

Bus Preservation Society of Western Australia Preservation Needs Assessment

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April 2015

Executive Summary

The Bus Preservation Society of Western Australia (BPSWA) aims to preserve Western Australia's bus heritage. The Society holds a large collection of operating and static buses dating from 1929-2004. The collection also includes a significant amount of archival materials, photos and artefacts that are associated with the history of bus services in Western Australia. The BPSWA collection of buses, with its focus on public services is arguably the largest collection of period motor buses in the Southern Hemisphere.

BPSWA is a self-funded, not for profit organisation operated and managed entirely by its volunteer members. The Society was established in 1969 and currently has around 85 members. Between 15 and 25 members regularly attend the Tuesday workshop sessions to carry out restoration and maintenance of the bus collection. A team of drivers provide transport services to Whiteman Park three days a week. Members also undertake tasks such as accessioning, cataloguing, collection storage, digital scanning, fundraising and providing access to the collection.

BPSWA established its depot at Whiteman Park in 1993. Whiteman Park is a state government facility operated by the Department of Planning. The WA Planning Commission provides the land and infrastructure under lease at Whiteman park, while the garages and workshops were financed through WA Lotteries Commission grants and fundraising. The BPSWA is one of five transport and machinery heritage groups that operate at Whiteman Park and is represented on its Transport Coordination Committee (TCC).

Although the Society does not have a dedicated display facility, BPSWA participates in community events throughout the year. They have also been allocated space to display a restored vehicle at Revolutions Transport Museum. The Society produces the quarterly Rattler newsletter, as well as various other brochures on their collection.

The society has achieved much in their years of operation and the members hold comprehensive knowledge and skills. However, the storage facility are inadequate and much of the collection is uncatalogued. Most of the small objects and archival collection are poorly housed due to a lack of funding and knowledge. Three recommendations are made following the assessment, they are:

1. Undertake basic conservation training including collection storage, handling and display methods.
2. Improve collection storage and display methods.
3. Build a new storage facility with a dedicated object workroom.

Key issues required to carry out the recommendations include:

1. Additional funding for training, storage materials, shelving and the development of a new storage facility.
2. Attracting and keeping more volunteers interested in working with the archival and small objects collection.
3. Agreement from Park Management to build a storage facility.

Key Recommendations

Short term recommendations (within 12 months)

- Remove original documents and photographs from display boards, scan and rehouse (pages 5,11,13,16).
- Establish digital scanning standards (page 4).
- Obtain / fabricate a book cradle to assist in safely scanning workshop manuals (page 5).
- Set up a hard drive for storage of digital files at Revolutions Transport Museum (page 5).
- Obtain a full copy of the Mosaic database and continue cataloguing the collection (pages 4).
- Begin scanning Howard Cowell collection albums (full pages plus individual photographs) (pages 4,5,14).
- Move the office area out of the shipping container. Keep the shipping container closed as much as possible (page 7,9,10).
- Provide basic conservation training for volunteers including collection storage, handling and display methods (page 6, 10, 14, 19).
- Undertake a membership drive. This should include registering with online volunteer recruitment services such as the City of Swan Volunteer Resource Centre and Go Volunteer (page 18, 19).
- Transfer more significant items to storage cabinets at Revolutions, and ensure efficient use of this space (page 13).
- Consider deaccessioning multiple items from objects collection in order to make efficient use of limited space and funding. Remove non-collection items from storage shelves (page 12, 14)
- Seek funding for new collection storage and object handling facility for small objects and archives (pages 6, 14, 15).
- Safely remove camphor / moth balls from storage containers (wear appropriate protective gloves / mask) (page 17).
- Obtain and install sticky traps to monitor insect populations in storage areas (page 17).
- Obtain a HEPA vacuum for cleaning storage areas and begin cleaning program (page 17).

Medium term recommendations (within 3 years)

- Undertake training in vehicle conservation and maintenance (page 16, 19).
- Obtain a laser printer to enable cost effective printing of workshop manuals (page 4).
- Establish internet connection at the BPSWA facility to facilitate collection digitisation and communication (page 5).
- Design new collection store / object handling area (pages 6, 14, 15).
- Establish recording standards for vehicle restoration and obtain digital cameras to facilitate this (page 3).
- Obtain archival supplies and begin improving the storage of small objects and archives (page 14).
- Provide training in basic conservation techniques for paper, books and photographs: staple removal, deframing, removing photographs from magnetic albums, cleaning and mould treatment techniques (page 18).
- Remove Howard Cowell photographs from albums and rehouse in archival materials (pages 4,5,14).
- Provide training in collection documentation techniques: accessioning, condition reporting, treatment reporting (page 3, 5, 18)
- Establish maintenance schedule for vehicles, including non-operation vehicles (page 5, 16).

- Improve storage of outdoor collections eg. provision of gravel / concrete pads, canvas covers (page 16).

Long term recommendations(within 5 years)

- Construct new collection store and object handling area (pages 6, 14, 15).
- Provide disaster planning training for volunteers and obtain supplies (page 18, 19).
- Obtain a chest freezer to assist in dealing with pest infestations / disasters (page 17, 18).
- Seek funding for conservation treatment of significant items in the collection - eg. Metropolitan Omnibus Company Minute Books, panoramic photographs, bus design sketches (page 5).
- Deframe paper based items housed in acidic frames (page 5, 14).
- Seek funding for new display facility (page 16).
- Seek funding to upgrade storage of buses stored outdoors (page 16).
- Seek funding for a running shed and washing facility for operational buses (page 15).

Policies

The current Collection Policy was adopted in 2010, and is included in Appendix 1. The Policy adequately sets out acquisition and deaccessioning policies of the Society.

According to the Collection Policy, the Society generally accepts only two buses of a kind, but more may be collected to ensure there are sufficient spare parts available. However, this part of policy has not been applied to small objects, for instance there have been a large number of multiple uniforms collected.

The stated aims of the Society include restoration of its collection, alongside public entertainment. Whilst the type of restoration carried out by the Society does not correspond with AICCM's Code of Ethics, the experience of riding on a historic bus is an important way for the public to appreciate and understand the history of buses in Western Australia. However, it is recommended that the Society introduce a policies on appropriate documentation and acceptable standards for restoration. Currently, all previous surface finishes tend to be stripped and many parts replaced without adequate documentation. In addition, the nature of some buses may be altered considerably from their working life. It is suggested that the Society consider significance and authenticity in planning restoration work. The Society has tried to improve documentation of mechanical repairs in the past by obtaining several digital cameras, but the cameras went missing very quickly. Obtaining some cheap GPS trackers may help solve this problem.

Collection

BPSWA holds an operating and static collection of public road transport passenger vehicles used in Western Australia. An extensive collection of archival materials, photographs and artefacts associated with the history of bus services in Western Australia complements the bus collection.

Overall, there are more than 21,000 objects in the collection, comprising:

- Approximately forty buses, one trolley bus, one horse bus and two chassis. 18 buses are in running order and / or display condition. A further 10 buses are held for spare parts.

- Textiles including uniforms, caps and rolled bus signage
- Organic materials such as leather bags and cases.
- Mixed media objects such as ticketing machines and stamping equipment
- Metals eg. radiator caps, bus stops, badges, spare parts
- Paper and books including historical records, newsletters, workshop manuals and ephemera.
- Photographs including the Howard Cowell collection of 57 albums (5,970 prints) and seven display boards with a total of ninety photos.
- Audiovisual material including DVDs, CDs, videos, slides

Significance Assessment

A Significance Assessment was carried out in November 2013 by Michelle Slarke. Major findings are that the collection demonstrates high historical significance, as well as research and interpretive potential. Several buses are considered valuable by world standards.

Due to time constraints, individual items in the small objects and archive collection were not significance assessed individually. However, items associated with buses of high significance and the history of bus services in Western Australia are also likely to have high significance. This means that the entire collection should be regarded as having potential significance.

Digital access to collection

There has been some cataloguing of the collection, but various systems have been used and much is uncatalogued. One of the volunteers has recently undertaken Mosaic training, and there are plans to catalogue the collection using this system.

Around 75% of the photographic collection has been scanned. Unfortunately, scanning has been done in a range of resolutions and file types and many photographs may need to be rescanned to ensure high quality digital files are available. An information sheet on current digital standards has been forwarded to the BPSWA.

Storage of digital files is on various members computers and hard drives - this may pose access problems in the future. However, the Society is currently investigating storage of files on a hard drive to be kept at Revolutions Transport Museum. Some members have their own relevant private images which they are unwilling to back up on a hard drive held at the BPSWA or in the care of another member. However, they may be willing to do so if the drive was to be kept at Revolutions.

As removal of the photographs from the non-archival albums is recommended, it is essential that complete pages as well as the individual images are scanned. Part of the significance of the Howard Cowell collection lies in the handwritten annotations and original layout, which will be lost when the photographs are removed.

The Society has recently purchased a book scanner and has begun the process of scanning the workshop manuals. This is a significant improvement in collection care, as previously, the rare workshop manuals were in danger of loss or damage when borrowed by members to do mechanical work on the buses. It is recommended that a simple book cradle be bought or made in order to prevent damage to the spines of the books during scanning. In order to facilitate the use of scanned copies by members, it is recommended that the Society obtain a laser printer. Laser printers are far cheaper to run than the existing ink jet printer.

The Society currently has no internet access, although member use their own wifi equipment. A dedicated system at the facility may facilitate research and access in the future.

Use of the collection

A number of buses are in running order and are used to provide tourist transport services around Whiteman Park, and for community events. Buses have also been hired for use on feature films.

The Society receives occasional requests from researchers wishing to look at the collection. They also receive research enquiries from other transport collections.

While the Society does not have a dedicated display facility, parts of the collection are shown at various community days, and on occasional tours of the depot. One vehicle is displayed at Revolutions Transport Museum on a rotational basis, and other items are also occasionally loaned by Revolutions.

Condition

Buses

Many buses have been restored to a 'as new' condition. This is not ideal from a conservation perspective due to loss of original finishes and materials, and lack of documentation. However, no major condition problems to the indoor bus collection were noted during the inspection.

The collection in outdoor storage is generally in very poor condition with extensive corrosion and weathering and biological deterioration of organic materials.

There is little knowledge of conservation requirements for both functional and non-functional buses. Priority issues for the bus collection include protecting the outdoor collection from the elements, and establishing conservation maintenance / storage / running procedures for both functional and non functional buses.

Objects and archives

The Metropolitan Omnibus Company Minute Books have been damaged due to mould and termite and silverfish infestation. These have been deinfested by freezing and are stable but will require treatment in the future. Drawings kept at Revolutions require deframing and appropriate storage.

The small objects and archives have suffered damage due to poor storage, display and handling. Issues include poor storage materials, overcrowding, lack of support, folding and incompatible materials stored together. Rehousing or repacking is required for much of the collection.

Photographs

The photographs in the display board have faded and some have cracking to the emulsion layer. These require urgent protection from light.

