

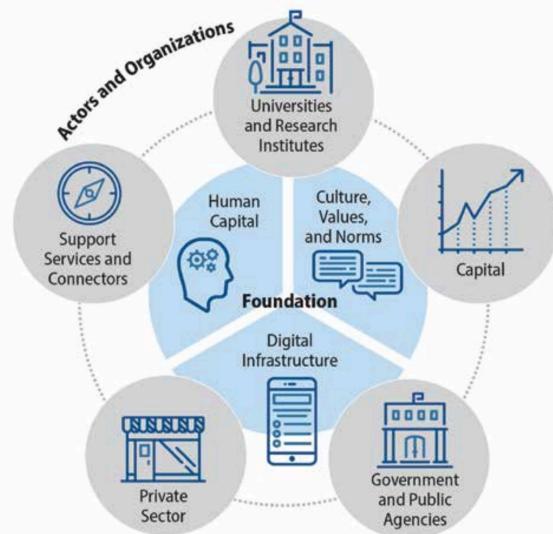
Innovation District Research

Planning for an Innovation District: Questions for Practitioners to Consider - RTI

Innovation Ecosystem (many different moving parts): universities and research institutes, human capital, information technology infrastructure, financial capital, private sector, and government; include companies and institutions of all sizes, ranging from small startups to large

Interactions: driving new products, technologies, services, and policies forward. Connects people who have good ideas to the training, funding, spaces, support services, and employees they need to make those ideas a reality

Based on a strong foundation of human capital, culture, information technology infrastructure, and the relationships between all these pieces.



Innovation District: a localized hub of an innovation ecosystem (specific geographic area).

Dense, mixed-use (including retail, housing and business) spaces within cities that connect universities and established institutions with entrepreneurial entities such as startups and business accelerators. Innovation districts are well connected with transit and internet and are located in a physical environment where creative people and organizations can collide in unpredictable ways that nurture new ideas and new ways of working together.

Require a mix of programming and organic social interactions and bring innovation to the public

1. **Dense mixed-use spaces:** connect housing with work spaces and retail, instead of single use buildings - contained within a specific area
2. **Flexible and decentralized:** not controlled by one company, person, or government branch - split authority widely across stakeholders. In terms of planning, they allow for flexibility, continuous improvement, and design iteration instead of sticking to a rigid master plan.
3. **Open and public:** ample public space and areas where people can interact informally. Shared working spaces, first floor retail, and open spaces for both work and recreation.
4. **Incorporating digital with physical elements:** e.g. Wi-Fi networks, radiofrequency identification (RFID) tags, digital kiosks, and personal handheld devices to blend the digital. And, well connected to the world via high-speed broadband internet.
5. **A public place to test new technologies:** piloting new technologies and practices in the public realm. e.g. environmental sustainability, energy, health, mobility, water management, shared space, and other public goods such as public green space or gardens.
6. **Strong in their sense of place:** expressing a strong narrative of their place and community. Innovation districts have features that make them distinctly local.

7. **Community oriented:** bring economic growth, strong public spaces, vibrant street life, and arts to their surrounding communities. Can bring the surrounding community into growth and development plans, mitigating potential negative impacts from gentrification.

Cities' Part in Physical Dynamism: Innovation districts can bring new life into old spaces and beauty to urban streets. Cities often provide incentives to developers to invest in and revitalize historic properties, forming a public private partnership that can accelerate development. Revitalization improves the attractiveness of urban space for private investment, thus increasing local tax revenue and economic vibrancy in what in many cases had been a blighted area of the city.

Building an Innovation District:

Overall Questions:

- The demand for such a space - avoid the lure of building a flashy new district that ends up unpopulated and underutilized because it was not properly designed with the end user in mind - demand for the innovation district must drive the design and programming
 - How will it meet the needs of small businesses and large businesses?
 - Will current residents and skilled workers be interested in the same amenities?
- The vision for the district
 - What demand do you want to create for the future? - balance between satisfying near-term tenants and constructing a new kind of place for economic activity that people and organizations may not yet know that they want
 - Do not tend to grow from a detailed master plan, but from a shared idea of what they might look like and what they can create

Key Economic Questions:

