

FROM A BROWNFIELD TO THE FUTURE OF R&D COLLABORATION



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Chris Lipson, Office of Economic Development



Todd Davis, CEO



Bill Dennis, Senior Project Manager

General Electric's *Electrical Power Integrated*
We just call it *The EPISCenter*
Systems Research & Development Center



Anticipated Completion: Spring 2013

EPISCenter Re-Cap

- The University of Dayton is building a special-purpose building and has entered into a long-term lease with GE.
- Facility will house the headquarters & research labs for GE Aviation's Electric Power Systems Group.
- A 138,000 sq. ft. building : 87,000 sq. ft. of labs and 51,000 of office.



THE UNIVERSITY OF DAYTON



- Founded in 1850 by the Society of Mary (Marianists) and one of the nation's ten largest Catholic universities & Ohio's largest private university
- Over 11,000 students (>7,000 undergrads – 90% of which live on campus)
- More than 70 academic programs in arts and sciences, business administration, education and allied professions, engineering and law
- #1 university in Ohio for Department of Defense-sponsored R&D and #13 among all universities for federally sponsored engineering R&D
- UD ranks third nationally in the "extraordinary efforts" it makes to contribute to the renewal and revitalization of its surrounding community.

UD's Campus Growth



HISTORICAL PERSPECTIVE

UD Campus



NCR in the 1950s

THE SITE

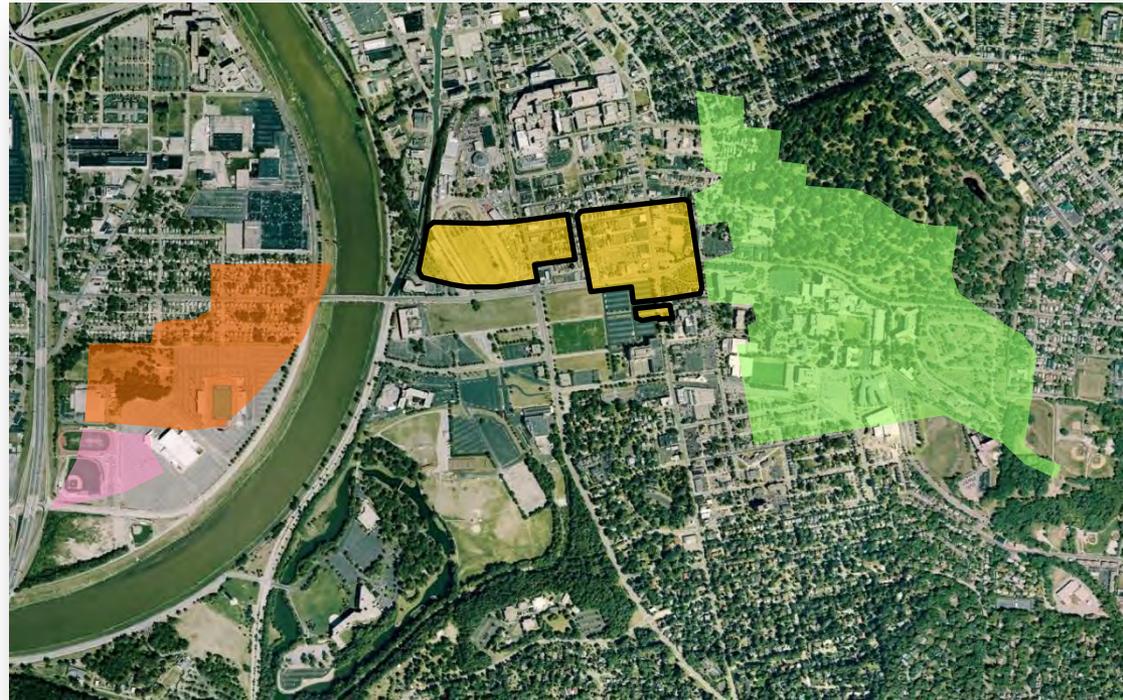


- **Underutilized for decades**
- **Two years of in-depth negotiations to structure a deal that made sense for both parties, as well as *ensuring responsible stewardship of the property.***

URBAN REDEVELOPMENT DEMANDS:

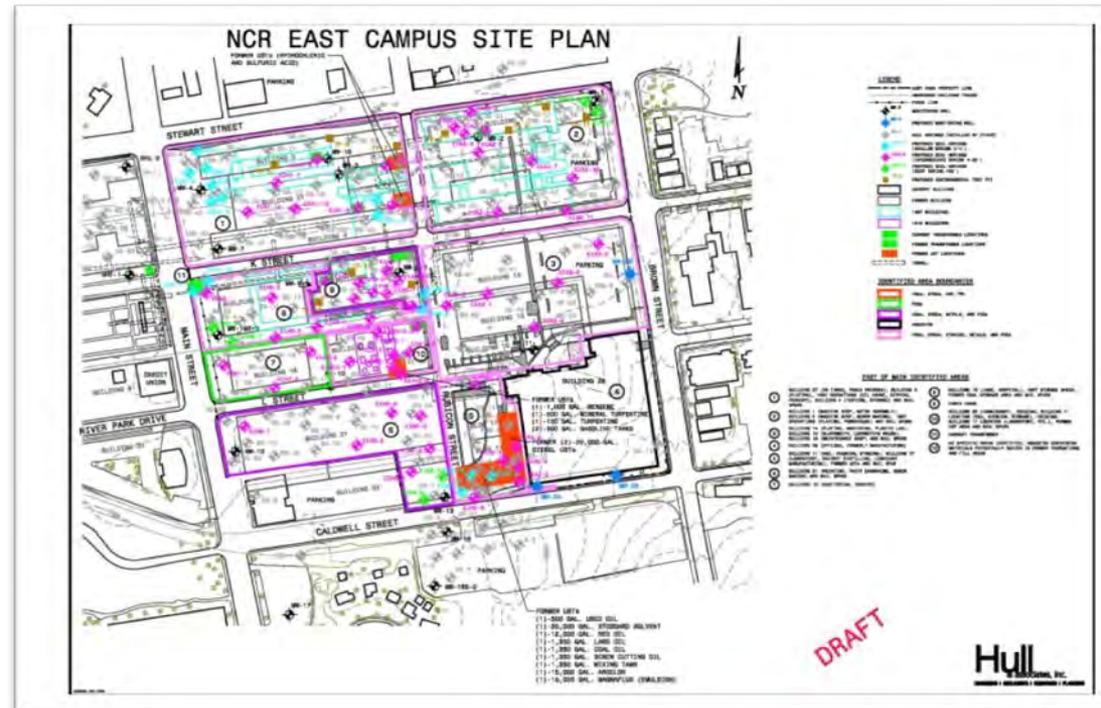
Beginning with a Vision

- *Create a cutting-edge, mixed-use development, including academic, research, commercial, retail and public uses;*
- *Create links to UD's campus, Downtown Dayton, I-75, and the southern suburbs;*
- *Address historical environmental, geotechnical and infrastructure issues;*
- *Engage a broad range of community stakeholders in all stages of the redevelopment process; and*
- *Procure local, state and federal funding to help meet the costs of cleanup, demolition, and infrastructure development.*



