KUR-World

Appendix 10

Regional Supply Capacity

Environmental Impact Statement

THIRKELL
CONSULTING ENGINEERS & BUILDING DESIGN

Report to

Cummings Economics

RE: Environmental Impact Study: Economic Impact &

Construction Phase - Regional Supply Capacity

for proposed development of

KUR-World
Great Barrier Reef

Contents

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1.0 INTRODUCTION AND INSTRUCTION

The construction phase of the KUR-World project economic impact and the calculation of "flow-on" effects of the original expenditure is under study. We are instructed to analyse and report on the degree to which the necessary inputs can be supplied from within the Cairns region and any potential supply constraints given the volumes required.

The analysis considers:

- An estimate of the likely quantities required of key inputs into the construction phase.
- The likely supply capacity in the Cairns region, in relation to the inputs needed and advise of:
  - What quantities are likely to be supplied locally and what imported.
  - Any supply constraints likely to develop because of the potential extent of the demand.

For the purposes of the analysis it is assumed that there is likely to be a heightened level of building construction taking place compared with current conditions.

As part of the economic impact process, business opportunities are noted that might be worth exploring.

In relation to supply capacity, supply from the Tablelands region is reported as it mitigates use of the Kuranda Range Road. There is also a policy preference for Tableland suppliers as opposed to those from Cairns.

Because of the capacity constraints of the Kuranda Range Road, likely traffic movements during the construction phase will be modeled in the project plan and this analyse will assist in identifying the volumes.

A survey conducted by telephone and face-to-face interviews of regional suppliers of construction materials was conducted to determine capacity to supply and determine constraints, opportunities and freight logistics. A summary of the results is provided in Appendix 2.

The 'Structural materials and other critical building elements' tables in Appendix 1 outlines selected materials that may be critical to manage in respect to the manufacturing and supply capacity from the local region. This report focuses on the proposed developments buildings and not civil infrastructure.

This significant project aims to showcase sustainable building principles that will consider local materials and resources wherever possible. The integration of accredited sustainable local materials into the project will be essential to achieving recognition along with other principles such as environmental controls of civil works, water sensitive urban design, energy use and generation, reuse of grey water and so on.

This analyse also considers options for reducing traffic movements on the Kuranda Range Road which cannot accommodate B-doubles and has a capacity of 15m length truck trailers for the transportation of building materials.

The estimation of structural materials is based on traditional construction methods of the local region which has a significant underlying capacity that has not been fulfilled post-GFC period. Comments have been received to how these manufacturers and suppliers have been well under-utilised in the last ten years and many have spare unused plant that was planned to efficiently supply a sooner and inevitable growth of the region.

The author has a wide range of experience in the engineering and design of the built environment and has applied this experience and judgement in a brief document that will assist in value engineering tasks and will assist the developer in making correct early decisions for formulating key design considerations and specifications to achieve a successful and sustainable development that positively contributes to the local region.

2.0 ENGINEERS ANALYSIS OF SURVEYED MATERIALS

The major structural materials have been reviewed in this report to provide an indication of how the project will fair over its build period. Glass has been considered in this review being a (usually) significant cost in commercial projects.

2.1 Building types

The buildings outlined in the master concept plans have been categorised for calculation purposes into the following being:

1. Building type 1 - residential (mostly) - timber wall frames throughout and roof truss construction
2. Building type 2 – residential and small public spaces - blockwork external walls, timber internal partitions and timber roof truss construction
3. Building type 3 – commercial - one storey - blockwork external walls and steel roof construction
4. Building type 4 - commercial – two and three storey - steelwork construction
5. Building type 5 – accommodation and education - two and three storey - reinforced concrete construction

2.2 Construction material elements capacity to supply

Some building types can be built with timber frame or blockwork such as the villas which are detached buildings. The table in Appendix 1 'Structural materials and other critical building elements' calculate a minimum and maximum material amount based on the building type selected for that stage and that scenario.

