

# Industry in front line of rescue and clean-up effort

Amec, Bovis Lend Lease, WSP and Skanska among companies that volunteered to look for survivors.

by Stuart Macdonald and Mark Leftly with Phil Clark in New York

BRITISH FIRMS are at the centre of the rescue and clean-up effort in Manhattan and Washington after the devastating terrorist attacks.

The destruction of the twin towers of the World Trade Centre has left officials with the Herculean task of clearing away the debris. It is estimated the clean-up may take as long as a year.

Amec and Bovis Lend Lease are together controlling the salvage operation around the remains of the south tower.

Amec has also won the contract to rebuild the Pentagon in Washington.

## Unprecedented challenge

New York's department of design and construction is co-ordinating the overall operation and has divided the WTC site into quadrants. Amec and Bovis Lend Lease are overseeing work in the south-west quadrant (see map, below). American firms are overseeing work in the other areas.

David Paterson, Amec's senior vice-president for corporate communications, said: "We immediately volunteered our services and were on site with cranes and heavy lifting equipment within hours of the tower collapse.

"The key issue is safety, as this is an unprecedented site in terms of scale and challenge," Paterson added. "This is the end of a rescue effort and the beginning of a salvage operation."

The company has 200 professional managers and 1000 tradesmen and labourers working in 12 hour shifts around the clock in New York. Paterson said Amec had plenty of help at the site, but expert personnel could be drafted in from the UK.

Bovis Lend Lease was another firm to offer its services immediately after the towers fell; it has about 60 managers on site. A spokesperson for the company said: "This effort goes on 24 hours a day, seven days a week, with the number of people we have there growing daily.

"We have had two guys there non-stop since Tuesday – they just don't want to go home and are sleeping on site."

Bovis has also built two emergency centres, one for the Red Cross and New York police department and the other as a command centre.

Tall buildings specialist engineer Cantor Seinuk, bought by WSP last year, has six men working around the clock in teams of three on the Manhattan effort.

Cantor Seinuk managing director Ahmad Rahimian said the company's team was mainly working around the south tower, advising

contractors, the fire department and the police on how to move through the rubble. The team is also advising on the safest location for cranes to come in and lift the debris.

Rahimian added that it was likely that some of the other buildings in the World Trade Centre would have to be pulled down.

Along with fellow director Jeffrey Smilow, Rahimian worked through the night at the site on Thursday.

Cantor Seinuk has begun talks with several tenants and landlords at neighbouring buildings to make structural assessments.

One of the company's engineers was particularly lucky last week: he survived the attack, despite being in a lift at the centre at the time.

Parsons Brinckerhoff, a New York-based engineer with offices in the UK, is also helping with the rescue and recovery operation. It has

pledged to assist the rebuilding of the city that its firm has "proudly called home" for 116 years.

Contractor Skanska has been asked by the City of New York and the Port Authority to bring resources into the city. It will help with the clean-up operation once the firefighters have completed their rescue effort.

Buro Happold, Bechtel and Arup are also involved in rescue work.

## Rebuilding the Pentagon

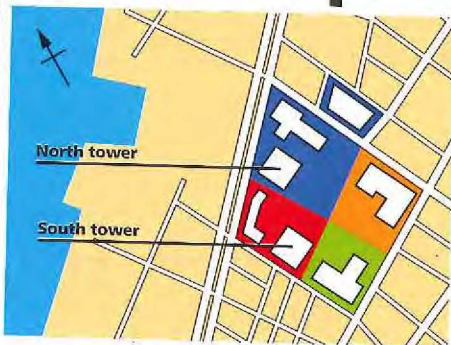
Amec was refurbishing one side of the US defence department headquarters when the adjacent "wedge" was struck by a hijacked airliner. It will now work on rebuilding that section.

The company said security considerations prevented it disclosing the precise nature of the rescue effort or the number of workers it had at the site.

