

SHAREHOLDER  
REPORT  
2017



# Financial Snapshot

**39,732,373**

Shares on Issue

**155.5 CENTS**

Net tangible assets per share

**\$216.6 MILLION**

Revenue

**\$10.3 MILLION**

Net profit after tax

**25.9 CENTS**

Earnings per share after tax

**18 CENTS**

Dividend per share (fully franked)

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# Chairman's Report

My name is Mick Caratti. I am one of the founders and chairman of Lycopodium.

This publication is designed to introduce you to the company, telling you who we are, what we do and how we see our future. This report does not replace the statutory financial statements but is designed to provide an informative insight into Lycopodium in an easier to read layout.

A year ago I said that the stability of the iron price, the strength of the gold price and the ability of junior miners to raise finance for new projects at that time, indicated that the worst was over. Gladly this has proved correct as we have seen a steady improvement in metal prices since then and there has been a steady though not high flow of projects proceeding to commitment. Junior companies have also been able to raise money for exploration which bodes well for future projects.

The driver for this improvement is an interesting subject for speculation and is well beyond my ability to unravel but I do believe that Lycopodium's achievement in surviving the downturn after 2012 with a loss of only \$1M in one period is a testament to the strategies the Board has followed since the company's inception.

Since the down turn it has been interesting to watch the changes that have occurred. During the boom times prior to 2012 the number of projects being built meant that it was a sellers market and many projects were negotiated without being tendered in order to get work started in a timely manner. Since then there has been a major downturn in the number of mining projects being built and only a few projects have found finance. More recently government spending in infrastructure projects has increased albeit with not a lot of projects being released for construction. Under those conditions, as always happens, tenders will be highly competitive and to be successful, tenderers will be forced to make little provision for profit. These are the normal forces that are seen in every cycle.

A difference this time is that some of the larger companies and government agencies are asking contractors and service providers to also accept unlimited liability for factors outside

their control. It can be assumed that this is a reaction to the company boards or government being attacked by investors, electors or the press when overruns occur. The intent seems to be to manage risk by forcing it on to the contractor in a highly competitive market rather than to understand the risk and provision for it appropriately. It will be interesting to see what happens with contracts let this way as contracts let with no hope of profit rarely go well without the contractor taking on risk that is beyond his control. Ultimately the Owner pays for bad contracting strategies as well bad design. For service providers it is a major issue as these unlimited liability provisions cannot be covered by Professional Indemnity insurance and are a subject of concern in the insurance industry.

The preference in the minerals industry for EPC or lump sum contracts to build their plants is in some cases an attempt to pass on the cost risk associated with building a new project. In the case of junior companies that is sometimes driven by the financier who may not see the junior company having the skills necessary for other development methods. The EPC delivery method can be very efficient as it allows a more streamlined approach with an agreed scope and quality of supply and little need for the Owner's involvement in the vast majority of decisions. It is most appropriate however when building a repeat of a previous design so that the Owner knows what he is buying. It is not appropriate on new processes and without sufficient time for the details to be agreed prior to signing the contract.

EPC contracts inherently carry greater risk than EPCM contracts due to most of the price risk being carried by the contractor including in some circumstances the cost impact of unknowns at the time of signing.



Lycopodium has begun two EPC projects in Africa as described in the Managing Directors Report and while these projects are going well our strategy is to limit our tendering on EPC projects to those that allow us to do sufficient investigation to be confident in our pricing and to those where the conditions of contract apportion risk in a fair and reasonable way. The Mondium JV established in the period is a further strategy to allow Lycopodium to be involved in larger EPC projects without exceeding the limits we have set.

The rebuilding that had begun last year has continued and the market for engineering services seems to be growing across the range of services and countries where we operate. The growth is starting from a low base and is not spectacular but it has allowed Lycopodium to achieve a substantial improvement on last years result with expectation of a similar result next year.

The improved result this year is the result of the efforts and commitment of the whole staff and management team and I would like to thank you on behalf of the Directors and Shareholders.

I hope you find this report informative and readable and if you would like further information please give us a call.

MJ Caratti



# Managing Director's Report

Lycopodium has had a busy year across all sectors. We have continued to execute our strategies and have seen our first class teams successfully deliver services across all sectors within which we are involved. In line with this we have achieved a good financial outcome for the year and have further strengthened our balance sheet and financial position.

In mineral resources Lycopodium was busy with the delivery of five green fields gold projects Mako (Senegal), Houndé (Burkina Faso), Natougou (Burkina Faso), Sissingué (Côte d'Ivoire) and Santa Rosa (Colombia) as well as two expansion / upgrade projects Karma (Burkina Faso) and Toka Tinding (Indonesia).

The level of activity in our infrastructure business increased materially in the second half of the financial year with a number of new briefs awarded to both the rail and asset management groups including a material package of asset management work with Energy Australia. In addition we are actively bidding a number of packages on the Inland Rail Project in Eastern Australia, a key national infrastructure initiative.

In our process industries business we have been awarded the design and construct contract for a Cotton Seed De-linting HCl package in NSW and are seeing a modest but steady increase in the number of opportunities.

We have grown in terms of staff numbers in line with the increased levels of activity and all our projects and studies are being delivered very well across the business and as always that is a reflection of our great people and teams.

## FULL YEAR RESULTS

As per prior guidance, the Directors are pleased to report a successful outcome for the financial year ended 30 June 2017, with Lycopodium achieving revenues of \$216.6 million and a net profit after tax of \$10.3 million.

Basic earnings per share were 25.9 cents. The Directors have resolved to pay a final dividend of 9 cents fully franked, which aligns with our dividend policy. The total dividend for the year is 18 cents fully franked.

## OUTLOOK

### General view

We consider that we are experiencing a new normal and expect that these conditions will prevail for the foreseeable future. In practical terms that translates to a reasonable level of work and opportunity in the market. With the business environment having stabilised we believe that this will in due course reflect in the business being able to achieve financial outcomes more in line with historical levels.

### Resources

In general we have seen steady if not strengthening prices across most commodities. The gold price has been resilient through the year having almost reached US\$1,300/oz on occasion. Obviously a strong gold price will be positive for the world's gold miners which in turn will be positive for us given our strong track record and credentials in the delivery of gold projects. Similarly, since November 2016 the price of copper has strengthened and is up over 25% for the year, this too is positive for our current and prospective clients and should see activity sustained or increase should these pricing levels prevail. The price of iron ore has also surprised to the upside this year and we are seeing a number of opportunities arise as global producers look to shore up their ability to sustain production levels.

### Infrastructure

We believe that our activity in the sectors which we services will continue to improve in line with what we have seen in the last half of this past financial year. This will be driven by a combination of factors which include the announced funding by the Australian Federal Government of some significant infrastructure initiatives during the financial year, a key example being ARTC's Inland Rail Project, and an

increase in spending by both the private and government sectors in terms of the maintenance planning and management of their fixed assets.

## CORPORATE OVERVIEW

As flagged last year we have now integrated our asset management, rail and general infrastructure activities under the Lycopodium Infrastructure banner. We consider this to have been successful in that we have worked through the integration of the businesses whilst continuing to strengthen the respective teams, we have broadened the locations in which we are providing our rail, civil infrastructure and asset management services. Our rail and asset management teams in particular have on the basis of the integration and improved market conditions also achieved improved financial performance.

Another key initiative for the year was the establishment of Mondium Pty Ltd (Mondium). This business is a standalone joint venture company owned by Lycopodium and Monadelphous Ltd, a highly respected engineering and construction company listed on the ASX. Mondium has been established to service the mineral resources market in Australia and select other regions by delivering projects on an Engineering Procurement and Construction (EPC) or Lump Sum Turnkey (LSTK) basis. Mondium has been in establishment mode for most of this financial year but has also bid a number of high profile EPC opportunities. Whilst it is yet to win work its' offering, as demonstrated in the various tenders, has been in every instance well received and well regarded. The numbers of opportunities in the EPC market remain low and those that have presented have all been toughly contested however we have every confidence that Mondium will be successful in the near term in



Photo by: Arnand van Heerden

securing some EPC based contracts and will undoubtedly build a strong name for itself based on the excellent management team and capabilities in place.

Finally, we have also been focussing on our 'One Minerals' strategy. This initiative is about ensuring that we deliver a consistent high standard of service across all our mineral resources related offices. We have excellent capabilities and depth across the business and we have a plan in place to leverage off those capabilities efficiently and effectively for the benefit of our clients and ultimately our shareholders. Several organisational changes have been made during the year which will help build the foundations for furthering this initiative over the next 12 months.

