Report on Assessment of Zorogwee Bridge by WFP Construction Engineer Peter Warte at location on the 6th June 2011

Background Data

Engineers from Danish Refugee Council (DRC) and Engineers Without Borders (EBW) made a joint assessment of the bridge in 2009. Their observations were:

- Some of the running boards on the bridge have broken, posing a potential threat to the sustenance of the bridge.
- The bridge is shaking because the basement is not wide and it might have been built on the chalk and the load on the bridge nowadays is too heavy for the bridge to stand.
- The steel beams have stayed long and there is some corrosion on them.

Today's findings

My findings now two years later are that the situation has deteriorated.

- The Plank Decking is in very bad repair.
- The Middle Support Pillar/Foundation is still trembling precariously when even a light vehicle crosses the bridge, as well as the I-beams.
- The Steel I-beams are severely affected by surface corrosion as well as pit corrosion (especially near the support foundations) which would indicate that maintenance surface protection not has been performed for quite some time.

Recommendations

To maintain functionality, serviceability, and financial value of the bridge the following measures could be applied.

Short Term Measures

- Replace the existing Plank Deck with a new Plank Deck. Ensure the Planks are securely fastened to the I-beams.
- Reinforce the Plank Deck with Longitudinal Planks as Wear Strips, securely fastened to the Plank Deck.
- Limit Vehicle Total Weight to 16 tonnes (Total Weight of Vehicle and Load).
- Permit only one vehicle to enter the bridge at a time.
• Limit the speed of any vehicle crossing the bridge to 5 km/hr.
• Construct Speed Bumps at each end of the bridge so any vehicle has to come to a complete stand still before it enters the bridge.

Middle to Longer Term Measures

• Reinforce the Middle Support/Foundation so it has the same width as the bridge in its entire height (from bridge to bottom).
• Construct two more Support Pillars/Foundations equidistant from the middle.
• Remove old paint from Steel I-beams. Prime with suitable corrosion protection agent, and surface paint.
• Maintain painting and Plank Deck on an annual basis.
• When a new deck is called for (maybe after 10-15 years) consider construction of a reinforced concrete deck.

Saclepea 8 June 2011

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Attachments: Folder “PicturesZorogweeBridge”