The Howard Cowell photographic collection is kept in acidic albums and requires scanning and rehousing. Photographic materials kept at Revolutions also require deframing, appropriate storage and pressure sensitive tape removal.

Handling

While one member has attended some basic conservation training, this has not been adequate. The majority of members are not aware of how to safely handle collection materials, and the collection has suffered damage as a result. Object handling training is recommended for all members working on the small objects and archives collections. This will assist in the establishment of handling procedures for the collection. Another issue is that there is no clean, dedicated space for object handling. Disposable gloves are recommended to handle most collection items. Fragile items that cannot be easily handled with gloves, such as paper, may be handled with freshly washed hands.

Building (repository structure)

The BPSWA is located at Whiteman Park, a recreation and conservation reserve managed by the Department of Planning. The site of the BPSWA is fairly isolated as it is away from the main tourist area of the Park, though nearby the Perth Electric Tramway Society.

The BPSWA premises consist of:

- Shed A (erected in 1987): This contains bus and object storage; an administration and meeting area with a kitchen. In 2005, a shipping container was installed inside the Shed, becoming the small objects and archive storage room and office. An additional archival work area is housed in an adjacent seat-free bus.
- The workshop (erected 2003) is equipped to overhaul engines and chassis, and rebuild/repair bus bodies.
- Shed B, erected in 2010 is used for storage of buses and their components.

The buildings are of uninsulated steel construction with concrete floors. The floor does not extend the full length of the sheds, and there is gravel at the edges. There is no ceiling and some gaps between ceiling and walls. There are no windows, but sliding doors are opened during working hours.

The buildings do little to modulate environmental conditions, although the shipping container does provide some insulation when kept closed.

The buildings are in good repair and there is no evidence of water leaks. No current pest, condensation or mould issues were reported, though the collection is very vulnerable to this occurring.

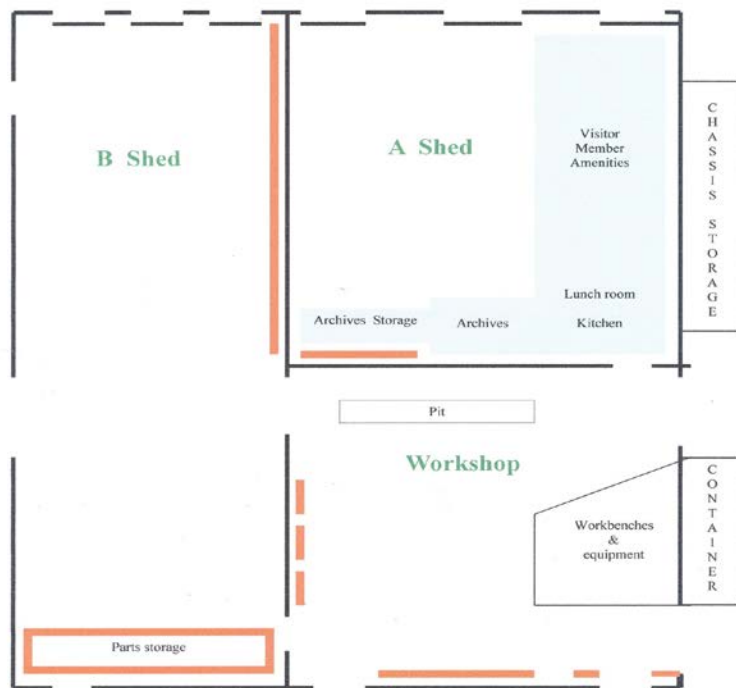


Figure 1: Plan of the BPSWA facility

Security

Some security for the collection is provided by its location within Whiteman Park. The Park gates are closed every evening, and a Park Security Officer patrols the area during this time.

The BPSWA premises are padlocked and use restricted security keys. There is no burglar alarm or security cameras, but the Society have installed imitation security cameras.

While there are perimeter fences, there have been occasional thefts and vandalism to the collection stored outdoors.

Theft amongst the volunteer group is not a general concern.

Fire detection and suppression

New fire extinguishers have recently been obtained and there are adequate numbers located throughout the storage facility, as well as on the running buses. These are of different types according to the area where they are located - dry chemical powder, carbon dioxide and foam. The extinguishers are scheduled to be regularly serviced. There is also internal and external fire hoses, and illuminated exit signs. A diesel generated water pump is also available for external fires. There is no fire detection system or sprinklers.

Environment

Temperature and humidity

Perth has large seasonal variations in relative humidity, with wet winters and hot, dry summers. Average outdoor temperature and relative humidity readings in Perth are plotted in Charts 1 and 2.

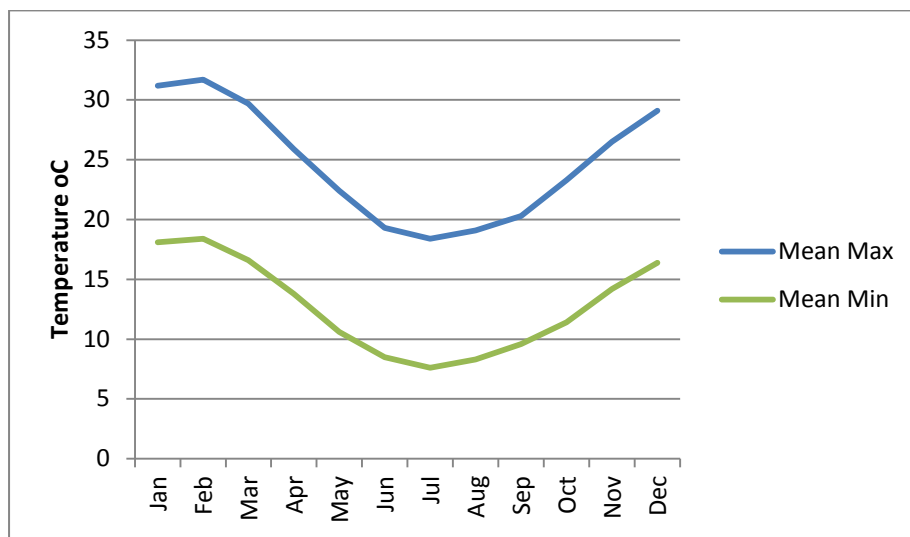


Figure 2: Seasonal average outside temperature (source: Bureau of Meteorology)

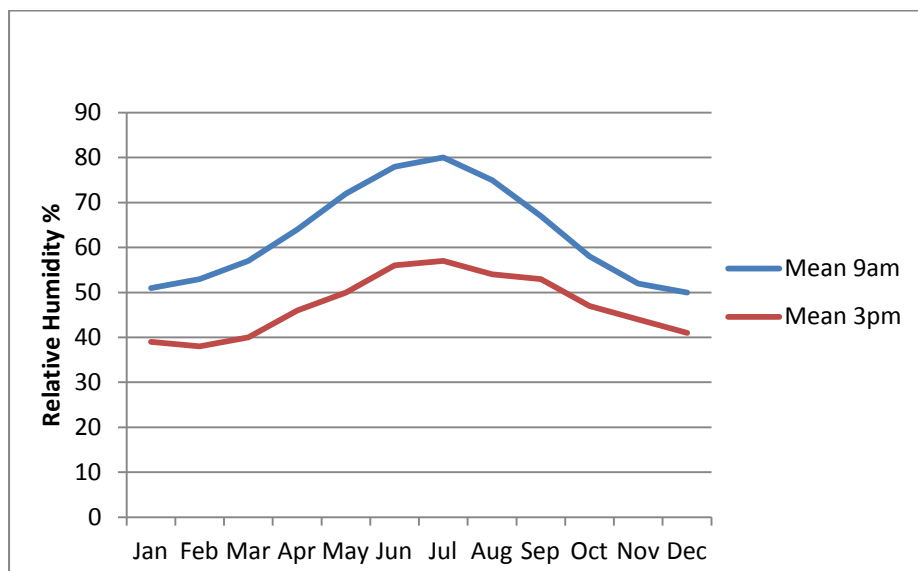


Figure 3: Seasonal average outside relative humidity (source: Bureau of Meteorology)

As can be seen in Charts 2, winter poses the greatest risk of damage to collections in Perth. Physical damage is most likely to occur during this season due to rapid humidity fluctuations. High humidity can also increase the risk of mould, insect damage, corrosion and other deterioration processes.

The temperature and relative humidity at the BPSWA were surveyed using Tinytag Dataloggers between the 26th of March and the 14th of April 2015.

The BPSWA sheds do not have air-conditioning, insulation or ceilings and are not well sealed. The buildings provide little buffering from the outside environment. Large sliding doors are also kept open during working times. The collection stored on open shelving has little buffering from environmental changes, other than that provided by storage containers themselves.

As can be seen from the charts, the environment conditions are very poor in the Drift Bus, Open Shelving and Photo Display. Relative humidity levels were extremely high as it rained during the latter part of the testing period. While no evidence of damage due to mould or damp conditions was noted during the inspection; the collection is vulnerable to damage caused by high relative humidity, including an extremely high risk of mould, pest outbreak and accelerated chemical deterioration. Mould is likely to occur where relative humidity remains at over 70% for 24 hours - conditions were as high as 90% in the testing period.

It can be seen from Chart 4, that the shipping container does buffer environmental conditions quite well. However, there are sharp fluctuations in relative humidity when the shipping container is open every Tuesday to access the small office at the front. It is recommended that the office be moved out of the container if possible, so that it can be kept closed when access to the collection is not required.