## OPERATIONAL HIGHLIGHTS

Lycopodium Minerals (including the Perth, Brisbane, Toronto and Manila based organisations) continued building its track record as the preeminent international engineer in terms of gold projects working on study or development phase activities for projects in Colombia, Mali, Senegal, Ghana, Burkina Faso, Ethiopia, Namibia, Philippines, Côte d'Ivoire and French Guiana. Lycopodium Minerals also continued its long relationship with First Quantum Minerals Limited (FQM) with work continuing on the world class Cobré Panama Project in Panama. ADP built on its relationship with key clients including De Beers (and its subsidiaries) whilst advancing several key studies and projects. Orway Mineral Consultants (OMC) built on the Group's strong reputation for innovation with its continued work on the Carapateena Concentrate Treatment Project for OZ Minerals.

Lycopodium Minerals, ADP and OMC provided services predominantly to the resources sectors with the following highlights:

- **Cobré**

Lycopodium continued working on the Mina De Cobré Panama project for First Quantum Minerals Ltd (FQM), furthering an extended and effective association with FQML on various projects in Australia and Africa. This year, Lycopodium's engineering and procurement activities have ramped up in line with the construction requirements. Design and procurement in many areas of the plant is nearing completion and at punch list phase, including milling, flotation, bulk and copper concentrate thickening, secondary crushing and reclaim and stockpiling. The majority of the engineering effort is planned to be completed by 4Q2017.

- **Sissingué**

In 2015 Lycopodium completed the Feasibility Study, a Mill Option Study and completed the Front End Engineering Design for Perseus Mining Limited's (Perseus) Sissingué Project. Across the year Lycopodium provided engineering, procurement and construction (EPC) services to deliver the process plant and related project infrastructure. The process plant has been designed to process nominally 1 Mtpa of primary run of mine ore crushing, grinding, gravity concentration (including intensive cyanidation and electrowinning), pre-leach thickening, leaching / adsorption, elution, electrowinning, smelting and carbon regeneration, with CIL tailings pumped to a Tailings Storage Facility. The project is progressing well in terms of safety and quality with engineering, drafting and procurement activities complete and construction progress well advanced with first gold on target for 1Q2018.

- **Santa Rosa**

Lycopodium was awarded the EPCM contract for the development of the Santa Rosa project for Red Eagle Mining (of Canada) in March 2015, having completed a Feasibility Study in October 2014. Red Eagle planned an initial 1,000 tpd expandable operation producing an average annual production of 50,000 ounces over an eight year mine life. Site construction began 3Q2015 and by January 2016 engineering and procurement activities were essentially complete with the main effort being carried out by the Lycopodium Toronto office with the help of a local Colombian engineering company based in Medellin. During 4Q2016, construction and commissioning of the mill was completed. The first gold pour was in November 2016 with the processing facility exceeding design throughput, with the capability to process up to 1,200 tonnes per day.

- **Houndé**

In April 2016, Lycopodium was awarded the EPCM contract for the delivery of Endeavour Mining Corporation's (Endeavour) 90%-owned Houndé project in Burkina Faso. The project comprises the delivery of a gold processing plant and associated infrastructure capable of treating 3 Mtpa of gold bearing ore. Having undertaken the Detailed Feasibility Study and participated in project optimisation reviews, Lycopodium was able to commence detailed engineering immediately with site activities commencing shortly after. Duration for project construction was estimated to be 18 months with Endeavour planning to self-perform the project build, while Lycopodium focussed primarily on the processing facility. Just over a year later, in May 2017, Endeavour presented an update to the markets

# Managing Director's Report

on the status of the project, by announcing: "excellent progress is being made, having achieved a major milestone with the SAG mill components, which are the longest lead items, already on site and installation underway. Construction is progressing on-time with over 85% of the total project complete and on-budget, with the first gold pour expected during the 4Q2017". This project is progressing very well and continues our long association with the Endeavour team.

## • Fekola

Nearing completion of construction in a remote location in south western Mali, some 400 km west of the capital Bamako, is the Fekola mine. Lycopodium's involvement in the development of this project is a continuation of a successful association with two other B2Gold projects - Otjikoto in Namibia and Masbate in the Philippines. The process plant was designed to process nominally 4 Mtpa primary run of mine ore. Fekola project infrastructure, also part of the Lycopodium design scope, includes process plant, administration and mine offices and workshops. Lycopodium scope of services included the process design, detailed engineering and design of the new facilities; delivering procurement services for equipment and materials purchases as well as providing a team of engineers who were integrated with B2Gold's construction team to deliver site technical and scheduling support. Significant activities undertaken by Lycopodium during the year have included completion of the: detailed design scope of the original 4 Mtpa processing plant, detailed design scope and equipment procurement for the 5 Mtpa process plant expansion, closeout of the construction fabrication contracts, and additional design scope items requested by B2Gold, which included, mine bulk diesel and lube storage and dispensing facilities and expansion of the mine workshop facility. Recently, B2Gold announced that mine construction is ahead of schedule and on target for an October 2017 production start. Lycopodium commissioning personnel commenced site mobilisation in May 2016 and dry commissioning checks are currently underway. B2Gold also confirms the project is expected to be completed on budget.

## • Lethakane XRT Tailings Audit Plant

The Karowe Diamond Mine, owned by Lucara Diamonds, is located in the Lethakane region some 500 km north west of Gaborone in Botswana. Since the AK 6 pipe was opened in 2012 it has yielded over 2,000,000 carats (400 kg) of diamonds. Lycopodium ADP was retained in 1Q16 out of the Cape Town offices on an EPCM basis to develop conceptual options and thereafter to design and implement an XRT Tailings Audit Plant scheduled for commission at the end of 2017.

## • Mako

In August 2016, Lycopodium was awarded the Engineering, Procurement and Construction (EPC) contract for the delivery of Toro Gold Ltd's (Toro) Mako Project in Eastern Senegal. Lycopodium's scope of work is to carry out the process design, detailed engineering and drafting for the gold process plant and associated facilities, including supply of equipment and materials, construction and commissioning through to handover to Toro. The process plant will be designed to process nominally or 1.8 Mtpa of run of mine (ROM) ore through crushing, grinding, classification, pre-leach thickening, leaching / adsorption, elution, electrowinning, smelting and carbon regeneration, with CIL tailings detoxified and pumped to a Tailings Management Facility. Since award, Lycopodium has completed all engineering and procurement activities and focus has shifted to the construction of the infrastructure facilities and the process treatment plant. When developed, Mako will be only the second gold development in the country. The project is located adjacent a World Heritage listed wildlife park which has seen the design and construction of project being undertaken in strict compliance with the International Cyanide Management Code (ICMC) as well as having minimum plant footprint and strict sediment controlled runoff.

## • Alternative Resource Development Capability New Evaluation Vessel (ARDC NV) - De Beers Marine

We are proud of our association through Lycopodium ADP (LADP), and sister company ADP Marine & Modular (ADP M&M), with the recently inaugurated SS Nujoma, the sixth and latest addition to Debmarine Namibia's fleet, being a highly specialised and

technologically advanced vessel to enable deep water diamond exploration and sampling off the coast of Namibia. Following its' launch in January 2016, the vessel was sailed from Norway to Cape Town, where it was fitted out with its Mission Equipment, comprising of the sampling tool, the launch and recovery system, and the treatment plant. The treatment plant was designed by LADP / ADP M&M each of which has specialist expertise in mineral processing and modular plant design and construction, to minimise footprint, height and mass, and still provide operational flexibility in compliance with stringent ocean-going standards. Sea trials were then undertaken late in 2016 prior to hot commissioning in non-diamondiferous areas, thereby offering the opportunity to resolve issues prior to establishing the security protocols. This project was recognised by De Beers Marine as being highly successful and meeting or exceeding its objectives.

## Process Industries

Lycopodium Process Industries provided services predominantly to the chemicals, renewable and pharmaceutical sectors with the following highlights:

## • Axieo

Axieo Operations Australia Pty Ltd (Axieo) is a distributor and manufacturer of raw materials, ingredients and specialty chemicals. Its products add colour, taste and function to the everyday lives of consumers and are key ingredients in many manufacturing sectors and processes. Lycopodium has been providing various detail design, procurement, relocation and commissioning services and during the period relocated and upgraded Axieo's production facility where adjuvants and solutions are blended from a small facility located in Bayswater, Victoria to an existing larger facility with expanded storage of raw materials and finished products in Dandenong South, some 30 km away. The project commenced in September 2016 and was completed in April 2017.



