WINDOWS TO A NEW WORLD

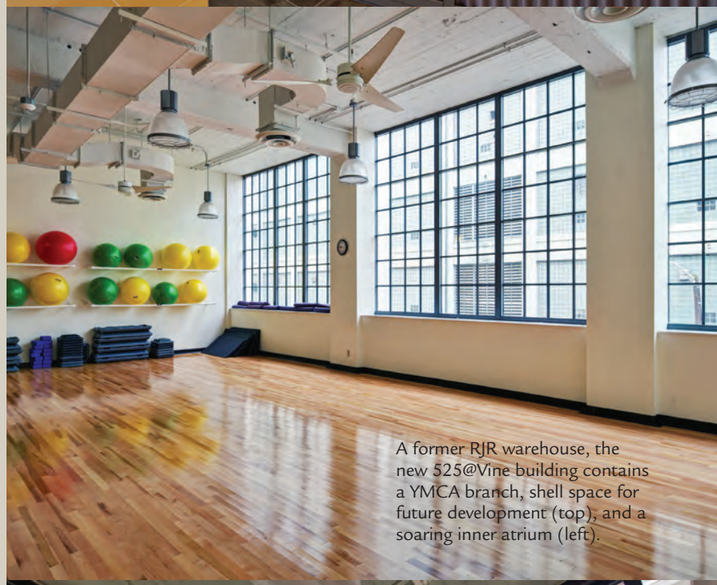
It's one of the fastest-growing research parks in the country and the focal point of Winston-Salem's future. Come along to see why Wake Forest Innovation Quarter is abuzz with ideas, inventions, and hope.

By Nancy Oakley
Photos by J. Sinclair

It was once the defining image that presided over the steel-and-concrete cluster of R.J. Reynolds factories and warehouses in the easternmost reaches of downtown Winston-Salem: a hand grasping a bunch of golden leaves, bearing the defiant tagline, "Pride in Tobacco." These days, a new symbol characterizes the district: a sleek @ sign, painted bright red, hovering over the same structures transformed into elegant and airy pieces of architecture. Welcome to Wake Forest Innovation Quarter.

The red @ symbol lies adjacent to Eric's Window, facing south from its fifth-floor perch in Wake Forest Biotech Place on the corner of Patterson and Fifth streets. "I love this window," says its namesake, Eric Tomlinson, Ph.D., D.Sc., and president of Innovation Quarter. "You can really see the scale of things," he adds, pointing to the view: to the left, the 525@Vine building; next to it, the yet-to-be renovated "60s Buildings;" to the right, the iconic smokestacks of the Bailey Power Plant; below, mounds of red clay from which Bailey Park at East End is emerging. Further south, there's a swath of undeveloped land and the bustle of traffic along Business 40.

All told, Innovation Quarter encompasses 145 total acres, making it one of the largest urban research parks in the United States. But the term, "park" is a misnomer, because Innovation Quarter is just that—a neighborhood akin to New Orleans' French Quarter or Paris' Latin Quarter—though one that's still in the making.



A former RJR warehouse, the new 525@Vine building contains a YMCA branch, shell space for future development (top), and a soaring inner atrium (left).

ABOVE: The front entrance of 525@ Vine, Wexford's newest project. BELOW LEFT: A catwalk over Vine Street connects Biotech Place (left) with 525@Vine. BELOW RIGHT: Flywheel is a shared working space that's open to all.

"We wanted an environment where people walk in and go, 'I want to be here.'" –David Mounts, Inmar CEO

The "Wow" Factor

Soaring atria, glass bricks, subtle mood lighting in dark corners, playful pops of color. These are just a few of the attributes in the transformed Reynolds buildings in the north end of Innovation Quarter.

"When people walk into those spaces and say, 'Wow!,' they get excited about what we're doing. They like the forward-thinking vision and the fact that we've restored these historic properties for a better and higher use," says Dr. John D. McConnell, CEO of Wake Forest Baptist Medical Center.

David Mounts, chairman and CEO of Inmar, sees similar reactions to the company's new headquarters—especially among his team of 900 workers, who had a say in the building's sleek design that accommodates more efficient work and collaboration. "We wanted to have an environment where people walk in and go, 'I want to be here,'" he says—an important ingredient for recruiting and retaining talent that's attractive to competitors such as Facebook and Yahoo.