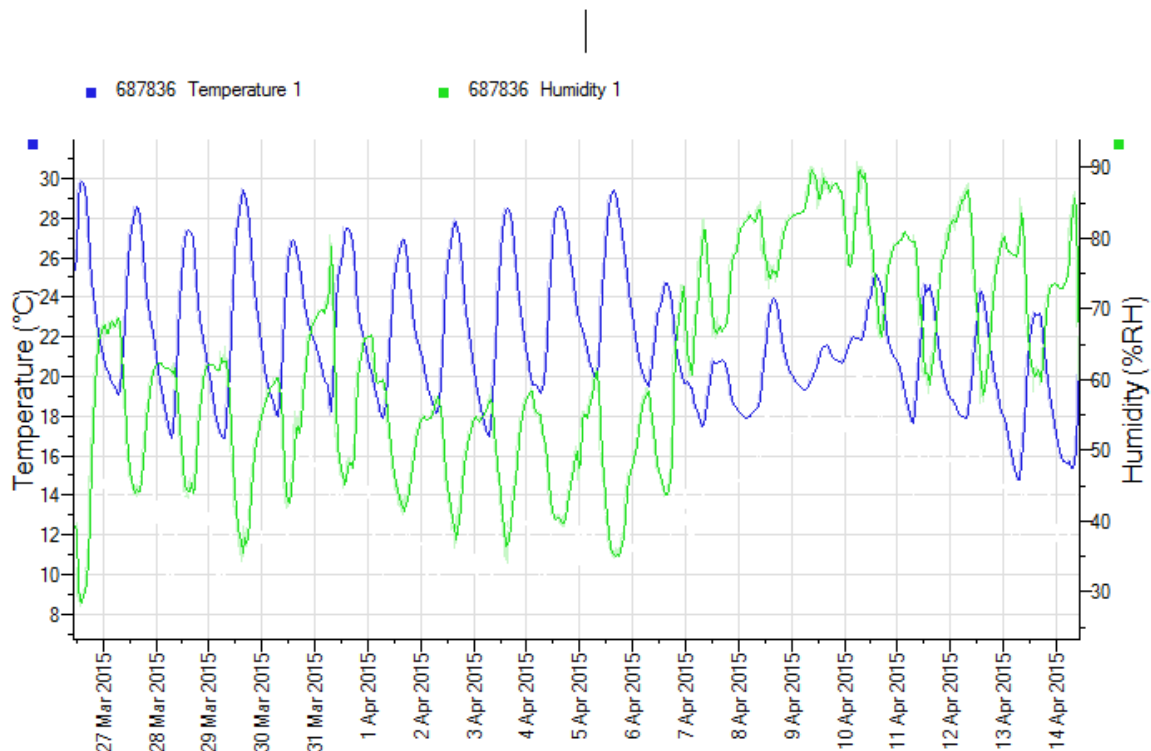


Figure 4: Graph of Photo Display environment

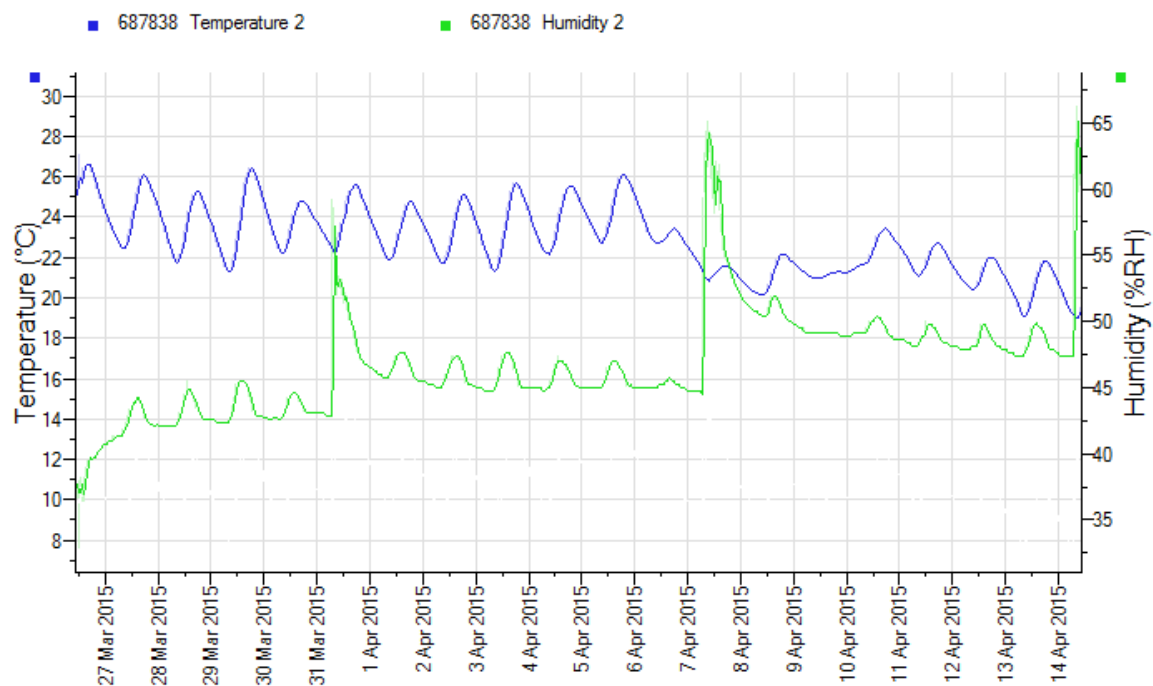


Figure 5: Graph of Shipping Container environment

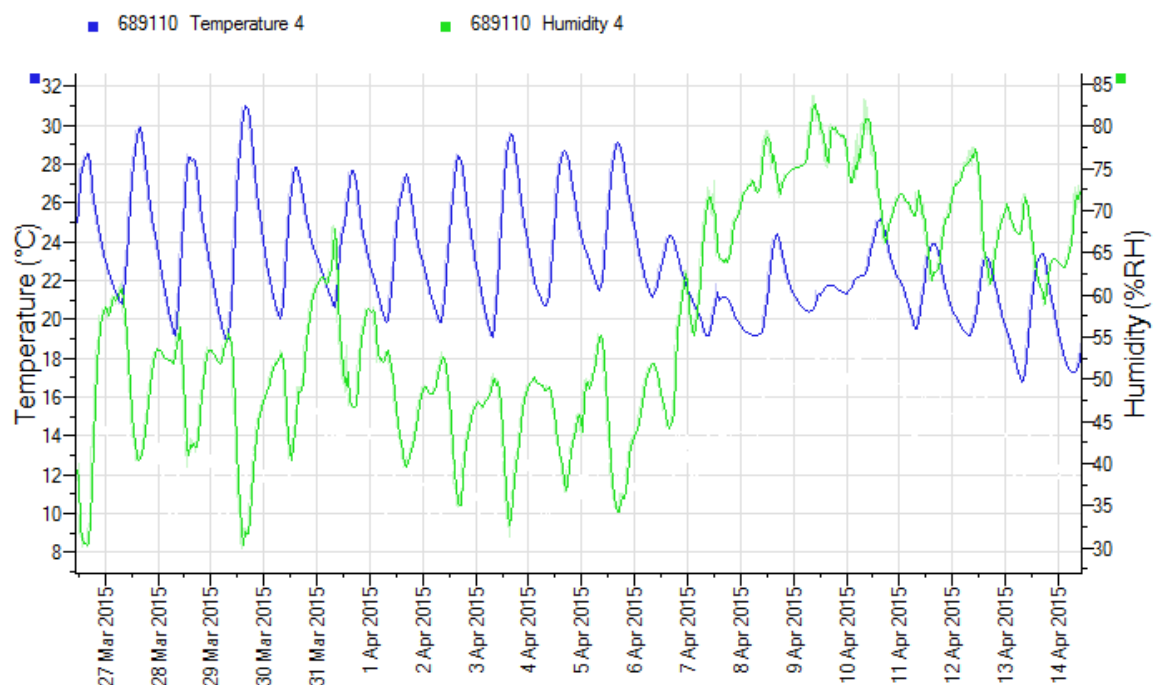


Figure 6: Graph of Drift Bus (Archive Work Room) environment

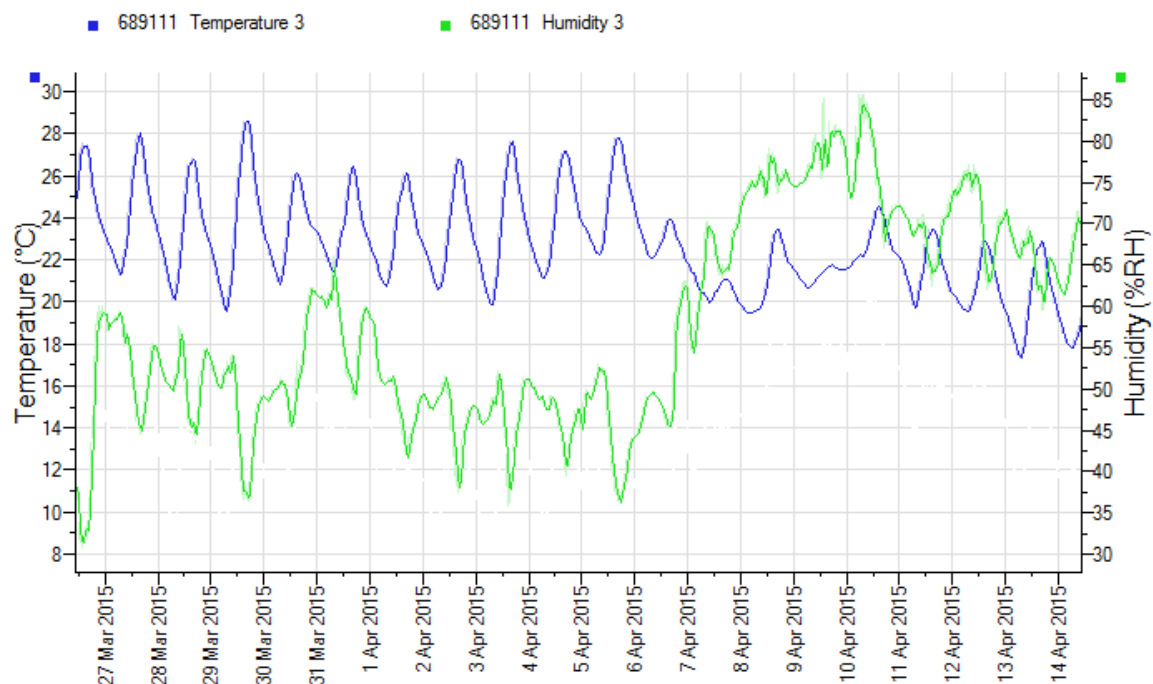


Figure 7: Graph of Open Shelving environment

Lighting

The shipping container is illuminated with fluorescent lights, these are generally only used when the collection is accessed. When the lights are on, this area is lit at 200-400 lux. When the container is closed, there is no light falling on the collection. Most items in storage are covered, so light damage is not an issue in this area.

The open shelving storage area is in part of Shed A which is not used as a work area, so the lights are not used very often. This area is illuminated with tungsten halogen lights. The light levels were measured at around 10-30 lux when the lights were not on, but the shed doors open. Again, much of this collection is boxed, so light damage is not a significant issue..

The items most at risk of light damage are the photographic display boards and the model buses. When the shed is open, they are exposed to daylight. For some of the display boards, the light levels are over 2000 lux. The photographs have begun to fade, and some have extensive peeling of the emulsion layer. It is recommended that all original collection material be removed for the display boards, and the model buses covered with opaque fabric when no visitors are present.



Figure 8: Photo display boards and model buses

Storage

Small Objects and Archives

Storage Areas

Most of the archives and small objects are kept either in a shipping container within Shed A, or on open shelving in a separate area, also in Shed A. Conditions are quite overcrowded, making it difficult to access the collection. A number of extraneous items are kept on the shelves, contributing to the overcrowding. Air circulation is likely to be poor, contributing to the risk of mould damage, particularly in the open shelving.



Figure 9: Shipping container storage



Figure 10: Open shelving storage

Some items are also kept on the floor, which poses a risk of damage in the event of a flooding.

