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 skin 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).
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
Stitzel, Ph.D. and chairman of Biomedical
Engineering at WFBMC. His team is
developing a 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
Stitziel, 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
lab 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 charting or
tapping away on your laptop; traditional
desk setups for 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 aerobics room.

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 folks, to
quarterly and monthly lectures from keynote
speakers. It’s the next generation of an
incubator,” he says.
As well, he says. The statement hints at education programs to Innovation Quarter, for an individual, most often by taking cost and produce the highest, best outcome sooner, the new curriculum also underscores the online Khan Academy videos and environment in Innovation Quarter has helped PHS locate subjects for clinical trials. Already Inmar is lending its know-how to for Inmar’s expertise in data analytics. McConnell notes, making it a perfect match leaders in epidemiology and biostatistics,” also been a boon to Wake’s Public Health 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 Innmar’s expertise in data analytics. Already Innmar 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 current 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 Innmar 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 confered 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 epidemia 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, solace 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, with its Bailey Power Plant, which will figure prominently in the Quarter’s future. Already there have been whispers that SciWorks, 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.”

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

**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).

**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.

**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.

**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).

**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 connect to the Salem Creek Connector (now under construction), connecting downtown to WSSU.

**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.

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