Dear Lord Mayor Schrinner,

On behalf of all the Mt Coot-tha Local Residents (MCLR), I am writing to you as the Third Chairperson and Engineer, and a previously LM Quirk "disengaged" person.

Subject: Mt Coot-tha Quarry (MCQ) Rehabilitation Delay (1998, 2015, 2025 and 2032) and Extreme Costs of $500 Million and lost benefit of $5.5 BILLION (Total Economic Mismanagement by 2032 = $6 BILLION).

Purpose: To ensure that you (Lord Mayor Adrian Schrinner) are fully aware of the MCQ & MCLR 20-year History, Situation, Research, Finance and Economic Estimates, as well as the grossly non-compliant MCQ operations. It is vitally important that you understand exactly what the BCC has done - for zero benefit.

MCLR Independence and Honesty: I can assure that the MCLR are totally honest and not politically biased against the LNP. We stress that we did not release our information to the general media before the recent Local Government Election.

Michael Berkman and the Greens: This is the only political party who are in favour of an immediate MCQ rehabilitation plan start date, plus a definite final MCQ closure date.
After the Mt Coot-tha Zipline failure, there was a huge community swing away from the LNP and towards Michael Berkman and the Greens party.
Michael Berkman thus became the only state politician to work closely with the local residents to defeat the Zipline, which earned the enduring trust and admiration of thousands of Brisbane residents, plus those ratepayers who pay for your costs.
In considering the recent Paddington electoral swing, plus the fact that approximately one third of all 2017 state election results had a margin less than 11%, many people now believe that the Greens can hold the balance of power after the QLD October 2020 state election.

Mt Coot-tha Protection Alliance Inc (MCPA): The MCPA is both honest and politically neutral, but shares similar goals as the Greens – to protect Mt Coot-tha.
They have taken the initiative to propose that the MCQ should close immediately, plus they have proposed a rehabilitation framework.
The MCPA was the main residential/ratepayer group to oppose the failed Mt Coot-tha Zipline thereby gaining a large following.

MCLR Report Contents:

1. The MCQ Scorecard – Referencing EPPR00447313 Schedule-F Environmental Authority (EA).

Financial and Economic Due Diligence in a major Tourism Revenue area.	Extreme Failure
Always Comply with EA Noise Conditions.	Major Fail
Always Comply with EA blast monitoring Condition 6 “or in or on any other noise sensitive place”.	Major Fail
Comply with AS2187.2-2006 Appendix-J “non overriding statements” conditions.	Major Fail
Respect for the DOGIT Title deed “only ever to be used as Public Parkland”.	Major Fail
Appropriate respect for the operational conditions experienced by the c2277 local residents, specifically residing in the area which are the undefined traditional 500m and 1000m separation zones.	Major fail
General Respect for the total lack of separation zones to the local residents and the provision of accurate blast vibration data relevant to those residents.	Major Fail
Respect for Historic building and monument Reduced Blast Vibration Limits as defined in AS2187 and published by QLD TMR.	Major Fail
Respect for the Liberal Party Cr Magub designation “Callous Attitude towards local residents”.	Major Fail
Best Practice, Best Accuracy & Legally Compliant Blast Monitoring Transducer Mounting Process.	Major Fail
Compliance with the RTI process to provide critical MCQ operational information for the benefit of greater Brisbane.	Major Fail
Logging blast dust intrusions outside the MCQ fence and into tourist, residential and ecological areas.	Major Fail
Recording and measuring blast dust intrusions and noise into tourist, residential and ecological areas.	Major Fail
Cleaning blast dust off Mt Coot-tha Road and Gutters, plus providing dust warning advice for asthmatic residents, volunteers & visitors.	Major Fail
Honesty in providing true, honest and accurate blast vibration monitoring data measured for the sake of local residents.	Major Fail
Honesty in providing true and accurate blast vibration monitoring data measured for the sake of Botanical Gardens Volunteers and Tourists.	Major Fail
Honesty in reporting the blasting effects to the ABC 612 radio program.	Major Fail
Minimising & reducing the thousands of urban truck movement numbers.	Major Fail
Honesty in providing all blast monitoring data via the RTI Process	Major Fail
Honesty in advising local residents regarding the effects of the MCQ blasting on homes.	Major Fail
Complying with DES Director twice-written requests to maintain contemporary blasting noise and vibration maximums, in a dense fully-BCC-approved Urban Environment with Zero Separation Zones.	Major Fail

2. <u>The MCLR Goals and Issues.</u>

1.1. The MCLR simply believe that they should be able to proceed with their lives, just like all other ordinary Brisbane people.
  1.1.1. Without fear of home and property damage from extreme MCQ blasting.
  1.1.2. Without fear of extreme MCQ operational and blasting noise levels inside their homes.
  1.1.3. Without mental health issues from MCQ blasting effects which sound like an internal explosion, which will threaten the protection of their children.
  1.1.4. Without being forced to work on MCQ measurement & compliance issues for 20 years.
  1.1.5. Able to express their complaints and have these recognised.
  1.1.6. Able to get a totally Fair and Humane Hearing with the BCC and Lord Mayor and without personal attacks on their reputation.