REDEVELOPMENT CHALLENGES

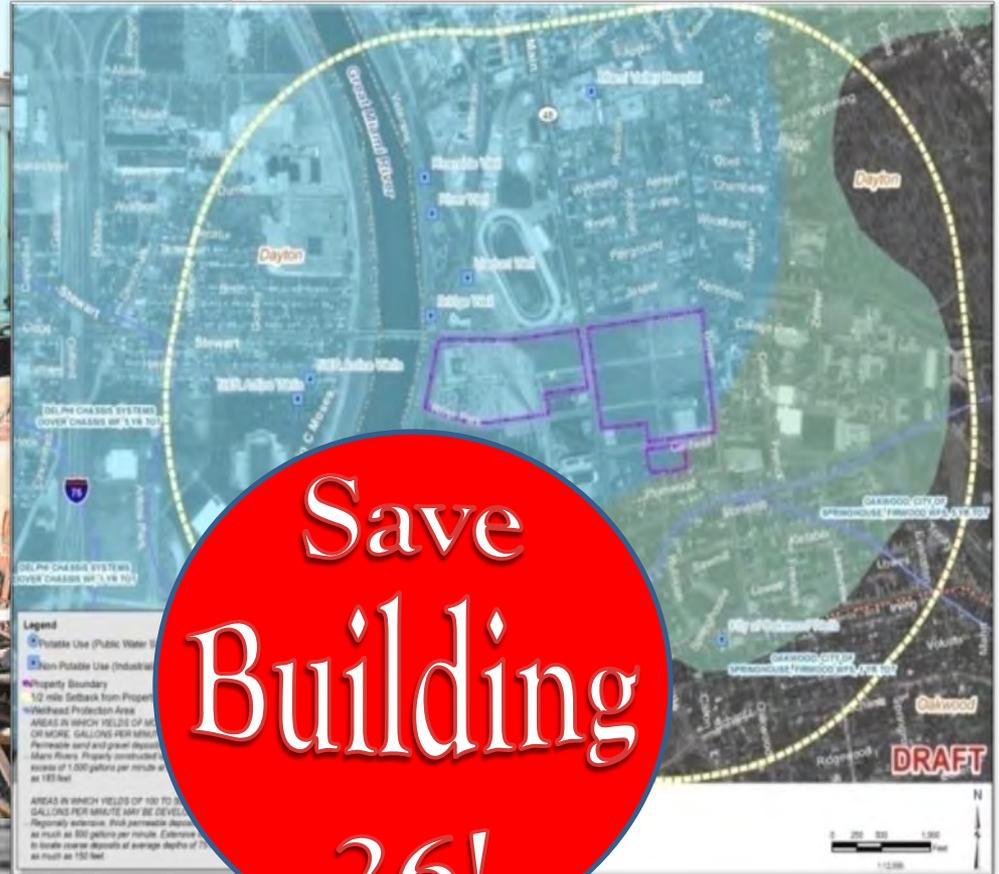
- Extensive Investigation
 - Intensive due diligence to evaluate historical site issues.
- Structure New Deal With NCR
- Strategic Planning
 - Update the University's Master Plan.
- Proactive Problem Solving



CRITICAL STEPS.

Procuring Funding & Clean-up

Urban Setting Designation



Save
Building
26!

FINANCIAL INCENTIVES

CAMPUS WEST

- **Army Corps of Engineers** \$5,300,000
Section 594 Program
- **Housing & Urban Development** \$99,000
Economic Development Initiative
- **Clean Ohio Round 3** \$2,500,000
West Campus Remediation
- **Clean Ohio Round 4** \$3,000,000
Mid-Campus Remediation

CATALYTIC FOLLOW-ON DEVELOPMENT

- **Ohio Job Ready Sites Grant** \$3,500,000
NCR World Headquarters / UDRI
- **Clean Ohio Assistance Fund** \$750,000
Frank Z Chevrolet / Student Housing

Total State & Federal Assistance

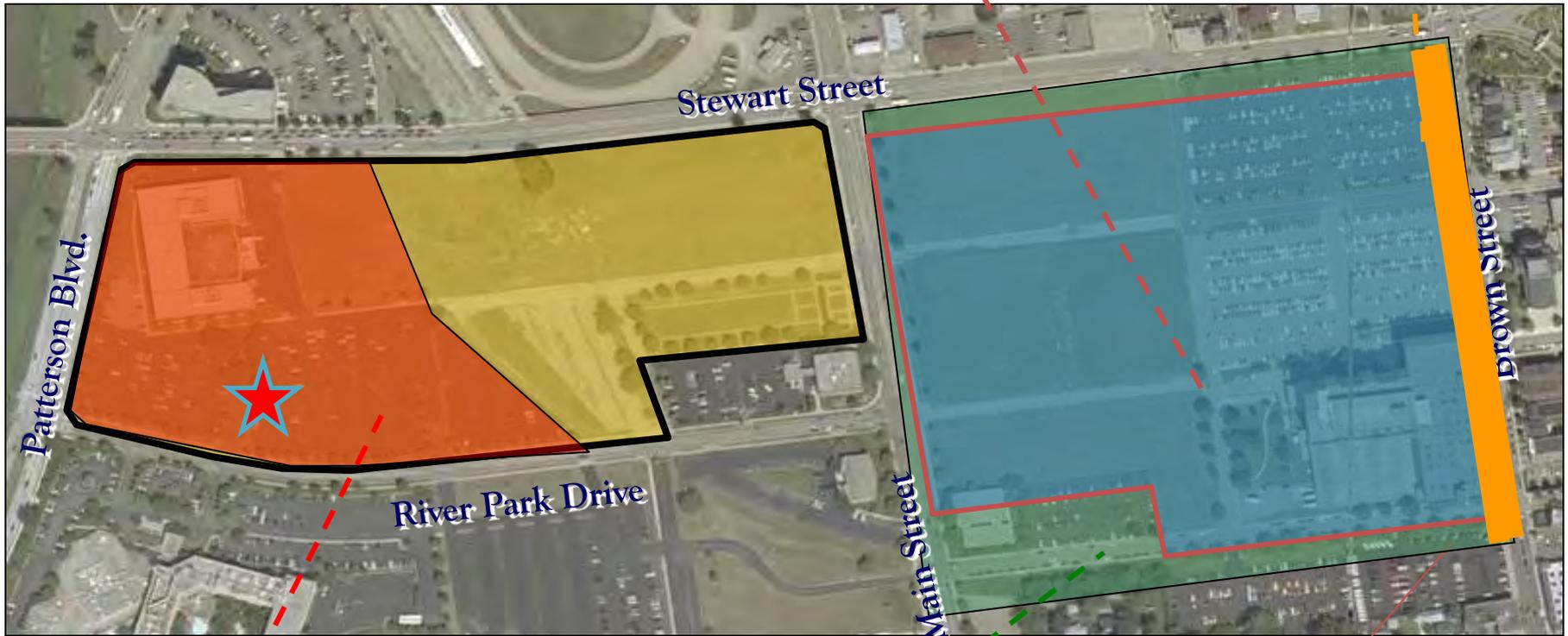
\$15,149,000

ACQUISITION, FUNDING, AND REMEDIATION

Cost of Acquisition: \$25 million

Clean Ohio Grant
@ \$3.0 million

HUD - EDI Grant
@ \$99,000

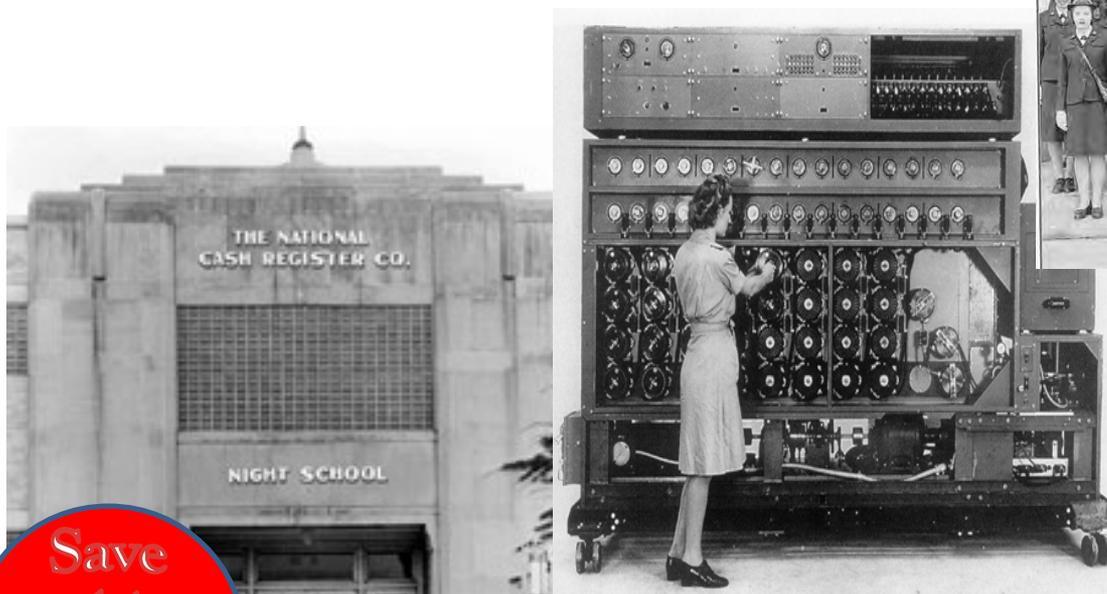
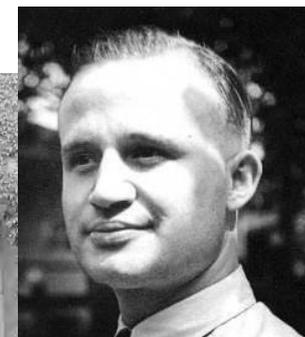


