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2016 ABC of the Carolinas
Excellence in Construction Awards
Carteret Health Care - Specialty Pavilion and Vertical Expansion
Healthcare, $25M - $50M

Contracted Scope

Provide a detailed description of your scope for this project. Responses should include: type of construction; size of project; contract value; length of project; and percentage of labor that is self-performed.

Project Description/Type of Construction

The project scope included the addition of a Specialty Pavilion, which serves as the new front entrance to the existing hospital. The Specialty Pavilion includes a Cancer Center, Women's Center, Central Energy Plant and Patient Tower, which involved converting double-occupancy rooms to 73 private, acuity-adaptable patient rooms. This change allows for private rooms for patients, and more room for hospital staff and visitors. The new rooms include 10 critical care rooms, 30 progressive care rooms, 15 medical rooms, two labor and delivery rooms, two triage rooms, 10 post-partum rooms and four joint and spine rooms. The biggest feature of the new expansion will offer cancer patients here both radiation and chemotherapy treatments in the same building, a first for the county. The services will be housed together in the new Cancer Center. The expansion also includes improved access for patients and families for inpatient dialysis and cardiac catheterization laboratory services, which were not previously available here.

Additionally, the project includes a two-story vertical expansion overtop the existing single-story Emergency Department wing, expanding outpatient surgery services, as well as ICU and CCU services.

Lastly, the project included various interior renovations as the new additions were completed and designated departments vacated existing spaces and relocated to the newly built spaces. Features include a new chapel, gift shop and cafe area called Java Stop.

Substantial upgrades to the hospital's overall Central Utility Plant and distribution channels to support the expansion and renovations were also part of the project.

Schedule

Start Date: January 6, 2014

Completion Date: July 10, 2015

The total project duration was 18 months.

Size of Project

122,00 SF (Addition & CEP)

12,000 SF (Renovation)

Contract Value

Construction costs totaled $37,294,601 million.

Self-Performed Labor

Rodgers self-performed 4.05% of labor on the project, providing self-performed concrete services.

- **The new Specialty Pavilion serves as the new front entrance to the existing hospital**

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Project Narrative

Provide a written narrative indicating why this project is special and why it qualifies for the Carolinas Chapter award. The focus of the narrative should be the construction of the project.

Why is this project special?

As the second largest employer in Carteret county, Carteret Health Care is an independent, 135-bed hospital that serves Eastern North Carolina. The Specialty Pavilion and Vertical Expansion project was the largest construction project on the campus since the construction of the original campus. The project grew from a facilities master plan and was a direct result of the needs of the community.

The new building symbolically represents Carteret Health Care's mission "compassion runs deep" and serves the community. Dick Brvenik, president and CEO of Carter Health Care, stated, "Better access to health care in rural areas like Carteret County is important, and the addition extends the breadth of services here and the quality of patient care including consolidating cancer care services under one roof."

• **The American flag waves from the steel structure of the new Speciality Pavilion at the project's topping out ceremony**

• **The project included a two-story vertical expansion overtop the existing single-story Emergency Department wing**

U.S. Rep. Walter B. Jones, R-NC, was the guest speaker at the groundbreaking event and called the ceremony a day of celebration and recognition of the hospital's commitment to enhanced medical care for the community.

Included in the enhancements to the hospital are an updated surgery suite, with dedicated endoscopy and C-section rooms and additional outpatient surgery beds.

The biggest feature of the new expansion offers cancer patients at Carteret Health Care both radiation and chemotherapy treatments in the same building, a first for the county. Before this project, the hospital's clinics for radiation and chemotherapy were separate and patients had to go to multiple locations or often had to travel outside the county, as far as 66 miles, to receive treatment. The services are housed together in the new Cancer Center. This allows for people

in the community to receive treatment in their community and not have to travel from the comfort of home.

The project also included a dedicated women's health area and modern and expanded rooms in progressive care and critical care.

This project allows Carteret Health Care the ability to continue adding more services for the community in the future. According to information given by hospital staff, more than 1,800 community members donated more than $4.75 million toward the new Cancer Center and staff gave $247,000. No tax dollars were used for the expansion or any hospital expenses.

- *"This important step in the growth of Carteret General Hospital has come as a direct result of the needs of our community," said Carteret General President Dick Brvenik. "Having a multidisciplinary cancer center and a dedicated women's health center will provide top quality care in these critical areas without having to travel long distances to other facilities."*

Local Participation

Rodgers set MWBE and local participation goals, although not required; the goal was set above owner expectations, with local participation tracking at 69%.

Value Engineering

In order to stay on budget, Rodgers provided cost studies and suggested alternative options to the owner to achieve the target budget, totaling a savings of roughly $4 million. One example involved changing the proposed curtainwall to paneled windows, creating a "ribbon" effect.