Some of the most significant items are stored at Revolutions Transport Museum, which offers somewhat better environmental conditions. This includes 33 framed photographs, 13 volumes of the Metropolitan Bus Company minutes and a restored trolley bus. Revolutions have provided an upright coated steel cabinet and several plan drawers. There is empty space in these storage units and It is recommended that more significant items be stored at Revolutions. Stacking of items is currently haphazard and does not make efficient use of the space. Neat and careful housing of collection materials will ensure that more items can be stored safely in these units.

Shelving

The shipping container is furnished with unsealed wood / plywood / chipboard shelving. This appears quite old and difficult to clean effectively. The open shelves are constructed from painted steel and plywood. They appear to be in good condition. As unsealed wood and wood products should be avoided where possible as they release damaging acids, it is recommended that coated steel shelving be obtained if a new storage facility is built.

Shelving and boxes are numbered for content and location, and are beginning to be linked to the Mosaic database.

Storage Enclosures and Packing

Much of the archives and objects collections are housed in clear plastic tubs. This is a good choice of storage enclosures in this area, as they are reasonably chemically stable, and help to protect the objects from dust and moisture.

However, there are many non-archival storage containers made from acidic cardboard, Styrofoam, chipboard or plywood. These are unsuitable for collection storage and should be replaced as funds allow.

The packing of objects within the storage containers requires considerable improvement - basic conservation storage training is recommended to assist in this process. Issues to address include:

- There is a general assortment of non-archival packing materials used to house objects eg. plastic bags, bubble wrap and newspapers. These items are likely to contribute to deterioration of the collection through the release of acids and plasticisers. Archival storage materials should be obtained as funds allow.
- Storage containers are generally overcrowded.
- Containers should be repacked to separate organic and inorganic materials wherever possible.
- It is best to place items of a similar weight and nature together. Do not place heavy items on top of lighter ones.
- Paper documents need to be appropriately supported either upright or flat, and not leaning over. Metal staples and paper clips should be removed. Archival enclosures are particularly important.

- flexible organic items such as bags and caps need to be appropriately padded out to avoid being permanently deformed.
- Textiles should not be stored with tight folds. Appropriate padding out of seams and folds is required to prevent future damage.
- Items that are stored rolled, such as the bus signage, requires supporting at the ends. They should not be stacked.
- Original photographs should not be stored in acidic albums or display boards. Archival envelopes or albums are recommended.
- Any collection items that are not boxed should be covered to protect them from dust and light. Tyvek is a good material for this purpose.
- Keeping multiple duplicates of items has contributed to overcrowding of storage enclosures. Consideration should be given to deaccessioning of these items in order to reduce overcrowding and more efficiently use scarce resources.
- Many frames release acids and where possible should not be used to permanently house paper based materials.

Recommendations for the future

A new storage facility should be built to house the small objects and archives. Some information sheets on collection storage facilities have been provided and should be carefully reviewed. The following points should be considered in designing the facility:

- No windows are required in a storage area as it should not be used a work area
- Good lighting is essential but should only be turned on as necessary
- A separate clean work area should be housed in an adjoining room.
- The facility should be well insulated and, preferably have a ceiling and be clad.
- Doors should be well sealed and there should be no gaps in the construction between walls and floors or walls and ceiling.
- Allow adequate space for the collection to grow
- Metal shelving is best for storage, compactus units could be considered to save space but increase the necessary floor loading
- Use fire resistant materials
- The floor should have a vapour barrier
- Concrete floors need to be appropriately sealed
- If the building is sufficiently well insulated it is best to avoid air conditioning:
 - The use of household airconditioning units can be damaging for collections as they do not control relative humidity, and there are sharp fluctuations in humidity if they are turned off at night or fail.
 - HVAC air conditioners do control relative humidity, but are expensive to buy and run, and must be in continuous operation to effectively protect collections
- A back to base fire detection unit is recommended if funds allow.

Buses

Most of the restored buses are kept within the various sheds. However, the collection is continually growing and there is not enough room to store all the buses indoors. Many of the unrestored vehicles, or those wanted for parts only, are kept outside. Some restored buses are currently in storage at Midland, but the Society have been told that this facility will not be available in the near future, placing even more pressure on the BPSWA facility.

Current indoor storage is crowded but provides adequate protection for the buses. The provision of a running shed and washing facility for operational buses is recommended, however, to facilitate the preservation of the collection.

Outdoor storage

A number of buses are stored outside, putting them at risk of increased corrosion and deterioration of components. Most buses are kept directly on the ground, and few are covered, contributing to corrosion of metal components. Light damage to paintwork and organic fittings of buses stored outdoors is also an issue.

Restoration of buses involves many hundreds of hours of volunteer labour, and requires additional undercover space. It is likely that many buses will never be able to be stored adequately or restored. Therefore, it is important to carefully consider whether additional buses should be accepted into the collection. Some deaccessioning of parts of the collection may be required to address storage issues, this should be done with full regard to their significance.

As it is difficult to house all the exterior buses under full cover, steps should be taken to provide some protection for this collection:

- The cheapest method to improve the storage of the outdoor collection would be to store the items on a bed of coarse gravel to improve drainage. This would also help reduce dust from the current crushed limestone.
- If funding allows, a concrete pad would provide better protection. It should be sloped to allow drainage and incorporate a polyethylene membrane. The concrete should be sealed with a concrete sealer to provide water proofing.
- Place vehicles on axle stands where possible
- Where possible, the buses should also be covered with waterproof covers. Efforts should be concentrated on the most significant buses, especially those likely to be restored in the future.
- In the long term, a roof or shed could be installed over the concrete pad, but it is unlikely that there will ever be enough funding to house all the buses this way.

Preservation of engines and working parts

Further training in vehicle conservation and maintenance techniques is recommended, however the following basic guidelines are suggested:

Functional buses

- Use inhibited lubricants
- Allow engines to warm up before use and run for a minimum of 30 minutes.
- Where possible only run during times of low humidity

Non functional buses

- Drain old oils, fuels, engine coolant
- Let down pneumatic tyres or place on stands
- Drain and neutralise batteries



Figures 11 & 12: Outdoor storage of buses

Display / exhibitions

The BPSWA does not currently have a dedicated display facility, but the buildings do host visitors on occasion. A small display area has been set up on one side of Shed A, this includes photographic display boards, honour boards and model buses. The photographic display boards are of particular concern as they use original collection material. The boards themselves are of acidic particle board. The displays are exposed to extremely high light levels and uncontrolled fluctuating environmental conditions. This has already led to fading of the photographs and documents, and peeling of the photographic emulsion. It is recommended that all original paper based material be removed and replaced with copies. It is recommended that the model buses and honour boards be covered with an opaque fabric. In the long-term, these items should be housed in more appropriate conditions.

Several buses in the collection are in running order, and used for visitor transport at Whiteman Park, as well as public events at other locations. The BPSWA take part in several public events during the year. Occasional temporary displays are produced for these events. The Society are working towards a more permanent mobile interactive display.

The BPSWA display one bus at Revolutions Museum, Whiteman Park on a rotational basis. Occasionally other items are also lent to Revolutions Museum. While buses may suffer some wear and tear during display at this facility, environmental conditions are generally adequate.

In the long term, there are plans to work towards a dedicated display venue at Whiteman Park, either for the sole use of the BPSWA, or in conjunction with the other transport groups.

Housekeeping

The open shelving and the shipping container are very dusty due to the unsealed nature of the buildings. It is difficult to clean the shipping container due to the raised central walkway and the crowded conditions. The storage areas are occasionally swept. There does not appear to be a vacuum available for cleaning purposes. It is recommended that the storage areas be cleaned approximately every two months, and that a vacuum cleaner with a HEPA filter be obtained for this purpose. Sweeping is not recommended as the main cleaning method as it can distribute dust and insects more widely.

The bus collection stored indoors is kept in a fairly clean condition, with particular attention paid to the running buses. However, the unsealed crushed limestone around the shed facility has made keeping the running buses clean quite difficult and dust is a general issue.

No live insects or pests were observed during the inspection, but this is likely to be a reoccurring problem due to the unsealed nature of the buildings. The volunteers carry out occasional pest inspections.

Pest infestations have been dealt with in the past using commercial insect sprays and mouse baits. Insecticide products may damage collection items, and are harmful to health - they are only recommended as a last resort. Camphor blocks have been placed inside some of the storage containers - these are also not recommended.

Localised insect infestations can also be treated by freezing collection items. It is recommended that a chest freezer be obtained to assist in pest eradication and quarantining and for use in case of a flooding disaster. It is recommended that sticky traps (without attractant baits) be installed and monitored on a monthly basis.

Once the new storage building is built, a quarantine system should be put in place for new items going into the collection. All new items should be cleaned and inspected, and preferably kept sealed for some weeks in a plastic bag in order to observe if insects are present. Many items can also be safely frozen in a chest freezer to eradicate insects. Collections must be securely covered with plastic prior to freezing to help prevent damage.

Disaster preparedness

The Society does not currently have a disaster preparedness plan and has not undertaken formal risk assessment or disaster training. However, one of the volunteers has a background in occupational health and safety, and has made a number of improvements to the safety of the volunteers and the collection in recent years. A list of emergency contacts is available onsite, at the Park Office, and at various volunteers' homes.

It is recommended that a disaster plan be written and kept in an easily located position and distributed to other council employees. Separating collection and non-collection items, and clearly labelling significant collection objects would assist in removal of priority items in the event of a disaster.

The two most significant threats to the collection are fire and flood. As both of these disasters can result in water damage to the collection, it is recommended that appropriate disaster supplies be obtained. Disaster bin should be stocked with appropriate materials to deal with flooding, including: buckets, plastic sheet, torches, mops and towels. Fans are also important to help dry out any wet items and should be stored in separate secure area.

Fire

Whiteman Park Management are responsible for fire safety within the park area, and have an overall fire and emergency plan. enforce restrictions on outside work during times of high fire danger. The Whiteman Park Fire Officer conducts regular safety briefings with the volunteers, so they are informed of what to do in an emergency. The BPSWA have a two way radio connected to the Park Office which enables them to stay informed of potential threats. Members are also able to alert the office if they see any fires.

The BPSWA have reduced fire danger by storing volatile materials in a locked separate building.

Flood

Water ingress into the sheds has been a problem in the past due to drainage issues. The soakwells have been improved by the park management, and concrete aprons have been added at the front of the sheds. It is hoped that this will reduce the possibility of flooding in the future.

Training needs / skills assessment

BPSWA may struggle to implement this survey due to lack of volunteers interested in working with the collection, lack of funding and lack of basic conservation training.

Volunteer recruitment and retention should be considered a priority for the Society:

- The aging volunteer workforce is of particular concern. The skills necessary to work on the older buses are only known to past generations of mechanics. Without younger members joining the Society, there is danger that these skills will be lost.
- There are few volunteers with the skills and interest to work with the objects and archive collection.
- Board members are inundated with work, leaving little time for essential tasks such as fundraising.

Training that has been undertaken by a couple of members in the past includes Mosaic database training and basic archival training, recording and photography.