- What innovation assets will you leverage?
 - e.g. core assets like research universities, laboratories, medical centers, large firms, and entrepreneurial support organizations
 - understand the existing innovation assets and build around them
- Is there an industry focus, or is it industry-neutral?
 - Some districts plan for a specific industry, while others aim to serve diverse sectors
- What kinds of intermediary organizations will be important to help bring innovations to market?
 - e.g., incubators, accelerators, shared workspaces, work training centers
 - The district requires resources to fund good ideas, experiment on design, and move new technologies to the public
 - Neutral intermediary organizations such as chambers of commerce, entrepreneurial support organizations, and nonprofits serve as network connectors that help entrepreneurs and innovators access the resources and information they need.
- What amenities will attract a skilled workforce?
 - It is key for planners to create places where people want to spend time
 - Restaurants, bars, coffee shops, retail, and aesthetically pleasing spaces will make the organizations in an innovation district more attractive to the skilled talent that will contribute to the economic vibrancy of the district
 - Be aware of the risk of alienating residents or promoting gentrification through the district's allotment of space for amenities

Key Physical Questions:

- What physical assets do you want to leverage? Do those align with the demand for an innovation district?
 - Map physical assets
 - Does your district have old warehouses, empty lots, or underutilized parking decks?

- Is there a bike path or public transit route that could be extended through the district?
- Would startups in your area be looking to use open coworking spaces, or a laboratory with shared equipment?
- What spaces will create and nurture connections within the district?
 - Comfortable, accessible places with lots of things to do help build both kinds [strong and weak ties] of sociability
 - Attractive spaces have assets like narrower streets with wider sidewalks and bike lanes, plenty of parks and green spaces, and tables, chairs, and benches where people can sit and talk.
 - Districts also need spaces where formal programming can happen, such as auditoriums and workshops, along with casual spots where people can bump into each other unexpectedly as part of their daily routines.
- Are there underused or distressed buildings, neighborhoods, and corridors that can be revitalized? Does the style lend itself to the district's sense of place?
 - Reimagine and improve on what's already there; continuity is crucial for creating a sense of place
- What physical infrastructure will ensure the district is connected locally and globally?
 - Open to all the people, ideas and resources passing through—and be designed to encourage that passing through
- What is currently being done privately that could be done publicly?
 - Creating an atmosphere of openness in an innovation district sometimes involves making significant physical changes to the existing city
 - E.g. One possibility is for big companies, laboratories or university buildings to open their ground floor lobbies to the public. Other organizations can dedicate their ground floors to coffee shops, cafes, or other public meeting spaces to encourage foot traffic and the interactions, bonding, and social capital formation that are so important to innovation
 - However, exclusive perks for the employees of large firms, such as cafeterias, gyms, or lounges, may draw employees in the short term but are an underutilized use of resources in the long term - innovation districts offer the opportunity to provide these amenities publicly and make it easier for smaller organizations to actively engage with larger, more established tenants.

Key Social Questions:

- What ties exist within the ecosystem?
 - Two kinds of linkages: strong ties and weak ties
 - Strong ties: between people and organizations with high levels of trust, maybe from a history of collaborating or strong personal relationships.
 - Weak ties: form as a result of briefer interactions across more diverse sectors.
 - Practitioners and planners may find it helpful to consider the ties that already exist between the established players in their city, and which ones could be newly cultivated in a district
- What kinds of events (workshops, training, conferences, other events) will strengthen links?
 - Planners should develop activities and programs that will bring different people together.
 - Events can be career-related, such as workshops and lecture series, or they can be more social, like free yoga classes, happy hours, concerts, and movie screenings
 - Events that are more focused on specific industries will nurture strong ties, as people in the same field will tend to interact with each other more frequently at different events, while more general events will encourage weak ties to develop across disparate industries because attendees will more likely have diverse interests and focus areas in

their work

- How will your district interact with the broader community? What opportunities will it bring disadvantaged residents? Will your development displace renters?
- How do you build and integrate networks between people and firms in different contexts?
 - Social networks between people and institutions provide this economic resiliency when they connect different groups and people in different economic contexts, not just when they reinforce already existing strong ties
 - Integrating various networks and individuals across economic sectors
- What independent network connectors and intermediaries are involved in the process (e.g., incubators, accelerators)?
 - Intermediary organizations can help connect people to funding, find them mentors, scout out qualified employees, and offer them material support in the form of office space or supplies.
 - Significant driver that attracts startups and entrepreneurs to the district
 - Planners can consider the kind of intermediary organizations that may make the best fit for the entrepreneurs and innovators they want to attract to the district.
 - If there is an industry focus to the district, this may refine the parameters of the kind of intermediary that will be important to locate within the district.
 - What kinds of network connectors make sense for the local innovation community?
 - Ideas can range from a dedicated innovation center, like Santiago's Centro de Innovación UC, to an independent management organization that plans regular events.
- Do the organizations in your district have a culture of flexibility? What can you do to encourage it?
 - Encouraging this environment of flexibility can be a crucial way to support startups in an innovation district.
 - Innovation district planners must consider the culture norms at work around new ideas, risk taking, and failure.
 - How can one seed or cultivate an accepting cultural environment for innovation in the local community context?

