

Annual Report

Facilities & Campus Services
Fiscal Year 2020





WAKE FOREST
UNIVERSITY

Letter from the Vice President

Dear Campus
Community,

For Facilities and Campus Services, the beginning of FY20 looked no different than any other year from an operations standpoint. Who could have imagined the changes that would come in early March? The Facilities and Campus Services organization began to react to the events occurring around us.

Throughout the early stages of the pandemic, the skillset of the Facilities team was clearly evident. The staff rallied to the challenges, never backing down in making sure that the campus environment was protected. They met every challenge, from disinfecting and furniture moving to classroom set-up and de-densifying the campus. The team also took on the challenge of self-performed work to help reduce expenses. This effort showcased how flexible and transparent the organization is. The staff in Facilities and Campus Services continues to be the department's most valuable asset!

Because of the investment in the campus infrastructure over the past years, our successful energy management improvement plan began to highlight why it is an integral part of the organization. It was clear that our investment and objectives allowed the team to preserve the quality and functionality of the campus buildings during this extended shutdown. With limited resources, the staff performed at a pace that never missed a beat. As I look back at the achievements in the

document, I am not only proud to be part of this extremely talented group, but also confident that as a team, we are poised to handle any situation.

As a group, we are always striving to challenge ourselves to produce high results without allowing ourselves to be reactive; something we experienced first-hand this spring.

Thank you to Whitney Barker and Brett Hewitt for their unwavering dedication in producing this report. To our campus partners and senior administration, thank you for your support during this challenging year. Your trust in us is appreciated.

Sincerely,
John Shenette



Contents

2 Letter from the VP

John Shenette shares our highlights during a year of extreme ups and downs.

5 From the Ground Up

Our Hearn Plaza performance touched the hearts of students, faculty, and fellow staff members.

11 COVID Response

During this unprecedented time, Facilities came together to help keep things moving.

25 Athletics Facilities

Athletics adds new challenges and more rewards to our department, especially during COVID-19.

29 Capital Projects

The profile of projects we completed show our commitment to excellence across campus.

41 Warehouse

Our Warehouse took charge with COVID-19 PPE orders for departments across campus.

43 Work Order System & By the Numbers

In October 2019, Facilities launched a new Work Order system.

47 Retirements

Some of our best Facilities folks retired this year after more than a combined 100 years in service.

49 Professional Development & Landscaping

Our leaders never stop learning and our landscapes stay pristine.

Facilities presents From the Ground Up, a dance featuring Wake Forest University's custodial, maintenance and utilities, landscaping, construction, and waste reduction employees.



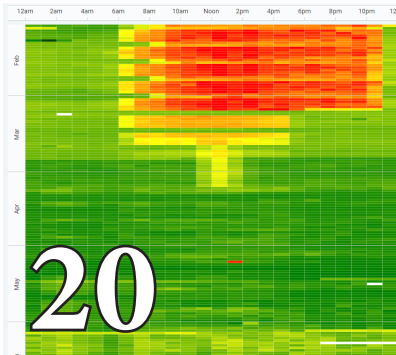
Through a series of residencies, Forklift Danceworks artists partnered with Wake Forest Facilities and Campus Services staff to co-create a large-scale, site-specific performances that were held on Hearn Plaza on October 3rd, 4th, and 5th, 2019.



Custodial staff, arborists, turf crew members, locksmiths and carpenters were among the nearly 70 participants performing on Hearn Plaza in the original dance piece "From the Ground Up."



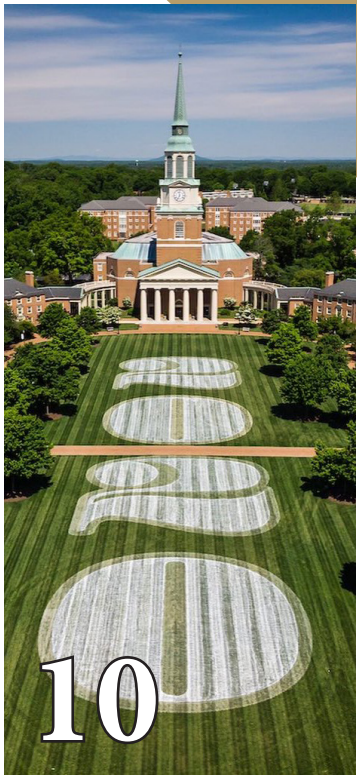
BPI² shows that our energy savings trends continue to climb toward a lower carbon impact and savings that we can take to the bank.



Sophie Wimberley, our new Waste Reduction Specialist led the Deac Donates efforts during our unconventional move-out process.



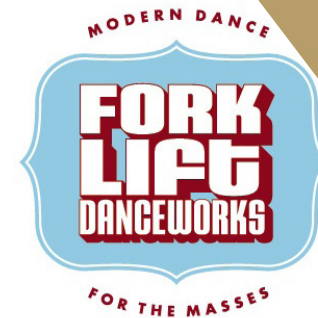
Events were halted starting in the month of March, but that didn't stop a special virtual graduation celebration.



The dreaded COVID 19 virus outbreak shook the entire world, not to mention our Facilities department. Take a look at how our group bends, but doesn't break.

From the Ground Up

Perhaps the greatest project of many of our careers, "From the Ground Up" touched the hearts of students, faculty, and our fellow staff members in a way we couldn't have imagined. With the dedication of Allison Orr and her Forklift Danceworks production team, as well as the coordination and support of the Wake Forest University Department of Theatre and Dance, we accomplished the impossible. After more than two and a half years of shadowing, planning, and practicing, our Facilities team, production students, a live band, light technicians, and many more came together to show off what Facilities is made of. Often the unsung heroes of the University's largest accomplishments, Facilities was finally featured in what can only be described as the most incredibly collaborative performance to be staged on Hearn Plaza.



Allison Orr
Founder & Artistic Director



Krissie Marty
Associate Artistic Director &
Community Collaborations Director



Gretchen LaMotte
Assistant Choreographer



Collaborating with Wake Forest alumna Allison Orr and her team at Forklift Danceworks, Facilities & Campus Services was able to showcase the skill and grace that our staff bring to the job every single day. This performance brought their mission of using creative dance to build community to a whole new level.

photo courtesy of the
Winston Salem Journal



More than 60 team members from Wake Forest Facilities & Campus Services, including custodial, maintenance and utilities, landscaping, lockshop, construction, and waste reduction were the stars of “From the Ground Up.” Using original choreography by the Forklift Danceworks team and music by the composer, Graham Reynolds, the performance highlighted Facilities folks in action.



Cindy Gendrich, theatre professor and director of IPLACe alongside Christina Soriano, dance professor and associate provost for the arts and interdisciplinary programs at Wake Forest coordinated much of the preparation and performance in ways often unseen. Their dedication to showcasing Facilities in a way that not only entertained, but educated campus made the difference between a dance and a life changing performance.



Wake Forest’s Interdisciplinary Performance and Liberal Arts Center (IPLACe) was awarded grants from the National Endowment for the Arts and the New England Foundation for the Arts to help fund the collaborative performance. Through this support, we were able to put together three full nights of performance on October 3rd, 4th, and 5th of 2019.



This performance was unlike anything Wake Forest has ever seen on Hearn Plaza. The dance featured huge machinery stretching out in unison and daily cleaning techniques demonstrated in synch with the live band. The turf team showed off their zero turn mowers and carpenters built garden beds from bed frames in real time. Showcasing the work of Facilities in it's depth and breadth in an hour long performance was a feat in itself.





"I am grateful for the special dramatic event we shared this fall, "From the Ground Up," which showed the power and dignity of so many faithful colleagues who keep up the buildings, grounds and systems on which we all depend. "

President Dr. Hatch

Facilities staff and art students were so moved by the response from the campus community that the performers decided that From the Ground Up was not over just yet. The group reconvened for a public showing of the documentary being made by the graduate film company, Wrought Iron Productions. After the showing, a panel of student production assistants and performers was held for those reflecting on the experience. Allison Orr and her Forklift Danceworks team travelled back from Texas to visit in for the event, showing their unending support and excitement for the new friends they had made.

"The purpose of the show was to educate the campus and wider community about the critical work the facilities staff do to keep campus running."



Allison Orr ('93)
Founder & Artistic Director
Forklift Danceworks



John Shenette
Vice President
Facilities & Campus Services

"We experienced a different kind of collaboration, engaged in conversations across teams, and learned more about each other as individuals."

With a plethora of positive feedback from people on and off campus, a new connection strongly formed between Facilities staff and arts students, and an excitement present at work that won't soon fade, it is safe to say that Facilities & Campus Services has truly had an experience of a lifetime making and performing in

From the Ground Up.

COVID-19

As a result of COVID-19, Wake Forest University looked very different in the second half of the 2020 fiscal year. Everything from graduation to move-out took on a different model in order to comply with the new and necessary restrictions to keep our community safe.

Our various teams were thrown into a new schedule during an already demanding time on and off campus. Maintenance & Utilities started working in weekly shifts while responding to the 300+ students and essential staff still remaining on campus proved to be a strenuous challenge.

The maintenance teams did a fantastic job proving their flexibility, regularly tracking schedules via an online document keeping their coworkers aware of personnel present on campus in real time.



Move Out & Summer Projects

Move out took a new form as all student contents in Bostwick & Johnson were boxed and stored temporarily at the Sutton Center as those buildings had a critical HVAC summer project that had to begin. Polo and North Campus Apartments were also added to Sutton storage in order to consolidate the students remaining on campus into those buildings. The heroes of move out during COVID were the surplus and maintenance teams, working alongside CORE contractors to pack, load, then haul the contents to Sutton 2nd and 4th floor gym areas.

Residence Life & Housing worked to schedule student pickup appointments, then Facilities managed moving the contents from the gym down to a staging area behind Sutton Center where the students had a pre-scheduled time frame to pick-up their belongings.

Students in suites and apartments had to review and select contents that were packed from shared spaces, bringing another level of complexity into the already complicated process.

The next moving phase was to duplicate the

packing process for the remaining Residence

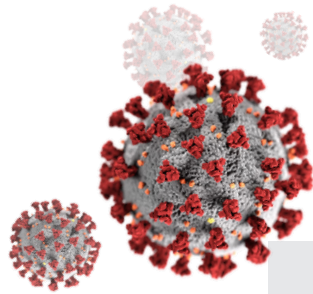
Halls and store student contents in the LJM Coliseum. The photo on the previous page illustrates the volume of contents that were moved from campus to the Coliseum. While operations have been limited, the summer team continued to

meet and communicate regularly to coordinate the normal schedule of work such as preventative maintenance, painting, inspections, construction projects, and Information Services Installations. A detailed summer schedule was pieced together as various decisions were made. This allowed the summer team to successfully meet the required deadlines.

In addition to the normal summer activities, the maintenance team developed building specific Start-up Checklists for each building on campus. These lists include numerous start-up activities including HVAC and water related checks.

Everyone's positive attitude, flexibility, and lessons learned from the past several years enabled the Maintenance & Utilities team to pull off the end of the year.





Our Way Forward

In response to COVID-19, committees and working groups across campus have formed, combining different experts from various departments to work to ensure that returning to campus is safe and stays secure for students, faculty, and staff in the Fall 2020 semester. Facilities Directors, managers, and technicians have served on these committees to build systems for returning to campus safely.



John Shenette serves on the Scenarios/Roadmap Planning Team, a group designed to respond to the pandemic and charged with coordinating research, data, advice from faculty/staff groups, responses by peer schools and other sources, and distilling that information into detailed scenarios for academic operations.

John Shenette also serves on the Cabinet-Plus Policy Group. This group, comprised of the Reynolda Cabinet administrators and other content experts, has focused on University policy and broad practice recommendations.



Our Systems Staff, Brett Hewitt and Whitney Barker, contributed to the weekly Return to Campus group that helped to build the Return to Wake Toolkit for Faculty and Staff and also tested the Sneeze Safe application used across campus. track symptoms and provide resources to all campus partners.