Building types 3 and 4 commercial buildings will most likely require long spanning structures and it is envisaged to consist of primary steelwork structure and concrete (and glass) wall surfaces being tilt-up concrete panels or concrete filled blockwork or other innovative methods such as insulated concrete panels for example. To fulfil its green-build status the final selection of material will be based on design intent and the cost, time and quality considerations at the time.

Structurally insulated panels (SIPS) have not been considered in detail due to the product not being manufactured locally. It is anticipated that it will be used for their aesthetic and insulation value to buildings.

Most building material suppliers have capacity to deliver product to the project site from the town of Mareeba, to the west of the Kuranda. Each major material type is either produced in the Atherton Tablelands region, the Cairns region and cities further south. The components of the material dictate source and freight modes, and these are described below.

2.2.1 Civil Materials

There is capacity to supply civil materials for road pavement construction from local and national companies with operations on the Atherton Tablelands. Quarry material may be soured from Tichum Creek quarry, off the Kennedy Highway between Kuranda and Mareeba. There are also quarries at the base of the Gillies Highway and the Palmerston Highway. In addition, sand quarries are located behind Mareeba on the Walsh river, and in Cairns.

Ashphalt and bitumen products and services are also supplied from the operators based on the Atherton Tablelands.

Transportation of civil material from the region west of Kuranda mitigates freight on the Kuranda Range Road. Further supply is available via the Gillies and Palmerstone range roads.

2.2.2 Concrete

Concrete materials have been selected for building type 5 accommodation and education buildings due to their overall structural, fire and acoustic qualities. Alternative systems may be considered in the future though is not an objective of this review.

Generally there is no concern regarding the supply of raw materials or concrete to site. Concrete can be delivered to site at up to 1,000 cubic metres per day by three of our largest concrete producers in Mareeba and Malanda. Stage 2 has an estimated maximum concrete volume of 27,733 cubic metres and the supply of this volume can be catered for in 28 days of a program extending 2 or so years. There is no problem with the supply of concrete or its raw materials.

The aggregate content can be supplied locally from Tichum Creek quarry located on the Kennedy Highway between Kuranda and Mareeba. Two of the largest concrete suppliers in the region own or operate from Tichum Creek. There are also quarries at the base of the Gillies Highway and the Palmerston Highway. In addition, sand quarries are located behind Mareeba on the Walsh river, and in Cairns.

Transportation of aggregate from the region west of Kuranda mitigates freight on the Kuranda Range Road. Further supply is available via the Gillies and Palmerstone range roads.

The cement content of the total estimated concrete use of the total project represents near 1 percent of Gladstone Cement Plant's capacity. In light of a construction program the project's concrete requirements are an estimated 10% of the two major concrete plant's capacity and are envisaged to cause no extraordinary measures by the plants to meet this demand. It is anticipated that the supply and cost of concrete will be competitive. A further benefit to the use of this material is that there is no traffic generated on the Kuranda Range Road as the supply is from Mareeba and Malanda.

Concrete blockwork can be supplied by the tableland local supplier which will manufacture the blocks in Cairns. At capacity, they can manufacture up to 16,000 blocks or 1,280 square metres per day. The scenario of having a maximum use of blockwork for external walls would pose serious construction program constraints. In the event that both major blockwork suppliers in the Cairns region were contracted and supplied 1,920 square metres of blocks it would be short of an anticipated 2,230 square metres. The capacity could be increased to meet the demand by the supply of blocks from Townsville and south of it. It is likely that the cost of blocks would not be competitive and that the labour force will be difficult to procure with a heavy reliance placed on mobile workforces in the country particular from the southern states.