Governance and Operations

- Governing and managing innovation districts may require a major shift in the way local planners, policymakers, and officials approach governance and operations
- 1. Innovation districts require breaking down silos between disciplines.
 - Typically, the government is organized into service-specific departments such as health, public safety, transit, waste management, etc.—but creating good multi-use places like innovation districts requires a multidisciplinary governance approach.
 - Each office of government should organize itself around creating successful public spaces, rather than every office having its own distinct and separate mission that doesn't concern itself with place.
- 2. Planners must integrate strategies for place-based development with distinct policies and programs that help innovation ecosystems flourish
 - Often new to public and private sectors, and strategists must be willing to embrace each other's way of designing programs and building out physical space
- 3. The steadfast dedication to focusing on the end users (e.g., workers, students, and residents), not just local leaders and experts
 - Hold themselves accountable to the innovation district community, such as by conducting regular surveys or listening sessions that foster honest feedback on the design and programming of the district

4. Strike a balance between fostering a common vision for the district's future while also leaving room for people to make many little plans
 - Developing a rigid master plan can kill an innovation ecosystem—and yet, without a common vision, it is difficult to rally support for the overall design and experience that the district seeks to achieve.
 - Districts cannot be overplanned or overmanaged
5. Districts generally require redirecting power, responsibility, and funding to the district level itself
 - A variety of structures exist that can be implemented to manage places, and whether those are formal or informal, public spaces must be managed to function.

Available Tools for Assessing Your Innovation District

- The InnovateNC Community Innovation Asset Map: “a community’s first step for developing a concrete roadmap to grow their innovation economy meaningfully”
 - Includes detailed worksheets to help policymakers map out their innovation assets.
 - It is a framework for an asset mapping exercise, which provides a concrete series of steps for local leaders to form collaborative committees and begin a course of action by understanding which assets it should leverage.
- The Brookings Institution, in collaboration with the Project for Public Spaces and Mass Economics, has developed an auditing tool for assessing innovation districts
 - They measure district data against city and regional data, compare it to other similar districts, and supplement it with qualitative research to assess cultural aspects, measuring things like density of people and institutions, economic growth, and diversity and inclusion.
 - It includes an assessment of critical mass, innovation capacity, diversity and inclusion, quality of place, and leadership

Developing Innovation Districts - Edgemoor Infrastructure and Real Estate

- Workers are 1.5 times more productive in these places where there is an agglomeration of knowledge, funding, talent, and specialized services than they are alone
- Fueled by a virtuous cycle: industry partners demand immediate adjacency to urban research institutions for access to talent and intellectual property → talented researchers demand adjacency to industry to interact, partner, and participate in funding to produce the research opportunities → workforce talent and supporting economic resources are driven to these research and industry partners

Common Success Factors:

- Vision and Leadership – A powerful, shared mission by a network of key stakeholders, including the institution, multiple industry participants, and local government. Thoughtful
- Design and Programming – Curating the places and activities to foster the core talent capabilities, attract complementary resources, and fundamentally drive collisions that lead to disruptive innovation.
- Workforce Development – Districts require a diverse workforce. In fact, there are districts where 60% of the workforce doesn’t have a college degree.
- Transportation – The district must be accessible, often multi-modal. Over half of all existing districts have a mass transit station within 0.4 miles (or an 8-minute walk).

- Development Timeline – It is also important to maintain a realistic perspective on development timelines. These places can take decades to establish and mature.

The Key Elements of Successful Innovation Districts - Gensler

Key Elements

- Partnerships: A grouping of committed people to the project.
- People: Firms want to be near their competitors and are there with connections to universities and collaborative spaces that promote creativity.
- Places: The design of space needs to promote walking, biking, and human interaction, and has to be cool.

Three viable model options to pursue when building an innovation district: anchor plus, reimagined urban area, and transformed science park

Important triumvirate of assets: economic, physical, networking

- Advice from Imran Aukhil (principal from HR&A Advisors): "Often, I encourage leaders of innovation districts to focus on creating an investment fund; invest in our commercial partners first. Focus on promoting local businesses and equitable hiring practices. Differentiate between placemaking and community building... the latter is much more important. Innovation districts must be diverse and equitable to work effectively. You must bring the community along and have them see the benefit early on. Invest in programming and operations and create an innovative economic system first."