Clean Ohio Grant
@ \$2.5 million

Army Corps of Engineers
@ \$4.9 million

AN UNANTICIPATED HISTORY LESSON

During WWII, Joseph Desch was retained by the U.S. Navy to assist with enemy codebreaking. In 1943, he and his team developed the U.S. version of the “Bombe”, a forerunner of the modern computer, that decoded German Enigma messages.



Save
Building
26!

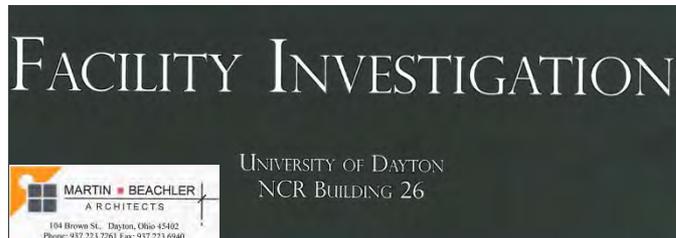
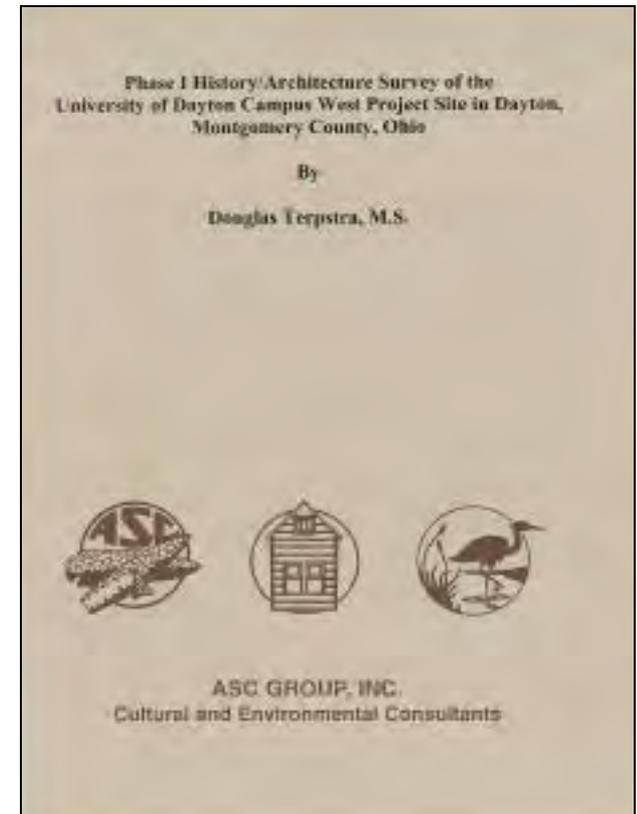
His team also broke Japanese codes resulting in defeat of the Imperial Japanese Navy. Much of the research and development of the technologies took place in **Building 26.**

BUILDING 26



The University's decision to demolish was affirmed after:

- A voluntary Section 106 study
- Input from community members
- Direction from the master planning process
- Architectural review of building & additions
- Assessment of tax incentive opportunities



COMMEMORATION – LOOKING FORWARD . . .

The University continues to be committed to telling the story of Joe Desch and the Codebreakers. Their actions and dedications shaped the face of history. The work performed at this site was critical to the Allies' victory in WWII.



The University is committed to “mitigation”:

- photographic documentation,
- reclamation of the building’s architectural elements,
- development of historical/artistic displays on and near the site.

OVERCOMING ENVIRONMENTAL HURDLES

- UD is meeting Ohio Voluntary Action Program (VAP) requirements for soil and groundwater as part of the redevelopment process.
- UD is addressing soil and groundwater issues on the property to meet VAP cleanup standards for the property's intended redevelopment uses.
- UD initiated an extensive public involvement program to seek input related to approval of an Urban Setting Designation (USD), a critical component to maintain redevelopment momentum and mitigate unnecessary costs

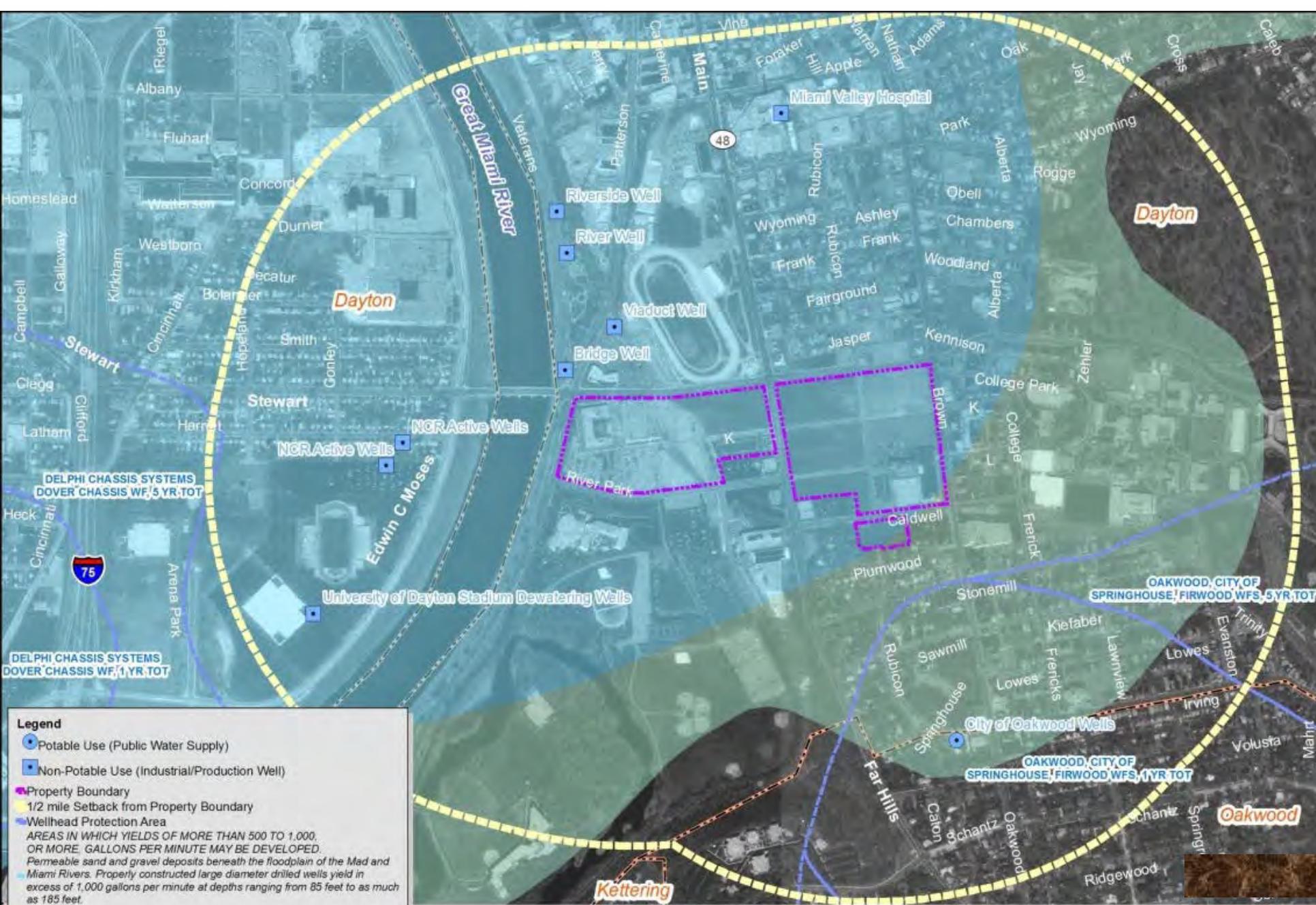
URBAN SETTING DESIGNATION

What is an Urban Setting Designation?