It is recommended that the group seek to increase their collective knowledge of conservation and objects handling. Training in the following skills is recommended:

- Preventive conservation, collection storage and object handling: textiles, objects, paper
- Disaster preparedness
- Basic conservation techniques for paper, books and photographs: staple removal, removing photographs from magnetic albums, cleaning and mould treatment techniques.
- Collection documentation techniques: accessioning, condition reporting, treatment reporting

- Conservation of vehicle collections (both functional and stationary)

Prioritised recommendations

| Recommendation | Priority | Resources |
|---|----------|--|
| Short term | | |
| Remove original documents and photographs from display boards, scan and rehouse. | 1 | <ul style="list-style-type: none"> • Volunteer to undertake work |
| Establish digital scanning standards. | 2 | <ul style="list-style-type: none"> • Volunteer to undertake work |
| Obtain / fabricate a book cradle to assist in safely scanning workshop manuals. | 3 | <ul style="list-style-type: none"> • Funds / volunteer to undertake work |
| Set up a hard drive for storage of digital files at Revolutions Transport Museum. | 4 | <ul style="list-style-type: none"> • Funds for hard drive |
| Obtain a full copy of the Mosaic database and continue cataloguing the collection. | 5 | <ul style="list-style-type: none"> • Funds for Mosaic |
| Begin scanning Howard Cowell collection albums (full pages plus individual photographs). | 6 | <ul style="list-style-type: none"> • Volunteer to undertake work |
| Move the office area out of the shipping container. Keep the shipping container closed as much as possible. | 7 | <ul style="list-style-type: none"> • Volunteers to undertake work • Suitable area for office |
| Provide basic conservation training for volunteers including collection storage, handling and display methods. | 8 | <ul style="list-style-type: none"> • Funds for training |
| Undertake a membership drive. This should include registering with online volunteer recruitment services such as the City of Swan Volunteer Resource Centre and Go Volunteer. | 9 | <ul style="list-style-type: none"> • Volunteer to undertake work |
| Transfer more significant items to storage cabinets at Revolutions, and ensure efficient use of this space. | 10 | <ul style="list-style-type: none"> • Volunteer to undertake work |
| Consider deaccessioning multiple items from objects collection in order to make efficient use of limited space and funding. | 11 | <ul style="list-style-type: none"> • Volunteer to undertake work |
| Seek funding for new collection storage and object handling facility for small objects and archives. | 12 | <ul style="list-style-type: none"> • Volunteer to write grant application |

| | | |
|--|----|---|
| Safely remove camphor / moth balls from storage containers (wear appropriate protective gloves / mask). | 13 | <ul style="list-style-type: none"> • Volunteer to undertake work • PPE |
| Obtain and install sticky traps to monitor insect populations in storage areas. | 14 | <ul style="list-style-type: none"> • Sticky traps |
| Obtain a HEPA vacuum for cleaning storage areas and begin cleaning program. | 15 | <ul style="list-style-type: none"> • Vacuum cleaner |
| Medium term | | |
| Undertake training in vehicle conservation and maintenance. | 1 | <ul style="list-style-type: none"> • Funds for training |
| Obtain a laser printer to enable cost effective printing of workshop manuals | 2 | <ul style="list-style-type: none"> • Laser printer |
| Establish internet connection at the BPSWA facility to facilitate collection digitisation and communication | 3 | <ul style="list-style-type: none"> • Funds for internet service |
| Design new collection store / object handling area | 4 | <ul style="list-style-type: none"> • Volunteer to undertake work • Funds to commission consultant |
| Establish recording standards for vehicle restoration and obtain digital cameras (with tracking devices) to facilitate this | 5 | <ul style="list-style-type: none"> • Volunteer to undertake work • Digital cameras (and tracking devices) |
| Obtain archival supplies and begin improving the storage of small objects and archives | 6 | <ul style="list-style-type: none"> • Funds for archival supplies |
| Provide training in basic conservation techniques for paper, books and photographs: staple removal, deframing, removing photographs from magnetic albums, cleaning and mould treatment techniques. | 7 | <ul style="list-style-type: none"> • Funds for training |
| Remove Howard Cowell photographs from albums and rehouse in archival materials. | 8 | <ul style="list-style-type: none"> • Volunteer to undertake work • Archival albums / envelopes |
| Provide training in collection documentation techniques: accessioning | 9 | <ul style="list-style-type: none"> • Funds for training |
| Establish maintenance schedule for vehicles | 10 | <ul style="list-style-type: none"> • Volunteer to undertake work |
| Improve storage of outdoor collections eg. provision of gravel / concrete pads | 11 | <ul style="list-style-type: none"> • Funds for contractor / materials • Volunteer to undertake work |

| • Long term | | |
|---|---|---|
| Construct new collection store and object handling area | 1 | <ul style="list-style-type: none"> Funds for construction Agreement from Park Management Storage furniture |
| Provide disaster planning training for volunteers and obtain supplies. | 2 | <ul style="list-style-type: none"> Funds for training and supplies |
| Obtain a chest freezer to assist in dealing with pest infestations / disasters | 3 | <ul style="list-style-type: none"> Freezer Suitable space |
| Seek funding for conservation treatment of significant items in the collection - eg. Metropolitan Omnibus Company Minute Books, panoramic photographs, bus design sketches. | 4 | <ul style="list-style-type: none"> Volunteer to write grant application |
| Deframe paper based items housed in acidic frames. | 5 | <ul style="list-style-type: none"> Volunteer to undertake work Archival storage materials |
| Seek funding for new display facility | 6 | <ul style="list-style-type: none"> Volunteer to write grant application |
| Seek funding to upgrade storage of buses stored outdoors | 7 | <ul style="list-style-type: none"> Volunteer to write grant application |
| Seek funding for a running shed and washing facility for operational buses | 8 | <ul style="list-style-type: none"> Volunteer to write grant application |

Authorship

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 Director of Conservation
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 April 2015

Comments on Preservation Needs Assessment – Wiggin Document.

As requested I offer some thoughts on Vanessa Wiggin's report on preservation needs. From my perspective it is a very extensive report that contains what appears to me a huge amount of valuable information, however, I'm no expert in the preservation needs area. Given Vanessa's qualifications and her position it seems that she is an appropriate person to offer such advice.

1.Implementation.

- In my view, the implementation of its recommendations will be a long-term project and should become part of BPSWA's long term overall plan. The report will provide a wonderful resource document in the preparation of any planning documents that are yet to be produced.

2.Understanding the Requirements

For any such document to reach its ultimate potential it must be fully understood and accepted by the majority of members, particularly by Council members and those members that undertake volunteering at the workshop. There is always the risk of early short-term acceptance only to drop away after a short period resulting in the report achieving little more than gathering dust on a shelf. I would suggest that a person be delegated to oversee its progress and provide a monthly report to Council so as to (hopefully) ensure it is kept alive and relevant.

3. Benefits of Addressing Preservation Needs.

There is little doubt in my mind that the addressing of preservation needs requirement, together with a well documented long-term overall plan, will enhance the availability of development grants from both Government and other providers. The providers of grants will always look more favourably on those organizations that have well documented plans in place and that have a good track record of developing quality products. BPSWA has a good record in building quality bus refurbishments, but it is somewhat lacking in having well documented plans. It is also lacking in adequate heritage storage requirements and cataloguing, these however, are addressed in the Wiggin report. I'm sure appropriate action will be taken.

4. Developing a Vision for the Future.

The first step is to develop a vision for BPSWA as to where the organization should sit in say twenty five years from now. To establish a vision that will be acceptable to all of the organization's stakeholders, they will need to be given the opportunity to have meaningful input. The vision should not be confused with the actual plan, it is merely a target to aim for over the long-term. The vision should provide accurate guidelines for the planning process. It should be regularly reviewed over its lifetime to ensure that it remains achievable in a broad sense. I'm sure the majority, if not all members have their own vision as to where they would like to see the organization placed at some point in the future. No matter what a particular person's vision may be, at the end of the day, consensus must prevail to ensure the well being of the organization.

I would strongly recommend that BPSWA develop a vision in an endeavour to facilitate the planning process. To effectively achieve a meaningful outcome stakeholders such as Whiteman Park, The Planning Authority, City of Swan and the

users of Whiteman Park (the general public) should be encouraged to make submissions. While speed is an important aspect, I don't believe it is the key issue, I would say a quality outcome is definitely more important.

5. Starting the Needs Assessment project.

While a certain amount of work can start on the Needs Assessment as soon as practicable, care must be taken not to undertake work that has any likelihood of impinging on any planned future operations. Any process involving structural alterations (even minor) should not be undertaken until the overall plan is known. To do otherwise could result in additional costs at a later stage, even worse, it can result in having 'built in' inefficiencies

6. The Overall Plan.

It is my view that any organization that has a clear view and vision as to what is desirable for the long term are invariably the ones that have effective and acceptable planning protocols in place. There are few things that motivate people more than being part of a high achieving venture. Such achievement is only likely to come about by people being aware of what is required of them and being supported by the organization.

7. Rolling Five year Plan.

A rolling five 'year plan' is a common tool used by many organizations, and I believe it would be the ideal method for the planning process at BPSWA. It is suggested that most people would be aware how the rolling plan works in its most simple form, but just in case anyone is not aware I will give a simple explanation:

- a) All the required projects are listed and prioritised and allocated into various years.
Note: The ones with the highest priority get top billing, however, there are numerous issues that can intervene, such as lack of funds, manpower etc. Such items can be split into affordable bites over any number of years. It may be delayed to a year when funds are available.
- b) Each of the subsequent years is treated in a similar fashion up to year five.
- c) A project that may take some years to complete can be programmed over a number multiple years.
- d) At the end of the first year another year is added (the original year 2 becomes year one and the new one becomes 5. Any work not completed in the first year is transferred into the new 'year one'. This may have a cascade effect over a number of years There is always a five year list. In BPSWA's case there will be a large non allocated list following the fifth year. However, it should be in order of priority. The system must be flexible enough to allow change in relation to plans and priorities

It is my view that this system would work well at BPSWA because it is flexible and caters well for possible delays. However protocols would need to be put in place to control changes and as such need to be approved by a senior manager.

As this whole programme is certain to be very large it will have to be prioritised and programmed in stages. It could well extend beyond the suggested twenty five year timeframe. The overall length of time will largely depend on how successful the organization is in attracting grants. Members should not be dismayed by its size or the length of time it may take. The important thing about all of this, if it is accepted, is that the organization is endeavouring to formally lay the ground for future works and its well being, something it doesn't appear to have done in the past relative to an overall planned development.