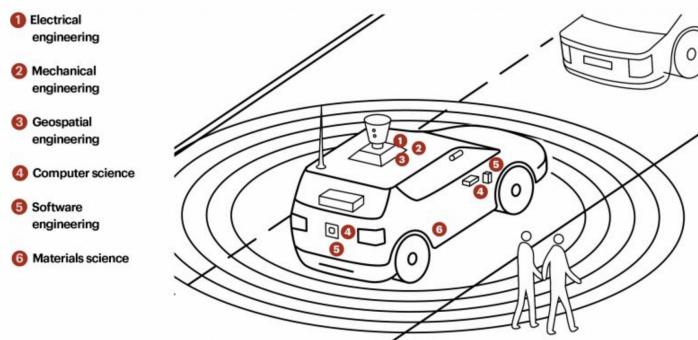
8 Placemaking Principles for Innovation Districts - Project for Public Spaces

1. Identity: Make innovation visible and public
 - What are we currently doing privately that we could be doing publicly?
 - A company could showcase one of the more exciting aspects of their work in a transparent ground-floor space or through programming in public space
 - Public spaces or coffee shops with power outlets and wifi could provide places to linger, work and think in public
2. Diversity: Mix innovation with a range of other uses
 - A district must also provide a reasonable amount of convenience, leisure and social uses for employees
 - Millennials flock to urban places that offer choice and liveliness
 - Talent from abroad demands places that embrace diversity and perhaps offer a few familiar footholds
 - Bring together sufficient retail and multi-use public spaces (as well as residents and visitors to supplement the foot traffic of the working population)
 - Organizations can externalize and share these quality-of-life costs—particularly to the benefit of young and small enterprises.
3. Continuity: Start with existing people and places
 - Innovation districts are often built near (or overtop of) low-income communities, and their relationships with those communities are often tenuous, if not hostile
 - “new ideas need old buildings”

- Rather than clearing rundown buildings in a district for new construction, or even polishing up these hidden gems, such buildings are important economic assets as is
 - They add to the diversity of a neighborhood by giving low- and no-profit uses a place they can afford without subsidy
 - The vernacular or historical style of existing buildings can help bolster a district's identity
4. Sociability: Bring people together through places and programming
- Accessible places with lots of things to do
 - Physical locations where formal social programming can take place, and where people unexpectedly bump into each other again and again in their daily routines
 - E.g. coffee shops and bars
 - The best public spaces attract more people in groups
5. Proximity: Build things close together on the ground—not just on the map
- Walkable streets with active ground floors and vibrant public spaces
6. Mobility: Connect to the broader city and region through multiple transportation modes
- Multiple transportation options can broaden the benefits of innovation to the city at large
 - For an innovation district, solid multimodal transportation means that firms can locate in cheaper spaces outside the district while still benefiting from its assets; it means reduced costs for district firms to collaborate in person with those outside the district; and it means district employees have a greater choice of residence and lifestyle options.
7. Flexibility: Experiment, Observe, Repeat
- The most effective solutions to improve a public space are often cheap, non-permanent interventions that can be accomplished right now.
8. Unity: Govern with vision and holistic, inclusive strategies
- How do stakeholders within the district collaborate and make decisions?
 - Where does the money come from?
 - Who has the power to implement the plans and policies?
 - Who is going to get their hands dirty and actually do the implementing?

12 Principles guiding innovation districts - GIID

1. Clustering of innovative sectors and research strengths
 - a. districts thrive by concentrating and leveraging their city or regional economic strengths
 2. Convergence of disparate industries
 - a. innovation districts are more aptly defined by horizontal platforms than by sectorial silos
 - i. As such, district stakeholders need to build their capacity to connect seemingly dissimilar industries through collaborative research, conversation, and cross-cutting technologies
- Example:**



A growing number of innovations—like the autonomous vehicle—were conceived through the convergence of disparate disciplines and sectors. Illustration credit: The Brookings Institution.

