

EMPOWERING A MULTIFACETED TEAM

MICHAEL PAUL KRUG

CELEBRATING A MULTIGENERATIONAL CAMPUS

MIAPPA 2025 WINTER CONFERENCE

THANK YOU TO THOSE WHO EMPOWERED ME TO BE HERE.

TOPICS AND TIMELINE

FRIDAY . ANTE MERIDIEM



MICHIGAN STATE
UNIVERSITY



THE START

9.15

BASIC PLOTLINE

9.25

ORIENTATION

9.45

ORIGIN STORIES, PRESENT ERA

10.00

FUTURE STATE

10.10

THOUGHTS FROM THE AUDIENCE

THE END 10.15



TOPICS AND TIMELINE

FRIDAY . ANTE MERIDIEM

BASIC PLOTLINE

ORIENTATION

ORIGIN STORIES, PRESENT ERA

FUTURE STATE

THOUGHTS FROM THE AUDIENCE

DEFINING SUCCESS ...IN A PROJECT. ...AT A PLACE.

ABSTRACT OF THE ABSTRACT

- Know your job.
- Know the people who are doing jobs that relate and depend on yours.
- Help build the place that is your community into something better.
- Know the mission. Know the why.

Empowering a Multifaceted Team is a mad-lib riff on this year's Conference theme, *Celebrating a Multigenerational Campus*. This presentation will highlight the critical role teams of people have played in 2 multigenerational design-build-operate endeavors : **the MSU FRIB in East Lansing and the GM Technical Center in Warren.**

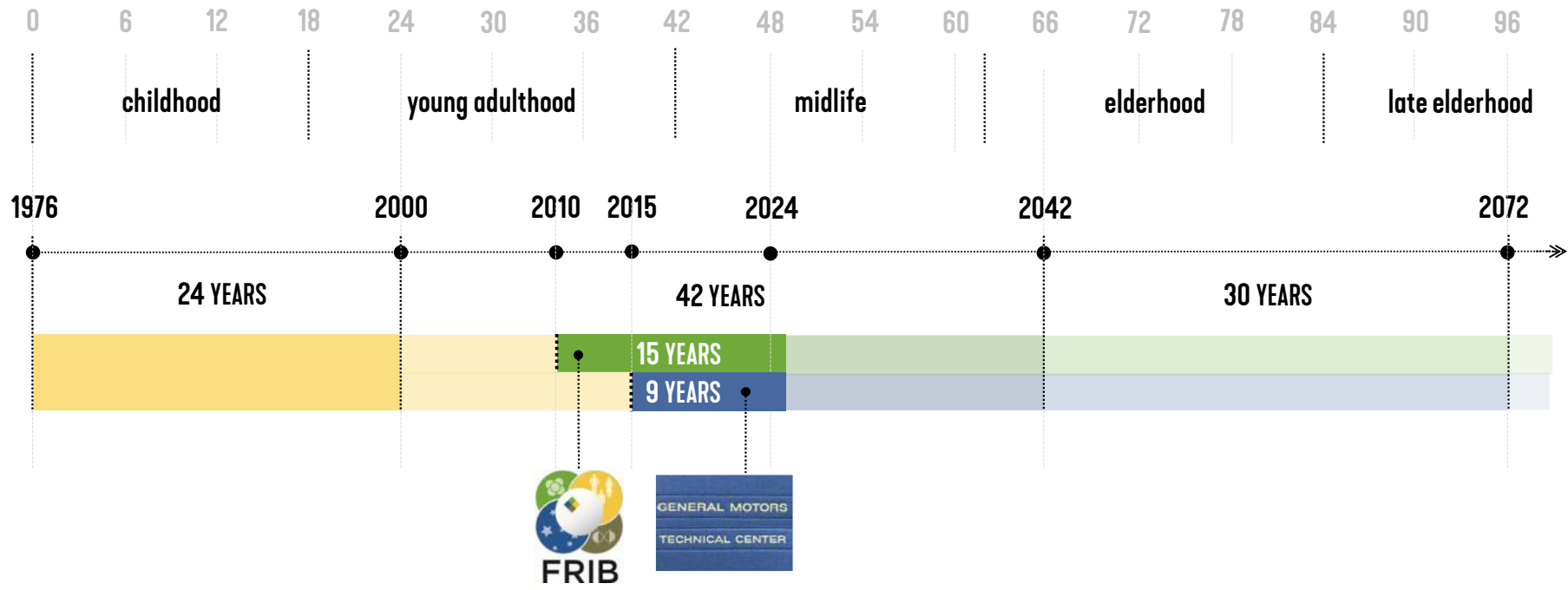
Each place has existed for 60+ years, shaped by people and circumstance through the decades to achieve their evolving missions. Common key concepts and methods of empowerment that guided each facility improvement process will be explored, along with applications for those best practices in future initiatives.

Latent synergies will be highlighted between skilled trades, design/engineering disciplines, and facility operators, and how they can be leveraged toward shared success. Also to be uncovered is the thread that ties a *corporate* mindset to a *cooperative* one, and how that perspective strengthens team empathy and establishes cross-generational ties, locking in institutional and individual legacy.



TIMELINE ... LIFELINE

MICHAEL PAUL KRUG



DEFINITIONS



Barbara Wallraff's go-to dictionary.

<https://ahdictionary.com/>

DEFINITION

n. 1. A statement or description of the fundamental character or scope of something.

WHAT WORDS REPRESENT

Celebrating a Multigenerational Campus

By combining the strategies below, you can effectively manage a **campus** with multigenerational **buildings**, ensuring they remain functional, sustainable, and vibrant **spaces** for the **campus** community.

1 Assessment and Planning

- **Conduct Regular Assessments:** Regularly evaluate the condition of all **buildings** to identify maintenance needs and potential upgrades.
- **Master Planning:** Develop a comprehensive **campus** master plan that integrates both old and new **buildings**, ensuring they meet current and future needs.

2 Maintenance and Upgrades

- **Preventive Maintenance:** Implement a preventive maintenance program to extend the life of older **buildings** and reduce emergency repairs.
- **Modernization:** Upgrade older **buildings** with modern amenities and technologies while preserving their historical value.

3 Space Utilization

- **Flexible Spaces:** Design flexible **spaces** that can be easily reconfigured to meet changing needs.
- **Shared Facilities:** Encourage the use of shared **facilities** to maximize **space** utilization and foster a sense of community.

4 Sustainability

- **Energy Efficiency:** Retrofit older **buildings** with energy-efficient systems to reduce operational costs and environmental impact.
- **Sustainable Practices:** Incorporate sustainable practices in both old and new **buildings**, such as using renewable energy sources and sustainable materials.

5 Technology Integration

- **Smart Building Technologies:** Implement smart **building** technologies to improve the efficiency and functionality of both old and new **buildings**.
- **Connectivity:** Ensure robust connectivity and IT infrastructure across the **campus** to support modern educational needs.

6 Community and Culture

- **Preserve Heritage:** Maintain the historical and cultural significance of older **buildings** while integrating them with new structures.
- **Engage Stakeholders:** Involve students, faculty, and staff in planning and decision-making processes to ensure the **campus** meets their needs.

7 Funding and Resources

- **Diversified Funding:** Seek diverse funding sources, including grants, donations, and partnerships, to support maintenance and upgrades.
- **Resource Allocation:** Prioritize resource allocation based on the strategic importance and condition of **buildings**.

keywords :

campus

buildings

spaces

facilities

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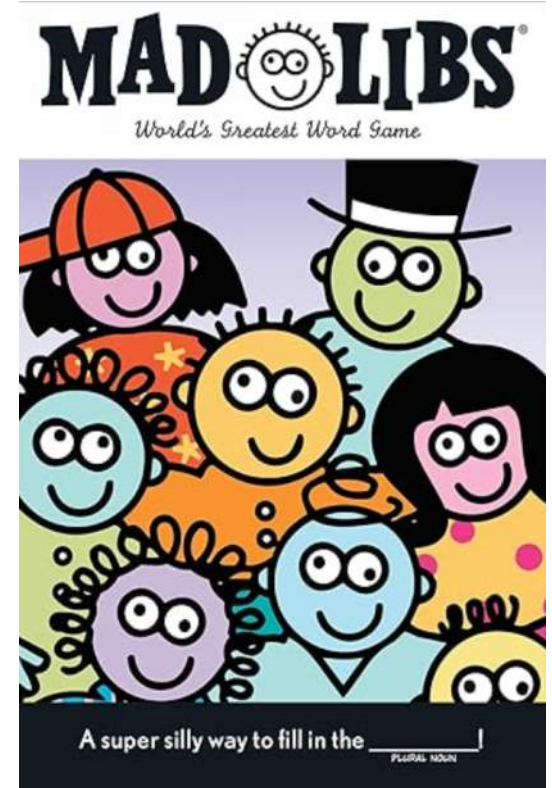
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replace :	with :
campus	team
buildings	disciplines
spaces	people
facilities	resources



A DIFFERENT PERSPECTIVE

Celebrating a Multigenerational Team

By combining the strategies below, you can effectively manage a **team** with multigenerational **disciplines**, ensuring they remain functional, sustainable, and vibrant **people** for the **team** community.

1 Assessment and Planning

- **Conduct Regular Assessments:** Regularly evaluate the condition of all **disciplines** to identify maintenance needs and potential upgrades.
- **Master Planning:** Develop a comprehensive **team** master plan that integrates both old and new **disciplines**, ensuring they meet current and future needs.

2 Maintenance and Upgrades

- **Preventive Maintenance:** Implement a preventive maintenance program to extend the life of older **disciplines** and reduce emergency repairs.
- **Modernization:** Upgrade older **disciplines** with modern amenities and technologies while preserving their historical value.

3 People Utilization

- **Flexible People:** Design flexible **people** that can be easily reconfigured to meet changing needs.
- **Shared Resources:** Encourage the use of shared **resources** to maximize **people** utilization and foster a sense of community.

4 Sustainability

- **Energy Efficiency:** Retrofit older **disciplines** with energy-efficient systems to reduce operational costs and environmental impact.
- **Sustainable Practices:** Incorporate sustainable practices in both old and new **people**, such as using renewable energy sources and sustainable materials.

5 Technology Integration

- **Smart Discipline Technologies:** Implement smart **discipline** technologies to improve the efficiency and functionality of both old and new **disciplines**.
- **Connectivity:** Ensure robust connectivity and IT infrastructure across the **team** to support modern educational needs.