1.2. Currently the blast vibrations violently shake their homes and are thus extremely intrusive by causing the occupants to regularly experience what is "like a bomb going off inside their homes".
  1.2.1. How might young children feel after hundreds of home-shaking strong blasts?
  1.2.2. What if they were alone at home?

1.3. Reduce the extreme effect of the blasting on the home environment.
  1.3.1. It being only in the more recent years that the MCLR fought hard to gain notice of blast emails, plus a warning horn to be sounded before and after each blast.
  1.3.2. Prior to that, the blasts could happen any time without warning.
  1.3.3. BCC Aggregates department managers twice refused DES director written requests to comply with their departmental contemporary maximums.
  1.3.4. BCC Aggregates department have ignored 16 emailed (approx. monthly) MCLR requests, to be advised of each estimated blast strength.

1.4. The MCQ Environmental Authority Schedule-F defines twice the normal DES maximum limit on 9 or 10 blasts, plus on <u>every 10th blast there is no defined limit</u>.

1.5. Whilst almost every other QLD Key Resource Area has a strict separation zone, KRA-42 has thousands of residents and ratepayers living in the totally undefined separation zones.
  1.5.1. Plus, Brisbane's second most popular tourist precinct also has zero separation zones.

1.6. The MCQ Schedule-F conditions state the maximum vibrations as measured "in or on any noise sensitive place", however the MCQ manager has repeatedly refused to do any monitoring in private noise sensitive places.

1.7. Schedule-F also lists several noise maximums, but the MCQ has never measured their operational noise levels in any residential property, which the MCLR proved greatly exceeds the stated maximums.

1.8. All homes in the area are all fully BCC approved.
  1.8.1. The damage effect on timber-stumped Queensland style homes without concrete slabs, is generally limited to plaster cracks and falling objects.
  1.8.2. However common homes now use very thin 0.6mm steel framing which is founded on concrete slabs, these suffer huge damage with large concrete and expensive tile cracks.
  1.8.3. Mt Coot-tha being a hilly area, also has homes which are tall and/or pole supported. These suffer even more, making parts of the homes unusable.
  1.8.4. The above damage cannot easily be repaired until the MCQ blasting ceases.
  1.8.5. There has never been any requirement for Mt Coot-tha homes to be designed to withstand undefined-strength blast vibrations on every 10th blast and double the common DES maximum on all other blasts.

1.8.6. Seismic building design and construction expertise is totally absent in Brisbane and no Brisbane engineers are ever required to consider blast vibrations.

1.8.7. Yet the BCC approves these designs and construction techniques, which in recent years has shown a strong tendency towards the very minimum possible strength through the use of 0.6mm steel framing.

3. General MCQ Operational Economics.

3.1 Whilst the MCQ has been operating since before 1900, the BCC map system 1947 Aerial indicates that at the time it was little more than a large swimming hole.

3.2 Using the Qld Spatial and Qld Globe, the MCLR have estimated the 2020 size of the Quarry hole at 13 million cubic metres with a total extracted mass of 42 million tonnes.

3.2.1 Requiring 8 million urban truck (10T) movements.

3.2.2 Since 2001, we estimate that 5 million tonnes have been removed.

3.2.3 Thus requiring 1 million urban truck (10T) movements.

3.3 On researching the MCQ economics the MCLR first considered the rehabilitation cost.

3.3.1 We obtained the final Roma St Parkland cost as $72 million in 2001, from the Qld Architect, Malcolm Middleton.

3.3.2 This was upsized by both the CPI and the Increased Surface Area, plus a 30% contingency was added to allow for the highly dangerous and unstable terrain.

3.3.3 By 2032 (the 2002 scheduled MCQ closure date), our spreadsheet estimates the rehabilitation cost will to be $504 Million. By 2035 it will have increased to $544 Million.

3.3.4 Because this is a promised BCC rehabilitation process (LM05342), we have assigned it as a BCC $Half-Billion Secret Debt.

3.3.5 Because this is an actual construction task, plus the blasting and tree removal is continuing, we believe that the rehabilitation cost is increasing at around $12 million/year.

3.3.6 This estimate increases further when using the Cordell CHIP data which further exceeds the profit from blasting tourist precincts.

3.4 On researching the MCQ blasting and exports since 2001, our spreadsheet indicates that the massive rehabilitation costs greatly exceed both the sales income and profit gained.

