Bridge Inspection and Assessment

Guide for Clients requiring a service so they can better define which service they require, how much it will cost and what to do with the results

DEFINITIONS

- All bridges should have a General Inspection – essentially a visual inspection not requiring specialist access - every 2 years and a Principal Inspection – a qualified and experienced evaluation - every 6 years.
- All bridges should have a Record which lists all dimensional and materials information and, very importantly, the weight capacity of the bridge.
- A Principal Inspection is carried out by a Bridge Engineer and a General Inspection by someone trained but not necessarily able to calculate a weight capacity.
- An 'Inspection' is a report on the condition of all elements of a bridge and it lists all work necessary to ensure it is able to carry the loads which the existing record states.
- An 'Assessment' is a Principal Inspection with a calculation of the weight capacity.
- A' Report' is a stand-alone document containing a Record, Principal Inspection and waterway calculation as well as other information which affects the use of the bridge. This document is necessary to show that an owner is implementing his 'Duty of Care' for estate insurance purposes.
- A 'Quick Look' at a bridge results in a verbal opinion, which carries no liability.
- An 'Inspection' carries Professional Indemnity (PI) responsibility for the observations and advice - but not for the weight capacity shown in the record which will have been calculated by a previous bridge engineer.
- An 'Assessment' carries PI responsibility for the weight capacity calculated.
- PI responsibility for inspections and assessments last for 3 years after the report was written and requires the bridge to be inspected, repaired and maintained in accordance with the report.
- Many rural bridges have no Record or Inspection history and thus no assessed load capacity. Clients usually ask me for an 'Assessment' which requires a Record to be made, necessitating a full survey. A Principal Inspection is then necessary to implement the bridge maintenance 'care' system- which the client's insurance requires to be in place before they would accept liability in the event of an accident.
- An 'Assessment' results in a full Report. This Report is written and presented to be understood by clients and estate managers who may have no knowledge of bridges but who need to make management decisions.
- A Principal Inspection requires every part of the structure to be accessible to the touch of the inspector's hands. This often requires expensive scaffolding or rope access or special operations to be carried out before the inspection. Special consideration is often necessary if a low value structure is not accessible at reasonable cost. In such a case a grade 1 inspector can be trusted to make some judgements based on other facts.
- Concrete bridges with no records showing the steel reinforcement cannot be assessed accurately. Such a bridge is likely to require an expensive load test to find its load capacity or invasive investigation.

Dr Geoff Freedman RURAL BRIDGES

COSTS and TIME

- General Inspections are carried out for £300/day, Principal Inspections and Assessments for £500/day
- A ‘Day’ is generally 8 hours- but if long travel is involved this will be extended at no extra charge. Work and travel are charged at the same rate.
- The size of the bridge and accessibility is proportional to the time to carry out the Inspection or Assessment. The vast majority of bridges are below 15m span and less than 4m above the river and can thus be inspected in an hour or assessed in 3 hours. Multiple bridges in one area can save on travelling.
- The most common commission is a Full Report which takes a day for travel and site survey and ½ day or 1 day for Calculation and Report.
- Total costs will be agreed before work is carried out – availability of background information will affect this.

ACTION FOLLOWING ON FROM AN INSPECTION

- A Principal or General inspection will probably contain recommendations for repairs which should ideally have an estimated cost against them. It will be the client/manager’s job to decide on the appropriate action.
- When faults are highlighted and the bridge is going to be used the management must carry out any repairs necessary to keep the bridge safe for public access. If this is not done and an accident occurs, no action would be viewed as negligence and thus not covered by insurance.
- Funding may favour the short term approach and minimum maintenance for safety carried out. This may mean the load capacity is reduced but is still acceptable to the Estate manager/client.
- The best value long term approach may lead to not spending money on repairs and opting for a new bridge.
- The process of commissioning repair work depends on the size of the repair and the complexity.
- If structural features are involved, or there are safety hazards involved, or a new bridge is required a qualified Engineer will be required to design, specify, tender, supervise and certify the work.
- If the work is minor and carries no risk to operatives or the public, the Estate Manager/Client will be considered qualified to implement, supervise and certify the work.

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