• **ANSTO**

ANSTO is a statutory body of the Australian government, formed in 1987 to replace the Australian Atomic Energy Commission. Over the past few years, Lycopodium has been working with ANSTO in the development of an innovative and cutting edge technology on their new SyMo Waste Treatment Plant (SWTP), which is an integral part of ANSTO's strategic plan that addresses the requirements of managing radioactive waste. The SWTP facility will utilise Synroc Technologies, an innovative waste treatment process technology designed to lock up nuclear waste, thus providing a safe and secure method for final disposal. Lycopodium's role is to provide the detailed design for the Off-Gas System (OGS). SWTP will be used to process liquid waste from the production of radiopharmaceutical Molybdenum 99.

**Infrastructure**

Lycopodium Infrastructure provides services across the general infrastructure, transport (road and rail) and asset management sectors with the following highlights:

• **CITIC Pacific Powerplant Engineering Design**

The massive Sino Iron Ore Project developed at Cape Preston, 100 km south west of Karratha in Western Australia's Pilbara region commenced producing magnetite concentrate in late 2012 with the first shipment being sent to China in 2013. In 2016, the last of six processing lines entered commissioning. Lycopodium's involvement with the project has been to provide detailed engineering design (using 3D modelling approach) of the warehouse, workshop, roads and drainage as well as site technical support services during construction for the Power Plant area. The assignment commenced January 2016 and construction is due for completion September 2017.

• **City of Perth, Property Asset Management Planning Services**

The City of Perth (CoP) covers an area encompassing the Central Perth Business District, West Perth, Crawley, Northbridge and East Perth. Lycopodium recently completed working with the local government organisation to deliver Property Asset Data Collection and Condition Programme services to enable the City to progress its Property Asset Management Programme.

• **Maude Street Shared Pathway**

Newcastle City Council's (NCC) commitment to enhancing cycling in Newcastle saw it progress investigations into a long standing, well supported proposal to develop a cycleway onto the rail corridor, under the rail overbridge and along the rail corridor to meet the current University cycleway. Based on works delivered to date, NCC awarded Lycopodium additional scope to provide concept and detailed design of the shared pathway, detailed design of adjacent road network and traffic signals as well as participation in and facilitation of workshops to progress the design. These studies started in August 2015 and are scheduled for completion by December 2017.

**HSE and Community**

Lycopodium's primary focus is on the health and safety of its staff and all personnel working on its projects. We continue to set and achieve a high standard of health and safety across all our projects and given the highly international nature of our activities we have worked proactively to ensure the security, safety and well being of our personnel wherever they may be.

In 2016/17 there were 3.67 million manhours worked across the Lycopodium managed projects with a LTIFR of 0.0 against an 8.0 construction industry average.

On the community side, Lycopodium continued to focus on education as a means of strengthening communities and in line with this remained an active sponsor and supporter of:

- The Clontarf Foundation, a charitable not-for-profit organisation in Australia improving the education, discipline, self-esteem, life skills and employment prospects of young Aboriginal men.

In addition Lycopodium supported a number of key initiatives around its areas of operation. Examples include:

- Engagement with local college facilities in the area around one project in West Africa to provide a select group of local employees (electrical and instrumentation) skills training with the objective being to enhance their skill set through the construction phase and improve their chances for full time employment post the project. Based on the success of this initiative it is intended to roll out this model on future projects.
- At Endeavour's Houndé Project Lycopodium has provided two scholarships to graduating Year 12 students from the local senior school. These students, one female and one male, will be supported in a curriculum aligned to engineering or mining.

Additionally, Lycopodium was an active participant in a number of targeted educational initiatives in association with both the University of Western Australia, Curtin University (Western Australia) and the South African Minerals Education Trust Fund (METF). The Company also continued to provide support to a number of charitable initiatives championed by staff.

**Acknowledgement**

The Board of Directors recognises that the Company's ability to continue delivering world class services to our clients and to maintain and enhance the company's performance and capability is dependent on the continued commitment and support of our personnel. On behalf of my fellow Directors I take this opportunity to sincerely thank all personnel for their highly valued contribution.

We would also like to thank our clients for their continued trust in Lycopodium to deliver services to their projects and studies. We will as always work hard to maintain these valued relationships.

Peter De Leo  
Managing Director

# Board of Directors



**Keith Bakker**  
 Company Secretary / Chief Financial Officer

Keith has been with Lycopodium for over 20 years and in that time has carried out the roles of Commercial Manager and General Manager Finance.

A Fellow of the Certified Practising Accountants of Australia, he brings to his role of Company Secretary and Chief Financial Officer, over 30 years' experience in company secretarial and finance roles within the airline, human resource management and mining services sectors.

**Michael (Mick) Caratti**  
 NON EXECUTIVE CHAIRMAN

Mick has nearly 40 years' experience in the mineral processing industry with involvement in conceptual evaluation, engineering, commissioning and study management for new and existing projects in Australia and overseas.

Mick has extensive experience in company management having been a director and shareholder of a successful engineering consulting company from 1982 to 1987, and then as a director and shareholder of Lycopodium from its formation in 1992.

Mick's primary role as Chairman is to take a global view of the engineering industry and Lycopodium's place in it whilst maintaining the Company's founding philosophies and strategies.

**Bruno Ruggiero**  
 EXECUTIVE DIRECTOR

Bruno is a founder of the Lycopodium group and has had a number of key roles throughout the group's business units since its inception in 1994. He currently serves as the Technical Director for Lycopodium Minerals, having overarching responsibility for the Company's technical knowledge base, capabilities and direction. At an operational level Bruno's role involves extensive project involvement, responsibility for strategy and the definition and delivery of technical solutions in its EPC business.

Bruno is a mechanical engineer by training, with additional qualifications in process and structural engineering. His experience spans over 30 years in the minerals industry, having worked on various projects and studies in Australia, North America, South America, Europe, Asia and Africa in all capacities of the Company's business – engineering, procurement, construction and management.

Bruno is an Executive Director of Lycopodium Minerals and a Non Executive Director of ECG Pty Ltd.

**Robert (Bob) Osmetti**  
 EXECUTIVE DIRECTOR

Bob is a Civil Engineer with over 38 years' experience in the project management and construction management of projects in an EPCM role and has worked for major construction contractors in the mining sector.

He brings direct experience in all aspects of project implementation, estimating, scheduling and construction management as well as the management of a number of feasibility studies for major resource projects in Australia and overseas.

Bob is one of the founding partners of Lycopodium and has held diverse positions within the group. Bob is currently the Managing Director of Mondium Pty Ltd, a fully incorporated JV between Monadelphous and Lycopodium established to service the engineering and construction market on an EPC basis.





**Rodney (Rod) Leonard**  
 EXECUTIVE DIRECTOR

Rod is one of the founding partners of Lycopodium and an Executive Director of Lycopodium Limited since listing in 2004. Rod is presently the Managing Director of Lycopodium Minerals and a Non-Executive Director of ADP Holdings.

His management roles within Lycopodium have included that of Managing Director of Lycopodium Limited and through earlier periods with Lycopodium Minerals the roles of Technical Director for the Risk Management Group, Managing Director, General Manager of Operations and Manager of Metallurgy.

Rod has nearly 30 years' experience in a variety of roles in the operation and project development of major projects in North and South America, Africa, Asia and Australia and has been involved in many aspects of the mineral processing industry from process development, feasibility studies, and design assignments as well as commissioning of projects.

**Steven Chadwick**  
 NON EXECUTIVE DIRECTOR

Steven is a Metallurgical Graduate of the WA School of Mines with over 40 years' experience in the mining industry, incorporating technical, operating and management roles, as well as a strong metallurgical background.

Steven is now a metallurgical consultant specialising in project management with a range of local and international clients. He was a founding Director of BC Iron and a former Managing Director of Coventry Resources, PacMin Mining and, Northern Gold. Steven brings extensive industry and operating experience to the board.

**Peter De Leo**  
 MANAGING DIRECTOR

Peter is the Managing Director of Lycopodium Limited and has been with the organisation since 1994. He was previously the Managing Director of Lycopodium Minerals Pty Ltd from 2009 through to 2015 and prior to that held the roles of General Manager – Operations, Manager of Projects and Project Director within the Organisation.