Rodgers communicated to the design team by comparing similar projects, showing them the most cost effective designs. Building systems were compared per square foot, which showed where money was being spent and allowed the team to concentrate on the most important areas by using system analysis.

During the system analysis, the exterior skin and casework square foot analysis was 20% higher than any other area. Scope was changed to bring cost in line with other areas. The cost of steel was also high. The project was originally designed with the ability for future expansion, allowing the addition of 1-2 more stories. After reviewing plans, it was decided from a mechanical standpoint, expanding vertical in the future was unlikely. The structural vertical options were removed from the design scope, providing a large savings to the owner.

- *"Rodgers Builders was selected by us in the spring of 2013 largely on the basis of their preconstruction planning and proposals for value engineering and helping to keep our project costs in line. That objective was certainly met and I must state as well that they have simply been outstanding to work with throughout the construction phase. Our project, in no small part to their successful planning and management expertise, is both substantially under budget and also ahead of schedule."*
  Dick Brvenik, President, Carteret Health Care

Schedule

The Rodgers project team used a whiteboard scheduling method, which has proven to be a very effective tool for keeping all project partners engaged and aware of schedule

concerns. There are four columns for each activity on the schedule: scheduled start, scheduled finish, actual start, and actual finish.

Rodgers held meetings with subcontractors each week to look at activities to accelerate that week to stay on track.

With the use of weekly progress reports, and weekly meeting with the subcontractors, the team was able to document and monitor progress and see if there were any areas that needed more attention.

By proactively managing the original 18-month schedule, Rodgers was able to absorb owner-initiated scope changes in excess of $4 million dollars, many of which were nearing the completion of the project.

To ensure minimal impact to normal operations, night and weekend work was performed. The project team worked over a non-stop, 24-hour period on Memorial Day weekend to install a special ceiling for the hospital's linear accelerator room. The "Starry Sky," designed by Earl Architects, features 600 fiber-optic twinkling lights mounted through a circular ceiling of painted drywall and strives to make cancer patients as comfortable as possible.

On July 3, 2014, Hurricane Arthur made its way up the east coast. Morehead City took a direct hit. The project was in the middle of exterior framing, sheathing, and interior wall framing and rough-in. The entire east face had been removed and temporary exterior protection had been put in place on the existing Brady Building Women's Center were the new pavilion was tying in.

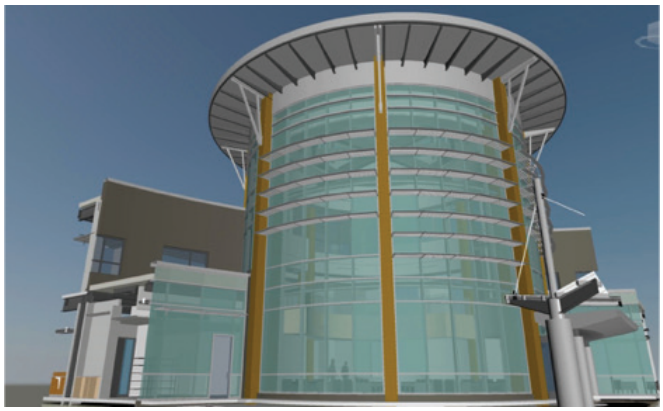
All members of the project team, Rodgers and subcontractors, went to great lengths to prepare the site for minimal impacts due to Arthur.

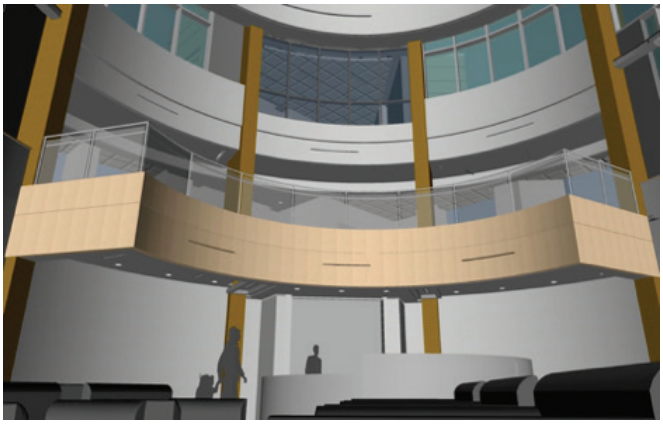
Due largely to the building additions and tie-in experience of the team, zero leaks were reported. After the storm cleared, evaluation of the project revealed that only two panels of temporary fencing were damaged due to the extensive preparations by the team.

Rodgers kept a response team in Morehead City, in the event the hospital needed help.

Quality Control

The use of virtual construction aided in ensuring quality finishes. Every finish on the rotunda was incorporated into a 3D BIM rendering, used to identify every aspect of the space.





• **3D BIM Rendering of the Rotunda**

Physical mock-ups were also used for exteriors. This aided with color selection, constructability, weather tightness. Mock-ups included brick windows, split face block and metal panels.