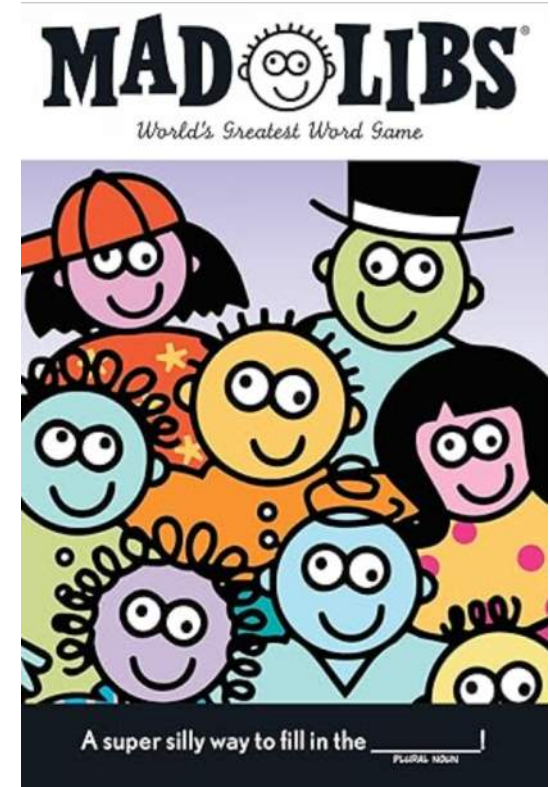
6 Community and Culture

- **Preserve Heritage:** Maintain the historical and cultural significance of older **disciplines** while integrating them with new structures.
- **Engage Stakeholders:** Involve students, faculty, and staff in planning and decision-making processes to ensure the **team** meets their needs.

7 Funding and Resources

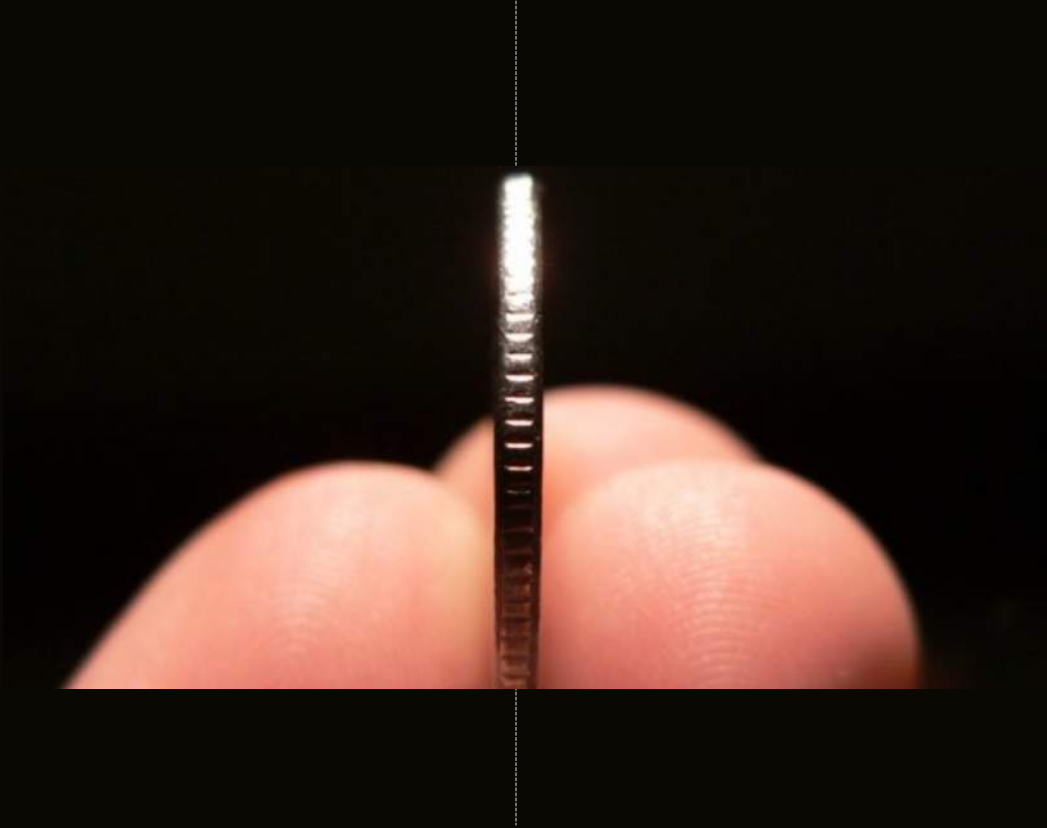
- **Diversified Funding:** Seek diverse funding sources, including grants, donations, and partnerships, to support maintenance and upgrades of **people**.
- **Resource Allocation:** Prioritize resource allocation based on the strategic importance and condition of **disciplines**.

replace :	with :
campus	team
buildings	disciplines
spaces	people
facilities	resources



2 SIDES OF THE COIN

DIFFERENT PERSPECTIVES



KEY COMPONENTS TO A SUCCESSFUL SITUATION

AN ACTIVE, LIVING ORGANISM - OR NOT.

INANIMATE	ANIMATE
campus	team
buildings	disciplines
spaces	people
facilities	resources



KEY COMPONENTS TO A SUCCESSFUL SITUATION

DEFINITIONS

- **Campus** : The grounds and buildings of an institution, especially a college or other institution of learning, a hospital, or a corporation.
- **Team** : A group organized for work or activity.
- **Buildings** : Something that is built, as for human habitation; a structure.
- **Disciplines** : A branch of knowledge or teaching.
- **Spaces** : An area provided for a particular purpose.
- **People** : Humans considered as a group or in indefinite numbers.
- **Facilities** : Building, room, array of equipment, or a number of such things, designed to serve a particular function. 1b. Something that facilitates an action or process.
- **Resources** : Something that is available for use or that can be used for support or help.

campus	team
buildings	disciplines
spaces	people
facilities	resources

DICHOTOMY

n. 1. A division into two contrasting parts or categories.

INANIMATE & ANIMATE

A DIFFERENT LENS



TWO BIG ORGANIZATIONS

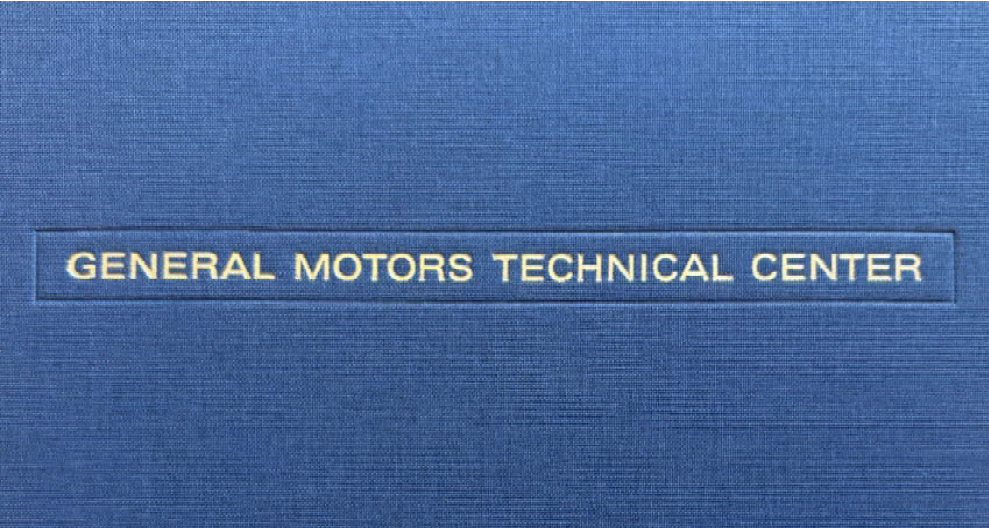


MICHIGAN STATE

U N I V E R S I T Y

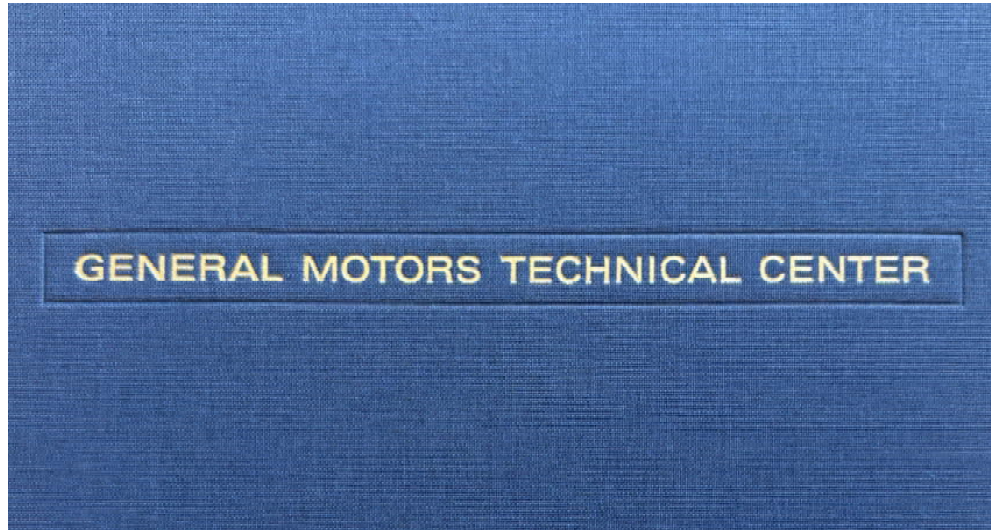


TWO BIG PLACES



TWO BIG PLACES

Deliver world-class experiences.

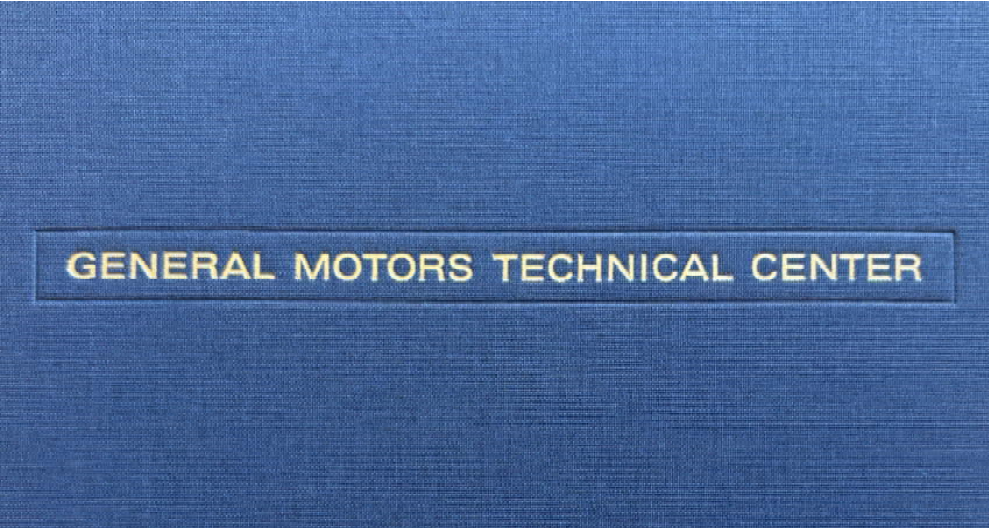


Advance scientific discovery & education.



TWO BIG PLACES

Located amidst suburbia.