Peter is a Civil Engineer with over 29 years' experience in engineering and construction within the resources and infrastructure sectors. Peter possesses strong business management and project implementation skills and has been responsible for the successful delivery of many of Lycopodium's pioneering and large scale projects. In his corporate roles he has often led the organisation in shaping and reshaping as required to meet the needs, and capitalise on the opportunities, within the market.

A Fellow of the Institute of Engineers Australia, Peter maintains an active involvement with industry associations and tertiary education institutions both as a representative of the organisation and of industry.

**Lawrence (Laurie) Marshall**  
 NON EXECUTIVE DIRECTOR

Laurie was Lycopodium Limited's Managing Director until early 2010 when, with the appointment of Rod Leonard, Laurie took up the positions of Non Executive Director and Consultant. He is also a Non Executive Director of Lycopodium Process Industries, Lycopodium Infrastructure, ADP Holdings and Metco Global.

As a founding partner and Certified Practising Accountant with over 40 years' experience in corporate, financial operational and risk management, Laurie has been instrumental in the development of Lycopodium from its early days as a privately owned engineering consultancy to that of a public company.

# About Lycopodium

## OUR COMPANY

Lycopodium is an innovative and value driven process, engineering and project management consultancy, which in 2017 is celebrating its 25th year in business.

Our multidiscipline services are provided through our subsidiaries, which specialise in their industry segment. Through our focused approach Lycopodium is able to consistently meet our clients' expectations and develop long term relationships.

## LYCOPODIUM LIMITED

					
MINERALS	ADP	PROCESS INDUSTRIES & RENEWABLES	INFRASTRUCTURE	ORWAY MINERAL CONSULTANTS	MONDIUM
<ul style="list-style-type: none"> <li>• Mineral processing</li> <li>• Materials Handling</li> <li>• Plant &amp; Mine Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Diamond Processing</li> <li>• Mineral processing</li> <li>• Fixed and Modular Process Plants</li> <li>• Underwater Mining</li> </ul>	<ul style="list-style-type: none"> <li>• Specialty Chemicals</li> <li>• Pharmaceuticals</li> <li>• Research &amp; Development</li> <li>• Food &amp; Beverage</li> <li>• Manufacturing</li> <li>• Renewable Energy</li> </ul>	<ul style="list-style-type: none"> <li>• Civil</li> <li>• Rail, Roads, Aviation</li> <li>• Mine Infrastructure &amp; Accommodation</li> <li>• Planning &amp; Land Development</li> <li>• Industrial, Commercial &amp; Public Works Buildings</li> <li>• Asset management</li> </ul>	<ul style="list-style-type: none"> <li>• Communion Circuit, Modelling and Optimisation</li> <li>• Hydrometallurgy</li> <li>• Process Plant Consulting and Commissioning</li> </ul>	<p><b>A Lycopodium Monadelphous JV</b></p> <ul style="list-style-type: none"> <li>• Engineering (Minerals Processing and Handling)</li> <li>• Project Management</li> <li>• Construction Management</li> <li>• Large scale EPC</li> </ul>

Established in 1992, Lycopodium is headquartered in Perth, Australia and is listed on the Australian Stock Exchange. Lycopodium has offices nationally in Brisbane, Melbourne, Newcastle and Perth and internationally in Canada, South Africa and the Philippines.

## OUR BUSINESS

Lycopodium's business model is based on consistently delivering quality services to clients through feasibility studies, projects, operations and maintenance advice which are fit for purpose, objective and reliable. In this way Lycopodium adds value to a client's business leading to long term beneficial relationships.

We work closely with our clients to evaluate, develop and implement engineering solutions for their projects and our involvement starts from the early conceptual planning moving through the feasibility phases to the completion of design, construction, commissioning and handover, continuing with optimisations, reliability engineering and maintenance services on operational sites.

Our contracting model is flexible and always aligned to meet a client's requirements. We deliver projects on the basis of reimbursable and lump sum EPCM basis (Engineering, Procurement, Construction Management), which relates to professional services only, and on an EPC basis, also referred to as lump sum turn key or design and construct, which encompasses

professional services as well as plant and equipment. We can also incorporate partial or fully integrated teams together with a client to best align with a client's internal capabilities.

Our work, reflecting diversity in not only client background, but commodity, technology, scale of operation and geographic location, falls into seven broad groups:

### Mineral Processing

Our Mining and Mineral Processing clients range from major multinational producers through to junior exploration companies and their projects involve a wide range of commodities: gold, copper, nickel, diamonds, iron ore, cobalt, zinc, lead, manganese, uranium, tin, tantalum, rare earth minerals and platinum group metals.

Projects, undertaken in diverse environments including tropical, arid, arctic and high altitude conditions, range in scope from large greenfield and brownfield projects involving process plant and equipment, civil and building works, control systems and supporting infrastructure to small skid-mounted, transportable plants.

### Infrastructure

Lycopodium has wide-ranging experience managing the assessment, design, planning and implementation of a variety of infrastructure elements, both independently and in conjunction with mineral processing projects. Infrastructure elements include power supply, water supply and treatment, housing, commercial and industrial buildings, roads, aerodromes and general infrastructure.

### Process Industries

Our Process Industries clients, many of them household names, produce a wide variety of products in the manufacturing, pharmaceutical, chemical, food and beverage, healthcare, oil and gas and petrochemical sectors.

### Rail

Lycopodium provides rail infrastructure asset management services, feasibility study and detailed design services to the heavy rail industry. These services are often complimentary in nature to larger projects undertaken within the group which include a rail component.



### Renewables

Lycopodium is at the forefront of developments in renewable energy and energy efficiency including the implementation of projects in solar, biofuels, waste to energy and heat energy recovery.

### Agriculture

Given our extensive technical capabilities, we have had on increasing involvement in the agricultural sector. This has included large irrigation systems, food handling and processing facilities, food and animal by-product processing to generate energy as well as new value adding by-products. Often these agricultural projects encompass other industry segments in which Lycopodium operates.

### Maintenance and Reliability

Maintenance and reliability engineering clients come from the oil and gas, petrochemical, power and water utilities, infrastructure, mining and minerals processing and marine industries.

In this sector, there is significant experience in re-engineering existing systems for brownfield operations as well as developing and implementing new maintenance management systems for greenfield operations.

Project examples of the various commodities and industry sectors in which Lycopodium has worked during the recent year follow later in this shareholder report.

### OUR SERVICES

Throughout our 25 year history, Lycopodium has developed a reputation for providing technically innovative and cost effective engineering solutions and delivering projects which exceed the client's project criteria and performance targets.

Lycopodium operates with well established systems and processes to ensure consistency in our approach across all aspects of project delivery. Our services fall generally into four areas of expertise:

#### Process

Lycopodium's process group has a wide range of experience to undertake the development of new processes and determine the viability of new and existing processes, including:

- Planning, design, supervision and interpretation of laboratory, bench-scale and pilot-scale test programs.
- Flowsheet development, mass and energy balances, process modeling, process design specification.
- Management and coordination of necessary skills in the production of studies. These studies are done at different levels of confidence depending on the stage of investigation and are usually defined as concept study, pre-feasibility study and detailed or bankable feasibility study.
- Evaluation and selection of new and alternative processes at the conceptual and pre-feasibility study stages to determine the viability of new and existing processes.
- Comminution circuit design using specialist database and in-house software to design crushing and grinding circuits and predict their performance.
- Hydrometallurgy for base metals, uranium and rare earths.
- Commissioning, training and operations services.
- Design, construction management and operation of pilot plant installations.
- Plant audits, debottlenecking evaluations and staged development planning.

Environmental compliance processes, e.g. cyanide recovery and destruction, arsenic fixation and disposal, metal precipitation and water management.

#### Engineering

Lycopodium's engineering group can offer a wide range of capabilities for the development of a project, including:

- Conceptual and detailed design of processing plants.
- Conceptual and detailed design of infrastructure including earthworks, roads, drainage, power supply and transmission systems, buildings and, accommodation villages with amenities, water and wastewater systems.
- Design expertise covering all relevant disciplines including:
  - > Architectural
  - > Civil
  - > Structural
  - > Mechanical
  - > Piping
  - > Electrical
  - > Instrumentation
  - > Process Controls
- Design, program, test and commission plant automation control systems
- Plant refurbishment and relocation.
- Conceptual and detailed design of large modular and panelised plants for major projects down to small transportable and skid-mounted plants.
- Plant debottlenecking, upgrading and improvements.
- Troubleshooting and modification of mechanical and electrical installations.
- Design expertise in tropical, arid, arctic and high altitude locations.
- General engineering consulting services including due diligence reports, project valuations and debottlenecking studies.