Transportation of blockwork from Cairns to Kuranda in large quantities is an issue to be carefully considered. The volumes of blocks required to be transported requires a number of trucks and

trailers to carry a meaningful load which the Kuranda Range Road cannot accommodate. The requirement for this local supplier to use the Palmerston Highway will most likely mean that they will source their supply from outside the region in Townsville and south of it. Supply from Cairns which incur additional transportation costs and the cost per block will increase. It would appear that there is adequate capacity to produce blocks though an inadequate capacity to transport them efficiently in the volumes this project requires.

2.2.3 Steel reinforcing

An estimated 11,646 tonnes of reinforcement is required for the total project and stage 2 will require the bulk of this at 7, 151 tonnes. There are 2 major suppliers in Cairns that can supply a combined estimated of 2,000 tonnes per month. This represents a significant portion of the reinforcement supplier's capacity at an estimated 40% of their capacity on a monthly basis. This means that any other major projects in the region at this time will impact on the supply by way of time and cost. It is anticipated that the cost of reinforcement will be high and there will be minimum competition to supply this product.

Reinforcement is likely to be obtained from outside the region to ensure its supply and be transported inland from outside the region from . This ensures a competitive supply of reinforcement for the abundant concrete supply in the Tablelands and will limit the local supply travelling on the Kuranda Range Road.

2.2.4 Timber

It is estimated that 3,355 tonnes of timber will be required and most likely consist of pine softwood. The largest requirement of timber will be in Stage 2 and require 1,895 tonnes. The local Tableland timber suppliers can supply up to 200 cubic metres or 120 tonne per week to date though we are advised that this can be doubled by expanding the mills in the Tablelands and providing further local employment opportunities. With regards to the construction program it is estimated to account for 30% of these timber supplier's capacities. This indicates an impact to supply and cost though it would appear manageable by way of additional supplies from the Cairns region and Brisbane suppliers.

The transport of timber on the Kuranda Range Road can be limited due to local supply on the Tablelands that can be doubled. The direct supply of timber from near to the site is a sustainable solution. There can be pine softwood timber supply transported from Brisbane to the Tablelands via the inland freight route. This will alleviate traffic movements on the Kuranda Range Road and other range roads.

2.2.5 Structural Steel

Steelwork capability in the tablelands would appear low though it may be feasible for local suppliers to contribute to the smaller and peripheral structures such as stables, bush kitchens, arena stands and railings and the like. The estimated mass for these smaller structures is 110 tonnes over the total duration of the project which can easily be catered for locally by a company that can produce up to 15 tonnes of steelwork per week.

The larger steelwork structures amounts to 651 tonnes and stage 1 is critical in this analysis for structural steelwork at 355 tonnes. There are a number of companies that can supply this nominal tonnage of steelwork and one particular company can process up to 150 tonnes per week. Structural steelwork in this analysis has been under-utilised and requires more consideration to its use and in particular composite steel and concrete structures.

Cairns has a good capacity to produce structural steelwork though transportation to Kuranda requires some consideration. The lengths of members is anticipated to be within the limits for transporting on the Kuranda Range Road though requires consideration to the number of movements needed to transport the tonnage. It may be more appropriate to design the buildings using smaller members in larger numbers than larger members in smaller numbers due to the efficiency of packing, loading and transporting as much as possible in a movement.

Although demand for steel can be supplied locally, steel suppliers part of national chains can draw on supplies from nearby cities. Steel freight can travel via the inland route thereby mitigating use of the Kuranda Range road, other range roads and coastal towns.

2.2.6 Glazing

Glazing has been estimated as 28,589 square metres and stage 2 is critical with a requirement of 17,539 square metres. One major glazing company has plant that is capable of producing 604 square metres of glazing per week with stage 2 of the project requiring over 50% of this capability. There are other suppliers of glazing that may contribute to make this element cost competitive with particular reference to the residential glazing products. There may be a supply issue with the glass component of the glazing item and much of it is likely to be transported from Townsville and other cities. It is likely that the cost of this element will be on the higher end though anticipate that the developer can manage this building element locally.