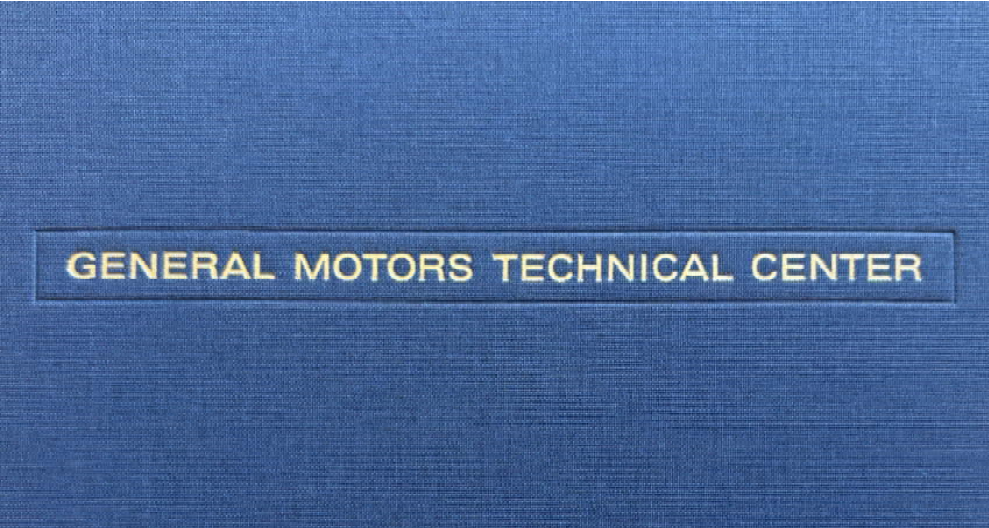


Located amidst an academic campus.



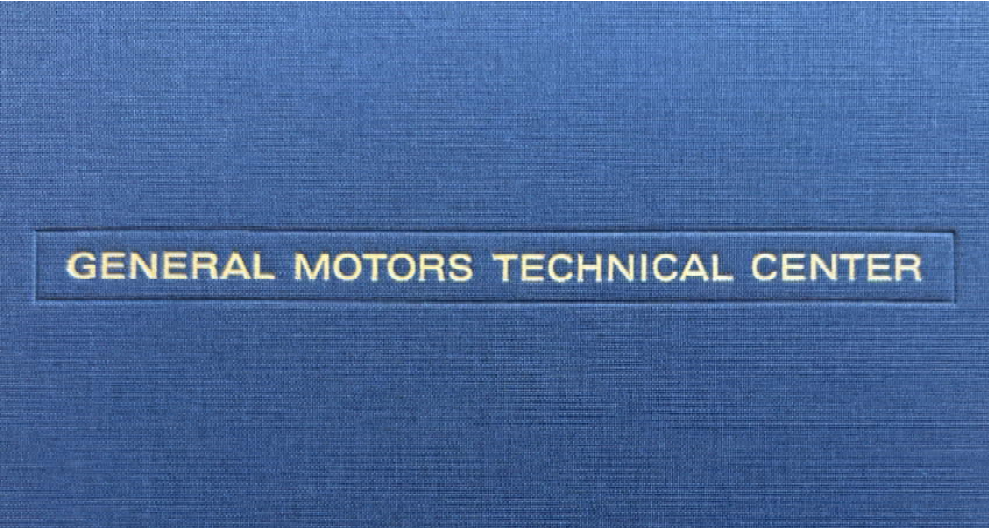
TWO BIG PLACES

BIG, MULTIGENERATIONAL ORGANIZATIONS

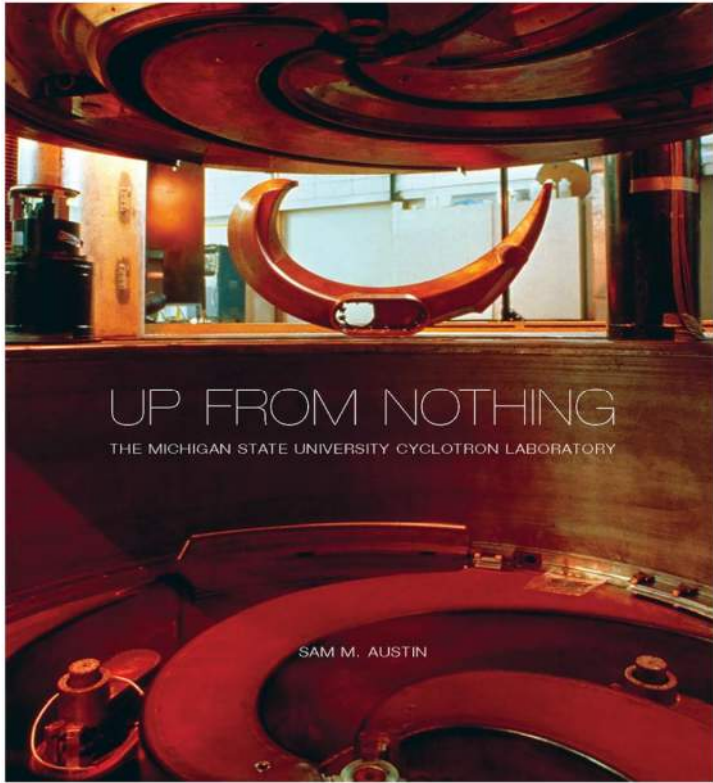


TWO BIG PLACES

FOCUS ON STEAM



TWO GOOD BOOKS



THE CHRONICLER

TECH CENTER



- Artist
- Archivist
- Author
- Color whisperer



**SUSAN
SKARSGARD**

Support the Cranbrook Archives:

<https://www.center.cranbrook.edu/store/items/where-today-meets-tomorrow-eero-saarinen-and-general-motors-technical-center>

THE CHRONICLER

FRIB

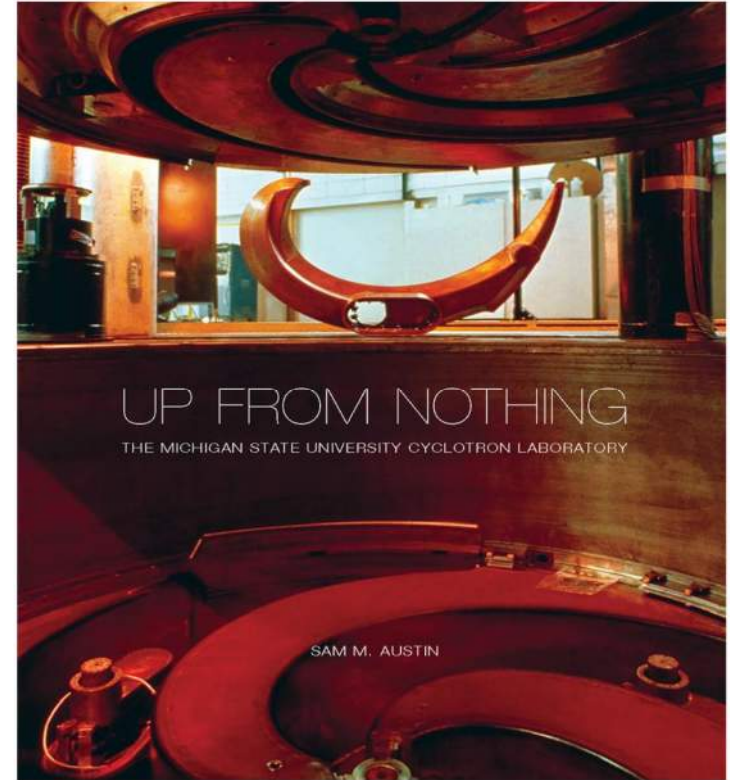


**SAM
AUSTIN**

- **1980-1992**
- University Distinguished Professor Emeritus, Dept. of Physics & Astronomy
- Chair of MSU Department of Physics and Astronomy (1980-1983)
- NSCL Director (1989-1992)

Support your local MSU press:

<https://msupress.org/9780996725224/up-from-nothing/>



BASIC PLOTLINE

ORIENTATION

ORIGIN STORIES, PRESENT ERA

FUTURE STATE

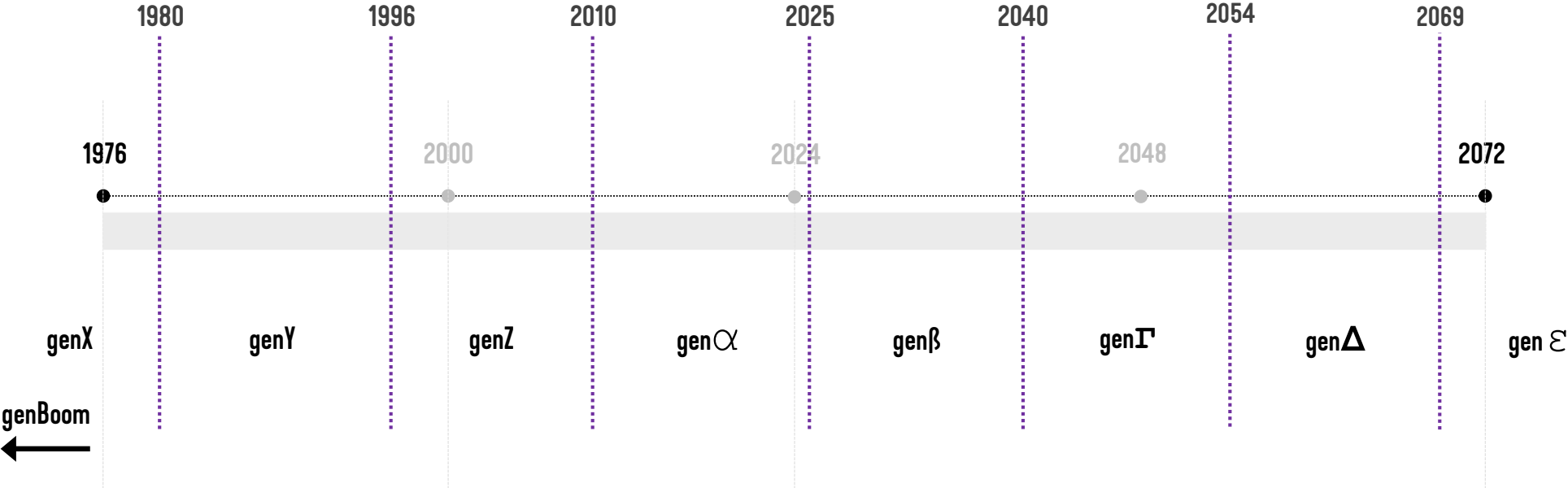
THOUGHTS FROM THE AUDIENCE

GENERATION

- n.* 1. The people born and living about the same time, considered as a group.
- 5.a. A stage or period of sequential technological development and innovation.
- 7. The act or process of generating; origination, production, or procreation.

GENERATIONS

KEEP ON ROLLIN'.