Formal recognition by the State of Ohio that:

- groundwater within an area is not used as a drinking water source;
- groundwater under the subject property cannot impact drinking water supplies; and
- there are other sustainable resources

USDs allow communities to cost-effectively address historical groundwater contamination at brownfield properties without compromising public health.



Legend

- Potable Use (Public Water Supply)
- Non-Potable Use (Industrial/Production Well)
- ▭ Property Boundary
- ▭ 1/2 mile Setback from Property Boundary
- ▭ Wellhead Protection Area

AREAS IN WHICH YIELDS OF MORE THAN 500 TO 1,000, OR MORE GALLONS PER MINUTE MAY BE DEVELOPED.
 Permeable sand and gravel deposits beneath the floodplain of the Mad and Miami Rivers. Properly constructed large diameter drilled wells yield in excess of 1,000 gallons per minute at depths ranging from 85 feet to as much as 185 feet.

Dayton

Dayton

DELPHI CHASSIS SYSTEMS
DOVER CHASSIS WF, 5 YR. TOT

NCR Active Wells

Edwin C Moses

University of Dayton Stadium Dewatering Wells

DELPHI CHASSIS SYSTEMS
DOVER CHASSIS WF, 1 YR. TOT

OAKWOOD, CITY OF
SPRINGHOUSE, FIRWOOD WFS, 5YR TOT

OAKWOOD, CITY OF
SPRINGHOUSE, FIRWOOD WFS, 1YR TOT

Oakwood

Kettering

Great Miami River

Miami Valley Hospital

NCR Active Wells

City of Oakwood Wells

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URBAN SETTING DESIGNATION

OUTREACH TO STAKEHOLDERS

- Winter 2005/06 - Internal Strategy Sessions and preliminary conversations with State agencies
- Spring 2006 - Initial Meetings with Stakeholders
- Spring 2006 - USD Research and Focused Consultation with the Cities of Dayton and Oakwood
- Summer 2006 - Ongoing Meetings with Stakeholders
- Fall 2006 - Supporting legislation approved by Cities of Oakwood and Dayton
- Fall 2006 - Submittal of USD Application to Ohio EPA
- March 2007 - Urban Setting Designation approved by the Ohio Environmental Protection Agency!

ENVIRONMENTAL DUE DILIGENCE APPROACH

Due diligence goals

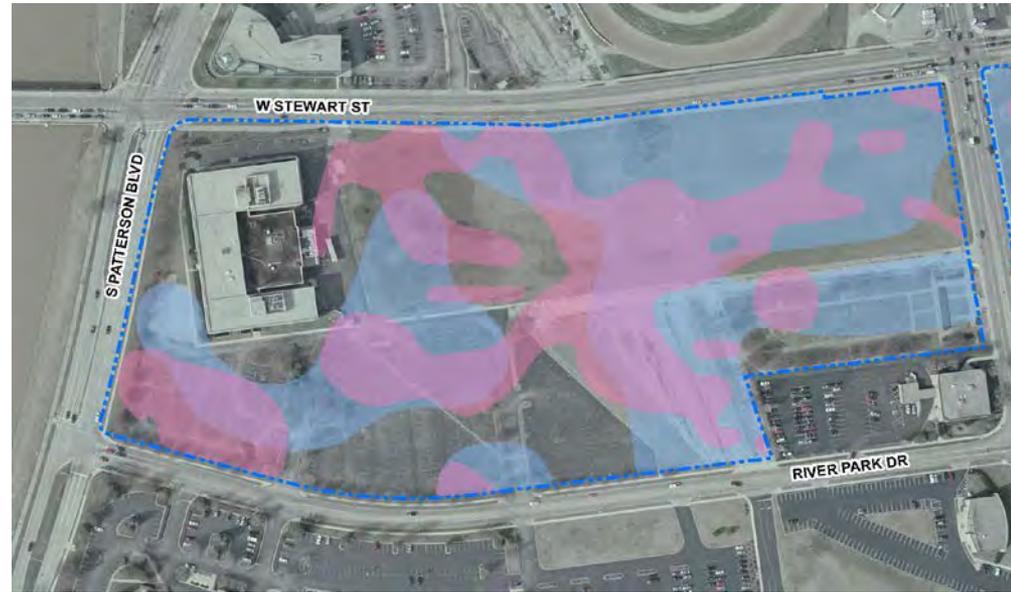
- Identify development constraints (environmental and geotechnical)
- Quantify costs to resolve development constraints
- Highlight potential risks
- Identify tools to manage those risks
- Support property acquisition negotiations with NCR



TYPICAL DEVELOPMENT CONSTRAINTS

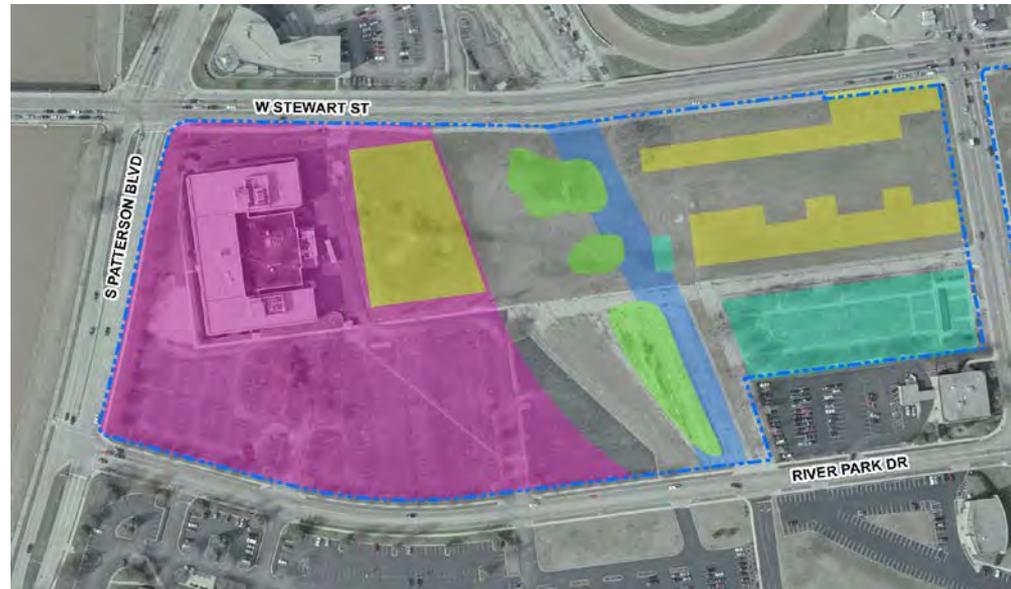
Environmental Constraints

- Soil and/or groundwater contamination
- Vapor intrusion considerations
- Soil management challenges



Geotechnical Constraints

- Large areas of uncontrolled fill
- Former basements with debris fill and intact structures
- Former slabs
- Former canal