Our Way Forward is a continuous effort across campus to keep students, staff, and faculty safe as COVID still presents a real risk to our community. These pages only cover a fraction of our department's efforts through June 30th, 2020.

Chris Poe has worked on the Committee for De-Densification of Common Area Spaces and Classrooms and the Committee for Physical Changes for Health and Safety. These teams led the de-densifying of classrooms and common spaces across campus and took on all campus signage related to COVID and the reopening of campus.

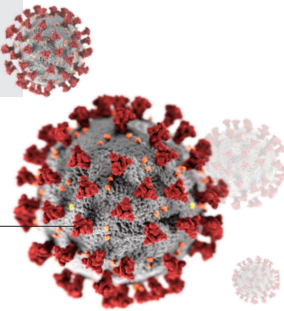


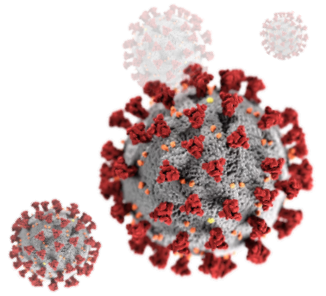
"They did a fantastic job and saved us money by creating our own system for each bus."

Jason Campbell
Transportation Manager

Jim Montgomery, Manager of Fleet Services, worked with Jason Campbell, WFU Transportation Manager, to ensure that campus transportation was safe during the pandemic.

WFU shuttles vary in year & model, so the Fleet team went through each vehicle to record exact measurements for each unit. Once they had the plexiglass, Mark Beckerdite and Mark Shouse were able to determine the necessary brackets and fixtures needed to install it correctly. The Fleet team installed custom plexiglass barriers on 15 total WFU Shuttle Buses.





Energy Savings

The campus sidewalks no longer fill with footsteps and the buildings no longer echo with chatter. COVID-19 has forced us to teach, learn, and work from home. The BPI² team has taken this unforeseen emergency and turned it into an opportunity to improve the campus and its building systems. The two goals of this response to COVID-19 are to save energy while we can and reduce the wear and tear on our equipment.



On campus events have come to a halt, and our only operations in buildings have been infrequent essential duties. Tim Mitchell has worked with departments across campus to schedule building setbacks during breaks, but now his role has shifted to lead our efforts during the campus wide shut-down. He has been able to work through a vigorous setback schedule and daily equipment rotations, while offices and classrooms are empty.

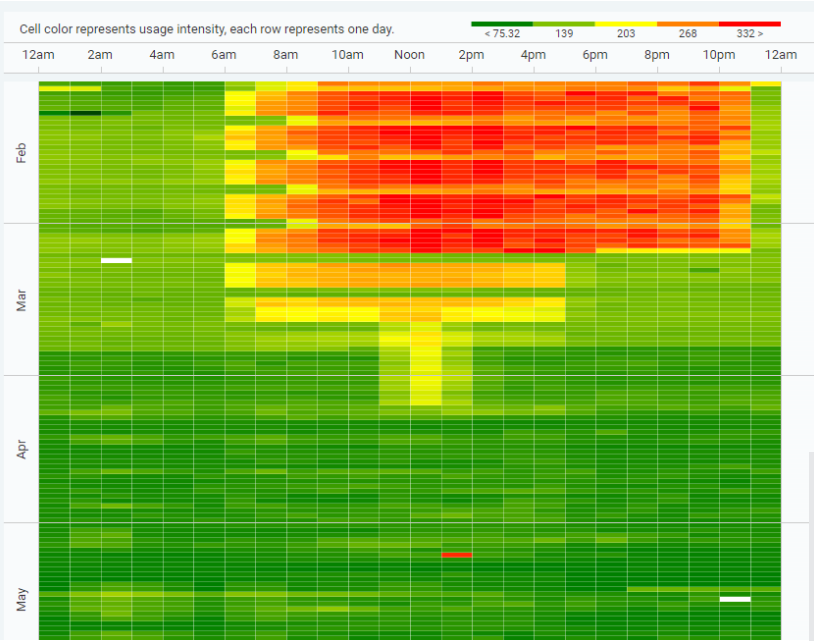
We are working hard to make sure our campus will come out stronger.

As always, our setbacks give special attention to areas of campus with sensitive material like laboratories or curated art galleries, even while unoccupied. Humidity alarming for art storage, mild setback points for musical instrument storage, and a separate schedule for laboratories are ways in which we preserve the work happening on our campus while we're away. This would not be possible without the collaboration and cooperation of the entire campus community.

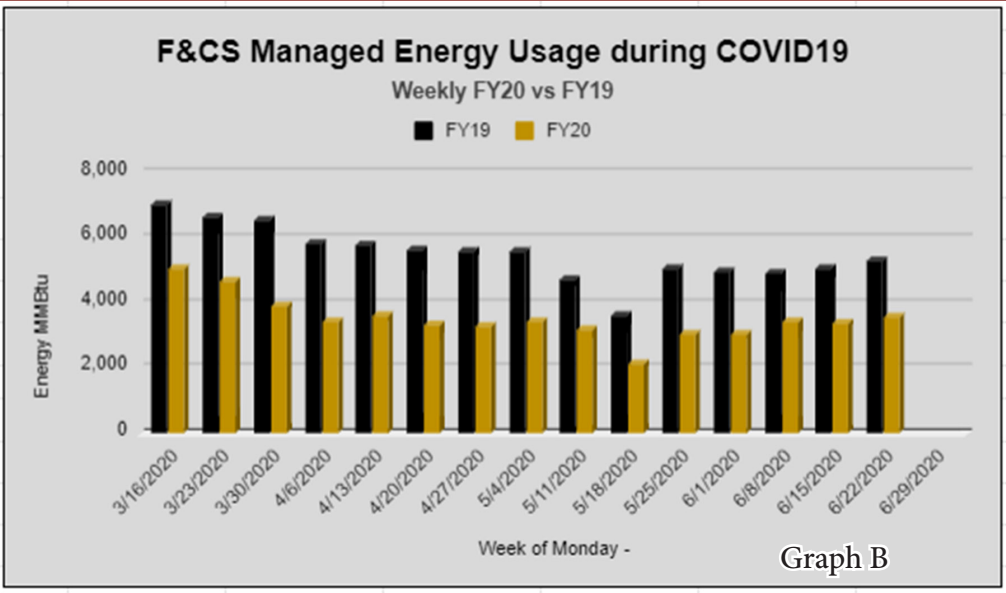
The setback duration has been longer than any regularly scheduled initiative during projects or breaks, giving our team a unique insight into areas of weakness. Data rooms are especially delicate areas in buildings, leading to the addition of fans and fan coil units in these rooms. These air circulation systems operate independently of the main building, keeping the data rooms efficiently operational no matter the building's schedule.

With this phase of setbacks and equipment rotation in place, our team has been able to further our care of campus by making weather related adjustments. While the circumstances are not what anyone expected, we are working hard to make sure our campus will come out stronger than before.

An intense drop in consumption is illustrated by blocks of green in Graph A, to the left, when the building was able to rest due to inoccupancy.



Graph A



Graph B

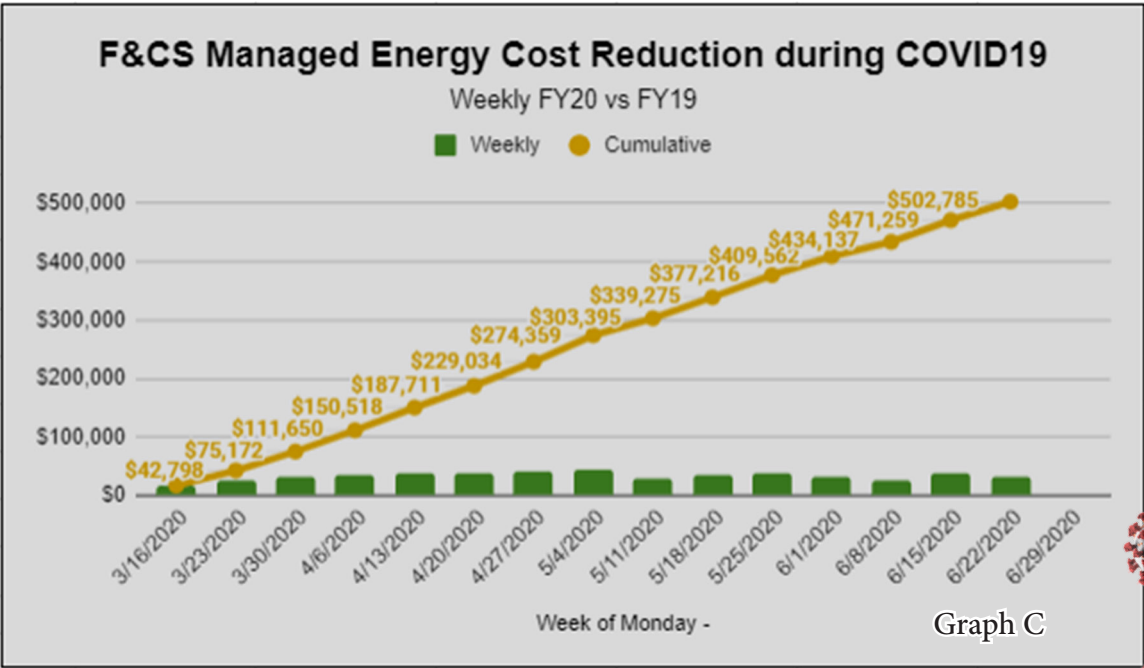
When staff and faculty began working from home, the Maintenance & Utilities teams began working to identify opportunities for campus improvement during the unexpected decrease in campus wide occupancy.



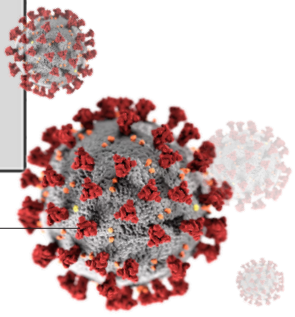
While in COVID-mode, the building systems team was able to setback the air handler systems when areas were empty to provide the maximum amount of energy savings, as illustrated by the heat map on the previous page (Graph A).

Periodic walk through inspections paired with the Enhanced PMs program spearheaded by BPI² led to immense energy savings during this time. Utilities Operations staff followed these in depth energy savings explorations with generation and distribution modifications as campus loads decreased.

Overall energy usage totals during COVID and the same time period in the previous fiscal year, illustrated above (Graph B), demonstrate our vast energy savings. As a result, a reduction in energy costs during COVID is totaled at about \$500,000 through June, 2020. These savings are illustrated below (Graph C).