CIRCUMSTANCE

- n.* 1. A condition or fact attending an event and having some bearing on it; a determining or modifying factor.
- 2. The sum of determining factors beyond willful control.

CIRCUMSTANCE

TURNINGS AND PHASES AND ARCHETYPES, OH MY.

▪ Strauss-Howe Generational Theory

– 4 cycles (turnings)

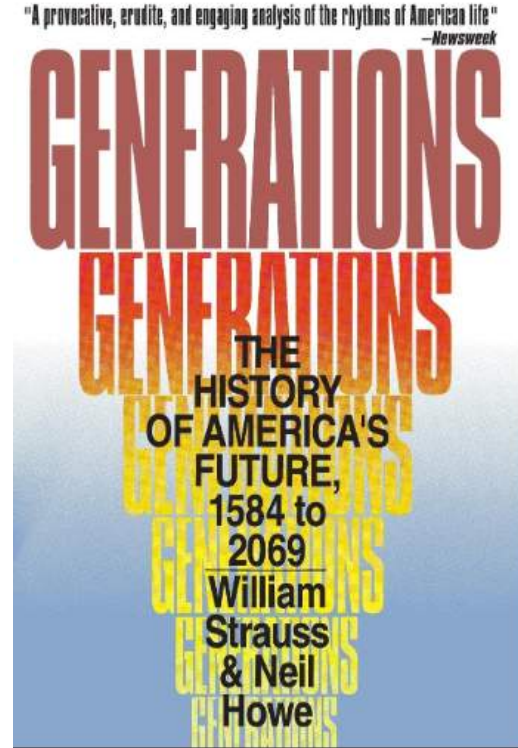
- High
- Awakening
- Unraveling
- Crisis

– 4 phases

- Childhood
- Young Adulthood
- Midlife
- Elderhood

– 4 archetypes

- Hero
- Artist
- Prophet
- Nomad



Purchase on poshmark.com:

https://poshmark.com/listing/Generations-The-History-of-Americas-Future-1584-to-2069-Neil-Howe-65b0c78ba58fa4c2ef23a530?srsIid=AfmBOoo8L3CCo_52a2lpnYX_VSbCJH9oQ8QZX3qwQ7QJd6FWBn0Xk5bjVF8&gQT=2#utm_source=gdm_unpaid

HISTORIC SOCIETAL TURNINGS						DECADES	WESTERN GENERATIONS				
mode	season	circumstance	period	date range	yrs		yrs	birthday range	name	Archetype	
						1880s	17	1883 - 1900	Lost	Nomad	
						1890s					
						1900s					
						1910s	23	1901 - 1924	Greatest	Hero	
						1920s					
public life change	winter	great depression. WWII.	Fourth Turning Crisis	1925-1945	20	1930s	17	1925 - 1942	Silent	Artist	
current saeculum_80-100y	transition	spring	postwar boom.	First Turning High	1946-1960	14	1940s				
							1950s	17	1943 - 1960	Boom	Prophet
	culture change	summer	consciousness revolution.	Second Turning Awakening	1961-1981	20	1960s	20	1961 - 1981	Gen X	Nomad
							1970s				
	transition	autumn	reagan revolution. culture wars.	Third Turning Unraveling	1982-2006	24	1980s	14	1982 - 1996	Gen Y	Hero
							1990s				
							2000s	13	1997 - 2010	Gen Z	Artist
	public life change	winter	great recession. trump. covid. edi.	Fourth Turning Crisis	2007-2026	19	2010s	13	2011 - 2024	Gen Alpha	Prophet
							2020s				
	transition	spring		First Turning High	2027-2046	19	2030s	14	2025 - 2039	Gen Beta	Nomad
						2040s					
culture change	summer		Second Turning Awakening	2047-2066	19	2050s	14	2040 - 2054	Gen Gamma	Hero	
						2060s					
						2070s	14	2055 - 2069	Gen Delta	Artist	
						2080s					
						2090s	14	2070 - 2084	Gen Epsilon	Prophet	

THE INDUSTRIAL REVOLUTIONS

THE CIRCUMSTANCE

1700s

1800s

1900s

2000s

2100s

1.0 MECHANIZATION



2.0 ELECTRICITY



3.0 DIGITAL



4.0 CONNECTEDNESS

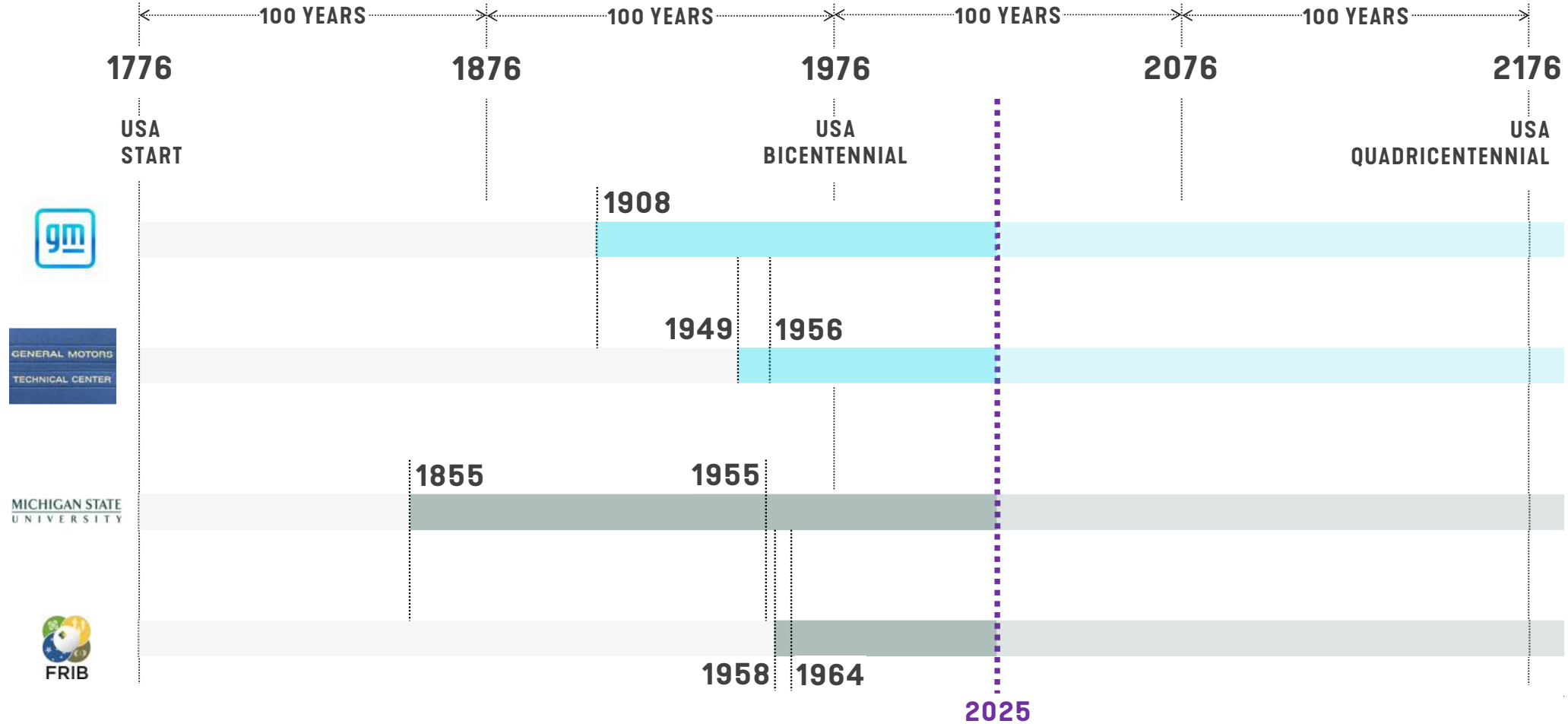


5.0 HUMAN-CENTRIC



IN THE ERA OF A NEW SYSTEM OF GOVERNMENT...

...BASED ON BURGEONING IDEALS.



BASIC PLOTLINE

ORIENTATION

ORIGIN STORIES, PRESENT ERA

FUTURE STATE

THOUGHTS FROM THE AUDIENCE

GM TECH CENTER

n. 1. A company and a place. A group of companies, a group of disciplines.

THE ENTREPRENEUR

GM

- **1908 - 1920**
- Durant First Incorporates GM (1908)
- During The Time of...
 - The Model T.
 - Wright Bros 1st Flight.
- Durant is Forced Out By Stockholders (1920 - During Recession)



**WILLIAM
DURANT**

THE INITIATOR

GM

- **1920 - 1956**
- Vice President of Operations at GM (1920)
- General Motors President (1923)
- Chairman of the GM board (1937)
- Retired (1956)



**ALFRED P.
SLOAN**

THE ENGINEER

GM

- **1920 - 1947**
- Charles Kettering, Vice President of Research
- 1944 Sloan and Ket conceive of Tech Center.
- Held position until 1947.



**CHARLES
KETTERING**

THE DESIGNER

GM

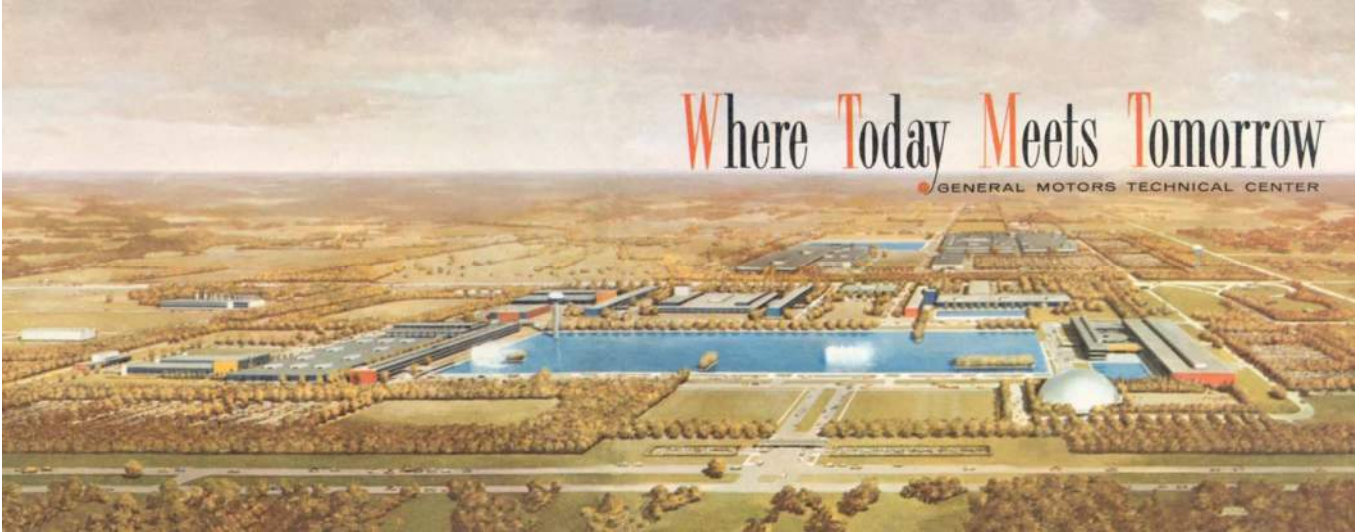
- **1926 - 1958**
- Hired as a Designer (1926)
- Designed the Successful LaSalle
- Color and Trim Created around Earl (1927-1928)
- Earl Named Vice President of Styling (1940)