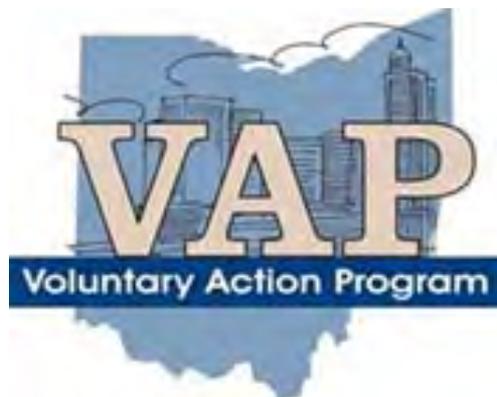
POTENTIAL RISKS

- Known environmental conditions on the property
- Undiscovered environmental conditions on the property
- Migration of contaminants off the property
- Future development cost increases



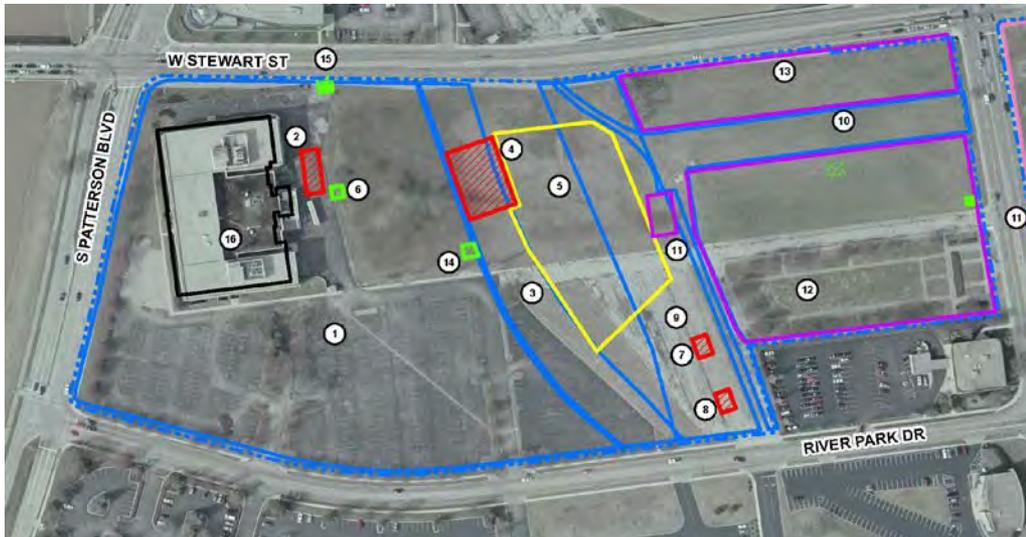
TOOLS TO MANAGE RISKS

- Ohio Voluntary Action Program
- CERCLA All Appropriate Inquiry
- Integrate development options with cleanup standards and geotechnical constraints
- Grant funding (e.g., Clean Ohio Fund)
- Contractual indemnifications
- Environmental insurance



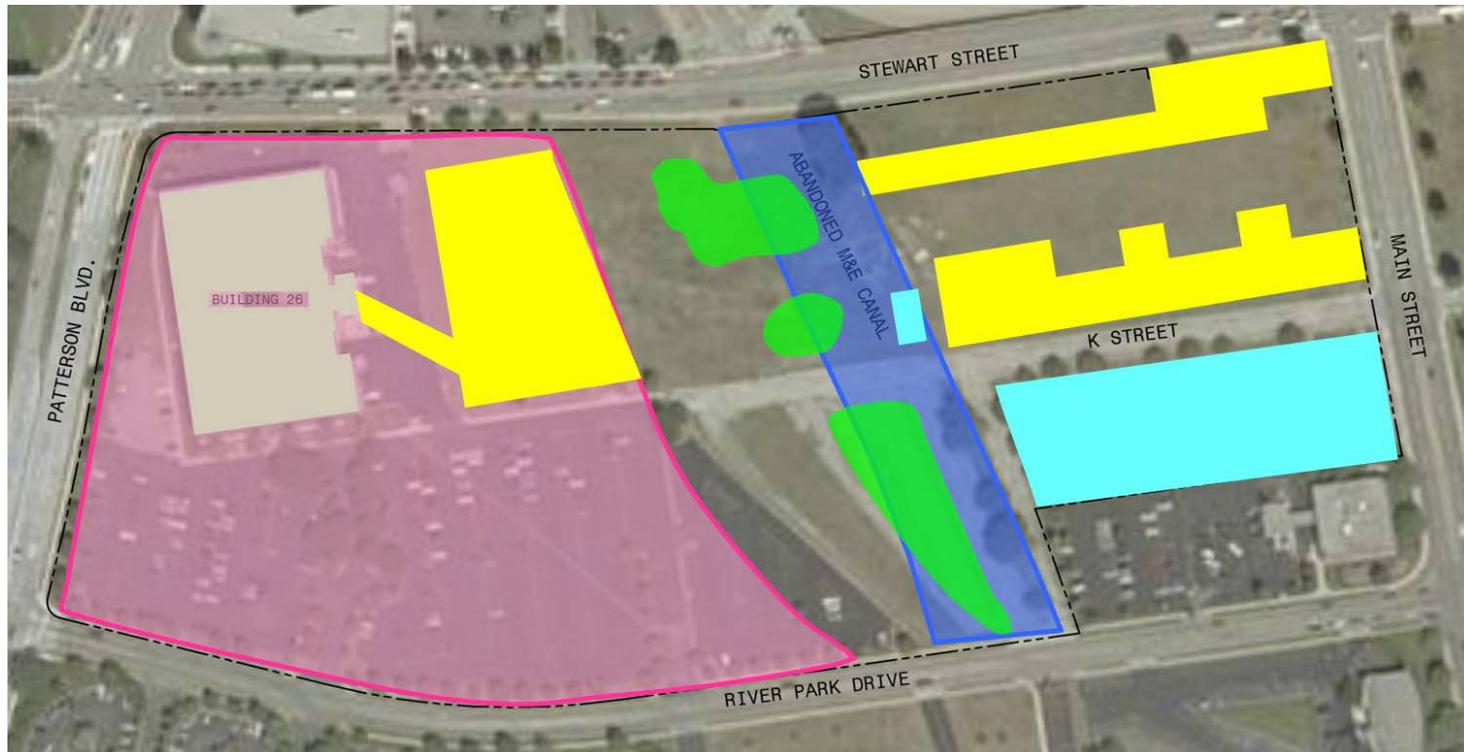
ENVIRONMENTAL RESULTS

- Asbestos in previously existing building
- Soil contaminants at concentrations above residential and commercial clean up standards
- Groundwater underlying the property meets unrestricted potable use standards (i.e., clean groundwater under the property)
- Groundwater underlying neighboring acreage exceeds unrestricted potable use standards



GEOTECHNICAL RESULTS

- Former basements and building slabs from former NCR complex
- Tunnels connecting former buildings
- Large areas of uncontrolled fill
- Former Miami & Erie canal



REMEDIATION DESIGN

- No fixed development plan available at the time
- Designed remedial approach to maximize future flexibility in consideration of available funding mechanisms and meet VAP standards for applicable land use
- Original remediation design included:
 - Asbestos abatement and demolition of previously-existing building
 - Soil remediation to meet mixed use development plan (mixture of commercial and restricted residential)
- Demolition and asbestos abatement were ultimately completed significantly under budget
- Savings on demolition process enabled the remedial design to be expanded to site-wide restricted residential land use (i.e., could now meet more conservative standard site-wide and not have limitation to commercial in certain areas)

REMEDIATION PROCESS

- Asbestos abatement in previously-existing building
- Demolition of building, basement structure and former tunnel
- Soil remediation to meet VAP restricted residential standards (i.e., residential standards to 4 foot depth)
- Soil managed below point of compliance and disposed offsite
- No groundwater remedy required, but property was included in Urban Setting Designation related to neighboring acreage
- Operation and maintenance (O&M) obligations



REMEDIATION PROCESS

- Covenant Not to Sue (CNS) issued by Ohio EPA in February 2011
- Remediation allows for restricted residential and/or commercial redevelopment
- Completion of the VAP process and attainment of the CNS was crucial for securing the GE EPISCenter redevelopment project



THE CITY OF DAYTON: FORWARD TO THE FUTURE!



