

# Energy Queensland

## Business Case: Specialist Workshop Facility



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# Executive Summary

Energy Queensland (EQL) operates a specialist workshop facility at Banyo which is an end-to-end manufacturing and testing facility which produces a range of products that are then deployed to substation yards across the entire EQL portfolio. The site operates with significant non-compliances, security and safety issues and risks that have potential risks for community and staff safety as well as operational effectiveness and efficiency. The existing site is not fit for purpose and due to layout and size constraints, it is not possible to invest in the current site to address the existing issues. EQL proposes investment in an owned Brownfield site to ensure a fit for purpose and operationally efficient solution.

Key benefits to our customers:

- Improved community and staff safety;
- Reduction in operational and maintenance costs through the exiting of leased accommodation which ultimately puts downward pressure on customer prices;
- Operational efficiencies which ultimately impact reliability of service.

## 1. Objective





Our Strategy is to deliver a safe and efficient, fit-for-purpose and customer-centric property portfolio.

The Property Services Group is responsible for optimising and maintaining the combined property portfolio for Energy Queensland (EQL), consisting of the Energex and Ergon Energy property assets. Our Strategy supports Queensland communities and customers by ensuring EQL has facilities in the right locations to enable the operation of a safe and efficient network.

Property Group Guiding Principles:

- Safe and compliant;
- Commitment to Queensland communities;
- Fit-for-purpose; and
- Asset optimisation.

The Specialist Workshop Strategy involves resolving the future location of the existing Ergon Energy specialist workshop at Banyo, to find a fit-for-purpose site that is operationally efficient and allows the team to work within a safe and compliant environment.

Property Group Guiding Principles	Existing Brisbane Workshops Compliance
Safe and compliant	
Commitment to Queensland communities	
Fit-for-purpose	
Asset optimisation	

**Table 1.0 Assessment of existing Speciality Workshop Facility against Property Group Guiding Principles**

The specialist workshop strategy aims to achieve further consolidation and cost efficiencies within the South East Queensland property portfolio for operational facilities. It also aligns to the property strategy of consolidating and owning operational facilities to reduce reliance on leased operational accommodation.

EQL has assessed and found that owning operational facilities is the most cost-efficient outcome due to the specialist nature of our operational sites. Given the specialist and unique nature of the existing Banyo Workshop facility, this is even more crucial. Owning these sites allows the business flexibility to ensure they are fit-for-purpose and operationally

efficient, safe and compliant. Excess costs associated with leasing these specialist premises such as make good (capital costs to return the site to its original condition to enable it to be handed back to the landlord) are avoided and result in significant savings for the business.

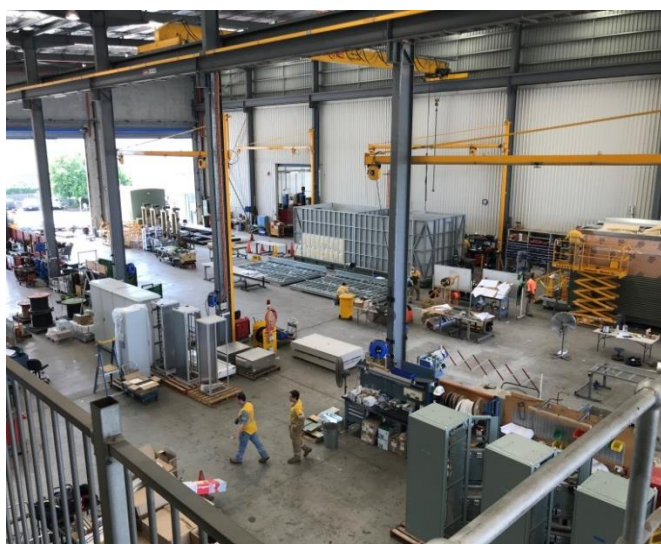
The key outcomes for the Specialised Workshop Strategy are to:

- Provide a safe and compliant working environment for EQL staff at the Specialist Workshop Facility;
- Address the existing issues in relation to noise exposure levels to provide a safe and compliant working environment;
- Restrict the spread and impact of metallic dust on sensitive electrical equipment;
- Address the existing access and traffic management issues and non-compliances at the site;
- Address the existing logistics issues at the site;
- Address the existing layout issues with regards to the colocation of workgroups at the site;
- Address the issues with regards to the crane limitations;
- Identify opportunities for consolidation of excess storage materials to other EQL sites to provide further efficiencies as a result of the merger and reduce the amount of required storage at the specialist workshop site;
- Address the security issues and concerns associated with the existing site and reduce the impact of break-ins and theft; and
- Provide a cost-efficient solution.

