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Project FutureCare

New East Tower at Overlake Medical Center

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NEW TOWER MAKES CAMPUS MORE INVITING, IMPROVES PATIENT EXPERIENCE, SAVES ENERGY

Patient rooms are organized into "neighborhoods" with care team spaces at the center for efficiency.

BY JEREMIAH POWERS & JANET DUGAN
NBBJ

Hospitals support life at its most fragile moments and bear witness to some of the most consequential events in the lives of the community. Yet they are also the underlying foundation of many significant medical and environmental community health measures. This triple-charge of responsibility — the compassionate, the fiscal and the environmental — informed the vision for Project FutureCare at Overlake Medical Center. By elevating patient care, improving the care business and being conscious of the world we all share, the new patient tower establishes high benchmarks in all three realms.

Construction recently completed at Overlake's campus in Bellevue, with a five-story, 240,000-square-foot expansion that will see its first patients in early February. The project aligns Overlake's physical identity with the high quality of care the organization is known to provide — and embodies its mission of "compassionate care for every life we touch." As the cornerstone piece of a multi-phased campaign that will ultimately transform the patient and family experience on the Eastside, the bed tower modernizes operations, improves the care environment, and is planned for long-term flexibility and resilience.

TRANSFORMED CAMPUS

Like many hospitals, Overlake's campus was developed in pieces over time, by adding to what already existed when growth was necessary. Consequently, navigation became difficult for guests. To reduce confusion, this tower uses its site placement, daylight, views and landscaping to orient patients, visitors and caregivers, while providing simplified access and circulation. The new tower is positioned to give Overlake an increased presence on the street, while opening up the center of campus for landscaping and a gracious patient arrival experience. A streamlined pedestrian thoroughfare at the front will create a prominent public zone that offers views to landscaped courtyards and link the north and south areas of the campus.

EXCEPTIONAL PATIENT EXPERIENCE

The tower — which will be the new home for the childbirth center, 114 standardized private patient rooms, a lab and an inpatient pharmacy — modernizes the patient experience through a series of notable design elements. Single-occupancy patient rooms are larger, with en-suite bathrooms to create a more comfortable, private and safe environment. Expanded rooms feature space to accommodate families and visitors, as well as expansive windows that offer daylight and views. Patient rooms are organized into "neighborhoods" with care team spaces at the center to facilitate efficiency, improve visibility for increased patient safety and allow clinicians to spend more time with patients.

The interior design took cues from Bellevue's reputation as a "city within a park" — its urban environment surrounded by nature. Along with ample daylight, warm wood finishes are used strategically to create a hospitality-like environment.

OPERATIONAL EFFICIENCIES

The new tower provides a resilient facility that can serve the community's current and future needs. Spaces on every floor can

adapt to meet evolving service lines. For example, patient units can adjust to different diagnostic needs by changing out equipment, not walls. Some support spaces have the ability to transition from one use to another, such as a rehab gym for orthopedics, or a stress-test room for cardiology.

Furthermore, the new tower connects to the existing South Tower. Patient types are consolidated on the same floor in both buildings so staff can easily move between the two. Should further space be needed in the future, the tower can expand vertically by three additional stories with minimal disruption or reconfiguration. Moreover, to help ensure the tower is fully operational during emergencies without locking down the entire site, the campus features distinct zones, with a dedicated emergency department on one side of the tower and a regular non-emergency entrance on the other side.

A PRIORITY ON SUSTAINABILITY

Health care facilities are some of the most energy-intensive buildings in the world due to their complexity and need to provide uninterrupted care every day of the year. As a result, they use on average much more energy than most other building types. Overlake's new patient tower makes great progress towards reducing that norm. The tower will consume 68% less energy than the average project of this type in the U.S., making it one of the most energy-efficient health care projects in the country at the time of its design. Key features include a high-performance building envelope, heat recovery systems and automatic temperature adjustments.

A BENCHMARK

Overlake Medical Center's, FutureCare serves as a benchmark for hospitals in the Pacific Northwest and indeed the country, with a focus on providing an inviting campus, an improved patient experience, future flexibility and an energy-saving design. It illustrates how wellness, performance and design can come together to improve the wellbeing of patients, their families and staff. By investing in the health of the community through a modern and uplifting tower, Bellevue embraces a new chapter of healing.