Dayton's
Industrial
Past



Dayton's New Transition: Changing Perceptions



During the last decade, Dayton has been working to redefine itself
as a hub for technology development.

1 mid-size region for new businesses 2009 and 2010. - *Site Selection Magazine*

6 school for young entrepreneurs – University of Dayton - *Entrepreneur Magazine*

#16 in exports as a percentage of gross metro product - *Brookings Institution*

#20 city for new college graduates starting careers - *BusinessWeek Magazine*

Asset-Based Strategy: Places & Space

Brownfield Development & infrastructure investments are two important parts of a multi-layer strategy to make Dayton more attractive to businesses in Ohio.





The University's commitment to preparing the property for redevelopment.



The City's commitment to brownfield redevelopment



What attracted GE Aviation's EPISCenter to the University of Dayton's Campus West site?

It was more than just location, location, location.



A magnetic and vibrant urban environment developed to attract college graduates, entrepreneurs, business persons, and investors



Location still matters:

- In the Ohio Aerospace Hub
- On a research university campus
- Less than one mile from I-75
- Near other GE Aviation sites
- Fifteen minutes from Wright-Patterson Air Force Base



UDRI's expertise in aerospace science & engineering and technology-based economic development

THE DAYTON AEROSPACE HUB



Dayton Region



What are **OHIO** Hubs ?

Ohio Hubs of Innovation and Opportunity

The Ohio Hubs are envisioned as place-based regional economic development initiatives that build upon leading assets in our urban centers to accomplish three major goals:

- Propel innovation through cutting-edge, market-driven applied technology and knowledge spillover;
- Foster the opportunity for job creation and retention; and
- Catalyze the formation of new companies in the region, while at the same time helping to ensure that Ohio's existing industries retain their competitive advantage in the global marketplace.



Vision

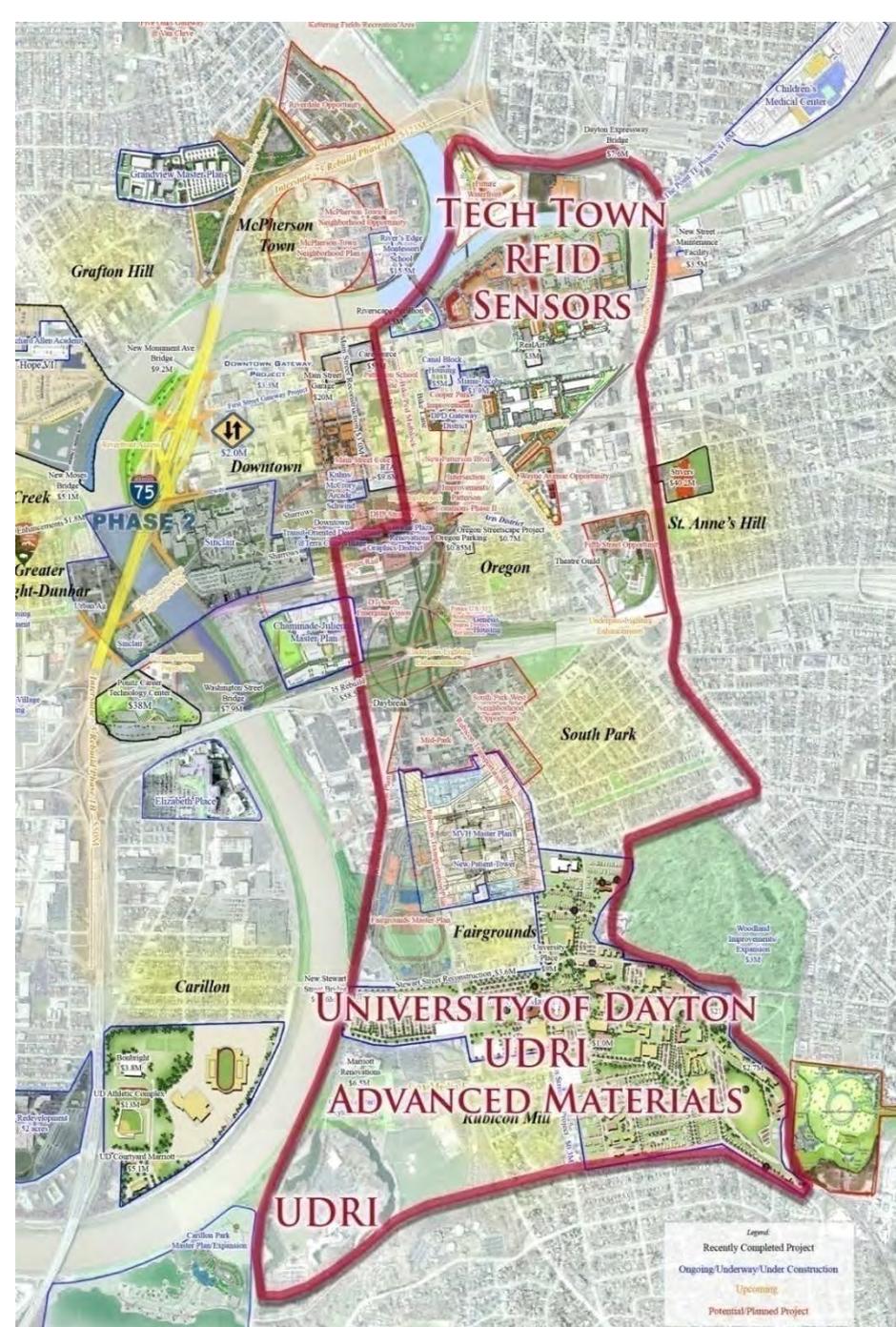
Become the magnet for entrepreneurs, innovators, and business owners seeking opportunity in a *live-work-play-learn* environment that fosters creativity and growth.

Mission

Create jobs by combining physical and economic development assets within the greater Dayton Region Economic Development Strategy.

Strategy

Develop the Dayton Region as the national center of aerospace research, development, acquisition, and commercialization.



The Next Critical Piece



The University of Dayton Research Institute brings expertise in aerospace science & engineering, as well as technology-based economic development

University of Dayton & UDRI

- UDRI was established in 1956
- Over 400 UDRI staff, 84 UD faculty and 260 students perform sponsored research
- UDRI is a stand-alone business unit of the University and fully supported by external sponsors; FY 2009 revenues > \$96.5M
- #2 among all U.S. universities and colleges for sponsored materials research (NSF, 2009)
- #1 in Ohio, #11 nationally among universities for federally funded engineering research (NSF, 2009)
- #2 among U.S. universities for contributing to community revitalization (2009 report: Savior of our Cities, by E. Dobbelle)
- Top 10 among U.S. universities for undergraduate entrepreneurial programs (Entrepreneur magazine, 2006-09)