**HARLEY
EARL**

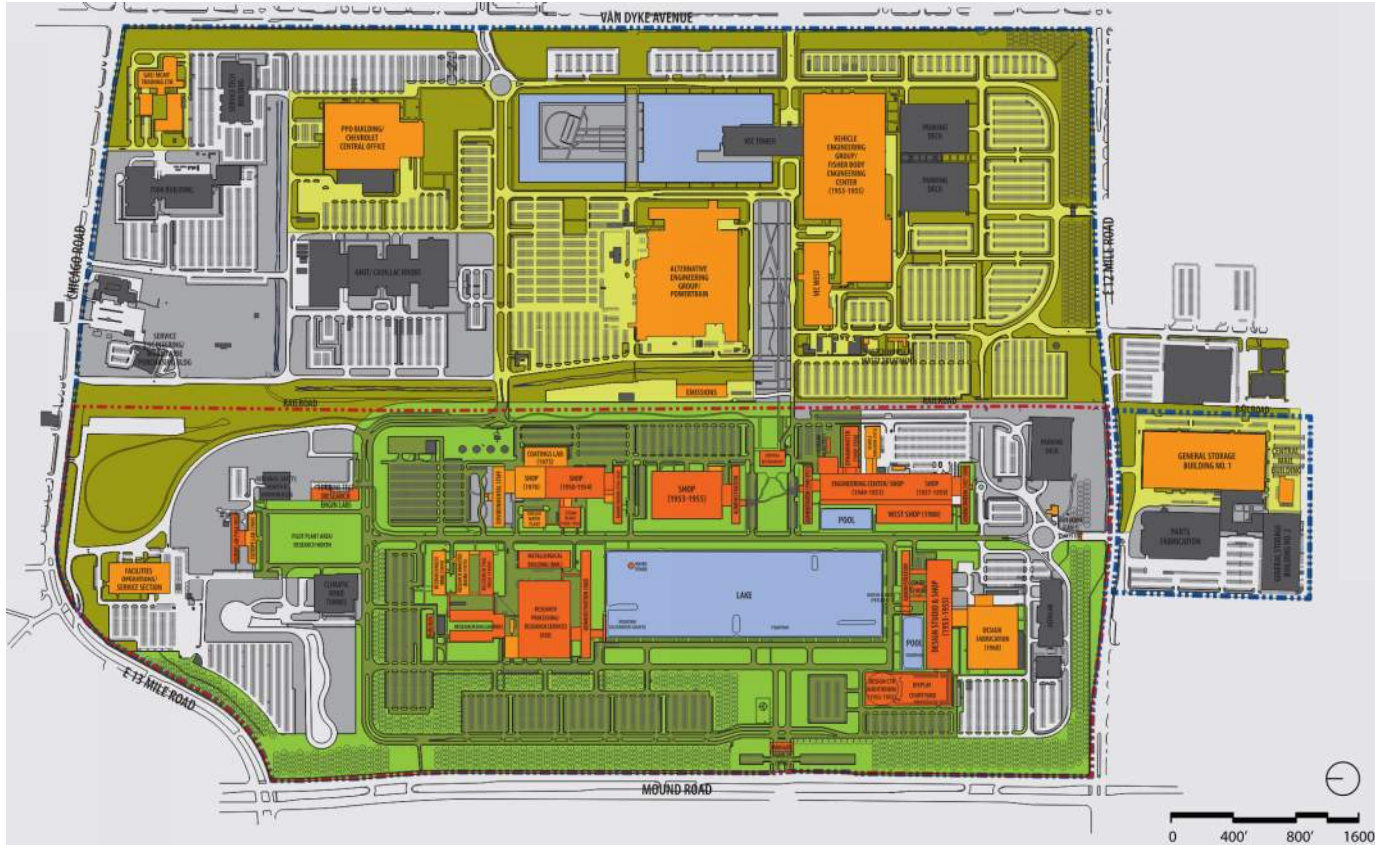
THE SUPERSTAR

INAUGURATION 1956





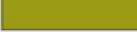



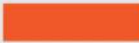


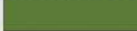
HISTORIC FABRIC

GM TECH CENTER



LEGEND

-  National Register of Historic Places Boundary
-  Contributing Structure from Period of Significance (1949-1970) as defined in the National Register Nomination
-  greenspace
-  "gridded" forest
-  streetscape/ site circulation

-  National Historic Landmark Boundary
-  Contributing Structure from Period of Significance (1949-1961) as defined in the National Historic Landmark Nomination [also a Contributing Structure from Period of Significance as defined in the National Register Nomination]
-  greenspace
-  "gridded" forest
-  streetscape/ site circulation

THE CHANGE AGENT

GM

- **2015 - 2021**
- Previously worked at Dell.
- Vice President, Global Facilities and Environment.
- Chief Sustainability Officer.
- Rebranded Facilities Group.

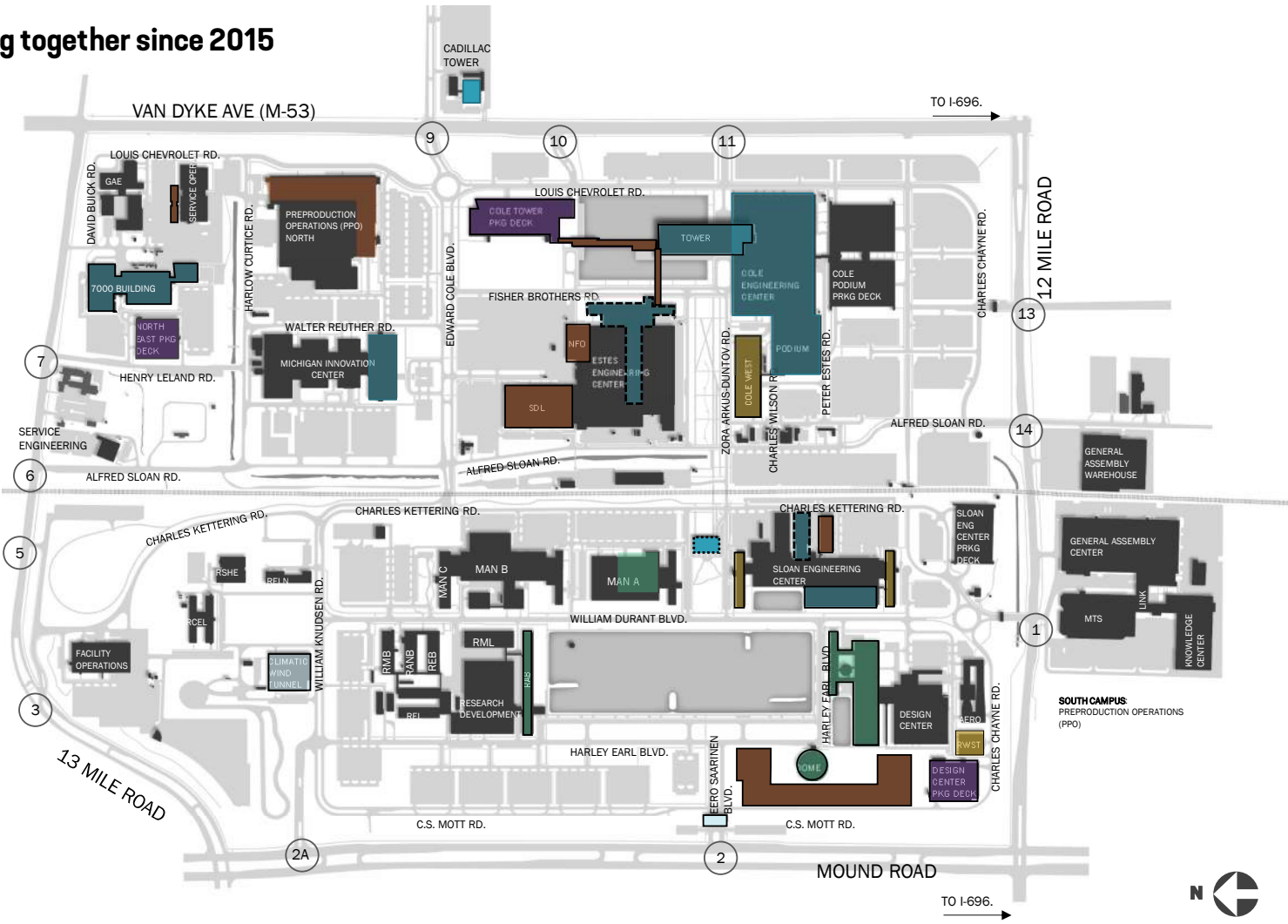


**DANE
PARKER**

WORK WITH GENERAL MOTORS TECHNICAL CENTER CAMPUS

5,000 to 500,000 square feet | Working together since 2015

- NEW BUILDING
- NEW PARKING DECK
- INTERIOR OFFICE TRANSFORMATION
- INTERIOR OFFICE TRANSFORMATION & EXTERIOR ENCLOSURE REPLACEMENT
- INTERIOR RENOVATION - DESIGN & CONSTRUCTION COMPLETE
- INTERIOR TRANSFORMATION - DESIGN
- INTERIOR RENOVATION DESIGN COMPLETE



MSU FRIB

n. 1. An institution. A mission. A part of a collective.

FACILITY FOR RARE ISOTOPE BEAMS

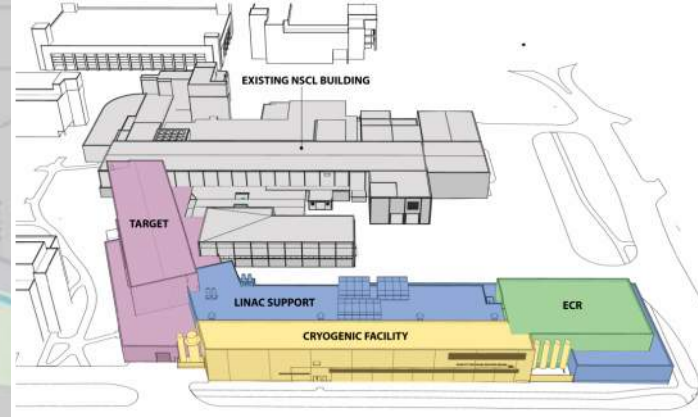
DOE OFFICE OF SCIENCE | MICHIGAN STATE UNIVERSITY



FACILITY FOR RARE ISOTOPE BEAMS

GROWTH CONFINED BY NEIGHBORHOOD CONTEXT

SCIENTIFIC USER FACILITY ON A COLLEGE CAMPUS



THE PROMOTER

FRIB

- **1941 - 1969**
- President of MSU
- Expanded the institution from a college of regional reputation into a nationally recognized research university.