3.4.1 Whilst our spreadsheet shows that the total sales value since 2000 is 85% of the $370 Million rehab costs, but when CPI annualised the sales percentage depreciates to only 68% and the profit is only 15%.

3.4.2 With every year that the mining continues and the rehabilitation is delayed, the CPI/CHIP annualization rapidly depreciating the original financial benefit.

3.4.3 We estimate that the BCC would have been several times (or 700%) better off, by importing the Asphalt gravel from one of several southside quarries, who can ship directly to the Swanbank and other southside asphalt factories.

3.4.4 Since 1997 there have been a massive 367 blasts done at the MCQ, which has zero separation zones to the Local Residents homes, Toowong historical buildings and cemetery monuments.

3.4.4.1 Stuartholme Iconic building are within the 500m separation zone.

3.4.4.2 We believe that almost all of the above was both unnecessary and has regularly exceeded the MCA EA blasting license conditions.

3.4.5 Our spreadsheet shows that since 2001, the average annual estimated extraction amount is 632,566 tonnes, with an average annual commercial profit of only $3 million.

3.4.6 By comparison the rehabilitation cost increases at around $11 million/year and the lost tourism benefit is close to $200 million/year (as demonstrated by the Eden Cornwall Case Study, and other similar material such as Gardens BC).

3.4.7 As Brisbane RTI states that MCQ is a fully commercial sales outlet, where most of output is used by external asphalt companies, our spreadsheet estimates that the total profit from 2001-2019 was only $63 million. When CPI annualised, this is depreciated to only $51 million.

3.4.8 In 2020, the spreadsheet rehab cost estimate is $370 million, plus by 2032 it will be $500million. (Different models are shown with 5% and 10% hole size increases.)

3.4.9 In 2016 the annual extracted mass reached a maximum, in excess of 1 million tonnes with a mine gate value of around $27 million, but after all this work and the huge agony for the MCLR, the "profit" was only $5.4 million. (annualised to $5.1 million).

3.4.10 But the real problem is the total lack of any rehabilitation plans and budgets, whilst the continued blasting plus the CPI and Cordell CHIP indices, rapidly inflates the rehab costs.

3.4.11 It is clear that the Rehabilitation Debt greatly exceeds the money saved by "tourism blasting" in Brisbane's second most popular and desperately needed tourist precinct.

3.4.11.1 For example, if it was possible to do extraction in 2001 and then repair that year's damage in 2002, the subsequent balance might possibly be affordable.

3.4.11.2 However, as new blasting and further damage compounds the rehab costs, these costs become so massive, that everyone pretends that the rehab commitment does not exist.

3.4.11.3 However, the MCQ Rehabilitation is a definite LM0342 promise and a fully expected public DOGIT parkland outcome.

3.4.11.4 The MCLR, MCPA and Maiwar Electorate all want you to begin rehabilitation costing and planning immediately.

3.4.11.5 Your ratepayers expect best practice, due diligence and full EA compliance – all of which has been totally lacking at MCQ. – We all fully expect you to totally enforce and adhere to this.

3.5 **So, the MCLR estimations spreadsheet shows that by 2032 (LM05342), the difference between the MCQ Rehab Debt and the Lost Benefit (as shown by Eden Cornwall and others) will be in the region of $6 Billion.**

3.5.1 This being approximately double the BCC annual budget and half the entire QLD budget.

3.5.2 Further we believe that an Eden Project Mt Coot-tha could have greatly exceeded the Eden Cornwall GVA.

4 <u>The Forced Work Done by the MCLR and the MCPA.</u>

4.1 The <u>Mt Coot-tha Local Residents (MCLR)</u> began around the year 2000 as a Quarry Action Group, when the MCQ did not have any dust prevention and the Local Residents were forced to assume the MCQ Policeman role to deal with quarry dust in the air and inside their homes.

4.1.1 On 18th December 2002 Under LM Soorley, the Labor-controlled council passed a motion to extend the MCQ closure date by 30 years out to 2032, and also a promise to limit the annual MCQ output to 400,000 tonnes.

4.1.2 All of the liberal councillors voted against this LM Soorley motion and CR Judy Magub described the decision as a "callous disregard for the Local Residents".

4.1.3 No public announcement of the new closure date deferment was released by LM Soorley, so most residents believed the 2015 closure date.

4.1.4 At the time Cr Magub was helpful, but in the end the liaison died after the BCC Aggregates department stopped attending her resident's meetings.

4.1.5 The MCLR continued complaining, which resulted in dust reduction measure, plus the MCQ created artesian ground-water sources washed and sprayed the crushed gravel.

4.1.6 Under Lord Mayor Quirk, the 400,000 tonnes annual limit promise was totally ignored and by 2016 the MCQ output had increased to be 2.5 times that amount.

