

The Home News Tribune  
*By Sharon Waters*

### **\$72M child health institute requires deep foundation**

New Brunswick: Excavators dug only 4 feet before they hit rock and shale at the construction site at French and Plum streets.

They still had 36 feet to go.

The 40-foot-deep pit and its trucks, cranes and ironworkers would delight children who love construction sites. But their parents will love what the pit will become a research facility for diseases that affect children.

Scientists at the \$72 million Child Health Institute of New Jersey will study childhood diseases as they develop, trying to identify when and why things go awry, said institute Executive Director Elizabeth S. Garlatti.

Stocked with state-of-the-art equipment, the institute will provide space for researchers to study how the environment affects the progression of a disease, she said.

It is part of the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School.

The first two floors of the 150,000-square-foot brick building will house academic offices and clinical trial space where children can be seen, most often as outpatients. The building's third and fourth floors will house offices and labs.

The deep digging was needed to create the institute's basement, where the most-advanced research will occur.

In six weeks, excavation contractor Ferriera of Readington moved 50,000 cubic yards of mostly shale and rock, said Elbert J. Rosa, general superintendent for Joseph Jingoli and Son Inc., the project's Lawrence-based construction manager.

Soil nails, ranging in length from 10 to 20 feet, were drilled into the pit's perimeter to keep the walls from collapsing, Rosa said. Mesh was placed over the rock and sprayed with gunite, a lightweight mixture often used for swimming pools.

Sump pumps drain rainwater from the bottom of the pit.

"What's been done here in this amount of time is pretty miraculous," Rosa said Friday as a 65-ton crane rumbled, and ironworkers set steel reinforcing for columns.

Yet, the real miracles may occur in the institute's basement where 21,340 square feet of research space will be used for a transgenic/gene-targeting core facility.

Transgenics involves DNA and cell manipulation to create models – often with lab animals—so diseases can be studied. A researcher might create a tumor model and then study it to learn how to restrict or even stop a tumor’s growth, said Garlatti.

The basement will have a vivarium, a holding area for lab animals such as mice and possibly zebra fish, worms and frogs, she said.

Nearly a fifth of the institute’s cost will be spent just to outfit the basement, Garlatti said. It requires a special level of air handling to keep the research space free of dirt, dust and other molecules, she said. The work area must also be free of vibrations.

“Basements are ideal for this because you won’t get the affect of activity on other floors,” said Garlatti. “You can isolate your activity much more accurately.”

A catwalk, separate from the basement research area, will house mechanical systems so service crews can access them without entering lab space.

The basement will have six procedure rooms to create models, two sets of tissue-culture rooms, cell-biology rooms and microinjection rooms, space for support staff, and area for washing equipment, and 12 animal holding rooms.

The institute, designed by Princeton-based Hillier architects, is uncommon because it will contain three separate environments—clinical and academic space, general labs and the highly specialized research space in the basement, said Garlatti.

It also stands out for its focus on children, and the combination has proven attractive to donors, Garlatti said. The Child Health Institute has received support from numerous sources, including the National Institutes of Health, other federal entities, corporations and individuals, she said.

The challenge now for Jingoli and its contractors is working at a construction site bordered by busy streets and Robert Wood Johnson University Hospital buildings. A 300-ton crane with a 300-foot boom will be on site in late August when structural steel is erected.

“There’s not a lot of room here. Logistically, it’s a tight job,” said Rosa. “Our whole focus here is to give a great quality product and to keep Robert Wood Johnson’s facilities 100 percent operational and keep a good, clean safe site.”

The institute should open in January 2005 and have 130 employees when fully staffed.