## Project Delivery

Lycopodium undertakes the project and construction management of clients' projects, including:

- Full project and construction management to deliver complete projects.
- Health, safety, environmental, community relations, quality management services.
- Project controls including cost control and scheduling.
- Tender preparation and evaluation.
- Procurement, expediting and inspection services.
- Plant evaluations and assessments for insurance or sales purposes.
- Capital and operating cost estimates.
- Financial evaluation of projects.
- Client representation.
- Development and implementation of project accounting services.
- Development and implementation of project maintenance and reliability engineering services.
- Logistical and transport management.

## Maintenance and Reliability Engineering Services

Lycopodium can assist plant site operators to reduce operating costs and increase productivity, whilst complying with statutory regulations and duty of care obligations, by refining or re-engineering their operating methods, maintenance management practices and implementing the required change processes.

These services fall within the following areas:

- Maintenance System Development – the preparation of work instructions to provide comprehensive maintenance actions.
- Optimisation – the fine tuning of systems, procedures and processes to cost effectively provide the highest productivity, availability and reliability for an operational site.

- Materials Management and Optimisation – encompasses all aspects of identifying, categorising and organising equipment in a facility or system.
- Operational Readiness – the provision of services to assist clients to initiate operation of new projects.
- Planning – the detailed processes and practices that form the maintenance planning cycle.

## OUR PEOPLE

Engineering consulting is a service industry and Lycopodium is dependent on its people for the quality of service it provides. Lycopodium is proud of the professionalism and loyalty of the team it has assembled and their achievements in the innovative and cost effective design and construction of projects in diverse industries and regions.

Lycopodium uses a team approach to its work where each project has a team drawn from the disciplines required and is led by a project manager. Each discipline is headed by a discipline manager who is responsible for monitoring and controlling the quality of work within the discipline and ensuring each project manager has sufficient resources to run the project team. Regular formal management meetings are held to review progress, cost and quality and ensure all projects are fully resourced, on time and on budget.

Lycopodium provides a team of respected professionals in each of the disciplines required in a process, engineering and project delivery business.

## OUR CLIENTS

Lycopodium services a wide range of organisations headquartered throughout the world including large international companies, mid tier and emerging companies, and junior and start up companies. The majority of our services are the result of long standing relationships with our clients, built over years of high quality services specific to

their requirements. Lycopodium's highly customer focused approach and ability to deliver tailored, value adding solutions has been fundamental to our success.

Lycopodium focuses on achieving each client's aims as its primary objective and its success is demonstrated by the high level of client satisfaction and repeat business the company enjoys. Lycopodium continues to deliver innovative and fit for purpose outcomes, tailored to the needs of individual clients.

## OUR GOALS

Lycopodium's aim is to be the best in its field through the delivery of technoeconomic solutions which optimise a project's returns to each of our clients. We believe our success is intimately tied to the success of our clients' projects.

Lycopodium has a proven track record of meeting budgets and schedules and achieving project performance criteria on both large and small projects and in greenfield (new) and brownfield (existing operating plant) environments.

A successful process, engineering and project management consulting company doesn't stand still – it grows through consistency and reliability in project delivery, accepting new challenges and resetting goals, which for Lycopodium reflects in larger, more complex projects and work in new areas, be they technical or geographic.

## Long Term View

Lycopodium continues to focus on the longer term horizon. Our growth has always been the product of delivering excellence to our clients on a consistent basis. In turn we are rewarded through repeat work, references to new clients and industry recognition for technical and project delivery excellence. This approach has enabled the business to expand through organic growth in alternative geographic locations and through strategic acquisition where clear added value to the business can be demonstrated.



# Project Reviews

## Project Houndé

Client: Endeavour Mining Corporation

Location: Burkina Faso

Sector: Minerals – Gold

In April 2016, Lycopodium was awarded the EPCM contract for the delivery of Endeavour Mining Corporation's (Endeavour) 90%-owned Houndé project in Burkina Faso. With an initial capital cost estimated at \$328 million, the project comprises the delivery of a gold processing plant and associated infrastructure capable of treating 3 Mtpa of gold bearing ore.

Having undertaken the Detailed Feasibility Study and participated in project optimisation reviews, Lycopodium was able to commence detailed engineering immediately with site activities commencing shortly after. Duration for project construction was estimated to be 18 months with Endeavour planning to self-perform the project build, while Lycopodium focussed primarily on the processing facility.

Just over a year later, in May 2017, Endeavour presented an update to the markets on the status of the project, by announcing: *"excellent progress is being made, having achieved a major milestone with the SAG mill components, which are the longest lead items, already on site and installation underway. Construction is progressing on-time with over 85% of the total project complete and on-budget, with the first gold pour expected during the 4Q2017"*.

Further, Sébastien de Montessus, President and CEO, stated: *"I would like to thank the team for their continued hard work and dedication which is allowing Houndé construction to remain on-budget and on-time for a first gold pour in the fourth quarter. Most importantly, I would like to congratulate them for posting 4 million hours without a lost time injury (LTI) - continuing to build on their track record at Agbaou, which was also built without an LTI incident"*.

Over the past year, Lycopodium has:

- Provided 2 scholarships to graduating Year 12 students from Houndé to attend a University in Ouagadougou or in Bobo
- Managed over 1 million site manhours with no Lost Time Injuries
- Completed engineering and drafting on schedule and on budget. Also completed all procurement under budget
- Continued to keep construction on schedule
- Commenced planning of resources for the commissioning phase



Construction of this project is a continuation of a successful development and construction partnership between Lycopodium and Endeavour on the Nzema (Ghana) and Agbaou (Côte d'Ivoire) projects.

Located within the Houndé greenstone belt some 250 km south west of Ouagadougou, the capital city of Burkina Faso, the project benefits from excellent existing infrastructure. Once in production, Houndé will become Endeavour's flagship low-cost mine, ranking amongst West Africa's top tier cash generating mines.



## Project Mako

Client: Toro Gold Ltd

Location: Senegal

Sector: Minerals - Gold

Toro Gold Ltd (Toro) is a private gold exploration and development company focused on the prolific Birimian and Archean geological terranes of Africa. Established in 2009, Toro has established a portfolio of gold projects across multiple jurisdictions, with its flagship asset being the Mako mine in Eastern Senegal, discovered in 2011.

Successive drilling campaigns were carried out from 2011 to 2015 and, based on these drilling results and the associated resource estimates, Toro completed a Pre-Feasibility Study in 2014 and a Definitive Feasibility Study in 2015.

Lycopodium assisted Toro through the preparation of these studies taking responsibility for the Metallurgy, Process Route Design, Project Infrastructure, as well as Study Manager responsibilities. In August 2016, Lycopodium was awarded the Engineering, Procurement and Construction (EPC) contract for the delivery of the project with responsibility for the execution and delivery of the various facilities and scope of work elements being divided between Lycopodium and Toro.

Lycopodium's scope of work is to carry out the process design, detailed engineering and drafting for the gold process plant and associated facilities, including supply of equipment and materials, construction and commissioning through to handover to Toro.

The process plant will be designed to process nominally or 1.8 Mtpa of run of mine (ROM) ore through crushing, grinding, classification, pre-leach thickening, leaching / adsorption, elution, electrowinning, smelting and carbon regeneration, with CIL tailings detoxified and pumped to a Tailings Management Facility. Mako ore properties are unique (extremely hard, extremely abrasive, extremely clean with low viscosity) and these characteristics needed to be considered in the proposed designs. Required infrastructure includes a mine services area, buildings, accommodation camp, and related process and non-process infrastructure and site power station (by others).

Since award, Lycopodium has completed all engineering and procurement activities and focus has shifted to the construction of the infrastructure facilities and the process treatment plant.

An important element placing pressure on the project team and schedule is Senegal's weather, in that it has two principal parts – tropical; hot, humid; rainy season from May to November with a dry season between December to April.



The project, approximately 650 km ESE of the capital city Dakar is accessed via the main national Dakar – Bamako highway and lies approximately 5 km from this sealed main road. When developed, Mako will be only the second gold development in the country. The project is located adjacent a World Heritage listed wildlife park which has provided some additional challenges for the design team including strict compliance with the International Cyanide Management Code (ICMC), a minimum plant footprint and strict sediment controlled runoff. The project is expected to be completed on budget.