4.1.7 The 400,000 tonnes for 30 years, defines a maximum allowable extraction of 12 million tonnes.

4.1.7.1 The MCLR spreadsheet indicates the 312 blasts have extracted 11 million tonnes since December 2002.

4.1.7.2 Using the 2019 mass, the 2002 maximum extraction will be reached in 2022 at an additional profit of $5 million and increased rehab cost of $20 million. Further CPI annualization will decreases the previous sales and profit benefit.

4.1.8 The MCLR were thus forced to allocate large blocks of their time to learn all about blasting and monitoring.

4.2 In the period from 2008 onwards, the then MCLR/QAG chairperson John Higgins appointed Electrical Engineer resident Mr Philip Best to undertake pro-bono engineering MCQ assessment work.

4.2.1 From 2008 through to 2010 Mr Best undertook to learn as much as possible about mining and blast vibration and noise measurement.

4.2.2 Mr Best liaised directly with the Asphalt Production Manager (Mr Chris Lange).

4.2.3 On the 24th February 2010, Mr Lange provided a signed BCC written assurance that their blasting limits were at levels well below those levels which could cause superficial damage to properties.

4.2.3.1 This document turned out to be completely untrue.

4.2.3.2 The letter also referred incorrectly to AS2187.2-2006 as a means to confirm (blasting) levels for damage to buildings.

4.2.3.3 MCLR research later discovered that AS2187.2-2006 did not provide any such assurance and additionally the non-compulsory Appendix-J specifically did not provide such assurance.

4.3 By the end of 2016, the effect of repeated strong blasting on the MCLR (extracting more than one million tonnes of gravel) was creating extreme mental anxiety.

4.3.1 The stronger blasts would violently vibrate and shake the homes, cracking tiles and concrete and masonry walls. Objects fall off benches and paintings fall off walls.

4.3.2 LM Quirk was personally provided with the damage reports and photographs, this was totally ignored.

4.3.3 The MCLR knew that no EA defined maximum blast strength condition was defined on every 10th blast. Hence, they always feared major destruction on the next blast.

4.3.4 The MCLR were never told of estimated blast numbers and strength. Sometimes more than one blast is done in one-week, other times it is once every week. They never know anything because they were never told anything.

4.3.5 The Aggregates department later began issuing a notice of blast email, this has a 4-hour window, plus sometimes the Blasting company "Maxam" runs late, due to shot-firing or adverse wind conditions.

4.3.5.1 So, for many residents it was necessary to avoid the "private home bomb explosion noise", so they must remove home occupants and pets for the period of the blast, these residents are deprived of their private property use for approximately 4 hours, plus an extra 30 minutes to allow for possible delayed blasts and airborne silica dust cloud effects.

4.3.5.2 In 2016, there were 29 blasts, which amounts to a total private home deprivation time of 4.5 days.

4.3.5.3 Since 2001 there have been a total of 327 blasts, this amounts to a total private home deprivation time of 8.75 weeks, or 7.8 weeks since December 2002 when LM Soorley re-extended the previous MCQ closure date.

4.3.6 The MCLR attended the 2016 Council Listens Forum, but were prevented from obtaining the microphone. Afterwards they showed photographic images of blast vibration damage to both Cr Matic and LM Quirk.

4.3.6.1 LM Quirk later wrote saying that there would be no change to the blasting. All of our photographic blast vibration damage evidence was ignored.

4.3.7 In 2016 the MCLR had begun using the RTI system to obtain blast vibration measurements. In order to satisfy the condition for ALL blast vibration measurements, they had to run 4 RTI requests and even now in 2020, all of their requested and Brisbane RTI promised data has not been provided.

4.3.7.1 The MCLR statistician analysed the RTI blast vibration data and concluded that before November 2011, (possibly for many hundreds of blasts), the blast vibration footprint reporting to the DES was grossly misrepresented, by a factor of around 300%.

4.3.7.2 In November 2017, the MCLR created a professional "Mt Coot-tha Quarry Advisory Committee Proposal" report to LM Quirk, along with blasting analysis, Cr Magub Letters & Faxes, plus personal mental health reports. mental health reports.

4.3.7.3 LM Quirk's response was to "disengage" the MCLR.

4.3.8 In 1H 2018, the MCLR conducted a series of blast vibration monitoring sessions in compliance with the "or in or on any noise sensitive place" EA Schedule-F6 statement, at the same address (3SSGD) as that chosen by the MCQ for the local homes monitoring point. This indicated a further 260±3% misrepresentation of the blast vibration footprint reporting to the DES.

4.3.9 In 2H 2018 the MCLR analysed the Blast Monitor Noise Decibel traces and was able to explain why the MCQ blast effects sounded "like a bomb going off inside the resident's private homes".

4.3.9.1 They had previously recorded internal home blast noise and found that the results greatly exceeded the allowable EA Schedule-F maximums.