Janet Dugan, a principal in NBBJ's Seattle office, designs environments that support and enable wellness to empower patients, energize care teams and enhance the financial health of the modern medical center. Jeremiah Powers is a principal in NBBJ's Seattle office who manages complex health care projects and ensures big-picture client objectives are upheld throughout the process of design and construction.

To support healing and create a hospitality-like environment, the new tower's interiors feature ample daylight and warm wood finishes that modernize the patient experience.

IMAGE COURTESY NBBJ

Balancing

The growth of Overlake Medical Center has reflected that of Bellevue and the greater Puget Sound region. Founded in 1960 at a time that much of the country still considered our area as 'South Alaska' the previous remodels and expansion are now dwarfed by the rapid development of the past decade which is reflected in Overlake's forward thinking Project FutureCare. The crown jewel of the $250 million five year renewal project is the New Expansion Tower, NET, a 240,000 square foot five story tower including a new Childbirth Center, Pharmacy, and rooms for orthopedic, oncology, and cardiac patients. When the Project team of GLY, NBBJ, and Bonewitz approached All New Glass to provide design development services for glazing package on the NET we jumped at the chance to assist on a project woven into many of our family's histories.

The team at NBBJ expressed a vision of a façade that presented a new face of the Overlake Medical Center to Bellevue. The NET presented an opportunity to develop the Southern portion of the property at the corner of NE 10th St and 116th Ave NE that would be prominently displaced to the then forthcoming light rail line and the portion of Bellevue South of NE 10th. NBBJ worked with the project team to identify aesthetic and performance targets for the unitized curtain wall that would present depth and variation for the building when both viewed as a landmark from afar and in close for those visiting the property. All New Glass early in the DA process organized a project team of Bruce Wall Systems and Viracon to supply the framing and insulating glass respectively. A collaborative seven-month design assist process explored each manufacturer's full value add options. Viracon regional representative, Janda Bauman, expertly guided the team through the full range of Viracon product offerings. Digital distinction on glass printing and custom silk screens were reviewed and budgeted to provide frit options in a custom vertical line pattern by NBBJ that would provide a different viewing experience a both distance and up close. Laminated and colored interlayers were explored to achieve a back lit glass to radiate the 'hospital blue' light during nighttime viewing conditions while still achieving a vibrant deep blue during daytime viewing conditions to immediately communicate to the viewer the purpose of the building. Bruce Wall Systems, the unitized curtain wall system designer and fabricator, provided rapid detail development for integrated vertical and horizontal fins to provide texture to the 70,000 square feet of custom façade system. Mike Minkoff, President of Bruce Wall Systems, and his team expertly laid out the possibilities and limitations of each option allowing the design team to explore their desired layout and intent.

With full scale visual mockups and an extensive design assist process completed the manufacturer's details and input was incorporated into the contract documents. This drastically reduced the need for RFI's and cut down on submittal review durations allowing for additional coordination with GLY and other trades through BIM modeling and the sharing CAD details and shop drawing information. The increased level of team transparency in the process and collaboration allowed for the production, assembly, and storage of the entire unitized façade system to be fully completed three months before the first unit delivery was required on site which allowed for greater flexibility to accommodate any schedule adjustments.

With 890 unique curtainwall units of 976 required for the project a full understanding of the sequencing, tagging, and quality control process was required for a smooth installation. All New Glass superintendent Ben Baatz and his crew put their experience and skill to work constantly nipping at the heels of the structural predecessors and advancing the project dry in dates. As 2019 turned to 2020 and topping out activities transition to interior glazing work we all felt the impact of the COVID-19 pandemic. With the initial shut downs hitting so much of the construction industry the project team fully understood the essential nature of the Overlake Medical Center seeing patients and staff each day on campus. The GLY project team with Jon Friedrichsen, Jerry Cochrun, Steve Heymes, and Brian Sandal put every effort possible forward to keep the project moving and safe as the industry as a whole reviewed new safety measures and protocols required to continue building during the pandemic. While we were unable to have a topping out party worthy of a project of this stature the team at All New Glass is immensely thankful for the opportunity to provide a façade worthy of being the new face of the Overlake Medical Center.