Graph C

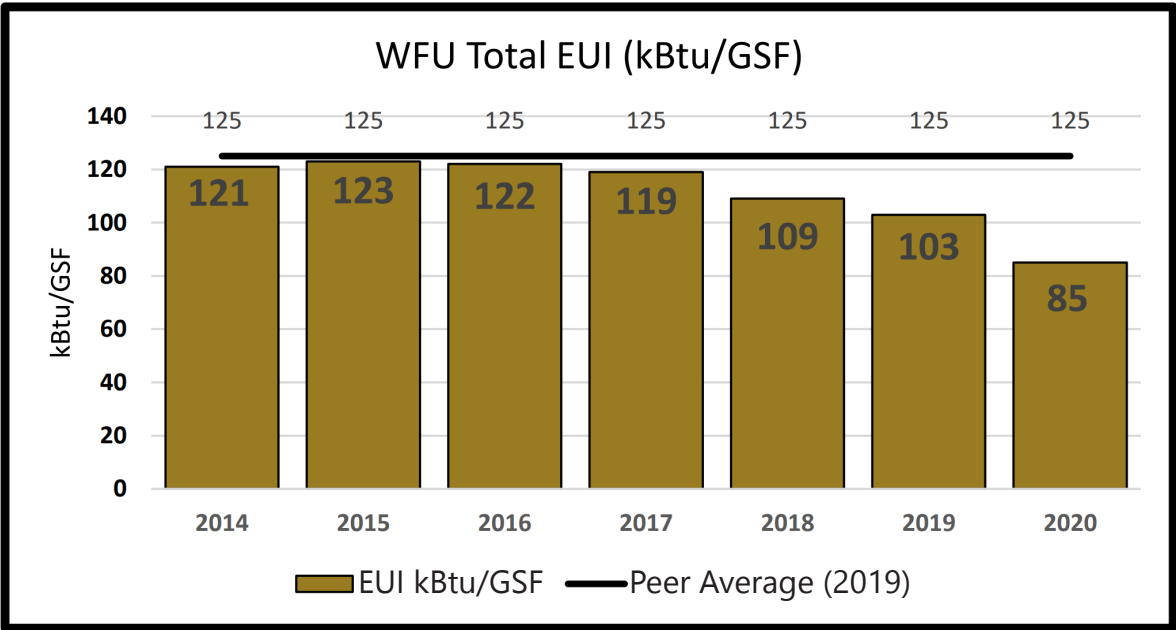


Energy Savings

Our Gross Square Footage continues to grow, reaching a 49% increase this year compared to our Fiscal Year 2007 baseline. Energy conservation efforts continue to progress and with the added COVID operations opportunity to conserve, our total energy usage is down 14% vs FY07 baseline.

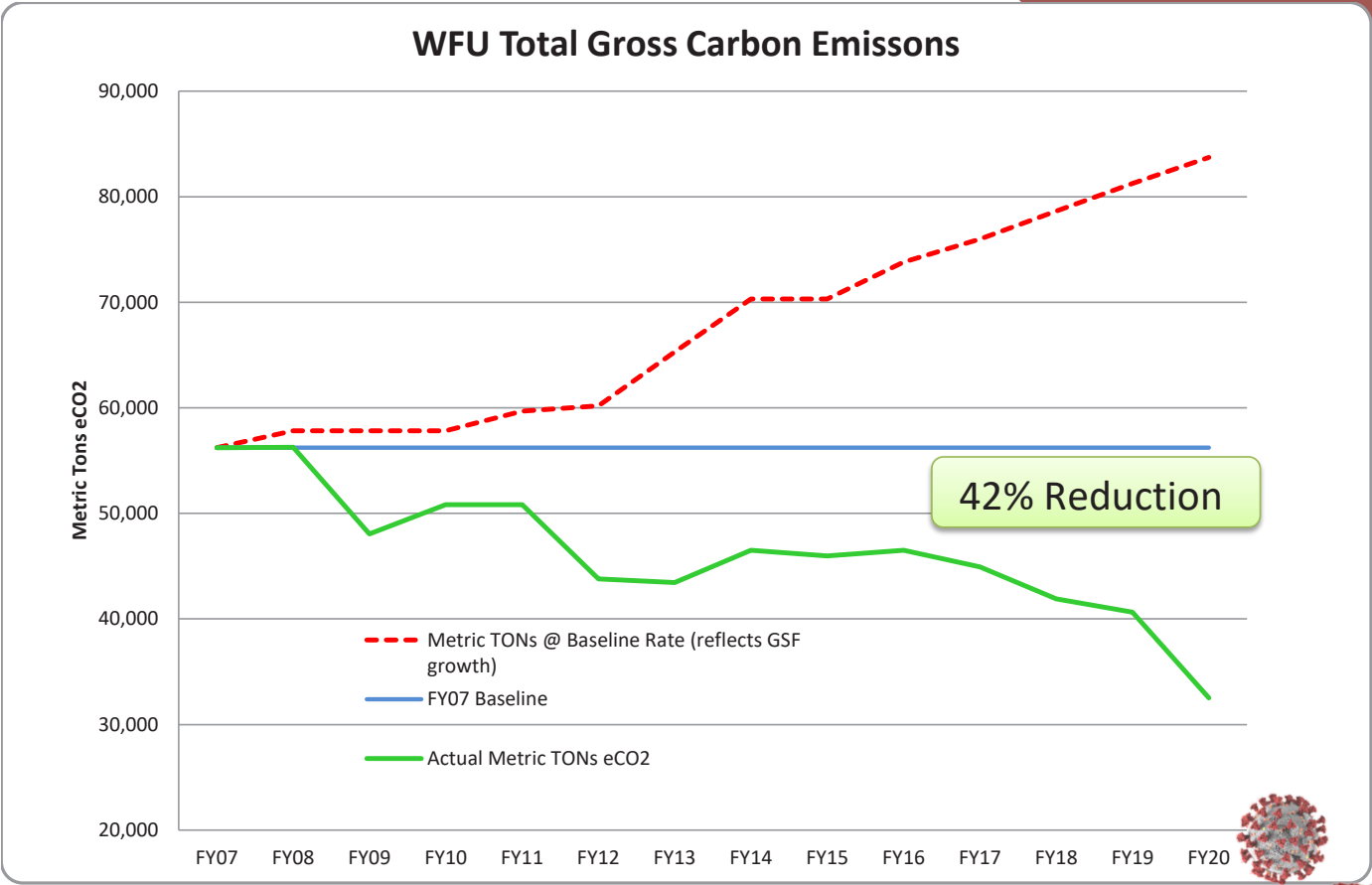
WFU Total Energy Usage Percent Reduction				
Year	NatGas (dT)	Electric (kWh)	Total MMBTU	Reporting GSF
FY07	228,026	78,886,000	537,642	3,630,121
FY08	224,104	78,735,682	533,783	3,755,461
FY09	227,465	76,543,520	525,718	3,755,461
FY10	231,641	77,435,720	538,879	3,755,461
FY11	234,642	76,483,546	540,083	3,875,337
FY12	210,992	72,867,236	503,342	3,909,027
FY13	219,462	74,126,221	516,299	4,240,478
FY14	235,507	78,172,845	550,372	4,566,764
FY15	251,827	78,561,177	562,011	4,566,764
FY16	257,967	83,043,286	582,926	4,816,515
FY17	257,621	84,840,051	589,367	4,933,330
FY18	243,012	78,132,119	551,165	5,076,133
FY19	242,575	75,858,364	542,151	5,245,294
FY20	203,104	65,864,153	460,974	5,405,060
%Change	-11%	-17%	-14%	49%
Current FY vs 2007 BaseLine				

Reduced COVID operations alongside our own implemented conservation methods have helped us reach records of energy efficiency as well. Our energy per building GSF has reduce to 85 kBtu/GSF, a 43% reduction from our 148 kBtu/GSF 2007 baseline.

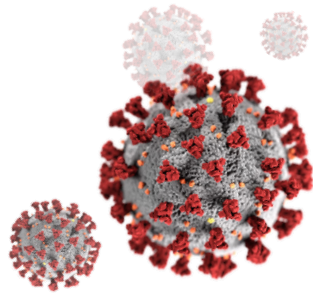


WFU Total Carbon Emissions Percent Reduction			
FY07 Baseline		Actual	Percent Reduction
eCO2 MetricTons		eCO2 MetricTons	eCO2 Metric Tons
Year	Total Emissions	FY Actual	% Reduction from FY07
FY07	56,229	56,229	0%
FY08	56,229	56,266	0%
FY09	56,229	48,052	15%
FY10	56,229	50,825	10%
FY11	56,229	50,815	10%
FY12	56,229	43,796	22%
FY13	56,229	43,457	23%
FY14	56,229	46,497	17%
FY15	56,229	45,983	18%
FY16	56,229	46,497	17%
FY17	56,229	44,920	20%
FY18	56,229	41,907	25%
FY19	56,229	40,658	28%
FY20	56,229	32,526	42%

Reduced energy usage and a cleaner grid has reduced Gross Carbon Emissions, FY20 reporting a 42% reduction vs FY07 baseline.



Data collected through June 30th, 2020.



Custodial

In response to COVID-19, the custodial department started applying PRO-Techs to all common area high touch surfaces using electrostatic. PRO-Techs is an EPA registered and FDA approved antimicrobial technology that instantly kills and provides long lasting protection against pathogens, including: bacteria, viruses, mold and fungi. Since the process is a mechanical kill at the molecular level, it continues to work at full strength for prolonged periods of time. Pro-Techs is an environmentally friendly, water-based chemical making it a fantastic option to help keep our students, faculty and staff safer each day.



Deacs Donate

In an effort to keep the university's commitment to sustainability at the forefront of our student's minds, even during unprecedented circumstances, Facilities & Campus Services Waste Reduction Specialist Sophie Wimberley took on the Deacs Donate program.

The annual Deacs Donate program helps collect thousands of pounds of donations. Students give away everything from tennis rackets to jars of pasta sauce. This has resulted in a collection of over 90 tons of donations in the past five years. The program is a collaboration with Goodwill that has allowed Wake Forest to divert waste from the landfill while giving back to the community.



"I am happy to take part in leading this program. It allows students to participate in waste diversion while simultaneously helping the Winston-Salem community in it's time of need."

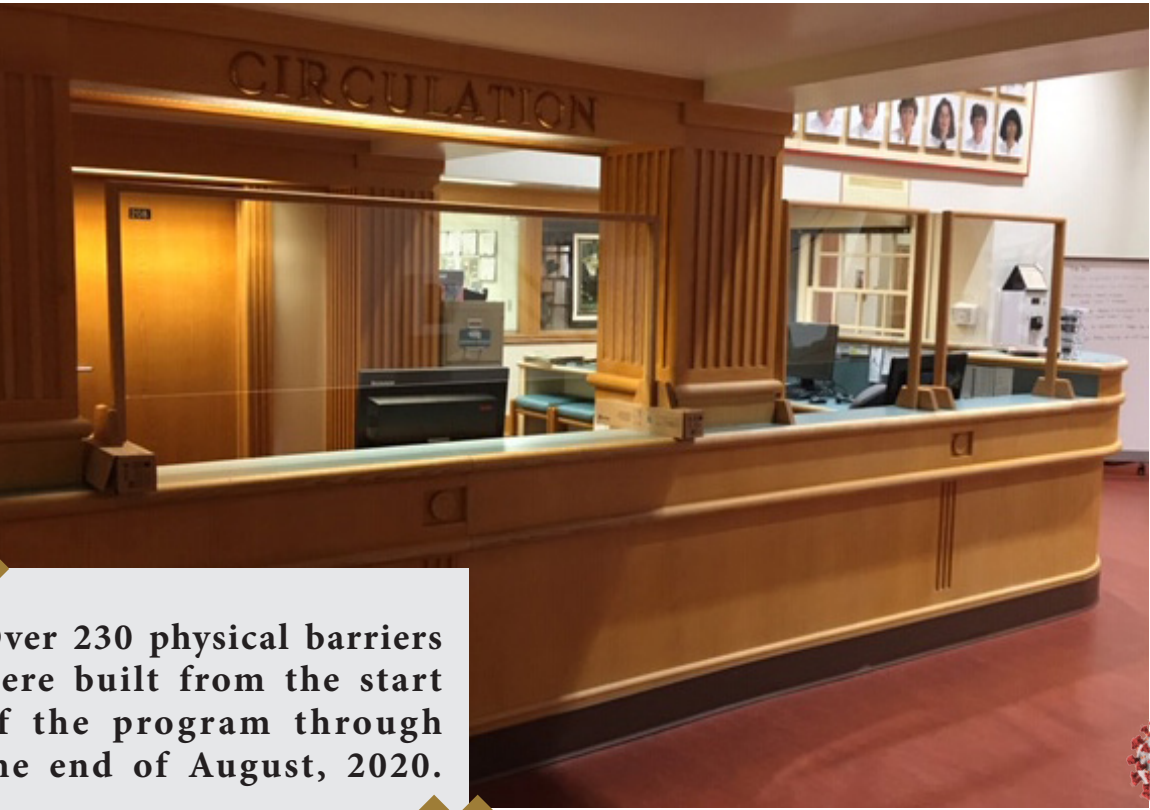
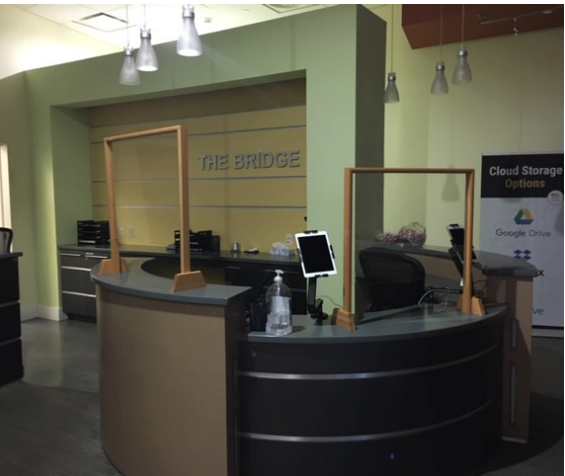


