# Guidelines for Structural Health Monitoring

## 6.9.3 Field Testing

- Field Testing

## 6.10 Hall's Harbour Wharf

- Structure Description
- Instrumentation for Monitoring

## 7 NOTATION AND DEFINITIONS

- Notation and Definitions

## 8 REFERENCES AND BIBLIOGRAPHY

- References and Bibliography

## APPENDIX A - SENSORS

- Strain Measurement
  - Foil Strain Gauge
    - Strain Gauge Selection
    - Attachment Techniques
    - Environmental and Mechanical Protection
    - Lead Wire Effects
    - Sensitivity to Transverse Strain
    - Temperature Effect
    - Noise Control
  - Fibre Optic Strain Gauges
    - Installation and Protection Techniques
    - Temperature Effect
  - Vibrating Wire Strain Gauges
  - Linear Variable Differential Transformers
- Accelerometers
  - Spring-mass Accelerometers
- Temperature Sensors
  - Resistive Temperature Sensors
  - Vibrating Wire Temperature Sensors

## APPENDIX B - DATA ACQUISITION SYSTEM

- Sensor Readout Units and Signal Conditioners
- Data Acquisition Boards
- Data Acquisition Program

## APPENDIX C - ALGORITHMS FOR VIBRATION-BASED DAMAGE DETECTION

- Methods Based on Changes in Resonant Frequencies
- Damage Detection Based on Modal Residual Vector
- Methods Based on Mode Shape Curvature
- Matrix Update Methods

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