Innovation and Technology

The project team utilized several cloud-based collaboration offerings on the Specialty Pavilion and Vertical Expansion project. Autodesk® BIM 360™ Field and Autodesk® BIM 360™ Glue, were used to facilitate more collaboration between all stakeholders on this project: Rodgers offered IPads and training on BIM 360™ Field for subcontractors.

Virtual Design was incorporated to more easily and accurately determine constructability issues. One example of how Rodgers used VDC was through the proactive development of the model through collaboration of all major subcontractors. Over 1,000 clashes on the second floor of the vertical expansion alone were identified early in the project. The construction team worked with the design team to identify alternate pathways and routing to minimize impacts to systems, both new and existing, cost, and schedule.

Another conflict discovered early on in the process involved underground utilities and the placement of footings. VDC overlaid utility drawings on design drawings and detected clashes between the two. The design team then redesigned the footings to avoid the footing hitting storm pipes, allowing construction to continue smoothly and on time.

Field dimensions were taken both horizontally and vertically for the vertical expansion and incorporated into the model for use by the steel fabricators. After establishing Master Control points, the Northing, Easting, and elevations were applied to a grid system for each column to confirm relative location of the top of each existing column we were extending the additional two floors. This was given to the steel fabricator with the deviations to develop the base plate details to insure the new columns were directly positioned over the existing. After the shop drawings were generated the BIM model was created to insure there were no conflict with the tie-in points to the Pavilion bridges or expansion joint location against the existing adjacent 3rd and 4th Floors.

Quality of Finished Project

Describe the end product in detail referencing Site, Exterior, Interior, MEP, Other. Include detailed pictures not included in Section 4 (Photographs) that show the quality of the work.

In addition to the increased quality of care and added medical services this project brought to the hospital, it also brought the opportunity to make a new first impression to patients and visitors with a new main entrance. The team's goal was to raise the standard for the environment in which the employees work and the community visits by creating grandeur as you enter the hospital. The rotunda was the solution and is the architectural focal point of this project and throughout the town.

Modeled after the lighthouses that dot the North Carolina coast, the rotunda towers into the air with long spans of glass, with the soffits and eves made from anodized aluminum metal panels. The steel columns are wrapped in a wood grained ceramic tile giving it a natural coastal feel. The coastal theme continues on the exterior with the use of split face block on the facade for the lower two floors.

The quality of finishes and theme continues as you enter the rotunda. A custom-made light fixture, over 30-inches tall, made from hand-blown glass fishing floats. These glass floats were once used by fishermen in many parts of the worlds to keep their fishing nets afloat.

- **The rotunda, modeled after the lighthouses on the North Carolina coast, acts as the new main entrance**

- **View of the custom-made light fixture from the 2nd level area of the rotunda**

Beneath the light fixture is a large welcoming circular reception desk made from solid surface material and wood paneling. A mezzanine to the West of the reception desk is clad in wood paneling with a glass and stainless steel hand rail system and is the Birthing Center's waiting area. On the 3rd floor, above the mezzanine, through a large glass wall the visitor's elevator lobby looks out through the rotunda glass towards views of the Atlantic Ocean.

- **The large welcoming circular reception desk is made from solid surface material and wood paneling**

Calming colors of blue and yellow are used throughout the new section, and the works of five local photographers showcase the rich coastal area the hospital serves. Walking down the corridors, the coastal artwork line the walls. Entering the 3rd floor patient rooms light fills the room as one large ribbon window runs the entire length of the South facing rooms. Each room, now a single room, features wood-laminated head walls, solid surface window sills, sinks, counter tops and ceramic tile bathrooms. Additionally, many of the rooms have a view of the Intracoastal Waterway to the South.

- **3rd floor patient room featuring wood-laminated head walls and solid surface window sills**

The new front concourse is a floor to ceiling curtainwall system on one side and a vinyl wall covering printed with an aerial image of the Cape Lookout National Seashore and Lighthouse on the other side.

In the center of the infusion bays within the cancer center lays a sitting area with a warm and welcoming stone fireplace. The carpet and furnishing surrounding the fireplace provide an oasis of comfort in this space. There is also a meditation garden in an outdoor space off this wing.

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• **Front concourse featuring the new curtainwall system and coastal artwork**

• **Sitting area in the new cancer center**

• **Mediation garden in the new cancer center**

Three new labor and delivery rooms were also added, increasing the quality of finishes and comfort to standards not previously available.

The "Starry Sky," designed by Earl Architects, features 600 fiber-optic twinkling lights mounted through a circular ceiling of painted drywall and strives to make cancer patients as comfortable as possible in the hospital's linear accelerator room.

• **Newly added labor and delivery room**

• **"Starry Sky" in the linear accelerator room**