## Project Reviews *(Continued)*



**Project** Fekola  
**Client:** B2Gold  
**Location:** Mali  
**Sector:** Minerals - Gold

Nearing completion of construction in a remote location in south western Mali, some 400 km west of the capital Bamako, is the Fekola mine. Lycopodium's involvement in the development of this project is a continuation of a successful association with two other B2Gold projects - Otjikoto in Namibia and Masbate in the Philippines.

The process plant was designed to process nominally 4 Mtpa primary run of mine ore through single stage primary crushing, an open SAG mill circuit with recycle pebble crushing, and a closed circuit ball mill, leach feed thickening with thickener overflow treated through a carbon in column circuit, leaching followed by carbon in pulp adsorption, elution and gold recovery to doré, cyanide detoxification, tailings thickening, and disposal circuits.

Fekola project infrastructure, also part of the Lycopodium design scope, includes process plant, administration and mine offices and workshops.

In 2015, Lycopodium completed an Optimised Feasibility Study. Once approvals were in place, B2Gold quickly commenced construction, making the decision to self-perform the project's construction with Lycopodium providing resources to supplement the B2Gold construction team with engineering, schedule support and commissioning.

In 2016 B2Gold announced that, as a result of positive drill results and exploration potential, they had decided to increase

throughput at Fekola and proceed with an expansion of the mill. Design factors built into the Optimised Feasibility Study by Lycopodium included 5 Mtpa assumptions for plant design, general infrastructure and tailings dam design and location, thus enabling ore throughput capacity to reach up to 5 Mtpa from the onset of initial production.

With this additional capital investment, the Fekola mill expansion is expected to be completed and commissioned in conjunction with the original plant commissioning.

Lycopodium scope of services included the process design, detailed engineering and design of the new facilities; delivering procurement services for equipment and materials purchases as well as providing a team of engineers who were integrated with B2Gold's construction team to deliver site technical and scheduling support.

Significant activities undertaken by Lycopodium during the year have included completion of the:

- Detailed design scope of the original 4 Mtpa processing plant
- Detailed design scope and equipment procurement for the 5 Mtpa process plant expansion
- Closeout of the construction fabrication contracts, and
- Additional design scope items requested by B2Gold, which included, mine bulk diesel and lube storage and dispensing facilities and expansion of the mine workshop facility.

Recently, B2Gold announced that mine construction is ahead of schedule and on target for an October 2017 production start. Lycopodium commissioning personnel commenced site mobilisation in May 2016 and plant dry commissioning checks are currently underway. B2Gold also confirms the project is expected to be completed on budget.



**Project Masbate Upgrade**

**Client:** B2Gold / Phillippene Gold Processing & Refining Corp

**Location:** Phillippines

**Sector:** Minerals – Gold

Philippine Gold Processing & Refining Corp (PGPRC), a wholly owned subsidiary of B2Gold, is the owner of the mineral processing facility at the Masbate mine in the Phillippines.

Masbate's original throughput was 4 Mtpa and an expansion has recently been completed to increase throughput to 6.5 Mtpa of ore at a grind size of 150 µm with design provision for a further expansion up to 8 Mtpa at 106 µm with the addition of an extra ball mill at a later date.

Lycopodium has an established and valued relationship with B2Gold having been involved with studies and development of B2Gold's Otjikoto project in Namibia and Fekola mine in Mali. Lycopodium also has detailed understanding of the Masbate project having completed the detailed design and provided commissioning services when the mine was first opened in 2009. More recently Lycopodium completed a scoping study that looked at various expanded throughput options and completed the engineering and procurement (EP) services for the 6.5 Mtpa expansion project.

This 6.5 Mtpa expansion project has recently been commissioned and is producing at or above nameplate capacity. PGPRC is now considering advancing the further 8 Mtpa expansion project with the addition of an extra ball mill.

Masbate, which lies 360 km south-east of the capital city Manila, can be accessed by a commercial airline service which flies daily to Masbate City and a 70 km drive on a partially sealed road to the project site. Alternate access to the site from Masbate City is via a one hour boat ride. The site is equipped with a barge loading jetty where heavy equipment and consumables are delivered and offloaded with a private airstrip for charter aircraft.

B2Gold is a Vancouver based gold producer with four operating mines, one mine under construction and a portfolio of development and exploration assets in various countries around the world. amongst West Africa's top tier cash generating mines.

**Project Sissingué**

**Client:** Perseus Mining Limited

**Location:** Côte d'Ivoire

**Sector:** Minerals - Gold

Perseus Mining Limited (Perseus) is a diversified West African-focused gold production, development and exploration company.

Currently Perseus operates the Edikan mine in Ghana (which entered commercial production in January 2012) and has Sissingué under construction in Côte d'Ivoire and Yaoure, also in Côte d'Ivoire, in the feasibility and early development stage.

In 2015 Lycopodium completed the Feasibility Study, a Mill Option Study and completed the Front End Engineering Design for Sissingué. At present, Lycopodium is working with Perseus to provide engineering, procurement and construction (EPC) services to deliver the process plant and related project infrastructure.

Lycopodium's scope of work is to carry out the process design, detailed engineering and drafting for the process plant and associated facilities, including supply of equipment and materials and construction and commissioning services through to handover to Perseus.

The process plant will be designed to process nominally 1 Mtpa of primary run of mine ore crushing, grinding, gravity concentration (including intensive cyanidation and electrowinning), pre-leach thickening, leaching / adsorption, elution, electrowinning, smelting and carbon regeneration, with CIL tailings pumped to a Tailings Storage Facility.

The project is progressing well in terms of safety and quality with engineering, drafting and procurement activities complete and construction progress well advanced with first gold on target for 1Q2018.

Sissingué is in the north of the country, adjacent to the Mali border approximately 700 km from the commercial capital, Abidjan.

Côte d'Ivoire is heavily dependent on agriculture and related activities, which engage roughly two-thirds of the population. Côte d'Ivoire is the world's largest producer and exporter of cocoa beans and a significant producer and exporter of coffee and palm oil. Mining gold and exporting electricity are growing industries outside agriculture.

Following the end of more than a decade of civil conflict in 2011, Côte d'Ivoire has experienced a boom in foreign investment and economic growth and for the last 5 years Côte d'Ivoire's growth rate has been among the highest in the world.

# Project Reviews (Continued)

**Project** **Mina de Cobré Panama**

**Client:** Minera Panama /  
First Quantum Minerals Ltd

**Location:** Panama

**Sector:** Minerals – Copper, Gold, Molybdenum



During the 2016/17 year Lycopodium continued working on the Mina De Cobré Panama project for First Quantum Minerals Ltd (FQM), furthering an extended and effective association with FQML on various projects in Australia and Africa.

Toronto Stock Exchange listed FQM, and its Panamanian subsidiary Minera Panama, are developing this US\$5+ billion copper project (including a port and power station) in the Republic of Panama.

Plans for the project involve mining from three open pits, overland conveyor transportation, a concentrator treatment plant adjacent to the mine with the concentrate being pumped 25 km to a port area for filtration and export. The project's mine life has been estimated at more than 30 years and it will produce around 300,000 t/y copper, 100,000 oz/y gold and 2,500 t/y molybdenum.

Awarded the project in 2013, Lycopodium scope of services is to carry out the process, earthworks, architectural, civil, structural, mechanical and piping detailed engineering design, and provide technical input into the procurement process for the construction of the process plant, services and associated infrastructure. The processing plant will have an installed capacity of 74 Mtpa for the first period of operation with the capacity to expand up to 100 Mtpa.

This year, Lycopodium's engineering and procurement activities have ramped up in line with the construction requirements. Design and procurement in many areas of the plant is nearing completion and at punch list phase, including milling, flotation, bulk and copper concentrate thickening, secondary crushing and reclaim and stockpiling.

Our areas of focus for the remainder of 2017 will be water services, reagents concentrate regrind, primary crushing and re crush crushing. The majority of the engineering effort is planned to be completed by 4Q2017.

This project involves some of the largest currently available and proven unit processing equipment in the world and Lycopodium has worked collaboratively with FQML to support its project development style to achieve industry leading capital intensity and project schedule targets.