TJ Mellott
Senior Project Manager
All New Glass

FLEXIBILITY AND COLLABORATION: HOW TEAMWORK PAVED THE WAY FOR AN INNOVATIVE HEALTH CARE PROJECT

When COVID-19 reared its head, a whole new dimension to flexibility came into play for the project.

Flexibility has been a key focus in facility design and construction thinking for many years. From planning spaces that are easily adaptable to changing technological and user needs, designing infrastructure that makes rapid changes possible, and inventing construction methods that support these needs both economically and time-wise, AEC firms have partnered to support a quickly changing world. Overlake Medical Center's Project FutureCare was conceived with an astute vision focused on flexibility.

BY BRYAN EPPLER
UMC

We often think of flexibility on a building project in terms of the design of the building. The planning and design lead the efforts for flexible spaces. However, once construction has commenced, a broader perspective toward flexibility comes into play — the ability to innovate, change or react as a team without impact to time, effort, cost or performance. During construction of Overlake's new East Tower, the second phase of Project FutureCare, numerous opportunities to flex and bend as a team were vital to the success of the project. And when COVID-19 reared its head in the home stretch, a whole new dimension to flexibility came into play.

NEW IDEAS IN CONSTRUCTION

Early in the construction of the East Tower, UMC presented an idea to employ an innovative prefabricated riser shaft support frame for the shaft openings on each floor. The new tower has a basement mechanical plant and a rooftop equipment penthouse. Piping comes up from the lower levels of the building while large ducts come down from the roof.

In a multi-floor building, the challenge is bringing the services to the top while beginning construction at the bottom. Traditionally, installing the supplemental steel, pouring the floors with the correct openings, allowing for shaft framing and construction, and having the seismic and supports figured out from top to bottom by the first elevated deck pour is a challenge for on-site crews. Instituting the prefabricated shaft assembly reduced field installation time, eliminated supplementary steel framing, and provided a cleaner, safer floor opening.

The installation of services in the shaft, both for UMC and all other trades, was a more efficient and organized process for the whole team. This was the first project where UMC utilized its prefabricated riser shaft support frame with noticeably positive results.

TEAMING FOR TOP RESULTS

One of the more complex pre-COVID operations UMC was involved in was the shutdown/tie-in procedure for the hospital's medical gas system. This complicated operation took months of planning between UMC and GLY; hospital representatives from all affected departments; insurance reps; many facilities and operational departments; Airgas, Medgas Services; and others.

Since it would shut down Overlake's South Tower containing 24/7 operational spaces for a period of time, to ensure there was no interruption to the facility's critical systems, the team isolated the entire South Tower, including the emergency room and surgery suites, to back feed it while tying its system to the new services.

After weeks of planning, teamwork and coordination, the long and complex shutdown was executed flawlessly with no interruption to ongoing operations.

MINIMIZING COVID DELAYS

When COVID-19 was emerging in March the Overlake team had to react quickly to produce plans for responsibly and safely continuing work on these essential projects, well ahead of the governor's office issuing mandated guidelines for construction work. The team worked together to propose and approve unprecedented protocols. GLY closed the project for one week and then reopened the job smartly in phases with about 50 people at a time spread out through the 240,000-square-foot building.

The protocols controlled the flow of workers to avoid contact with others, implemented sanitation and cleaning practices, and applied contact tracing procedures — every person was known by name and where they were working so if a challenge arose, it could be easily pinpointed. This new way of working imposed significant impacts on productivity. Yet, the close coordination and flexibility of the team on-site helped to minimize delays to the extent possible, resulting in only a two-month delay in the project schedule.

On this essential project, strict protocols of distancing, sanitation and contact tracing allowed construction to proceed during the pandemic.

PHOTO BY UMC

PREFAB KEEPS JOB MOVING

At the beginning of the pandemic, there was uncertainty as to whether the project would come back full strength at all. UMC quickly pivoted its fabrication shop's safety protocols in parallel with efforts on jobsite coronavirus safety plans to be able to continue off-site mechanical and plumbing assembly fabrication. Organizing assemblies on carts in the shop — a safe, controlled environment — they were ready to go when the project came back. After delivery to the site, workers simply pulled the nearly completed plumbing assemblies off the carts, put them in place in the ceilings or in the walls, and made the final connections.