4.3.9.2 On this 2018 inspection, the audio trace clearly showed the delayed arrival of the mostly inaudible 16hz Overpressure sonic boom, however before that there clearly existed a ground vibration induced noise level which was coincidental and phase coherent with the blast ground vibration trace.

4.3.9.3 This ground vibration induced noise arriving earlier and being in the audible frequency range was not an overpressure sonic boom.

4.3.9.4 This is therefore grossly non-compliant with the noise conditions.

4.3.9.5 Decibel recordings done at #3SSGD indicated that the duration of the noise lasted much longer than the overpressure and the degree of noncompliance was around 500%.

4.4 The Mt Coot-tha Protection Alliance (MCPA) also began several years ago and became more active when LM Quirk Proposed the Mt Coot-tha Zipline Project.

4.4.1 On analysing the Zipline Proposal, it became clear that due diligence was not maintained.

4.4.2 When LM Quirk advised that the BCC had approved their own DA, it became apparent to everyone that there was no separation of powers, plus the DNRME minister has been bypassed.

4.4.3 The MCPA and Maiwar Electorate worked together to alert the general public as to the reality of what the BCC was attempting to do with their much-loved natural public parkland.

4.4.4 When the DA was posted for objections, approximately 90% of respondents were against the proposal. We are advised that of the remaining 10% approximately half came from the Zipline Australia website plus many others did not specify Mt Coot-tha as the location.

4.4.5 In creating a legal appeal, it was necessary to notify all respondents thereby providing a large number of residents who were keen to provide financial support.

4.4.6 We are advised that following the successful legal appeal, the MCPA asked their large new membership base, what they should do next at Mt Coot-tha. The primary response was to close and rehabilitate the Mt Coot-tha Quarry.

4.4.7 In late 2019, the MCPA and Maiwar Electorate combined to conduct a Workshop-Forum at the Mt Coot-tha Botanical Gardens Auditorium. The outcome of this was a large number of suggested usage ideas for the rehabilitated MCQ.

5 QLD Treasurer Andrew Fraser 2011 MCQ Intervention.

5.1 On carrying our further research, the MCLR discovered that the MCQ was conducting blast monitoring at the much further away Sussex St Toowong location.

5.2 The MCLR learned that this data would have indicated the strong blast vibrations and noise being regularly inflicted on the local residents immediately opposite the weighbridge area.

5.2.1 However, the data which was being reported as the blast vibration and noise footprint was that which was recorded at the much further away Sussex Street (and occasionally Richer Street) Locations.

5.2.1.1 Analysis of common solid angle attenuation indicated that the blast effects at Sussex Street would have been considerably weaker. Everyone knows that sounds get weaker with distance.

5.2.1.2 Solid angle theory considers an imaginary square at distance from the source. When the distance is doubled the square area is doubled on 2 dimensions, thereby decreasing the energy density by one quarter.

5.2.2 Previous liaison with DES Ms Birch had not been helpful, so the MCLR approached QLD State Treasurer and Mt Coot-tha MP, who immediately recognised the MCQ blast effect misreporting issue.

5.2.3 Around this time Mr Tim Adams took over the liaison role from Ms Birch. Being backed by Mr Fraser, he was able to force the MCQ to begin monitoring near the closest homes.

5.2.4 Dr John Heilig was also in full agreement and personally installed the industry standard 200mm concrete block transducer mounting monitoring point beside Mt Coot-tha Road.

5.2.4.1 However, the MCQ manager later overruled Dr Heilig.

5.2.4.2 He prohibited the Heilig technician from using the much more accurate concrete block.

5.2.5 Hence the November 2011 decision by Andrew Fraser was validated because the new measurement was considerably stronger.

5.2.6 Following this, there was an immediate apparent reduction in the blast strength. However, the MCLR knew in their own hearts that the blast vibration and noise was still much stronger than it should be.

5.2.7 Local residents had learned about the blast strength reduction strength and damage reports started arriving.

5.2.7.1 It was apparent that a lot of residents had sustained damage, however many did not want this publicised in case they wanted to sell their property.

5.2.7.2 However, there were others who were happy for the damage to be photographed and displayed on the MCLR website.

5.2.8 In 2017, the Brisbane RTI blasting data was supplied to a statistician, who confirmed that a 300% misrepresentation of blast vibration monitoring has occurred prior to November 2011 (around blast 600).

6 2017 MCLR Research Work & Report to LM Quirk.

6.1 In 2015 and 2016, the MCLR studied the Australian Standard AS2187.2-2006 and the associated Appendix-J (Blast Monitoring). They studied and learned more about blast monitoring as well as the RTI process.

6.1.1 They created and paid for a series of RTI requests, as they learned the RTI Process.

6.1.2 In 2016 they requested as much historic blast monitoring data as possible.

6.1.3 Searches were conducted at as many places as possible, but unfortunately much of the old Blastronics data had been destroyed after they ceased to exist.