Transport of glazing will need to be via the Kuranda Range Road for economy. To ease the burden on the Kuranda Range we consider more easily packaged elements such as glazing could be transported in larger B-doubles for the longer journey via the Palmerston Highway. A longer trip requires an adequate pay-load to be feasible. Further review is required.

2.2.7 Roof Sheeting

A major supplier of metal roof sheeting can supply stage 2 quantities of 59,426 square metres and be at 23% of their capacity. Cairns is competitive in regard to this element and there is no problem meeting this demand and obtaining competitive tenders. Transportation of this product will need to be considered up the Palmerston highway though it is expected to be manageable. The transport of this product may be as per the glazing above, in that larger pay-loads are transported over a longer route to ease traffic on the Kuranda Range. It is advised that the design specifies profiles that can be manufactured locally to ensure cost and time efficiencies.

There is the possibility to re-locate dormant metal roofing plant and roof truss fabrication table to the Tablelands that will allow local employment and supply of these building elements. This will alleviate traffic movements on the Kuranda Range Road and Palmerston Highway.

3.0 CONCLUSION AND RECOMMENDATIONS

It is understood that this development will comply with Enviro Development National Technical Standards (EDNTS) as part of its conditions. The compliance with this standard has not been reviewed as part of this report and will be required to be managed by the developer, their designers by way of documentation and specifications and co-ordinated with the main contractor. It is our opinion that this will be manageable and the structure will for example use supplementary cement materials and/or recycled content in steel and/or Australian Forestry Standard (AFS) accredited timber or others listed in the EDNTS document.

Civil material is supplied from operations based on the Atherton Tablelands and there is no impediment on the capacity meet the needs of the project.

The abundance of concrete supply in the local area would appear restrained by the supply of reinforcement which will likely need to be complemented by additional supply from Townsville. It would appear a preferred choice of material if the reinforcement transport and its costs can be contained and the labour force acquired.

Tilt up concrete is an efficient option and the development's building designs would need to integrate and innovatively connect to a system that could be applied to as many of the building types as possible. The developer's brief is important to the success of the project by way of value engineering in association with the design intent.

Blockwork is a difficult material in large volumes to adopt for this project. It would appear a more favourable outcome to use the more than adequate capacity of concrete supply and resolve the reinforcement issues locally and from outside the region. The fact that reinforcement is likely to travel up from Townsville on the inland road and be complemented by a local supply is a benefit for the Kuranda Range Road traffic volumes.

More innovative blockwork solutions maybe reviewed such as mortarless blockwork which is manufactured in the major cities. We were advised that it may be feasible to upgrade the Cairns local plant to manufacture mortarless blocks. Further review is required to understand the dynamics of upgrading from the traditional to the new form of concrete masonry construction.

Cairns is well placed in its capability to supply structural steel. The Tablelands is well placed to service the many smaller periphery structures within the development and limit the traffic movements on the Kuranda Range Road.

This analysis sees that the structural steelwork has been under-utilised and it is recommended that alternative engineering designs are carried out and reviewed to provide competitive costing and supply. An example of this may be the possible benefit of providing composite steel and concrete structures which will provide more structural steel sections that can be adequately supplied and reduce the reinforcement required in the concrete structures. This composite structure was popular in the 1980s and has been popular in the UK for the past 20 years. It is making its way back into mainstream in the major cities likely due to its speed and efficiency of materials. This type of building may provide a feasible and optimum design option for commercial buildings of this development.

It is recommended that timber be an integral part of the building structure and envelope as it is understood that much of this supply will be transported from the capital city and its surrounds. There is opportunity to meet the requirements of the EDNTS by way of AFS accredited timber and there is adequate supply of this material. Carpentry labour supply is to be considered and reviewed in detail in the future.

Prefabricated steel wall frames are an option on this project where practical and can be obtained locally and regionally. The incorporation of this element within the whole design scheme may balance the use of various materials and minimise the likelihood of supply bottlenecks and provide competitive costing outcomes.