CREATIVE CLEANLINESS

When the coronavirus hit, the Center for Disease Control recommended frequent hand washing as one of the most effective ways to protect yourself and others from contracting COVID-19. Knowing that construction sites are inherently dirty areas, UMC's foremen on the Overlake project came up with the idea to attach utility sinks to a backer board, each separated by a plywood barrier, and connect them to the site's plumbing system so wash stations would be available for workers. The plumbing system was far enough along that they could put wash stations on every floor for soap and water access. These not only helped keep this project moving forward with better sanitization but became the prototype for UMC's portable wash stations.

DESIGN FLEXES TO NEW NORM

The flexibility designed into the new tower allowed for important alterations to the building in response to the COVID-19 pandemic. One of those is the implementation and additional sequence of operations (mode) that allows several groups of rooms on most floors to become cohorts, grouped isolation rooms. The mode in these rooms uses 100% outside air and causes the patient rooms to attain negative air flow. These cohorts will provide needed space for the current pandemic and more flexibility in the event of a future pandemic.

CHANGING EASTSIDE HEALTH CARE

The Puget Sound region is witnessing what is being dubbed by some as the "Eastside Migration." Approximately 2.5 million square feet of high-tech office space is expected to be completed by the end of 2021, bringing an influx of workers and residents to the area and a rising demand for modern, high-quality health care options in what had been an underserved area. Through flexibility and teamwork, the new East Tower's designers and builders have overcome unforeseen circumstances and will help transform health care opportunities for the growing Eastside.

Bryan Eppler is director of strategic development at UMC and project manager on the Overlake new East Tower project.

OVERLAKE MEDICAL CENTER

Coughlin Porter Lundeen is proud to contribute to Project FutureCare and Overlake Medical Center's campus renewal. We know Overlake is committed to delivering innovative care and a superior healthcare experience, and we match that with our own commitment to deliver quality and an exceptional partnership.

A VISIONARY PROGRAM

One of the largest in the region, Overlake's Project FutureCare is a $250 million, five-year campus renewal project. Tiered into three construction phases, the final phase is to be completed in 2022.

Every team member brought vision, experience, expertise and creativity, successfully delivering an enhanced patient and family experience.

UNINTERRUPTED CARE

Hospital operations can't come to a halt in the name of construction. It's our job to ensure that critical 24/7 operations, and the patient experience, remain as uninterrupted as possible.

Using insights gathered from consulting with the center's administrators and staff, along with the utility companies and the AEC team, we created a campus within a campus to keep patient care running smoothly.

AN URBAN SITE

Overlake couldn't get any closer to the action. Situated in the heart of Bellevue and surrounded by major arterials, there's not much room to maneuver – and utility coordination is complex and demanding.

Negotiating the infrastructure and frontage improvements was a challenge, and sequencing was paramount to keep the hospital and neighboring businesses connected.

A HOME IN BELLEVUE

We know Bellevue well and have been an integral part of the city's transformation for more than two decades.

We helped keep the Overlake campus renewal on schedule and on track, contributing our intimate understanding of the various city departments and positive relationships with city review staff.

COUGHLINPORTERLUNDEEN
STRUCTURAL CIVIL SEISMIC ENGINEERING

6 GUIDING QUESTIONS HELP DELIVER WORLD-CLASS HEALTH CARE CENTER

With the new East Tower built, Project FutureCare is about 75% finished.

In January 2016, the GLY team presented its proposal to Overlake Medical Center for the construction of Project FutureCare, Overlake's $250 million, five-year, phased campus renewal project. Knowing the project was about more than bricks and mortar to its client of nearly 30 years, GLY's proposal centered on a list of six questions. If the questions could consistently and continuously be answered "yes," that meant important promises to the community were being kept, and Overlake's vision to provide world-class health care close to home achieved.

BY JON FRIEDRICHSEN
GLY

Project FutureCare's "Yes Set" included:

- Are we minimizing operational disruption while maintaining the highest level of safety for the Overlake community — patients, staff, visitors, everyone?
- Are we maintaining safe drop-off and walk-in access to the emergency department?
- Are we maintaining safe and easy-to-find vehicle access in and out of the South Tower parking garage?
- Is the site presentation organized and welcoming, and are GLY field directors in the proper location to help the Overlake community if help is needed?
- Is there a clear sense of wayfinding upon arrival to, and departure from, the Overlake campus?
- Can we safely and efficiently manage traffic integration and circulation across the campus?