**JOHN
HANNAH**

THE INNOVATOR

FRIB

- **1958 - 1989**
- Founding Director of the Cyclotron Laboratory
- Professor of Physics
- Designed discovery machines



**HENRY
BLOSSER**

CYCLOTRON LABORATORY

MSU



THE CHRONICLER

FRIB

- **1980 - 1992**
- University Distinguished Professor Emeritus, Dept. of Physics & Astronomy
- Chair of MSU Department of Physics and Astronomy (1980-1983)
- NSCL Director (1989-1992)



**SAM
AUSTIN**

THE IDEATOR

FRIB

- **1992 - 2015**
- NSCL Director (2003-2015)
- “We had to take our shot,” Gelbke said. “It was important to create a long-term scientific trajectory for the lab.”



**KONRAD
GELBKE**

THE BUILDER

FRIB

- **2003 - NOW**
- FRIB Lab Director (2015-present)
- NSCL's Associate Director for Operations from 2003-2009.
- In 2008, Led Team to Winning FRIB Proposal.
- Served as FRIB Project Director for the 13-year project - Completed on Budget and Ahead of Schedule in January 2022.



**THOMAS
GLASMACHER**

THE SCIENTIFIC KNOW-HOW

FRIB

- **1986 - NOW**
- University Distinguished Professor
- Rare isotope beam scientific know-how
- Designed the A1200 and A1900 fragment separators

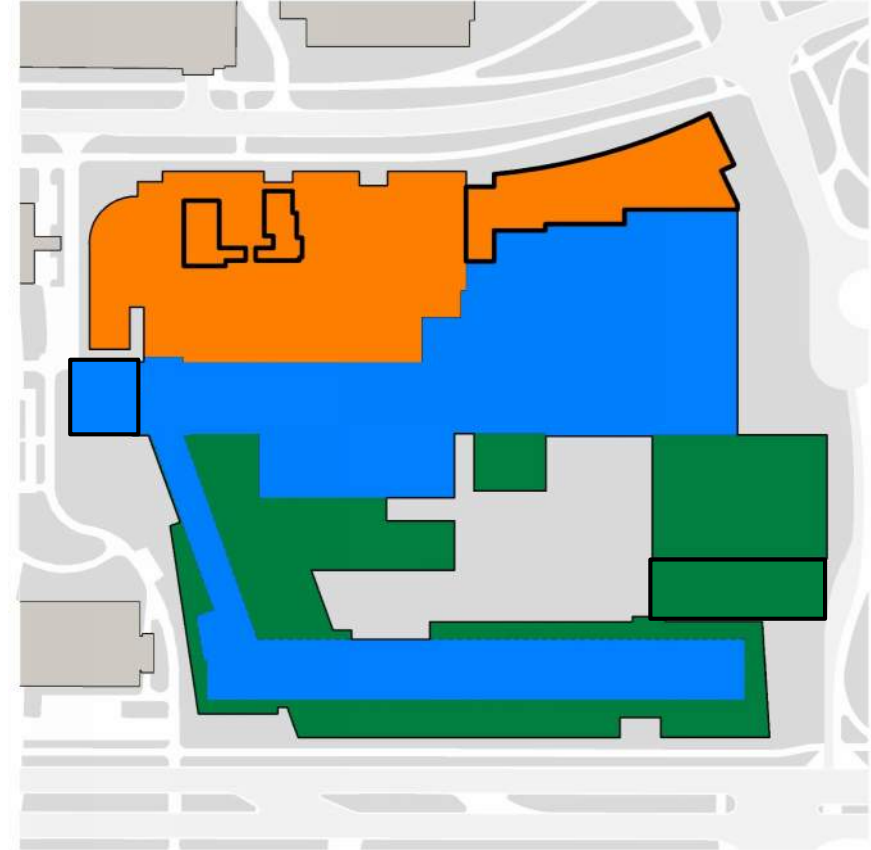


**BRADLEY
SHERRILL**

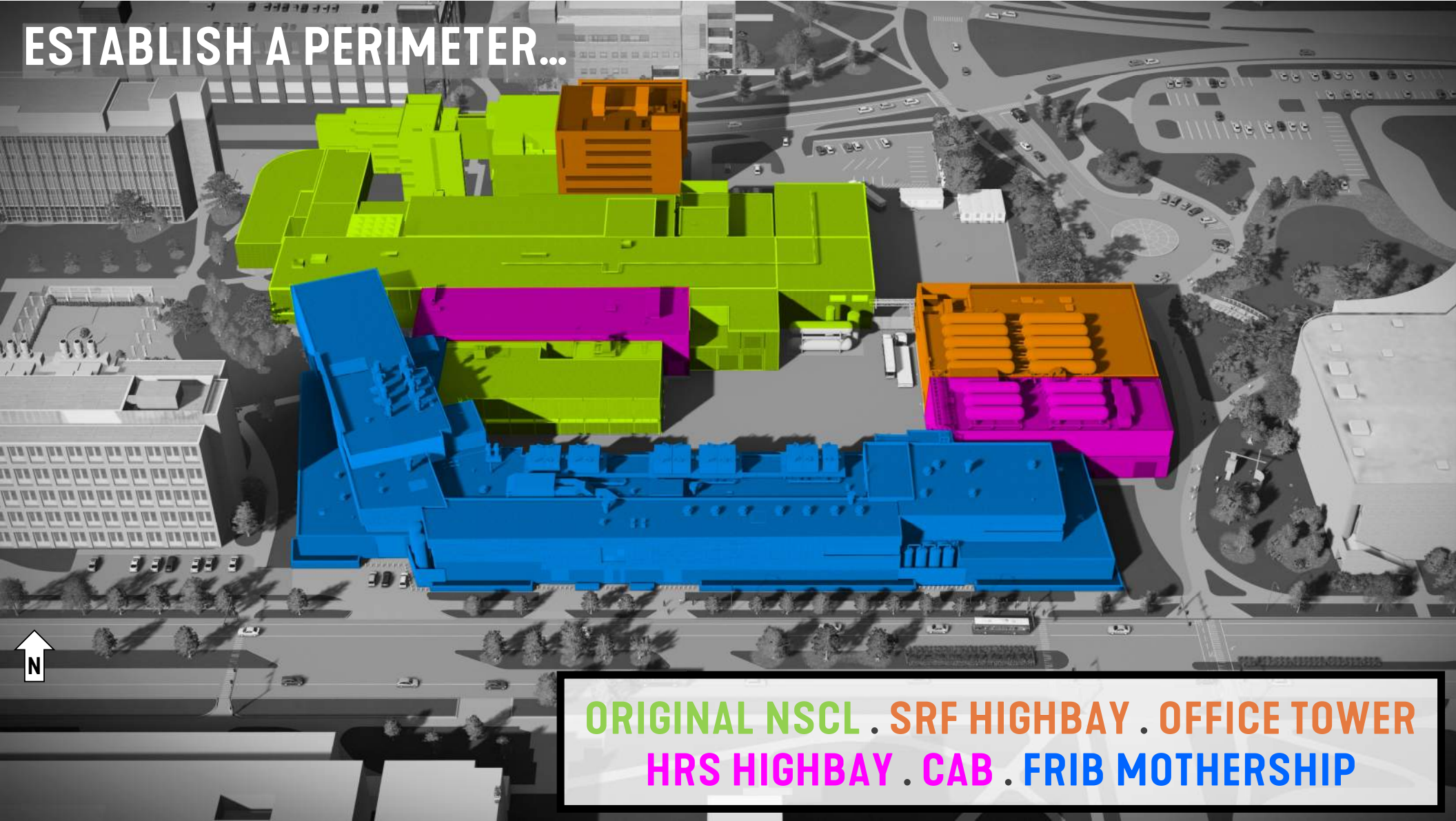
FOLLOWING THE EVOLUTION OF SCIENCE

A YOUNG OAK RIDGE PHYSICIST NAMED HENRY BLOSSER...

- 1964 **People** **Science**
(K50-Room Temperature)
- 1968 **People**
- 1978 **Science**
(K500-Superconducting)
- 1982 **People** **Science** **Support**
(K1200-Superconducting)
- 1986 **People**
- 1995 **Support**
- 1999 **Support**
(Cryoplant)
- 2002 **People**
- 2004 **Support**
- 2008 **People** **Science** **Support**
- 2012 **People** **Support**
- 2014 **Support**
- 2017 **People**
- 2022-2025 **Science** **Support**
(Heavy Driver Linac-Superconducting)
- future **Science**
- future **People**



ESTABLISH A PERIMETER...



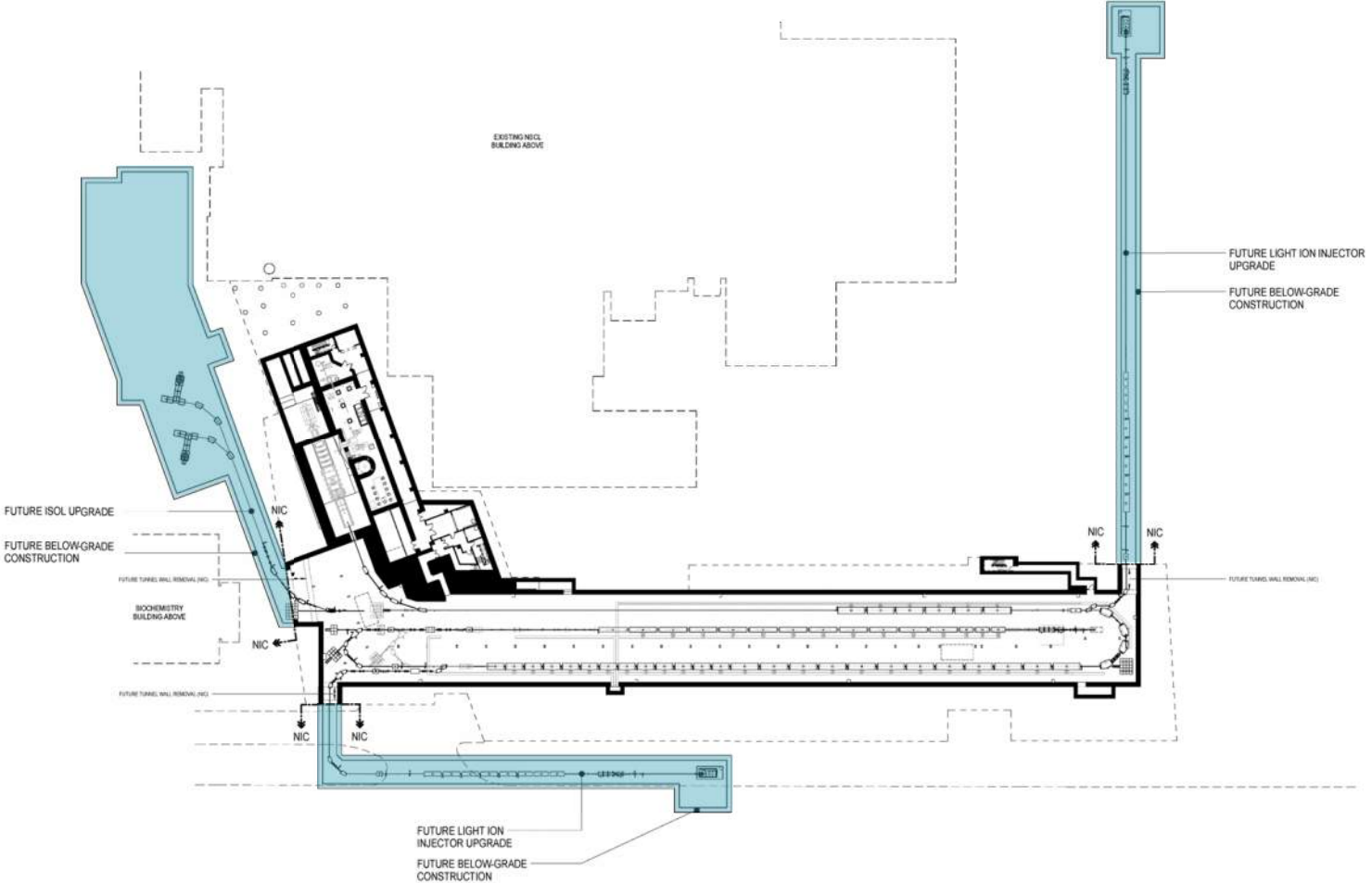
**ORIGINAL NSCL . SRF HIGHBAY . OFFICE TOWER
HRS HIGHBAY . CAB . FRIB MOTHERSHIP**