## 2. Background

The Banyo Workshop is an end to end manufacturing and testing facility which produces a range of products that are then deployed to substation yards across the entire EQL portfolio. The substations team which operates from the Banyo Workshop is comprised of test, electrical, production and mechanical staff.

Within EQL the team have proven to be competitive and achieve valuable and significant efficiencies for the business by completing production of purpose-built substation buildings in-house. Efficiencies are gained both financially and operationally as the facility allows substantial electrical work to the various items (for example modular buildings and control and communication panels) to be centralised and completed onsite at Banyo before they are deployed. The benefit of this method is that it involves doing the bulk of the work in a safe and controlled environment, minimising the construction time on-site which is often in remote locations that can be exposed to and impacted by weather.



**Image: Banyo Workshop Facility**

## 2.1 Panel Wiring Workshop

The Panel Wiring workshop provides panels for the EQL statewide network as well as Powerlink. This team on average produces in excess of 150 panels per year. This capability requires a ventilated, dustproof workspace. The team also undertakes label making for a variety of applications across the business. Demand and cost efficiencies have confirmed the benefit of doing this service in-house and it is expected that the business will expand the capability of this group to provide all labelling and 3d printing requirements for the business.



**Image: External view of Panel Wiring Workshop**

## 2.2 Mechanical Workshop

The mechanical workshop specialises in structural steel and sheet metal production and since the formation of EQL has increased its customer base substantially. Currently, this team provides for the mechanical steel requirements for the buildings manufactured at the Banyo Workshop facility as well as producing sheet metal requirements for South East stores and structural steel for major projects statewide.

## 2.3 ACR & Regulator Test team

The test team provides for the control and communications assembly and the primary and secondary test and commissioning capability for the regional program for ACR's (Automatic Charging Relay), Regulators and Fusesaver products for the North and South regions. On average this team has a throughput of 30 units per month. In addition, as a benefit related directly to the merger, the business has indicated the possibility that this may also incorporate the South East pole mounted plant in the future.

## 2.4 HV Test Bay

The Test team also has the capability of undertaking HV Test to 500kV. A limitation of the existing facility is the height of the roof structure which limits the team's ability to increase the test limit to 1,000kV which would provide for a wider market within the business and additional benefits related to the merger.

### 3. Problem Statement

The Banyo Workshop site will be the last remaining major operational site within the EQL property portfolio that is leased, with the lease for the site finishing by the end of the 2015-20 regulatory period.

The site has been identified as not being fit-for-purpose and a strategy has been proposed to relocate this facility to an owned EQL location. The existing operational unsuitability of the site provides an opportunity for EQL to achieve savings and significant operational efficiencies whilst reducing risks for the business.

The key cost drivers of the Banyo Workshop strategy can be quantified through the existing increased operational expenditure particularly those associated with lease costs, transport, and crane hire. Furthermore, the site is clearly not fit-for-purpose and non-compliant.

The key operational issues of the site are summarised below:

- **Constrained site:** The site has poor logistics for transport requirements. Due to poor turning circles, large trucks are unable to enter the site via the shared driveway and drive through the lanes within the workshop building. Instead, they must reverse into the site through the driveway which runs parallel with the onsite car parking provided. The MCU Approval (dated April 2008) for the site states the requirement for providing parking for 47 cars on site and the loading and unloading of vehicles within the site. There are currently 54 car parks provided at the site, 10 are at the front of the property, and 44 located along the side (refer appendix 1.9.1 for current site plan). The location of the 44 carparks along the side of the property, when utilised, restricts the ability for trucks to enter and exit the property through this driveway. When trucks are accessing the facility, it is only possible for them to do so by vacating the 44 carparks. The constrained site is uncompliant with the requirement of the MCU Approval. Furthermore, for larger buildings, when exiting the site trucks often mount the kerb/footpath to enable turning out of the facility.