Sophie Wimberley
Waste Reduction Specialist

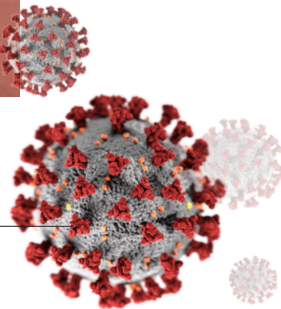


Physical Barriers

In partnership with Environmental Health and Safety, our construction department has been building custom fitted physical barriers to protect our staff and faculty in face to face working conditions. Michelle Adkins, Director of Environmental Health and Safety, worked with the "terrific trio" Jen Haggas, Immanuela Onocha, and JL Bolt to schedule tours and interviews with space owners, conduct physical reviews of spaces on and off campus, discuss the operations within the spaces, and define whether barriers were needed. These physical barriers are sustainably designed using residence hall bed frames that are no longer in use.



Over 230 physical barriers were built from the start of the program through the end of August, 2020.



Graduation 2020

Events were halted in the month of March, but that didn't stop us from making graduation as special as possible.

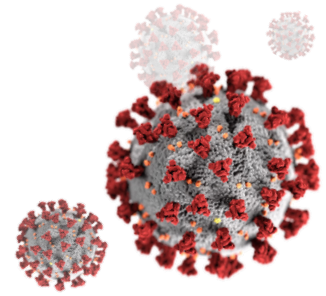


A giant 2020 logo was painted onto Hearn Plaza's open field where graduation would have taken place.



The logo took 48 hours of labor to paint, measured out to 25,600 square feet, and required 90 gallons of paint.





COVID by the numbers

Summer Student Move

6,000 pounds of packing paper
3,200 rolls of packing tape
24,600 boxes packed
175 truckloads moved
26 CORE employees involved

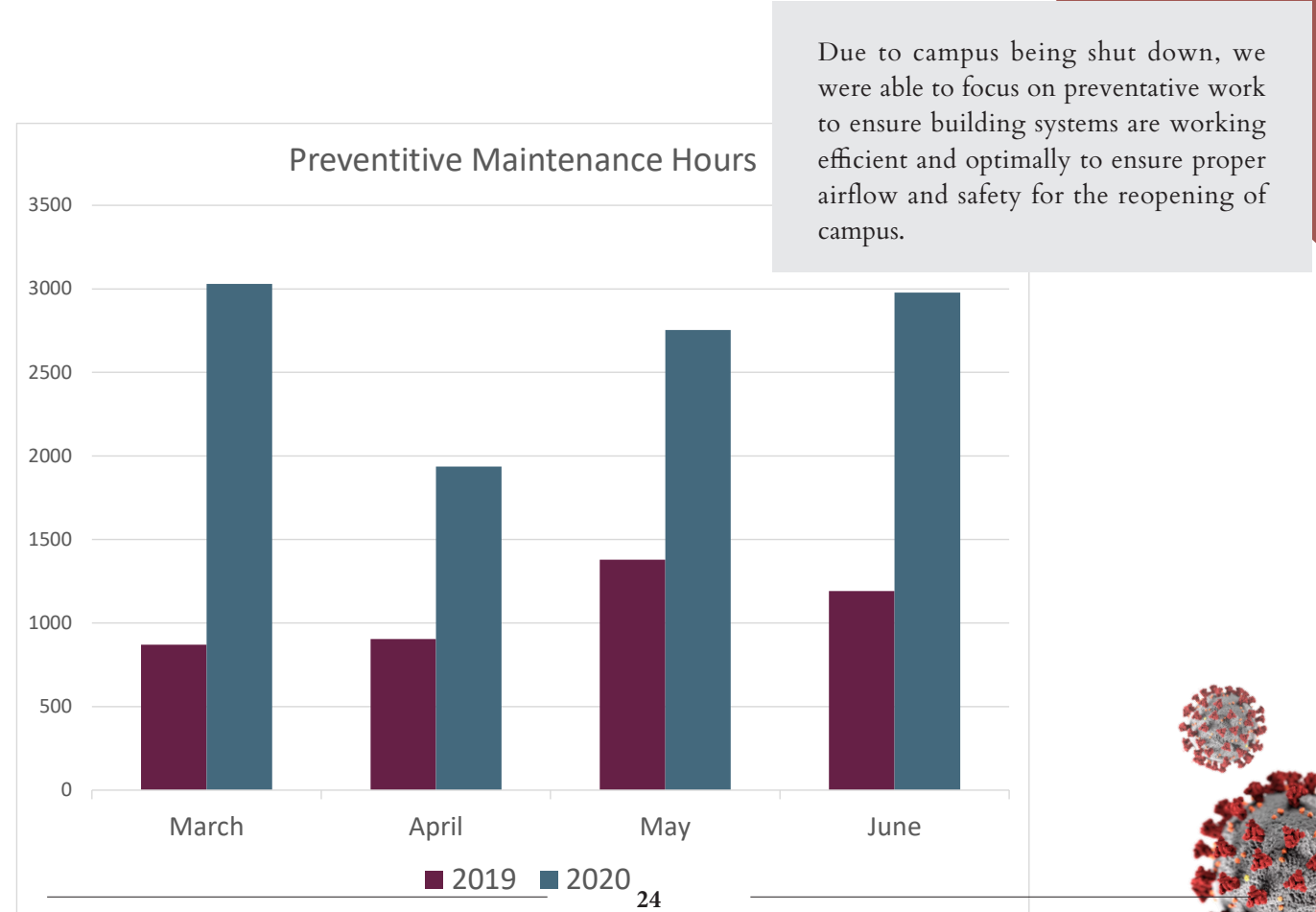
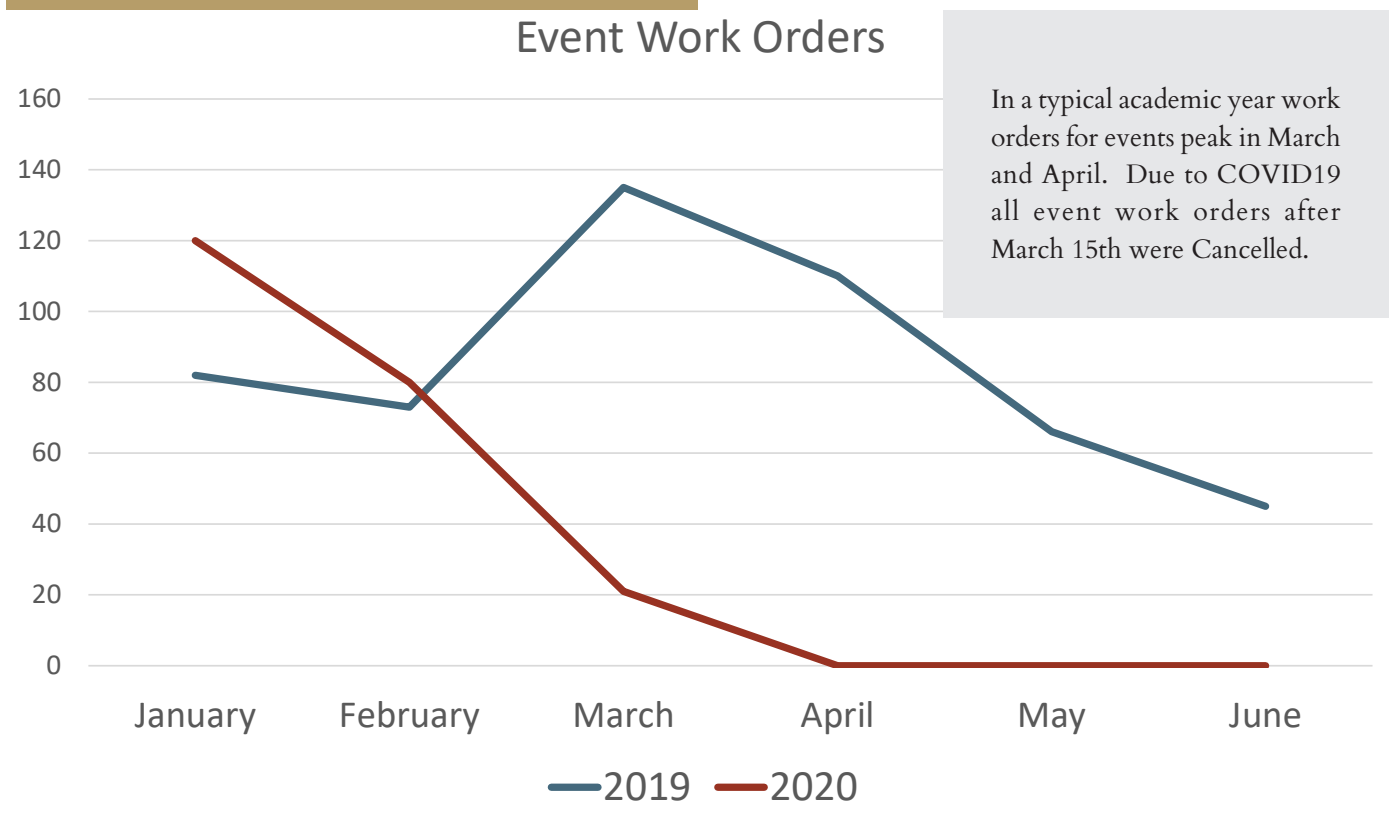
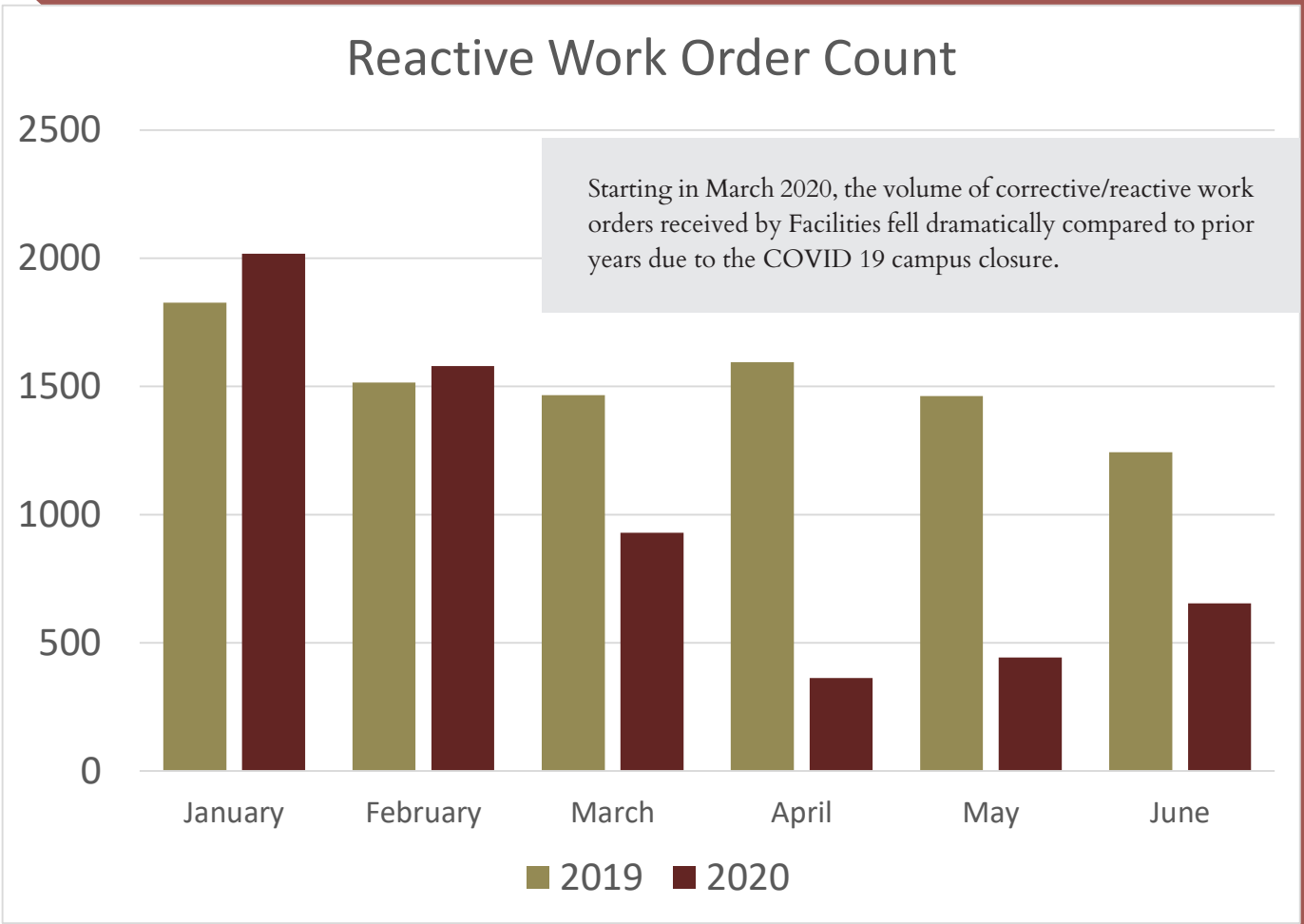
reactive work orders dropped from

