Airfield Projects in Japan

CEAT Director David Lange, shown in Figure 1 at Tokyo Narita International Airport, visited airfield pavement projects in Japan in mid-September 2007 as a guest of Prof. Ryoichi Sato from Hiroshima University and Dr. Kazuo Yamada of Taiheiyo Cement Corporation, the largest cement producer in Japan.

The US Marine Corps Air Station at Iwakuni, Japan is the site of a 10-year $3B construction project requiring a 500 acres landfill to create space for a new runway. Because of concern about settlement of the landfill soil, a large full-scale test program was executed to study how continuously reinforced concrete pavement tolerates differential settlement. Figure 1 is an artist rendering of the new runway on the landfill zone shown in green. Figure 2 shows the test pavement with water jacks, situated below the pavement and subgrade, to simulate settlement of landfill soils.

Tokyo Narita International Airport is the 2nd busiest passenger airport in Japan and the 3rd busiest air freight hub in the world. Most of the rigid pavements at Narita are continuously reinforced concrete pavements that are nearing the end of their 20+ year life. Consequently, engineers are grappling with reconstruction options. One of the most promising is a continuously reinforced concrete overlay method. The development of the CR overlay method required a major testing program at Narita that proved the viability of the concept. Figure 2 is a section of new overlay. The overlay method is a cost-effective solution that extends the utility of the old pavement.