Building Earthquake Protection for Today’s Hospital

Loma Linda University Medical Center

Large earthquakes can cause major damage to structures, putting people’s lives in jeopardy. Because of their vital role in communities, particularly in the event of a disaster, medical facilities in areas prone to seismic activity must meet rigorous design and construction standards. Terracon is part of a team including structural engineers, architects, the construction management company and the general contractor creating new ways to protect structures in the event of catastrophic earthquakes. Working collaboratively, the team is developing three-dimensional earthquake protection, using a base-isolated foundation system for Loma Linda University Medical Center’s (LLUMC) new towers, which would make it the world’s first hospital to use this innovative technology.

Innovative Foundation Design

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Meeting Heightened Seismic Standards

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MEETING HEIGHTENED SEISMIC STANDARDS

LLUMC is investing $1.2 billion to build a new 16-story adult tower, built in 1967, no longer meets the state’s Office of Statewide Health Planning and Development (OSHPD)’s seismic compliance program requirements, putting people’s lives in jeopardy. Because of their vital role in communities, particularly in the event of a disaster, medical facilities in areas prone to seismic activity must meet rigorous design and construction standards. Terracon is part of a team including structural engineers, architects, the construction management company and the general contractor creating new ways to protect structures in the event of catastrophic earthquakes. Working collaboratively, the team is developing three-dimensional earthquake protection, using a base-isolated foundation system for Loma Linda University Medical Center’s (LLUMC) new towers, which would make it the world’s first hospital to use this innovative technology.

The potential for a catastrophic earthquake with design peak ground acceleration (PGA) of UHT (California普通的 seismic codes) is 0.42g. The 2010 earthquake in Haiti had a PGA of 0.5g, combined with the loose soil conditions, created significant challenges for accurately estimating the remotely induced settlement and the potential for unknown fault slips. As the geotechnical engineer of record, Terracon is committed to finding innovative ways to address these issues and meet the structural design requirements.

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HELPING HEAVY-WEAR PAVEMENTS LAST LONGER (continued from cover)

such as chemical amendment or geogrid reinforcement properly characterize the soil conditions at a potential site. “ground up” with a thorough geotechnical investigation to experts investigate a variety of materials and methods.

To provide Love’s with the best solution, our pavement system, and with Love’s heavy traffic, they are critical. QUALITY MATERIALS SELECTION

In the end, Terracon’s goal is to help Love’s manage their construction and Travel Stop operations in the most efficient and cost-effective manner. To do this, our teams work together to find solutions.

In Salt Lake City, John oversees Terracon’s services for clients and inspectors partner with the Love’s team to identify the correct pavement materials are used and that quality specifications are met.

As a partner, Terracon’s approach begins from the “ground up” with a thorough geotechnical investigation to properly characterize the soil conditions at a potential site. “ground up” with a thorough geotechnical investigation to experts investigate a variety of materials and methods.

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QUALITY MATERIALS SELECTION

Terracon’s Digital Facility Asset Management System (DFAMS) provides a complete digital solution has been developed for an owner’s application for use during the district’s in-field inspections. For example, covering 40 interior bleachers, 60 exterior bleachers, more than 300 Cloaking devices, and numerous other school district components. A prime example of the effective combination of technical and data assimilation technology.

The DFAMS tool currently includes 335 assets for LISD covering 40 interior bleachers, 60 exterior bleachers, more than 300 Cloaking devices, and numerous other school district components. A prime example of the effective combination of technical and data assimilation technology.

SCHOOL DISTRICTS

Schools in Texas are no strangers to the pressures of traffic, and the amount of traffic that can impact the quality of the constructed pavement. To prevent these issues, Terracon’s project managers and engineers partner with the Love’s team to document and report on progress so that construction issues can be quickly resolved. Our teams work together to find solutions and complete the project on time and under budget.

STEPS TO PREVENT PAVEMENT FAILURE:

• Characterization of subgrade
• Site-specific design
• Site improvement when needed or feasible
• Innovative materials
• Construction observation and testing

Learn more about pavement services at:

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identifying environmental challenges

The unique remediation site encompasses 1,570 acres, with 1,070 acres of wetlands and 588 acres of uplands. Initial construction of the former titanium dioxide plant began in 1952. Portions of the site were used as a municipal solid waste incinerator, a gas separation plant, a municipal landfill, and a water treatment plant. Local residents have concerns about soil and groundwater including trichloroethylene, polyaromatic hydrocarbons, chlorinated volatile organic compounds, and Resource Conservation and Recovery Act (RCRA) metals.

To enter the Brownfields Program, the developer conducted a complete RCRA Facility Investigation (RFI) and submitted a Complete Resource Action Plan (CRAP) to the Environmental Protection Division (EPD) for approval. Terracon is the developer of the site contracted with Terracon to investigate and remediate the site. Terracon’s responsibility included making initial assessments, developing assessment methods, and preparing a comprehensive RCRA Facility Investigation (RFI).

The developer is now implementing a CAP and submitted a complete plan for the project. The plan includes:

• Construction observation and testing
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