Once inside the site, trucks required to move the modular buildings can only do so out of two of the three lanes due to poor turning circles in the facility driveway. This significantly restricts and impacts daily operations at the site as it restricts the volume of outputs by the team, and causes significant logistical issues in positioning buildings within the facility during and after construction to ensure they can be safely transported once complete. In addition, any trucks delivering steel, materials or plant cannot easily turn into the facility which causes significant congestion and safety concerns. This same area is also utilised by cranes when moving site construction containers or buildings which closes down any delivery or dispatch of goods during this period. The road outside the facility is of normal single lane road width and this is required to be closed and onsite parking removed during building deliveries. A Road Safety Audit conducted by PSA Consulting on 23 October 2018 further highlighted the concerns and issues of the constrained site. The audit identified 10 issues and non-compliances relating to the site being constrained and the truck, vehicle and pedestrian movement, and onsite storage. The report identified a short-term measure of relocating the storage offsite; however, this presents major operational issues for the team. The audit confirmed the magnitude of the safety and non-compliances on site and recommended that an alternate location for the Banyo Workshop team be sourced.





**Image: Onsite car parking that has to be relocated offsite during building deliveries**



**Image: Delivery of the Labrador Control and Switch Rooms**

- **Layout Workshop 1:** The current layout of the workshop has resulted in the Mechanical and Test teams occupying workshop 1 together. The Mechanical workshop is an environment with high noise output, welding fumes and metallic dust and is co-located with a Test team that utilises expensive and sensitive test equipment that is prone to damage and degradation in such an environment. Telephone communication for the Test team is also a challenge as much of their time is spent coordinating with SCADA and Telecoms teams during the pre-commissioning phase. There is no option of relocating the Test team within the current facility.

The limited room in the mechanical workshop restricts the production of building bases to one unit at a time. When two bases are required to meet the production schedule a temporary welding area is set up in workshop 2 which is not ideal given the limited floor space and the proximity to the electrical and building construction activities.

- **Noise exposure:** A Noise Survey Report conducted in August 2017 found that tasks with significant potential to cause worker noise exposure exceeding the relevant exposure standard were performed in the boilermakers and fit-out areas of the workshop. The report noted the safety risks and issues of having the HV test bay located in the same workshop as the boilermakers. It recommended moving the HV test bay or putting measures in place to isolate the HV testing area from the Boilermakers area.
- **Cranage Limitations:** The height limitations of the roof in both workshops 1 and 2 results in the use of lifters when rotating the building bases or lifting the buildings on to specialised transport trailers. This results in additional time, effort and space for these activities and limits the design options for the buildings. For buildings with a narrow base profile, the lifters cannot be utilised and the buildings are either mechanically rolled outside whereby large cranes are used to load the buildings or Frannas are brought into the workshop to move the buildings into a lift position. This adds significant additional cost to the product and costs the business approximately an additional \$150k per year on crane hire. A higher roof would enable all of the required lifting to be undertaken by gantry cranes within the facility and less impact on the management of logistics. Additionally, suppliers would also be able to utilise a broader range of transport trailers reducing some of the specialised cost associated with the current lifts.
- **Facility Storage:** The site has very limited storage capacity. The facility requires a large volume of bulky construction materials, laydown areas and also stores ACR's and Regulators on site for the pole-mounted plant program. Site field crews which operate across the state also have a storage requirement for five containerised workshops and large plant which is regularly transported to site-based projects. The merger presents an opportunity to reduce the need for the current amount of storage space on site by co-locating several bulky items at the nearby Eagle Farm Distribution centre. This essentially reduces the amount of external storage space required at the Specialist Workshop Facility enabling it to be utilised more efficiently.



**Images: Limited external storage for bulky items**

- **Security:** The site has a number of security concerns. The shared driveway with the neighbouring property, Jade Engineering, means that one side of the workshop is open to the public with limited opportunity to manage this due to restrictions imposed by easements. There are several easements enabling the shared driveway which runs adjacent to the open warehouse doors within the Banyo Workshop Facility. The easements prohibit the establishment of structures such as gates or fences to restrict access. On a regular basis, members of the public have walked into the facility which is a serious safety concern for the public and staff onsite. The easements in place restrict EQL's ability to put any control measures in place to manage this risk. Banyo Workshop Staff estimate this would occur at least once per quarter.