As for Chris Harrison, NFL-player-turned-developer, "We wanted it to be mind-blowing," he says of the uber-contemporary décor that complements the industrial ambiance of Plant 64, a complex of five buildings that he and partner Penrose Properties of Philadelphia are converting into lofts and retail space.

Transforming the blocks of concrete into marvels of 21st-century aesthetic fell largely to Baltimore-based Wexford Science & Technology, a biomed realty company that specializes in developing research parks. Called in to rehab Biotech Place—a feat that involved removing, cleaning, and replacing its glass bricks and raising a floor by 18 inches—Wexford inadvertently became the driver in the evolution of Innovation Quarter when a previous master developer dropped out of the project due to financial difficulty. Wexford opted to develop Innovation Quarter on a piecemeal basis opposed to the all-at-once plan proposed by the previous developer. This created a stronger, more flexible relationship with Wake Forest. "We can do more on a handshake than with a formal agreement," says Senior Vice President Dan Cramer.

The approach made good financial sense for the company, too: Wexford combined its own investment of $250 million with several million dollars in city, county, and state money and historic tax credits approved by the National Parks Service. "It's a wonderful public/private partnership," says Cramer, adding that of all the projects he's worked on, the Quarter is a personal favorite. "It's one of those rare situations where everyone seems to be working off the same paper."

Innovation Explained

Just what *is* innovation? "By our definition, a technology, a product that has added value that someone will use, maybe pay for, that is of added benefit to them," Tomlinson says. "So it's either a better way of opening a can … or a better mousetrap … or it's an innovation where food is presented to you in, say, a vacuum-sealed pack. That is a revolutionary innovation."

At Wake Forest Innovations, there are myriad projects coming out of research labs: a technique for using the human body's magnetic system to improve MRI scans and a hi-tech fabric that converts body heat to energy—a sort of battery-charger that could be used to power cell phones or other mobile devices. But do they have commercial potential? That's where Tomlinson's other role comes in. As chief innovation officer at WFBMC, he is establishing an infrastructure that will expedite the processes by which projects move from the lab bench to clinical phases to marketplace.

The approach is already paying off. Take, for instance, TLR5, a vaccine for bubonic plague being developed in the Quarter. It's been so successful in early tests that the National Institutes of Health, which had funded the project with a $9.2 million grant, fast-tracked the research and provided extra funding. Its developer, Steven B. Mizel, Ph.D., has obtained a patent for the vaccine and is poised to take it to Phase II clinical trials in the near future—and he credits Wake Forest Innovations for helping expedite the process.

Then there are the breakthroughs in head-trauma research being done by Joel Stitzel, Ph.D. and chairman of Biomedical Engineering at WFBMC. His team is working with Toyota to create an Advanced Auto Crash Notification system that would reveal a vehicle's crash data—speed, deceleration, whether it rolled over—to help first-responders determine the kinds of injuries a driver or passenger might sustain. He's also working with several local football teams to study head injuries, installing sensors in players' helmets to see how their heads move during impact.

These are just a few examples of the collaborative innovations happening inside Innovation Quarter. And that shared approach to innovation should only amplify with the addition of an exciting new space inside 525@Vine.

Working on the Fly

With an estimated 30 percent of freelancers, independent contractors, and self-employed people—the contingent workforce—currently comprising the labor market, places such as Flywheel are "becoming more prevalent," says Brad Bennett, one of the company's founders.

Located on the ground floor of 525@ Vine, Flywheel is a 24/7 co-working environment that accommodates anyone who works on the fly—whether for a day, a couple of weeks, or a few months. Just sign up online for a membership; the rates vary according to the duration of a work project and the type of space needed to execute it.

And there are all kinds of spaces inside Flywheel: a lounge area for chatting or tapping away on your laptop; traditional desks with electrical outlets; a screened-off area for groups; phone booths; fully-equipped conference rooms; a bank of mailboxes, conceivably for a startup that needs a business address, but can't afford overhead. There's even a snack bar with local beer taps, and a basketball court that can be converted to auditorium space.