The major equipment in the Cobré process plant includes:

Primary Crushing plants, semi mobile in-pit gyratory	2 2	(1,500 kW/crusher) with max throughput of 5,800 t/h/crusher (1,000 kW/crusher) with max throughput of 3,600 t/h/crusher
Overland Conveyors	2	1 km each, 2.6 wide at 1,2000 t/h
Secondary Crushers	3	(2,500 kW/crusher) with max throughput of 4,500 t/h/crusher
SAG Mills	2 1	28 MW/mill, 40' dia x 24' EGL 28 MW/mill, 40' dia x 27' EGL
Recrush Crushers	3	(930 kW/crusher) with a max throughput of 810 t/h/crusher
Ball Mills	4	16.5 MW/mill, 26' dia x 42' EGL
Gravity Concentrators	10	48" centrifugal gravity concentrators
Bulk Flotation Cells	22 10 8 4 6 2	630 m <sup>3</sup> tank cells 300 m <sup>3</sup> tank cells 200 m <sup>3</sup> tank cells 100 m <sup>3</sup> tank cells 5 m dia columns 4.5 m dia Jameson cells
Thickeners	2 1	50 m dia bulk concentrate 40 m dia copper concentrate
Regrind Mills	3	5 MW Stirred mills
Overland Concentrate Pumpin	2	900 kW piston/diaphragm pumps
Concentrate Filtration	3	1,500 m <sup>2</sup> horizontal plate filters
Water Reclamation	16	1.1 MW pontoon mounted decant return pumps. Design capacity of 30,000 m <sup>3</sup> /h water returned to plant site



**Project** SS Nujoma  
**Client:** Debmarine Namibia  
**Location:** Namibia  
**Sector:** Minerals - Gold

Lycopodium ADP (LADP), and sister company ADP Marine & Modular (ADP M&M), are proud of their association with the recently inaugurated SS Nujoma, the sixth and latest addition to Debmarine Namibia's fleet, being a highly specialized and technologically advanced vessel to enable deep water diamond exploration and sampling off the coast of Namibia.

The vessel was built in Ulsteinvik in Norway by the Kleven Verft shipbuilding group, and is named after Namibia's founding president, Dr Sam Nujoma. The 113 metre-long diesel-electric powered vessel has a displacement of 12,000 tonnes, and accommodates a crew of 80. It has a helicopter deck suitable for Sikorsky S61's, and is equipped to remain on exploration operations for three years between port maintenance layovers.

The vessel itself was manufactured in six modules, five in Poland and one in the builder's Norwegian shipyard. The Polish modules were transported on a barge to Kleven Verft for final assembly on the slipway.

Following its' launch in January 2016, the vessel was sailed from Norway to Cape Town, where it was fitted out with its Mission Equipment, comprising of the sampling tool, the launch and recovery system, and the treatment plant. The treatment plant in turn comprises the following plant areas:

- Primary plant,
- Comminution plant,
- Dense media separation plant, and
- Final recovery.

The treatment plant was designed by LADP / ADP M&M each of which has specialist expertise in mineral processing and modular plant design and construction, to minimize footprint, height and mass, and still provide operational flexibility in compliance with stringent ocean-going standards.

The Mission Equipment was designed and built in large modules, suitable for marine duty within a confined deck space, with a combined mass of 2,200 tonnes, in parallel with vessel construction in Norway. The modules were lifted on to the vessel using the second-largest super-lift crane in southern Africa, with the heaviest module weighing in at 220 tonnes.

A feature of the modular plant design was the ability to lift and place portions of plant from quayside, to the Vessel enabling complete fit-out and cold commissioning of the Mission Equipment within 3 months. Sea trials were then undertaken prior to hot commissioning in non-diamondiferous areas, thereby offering the opportunity to resolve issues prior to establishing the security protocols.

LADP's process design input included the seamless processing and management of multiple samples (>5 samples), by a fully automated and intelligent system by application of a pre-designed binning philosophy and vendor-proprietary batch software. LADP also designed the automated capturing of metallurgical and processing data per sample as each is processed through the different unit processes.

Of course every project has tight time, cost and quality targets so what is so different with this design? Briefly some of the design challenges were as follows:

- Being a sampling vessel, the sample integrity is paramount and no hang-up, material entrapment or retention could be allowed between samples.
- Furthermore unlike the rest of the fleet which are 'winch positioned', this vessel has dynamic positioning which facilitates the faster sampling rate that is targeted for the SS Nujoma. This required fast processing and purge cycles for each sample within each of the unit processes, which underpinned the sizing and selection of equipment.
- With regards to control and instrumentation engineering and new to DBM and LADP was the use of 'Dessoft'. This is an intelligent database driven software for the generation of P&IDs to facilitate the instrumentation design. Also the implementation of the ISA-88 standard for batch control, which will be used to manage and track samples, as well as record pertinent sample information through the treatment plant.
- Layout and design challenges are obvious - footprint, height and mass had to be kept to a minimum. Ongoing weight management during the design phase alerted the LADP team to the fact that the allowable mass was being exceeded. Some clever thinking and engineering resulted in the lowering of the Final Recovery module by one floor. ADP Marine & Modular were well suited to undertaking this plant design as they have designed, built and commissioned numerous final recovery plants for the De Beers Group over the past 20 years.
- Also important was to ensure effective integration of all treatment plant components into the platform (the vessel). In this regard detailed integration and battery limits had to be carefully managed.
- As with any project 'Safety in Design' was critical. With regards a ship there are more aspects to be taken into account and stringent worldwide standards such as SOLAS (Safety Of Life At Sea) needed to be adhered to.

De Beers marine was responsible for development of the sampling tool, which was then fully integrated with the sampling system to enable collation of comprehensive sample data.

Michael Curtis, Project Head for De Beers Marine, said *"This unique and technically challenging global project has been successful in exceeding its objectives. The project team understood how important the project is to our client Debmarine Namibia, and have been committed from approval of the project in April 2015 to fast track the delivery."*

Andrew Jakins, Managing Director of ADP Holdings and ADP project sponsor noted *"The combined De Beers Marine and ADP teams deserve high praise for completing the immensely complex process plant scope, not without its challenges, but with all major metrics including cost, schedule, plant performance and sampling rate, sample integrity and safety being either achieved or surpassed"*.



# Project Reviews (Continued)

**Project**    **Santa Rosa**

**Client:**    Red Eagle Mining Corporation

**Location:** Columbia

**Sector:**    Minerals - Gold

Red Eagle Mining Corporation (Red Eagle) is focused on building shareholder value through acquiring, developing and operating gold projects in Colombia, a jurisdiction with prolific historic production but until recently, limited modern exploration.

Red Eagle owns 100% of the Santa Rosa Gold Project, comprising a total area of approximately 33,000 hectares and located 73 km northeast of the department capital Medellín in northern Colombia.

Lycopodium was awarded the EPCM contract for the development of the Santa Rosa process plant in March 2015, having completed a Feasibility Study in October 2014. Red Eagle planned an initial 1,000 tpd operation producing an average annual production of 50,000 ounces over an eight year mine life.

With confidence that additional resources will be identified in the future, Red Eagle required that the design make allowance for a future doubling of process plant capacity. Also, to meet strict environmental regulations, the design required the plant tailings to be filtered for dry tailings deposition.

The mine complex comprises the decline shaft providing access to the San Ramon underground mine, processing plant and plant infrastructure. Processing incorporates single-stage crushing, SAG milling and flotation with concentrate re-grinding followed by conventional carbon-in-leach, which processes the combined float tails and regrind concentrate, to produce gold dore at a 96% recovery.

Site construction began 3Q2015 and by January 2016 engineering and procurement activities were essentially complete. The main design and procurement activities were undertaken by the Lycopodium Toronto office with assistance of a local Colombian engineering company based in Medellín. During 4Q2016, construction and commissioning of the mill was completed. The first gold pour took place during November 2016 with the processing facility exceeding design throughput, with the capability to process up to 1,200 tonnes per day.

Red Eagle's future plan is to develop additional mines to feed the Santa Rosa Mill Complex and fulfil its vision of increasing capacity to 2,000 tonnes per day.





**Project XRT Tailings Audit Plant**

**Client:** Boteti Mining (Pty) Ltd (Lucara Diamonds)  
**Location:** Lethakane, Botswana  
**Sector:** Diamonds

The Karowe Diamond Mine, owned by Lucara Diamonds, is located in the Letlhakane region some 500 km north west of Gaborone in Botswana. Since the AK 6 pipe was opened in 2012 it has yielded over 2,000,000 carats (400 kg) of diamonds.