Though SIPs cladding has not been reviewed in detail it is recognised that they will form part of the project due to their aesthetic and insulation value to buildings. It is anticipated that the quantity will not be an issue (based on the above project principles of using local materials) and there is sufficient competition in the region to suggest that costs will be reasonable.

A possible solution to overcoming the heavy traffic travelling with the general public on the Kuranda Range Road is to agree the transport of reinforcement, steelwork and other important elements produced in Cairns is out of normal hours. The cities transport major pieces of plant and equipment during the night and early mornings and the route to this proposed site is via highways.

A further consideration to alleviating the traffic movements to the Kuranda Range Road is the increasing of pay-loads on B-doubles for the longer travel on the Palmerston Highway. Maybe it can be made feasible for this project where there are considerable materials to be transported. Designers and industry need to engage, innovate and resolve this issue which has significant benefits to industry and the reduced use of the Kuranda Range Road.

The possibility that plant can be re-located to the Tablelands and timber mills can be expanded brings opportunity to the Tablelands capacity to supply and local employment. This would also considerably reduce traffic movements on the Kuranda Range Road and the Palmerston Highway.

The development consists of many buildings and various building types that provide for an aesthetically dynamic modern village which adopts a balance of light and heavy materials. The diversification of building materials specifications to suit the region's capabilities provides for the distribution of opportunity locally that will result in an economic and socially sustainable outcome. Refining the building design to be flexible in choice of structural or building envelope materials allows agility that may be of benefit for this project's long-term build where cyclones and flooding of our transport routes can happen. The more locals that can be part of this project the more integrated the development will be with the locals.

It is recommended that this document be expanded in the future and integrated with more refined building design requirements to substantiate these quantitative findings and more accurately define the building envelopes and other materials.

ATTACHMENT A

KUR-World – Summary of Construction Material Quantities Required by Years

Year	Concrete Footings (m3)	Concrete Walls Including Block (m3)	Concrete Susp Floor Slab (m3)	Reinf Footings & GND slab (t)	Reinf Walls (t)	Reinf Susp Floor Slab (t)	Timber Wall Ext. (t)	Timber Walls Int. (t)	Timber Roof (t)	Steelwork Frames (t)	Steelwork Floor Framing (t)	Steelwork Roof Framing (t)	Glazing (m2)	Roof Metal Sheeting (m2)	Total
18/19	1,325	855	720	211	53	0	76	399	46	146	58	28	2,368	9,414	**15,699**
19/20	2,297	4,580	1,545	1,093	177	1,082	128	98	99	0	0	0	6,712	13,668	**31,478**
20/21	2,008	3,587	1,425	833	134	761	132	254	78	34	27	13	4,908	13,152	**27,346**
21/22	1,558	2,588	1,058	538	92	425	127	293	59	45	36	18	3,339	11,316	**21,491**
22/23	1,288	2,453	720	496	92	425	127	125	59	11	9	4	3,339	10,346	**19,493**
23/24	1,539	2,566	1,753	851	92	925	69	283	32	55	35	17	2,339	11,238	**21,792**
24/25	1,810	2,933	2,068	972	103	1,045	78	364	36	73	46	22	2,642	13,102	**25,294**
25/26	1,114	1,892	932	482	68	458	78	189	36	36	22	11	2,190	8,568	**16,076**
26/27	325	570	205	118	21	97	29	48	13	9	5	3	752	2,604	**4,799**
Total	**13,263**	**22,023**	**10,425**	**5,594**	**833**	**5,219**	**843**	**2,054**	**458**	**408**	**238**	**116**	**28,589**	**93,408**	**183,469**

