

VERTIMAX WHITE PAPER SEPT 2019

Dear Facility Manager and Owner

RE: Building Maintenance Unit Risk Control

Following the occurrence of severe Building Maintenance Unit (BMU) incidents in previous years, it is evident that the industry has to do better. As an ISO accredited company championing higher safety standards, we at Vertimax have formulated this white paper to help you understand and avoid the risks associated with owning, operating, managing and servicing a BMU system.

Armed with the findings of Worksafe NSW along with the expertise of other industry providers, consultants and specialist suppliers, we have put together a series of best practice guidelines. We hope this will lead to higher standards and a more responsible approach by all stakeholders involved with BMU's.

Please use this white paper as a checklist to ensure that the management and servicing of your BMU meet regulatory standards and is safety compliant. Additionally, each owner should also refer to their state legislations, such as Worksafe regulations, for further compliance requirements.

Maintenance Requirements:

The following is a list of activities that you should consider in regards to maintaining any BMU. AS 2550.13, Occupational Health & Safety Act(s), Work Health & Safety Act(s), BMU Manufacturers Manuals and Specifications regulate these activities.

- Pre-operational inspections per AS 2550.13 before the use of the BMU
- Quarterly maintenance inspection and testing as per AS 2550.13 before the use of the BMU
- Annual maintenance inspection and testing as per AS 2550.13 before the use of the BMU
- Ten-yearly major inspection including third-party Non-Destructive Testing (NDT) per AS 2550.13
- Issuing a "safe to use" certificate on completion of any repair works, modernisation, and routine servicing
- Issuing an Annual Test Certificate on the completion of the annual inspection
- Rope replacements per the BMU Manufacturers Operations Manual and Rope Supplier Specifications
- Occupational Health & Safety Act requires plant (BMU's) to be under commercial contract with a competent service provider
- AS 2550.1 calls for an annual third-party maintenance activity review which should trickle down to AS 2550.13. Frequency to be determined based on use and environment
- AS 2550.13 states that Non-Destructive Testing *should* be completed on the BMU **annually**.

Documentation Control:

The following is a list of documents that should be maintained on-site. These documents should be provided to your current service provider to ensure that the full history of the BMU is known.

1. Operations/Maintenance Manual(s)
2. Electrical Drawing(s)
3. Date of last major inspection(s)
4. Date of last rope replacement(s)
5. Date of last NDT(s)
6. Maintenance records
7. Repairs and alteration records
8. Registration documentation with your state's Worksafe authority for either new or altered plant
9. Register of inducted operators
10. BMU Logbook
11. Emergency Procedures/Rescue Plan

General Notes

Lifting Ropes:

The BMU industry is very conservative in regards to replacing lifting ropes, especially in the case of copper core cables. The replacement time frame set forth by most manufacturers' averages at four years within their operational manuals. This time frame is supported by the leading global suppliers of the lifting ropes to ensure safety and performance. Generally, poor rope performance occurs well before any visible signs of concern are exposed when measured against AS 2759. Operators usually experience this poor performance through intermittent faults on controls coming back from the BMU cradle. Third party Inspectors are now flagging non-copper core ropes for replacement at year ten regardless of how they measure up against AS 2759.

Non-Destructive Testing:

AS 2550.13 states that Non-Destructive Testing (NDT) should be completed on the BMU annually. Traditionally, as the word "should" has been used, this has not been incorporated into the annual servicing of BMUs and is generally only completed during the major inspection. However, since the Sydney incident in 2015, more and more clients are performing NDTs per the recommendation to reduce their risks significantly.

The following is a practical approach to reducing the risks associated with the operation and utilisation of BMUs. The Australian Standards, regulations that encompass BMUs, industry experience of our staff and industry standards currently being adopted by various BMU owners guide the following information.

Management of BMU Operators:

- All operators to have completed a Working at Heights course conducted by an accredited training company. Renewal not to exceed three years
- All operators to undertake an induction onto the BMU (to be completed by an experienced tradesperson familiar with the particular BMU)
- All Operators must be trained to understand what the key requirements are to be inspected during the pre-operational checks. This training ideally is done within the induction process
- All safety harnesses used within the BMU have undergone an inspection within the previous six months by a competent person per AS 2626
- Senior operators to have a minimum of 500 hours of BMU driving experience
- Operators with less than 500 hours of experience to always be accompanied by a senior operator
- Operators to be deemed competent by their employers before being allowed to operate the BMU independently, regardless of experience

Recommendation of Maintenance to BMU:

- Quarterly service of the BMU to ensure it is always ready to use and safe to operate
- Annual service to ensure the BMU is always ready to use and safe to operate
- A third-party annual review should be completed on the BMU maintenance. This review is often undertaken during the annual service to witness the load testing of the BMU
- On new BMU's, the NDT should be conducted at the five-year and ten-year mark. Then annually thereafter
- Annual NDT's should be performed on BMU's older than ten years
- Major inspection must be completed at the ten-year mark per AS 2550.13
- For BMU's that sit out in the elements, a major inspection should be completed every five years following the first ten-year major inspection
- For BMU's stored within a garage or undercover, a major inspection should be conducted every five years after the second ten-yearly inspection. Therefore, at years 25, 30, etc
- Full rope replacement every four years for copper core lifting ropes, unless stated otherwise within the operational manual
- Full replacement of lifting ropes every ten years for non-copper core ropes. Unless stated otherwise within the operational manual
- Service providers to issue a "cease to use" and "safe to operate" electronic formatted certificates along with on-site tag outs during BMU repairs or outstanding issues
- Service providers to keep registers of BMU equipment, in regards to rope replacement, major inspection completion or due dates
- Service providers and BMU owners to keep copies of electrical diagrams, operation manuals, major inspection reports, NDT reports and third-party reviews

Repairs or Modernisations of BMU's:

- All repairs should endeavour to use original parts
- If original parts are no longer available, alternative equivalent parts may be used and substitute recorded
- If repairs require re-engineering, then a design alteration must be lodged with Worksafe within the state
- All modernisation works are to have a design alteration filed with Worksafe within the state where the works were completed
- Modernisation works should follow a QA process with all records being retained on and off-site.

We recommend going through these guidelines with your service provider to confirm that your BMU is being serviced and maintained accordingly and alter to improve contract conditions and pricing to reflect best practice.

We hope you find this helpful. Should you have any enquiries regarding the above information, feel free to contact us directly or get in touch with your state's Worksafe authority for more detail.

Yours sincerely



Glenn Porter

Referenced current standards;

AS 2550.13-1997 Cranes - Safe use - Part 13 Building Maintenance Units

AS 2550.1-2011 Cranes hoists and winches - Safe use - General requirements

AS 2759-2004 Steel wire rope - Use, operation and maintenance

AS 2626-1983 Industrial safety belts and harnesses - Selection use and maintenance

Occupational Health & Safety Act or Work Health & Safety Act