3. Diversity of institutions, companies, and start-ups
 - a. Districts that are largely composed of large institutions often lack the accelerated innovative growth that small, nimble firms provide.
 - b. Districts characterized by a density of start-ups have fewer opportunities for well-funded partnerships and alliances.
4. Connectivity and proximity
 - a. A well-connected district—transit, bike paths, sidewalks, car-sharing, and high-speed fiber
 - b. Physical concentration of firms, workers, and activities
5. Range of strategies—large and small moves, long-term and immediate.
 - a. Mix of large investments (e.g., in transit, high-speed fiber, venture and other capital funds) and smaller strategies (e.g., reactivating a neglected park and programming spaces)
 - i. Large-scale investments set the foundation upon which other activities can be layered
 - ii. Short-term, community-led processes can inform bigger and lengthier undertakings and create crucial momentum.
6. Programming
 - a. A range of activities to grow skills, strengthen firms, and build networks
7. Social interactions between workers
 - a. Essential to collaboration, learning, and inspiration
 - b. Occur in concentrated “hot spots”
8. Make innovation visible and public
 - a. Inspire curiosity in aspiring innovators, start conversations between neighbors, and convey the story of an innovation district to potential recruits or investors
 - b. Transforms public spaces into “living labs” to test prototypes
 - c. Activities like hackathons, symposiums, and health clinics
 - d. Greater transparency at the ground level of buildings allows pedestrians to connect with the innovation activities inside
9. Diversity and inclusion in all visions, goals, and strategies
 - a. Intentional training, hiring, business development, and placemaking efforts
 - b. Cultivate new local talent, encourage more diverse ownership structures, and help address poverty and disinvestment in surrounding communities
10. Get ahead of affordability issues
 - a. Successful districts can, over time, drive up market pressures, impacting the ability of start-ups, maturing firms, and neighboring residents to remain in these areas

- b. Smart districts respond early, getting ahead of the curve through a range of policy moves and strategic projects that preserve affordability and the diversity it engenders
11. Innovative finance for catalyzing growth
- a. Most innovation districts require new finance streams to advance innovative and inclusive growth without straining existing and limited resources
 - b. Creative financing tools—including ways to leverage city-owned and district assets—should be explored with an eye toward sustaining financing over time
12. Long-term success demands collaborative approach to governance
- a. “collaborate to compete” = bottom-up horizontal governance model
 - i. involving business, academic and civic institutions, government, workers, and residents
 - b. Can best orchestrate what must be done collectively: Identifying assets; design, finance and strategic initiatives; public space management; and evaluating progress

What makes a successful innovation district? - Cities Today

Innovation District Definition by Brookings: “geographic areas where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators and accelerators”

Innovation districts as a badges of honor for cities and the underlying “focus on innovation districts is a reaction to the lack of financial support for local governments”

- Entering the ecosystem of economic system is a more viable option for certain cities given their geographic limitations
- Catalysts of innovation districts:
 - visionary leadership of a mayor
 - the ambition of a university or hospital president
 - the collective drive of a group of local leaders willing to unite around a common geography
- Specific prerequisites for innovation districts:
 - physically compact, transit-accessible, technically wired and offer mixed-use housing, office and retail
 - have a mix of public, private, civic and university leadership, so, in the US, most districts evolve because of multi-sector leadership
 - economic assets, physical assets, and networking assets. Innovation districts reach their potential when all three types of assets, combined with a supportive, risk-taking culture, are fully developed, creating an innovation ecosystem. Universities are drivers for innovation districts (the Mayor’s role is to pull these sectors together and drive them toward a shared vision)
 - Not just focused on one industry but a focus on finding collaborative opportunities for different industries to interact and build off of each other
 - innovation districts represent an intentional effort to create new products, technologies and market solutions through the convergence of disparate sectors and specializations → they grow tax or business rate revenues for cities and raise the value of municipal land
- Delicate role of government: “So, the government can, in certain markets and in certain conditions, accelerate the growth of innovation districts, but it has to be done very carefully, in concert with the innovative sectors—it just can’t be the public sector declaring something—that’s usually a recipe for disaster.”

- “The most noteworthy element is the incorporation of the neighborhood in the governing body of the project, according to a model of quadruple helix–neighborhood, business, academic and public sectors—in order to find a mixture of uses balanced between economic activity and the right to housing, heritage and so on”
 - The influx of lower-income residents into the area means the city must ensure that affordable housing is available
- Innovation districts fundamentally change the meaning of city from something government driven to an autonomous network
- One of the best innovation district examples: Philadelphia is the best model of a civically engaged university—that’s Drexel – then there’s a special skills initiative run by the anchor institution, the eds and the meds, the university, the hospitals—to customize skills training for local residents
- Measures of success:
 - Job growth
 - Growth by type of industry
 - Number of new start ups and their survival over the course of 3-5 years
 - amount of people that have undergone training related to the industries within the innovation district
 - looking at the amount of space taken by new development, including amounts for start-ups, affordable housing and mixed-income housing
 - looking at the number of programmes and network events organized to create an innovation ecosystem
- Ultimately, the success of innovation districts going forward will increasingly be measured by their ability to upgrade the education and skills of local residents by investing in cradle-to-career initiatives