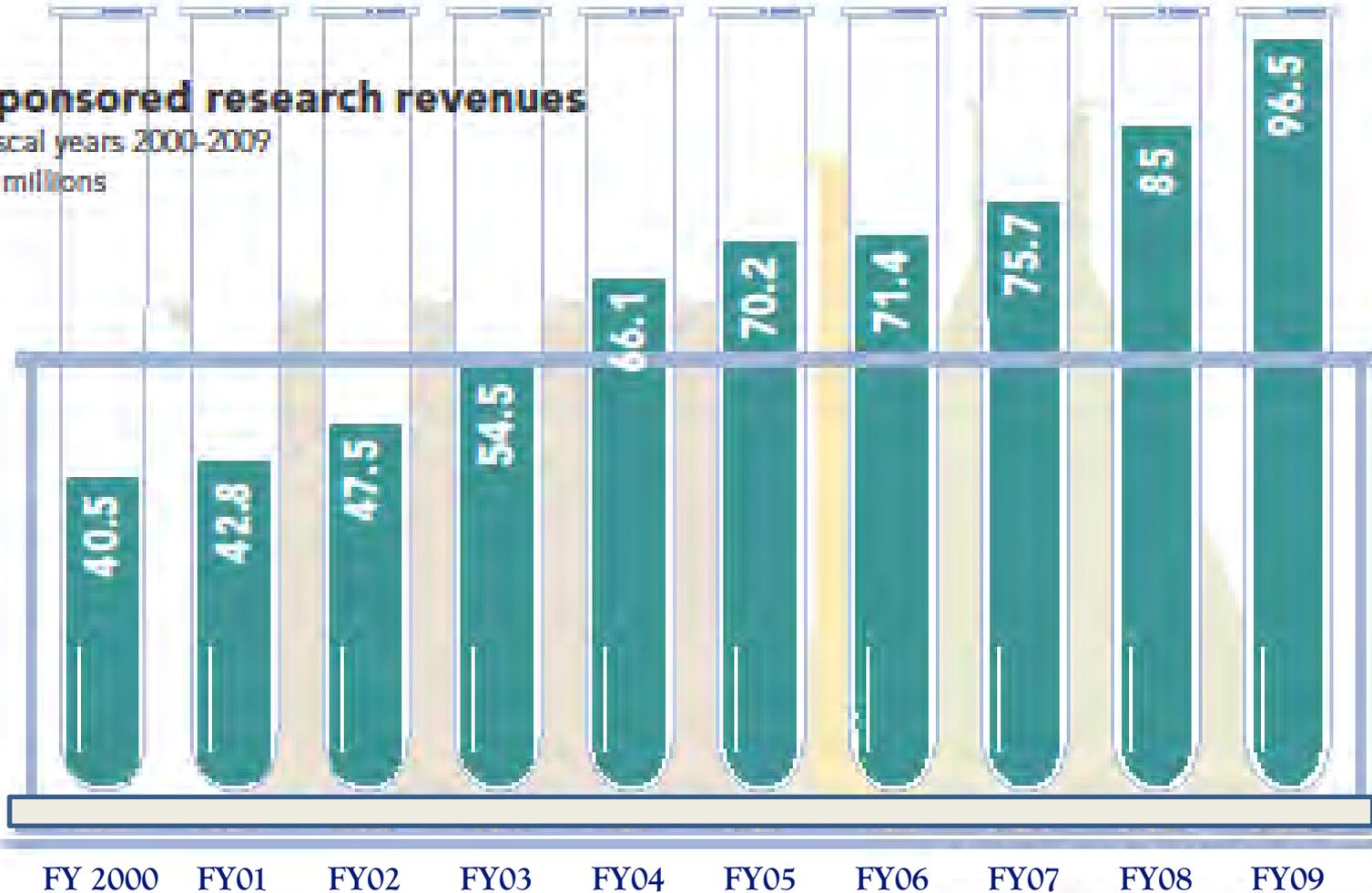


UDRI 's Research Volume Growth

Sponsored research revenues

Fiscal years 2000-2009

In millions



UDRI and Technology-Based Economic Development



Create strong industry/university teams to pursue large opportunities;

Initiate and support technology development that has the potential to impact a large number of Ohio companies;

Raise the technological competitiveness of Ohio's industries;

Link students to potential Ohio employers by providing them with specific skill sets through work on customer projects;

Save and create jobs through self-sustaining materials value chains, from raw material suppliers through end-users, that make Ohio globally competitive; and

Attract companies and start-ups, building on proven successes in advanced materials-based industries and their associated high-wage jobs for Ohio.

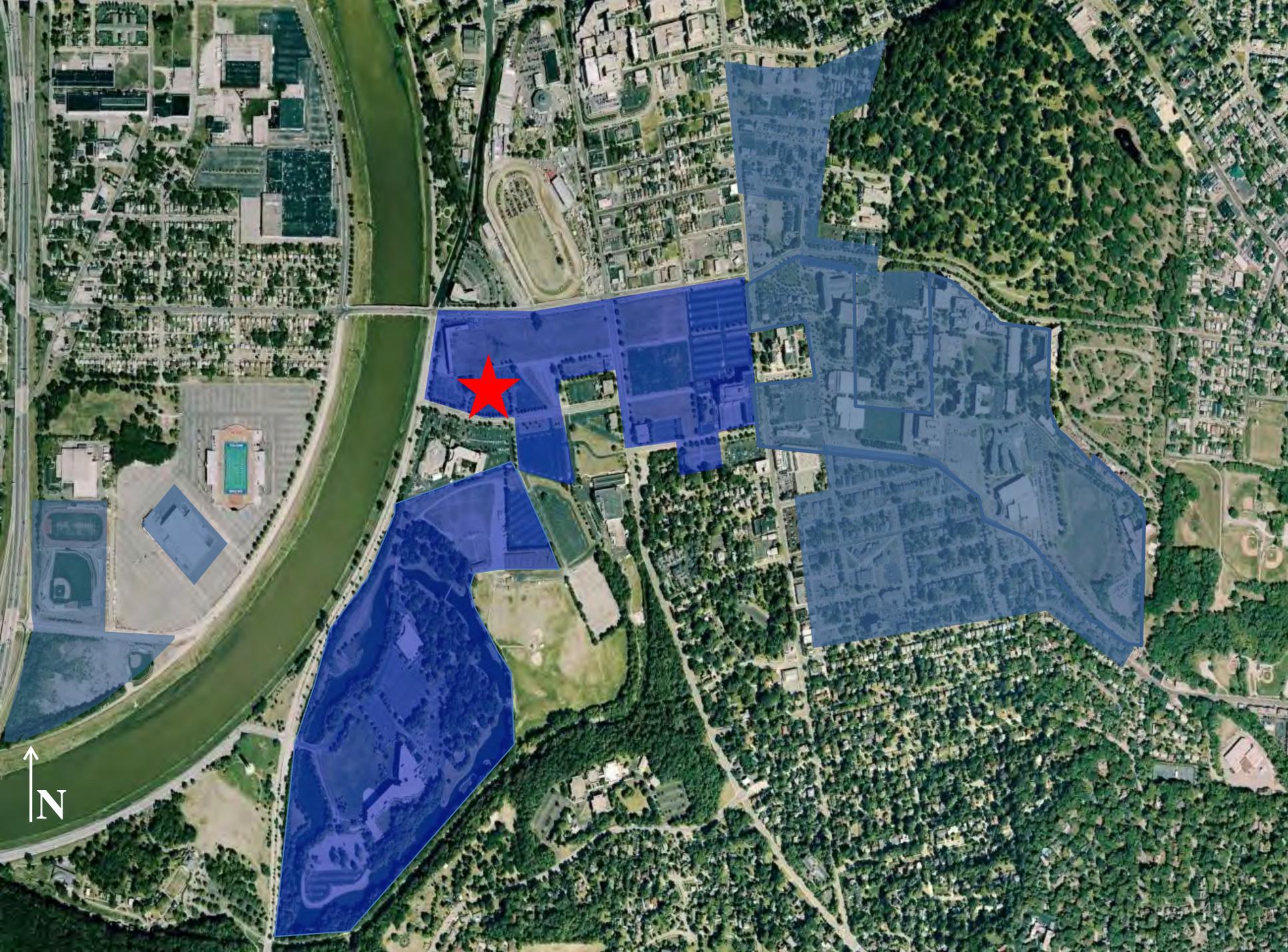
The GE / UD / UDRI Relationship

- Collaborative research agreement with UDRI
- GE will consult on future site development
- GE will have access to engineering students through co-op activities
- UD provides access to future engineering talent for GE
- GE has access to campus for seminars, training, events, and activities
- GE has access to meeting space and conference rooms and other facilities and amenities on UD's campus