ATTACHMENT B: KUR-World Building material capacity survey July 2017

		Questions & Answers				
Product Category	**Location**	**1. What would be your capacity to supply at this point in time to regular customers?**	**2. In current conditions, are you likely to expand your capacity over the next few years? Are there projects that you have on your books that will increase demand?**	**3. If you had prior advice of additional supplies needed, could you quickly expand your capacity**	**4. What freight route is most commonly used to supply your business?**	**5. Could this change in the future if also considering volumes and timing?**
Concrete	**Atherton Tablelands**	1. All supply is currently re-sales from Cairns & Mackay, sometimes imported. Landscaping supplies i.e. paving has demand.	2. We used to manufacture although this was shut down and now plant is old. The business has the capacity to re-ignite manufacturing although it would require a solid commitement for the product to make that sustainable. We also have morteless concrete and other new technology.	3. We could expand and locally manufacture although we would need to invest in new plant. The aggregate supply in the tablelands district is not a problem.	4. Currently blocks come via Kuranda or the Gillies. Loads from Mackay can take the inland route.	5. Given sustainable volumes and a satisfactory lead in time, we can manufacture on the Tablelands to save haulage.
Concrete & Civil materials	**Cairns and Atherton Tablelands**	1. Commercial in confidence	2. Nothing major just the windmill projects	3. Straight away and up to 500 m3 per day easily.	4. We are also based in Innisfail. Can be Cairns & Kuranda range road or Innisfail and Palmerston. Quarries are at the bottom of the Palmerston Highway near Innisfail and Edmonton, where the Gillies range is used to freight to the Tablelands.	5. Yes, but not a problem for us as the bulk is aggregates and there is plenty of supply on the tablelands.
Concrete & Civil materials	**Cairns and Atherton Tablelands**	1. Commercial in confidence	2. No, no plans	3. Can quickly expand Mareeba plant	4. All agregate supply can be from the Tablelands region. The main quarry is Tichum Creek and sand is from the Walsh river.	5. Liklihood to supply from Cairns is very low. Aggregate supply is good on the Tablelands. Course sand from Redlynch is stockpiled at the Cairns plant and can also be moved to Mareeba via the Gillies Highway. Also own Mountain View quarry at the bottom of the Gillies Highway.
Concrete & Civil materials	**Cairns and Atherton Tablelands**	1. Commercial in confidence	2. No, nothing major that we cannot handle.	3. Yes, we currently have latent, under-used resources and spare capacity	4. We own Tichum Creek quarry on the Kennedy highway between Mareeba and Kuranda.	5. We also operate out of Atherton and have quarries at Redlynch and Holloways Beach in Cairns.
Steel reinforcing	**Cairns**	1. Commercial in confidence	2. In the process for upgrading plant and machinery to increase production. To increase capacity they can easily increase shift times. Currently there is surplus capacity.	3. Yes and can call upon Townsville, Rockhampton and Brisbane	4. Kuranda range road is most commonly used to supply Kuranda and the Tablelands. It may not make economic sense to go any other way.	5. The customer can pay an increased cost to go the Gillies or the Palmerston - quicker to go up the Kuranda range, even if coming from Townsville.
Steel reinforcing	**Cairns**	1. Commercial in confidence	2. No, not sure about big new projects.	3. Can quickly increase capacity by introducing double shifts. We can also call on supply from Townsvile, Mackay and Brisbane.	4. Kuranda range road is used.	5. Can also use Gillies highway or Palmerston, especially if supplying from down south.