All in all, it's the kind of environment conducive to firing the cylinders of the imagination, which, in part, is why the facility is more than a work hotel.

"We consider ourselves a co-working/innovation space," Bennett explains, mentioning that the company provides services—connecting members to, say, an intellectual property attorney or a venture capitalist—and programming, from daily practical advice from business folk, to quarterly and monthly lectures from keynote speakers. It's the next generation of an incubator," he says.

■ Laboratories of Learning

A few floors above Flywheel, students in Wake Forest's Physician Assistant Program and Division of Public Health Sciences are getting acquainted with their new digs. The program's decision to move to Innovation Quarter arose as much from the geographical limitations of the school's main campus on Hawthorne Hill as from a vision to create inspiring places to learn and collaborate with other Quarter tenants.

No one is more thrilled with that decision than first-year PA student Jana Villanueva, whose class is the first to attend school in the facilities at 525@Vine, which she describes as "cutting-edge in every way." She adds that the larger environment of Innovation Quarter has other advantages—and not just the amenities, such as IBL study rooms, access to the YMCA, and soon, a greenway along the railroad tracks.

"If we were isolated as a department, it would become easy to forget that life exists outside the stresses of our vigorous curriculum," Villanueva says. "But our program's unique setting puts us in contact with the community daily as we share the elevator, the atrium, café (Brioche Dorée), and other facilities with [people] from a wide variety of fields."

This cross-pollination among tenants has also been a boon to Wake's Public Health Sciences Department. "PHS has world-class leaders in epidemiology and biostatistics," McConnell notes, making it a perfect match for Inmar's expertise in data analytics. Already Inmar is lending its know-how to help PHS locate subjects for clinical trials.

The PA and PHS Programs' successful wedding of teaching methods and environment in Innovation Quarter has prompted a change in the medical school's curriculum, too. Drawing inspiration from the online Khan Academy videos and emphasizing a team approach in which students are introduced to clinical practice sooner, the new curriculum also underscores value-based medicine. This, says McConnell, involves "trying to get the lowest possible cost and produce the highest, best outcome for an individual," most often by taking preventive measures.

And next? "We're trying to think through how we can actually move medical school education programs to Innovation Quarter, as well," he says. The statement hints at rumors that WFU is planning to move almost all of its medical school to the 60 series buildings just south of 525@Vine.

Meanwhile, up to 1,200 people affiliated with Forsyth Tech at Innovation Quarter will be filling 23,000 square feet of space at 525@Vine this fall. "One of the reasons we're there is we see Innovation Quarter as part of future of economic growth in Winston-Salem," says Forsyth Tech President Gary Green. "We're preparing people for the jobs that come out of that."

A wet lab will provide training for biotechnology and nanotechnology students, and "will help connect them with businesses and jobs that are located in the Quarter that are really attuned to technician level individuals," Green observes. The RJR Corporate Training Center will provide outreach to the business sector, with classroom space, seminar and video conferencing space, and computer labs for IT training. "With Inmar being on the other end of the building, that'll be a great match for that type of training," Green notes. And for anyone interested in hanging out his or her own shingle, the Small Business Center will be on site to teach entrepreneurship to start-ups or mom-and-pop enterprises.

■ Designs of the Times

Forsyth Tech is also an institutional arm of Center for Design Innovation, along with UNC School of the Arts and Winston-Salem State University. Operating on state funding channeled through the three schools, CDI's mission lies at the intersection of science, art, and business.

With high-speed video, 3-D motion capture, and laser scanning rapid prototyping from 3-D printers, CDI's research "continues to push the boundaries of scientific possibilities and stretch the thought processes that lead to new knowledge and new design applications," says Interim Director Scott Betz. For example, using motion capture, a team of students, professors, CDI researchers, and entrepreneurs measured the effect of improvisational dance on patients with Parkinson's Disease to see how the science of movement can be used in traditional therapies and documenting the patients' quality of life.

As for rapid prototyping, CDI's 3-D printers have produced draft objects from medical devices to toys. The center has conferred with Hanesbrands on the future of fabrics and is involved in an ongoing laser scanning survey of Carlsbad Caverns. And in conjunction with the Smithsonian Channel, CDI participated in the Emmy-nominated documentary "Killer in the Caves," which explores the epidemic of white-nose syndrome that's threatening the population of North American bats.

