

# 2nd International Conference on Timber Bridges

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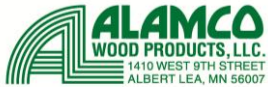


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## Outline

- Introduction – Iowa Timber Bridges
- Bridge Cluster Overview
- Case Study 1: Blackhawk 5
- Case Study 2: Clarke 1
- Wrap-up



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- Small span bridge
  - In theory all possible
  - Differently oriented
- Long span bridge
  - Deck
  - CLT long beams weak against bending

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## Context for Rehabilitation

- Principal timber truss elements had been periodically replaced due to degradation / poor detailing & inadequate maintenance



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- Approx 20m minimum s
  - Permanent bridge
  - No load limit (63,700 kg
  - Timber structure desire
  - One traffic lane, but wid
  - Improved flood clearanc
  - Roadway not to be raise
  - driveways
  - Available depth for stru
  - Minimize disruption to s
- 
- Solution: glulam timber structure

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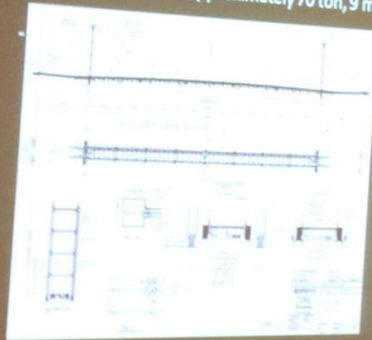


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### WHAT HAS BEEN BUILT?

#### CABLE STAYED BRIDGE IN TIMBER

- Distance between pylons, span length: 130 m, total length 182 m.
- Free width of decking: 4 m
- Height of pylons: 24 m
- Amount of timber: Approximately 200 ton, 400 m<sup>3</sup>
- Amount of steel: Approximately 70 ton, 9 m<sup>3</sup>



- PERFORMED ACCORDING TO  
THE SWEDISH BRIDGE CODE  
"BRO 2004"

- DESIGN WORK  
COWI & MARTINSONS

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# Pre-Conference Tour:

## *Covered Bridges of Madison County (Iowa)*



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## Post-Conference Tour:

### *The Grand Canyon – West Rim (Arizona)*



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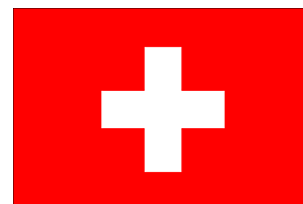
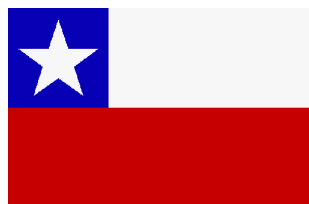
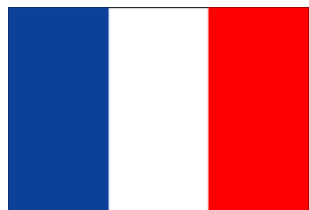
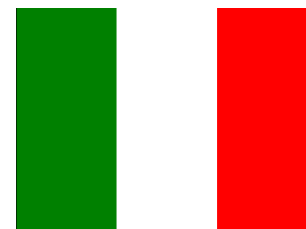
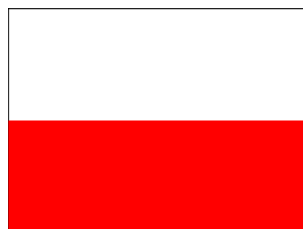
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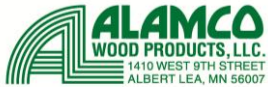




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