**We have had two guys there non-stop since Tuesday – they just don't want to go home and are sleeping on site**

Bovis Lend Lease spokesperson

## How the operation is being organised



Who is working on which quadrant

**Tishman Construction**  
**Amec and Bovis Lend Lease**  
**Tully Construction**  
**Turner Construction and Plaza Construction**

THE FIRST SALVAGE workers began sifting through the rubble within five hours of the collapse of the World Trade Centre.

What began as a search and rescue operation has grown into a mammoth clean-up effort involving the emergency services, the New York authorities and contractors including Amec and Bovis Lend Lease. More than 5400 people are still missing in the remains.

There are now thousands of workers working around the clock, and by Wednesday about 50,000 tonnes of rubble had been cleared. More than 350,000 tonnes remain and it is estimated it will take up to a year to clear the site – particularly since it is being treated as a crime scene, with the FBI sifting all the debris cleared for evidence.

The workers are using trucks, excavators and cranes to lift and transport the twisted steel girders and concrete that are the remains of the

World Trade Centre.

New York's department of design and construction, which is co-ordinating the rescue effort, has divided the site into quadrants.

Amec and Bovis are overseeing work in the south-west quadrant, which takes in the remains of the south tower.

Turner Construction and Plaza Construction are managing the eastern section. This includes three buildings that have totally or partially collapsed.

Tishman Construction is responsible for the area that includes the northern tower, and Tully Construction has the remaining southern quadrant.

A subcontractor with one of the biggest presences on site is demolition firm Season Contracting. It is working around the collapsed south tower and has brought about 30 pieces of equipment to the site.

**'If we think it's stable, we let the rescue teams in with dogs'**

Arup US boss Ray Crane is helping to lead the rescue effort. This is his story.

IT'S MIND-NUMBING. THERE HAS BEEN A SENSE of helplessness in the city – thousands of people have been lining the streets to volunteer to help.

We have been organising teams to go down to sites to assist with search and rescue operation. It is some comfort to be a structural engineer as we are able to help. People have been working eight to 12 hour shifts. We've been called upon to give instant advice – is it safe to go in there? Can we move that? There are no calculations we can make to guide us, which is a little scary.

I was there from 4pm Saturday to 2am Sunday morning. It's like daylight down there, with all the lights. It's a situation you don't want to think about too much. It's emotionally draining. Contractors pull away steel; if there are any openings we go in with federal emergency agents and walk on the debris to check out the state of the voids. If we think it's stable we let the search and rescue teams in with the dogs. It's very slow going – as soon as something is found, everything stops as an examination of the area is carried out.

When you are there you are standing on 20 ft of rubble – you are standing on what used to be a tower. The 20 ft of rubble used to be a 100-storey building. It's just incredible. It's very difficult to comprehend what's gone on. Your mind blocks it off; it cannot accept it. There will be a long slog of work to do – just trucking out the material will take months. A big problem has been the fires. You pull a piece of debris and they flare up as they are fed oxygen. We'll be on call for some time. There are still precarious elements in the surrounding buildings. One nearby building has a piece of the tower's two-metre perimeter frame embedded in it.

Because of an event like this there is a sense of coming together and camaraderie – that's just fantastic. The city has been overwhelmed with help – bottled water, protective clothing, volunteer workers. One of our engineers finished his shift on Sunday morning. I gave him \$20 for a cab. As soon as he got in the driver said: "Wherever you want – it's on me." This was a New York cab driver – they're not renowned for their generosity.

Our office was closed from Wednesday on. Grief counsellors are on offer to our staff – many of them witnessed the collapse from our windows. There are a lot of very traumatised people here. The mayor, Rudolf Giuliani, is saying the best way for the city to go forward is to get back to work. But it's still very quiet. I came to the office on the train, but there were only a few people on it. When I got to Grand Central Station, it was like a ghost town.

It's been harrowing. We've seen some gruesome things. But there is a strengthening of resolve, not a weakening. There were reports of people being pulled out of buildings in Turkey 12 days after its earthquake in 1999, so you never know.

Ray Crane, chairman of Arup USA, spoke to Phil Clark.