CDI's new space will feature an electronics lab, a rapid-prototyping lab, and space for communal design work, teaching, and research. Another highlight will be "the Cube," a 60 feet by 60 feet by 60 feet space that will be one of the largest dedicated spaces for motion-capture research in the Southeast. "Unlike other similar facilities," Betz explains, "the unusually high ceiling will enable aerial performances, experimentation with large, vertical, physical models … and other uses in the protected but large space."

■ Eyeing What's Out "There"

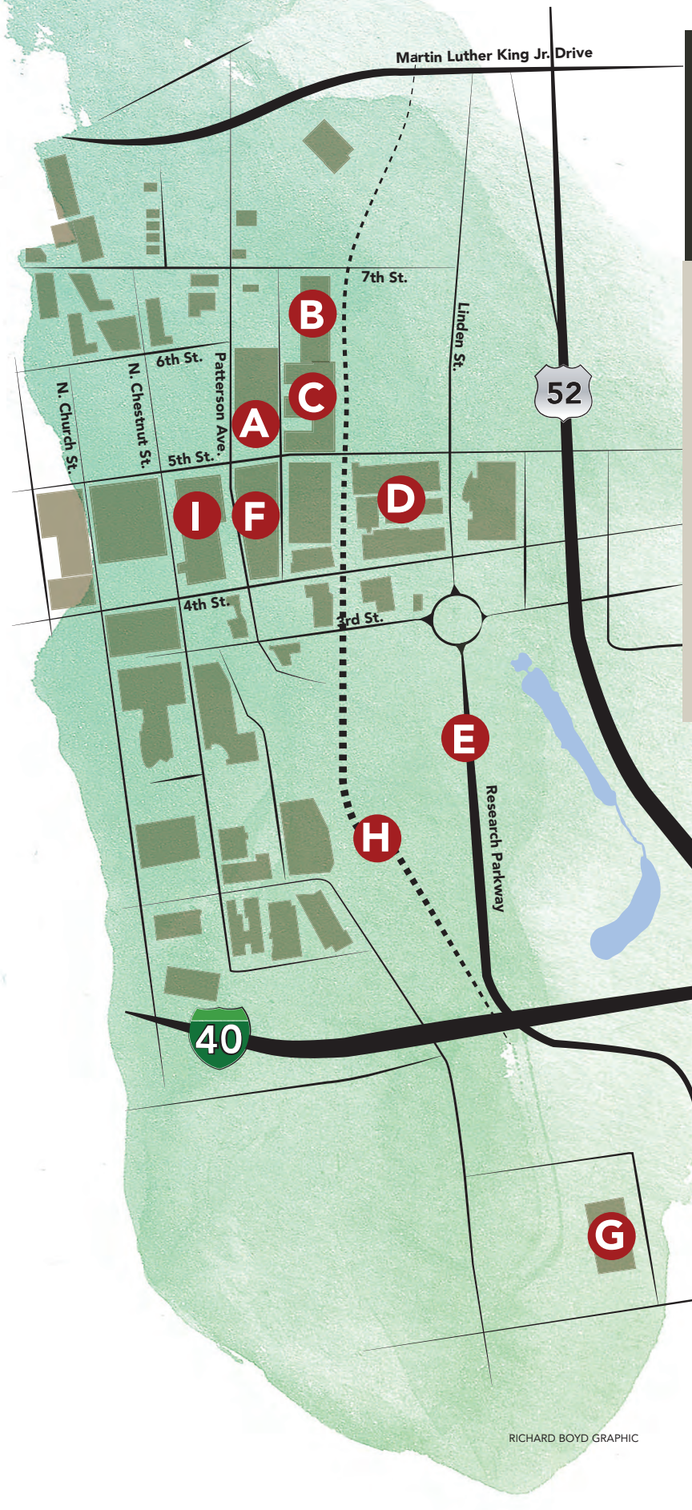
With CDI's facility emerging at the south end of Innovation Quarter, and with the north end humming along, the next area of focus is the 28 acres in between the two that will bleed into the rest of downtown via Fourth Street. "There's a lot to be done to develop a sensible plan [for that area]," says Cramer. "I would think the goal is to keep it a mixed-use style development—office, residential, additional hotels as there's demand for it."