The Game Changer





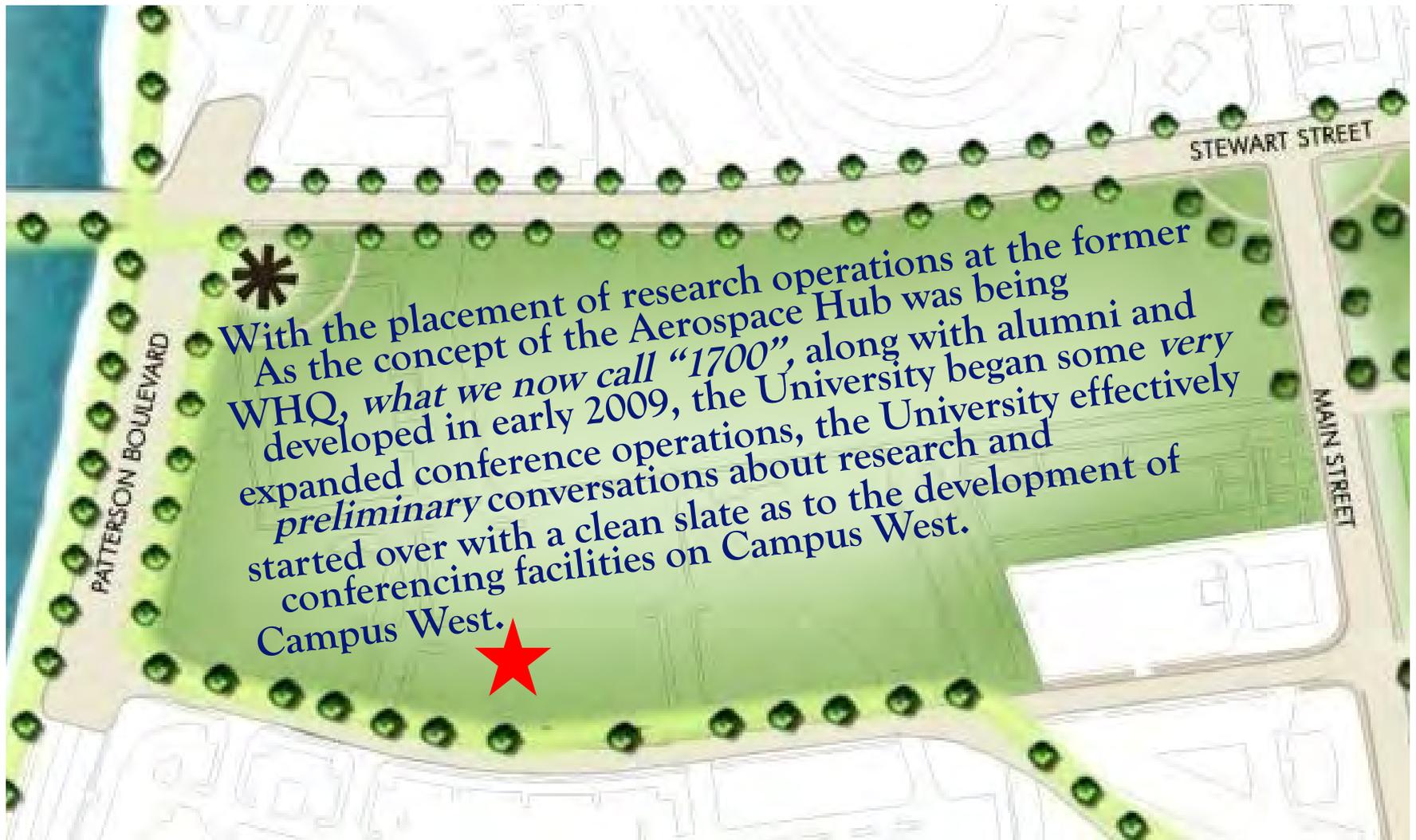
115 acres



455,000
square feet



Impacts on Master Plan for Campus West



GE Project Re-Cap

- The University of Dayton is building a special-purpose building and has entered into a long-term lease with GE.
- Facility will house the headquarters & research labs for GE Aviation's Electric Power Systems Group.
- A 138,000 sq. ft. building : 87,000 sq. ft. of labs and 51,000 of office.
- Total design, engineering, construction costs, equipment, & fees - > \$50 million
- UD to form new legal entities required to effect the transaction
- Financing will consist of:
equity, county & city grants,
New Market Tax Credits, and
bank loans
- Building will be LEED Certified



Location of Building on Property

Flying over from the north

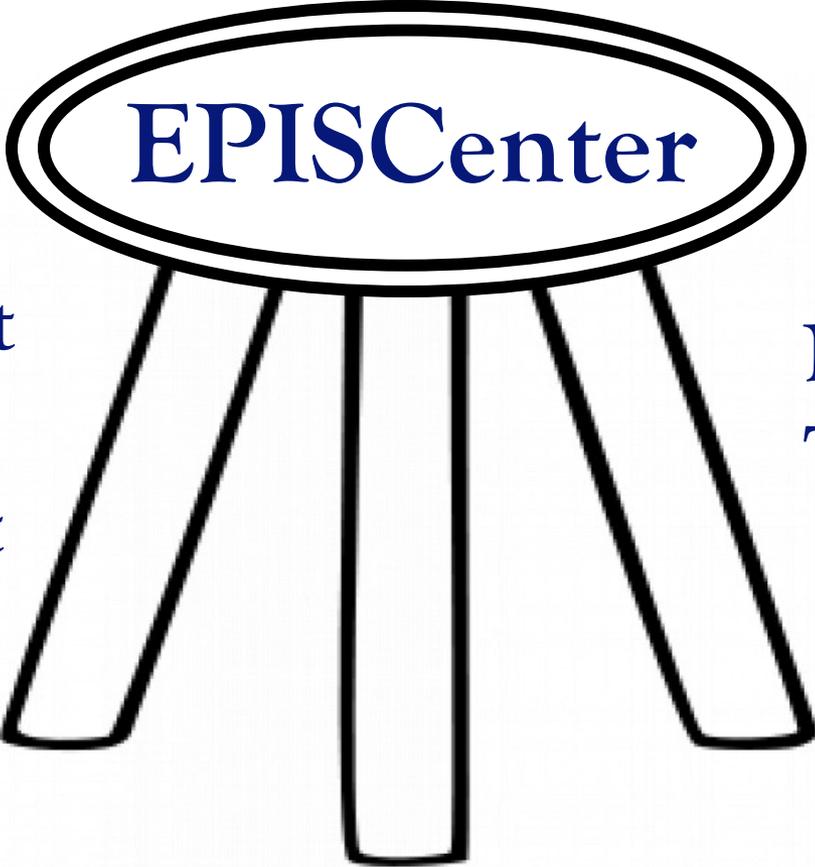


Location and Look of the Building



- GE wanted a presence on Patterson Boulevard, along the Great Miami River.
- The building takes advantage of Great Miami River and Downtown Dayton views.
- Placement leaves opportunity for future development on the site.
- Centrally locates parking for GE, as well as UD and other potential tenants.
- The building *looks like a University of Dayton Building.*

Three Legs that helped support the EPISCenter



Tax Abatement
&
Tax Increment
Financing

New Market
Tax Credits

Environmental
Remediation & Relief

A look at the EPISCenter's Interior *Main Lobby*



A look at the EPISCenter's Interior *Meeting Room*



A look at the EPISCenter's Interior *Gathering Space*



GE EPISCenter

Construction as of Spring 2012



GE EPISCenter

Construction as of Spring 2012



GE EPISCenter

Construction as of Spring 2012



GE EPISCenter

Construction as of Spring 2012





Brownfield redevelopment requires *playing nicely with others.*



Ohio Citizen Action



Dayton History



US Army Corps of Engineers.



Dayton Region

Dayton Daily News

BURT, HILL



Wright-Patterson Air Force Base

URBAN REDEVELOPMENT DEMANDS:

Then adding lots of Patience

Willingness to take risks

Financial

Liability

Political

Lost Opportunities

Public/Private Partnerships

Federal Gov't

Local Gov't

State Gov't

Commercial Partners

The Neighbors

Tremendous Creativity/Expertise

Legal

Environmental

Construction

Financial

Public Relations

Advocacy

And, in all seriousness, *seek professional help!*

You That highlights ?



Ted Bucaro



Chris Lipson



Todd Davis



Bill Dennis