Steel	**Cairns**	1. Commercial in confidence	2. We have the largest stock pile in Cairns as well as a state of the art Laser cutting machine and plasma cutting facilities.	3. In addition in Atherton have just installed a 6 tonne gantry and are increasing storage capacity in anticipation of some major projects in the pipeline.	4. We are bringing our freight up to the Tablelands via the Kuranda range and also the Gillies range	5. I do not believe we would bring freight up on another route unless it was full slings from one of our southern suppliers and that would possibly come via the inland road.
Timber	**Atherton Tablelands**	1. About 80% of the timber can be milled locally (Ravenshoe) but scheduling will determine supply volumes. Trusses: Have a surplus truss plant and can re-locate it for this project. But must design trusses to suit the truss bed.	2. Maybe.	3. If they are organised to supply well in advance, they wil increase capacity to manufacture as much as they can from the Tablelands.	4. All freight routes are currently used.	5. If supplying from Cairns, we can use the Palmerston.
Timber	**Atherton Tablelands**	1. Mills in Brisbane with unlimited capacity.	2. No, there are no projects that we know of that will increase our current capacity.	3. Mill out Brisbane: access up to four mills. Additional 45 suppliers for trimmings and carpentary. Yes, unlimited access to supply at short notice: but limited by freight times etc. Southern timbers better for construction. Spotted gums and ironbarks are best for contruction and best from down south. Also all timbers need treatment these days and there is no access to good treatment facilites on the Tablelands.	4. We cart everything ourselves. We have semi-trailer and B-double loads. We use the Palmerston highway. We don't use Kuranda range road.	5. The freight contractor carts every week with the ability to move massive volumes. We don't use rail. Road freight from Brisbane.
Timber	**Atherton Tablelands**	1. We are a retailer only. Majority of supply comes from Brisbane and some is sourced locally from Ravenshoe.	2. Hoping so, and there are two projects that are reasonably big.	3. Yes. There is no limit save freight constraints and weather.	4. Bruce and Palmerston highways.	5. Bruce and Palmerston highways, but for bigger planned loads can also use the inland road through Mount Garnet.
Timber	**Atherton Tablelands**	1. Re-supplying about 100 cubic metres a month. All supply is from South East Queensland.	2. No, we don't have any plans to expand and no big projects on the books.	3. We have plenty of spare capacity at the moment. We can ramp up quickly. We have two truss beds in Innisfail. One is laying dorment. People in the industry are looking for work. No problem to supply from Brisbane and Sydney. Pine framing is from South Australia.	4. Bruce highway and Palmerston mostly. Sometimes Kuranda. It is all road freight.	5. If demand increases, we will continue to bring freight up the Bruce and Palmerston Highways.
Glass	**Cairns**	1. Can only manufacture in Cairns but can bulk freight in shipping containers to Mareeba storage and then feed in smaller volumes back to construction site.	2. Maybe.	3. If they are organised to supply well in advance, they wil increase capacity to manufacture as much as they can from the Tablelands.	4. All freight routes are currently used.	5. Can find a way to limit the amount of freight transport on the Kuranda Range Road by using larger single shipping containers and bulk storage capacity in Mareeba i.e. less movements, but each larger.