6.1.4 The DES, DNRME and BCC were searched intensively. All of the blast vibration and noise data from January 2001 through to 2017 was obtained. (This did not include the secret weighbridge office data).

6.1.5 The MCLR then began analysing this data and it became apparent that there was a large anomaly after the new Mt Coot-tha Road monitoring location was created.

6.1.6 This being at approximately Blast 600.

6.1.7 The MCLR hired a statistician to analyse the data, who advised that an approximate 300% (3X) blast footprint misrepresentation had occurred before blast 600.

6.1.8 The MCLR then wrote a lengthy report to LM Quirk.

6.1.9 The response from LM Quirk was to "disengage" the MCLR.

6.1.10 Further futile attempts to communicate with LM Quirk on this topic were unsuccessful, however the MCLR had learned a great deal about blasting and blast monitoring.

6.1.11 During this period, their much-loved and highly-respected MCLR chairperson John Higgins died, and the MCLR were without any leader.

6.1.12 The local residents asked Philip Best to continue his engineering work as chairperson, plus the membership was expanded to include all residences south of Birdwood terrace.

7 <u>2018 MCLR Research Work and Reports.</u>

7.1 The MCLR continued their research work with a focus on AS2187.2 Appendix-J.

7.2 This clearly indicated that there was a known concept of blast vibration amplification inside buildings exposed to seismic ground vibrations.

7.3 The Seismology Research Centre www.SRC.com.au Mr Adam Pascale advised that it was scientifically established that common 10-level building buildings would experience a 400% ground vibration amplification at anti-node locations inside the structure.

7.3.1 A subsequent visit to the seismology measurement area at Mt Nebo confirmed this and that all MCQ blasting was measured at the Mt Nebo seismograph.

7.3.2 It was then decided that this internal blast vibration was the cause of the damage to local homes, however in conducting an inspection of homes closest to Mt Coot-tha Road, it was discovered that those homes which were built on concrete slabs suffered much more than the older timber homes on stumps.

7.3.3 The geology of the area is essentially rock which dips towards the North East at around 30 degrees. There is typically one or two metres of topsoil, so most slab homes needed to engage the bedrock which required that the entire slab be bedrock supported.

7.3.4 In the more-hilly areas, many of the homes are built on steel piers or timber poles (commonly known as pole homes). These suffered much more from blast vibrations, than older timber homes on flat ground.

7.3.5 It was also established that Suartholme received approximately one third of the blast vibrations measured, so a blast strength of 20mm/second measured at Mt Coot-tha Road would be around 7mm/second at Stuartholme which is more than 3 times the maximum allowable for historic buildings.

7.4 The MCLR approached John Heilig asking if the MCQ blast monitoring could be extended to include the monitoring of private homes. His reply was that the MCQ manager Mr Bell had expressly forbidden this.

7.4.1 During the 1H2018 the MCLR then hired the Instantel Minimate blast monitor from Saros, because the principal Tony Zoitsas was formerly the Blastronics technician.

7.4.2 A series of internal home blast monitoring sessions were recorded with the transducer clamped to the outdoor patio balustrade where the glass has exploded after a previous blast.

7.4.3 The statistician analysis of the recorded data showed that the MCQ blast vibrations were being amplified in the home by 260%.

7.5 Liaison with the Environmental Defenders Office (EDO) primary solicitor advised that this data was the ground vibrations as measured on a private home, which being a sensitive passive receptor and a primary noise sensitive place was covered and required by the MCQ EA.

7.5.1 The MCLR formed a commercial client agreement with the EDO, who provided a signed legal statement.

8 2018 MCLR Blasting Noise Research Work and Reports.

8.1 After liaising with other locals, they found that many residents continued to describe the blast as "like a bomb exploding inside their private homes".

8.2 The MCLR then focussed on the blasting noise that was heard inside the private homes.

8.3 They began to analyse the blast vibration data, which contained both audio as well as blast vibration data.

8.3.1 The fundamental purpose of the audio was to record the blasting sonic boom, which is a very low inaudible frequency commonly known as "overpressure". This being the explosive gasses rushing out from the blast site immediately after the charges are ignited.

8.3.2 However, at the Mt Coot-tha Local residences the overpressure propagation distances were much longer than the direct vibration path through the rock to the homes.

8.3.3 Additionally, the transmission velocity through the air was much slower and when the overpressure did arrive at the local homes, the blast monitor showed that the frequency was (as expected) well below the audible range.

8.4 In examining the audio trace prior to the arrival of the overpressure, there existed a recorded noise which was phase-coherent with the actual ground or home noise vibrations.