125 to 25

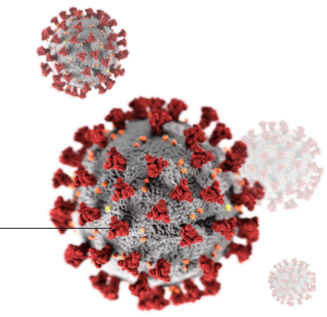
on average per employee per month

92 reactive work orders
related to COVID 19

820 hours spent by
Lockshop on building walk throughs



23
*Data collected through June 30th, 2020.



Athletic Facilities & Turf

With a mission to develop champions, Athletic Facilities & Turf joined our team allowing us to help support student-athletes and fans. This team of experts brings over 175 combined years of experience to the table to provide 24/7 & 365-day coverage and support for athletic venues and events.



"We are inspired by the future growth and resources that will come from merging with the F&CS team. More importantly, how this partnership will allow us to better support the goal of maintaining and enhancing the athletic venues to meet and exceed the needs of our student-athletes, coaches, support staff, and fans."

Steve Adams

Director of Facilities Operations

50,000 seats
maintained in Truist stadium and
LJVM coliseum

85 outdoor campus events
supported per year

50 miles of lines painted for
football and soccer fields



900 gallons of paint used
on athletic fields for football and soccer

365 days of coverage for
athletic venues and events

55 million square feet of grass
mowed per year

50 acres of daily maintained
athletics facilities



photo courtesy of
Ken Bennett, WFU
campus photographer

In an attempt to unify
campus and lift student
spirits, Athletic Facilities
placed branded custom masks
made for the Arnold Palmer
statue and both of the Demon
Deacon statues.



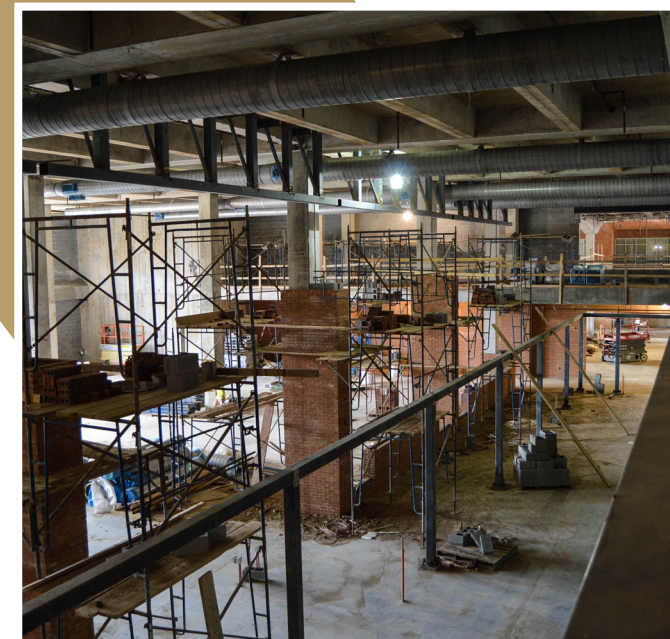
Sutton Sports Performance Center



The Sutton Sports Performance Center, a four story building positioned between McCreary Football Field House and Shah Basketball Complex. The first and second floors house Football and Olympic Sports strength and condition areas, trainer offices, and a nutrition space for all athletes. Upper floors house the Football Team offices, Basketball Team offices, Hall of Fame areas, team rooms and supports spaces.



On a crisp February morning, the Demon Deacon himself was delivered and installed right in front of the SSPC's main entrance. Modelled after the statue at Truist Field on Deacon Boulevard, this statue stands in a forward march toward victory, staff in hand with top hat and game face on.



Shah Basketball Complex



64

miles of electrical wiring

725

tons of structural steel

530,000

bricks

Shah Basketball Complex, positioned between the existing Miller Center and Sutton Sports Performance Center, houses strength and conditioning area for the Men's and Women's Basketball teams, a new Basketball court for the Men's Basketball team, and support spaces. The Budd Gym in Miller Center was refreshed for the Women's basketball team.



The Sutton Sports Performance Center and Shah Basketball Complex, both awarded LEED Silver Certification, officially opened with a ribbon cutting ceremony and tours for students, staff, and faculty on September 13th, 2019. The two honored guests, Mit Shah and Ben Sutton spoke on leadership and excellence in WFU's athletic programs. The entire complex serves as a recruiting tool for all the University athletic sports programs, but on opening day, Demon Deacon fans had the opportunity to tour and explore the four new levels of the buildings.

75%

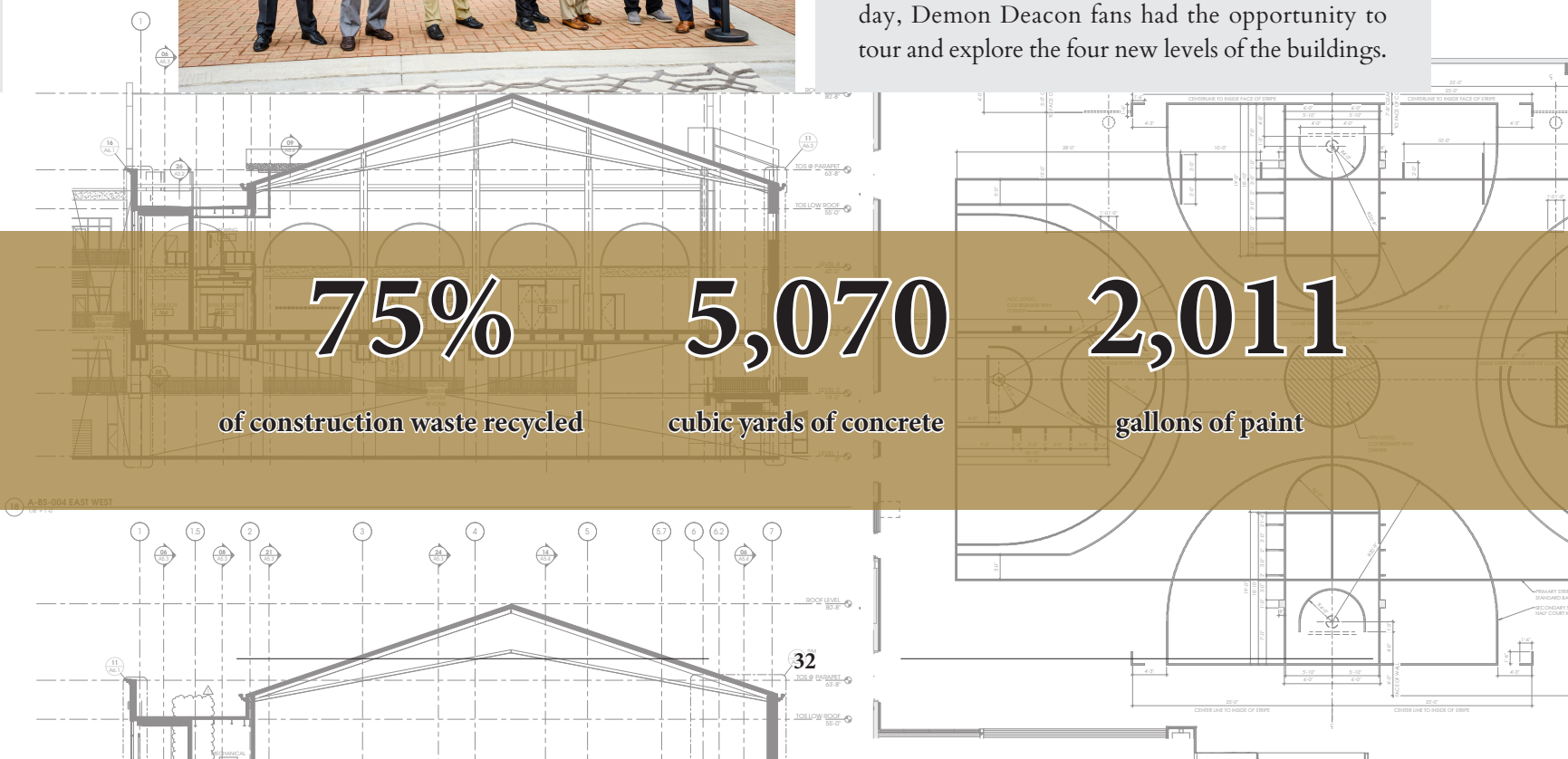
of construction waste recycled

5,070

cubic yards of concrete

2,011

gallons of paint



Math Center



In 2019, the University was seeking a centrally located Math Center for undergraduate and graduate students to replace the outdated and difficult to find location on the upper floor of Kirby Hall. The new location on the main floor of the building not only brings the important student area front and center, but serves as a bright and welcoming space for students to hone their math skills through a variety of tutoring sessions and active learning opportunities. The space offers flexible spaces for individual and small group work and showcases a lively design that reflects the character and identity of the Math Department. The center includes quiet study space, a collaborative study space, two and four-person study rooms, as well as a large eight-person break out room. The project also included a reconfiguration of the former third floor space into offices, a seminar room, and a graduate study lounge. The creative reuse of the space provided much needed private office space for the growing department while providing students easy access to faculty support.



Reynolda Upper Terrace



The Reynolda Upper Terrace project included full roof and bluestone replacement to address drainage issues and water intrusion while improving handicap accessibility.