The following clearly demonstrates the huge scope that is involved in such a development plan. At this stage it would be virtually impossible to accurately predict a timeframe for such a development as there are so many variables, particularly in relation to volunteer availability and funding. If it is to go ahead and hopefully it will, it can be achieved in small and manageable bites, with the only downside being the smaller the bite the longer it will take. I would certainly recommend small manageable bites in the first two years at least:

Following is a list of the various facilities and issues that will need to be addressed in any formal plan. It should be noted they are not listed in order of priority

- a) Office Facilities
- b) Archive Requirements
- c) Bus Storage Areas including operational, non operational & buses being held for restoration in the long term.
- d) Spare Parts Store.
- e) Wash & Fuelling area.
- f) Mechanical Work Area including pits.
- g) Coach Building Area
- h) Fuel Storage Area
- i) Security facilities.
- j) First Aid Facility.
- k) Well Designed Bus Movement Plan – ingress & egress to workshops.
- l) Eating & Rest Area.
- m) Roof Water Storage (tanks)
- n) Effective Drainage for water run off on site.
- o) Preservation Needs Assessments.
- p) Funding Options.
- q) Public Events.
- r) Whiteman Park Passenger Carrying Contract.
- s) Sourcing of Volunteers
- t) Budgeting.

Note: The above list may not be fully representative of the needs and may require subtractions and additions.

Funding, as mentioned before, will be a critical aspect in bringing a project of this magnitude to fruition. It is virtually certain that grants will be needed to meet costs. There is no doubt in my mind that various areas of outside expertise will be required to develop such a plan. I am reasonably confident that technical help could be sourced from technically qualified members and retired transport engineers particularly in

relation to workshop modifications. If this plan is accepted in principle, the next step would be to formulate a staging plan.

8. Duplicate Items or Vehicles.

I note the consultant has raised the hairy issue of duplication. While I agree in general with her sentiments, there are occasions where a duplicate vehicle is required. However I would suggest that this would be the exception rather than the rule. Generally I don't believe that duplicate vehicles should either be purchased or rebuilt. An exception to this should only be where it is required for spare parts.

It seems most people prefer to see variety rather than the sameness of vehicles. I believe funds would be better spent on other important needs or on refurbishing some of the heritage type vehicles on the waiting list to be restored.

9. Budgeting.

While this item wasn't raised in the Preservation Needs Assessment Report, it is an important issue in relation to any development plans that may be prepared. It seems to me that there is no definitive amount set aside for individual buses for body reconstruction or major repair. This whole issue must be addressed in the formal plans for each year. Currently I believe there is far too much being spent on purchasing and transporting old buses, many of which will waste away before they see the inside of a workshop. This whole issue is in urgent need of review..

10. General Comment.

As mentioned earlier I believe that the Assessment Report is a valuable and important document. The great majority of issues raised are valid and do need addressing over a period of time. There is an excellent priority list at the end of the report – pages 19 to 21.

Conclusion.

There is nothing more necessary than having clear and precise objectives as to what any organization wishes to achieve in the medium to long term. It contributes to improved morale among its workforce and builds confidence for all its stakeholders. However, the mere fact of having or developing any plan won't generate success on its own, it needs to be clearly demonstrated that the organization is fully committed and effectively working towards the planned goals.

It is also my opinion that the concept of a 'five year rolling plan' would be most suitable in achieving long term desires for BPSWA as it provides the utmost flexibility in meeting targets.

R. J. MacDonald
20 October 2015.

Bus Preservation Society of Western Australia

Preservation Needs & Master Plan Report.

The following report should be treated as merely a reference document dealing with issues relating to both preservation needs and a proposed long-term plan. Another important reason for this document is the hope that it may help generate ideas in relation to the future wellbeing of the Bus Preservation Society of Western Australia (BPSWA).

Further to John Weaver's email some time ago, which posed the question – 'Where to from here?' – the question was asked in relation to the 'Preservation Needs Assessment' (PNA) report prepared by Consultant Vanessa Wiggin. In response I tender the following comments. However, before doing so, I would like to make general comments on the on the PNA report. From my perspective I believe it will be a most useful document as it contains important information and recommendations, the majority of which can be implemented progressively over the coming years if the Society so desires. Well founded information regarding 'preservation needs' is absolutely essential and will facilitate appropriate action by BPSWA in this most important task of preserving heritage related to the Western Australian bus industry. The management council must now remain wary of not losing the early and obvious momentum that the report has generated.

It will be noted that I haven't discussed all of the issues raised in the PNA report, not because I don't consider them important, but more because I'm of the view that the bigger picture needs to be addressed; by so doing, it will facilitate the forming of a framework which can be used in addressing the issues faced by BPSWA as a whole.

There is little doubt that BPSWA has made significant advances, particularly during the past year, in gaining NLA accreditation for its overall collection and also for taking the initiative in relation to the identification of preservation needs as documented in the recently completed PNA report by the Director of Conservation Artworks, Vanessa Wiggin.

While the needs of the archives and the general area of conservation are well documented in the report, there is still much to be done in relation to the broader aspects of the overall BPSWA operations. It appears to me that the organization now has a great opportunity to include recommendations from the PNA report into a master plan that will detail the future direction of the BPSWA for at least the next twenty years.

It is my belief that a long-term master plan is overdue and totally essential. It is almost certain that BPSWA will be required to submit its plans for the future when applying for funds to meet BPSWA's preservation needs as detailed in the PNA report, also, to meet numerous other requirements related to the general operation of the organization. As mentioned above it seems to me that it makes the utmost sense to amalgamate the issues raised in the PNA report with other areas of identified need within BPSWA. In so doing, it will facilitate the development of a fully integrated plan. I'm sure it is safe to say that much of the work undertaken in relation to the

archives and that of general preservation will impact in varying degrees on the Society's overall operations, as a consequence, a considerable range of issues will need addressing.

There is little doubt that the 'PNA' report contains a number of tricky issues for BPSWA, due in part to the fact that the operations are unique, and different from that of other collectors of heritage items including museums. The vehicles that are collected are rebuilt and refurbished to become full working models. As a result they are required to meet the current State Traffic Act's licensing requirements to enable their use on public roads. The great majority of the vehicles have been modified over their working life to facilitate improved driver comforts and safety aspects, as well as ensuring they remain compliant to changes in the 'Traffic Act'. Over the years, many of the changes to bus bodywork have impacted on the original design of the vehicles. The rebuilt and refurbished buses are subsequently utilised to provide a public service, this being a shuttle service between the entrance to Whiteman Park and the main activity area within the park. The service takes passengers to and from the local public transport service (Transperth) that operates along Lord Street which is located on the perimeter of the park. It is very popular with its users, and in particular, with young families, as it provides an opportunity to ride on buses from past eras, and in many cases they are eras unknown to many of the younger riders.

The shuttle is a unique service given the age and the variety of the vehicles that are used. From time to time BPSWA also provide a 'free ride' service at various community events. Again, this particular type of service is very popular and invariably generates complimentary comments from its many users. The shuttle service provides to its users an experience that is unique to Whiteman Park.

The PNA report makes numerous and useful recommendations, with an anticipated timeframe of some five years for full implementation, with the individual projects ranging in size from relatively small, but important, to those that are large and complex. I have reservations regarding the timeframe suggested in the PNA report - it seems too tight, given the likely funding constraints, the amount of work involved and particularly the factor of the ever present shortage of volunteer labour. It is for this reason and the fact that a 'master plan' has been included that the timeframe has been extended to twenty years. This whole project will tax BPSWA's current human resources, however, I believe it will be a matter of short-term pain for long-term gain.

A major benefit of amalgamating preservation needs and general planning is that it will synchronise BPSWA's overall planning task. I'm sure by adopting such a method, it will make it easier to manage a number of critical priorities. I'm of the opinion that it may be more manageable from both a financial and manpower point of view to fund the building programme in two bites rather than in one. If that is to be the case the garage could be reduced in size to possibly no more than thirty-five buses. In my view, the other two most important components are the creation of a purpose built archive and the renewal of the spare parts store. While modification of the two workshop areas is certainly desirable, arguably they are of lesser urgency than that of the garage, archive and the parts store.

A discussion with major funding bodies that provide grants could be most helpful in order to explore important issues relating to grants and limitations that may or will be

imposed on grantees. If the granting authorities are prepared to do so, the information gained could be of significant importance for the staging of the building programme and also when preparing an application for funds.

Critically important matters that need to be considered when the vision is compiled are as follow:

- a. Does BPSWA have a management structure in place, or one that can be put in place, to adequately administer a development of this size and nature?
- b. Will the proposed development (particularly the archive display area) fit in with long-term plans Whiteman Park may have, or is considering?
- c. Has the overall concept (in broad terms) been discussed with senior management from Whiteman Park?

If the above listed matters have not already been discussed, obviously on a preliminary basis, I believe it may be desirable to keep Whiteman Park management abreast of BPSWA'S current thinking. If they have any concerns it will be far better to learn of them now rather than later .

Following is a suggested broad brush list of important issues that will need to be addressed:

1) Develop Overall Vision.

A vision provides some clarity for future projections in regard to the ongoing development of an organisation (in this case BPSWA) while at the same time it facilitates both management and workers (volunteers) to focus on a common goal, a most critical ingredient for ultimate success. It can be described as a 'vivid picture created by imagination'. Irrespective of how it may be described, it can and should play an important role in consolidating the thinking of both management and members. In this case, the vision, or if you like the 'big picture' should focus on the whole organization rather than part thereof.

I don't believe anyone can over stress the importance of a long-term vision, because a well thought out vision will capture the imagination of people, as a consequence, it will tend to create greater interest as well as generating a broader spectrum of ideas. In my view, it forms a most desirable starting point for any complex planning process, this is particularly so in regard to long-term planning. Far too often we see the problems that stem from only planning short-term, when in fact, long-term would have been more appropriate. In many instances the short-term process tends to ignore the long-term ramifications, which generally results in achieving outcomes that are less than desirable. By adopting the strategy of developing a long-term vision and plan, it demonstrates to all and sundry that management is not only setting a clearly defined path, but also demonstrating a commitment in relation to the organization's future. In all likelihood, this aspect will become crucial when applying for funding.

A vision can be developed in isolation by either an individual or indeed by management. However, I favour a much more consultative approach, one that involves both the volunteers and other major stakeholders, irrespective of that, the project must be guided and driven by management. Consultation must be genuine and, importantly, be also seen as genuine. If this transpires it will undoubtedly foster goodwill, commitment and greater understanding and trust, commodities that are absolutely critical for success. The broader membership of BPSWA should be afforded the opportunity to become involved from the early stages of the entire process. At the end of the day, the management council must make all final decisions, as it is they who will eventually have the responsibility for its success or otherwise.

2). Identify Key Objectives.

It is absolutely essential to ensure that clear easily understood aims and objectives that reflect the intent of the vision are created before the preparation of any plan. Quite obviously, the plan should provide a clearly defined path to meeting the ultimate goals of the vision.

3) Preparation of The Overall Long-term Plan.

Prior to documenting the plan the vision must be ratified by the management council, this would occur after extensive consultation with the primary stakeholders. During the process, agreement must have been reached or at least that of a general consensus. Another critical factor that has to be finalised is the order of construction, i.e will the first component be the archive facility or the bus garage, or will it be some other element? This will be a matter that will have to be decided by the management council.

4). Purpose Built Bus Garage.