Ohio State Innovation District (created in Feb, 2021) Information:

Research and Engineering Areas:

- **Cancer**
 - engineering nanoparticles that can kill cancer cells and creating technology to deliver drug therapies to hard-to-reach places, such as the brain or deep within tumors
 - designing simulation technologies so that drug therapy candidates have the potential to be tested and screened entirely on computers
 - Outpatient Cancer Facility:
 - The outpatient cancer facility at the university, also known as Wexner Medical Center Outpatient Care West Campus, is being built south of the intersection of the Kenny and Carmack roads. The 385,000ft², five-story, cancer-focused center will house the first proton therapy treatment facility in central Ohio.
 - Being constructed by the Ohio State University in partnership with Nationwide Children's Hospital, the building will include outpatient operating rooms, pre-anaesthesia center, interventional radiology rooms, an extended recovery unit, a diagnostic imaging center, a hematology clinic, a genitourinary (GU) clinic, retail pharmacy, infusion, and medical office spaces.
 - Combating the **opioid crisis** (Ohio is disproportionately affected - 1 in 5 Ohioans report dangerous binge-drinking behavior)
 - expanding access to medical and psychological care
 - helping relieve the pressure on our legal system and social service needs
 - preventing our children from becoming addicted in the first place
- **Clean energy**
 - [Ohio State's Energy Advancement and Innovation Center](#) will serve as a hub for the next generation of renewable energy, artificial intelligence and smart energy systems
 - The 52,600ft² energy advancement and innovation center will support the next generation smart energy systems, renewable energy and green mobility solutions. It will facilitate collaboration between the university's faculty members, students, alumni, researchers of Engie Buckeye Operations, as well as entrepreneurs and industry experts.
- **Immunology**
 - At Ohio State's [Pelotonia](#) Institute for Immuno-oncology, researchers are developing cancer-targeting immunotherapies at the molecular level so that the body's own immune system can fight cancer — taking personalized cancer treatment to a new level
- **Interdisciplinary Research Facility**
 - The interdisciplinary research facility is being developed as a 305,000ft², five-storey laboratory building with a budget of \$237.5m. The site is located to the west of Kenny Road and south of Lane Avenue.

Quick Stats:

- Columbus Innovation District aims to generate 20,000 new jobs in central Ohio over the next 10 years, involving an estimated 10,000 direct STEM jobs in the technology and healthcare industries, as well as 10,000 indirect jobs in the community at large
- It is estimated to contribute \$3bn to the economy of Columbus and Ohio over the coming ten years

- JobsOhio, Ohio State and Nationwide Children's will invest \$1.1 billion in the Columbus Innovation District, including the development of an Interdisciplinary Research Facility, an Energy Advancement and Innovative Center, an Outpatient Cancer Facility, and the region's first proton therapy facility to treat cancer patients already underway at Ohio State's West Campus
- The interdisciplinary research facility is being developed as a 305,000ft², five-storey laboratory building with a budget of \$237.5 million

Contractors:

- Andelyn signed the land lease agreement for the new gene therapy manufacturing center with SciTech.
- CE&IC was selected as the architect for the gene therapy production facility while Gilbane was appointed as the project's main contractor.

Columbus's success, enabling to be an innovation district:

- Over the past decade, the Columbus Region has been awarded the Department of Transportation's Smart City Challenge, gained record-setting levels of venture capital for startups leading to four unicorn investments, and fleshed out its leadership as a world-class biotech and gene therapy hub. In early 2022 Intel also announced it would be moving its semiconductor chip factory to Licking County, just under a 30-minute drive from downtown Columbus. The Region proves itself time and time again as an open and collaborative business environment with a strong economy and skilled and intelligent talent.

Cincinnati Innovation District (March, 2020):

- Powered by the University of Cincinnati, the CID includes the world-renowned Cincinnati Children's Hospital Medical Center and other national research centers.
 - The University of Cincinnati, a Carnegie Level 1 research institution, is nearly 50K students strong and produces \$500M+ annually in research. The economic engine of the university fuels the needs of employers to support their growth in talent: students, research and education. Cincinnati Children's Hospital Medical Center (CCHMC) is a world-class, preeminent children's hospital system and health care research center. CCHMC is a trailblazer in healthcare research and a dominant leader in pediatric care. The EPA has a national center focused on environmental issues. These innovation anchors are a strong attractor of talent.