ANTICIPATING FUTURE INITIATIVES

EXPANSION



ANTICIPATING FUTURE INITIATIVES



PLAN FOR MULTIPLE USES

FRIB



BASIC PLOTLINE

ORIENTATION

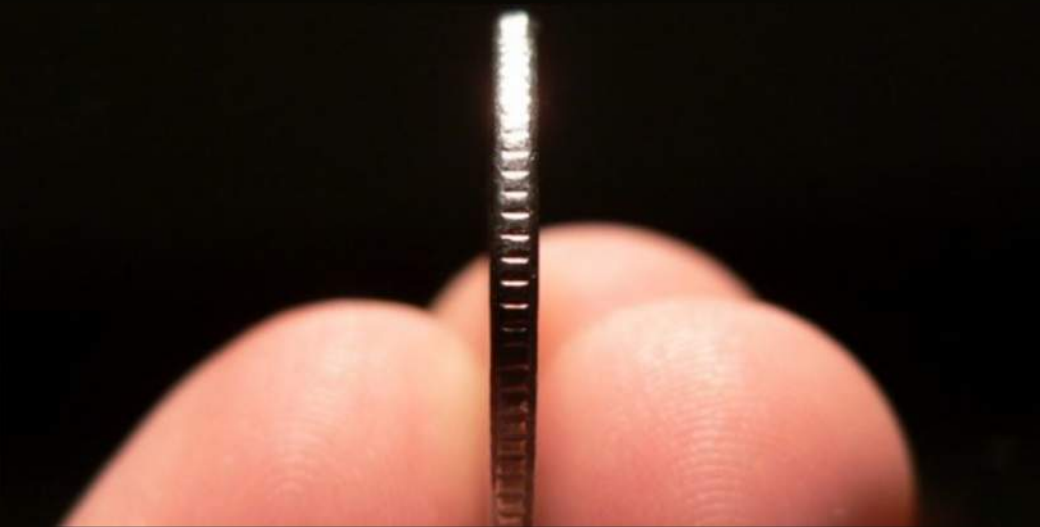
ORIGIN STORIES, PRESENT ERA

FUTURE STATE

THOUGHTS FROM THE AUDIENCE

2 SIDES OF THE COIN

DIFFERENT PERSPECTIVES

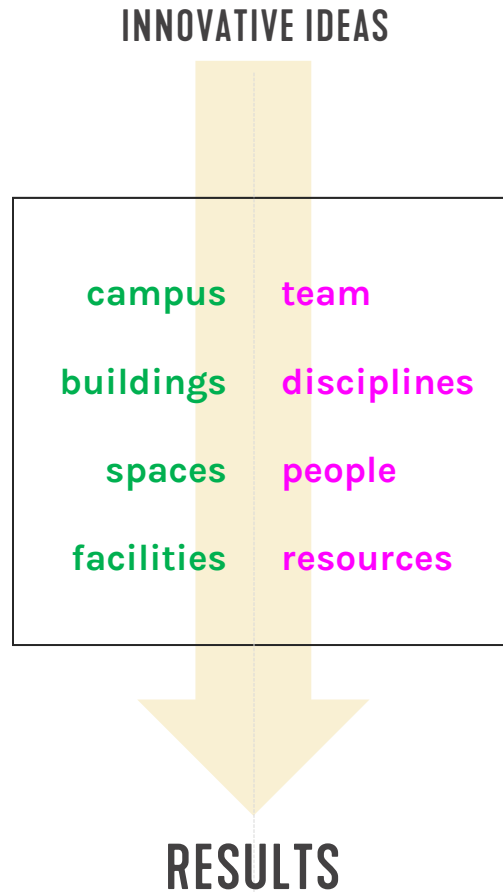


MORE THAN 2 FACETS

DIFFERENT PERSPECTIVES



KEY COMPONENTS TO A SUCCESSFUL ENDEAVOR



RECOGNIZING YOUR TEAM, PAST AND PRESENT

ANIMATE

- Administrators
- Building Operators
- Building Users
- Planners
- Designers
- Engineers
- Construction Managers
- Skilled Trades

PHYSICAL PLANT TEAM – SUBJECT MATTER EXPERTS

DISCIPLINES

- Civil
- Structural
- Architecture
- Mechanical
- Electrical

DESIGN TEAM

DISCIPLINES

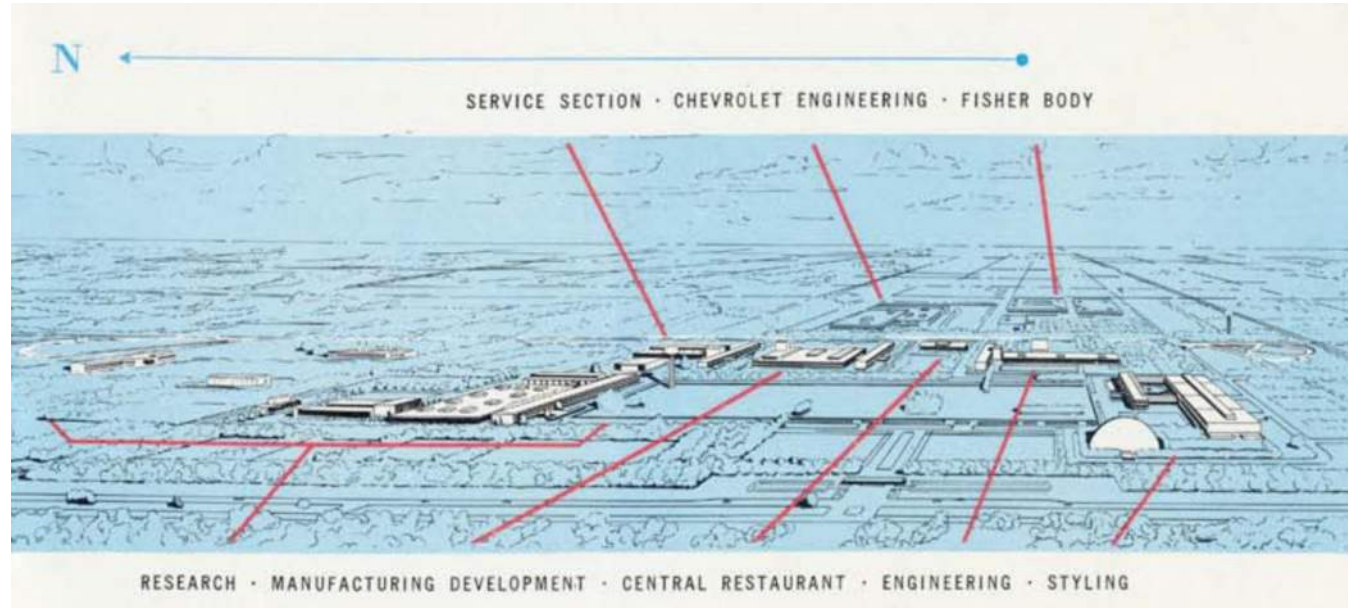
dept.	discipline	dept.	discipline		dept.	discipline		dept.	discipline	
administration	company administration.	design planning	architecture.		engineering	surveying.		specialty consultancy	irrigation.	
	design administration.		lab planning.			civil.			fire protection. fire alarm.	acoustics. vibration.
	project administration.		interiors.			structural.			electrical.	door hardware.
	construction administration.		workplace strategy.			mechanical.			information. communication. technology.	elevators.
			building technology.							
			sustainability.							
			lighting.							
			landscape architecture.							