The fence and storage area at the rear of the site has an electric fence which has proven difficult to maintain. Furthermore, the rear neighbours have approached the Banyo Workshop team numerous times to advise that trespassers have entered their property to gain access to the EQL Workshop. This has often caused damage to neighbours fencing. The front gate on the dispatch side of the building is a mesh gate with a padlock and considering the value of the equipment stored on site, this is an inadequate security system.

- **Under-utilised Front Office:** Since the functional realignment of internal workgroups as a result of the merger, the front office space is underutilised. The office footprint provided at the Banyo Workshop is not fit-for-purpose and well above the requirement for the team with at least 12 vacant workspaces.

## 4. Proposal

Our Strategy for 2020-25 focuses on consolidation and seeks to dispose of the Banyo leased site & relocate this specialist team to a Brownfield fit-for-purpose owned site.

This strategy will require an initial capital investment of \$19.905M which is based off a QS estimate to provide for the specialist requirements of the Banyo Workshop team to ensure a fit-for-purpose property solution. Despite the initial investment required to relocate this team, preliminary analysis has identified savings to EQL in lease and operational costs resulting in this being a positive option for the business.

2020-2025 Indicative Strategic Property Plan Budget						
Strategy	2020/21	2021/22	2022/23	2023/24	2024/25	2020-25 Estimate
Specialist Workshop Facility	\$ 11,250,000	\$ 4,750,000	\$ 3,905,000			\$ 19,905,000

**Table 2.0: 2020-25 Capital Investment for Specialist Workshop Facility (Real, direct \$1718)**



The key drivers identifying the requirement to address the Specialised Workshop Strategy have been summarised in table 3.0 below

Property Group Guiding Principles	Description
Safe and compliant	There are several safety concerns at the site however the major safety concern is with regards to vehicle access in, out and around the site. The Road Safety Audit conducted by PSA Consulting confirmed 10 non-compliances and the magnitude of issues with the existing site.
Commitment to Queensland communities	Our commitment to Queensland communities involves investing in local communities and also in ensuring that we continue to put downward pressure on costs and operate a cost-effective and prudent property portfolio. The NPV analysis has identified savings to the business over a 20 year period by exiting the lease at Banyo and relocating this specialist team to an owned location.
Fit-for-purpose	The Banyo Workshop facility is not fit-for-purpose. There are issues with access in, out and around the site, the layout and space allocated within the workshops is not adequate, is constrained, and presents significant operating inefficiencies and limitations. The existing facilities do not provide any flexibility to meet the growing demands of the business or realise real benefits and savings as a result of the merger. The office space at the front of the facility is underutilised meaning the business and the customer are paying lease costs for a large amount of workstation space that is not being used or expected to be used.
Asset optimisation	The Banyo Workshop facility is not an optimised property asset. The excess office space is underutilised and not optimised, and the constrained site and workshop poses safety, non-compliances and operating inefficiencies that directly impact the day to day outputs of the team.

**Table 3.0: Key Drivers to address Specialist Workshop Strategy**

## 5. Initial assessment of options considered

The following options to deliver the proposed Specialist Workshop Strategy have been considered:

1. Retain existing leased facility (extend the lease and continue business as usual)
2. Purchase a Greenfield site & construct a new facility
3. Purchase of a Brownfield site with existing facilities
4. Colocation with existing EQL facilities at an existing EQL owned site

**Base Case – retain existing leased facility** this option assumes continuing with business as usual and extending the existing lease at the Banyo Workshop facility beyond the 2020-25 regulatory period.

**Scenario 1 – Purchase of Greenfield site** this option reflects the purchase of a Greenfield site within the South East region and the construction of a purpose-built workshop facility to accommodate the existing Banyo Workshop teams.

**Scenario 2 – Purchase of Brownfield site with existing facilities** this option reflects the purchase of a Brownfield site within the South East region with an existing workshop and office space. Capital investment is required for this option as even with existing facilities the site will require significant investment to ensure it meets the specialist needs of the Banyo Workshop teams.