With the cornerstone of the project — the 240,000-square-foot new East Tower — now complete, and about 25% of the overall scope left to go, the Yes Set paired with the team's suite of communication tools and processes supported successful delivery of a major health care project.

ALL EYES ON THE HOT SPOTS

Minimizing operational disruption while maintaining safety was not only top of the Yes Set, it was also a critical factor in developing phasing plans. As the preconstruction effort progressed, GLY focused on how to build what was being designed. It settled on five major phases and drew up a map of hot spots for Overlake executives.

A hot spot was defined as any potential moment of operational risk or patient dissatisfaction. Regular discussions about these locations allowed the GLY team to gather feedback and make thorough preparations in advance of activities in those areas. It also armed Overlake leadership with the knowledge they needed to communicate with and empower others working in and around the hot spots: this work is necessary and here's why; here's what you can expect to experience and for how long; here's how we can all prepare for no surprises.

PREPARING FOR A NON--EVENT

At the project level, GLY field supervisors sat down with Overlake's engineering team, infection prevention specialists and construction management team twice weekly to review upcoming work. Anything that impacted hospital staff or patients was communicated with a detailed plan and narrative. Stakeholders and associated contractors signed off on the work plan, and it was routed to hospital staff.

Similarly, tasks that involved critical hospital infrastructure required a shutdown request noting date, time, impacted systems and procedures to conduct the work. The goal for shutdowns was to plan everything so thoroughly and accurately that it essentially became a "non-event."

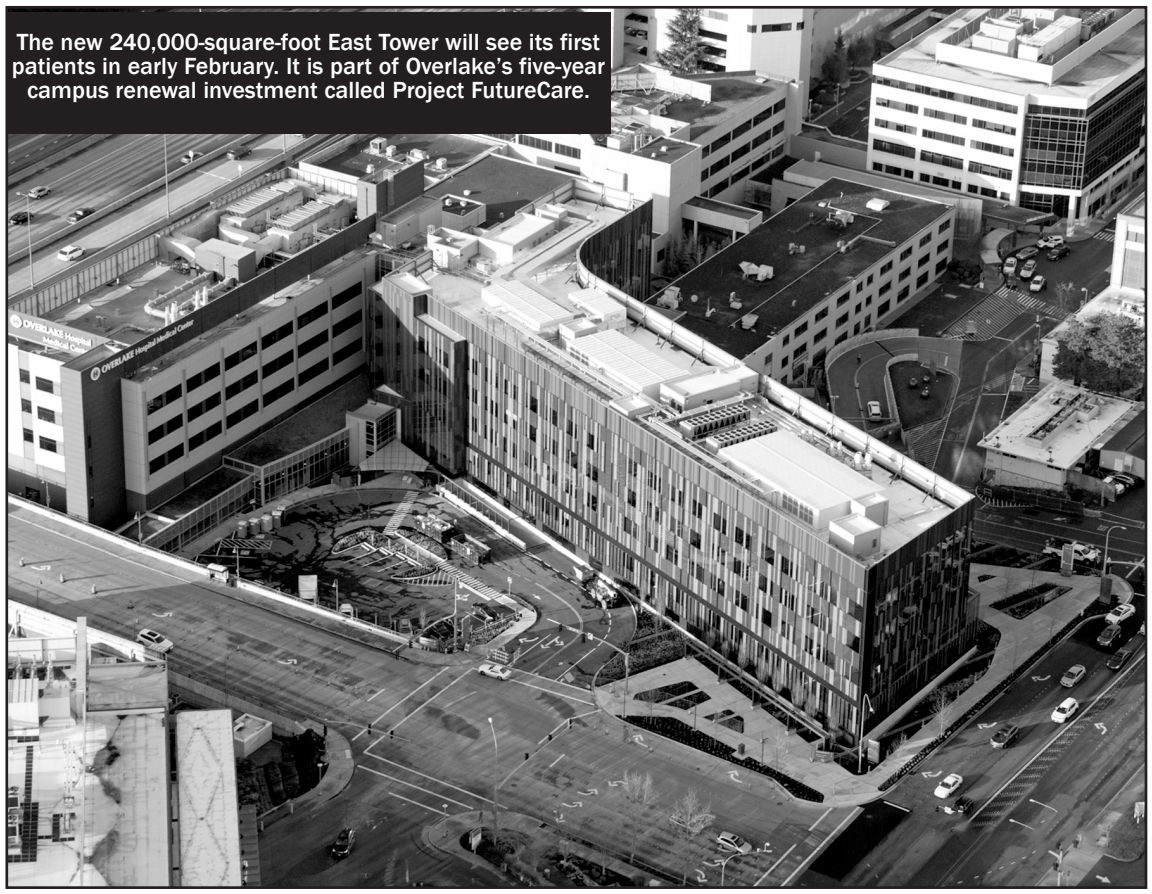
During the project's first phase, sensitive MRI and CT equipment were relocated by installing all required power and glycol lines to new locations prior to the scheduled shutdown. This reduced the overall down time and limited critical liquid helium bleed-off in the imaging department. In total, the FutureCare project team successfully executed 92 shutdowns, authored 92 work plans and completed 28 access requests.