8.5 The amplitude of this noise greatly exceeded the Schedule-F maximum allowable noise level.

8.6 Hence the MCLR had measured the noise which the local residents feared.

8.7 They had thus proven beyond reasonable doubt that this was common noise and further that the noise happened simultaneously with the actual blast vibrations of the ground and homes. This noise was mainly confined to the homes and was not at all any Overpressure atmospheric noise.

8.7.1 Discussions with the Environmental Defenders Office indicated that the MCQ was non-compliant with their Schedule-F noise conditions and the EDO provided a signed statement confirming this.

9 2019 MCLR Research Work and Reports.

9.1 The MCLR then turned their focus towards the physical MCQ properties to measure the size and cost of the actual MCQ hole, for the purpose of creating some kind of rehabilitation estimate.

9.2 In comparing MCQ with Roma St and Southbank Parklands, it initially appeared that the scope of the rehabilitation problem might be gauged by comparing MCQ with a joined Roma St and Southbank and excavating to a depth of 150 metres.

9.3 In considering a further comparison between Roma St Parklands and the MCQ hole, we knew that the Roma St Map area was 17ha, whilst the MCQ map area was 30ha. Hence a simple map-area-based extrapolation could be achieved.

9.3.1 However, this would have been good if the deep MCQ area was actually flat, but it did not consider the dangerous 15m vertical cliff faces which defined the MCQ hole.

9.3.2 We researched the Qld Spatial and Qld Globe had public facilities which allowed graphical visual interpretation of the MCQ Hole.

9.3.3 We were able to calculate the total hole volume, but more importantly the vertical area component which was almost 9ha.

9.3.4 Hence, we were able to provide an estimated extrapolation factor which accounted for the actual MCQ hole, but which did not consider the danger and instability of several kilometres of blasted vertical rock faces.

9.3.5 In addition to this, the MCQ hole was a moving target, which gets larger and more dangerous with every new blast.

9.3.6 For the first time ever, we were able to assign the approximate total mass of all rock removed from Mt Coot-tha as 42 million tonnes, thus requiring 8 million urban truck movements to cart away.

9.3.7 In order to illustrate the magnitude of the rehab problem, we considered that if all the material which was removed from Mt Coot-tha could somehow be stacked vertically on the "Suncorp Stadium Hallowed Turf", that it would reach a height of 1.3 kilometres high, hence in winter it would be snow-capped.

10 <u>2019 MCLR Finance and Economics Research Work and Reports.</u>

10.1 In establishing a possible MCQ rehabilitation cost, it became essential to begin at some known reference point.

10.2 The option of calculating all of the materials and labour was impossible, because of the large number of unknowns.

10.2.1 However, the Roma Street final rehabilitation cost was known to be $72 Million in the year 2001. So that provided the only known reference point, and using the Australian Bureau of Statistics CPI data, the $72 Million could then be annualised forward to 2020.

10.2.2 This provided an estimation of the Roma St cost as $105 million, for the same work if completed in 2020.

10.3 However, the real goal was the overall financial and economic perspective, because the more we discovered, the more that there appeared to be a total lack of MCQ economic due diligence.

10.3.1 We had updated the Roma St cost and calculated a surface area upsize of 243%. This being compliant with information from other sources that actual surface area calculations needed to be used instead of the simple map area.

10.3.2 After lengthy consideration of the physical and structural MCQ hole difficulties plus the increasing hole and further mature tree removals, we allocated a further 30% contingency amount. This being partially based upon the need for something actually better than Roma Street Parklands at Mt Coot-tha.

10.3.3 Hence a total surface area based upsize of 316% from Roma St had been established. The spreadsheet applied this to the 2001 Roma St $72 million cost and increased by the annual ABS CPI.

10.3.4 We had also attempted to calculate the upsize by using the Cordell RP-data CHIP index, however whilst this index was much higher, it was too difficult to apply.

10.3.5 We were thus content to know that our estimation was probably much less than the actual building industry cost indexes.

10.3.6 So, we had created the first ever approximation of the MCQ rehabilitation costs.

10.4 The MCLR then considered the likely income from the road gravel sales and after liaising with other suppliers we allocated a mine-gate price of $25/tonne with a cost of $19/tonne and a "profit margin" of $6/tonne.

10.4.1 We used historic data to estimate the amount exported rock created by each blast and was thus able to estimate the revenue created by every blast.

10.4.2 It immediately became apparent that the income from gravel sales since 2001, was much less than the actual rehabilitation cost and several times the gravel sales profit.

10.4.3 We established a $500 Million Rehab Cost Debt in 2032.

10.5 It followed that if the rehabilitation cost exceeded the gravel sales amount and several times the gravel sales profit, then there existed a lost benefit by continuing to blast and extract gravel.

10.5.1 The failed LM Quirk Zipline defined a general financial benefit to Brisbane, so we started searching for the general benefits from other rehabilitated mines and quarries.