It will be noted that I have assumed in the writing of this report that the purpose built bus garage will be the first component of the plan after funding has been secured. For various reasons this may not necessarily be the case. The management council will make that decision after taking into account all the appropriate issues. Given the facts I have at my disposal at this time, it seems to me that the best way forward would be to commence with the construction of the purpose built bus garage on the vacant land that will become a BPSWA leasehold in the near future. The major benefit of starting on this component is the fact that it will have little impact on the operations of the Society during its construction phase. Furthermore, when it is completed it will result in freeing up space in the existing sheds due to the removal of buses that will allow modifications to take place for the new archives area.

If funding becomes a problem, the dimensions of the garage can be reduced. Its overall design should reflect its ultimate size and the design of the structure be such as

to allow the flexibility of adding an extension without further design work or indeed modifications. I am confident that a phased implementation of the new building will not cause major problems, apart from the possible delaying of some elements and the overall completion date. The total project could still be completed within the twenty year timeframe subject to available funding.

The design of the current sheds is not suitable for modification into an effective and user friendly garage. Fortunately, it is suitable for modification into an archive facility and for continuing use as workshops and a parts store. However, it would be most desirable to undertake modifications as soon as practical to both workshops and the spare parts store in order to improve safety and productivity. Another benefit that could accrue as a result of updating the workshops is that it would make them more attractive to those people aspiring to become volunteers. I would suggest that the store area would have a higher priority for modification than either of the workshops. There are further details below about each of these facilities.

It is envisaged that the new garage should be able to house some fifty buses at the end of the long-term twenty year planning horizon. The garage should be designed in such a way so as to facilitate effective bus ingress and egress, reduced reversing manoeuvres, also to enable it to be used as a temporary bus display area for public use on special occasions such as 'open days'.

I believe that it will be essential to incorporate in any plan, the provision of both a fuelling facility and a bus wash area adjacent to the new garage. I don't consider that the building of the fuelling facility is necessarily required in the short-term, but the need for such provision will escalate as the fleet grows in size. I also envisage that these two facilities would be relatively small, however, both will need appropriate drainage and liquid catchment systems, as the activities to be carried out have the potential to contaminate groundwater. It is absolutely imperative to plan for them at the embryo stage to ensure optimal positioning and effective utilisation of the site.

A separate garage has been spoken about for the operational fleet, however I believe it would be hard to justify the additional cost of having two garages, even though one would be small. In my view, BPSWA would get better value from allocating the required number of bays to cater for the operating function in the main garage. There is no doubt that the present storage of buses is unsatisfactory, this is particularly so for the operating fleet. It can be most difficult for the drivers to access their allocated buses due to the overcrowding situation in the present sheds. However, the design of the new garage should eliminate the current problems of overcrowding and enable buses to be retrieved from the sheds easily as a result of additional space for each vehicle, and the proposed drive through arrangement.

I would also recommend a small storeroom within the garage to enable the storage of small items that are required for bus operations. Details as to what is required needs to be discussed with the people responsible for bus operations. I am sure such a small facility can be accommodated at minimal cost.

Another worthy inclusion that would become useful in the long-term would be a water tank to harvest rainwater for use in radiators and batteries. I believe it is important for BPSWA to be environmentally conscious in all of its operations.

The provision of toilets may become an issue at the bus garage because of the distance from existing facilities. Also, if the garage does get used as a display area on odd occasions by the public I don't believe the existing toilet facilities are up to the standard that the general public would expect.

5). New Archive Facility.

In the provision of an up-to-date archive facility, (while still maintaining normal operations), I would recommend the most economical way of achieving this would be by modifying one of the existing sheds. The PNA report raised the issue by indicating that the area housing paper documents and photographs requires effective insulation; this can be done by the construction of a mezzanine floor within a portion of the overall archive area and enclosing the bottom part to a standard that meets the specific requirements for the storage of such fragile items. The size of the area has not been ascertained at this stage, but it is a task that will need to be undertaken early in the planning process. The ceiling height would need to be about three metres to reduce any claustrophobic effect. The area that encompasses the mezzanine floor will account for only a portion of the overall archive area, however, the upper level will provide space for a much needed storage facility for light weight items. I would not recommend that the mezzanine floor area be used as a specific work area, but instead purely used for storage for those items that are not in constant use or demand. It would not be prudent to expect volunteers to frequently negotiate stairs, given the general age profile of BPSWA volunteers.

Apart from the enclosed area for paper documents, the PNA report recommended the provision of an area for storage, a handling and display facility for small items and memorabilia. To enable the creation of a purpose built archive, it will necessitate the removal of stored buses from one of the sheds. The space required for this facility in the long-term is likely to be greater than its requirements in the early years of its development. However, I believe such additional space can be productively used during the development phase, as undoubtedly there will be demand for temporary space so as to enable other building modifications to be carried out during the overall development programme.

The selection of display memorabilia is not likely to be a simple task, if my understanding is correct, each item will have to be labelled regarding its original purpose. I have been informed that there are items in the current archive, of which the history is unknown. The sorting of items is going to be time and space consuming. I believe the space requirement will not be a major problem when the buses are removed from one of the sheds, however, volunteer labour to undertake what is likely to be a tedious task maybe another matter. It could well be that hired labour may be required.

Before any of the matters addressed in the above paragraph can proceed, funding must be approved and available. Fortunately, the problem relating to labour is not likely to occur for at least two years, because in the intervening period, there will be a substantial amount of planning to be undertaken, as well as the arranging funds for the total project. The new bus garage has to be completed beforehand in order to allow at least one of the sheds to be modified.

6). Improvements to Mechanical Workshop.

While this item was not included in the assessment report, I believe the opportunity should be taken to modify the mechanical workshop to provide a safer work environment, while at the same time making it more user friendly, which in all probability will result in improved productivity.

The present layout has numerous constraints, but, I do believe that some significant improvements can be implemented that will have the potential of making it more user friendly while at the same time enabling additional hard standing and improved bus flow. The below ground pit is very poorly located, being positioned too close to a wall. Its present location impacts negatively on its usefulness and flexibility. There seems to be only two practical options, these being:

- a). Relocate the pit away from the wall and extend its length.
This would be an expensive exercise and I have been advised that current legislation requires all 'below ground pits' to have side entry, I am told this is a safety requirement. This last comment requires verification, as the information that I have came by word of mouth. If the information is correct and I am sure that it is, it would mean that the configuration of the present pit would render it illegal.
- b). Replace the present pit with two 'four poster' hoists.
I am aware that the four poster hoists were popular at the former Transperth central workshops in East Perth, however, it should be noted that they have their limitations. In situations where wheels have to be removed while the bus is raised off the ground, the four poster hoist is not suitable. Also if the task to be undertaken is a quick fix, that is where the bus is only required for a short period of time, the pit option becomes the one preferred by the mechanics. Senior mechanical volunteers need to be consulted to establish which options are more suitable for the tasks carried out at BPSWA's workshop,

The present hard standing area within the mechanical workshop is quite limited and not easily accessed by buses, as it generally requires backing and filling to get vehicles into a required position. Obviously, there will be funding constraints that will limit the amount of work that can be undertaken in the short to mid term. However, it is important that the organization puts in place a plan that addresses the long-term needs of this important function. I believe one option would be to institute moderate improvements for the short-term, culminating in more extensive improvements long-term. However, the long-term option must become part of any master plan if BPSWA wishes to implement such a plan.

The current bench space available for mechanical volunteers at the Whiteman Park workshops is at best second rate. The workshop facilities in their present state provide little incentive to attract new volunteers, particularly when they see both mechanic and engine sitting on the floor when undertaking major engine refurbishment. Obviously much more detail is required to make a solid case for improvement. I am

sure the volunteer users of this facility will be able to provide further and necessary information as to where and how overall improvements can be achieved.

7). Improvement to Bodybuilding Workshop.

There is a definite need to modify the bodybuilding workshop which is very basic and is not well designed. It has numerous shortcomings, a relatively small but important one being the positioning of electric power points that require long and unprotected cables running along the floor which create a hazardous situation. There also appears to be a lack of appropriate bench space for this section. Well designed benches for both the body builders and mechanics would make a significant difference to both output and quality. These items may be seen by some as low key, but, they do have a major impact on safety and productivity.

As I see it, through a past tradesman's eyes, I am amazed there is not a purpose built workbench within the body shop. It is a credit to the volunteers of both the body shop and mechanical workshop as to the quality of work produced in conditions that can be best described as bordering on primitive.

Currently, hard standing space, or some of it at least, is shared between the two functions, body and mechanical. I certainly believe it would be preferable if each had their own defined area which would enable both sections to place required equipment to their advantage. However, this doesn't mean that space shouldn't be shared when circumstances dictate. From my perspective the workers in both the body and mechanical sections work under trying conditions and improvements are most desirable.

Considerable improvements are possible if a drive through system can be implemented. For this to occur it would require additional openings between the sheds, and two additional exterior doors. While mechanical and body areas are both badly in need of updated facilities, the body area seems to be the poor relation in regard to facilities. Like the mechanical section, this section plays a major role in the rebuilding and maintaining of both display and operational vehicles. Without either of these sections the operating costs of BPSWA would be significantly higher.

8). Updated Spare Parts Store and Facilities.

The spare parts store is in urgent need of renewal as a result of being overwhelmed with large components and a lack of appropriate facilities and labour to adequately handle and manage them. It needs to be emphasised that blame for the current problems are not of the making of the stores person, it is the facilities that haven't kept up with the growth of vehicles, and as a result there is an urgent need for a review and modernisation if possible. The inventory level has grown significantly (particularly large components such as engines) in recent years, with very little being spent on improved or additional store facilities. Another factor that has added to the problem over recent times is that the store has grown from a facility that stocked a relatively small volume of parts, to one that is larger and catering for a more diverse

range of vehicles. The store provides a critical service for those volunteers tasked with maintaining the heritage fleet.

There is no doubt that every facet of the stores system is in need of review, including possible changes in long-term demand. Storage space does not come cheaply, so every effort must be made to ensure that space is used wisely. Overstocking must be avoided at all times. There are storage systems that optimise space and labour available on the market, however, cost and the availability of finance are critical factors. The cost of installing such a system must be weighed against the savings that the system can achieve, in regard to both direct and indirect savings and costs. It is unlikely that a totally new mechanised system would be affordable or indeed justified. A second-hand system, if available, may provide an answer to this vexed question. A customised low tech system may need to be developed in house.

This whole stores issue is some-what complex for lay people to fully comprehend. My recommendation is that BPSWA should seek professional advice from a qualified and experienced stores administrator to give broad based advice on these important issues. It is worth stating at this point, that the operation of the store at BPSWA is a world apart from one that operates in a medium to large modern passenger bus depot. However, it is my view that the basic principles will be much the same.