COUNTERING THE BIGGEST RISKS

The Hospital Consumer Assessment of Healthcare Providers and Systems survey was introduced in 2006, began publishing in 2008, and since 2012 has played a pivotal role in hospital reimbursement. Low scores can both hinder a provider's reputation and limit the funding it receives. So it was no easy decision during Phase 2 of the project to temporarily relocate the emergency department entrance — Overlake's front door — to the first (underground) level of the South Tower parking garage. With the tower crane now on-site and overhead, deep shoring walls adjacent, and a significantly reduced arrival area, relocating the ED drop-off solved the operational disruption and impact that the growing construction footprint could have had on the ED. Still, how would patients and staff respond to such a major shift?

GLY's virtual design and construction specialists collaborated with designer NBBJ to model how it would look and function, like a valet ED system versus curbside drop-off. Upon entering the garage, security staff would quickly radio the ED so that attending staff were ready and waiting to transport a patient into the hospital. To put their idea to the test, GLY and hospital staff staged multiple scenarios and filmed their drive times into the garage before everyone agreed to the concept.

In the end, patient satisfaction numbers did not suffer — they went up — confirming that patient experience and service remain some of Overlake's key differentiators.



The new 240,000-square-foot East Tower will see its first patients in early February. It is part of Overlake's five-year campus renewal investment called Project FutureCare.

PHOTO BY SKYSHOTS AERIAL PHOTOGRAPHY

REDUCING BARRIERS WITH TECH

The exponential evolution of technology has meant live communication is possible no matter where construction occurs. BIM360, tower crane camera capture, and drone image capture all allow live, remote access to the Project FutureCare jobsite. At Overlake's South Tower, which now ties into the new East Tower, the elevators open into the lobby to offer spectacular mountain views. When construction phasing called for a solid temporary wall, the GLY team built a virtual mock-up to communicate how two windows could be inserted without compromising the protection offered by the wall.

NEXT UP

Although the new East Tower is the most notable addition to the campus, FutureCare has three phases left before the Yes Set is tucked away until a version of it may be needed again. An expanded behavioral health unit moves to the top floor of the West Tower, where it continues to offer the only hospital-based inpatient mental health treatment program on the Eastside. Next, GLY demolishes the old East Tower and the two existing structures that comprised the original 1960s layout.

The final phase, scheduled for completion in 2022, involves construction of a connecting corridor between the new East Tower and existing main entrance, becoming Overlake Medical Center's new front door. With a concourse-style drop-off and pedestrian-friendly pathways and wayfinding, the reconfigured campus will welcome patients and visitors from the Sound Transit Wilburton Station, two blocks away.

From childbirth services to surgery to mental health, Project FutureCare is Overlake's investment in the growing Eastside community, and a "yes" to enhancing the work of its medical providers and continuing to provide an exceptional patient experience.

Jon Friedrichsen is a senior project manager at GLY and has been involved in Project FutureCare from day one.

Patients first & always.

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UNDERSTANDING NEEDS

PATIENT EXPERIENCE

SECURE OPERATIONS

INFECTION PREVENTION

PRIORITIZING SAFETY

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