10,000 square feet of six to eight inches of high density foam insulation, mortar bed, and roofing membrane



10,000 square feet of new 1 inch thick bluestone



drone photo courtesy of Travis VanSweden
Office of Communications and External Relations

Palmer & Piccolo

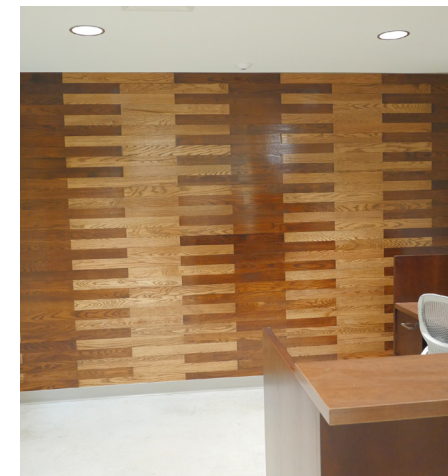


Built in 1982, the Palmer and Piccolo dorms were named in honor of star-athletes Arnold Palmer ('54) and Brian Piccolo ('64). With this renovation, the buildings have been upgraded and re-purposed for academic use; completely reconfigured for classrooms, labs and offices. The current Anthropology Museum of Man moved to the Palmer building, and the Piccolo building is now home to the Department of Anthropology. The Environment and Sustainability Program also has a new space in the Palmer building.

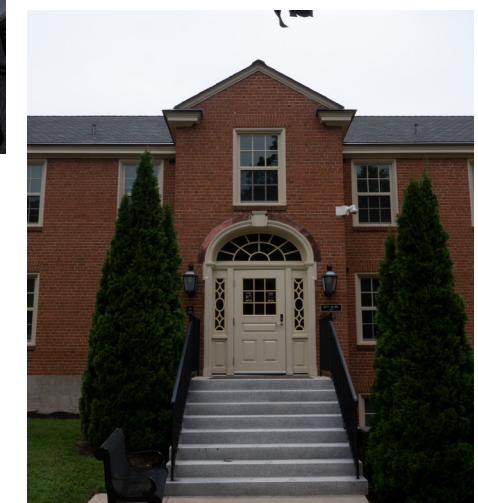
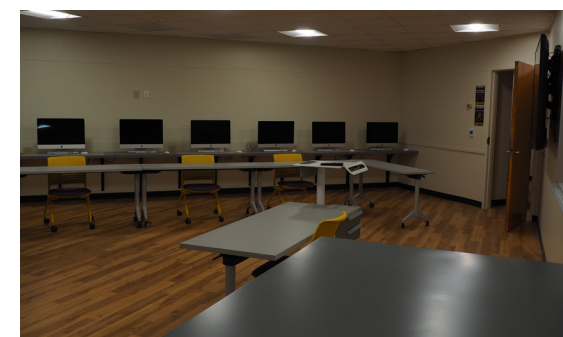
The Palmer and Piccolo buildings were originally almost identical and practically indistinguishable from one another. But now with a new porch at Piccolo to allow for an expanded classroom, wide open gallery space at Palmer, and beautiful skylights and solar tubes in the Environment and Sustainability Program wing, the buildings bring a whole new vibe to WFU's portfolio of academic spaces. This renovation is in pursuit of USGBC LEED Silver certification.

Construction

Our Construction team has once again touched every corner of campus with their special projects. This year's portfolio includes the installation of Granite steps on the exterior of North Campus Apartments buildings, renovations of the 8th floor offices in the ZSR library, numerous projects at the newly acquired Deacon Place, a reclaimed wooden wall at Piccolo, and a new media lab and live edge table at Scales Art Center.



Deacon Place was acquired by WFU as the newest expansion of north campus housing. Our construction team painted and installed new floors all while Deacon Place residents were living there. The doors and locks were all updated to comply with campus safety standards.



Maintenance & Utilities

Project Map

Maintenance & Utilities

serves our academic/administrative and residential buildings across campus. Our dedicated teams of cross-trained technicians provide a broad set of services to maintain the buildings as well as manage projects to support the deferred maintenance and system-level renewal programs for the buildings. Our projects completed during the 2020 fiscal year are tagged on this map.



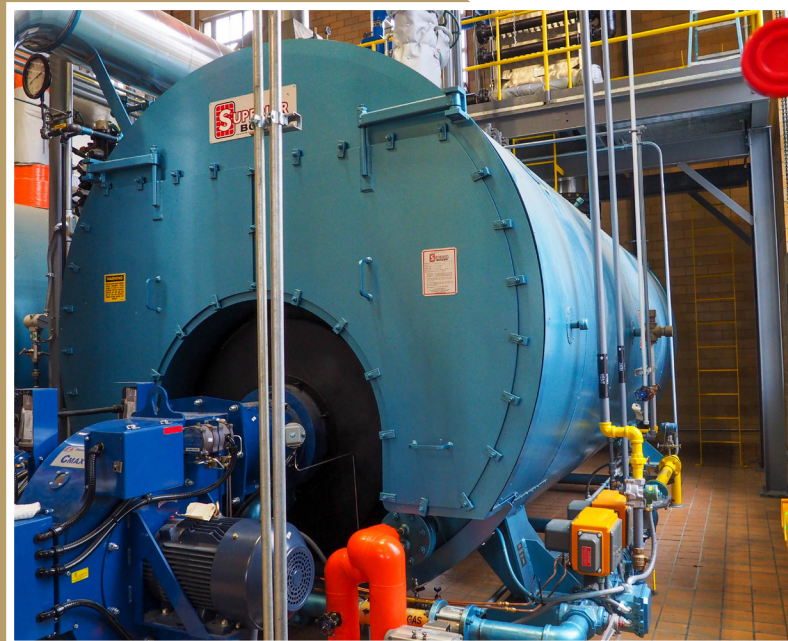
M&U Projects

- Greene Hall: Atrium renovation
- Reynolds Gym: Rock climbing wall sprinkler system
- Lot Q: North Campus Steam leak repairs
- Carroll Weathers Drive: East Loop chilled water extension
- Campus MV distribution: Replaced South substation
- Olin: Fire Protection Renewal
- Carswell: Building exterior repair
- The Barn: Solar energy system replacement
- H.S. Moore: Renewal Project

Central Heating Plant Boiler Addition

In July of 2019, a **20 ton** boiler, Boiler #4, was lifted into the Central Heating Plant and placed carefully in its prepared spot. After being tuned and tested through the 2019 fall semester, this 1.8 million dollar project has been integral in the reduction of energy usage and the carbon footprint across campus.

Boiler 4 is a duplicate of boiler 3, which was installed in 2013. With the added steam generation capacity of Boiler 4, this will allow for longer term utility master planning which includes the dismantling and replacement of original campus boilers 1 and 2. This will ensure the future of the heating plant to provide heat and domestic hot water to campus buildings.



The total plant capacity is now capable of producing **120,000 pounds** of steam per hour. The new boiler can generate **20,000 pounds** of steam per hour, or enough heating energy to heat over 1000 average 2,000 square foot homes.

With efficiency, energy and carbon reduction in mind since the start up of boiler 4 in Feb 2020 our winter months fuel consumption is projected to decrease **5%** and expected annual plant efficiency with boiler 4 is projected at overall **2%** improvement.



Warehouse

Facilities Warehouse is responsible for coordination of ordering, receiving, stocking, and issuing all warehouse materials, and non-stock purchases as requested. Our team of 3 partners functions as a liaison with University Procurement to maximize the value of our purchasing power, utilizing Work Day to make the purchase of record and Asset Essentials as the system of record to track inventory. The team has excelled in reducing obsolete and excess material, yet accommodating recent addition requirements to supporting campus customers with COVID-19 PPE and cleaning supplies.

Warehouse data is current from July 1st, 2019 through June 30th, 2020.

9318

inventory transactions

971

vendor deliveries

1,437

parts inventoried

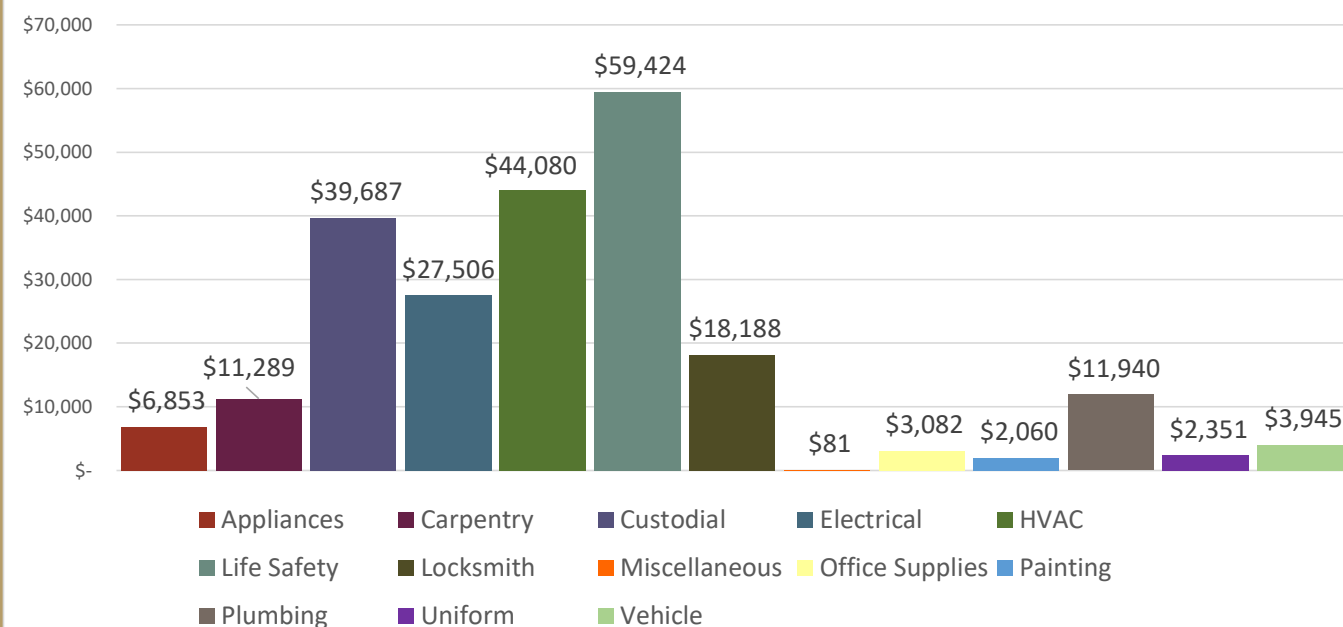
5,019

part requests processed

\$230,488

year end inventory value

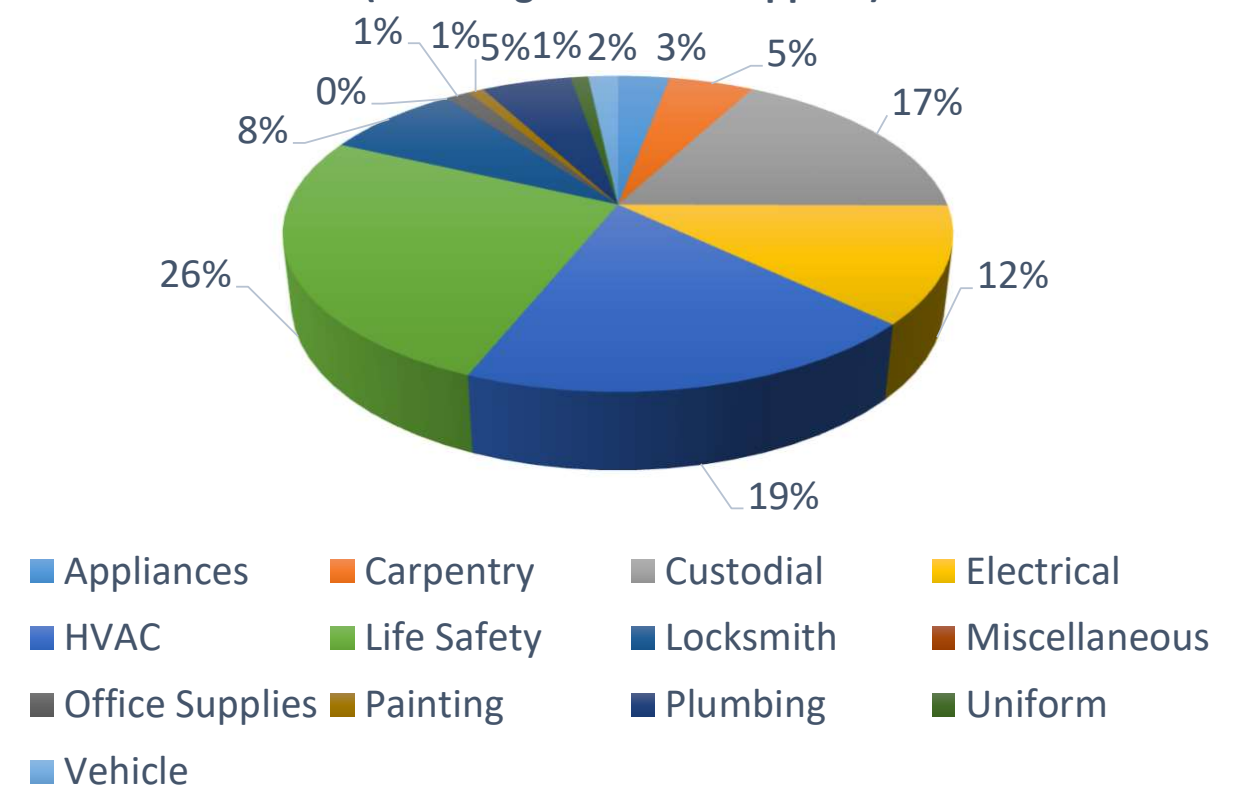
FY20 Inventory (\$) Value
By Commodity Type
(Including COVID-19 Supplies)