GM

DISCIPLINES

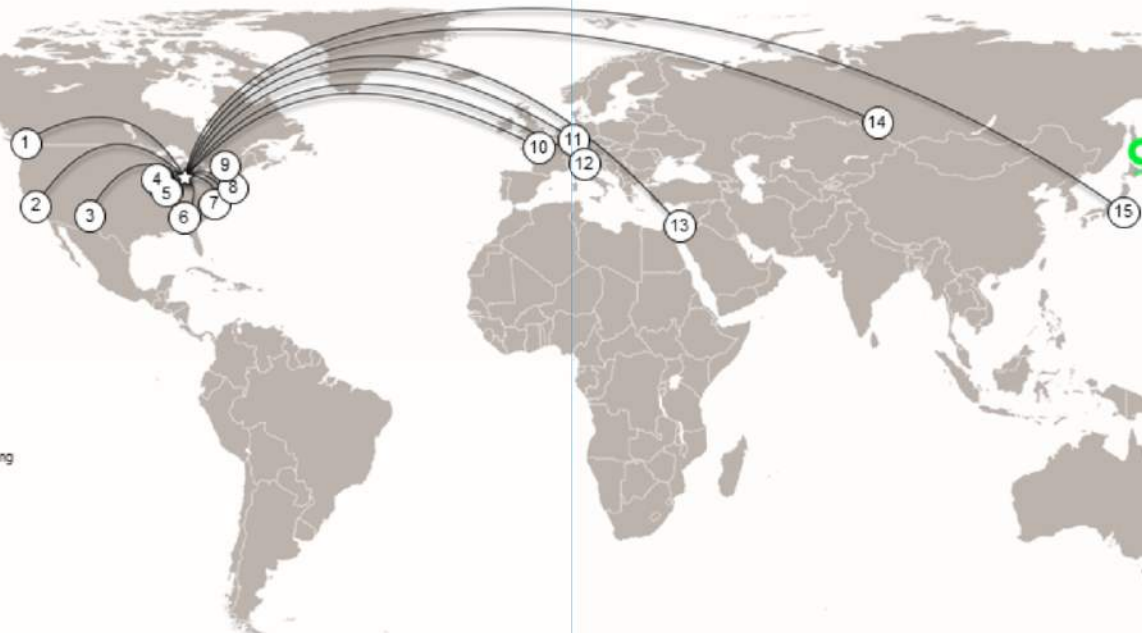
- Service Station
- Chevrolet Engineering
- Fisher Body
- Research
- Manufacturing Development
- Engineering
- Styling
- Central Restaurant



FRIB

DISCIPLINES

Credits



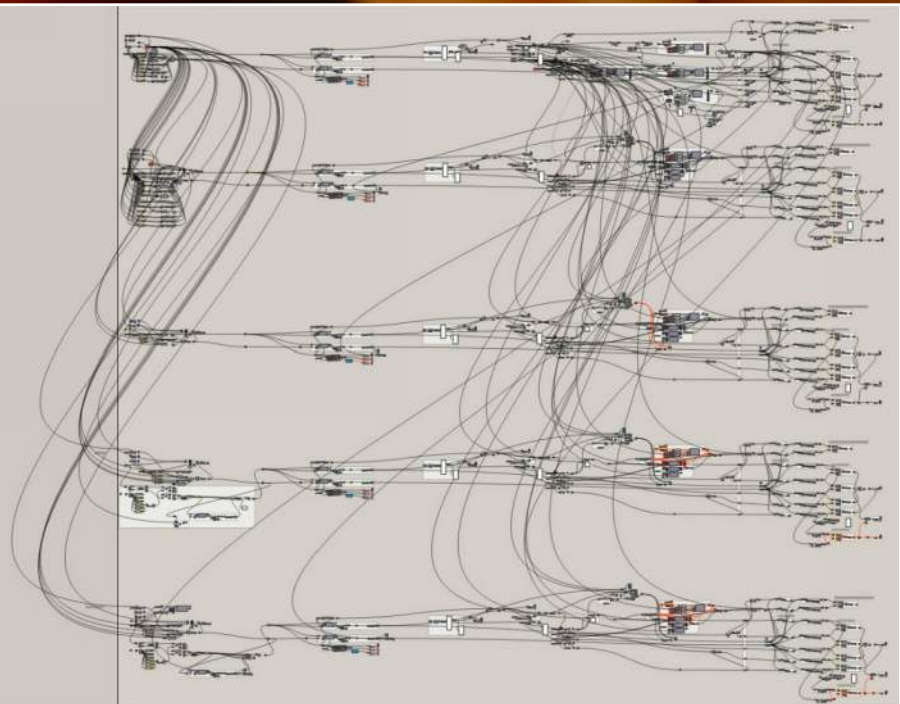
KNOW THE WHY

DISCIPLINES

"WELCOME TO TYPICAL"
-t.bull



CONNECTING IDEAS. PEOPLE. PERSPECTIVES. TOOLS.



PHYSICAL PLANT

- n.* Refers to the necessary infrastructure used in operation and maintenance of a given facility, along with the staff who maintain them.

**DESIGN INTENT
MAKING PLACE**

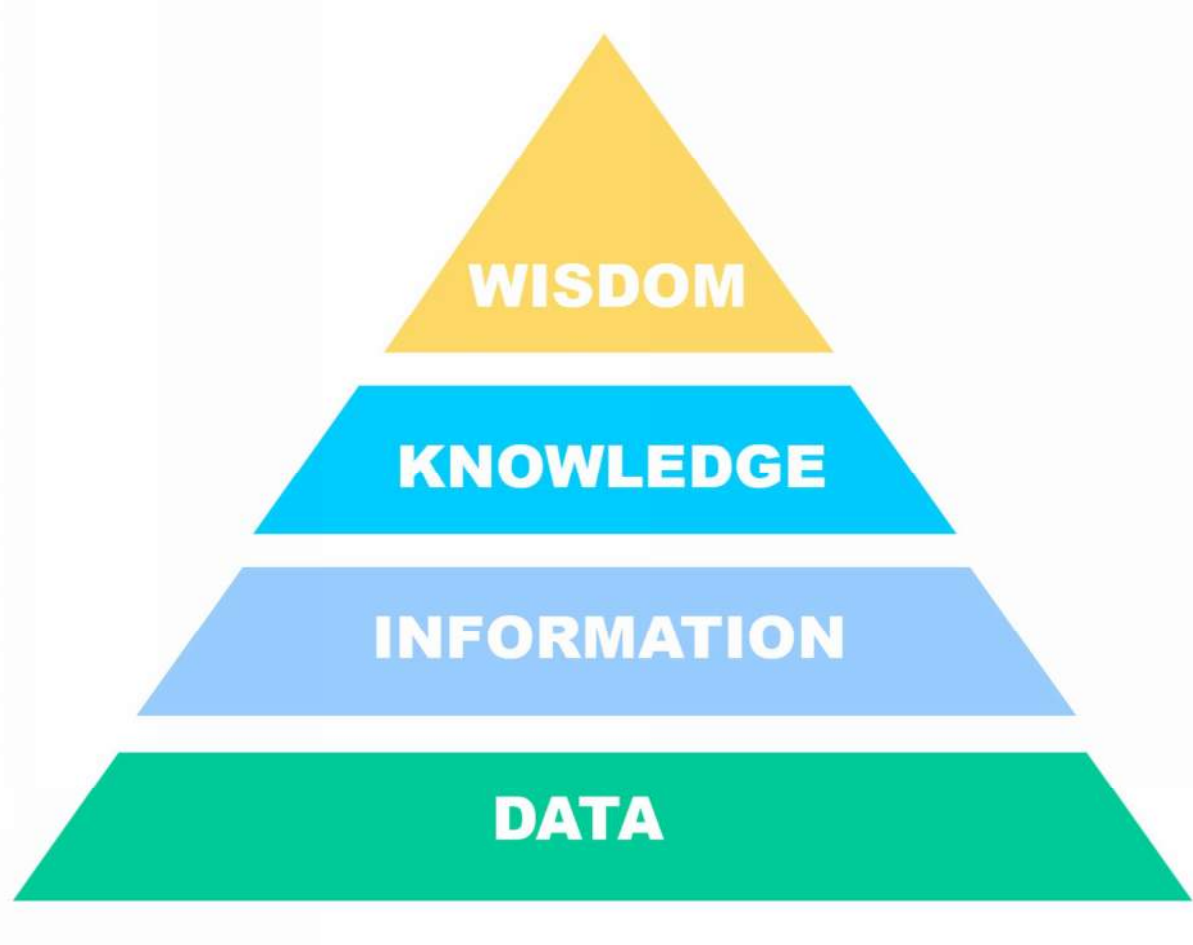
**KINDA SORTA
REALITY**

**INTENTION
CURATION**

BRAND IDENTITY
MISSION

**CORPORATE
COOPERATIVE**

BIG DATA, LITTLE DATA, AND THE REASONS WHY



LEGACY

n. 1. Something handed down from an ancestor or a predecessor or from the past.

HERITAGE

- n.* 1. Property that is or can be inherited; an inheritance.
- 2. Something that is passed down from preceding generations; a tradition.

TAKEAWAYS

THE ROAD AHEAD

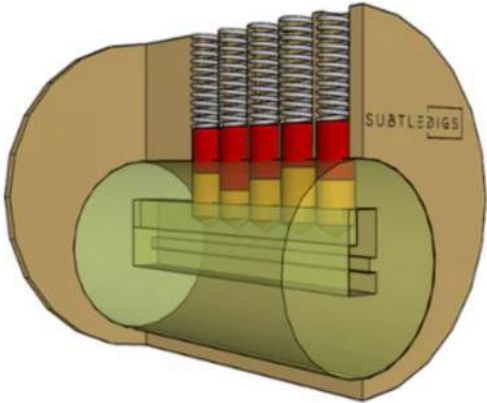
- Recognize and strengthen synergies between
 - skilled trades -- planning+design+engineering disciplines -- facility operators
- Consider : Market. Context. Circumstance. People. Change. Flexibility. Relevance.
- Establish cross-generational ties. Lock in institutional and individual legacy/heritage. Buy-in. Own it. Strengthen team empathy.
- Create and Anticipate future initiatives.
- Consider place as community. Place as a project. Community as project.



PIN-TUMBLER LOCK

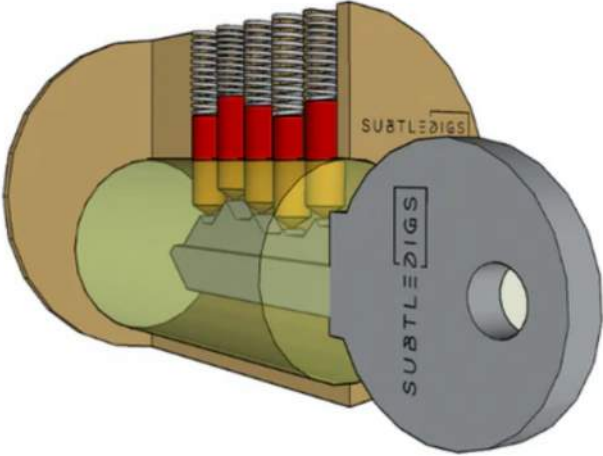
DIFFERENT PERSPECTIVES

Pins are not lined up; plug will not rotate and lock will not open.



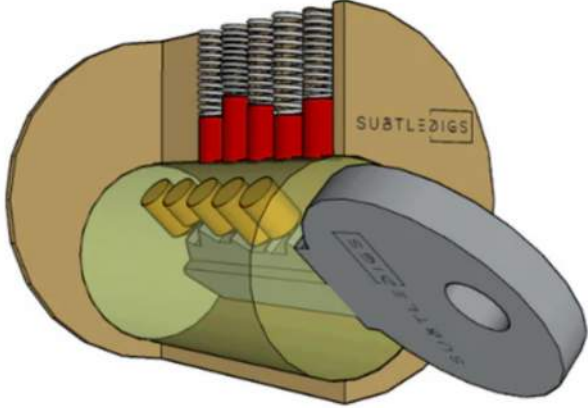
READY

The correct key raises the pins so that they are lined up.



SET

When the pins are lined up correctly, the cylinder can rotate.



GO

THE END

THE END

THOUGHTS FROM THE AUDIENCE

EMPOWERING A MULTIFACETED TEAM

MICHAEL PAUL KRUG

EMPOWERING A MULTIFACETED TEAM

MICHAEL PAUL KRUG

GOODBYE, AND THANK YOU FOR LISTENING...