ATTACHMENT B: KUR-World Building material capacity survey July 2017

		Questions & Answers				
Product Category	**Location**	**1. What would be your capacity to supply at this point in time to regular customers?**	**2. In current conditions, are you likely to expand your capacity over the next few years? Are there projects that you have on your books that will increase demand?**	**3. If you had prior advice of additional supplies needed, could you quickly expand your capacity**	**4. What freight route is most commonly used to supply your business?**	**5. Could this change in the future if also considering volumes and timing?**
Glass	**Cairns**	1. Because there are so many components to door and window manufacture it is too difficult to supply volumes. In 2010 off the back of the GFC we had 75 staff. We were looking to expand into a larger factory. We have 4000 sqm of factory floorspace but we were looking for 10,000 sqm to build a 6000 sqm factory. Now, we are down to 44 staff and sales have halved from 2010.	2. We hope so.	3. We have plenty of latent capacity to expand. It would not take too long to get back to 2010 production levels. We will gear up and grow locally from Cairns.	4. All aluminium extrustions and glass comes from Brisbane by road and rail. Our manufacturing base is in Cairns and we use the Kuranda range road to supply re-sellers on the Atherton Tablelands. Queensland rail may take load for a really large project in the Kuranda district.	5. Can also manufacture and supply from Townsville, but we will gear up in Cairns for a large project.
Glass	**Cairns**	1. Supplied cut to size in Townsville. They don't work in volumes, they work on units. 1 unit is 1 minute. As an example a set of sliding glass doors is about 90 units to make. This is because of the number of components that go into manufacture. Currently employ 30 staff in Cairns.	2. No, there are no curent plans to expand and no large projects for them in the wings.	3. Yes, can expand quickly. Also have a branch in Townsvillea and is a national company. We have no licenced re-sellers on the Tablelands at the moment. It is all supplied from Cairns.	4. Components are rail/ road freighted into Cairns from Townsville. We use the Kuranda range road to service Tablelands customers. We do the loop, go up Kuranda range, and down the Gillies. We run own fleet of trucks.	5. Palmerston Highway may be used if coming straight from Townsville.
Roof sheeting	**Cairns and Atherton Tablelands**	1. Capacity to possibly manufacture roof sheeting in Atherton by moving accross surplus plant from Innisfail. But it will only roll corrugated sheeting.	2. Maybe.	3. If they are organised to supply well in advance, they wil increase capacity to manufacture as much as they can from the Tablelands.	4. All freight routes are currently used.	5. Can find a way to limit the amount of freight transport on the Kuranda Range Road by using larger single shipping containers and bulk storage capacity in Mareeba i.e. less movements, but each larger.
Roof sheeting	**Cairns**	1. We are set up for cyclones that cause peak demand. We can roll quicker than any one. Some profiles are manfactured in Cairns and some come out of Townsville. We manufacture purlins in Cairns. 59,500 sqm would take 2 weeks to produce.	2. No, because we can increase capacity very quickly with our current set-up.	3. Steel rolls come from Brisbane with 5 days order and up to two weeks freight time for standard colours. Special colours take 12 weeks. We carry 26 standard colours in stock. Capacity is often limited by the construction sites ability to handle load deliveries. A semi can carry 20 tonnes at a time. For the bigger projects it's handling it off the truck and onto the roofs with cranes on-site and laying the product constraining production processes. We gennerally roll a month ahead of delivery. If extra labour is required it is easy to run a second shift.	4. Depends on lengths and getting it up the range. Trays are 12.8 m and can put 13 metres on them. We are at Edmonton, and we can use the Palmerston.	5. Palmerston Highway may be used if coming straight from Townsville.
Roof sheeting	**Cairns**	1. If the maximum production for the largest stage is 60,000 sqm of roof sheeting, we can produce that in 10-12 weeks although that will vary, depending on the product. Some sheet profiles have a slower rolling time. There are four main companies in Cairns producing roof sheeting. Not all of us are making the same profiles. Normally the project goes with the same company for that part of the project. Therefore it is individual capacity, not group capacity.	2. Capacity is sufficient for current market given there are four in town. We have the option of going to second shifts or 24 hours operations for peak demand. At the moment we are on one shift.	3. Our scale-up lead in time is 3 to 6 months to expand and train employee's.	4. We don't make everything here in Cairns. Other profiles as well as purlins are made in Townsville. Kuranda Range Road has a limit of 15 metres in length.	5. Product can be road freighted via the Palmerston highway. Freight routes are also dependent on length. The longer travel up the Palmerston increases costs.
Roof Sheeting	**Cairns**	1. All coil bought from Brisbane and rail freighted. Costs less to manufacture in Cairns. Constraint in length to 15 metres. 1 sqm = 5.5 kg @ .42 guage at any given time 20 tonnes one colour. And we would have the biggest on-ground supply in Cairns. For about 60,000 sqm there would be at least 9 days of production time, from landing to getting it rolled.	2. No - not in FNQ	3. Yes	4. Using Kuranda range road quicker. If long-load then Palmerston. 10m length on Gillies.	5. Capacity to supply from Townsville