1819 Innovation Hub:

- The repurposed and reinvigorated former Sears, Roebuck & Co. building serves as an ecosystem and catalyst for collaboration between industry and talent by co-locating companies from startup to Fortune 500 with the UC Venture Lab (a startup accelerator program), the Groundfloor Makerspace and the Office of Technology Transfer

Digital Futures Complex:

The mission continues with the opening of the first building in the Digital Futures Complex, a 600,000-square-foot mixed-use development which houses UC's Interdisciplinary Research Institute.

Services: for new startups and companies looking to enter

- [1819 Learning Lab](#): a think tank for the art and science of learning. the 1819 Learning Lab works with individuals and organizations to enable people to learn and unlearn different mental models, empower them to build a culture of learning and collaboration and excite people's curiosity to unlock bigger, better, faster innovation

- Highly [collaborative environment](#) (serves as the glue of the innovation district)
- Venture Lab: UC's [Venture Lab](#) helps entrepreneurs from idea conception to startup launch. We connect the Bearcat community to knowledge, talent and resources to help launch scalable startups. The team includes UC staff, entrepreneurs in residence, mentors and technical experts.
- The [Center for Entrepreneurship](#): offers consulting, executive education and professional development to leaders of new ventures and executives of mature businesses aspiring to be more entrepreneurial. Services, which are provided by UC faculty and staff work in conjunction with professional affiliates, include a Small Business Institute consulting program and executive MBA-level coursework for executives, business leaders and functional managers.
- [Technology Transfer](#): comprised of specialists in licensing, business development and legal matters, with vast experience in transferring technologies across a broad array of research and innovation fields
- [Ground Floor Makerspace](#): open to all 1819 partners and other area businesses. Capabilities include 3D printers, graphics, laser cutting, textiles, sewing, CNC machining, electronics, IoT, waterjet cutting, woodshop, metalworking, welding, software and digital services. Engage your employees in teambuilding events, test new business ideas through student innovation challenges, create prototypes with the help of technical staff and develop new skills and certifications.
- [IT SOLUTIONS CENTER](#): Services include AI/AR development, analytics, chat bots, CPT chat, custom IT solutions, cybersecurity checks, full-service IT support, gaming, Microsoft Shop solutions, mobile app development, new technology evaluation, software support and web development.
- [Esports Innovation Lab](#): The lab serves as a catalyst for student development, providing opportunities for personal and professional development with partners within the business community and the Cincinnati Innovation District.
- Goering Center for Family and Private Business: promotes family business and job creation, growth and sustainability by advocating for family businesses, their lifetime of savings and the issues they face running their businesses every day.
- [Co-ops](#): University of Cincinnati is the birthplace of cooperative education, and we consistently rank among the top five universities nationwide for co-ops. Each year, students earn a collective \$75 million working for thousands of employers all over the world, including GE Aviation, Disney, Toyota, Kroger, P&G and more.
- Capstones: Recent UC capstone projects have included analysis of data for P&G's FemCare Digital Innovation Team, assessment of electronic health records for life insurance underwriting, and development of a potential new treatment for iron overload disorder.
- Student Creative Agency

Quick stats:

- The Cincinnati Innovation District is a unique ecosystem that plans to graduate an additional 15,000 STEM graduates and drive an additional \$2 billion in research investment over the next 10 years.
- The University of Cincinnati and Cincinnati Children's Hospital contribute \$450 million each year in research

Cleveland Innovation District (in progress; launched Jan, 2021):

Collaborators:

- Case Western Reserve University
- Cleveland Clinic
 - Initiatives taken as part of their commitment to the program:
 - While the Clinic said it plans to spend \$300 million as part of the initiative, other organizations also anticipate spending millions to create what the state said will be a \$3 billion economic impact on Cleveland and Ohio as a whole.
 - Launched **Discovery Accelerator with IBM**: 10-year partnership that serves as the technology foundation of the Global Center for Pathogen Research & Human Health
 - Opened **Cleveland Clinic BioRepository** (first new building in the Cleveland innovation district):
 - Launched plans for **significant expansion of research facilities**: Construction has begun to add 45,000 square feet of research space into the existing NA building, tentatively scheduled to open in 2022. The renovation of two floors will house the Center for Therapeutics Drug Discovery, Biomedical research labs (Vaccine Technology Laboratory, Center for Immunotherapy & Precision Immuno-Oncology), technical laboratories for biomedical support services, Discovery Accelerator (Computational Sciences for Big Data) and Digital Research and Learning Laboratories.
 - Earned more than \$16 million in NIH grants related to pathogen research in 2021. Grants support research into COVID-19 vaccine candidate, development of broad-spectrum antiviral drugs, and a vaccine for emerging tick-borne virus.
 - Recruited world leaders in immunology, cancer biology, immune-oncology and pathogen research as well as technology development and education to address public health threats such as HIV/AIDS, Dengue fever, Zika and COVID-19. This team plans the recruitment of more than 300 scientists in the next 5-7 years
- Cleveland State University
- MetroHealth
- University Hospitals
- Cleveland Foundation
- Fund For Our Economic Future
- Greater Cleveland Partnership
- JumpStart
- TeamNEO
- The alliance and more than 150 business, entrepreneurial, institutional, and nonprofit leaders have developed and launched integrated initiatives towards the vision of Cleveland being a Leading Midwest Region for Technology-led Growth & Inclusion by 2030.

Strategic Initiatives:

- **Smart Manufacturing:** Leading in innovation, application and scaling of industrial digital technologies, leveraging Cleveland's position as one of the largest and most diverse manufacturing hubs.
- **Health Innovation:** Developing the technologies and services for delivering excellent remote and community health care, reducing health disparities, and promoting wellness, and becoming a

global center for pathogens and infectious disease research, development and manufacturing of new diagnostics and medicines.

- **Water Technologies:** Becoming a center for next-generation solutions—controls, treatments, data, and analytics—for a water-stressed world.
- **Boost STEM Talent:** Align and expand education and training programs—post-secondary through post-graduate—to prepare many and diverse individuals for STEM careers.
- **Catalyze a Capital Continuum:** Foster and provide access to a robust range of private capital sources to start and scale businesses.
- **Expedite Digital Equity:** Ensure every resident has access to in-home high-quality broadband for learning, working, and living.
- **Enhance Innovation Zones:** Develop the region's primary innovation geographies—the Health-Tech and Opportunity Corridors.

Goals for 2023:

- 100% of households with high-quality broadband connectivity by 2022
- 20,000 additional tech-led innovation jobs, with 25% held by Black or Latinx individuals and 50% held by women
- 20,000 additional STEM graduates (above baseline) trained and retained, or attracted; 25% Black or Latinx and 50% women
- >\$2 billion in increased targeted research investment
- >\$4 B in total invested capital in tech-led companies, with 25% having Black or Latinx executives and 50% having women executives
- >2 million square feet of new institutional, commercial, residential and community space in the Health-Tech and Opportunity Corridors

Quick stats:

- All told, Ohio's nearly **4,300 bioscience companies produce \$7.1 billion in annual payroll** for some **84,000 employees across the state**.
- The Cleveland Innovation District intends to leverage talent and research across multiple world-class clinical and academic institutions to drive the next generation of **healthcare technology**. At the center of this effort, the Cleveland Clinic will launch its new **Global Center for Pathogen Research & Human Health** to combat emerging infectious disease threats worldwide.
 - stakeholders acknowledged during the news conference that there won't be one central area of the city where all the activity will happen, but this infectious disease center will be the heart of the innovation district
- Over the next ten years, the collective efforts of the Cleveland Innovation District hope to catalyze the creation of **more than 20,000 new jobs and 10,000 new STEM graduates**.
 - Half of those jobs will directly involve the hospitals and universities involved in the healthcare and IT fields, while the rest will be indirectly involved, according to Gov. Mike DeWine's office.
- State agencies will kick in **\$265 million, with \$155 million coming from the state Development Services Agency and \$110 million from JobsOhio**.
- The project is the largest project JobsOhio, the state's economic development corporation funded in part by profits from liquor sales, has ever committed to in terms of money and job creation.

- The **Ohio Tax Credit Authority approved a 2.58%, 15-year tax credit for the Cleveland Clinic to create 1,000 research and development jobs by 2029 and retain hundreds of others that pay a combined \$956.3 million.** The tax credit is valued **\$35 million** and could be worth more if the Clinic creates more jobs.
- The state will chip in **\$10 million for the new institute (Community Responsive Care Institute** to look at infectious diseases and to provide workforce training) and the **hospital will invest \$20 million over five years.**
- **University Hospitals** also said in a statement that plans to **grow its investment research activities by \$233 million** over the next decade. That includes \$10 million for research and infrastructure, and **creating 235 jobs.**