**Scenario 3 – Colocation at existing EQL site** this option represents relocating the Banyo Workshop teams to an existing EQL site/s. This option requires capital investment to accommodate the specialist nature of the Banyo Workshop teams and provide a workshop, office and external areas that are fit-for-purpose.

Each of these options was assessed against critical operational criteria to determine the feasible options. The operational assessment identified two feasible options (scenarios 1 and 2) which were then evaluated from a financial perspective to determine the best option available in an NPV (Net Present Value) analysis. The NPV analysis was run over a 20 year period.

The primary objectives that the Specialist Workshop Strategy needs to address are:

- Address the safety and non-compliances at existing Banyo Workshop Facility;
- Decrease operational costs with the release of the leased Banyo facility;
- Improve operational efficiencies associated with the constrained site and poor layout at the existing site;
- Improves asset utilisation within the Banyo Workshop site;
- Provide a fit-for-purpose workshop facility within South East Queensland;
- Address current and future growth demands for the benefit of our staff, the community but most importantly our customer;
- Provide a cost-effective solution.

Objective	Base Case	Scenario 1	Scenario 2	Scenario 3
Address the safety and non-compliances at existing Banyo Workshop Facility	1	5	5	5
Decrease operational costs with the release of the leased Banyo facility	1	5	5	5
Improve operational efficiencies associated with the constrained site and poor layout at the existing site	1	5	5	5
Improves asset utilisation within the Banyo Workshop site	1	5	5	5
Provide a fit-for-purpose workshop facility within South East Queensland	1	5	5	5
Address current and future growth demands for the benefit of our staff, the community but most importantly our customer	1	5	5	5
Provide a cost effective solution	1	3	5	5
<b>TOTAL</b>	<b>7/35</b>	<b>33/35</b>	<b>35/35</b>	<b>35/35</b>

**Table 3.0: Assessment of options against strategic and operational criteria**  
**Note: Scale of 1 to 5, where 1 = does not meet objective and 5 = fully meets objective**

A summary of both the qualitative and quantitative assessments can be found within table 5.0 below

Option	Description	Assessment	Ranking
Base Case – retain existing facility	This option assumes continuing with business as usual at and renewing the lease throughout the 2020-25 regulatory period. This option reflects minimal capital investment in the site as due to the constrained nature of the site, no investment can rectify the issues with regards to safety, compliance and operational efficiencies.	From a capital perspective, the base case is a cost-effective solution due to minimal capital investment however it does not address the safety, compliance or operational risks and issues at the site. The site as it operates poses safety risks not only to staff but also the public. This option also sees the continuation of a specialist leased facility which impacts our leased property portfolio and operating budget by over \$500k annually.	The base case does not address the identified operational objectives and is not considered a viable solution.
Scenario 1 - Purchase a Greenfield site & construct a new facility	This option reflects the purchase of a Greenfield site within the South-East corner, and the construction of a purpose-built workshop facility to cater for the Banyo Workshop team.	Scenario 1 allows for all safety issues, non-compliances and operational inefficiencies at the Banyo workshop site to be addressed through the construction of a purpose-built facility at a Greenfield site. It guarantees a fit-for-purpose, flexible and optimised solution from a property perspective and allows this team to operate to a much more efficient and safe standard, and to meet the growing demands of the business. It delivers reduced opex costs through the release of the existing leased Banyo Workshop Facility.	Scenario 1 was tested in an NPV analysis and ranked as the second preferred option from a financial perspective with the total capital investment required of \$21.67M (Real, direct \$1718)
Scenario 2 - Purchase of a Brownfield site	This option represents the purchase of a Brownfield site within the South-East corner, and the fit-out of an existing workshop facility to cater for the Banyo Workshop team.	Scenario 2 allows for all safety issues, non-compliances and operational inefficiencies at the Banyo site to be addressed through the fit out of an existing workshop facility at a Brownfield site. It provides the potential for a fit-for-purpose, flexible and optimised solution and allows this team to operate to a much more efficient and safe standard, and to meet the growing demands of the business. The major risk with this option is the availability of a suitable site in terms of the size of the overall site to allow safe access and movement by vehicles and also one that already has an existing workshop	Scenario 2 is the preferred option and ranked as the highest when tested in an NPV analysis. This option requires capital investment of \$19.905 mil (Real, direct \$1718) and provides cost-saving benefits of approximately \$1.21mil over the second preferred option.