As the plan to be implemented will in all likelihood have a horizon period of twenty years, thought should be given to ever changing technology (buses and their equipment in particular) that will in all likelihood need to be catered for possibly within ten years. While changes related to future technology will not be required immediately, it will be most desirable to make provisions within the planning process for likely changes in the future; not to take action will almost certainly be more expensive in the long term.

9.) Establish the Long-term Timeframe.

As indicated above, a twenty year horizon has been chosen for the long-term master plan. The reason twenty years was chosen is because it is difficult to comprehend that the task being contemplated could be completed any sooner, particularly if BPSWA continue to operate along the same or similar lines as at present. In more recent projects BPSWA has moved to using a contractor for the construction of the timber framework for the rebuilding of the old style timber bodies, and using volunteers for the bulk of fit-out and finishing work; this combination has worked well from both a technical and cost standpoint. Even though the use of a contractor does reduce the overall time taken on specific projects, I believe the twenty year horizon is still applicable.

Another reason for the twenty year timeframe is the already large backlog of important heritage reconstruction work still to be undertaken. A major factor that will undoubtedly impact on the time frame, will be the availability of funding, therefore careful thought has to be given to every aspect of cost, particularly all the costs related to the ever increasing size of the fleet. Also, there is a need for a thorough review of the future construction programme, so as to ensure the vehicles with the greatest heritage value are placed high on the programme's agenda. Duplication of reconstructed vehicles should be avoided and only undertaken if there is an absolute and compelling reason to do so.

Personally, I have reservations in relation to the economics of the policy that decrees all rebuilt buses, particularly those representing the 1930's and earlier eras, be developed as full working models. Most if not all are aware of the popularity of such working models, however, it does come at a considerable additional expense, both in the rebuilding costs and the ongoing maintenance costs. The availability of spare parts is another factor that must be considered. While I'm not in anyway suggesting that working models should not be built, I do query the need for every rebuilt bus to be a working model, given the costs involved. I believe this aspect requires careful and detailed consideration by the management council.

10). Staging of the Implementation Process

Staging of the total process is imperative, as it facilitates financial planning and allocation of funds, including the scheduling of labour. In the case of large projects like the one in question, staging plays an important role in keeping the whole task, including progress, in perspective. In relation to the twenty year time frame, I would suggest that it be divided into four stages, each with a five year duration. It should be noted that each stage can be made up of numerous components or groups of components and each may have differing conclusion times, but still be contained within the timeframe of such stage.

Before work commences on a particular stage, ideally the work schedule should be further broken down into one year increments in order to provide easier management while at the same time facilitating more effective and tighter control.

11). Establish Estimated Covered Space Requirement.

It will be most important to make an estimate of the amount of covered space required to satisfy long-term needs which span twenty years. To do this effectively, it will require a total and clear understanding of what outcomes are expected when the vision and master plan become a reality. The plan will be based on an estimated number of buses to be housed and the space required for the archive and its associated activities, plus any additional space that may be necessary if the two workshops (mechanical & body) are modernised as well as the 'parts store'. I have estimated, purely as a preliminary figure, fifty buses. Such a figure can only be realistically estimated when the organization's 'aims and objectives' are known. The eventual number must include an estimate of additional vehicles likely to be purchased during the twenty year period and being vehicles BPSWA intend to retain for both operational and display purposes.

As I see it, the amount of covered space required for the new archive facility and modifications to both workshops and the spare parts store will be easier to ascertain because the bus purchasing policy doesn't impact as dramatically on those facilities. It needs to be remembered that each additional bus stored, under cover, will add some forty-four square metres (including adequate space to walk around the vehicle) of shed space. It will be seen from the foregoing figure that each bus adds significantly

to the storage cost, particularly when the storage is to be of a secured nature as will be the case for the bus garage..

12) Purchasing policy.

There are a number of people within the organization who share a common concern regarding the number of buses that have been added to the fleet in recent years. On face value, it would appear that insufficient thought has been given to the ongoing redevelopment programme with all its implications. However, I am convinced that BPSWA would be better served by reducing the intake of additional vehicles, thereby reducing purchasing costs, and investing the savings achieved into the rebuilding and/or refurbishment programme.

There is little doubt in my mind that the management council needs to rethink both the purchasing policy and that of the current rebuilding/refurbishment programme, while at the same time, devising a system that enables a better balance between bus purchases and the bus rebuilding and refurbishment output. I am quite sure that the providers of grants would be far more likely to approve grants to those organizations that can demonstrate a sustainable purchasing policy together with a firm commitment of adding additional buses to the display fleet in a timely manner.

The organization must retain the flexibility to be able to obtain historic vehicles of a type that is not already represented in the fleet. It is important from the public's point of view that BPSWA maintains a broad range of vehicles of varying age, design and type.

During the life of the proposed master plan, BPSWA should endeavour to purchase one if not two early 1920 model 1 ton or 30cwt chassis to enable replica charabanc and saloon type bodies to be placed on them. A special effort needs to be mounted to establish the location of any such chassis. I am aware that from time to time very early model trucks are advertised for sale in some motor magazines.

From my prospective, people generally, unless they are technically minded, are more interested in the body type than the individual chassis makes, that being the case it offers greater flexibility as to the type of chassis that can be used. I believe research needs to be undertaken to get a better understanding of what interests people most in relation to heritage bus displays. I fully understand the difficulty some people may have in accepting a policy whereby cuts in certain areas have to be made to enable greater expenditure in another. The principle is simple- where alternative funds are scarce or not available, the obvious action is to reduce activity in one area, in this case bus purchases, thereby saving costs to enable expenditure in an area of greater need, that being, rebuilding and refurbishment. Obviously, far more funds will be required than will be generated from cutting back purchases, therefore other avenues of funding will need to be explored.

13) Office Space

Currently one often has difficulty finding a suitable location or a free table to undertake any clerical or research tasks, which can be frustrating and wasteful of

time. Given the possible development that is proposed for BPSWA, it would be surprising if this type of activity does not increase, therefore I believe it would be prudent to cater for such happening.

The current situation does not cater for privacy, or indeed convenience, and it certainly does not project a professional image. Therefore I would suggest that when modifications for the archives are being planned, a relatively small partitioned general office area be included, two small rooms would suffice.

In the shorter term, a suitable but temporary area may become available within the area that is to be allocated for the archive, because the total planned area will be based on requirements for the long-term and it is unlikely that all of the space will be required in the short-term, therefore it could provide the opportunity for its use as temporary office space. However, realistically, this could be about two years away. I am aware that there is thought of purchasing transportable accommodation. I feel that should be put on hold temporarily until such time as an analysis is undertaken regarding the total requirement for covered space in relation to the redevelopment as a whole.

In summary, the major areas that need additional space and cover is bus storage and the archives and associated activities. These two areas represent the core of BPSWA operations.

14). Site Preparation.

As the proposed site is currently covered in sparse natural bushland that is slightly undulating, it will obviously require earth works and levelling. Another issue that I have been told about, and it is one of considerable concern, relates to an existing underground power line bisecting the site. I have also been told that a statement has been made that buildings can be constructed over the proposed line - I must say I find this surprising. My advice would be for BPSWA to make its own formal enquiries with the responsible authority, which I believe would be Western Power and seek their response, possibly in writing, if they are prepared to do so. Potentially it is an issue that could create significant problems.

I would also recommend that great care be taken when deciding upon the actual location of buildings in order to ensure minimal wastage of land. Prevailing weather conditions should be borne in mind, both in the orientation of the buildings and their design.

Fencing is another important aspect that has to be considered early, but it should not be erected until the site is at the appropriate level. As the site is much larger than what is required in the foreseeable future, consideration will need to be given as to whether it would be feasible to only level the required portion. However there could be issues that may not allow such treatment. A problem that may arise, if the whole site is levelled, is that of erosion and blowing sand. If that was to be the case it could involve costly sand stabilisation treatment. These issues will need to be discussed with the various authorities. While preliminary discussion could take place anytime, final discussions and decisions can only take place when BPSWA is fully aware of the size, location and the number of buildings to be constructed.

The location of roadways and gates is critical in relation to efficient and effective operations. It would be advisable to develop flow charts in relation to traffic movement on the site, by so doing it will facilitate the decision making process to ensure the best possible siting for gates and roadways.

15). Preliminary Sketch Concepts.

In relation to new and updated building facilities, in order to crystallise ideas, it is always very helpful to consider possible concepts that could be adopted. Such concepts should take into account the movement of materials, vehicular movements, delivery of stores, heavy items and the need for safe work places.

Every endeavour must also be made to ensure the flow of work, including vehicles, is as close to optimal as possible. The time to address these issues is in the early planning phase.

The use of freehand sketches can be used and they are generally most helpful in enabling people to comprehend the overall picture. Obviously the final planning phase should not begin until after consensus of design has been achieved, relatively firm costs have been estimated and it is known that funds have a better than even chance of being granted.

16). Consultancy.

This particular project is of considerable size and complexity. As a consequence, I believe it would be wise when planning the funding options that an allowance should be made for some paid advice covering a number of issues. I am hopeful that some free consultancy can be arranged. I also envisage that some further advice related to preservation needs, on top of that contained in the PNA report, may well be needed. Other areas where independent advice would be helpful and possibly necessary, are:

- Buildings – civil engineering advice.
- Drainage design – civil engineering
- Workshop modifications – mechanical engineering & possibly civil eng.
- Store area modifications – Qualified stores administrator & possibly civil eng.
- Archives – Possible further advice from archivist.
- Costing Analysis – some professional help in this area could well be required.

I'm not sure extensive professional advice is required, however, I do believe it is critical that the planning be based on well founded and reliable information.

17). Security.

Security is always a concern, particularly at sites that are as isolated as is the workshop precinct at Whiteman Park. Mobile patrols currently in place at best provide deterrent value only. It is very likely that vandal attacks will become more prevalent as housing increases in those areas surrounding the park, many of which contain young and teenage children, this being an age group that is more likely to become involved in such behaviour.

While there is no system that is totally secure, camera surveillance combined with an alarm system provides better security, however, cost is a determining factor. As security monitoring is a growing and developing trend, I would strongly recommend

that advice be sought from experts in the field to enable BPSWA to gain a better appreciation of what is available and the likely costs. Such information will provide the best guidance in selecting an option that is appropriate.

Fire is another threat that should be of considerable concern, as it has the potential to create the greatest devastation, and given the value of the total collection, a fire sprinkler system within the buildings should be given serious consideration. On some occasions when burglaries have taken place, the premises are then set on fire. Cameras are generally the best deterrent for this type of offence.

Bushfire is also a considerable threat and as such, advice should be sought as to whether the current buildings are adequately protected, also what action will be needed to properly protect the proposed bus garage.

18). Volunteer Parking.

Parking space for volunteers is starting to show signs of becoming crowded in recent months as more volunteers attend the workshop, and this is an issue that may need addressing as the organization grows in size. I believe some hard standing along the edge of the entry road may suffice. If such a facility is not allowable, then some space may need to be provided on the new site, preferably between the proposed garage and the current sheds.

R.J.MacDonald.

12th. April 2016.