10.5.2 The Gardens British Columbia, which includes the famous ButChart Gardens, advised that in 2014 the general financial revenue from Gardens Tourism was CA$300 Million every year, with employment numbers of 10,000 jobs.

10.5.3 The Eden Project Cornwall published a case study stating that their project provided a GVA of around £100 million every year.

10.5.4 We then knew that Brisbane would have been considerably better off if the MCQ was rehabilitated and converted to tourism, as was done at places such as Eden Project Cornwall 12ha with an annual GVA of around $200 million.

10.5.5 It followed that an "Eden Project Mt Coot-tha" could earn considerably more, as the smaller Cornwall is restricted in many ways not applicable to Mt Coot-tha.

10.5.6 Hence, we used the Eden Cornwall data to provide a realistic lost economic and financial benefit of $5.5 Billion by 2032, which when added to the $500 Million rehabilitation cost debt created a very real economic loss amount of $6 Billion by 2032.

10.5.7 Further details of these projects can be seen on the website www.SaveMtCoot-tha.org/WorldRehabProjects.htm

Appendix-1: The MCLR Disclaimer.

- The MCLR (they) are an ordinary residential group who have been forced into a 20-year nightmare situation, where they have been forced to defend their health and homes against the actions of the BCC and the Mt Coot-tha Quarry (MCQ).
- They are not lawyers, accountants or economists and wish to advise that almost all their requested MCQ data has been denied & withheld by Brisbane RTI, who stated that MCQ is a fully commercial gravel sales enterprise.
- The MCLR advise that their tonnage estimates may be generous by as much as 10%, because the blast size and extracted gravel amounts sometimes decrease with increased hole depth and overburden.
- Brisbane RTI have advised that their historic database states that from 2001-2010 a total of 5,150,394 tonnes of material has been removed from MCQ. (Thus requiring 400 daily urban truck (10T) movements.)
- Brisbane RTI also advised that no MCQ Rehabilitation (Rehab) documents, or plans or costings exist anywhere in their search area. - Please advise if this is not correct.
- This indicates that by doing continued blasting in an environment of rapidly increasing tourism/employment lost benefit, that the BCC MCQ is operating totally without due diligence.

- In considering the value of crushed asphalt gravel from other quarries, we received estimations from Beenleigh and Mt Marrow, that the common mine-gate sales value was around $25/tonne. From that we assigned a 30% profit of $6/tonne, and an extraction cost of $19/tonne.
- However, it was suggested that the contract with Downer RPQ Asphalt is closer to $20/tonne.
- The true cost of MCQ gravel extraction is unknown and we doubt if the BCC accurately knows a totally honest factor for this.
- The MCQ Scorecard represents the best possible estimation by the MCLR, without any funding and the fundamental BCC RTI denied "Commercial Operational Unit" data.

The MCLR therefore request that the Brisbane Lord Mayor issues an order that blasting at MCQ should not proceed in the year 2020 and beyond, plus that rehabilitation planning should commence immediately.

Appendix-2: the 2019 Qld Human Rights Act.

The QHRC only applies to actions which happen after the 1st January 2020, however if the BCC MCQ continues to operate as they have done in the past then they will be subject to the conditions of the QHRC legislation.

The MCLR believe that if the MCQ continues to operate blasting without recognition and repair of all the principals as stated either before or above, that will cause a complaint concerning the Human Rights item or items below.

☐ Breach of Human Rights	After 1.1.2020 someone in a public entity *(e.g. a Qld government department, local government, public school or hospital, police, or non-government agency which provides public services for the government)* breached your human rights, including - ☐ Recognition and Equality before the law ☐ Right to fair hearing ☐ Rights in criminal proceedings ☐ Right of children to protection in the criminal process ☐ Right not to be tried or punished more than once ☐ Right to protection from retrospective criminal laws ☐ Right to humane treatment when deprived of liberty ☐ Right to protection from torture or cruel, inhumane or degrading treatment ☐ Right to liberty and security of person ☐ Cultural rights - generally ☐ Cultural rights for Aboriginal and Torres Strait Islander peoples ☐ Freedom from forced work ☐ Freedom of movement

	☐ Right to peaceful assembly and freedom of association ☐ Right to take part in public life ☐ Freedom of thought, conscience, religion and belief ☐ Freedom of expression ☐ Right to privacy and reputation ☐ Property rights ☐ Right to protection of families and children ☐ Right to education ☐ Right to health services ☐ Right to life

This Report was created by Philip Best on behalf of all the Mt Coot-tha Local Residents.
MCLR Chairperson 2017-2020.
MCLR Engineer 2008 – 2020.

Time taken to research, create, write and check this report = 10 days.
We hope that the reader can take more then 10 minutes reading the content.