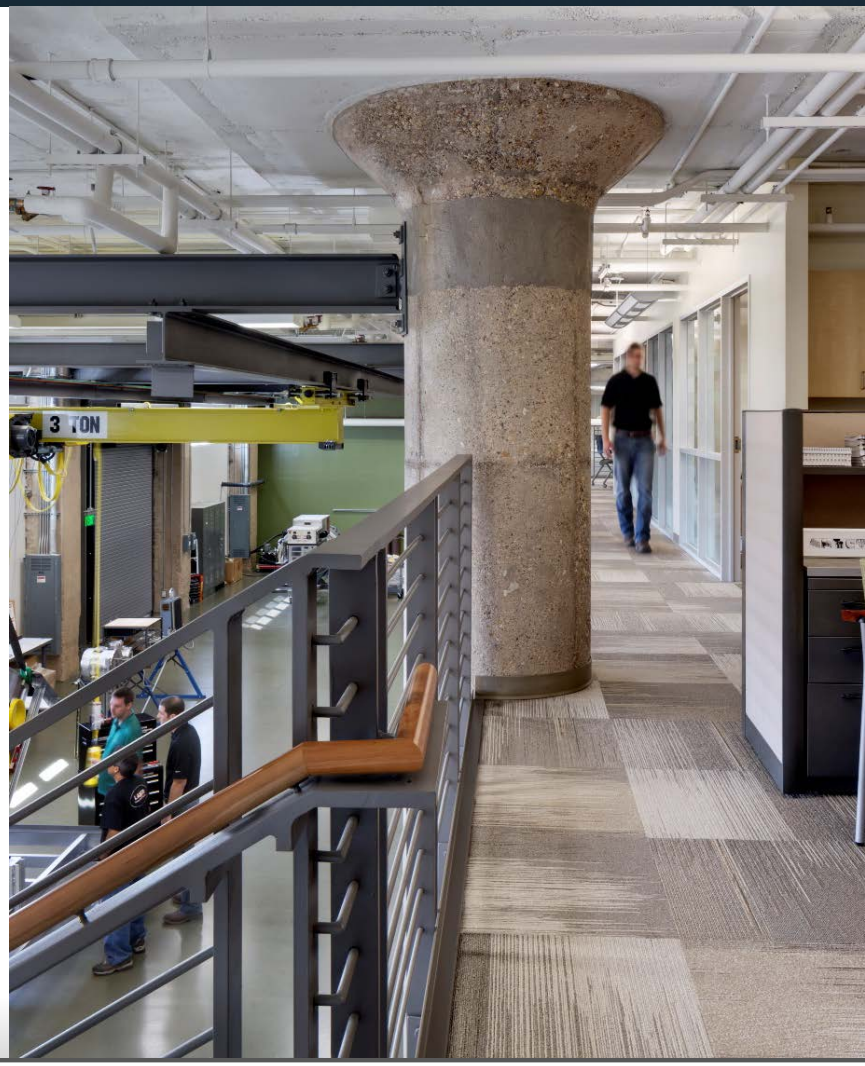
Master Plan

Program


West Penthouse
Workforce Training
Industry
CASPER
East Penthouse
STEM Storage
Elec
STEM Classroom
STEM Classroom
STEM Classroom
STEM Administration
Data
STEM Learning/ Kiosks
Restroom
Men's and Restroom
Elec
East Terrace
West Terrace
Symposium
STEM Presentation Space
Symposium Meeting Room
BAYLOR RESEARCH &
Baylor Research
Baylor Research Shell
Industry
Texas State Technical College
FLOOR PLAN - LEVEL 03

Lessons Learned - Planning:

- Master plan for entire facility was valuable decision-making tool (Zoning)
- Design complete building systems and infrastructure, but defer buyout until needed (5-7 year window)
- Use of innovative technologies had almost immediate payback at this scale (Chilled Beams)
- Innovative Code applications were critical
- Assume the program will change –design for it
- Celebrate the industrial nature – "*don't put lipstick on a pig*"



Performance & Associated Metrics:

- Grant funding attained
- Tier 1 status
- Maintenance of Christian guiding principles
- Notable Waco Economic Development
- Quality of Research
- Increased Workforce Training programs
- Growth of BRIC / Company Investments
- Increased, more rigorous faculty tenure
- LEED Gold Certification pending, equal or less cost of traditional
- Positive Economic impact on state of Texas

Flexibility Concepts:

- BRIC intends to be nimble and accommodate changing partners
- Conferencing to promote voices of leadership – physical or digital
- Interdisciplinary teaming
- Communal spaces to support community functions
- Support future growth with broader site adjacencies
- Seek community voices & needs – “be a good neighbor”

Lessons Learned: *Wrap-up*

- Re-set your expectations for how quickly you can achieve occupancy numbers.
- University model for learning & fit-out not always the same as market place.
- Review priorities…evolve quarterly.
- Support future growth with broader site adjacencies
- Seek community voices & needs – “be a good neighbor”

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For more information visit our websites:

http://www.baylor.edu/bric/

http://www.baylor.edu/research/

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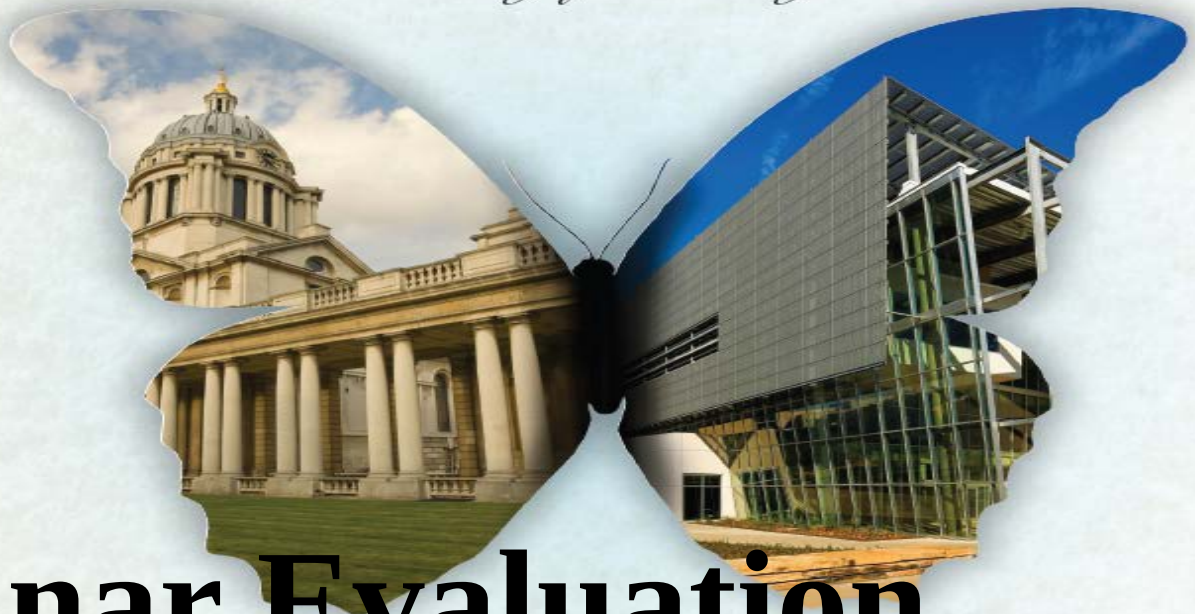

Seminar Evaluation

We hope you enjoyed this session…

Please take a moment to complete the evaluation form.

Thank you!

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