		facility suitable for the Banyo Workshop team. This option allows for capital investment to bring an existing workshop up to a standard that is fit-for-purpose. It delivers reduced opex costs through the release of the existing leased Banyo Workshop Facility	
Scenario 3 - Colocation with existing EQL facilities at existing EQL owned site	This option allows for the relocation of the Banyo Workshop team to an existing EQL site and the colocation with existing EQL facilities and teams.	Scenario 3 allows for the release of the leased Banyo Workshop facility through the colocation of the Banyo Workshop team at an existing EQL site. Banyo is a specialist manufacturing workshop facility that requires Environmentally Relevant Approvals (ERAs). The noise and dust issues associated with the facility means that there are few co-location opportunities with existing EQL Facilities. Although this option would potentially be a cost-effective option through saving having to purchase a Greenfield site, it is not considered a feasible option due to the non-availability of such a property within the EQL portfolio. A site selection was conducted on a number of sites within the EQL portfolio which revealed there were no fit-for-purpose options available.	Scenario 3 does not address the identified operational objectives due to limitations within the existing EQL portfolio and is not considered a viable solution.

As per table 3.0, scenarios 1, 2 and 3 meet all or most objectives. However, a site selection process which considered potential existing sites within the EQL portfolio has revealed that the option of colocation at an existing site is not a feasible option. This is due to there not being any suitable sites in terms of location, size or facilities within the EQL portfolio to cater to the needs of this team. Due to the extent of non-compliances of the current site, no amount of capital investment will rectify and address them. Due to the significance of the non-compliances and possible safety, operational and compliance risks and potential consequences the base case is not considered a feasible option. Therefore, only scenarios 1 and 2 have been evaluated in an NPV as these options will best meet the requirements of the Specialised Workshop Strategy. The base case and scenario 3 will not be subject to further financial analysis as they fail to meet all of the critical operational criteria or as described have been deemed not to be feasible options.

## 6. Assessment of options

An NPV assessment was conducted against scenarios 1 and 2 to provide a financial comparison between the two preferred options for the Specialised Workshop Strategy. The analysis provides the cost comparisons between the two proposals which have been estimated using a Quantity Surveyor. For the purpose of this analysis, the risk assessment has been covered only within this business case rather than the NPV template to ensure a property-specific risk assessment. Dollars are expressed in 2017/18 real, direct dollars. The table below outlines the individual cost impacts of the two preferred options and identifies that over the NPV model period that scenario 2 requires a capital investment of \$19.905 million

(Real, direct \$1718) and produces the most favourable outcome providing a cost saving benefit of approximately \$1.21 million over the less favourable scenario 1, refer Table 4.0 below.

\$ Millions	Scenario 1	Scenario 2
Capex	(21.67)	(19.91)
Opex	(12.83)	(12.83)
Direct Benefits	0.00	0.00
<b>Commercial NPV</b>	<b>(34.50)</b>	<b>(32.74)</b>
<b>Ranking</b>	<b>2</b>	<b>1</b>

**Table of NPV Comparison (2017/2018 – 2037/2038)**  
**NPV reflects Real, direct \$1718 over a 20 year period**

## 7. Recommendation

Financial and operational assessments and analysis have revealed that scenario 2 is the most beneficial outcome for EQL to proceed with to address the requirements of the Specialised Workshop Strategy. The proposed investment within the 2020-25 period is reflected below:

	2020-2025 Indicative Strategic Property Plan Budget					
	Strategy	2020/21	2021/22	2022/23	2023/24	2024/25
<b>EQL Property Strategy</b>	Banyo	\$ 11,250,000	\$ 4,750,000	\$ 3,905,000		
						<b>2020-25 Estimate</b>
						\$ 19,905,000

Real, direct \$1718

## 8. Attachments

### 8.1 Appendix: Current Site Plan



0842-1 Site Plan.pdf

### 8.2 PSA Road Safety Audit



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