Perhaps there will be restaurant and retail outlets, maybe a farmers market by the railroad tracks, between Krankies and the Bailey Power Plant, which will figure prominently in the Quarter's future. Already there have been whispers that SciWorks might occupy part of the plant's massive space, maybe alongside a restaurant or entertainment venue.

McConnell sees the undeveloped area as "Winston-Salem's new front door as you're coming from three directions." And Tomlinson? "We hope to have the Facebooks and Googles of the future in that area," he says, gazing at the land through Eric's Window. "Who knows what's out there?" he muses, inadvertently answering his own question. For what's out there is the dawn of a new era in Winston-Salem … the Age of Endless Possibility.

"[Innovation Quarter] is Winston-Salem's new front door." –Dr. John McConnell, CEO of WFBMC

ABOVE: Bailey Power Plant is set to become an entertainment hub. BOTTOM LEFT: The atrium inside Inmar's new headquarters. BOTTOM RIGHT: The new Center for Design Innovation headquarters will open in 2015.



RICHARD BOYD GRAPHIC

eXploring the quarter

Over the past two years, the Innovation Quarter has turned from a desolate area with a few hundred workers into a booming area with a few thousand workers. Much of the credit goes to Wexford Science & Technology, which invested more than $250 million to renovate three former RJR Tobacco buildings into cutting-edge technology spaces. Here's a quick look at those projects, along with a handful of others that will soon redefine the eastern edge of downtown.

—Michael Breedlove

For more on businesses, buildings, amenities, and plans inside Innovation Quarter, go to wakeforestinnovationquarter.com.

A Biotech Place (Opened 2012). Wexford's first project, this 242,000-square-foot space serves as the heartbeat of Innovation Quarter, housing researchers in WFU's School of Medicine along with several private companies. Amenities include a wine bar/café, and a stunning atrium equipped with a 14-foot video screen.

B Inmar Headquarters (Opened 2014). When Inmar Inc. moved its 900-plus employees into this dazzling five-floor building, it became the largest employer in Innovation Quarter. Wexford spent $150 million to renovate the space, equipping it with a café, unique meeting spaces, and a dramatic atrium.

C 525@Vine (Opened 2014). The latest Wexford project is this five-story space that opened as a $75 million mixed-use lab and office building this spring. Among its current (and future) tenants are several Wake Forest and Forsyth Tech departments, a YMCA branch, and the Flywheel co-working space.

D Plant 64 (Opened 2014). Built in 1916, this colossal RJR factory was recently revamped into 243 upscale apartment units. Its list of amenities includes a saltwater pool, outdoor theatre, indoor basketball court, dog wash station, and rooftop terrace. Units range from one to three bedrooms. *(Rendering shown).*

E Research Parkway (Opened 2013). This four-lane road runs nearly a mile along the eastern edge of downtown, laying the foundation for future development. Plans call for it to eventually join up with the Salem Creek Connector (now under construction), connecting downtown to WSSU. DAVID ROLFE PHOTO

F Bailey Park (Opening this fall). Located in the heart of the Quarter, this 1.6-acre public park features a large covered stage, bathroom facilities, and an area for food trucks. Concerts, movie nights, and other cultural events are being planned. *(Rendering shown).*

G Center for Design Innovation (Opening in 2015). Anchoring Innovation Quarter's South District is this inventive new space that will become the headquarters of CDI, a joint technology institute created by UNCSA, WSSU, and Forsyth Tech. *(Rendering shown).*

H Rails-to-Trails Greenway (Opening in 2015). The first phase of this walking/biking path starts at the north end of downtown and runs along an abandoned rail line to Third Street. Plans call for it to eventually connect to the Salem Creek Greenway, creating a 20-mile loop.

DAVID ROLFE PHOTO

I Bailey Power Plant (TBD). While officials are still picking a developer for this iconic 1926 facility, it's clear they're thinking big. The list of rumored occupants includes a movie theater, bowling alley, restaurant, farmers market, wine bar, and perhaps even a museum *(hint: SciWorks).*