COVID 19 PPE and Cleaning Supplies



FY20 Inventory %
(Including COVID-19 Supplies)



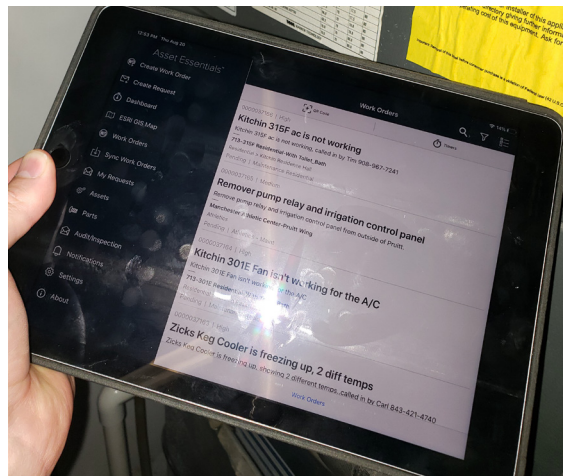
Work Order System

In October 2019 we transitioned from our old CMMS Product and upgraded to Asset Essentials(AE). AE is a cloud-based software that enables us to assign and track the progress of all maintenance activities, manage equipment, and inventory and track the costs across our asset portfolio.

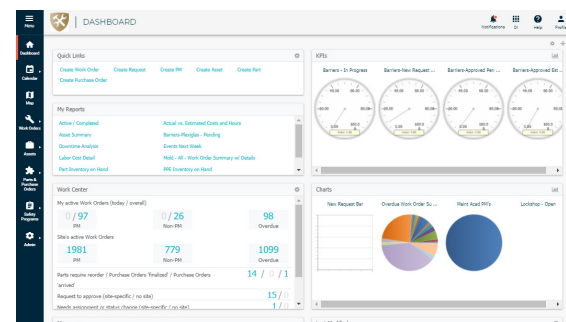


Used across campus, by Facilities & Campus Services, Residence Life & Housing, Athletics, Reynolda Gardens, and Graylyn

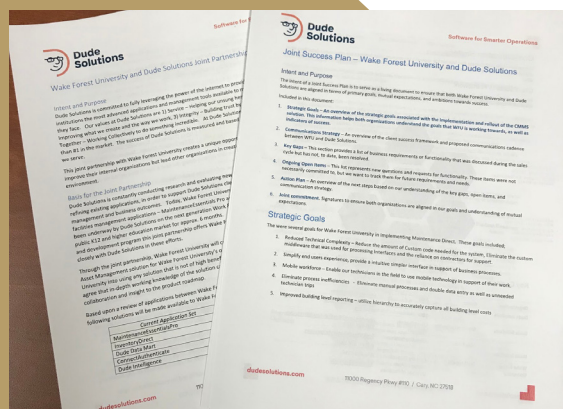
Technicians can use the Asset Essentials App to receive work orders and notifications on their tablet or phone.



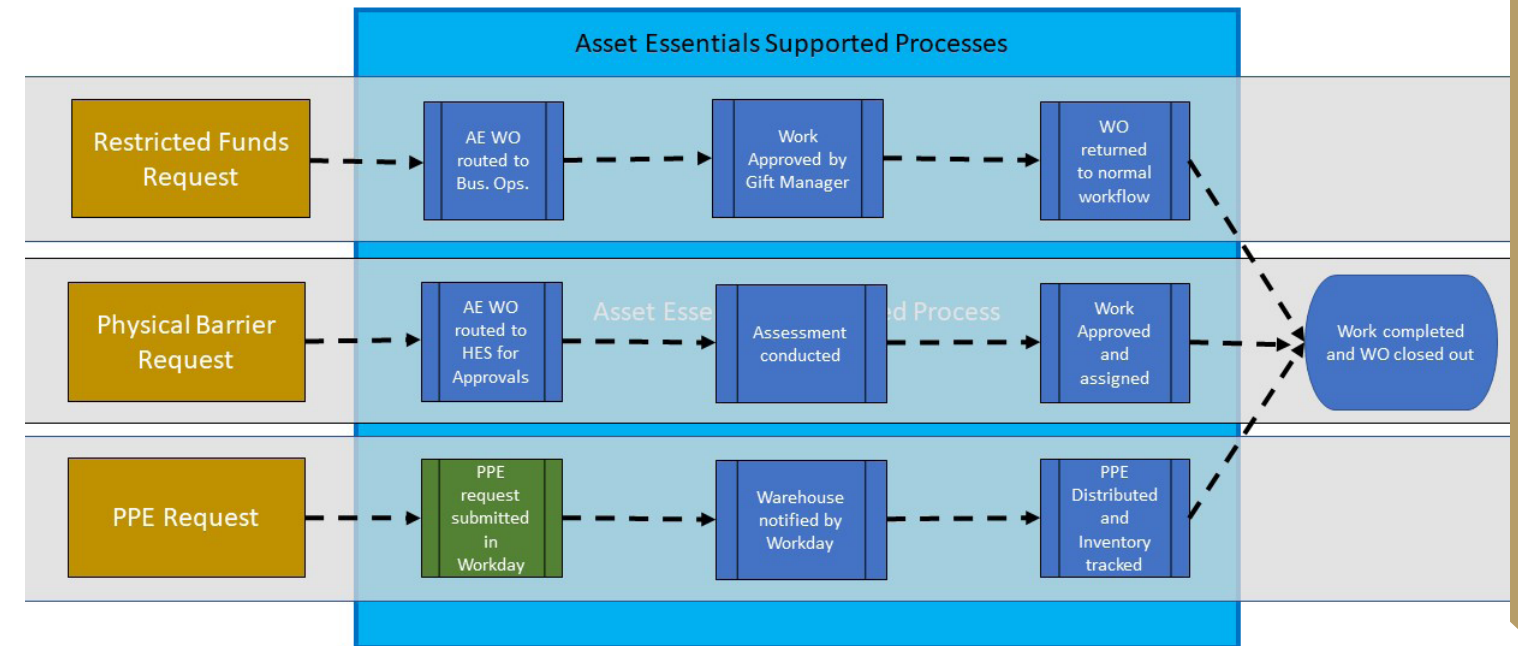
Asset Essentials allows us to manage different sites and processes easily through the underlying hierarchy structure that supports the system. The views within AE are customizable by and for the managers and you can save favorite reports or views for easy access.



Wake Forest University established relationships with key management team members at Dude Solutions. We entered into a joint partnership agreement and developed a success plan for clients migrating from Maintenance Direct to Asset Essentials.



"Asset Essentials has allowed us the ability to adapt our processes to effectively track and manage the work F&CS is required to do on a daily basis especially through the challenges of COVID 19." Brett Hewitt



We have been able to implement system changes to support unique business processes. Put in place special routing for work orders with "Restricted funds", Created a ordering and tracking process for PPE across campus due to COVID-19, Special process in place to review requests for physical barriers due to COVID-19. Would not have been possible with old system.

Wake Forest is a member of the Dude Solutions Campus Advisory Board for higher education, serving as a partner to develop and beta test improvements to their product lines.

Inventory Module was improved with, Commodity codes, customizable views, auditing functions, Security functions, Custom Fields. Working with Dude Solutions for further enhancements.

Asset Essentials provides the framework for continued process improvements with additional project phases planned.

By the Numbers

Work Orders by Department

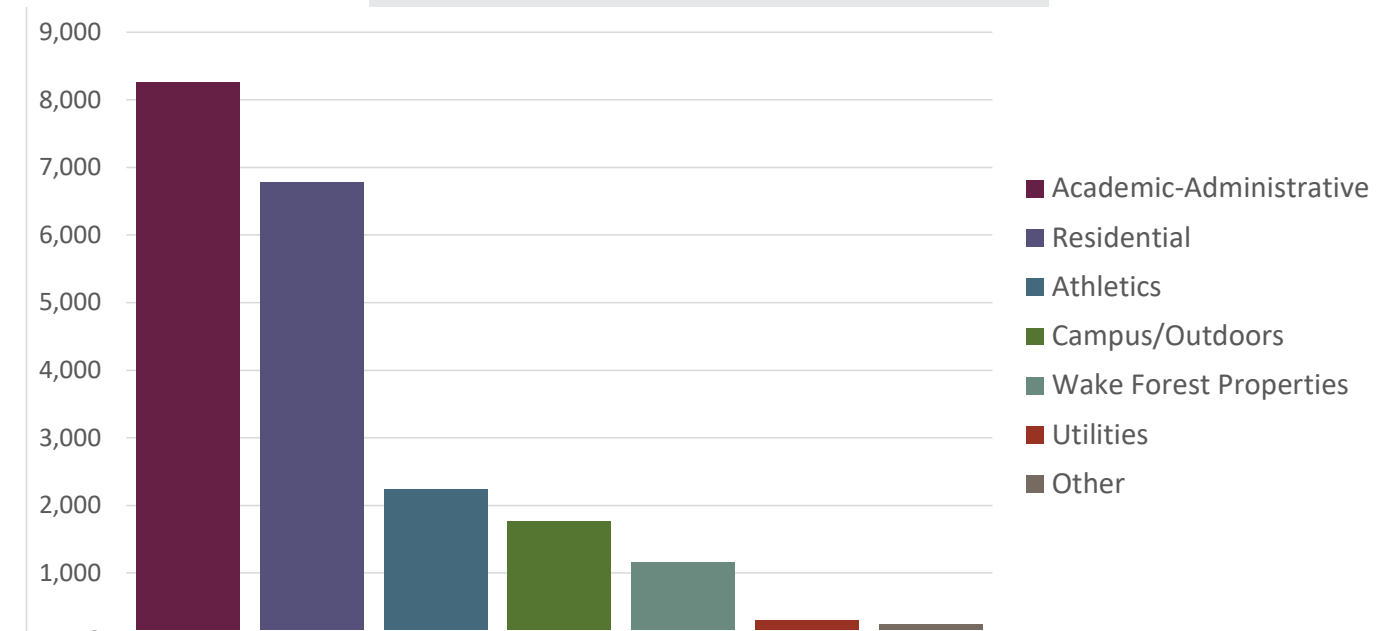


Data Points



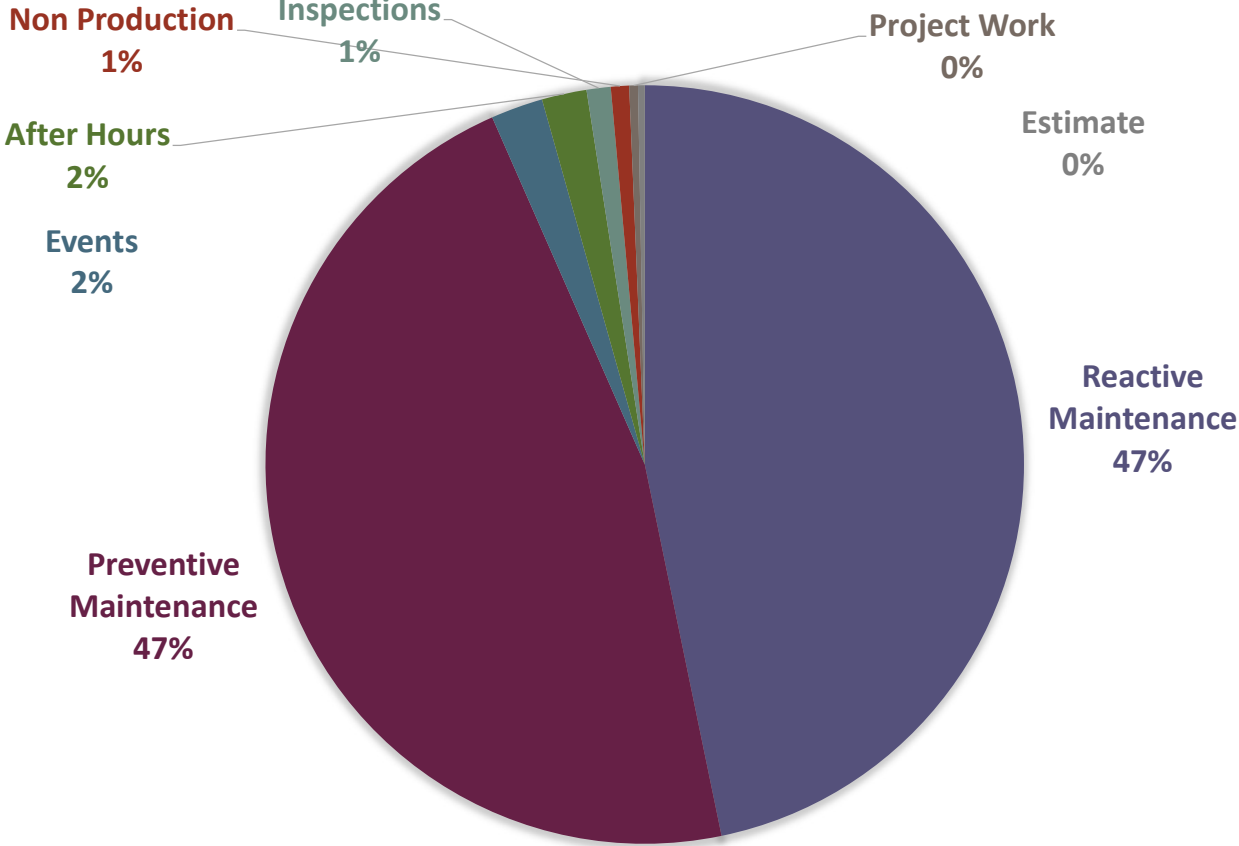
Preventative Maintenance within Asset Essentials is easily searchable. A large effort was undertaken to convert all of our PM's from MD to AE. Reactive maintenance can be expensive. Facilities face hefty costs when an asset breaks down unexpectedly, including costs to diagnose the issue, replace parts and ultimately fix the problem. Preventive maintenance can dramatically reduce the likelihood of these risks. 4,180 Preventative Maintenance schedules in the system. 47% of work orders received for the time period ending June 30th were PM's.

Work Orders by Area



All work order data is post-implementation of Asset Essentials for the time frame October 1st, 2019 - June 30th, 2020.

PERCENT BY WORK TYPE



Retirements

GREG SCOTT

PROJECT MANAGER

Greg came to Wake Forest in July 1983 when he was working for George W Cane Construction adding the 4th floor office space to the Wait Chapel steeple. Over the next 37 years, Greg worked in just about every building on the Reynolda Campus completing countless projects of all sizes. His largest project was the long awaited major renovation of Salem Hall. He completed numerous lab renovations (some a second time) and many renovations in Reynolda Village. Greg's claims that his favorite project was the bookstore renovation he did in the 90's. Greg completed so many projects during his tenure that the PM group jokingly blamed him for any challenging situation they encountered on campus. They also admired him as an unbelievable resource and historian of the campus and its construction through the years.



36

years of service

HUGH BROWN

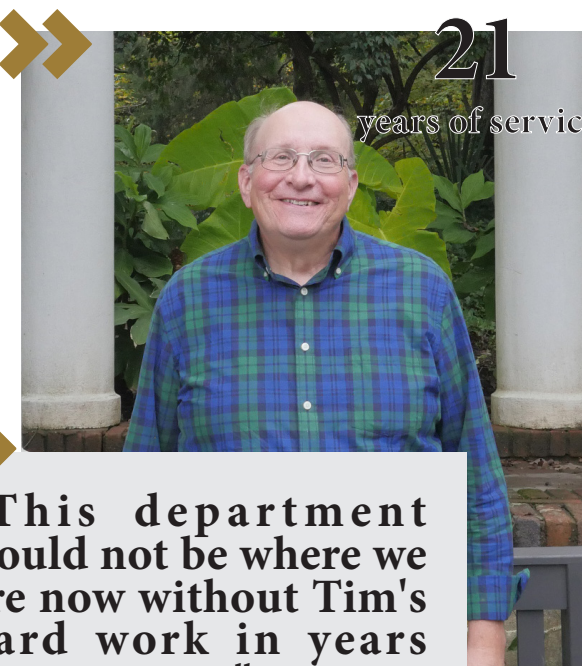
CARPENTER

Known by the University president's family by his first name, Hugh designed and completed carpentry work in more than 14 rooms in the historic President's House since 1989. While this was likely the highlight of his career, Hugh also did extensive carpentry work on campus and led our singers in the "From the Ground Up" performance.



36

years of service



21

years of service

TIM WARD

SPACE INFORMATION

Tim Ward was instrumental in the Planning & Construction department of Facilities during his 18 years of service. He led the implementation of Archibus and created our utilities maps and our property maps that are used daily. Tim also developed up our CAD file standards and drawing flat file archives so that the department would have a solid foundation for future projects.

BENTLEY MCCLURE

CONSTRUCTION FOREMAN

Bentley McClure retired from the Construction team after serving on the Construction Team within Facilities.

Bentley was a part of numerous special projects led by JL Bolt from live edge conference tables to the extensive renovations at Deacon Place.



26 years of service

"This department would not be where we are now without Tim's hard work in years past."

Sean Brittain
Space Manager

Professional Development

The APPA organization offers different professional development opportunities for individuals to elevate their value within their Facilities team. Paul Sheff completed the four levels of the APPA Leadership Academy before he was promoted to Assistant Director of Landscaping.



Jeff Gaither also completed the APPA Institute for Facilities Management Program after earning a merit scholarship to finish the program.



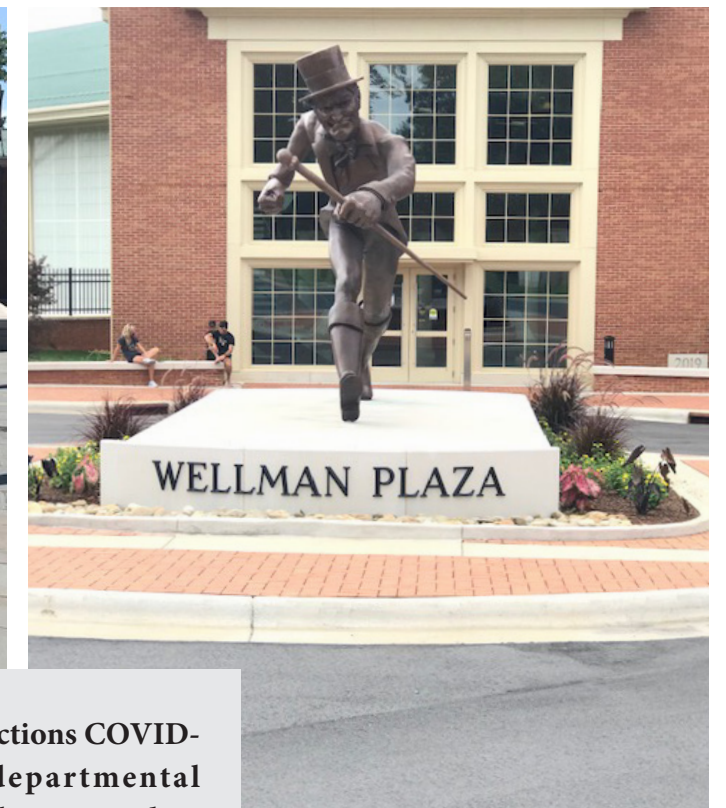
Matt Bennett attended Forsyth Tech and earned both his Certificate and Associates Degree in Project Management.

Demetrius Richardson, custodial also graduated from Walden University with a Bachelors of Science in Health Studies.

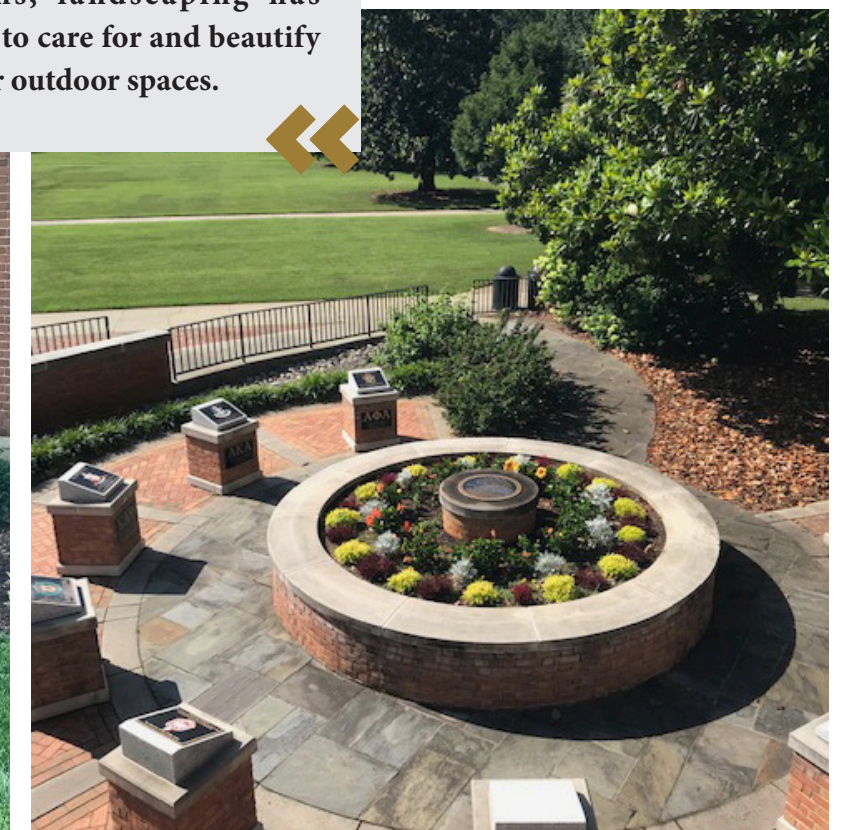


Our Facilities & Campus Services staff have continued their education as leaders on campus and beyond by attending 9 separate conferences this fiscal year. Our year was only just beginning when the COVID pandemic put all large educational events on hold.

Landscaping



Even with the restrictions COVID-19 has put on departmental operations, landscaping has continued to care for and beautify our outdoor spaces.





WAKE FOREST

UNIVERSITY



cover photo courtesy of
WFU photographer
Ken Bennett