The mine was thrust into the international spotlight following the discovery of the Lesedi La Rona (translated means 'Our Light') diamond weighing 1,109 carats, measuring 65 mm x 56 mm x 40 mm on 16 November 2016 and an estimated worth over USD65 million. The Lesedi La Rona is the largest diamond recovered using machines for automated ore sorting and processing and believed to be only the second diamond ever recovered to exceed the 1,000 carat mark, the largest being the 3,106 carat Cullinan diamond discovered more than one hundred years prior, in 1905, part of which, the Great Star of Africa, now forming part of the British royal crown jewels. Lucara's historical discovery was followed only a day later with two more diamonds being recovered and weighing 813 and 374 carats, respectively.

Lycopodium ADP was retained in 1Q16 out of the Cape Town offices on an EPCM basis to develop conceptual options and thereafter to design and implement an XRT Tailings Audit Plant scheduled for commission at the end of 2017. The scope of facilities is to modify the existing tailings conveyor transfer tower to include a 3-way splitter chute to enable a stream of tailings to be diverted through advanced XRay Transmission (XRT) technology sorting machines to audit the tailings stream.



**Project Otjiwarongo Graphite Project**

**Client:** Imerys Gecko Graphite (Namibia) (Pty) Ltd  
**Location:** Otjiwarongo, Namibia  
**Sector:** Graphite

In 2014 and 2015 Lycopodium ADP was engaged by the previous mine owners (Gecko Graphite) to manage a test work program and a feasibility study to update previous studies performed by others. The work involved evaluating extensive test work and subsequently scoping a 20 000 tpa graphite plant flowsheet to improve the recoveries materially from what was predicted during prior study work.

In 2016 Gecko Graphite and Imerys Graphite and Carbon, Swiss based and part of the French CAC listed Imerys Group, formed a company and undertook to convert the decommissioned Okoruso fluorspar processing plant into a graphite processing facility. Lycopodium ADP was appointed to perform detailed design, procurement, construction reviews and provide commissioning assistance for the 20 000 tpa greenfields dry plant generally comprising new dewatering, drying, size segregation and bagging facilities.

The plant at the end of 2Q17 was commissioned and in ramp up.

## Project Reviews (Continued)

### Project **Benalla Filling System**

Client: Thales Australia Limited

Location: Victoria

Sector: Process Industries - Chemical

Australian Munitions is a business of Thales Australia Limited (Thales) and is the largest supplier of explosive ordnance. The company also produces high quality propellant and ammunition for domestic and international customers.

Lycopodium has completed several projects for Thales at the Mulwala site, but this is Lycopodium's first involvement with the Benalla site.

Thales has signed a 10-year contract with Orica Australia (Orica) to produce five million explosive boosters each year which will see imported products being replaced by Australian ones. Orica is the world's largest provider of commercial explosives and innovative blasting systems to the mining, quarrying, oil and gas and construction markets.

Boosters are small explosive devices that help detonate larger charges, and are used extensively across Australia's mining and construction industries. The boosters themselves are an advanced new product designed by Orica.

Andrew Donald Design Engineering (ADDE) was the prime contractor for the automation and upgrade program partnering with Lycopodium for the design, manufacture and install of the Filling Head System that is able to deliver a specific amount of explosive into each booster to meet the required production rate. The system has been retro-fitted into the Benalla plant's existing ammunition filling facility which presented major design complexities that had to be overcome.

### Project **SST Facility Relocation**

Client: Axieo Operations (Australia) Pty Ltd

Location: Victoria

Sector: Process Industries - Chemical

Axieo Operations Australia Pty Ltd (Axieo) is a distributor and manufacturer of raw materials, ingredients and specialty chemicals. Its products add colour, taste and function to the everyday lives of consumers and are key ingredients in many manufacturing sectors and processes.

SST Australia manufactures and markets more than 70 products to the agricultural and turf industries in Australia and New Zealand.

Late 2016, Axieo announced that it had signed an agreement to acquire SST Australia and CEO Sam Bastounas advised "that in the months ahead we will invest in upgraded manufacturing facilities that expand our capabilities further".

Lycopodium has been assisting Axieo to achieve their goals by providing various detail design, procurement, relocation and commissioning services.

Lycopodium has relocated SST's production facility where adjuvants and solutions are blended from a small facility located in Bayswater, Victoria to an existing larger facility with expanded storage of raw materials and finished products in Dandenong South, some 30 km away.

Lycopodium has also upgraded the facility by:

- Designing and installing a bulk unloading facility for delivery of Methyl Oleate by 20,000 L tankers instead of receiving in IBC's (Intermediate Bulk Container).
- Replacing 2 ageing tanks with larger stainless steel tanks complete with agitators.
- Providing a new designed access walkway that delivers a safe way of delivering pallets of materials to the mezzanine level and installing a vacuum lifter to improve manual handling methods.
- Designing and supplying 2 new hot water baths to warm up viscous product to enable it to be pumped into mixing tanks



**Project Off Gas Handling System, SyMo Facility**

**Client:** Austra  
**Location:** Australian Nuclear Science and Technology Organisation  
**Sector:** Process Industries - Manufacturing

ANSTO is a statutory body of the Australian government, formed in 1987 to replace the Australian Atomic Energy Commission. Headquartered in Lucas Heights, a suburb in southern Sydney, it is a public research organisation responsible for delivering specialised advice, scientific services and products.

ANSTO's vision is to deliver excellence in innovation, insight and discovery through people, partnerships, nuclear expertise and landmark infrastructure.

Created by the ANSTO Act 1987, the organisation's core functions are to:

- Conduct research and development in relation to nuclear science and technology
- Produce and use radioisotopes, isotopic techniques and nuclear radiation for medicine, science, industry, commerce and agriculture
- Encourage and facilitate the application and use of the results from research and development
- Manage radioactive materials and waste arising from various prescribed activities
- Provide goods and services related to core activities
- Provide advice to government and undertake international liaison in nuclear-related matters
- Make available facilities, equipment and expertise for research in nuclear science and technology
- Publish scientific and technical reports, periodicals and papers, and provide public information and advice.

Over the past few years, Lycopodium has been working with ANSTO in the development of an innovative and cutting edge technology on their new SyMo Waste Treatment Plant (SWTP), which is an integral part of ANSTO's strategic plan that addresses the requirements of managing radioactive waste. The SWTP facility will utilise Synroc Technologies, an innovative waste treatment process technology designed to lock up nuclear waste, thus providing a safe and secure method for final disposal.

Lycopodium's role is to provide the detailed design for the Off-Gas System (OGS). SWTP will be used to process liquid waste from the production of radiopharmaceutical Molybdenum 99.

**Project Property Asset Management Planning Services**

**Client:** City of Perth  
**Location:** Western Australia  
**Sector:** Asset Management

Perth, Western Australia is a modern and vibrant capital city, boasting a desirable lifestyle and a great geographic location. With just under 14 sq km in land area, the City of Perth (CoP) covers an area encompassing the Central Perth Business District, West Perth, Crawley, Northbridge and East Perth.

It is experiencing a period of rapid growth and development, and by 2050 it is estimated that CoP will be home to 50,000 people, provide 180,000 jobs and will welcome an increasingly diverse array of visitors.

Lycopodium recently completed working with the local government organisation, CoP, to deliver Property Asset Data Collection and Condition Programme services to enable the City to progress its Property Asset Management Programme. To do this, CoP has identified its objectives as:

- Finalising the City's Land and Building Asset Management Plans and continuing to satisfy statutory obligation
- Gaining an understanding of the condition of all current buildings assets condition at a component level
- Identifying current operational and maintenance risks to the City to facilitate detailed forward works planning
- Demonstrating capital works funding requirements, and assisting strategic and portfolio estate planning.

**Lycopodium's scope of work included the following activities:**

- Undertaking an Asset Data Collection to identify component level assets within all City property.
- Completing an Asset Condition Rating, Risk & Rectification to identify the current condition and rating of component level assets within all City property.
- Providing a professional opinion of the current risk the component and building represents to the City, along with the recommended rectification actions required in order to bring the property back to a suitable standard.
- Preparing a 10 Year forward works program for all property assets based on a series of three scenarios that achieve agreed condition levels of services.
- Developing, in consultation with CoP personnel, a scientific and justifiable method to alter the priorities of the Property Asset Component replacements to develop 3 scenarios.
- Conducting a review of emergency equipment as legislated by Statutory Requirements.
- Producing a gap analysis of the Forward Works Plan against the budget for each property asset to identify which of the required actions in the Forward Works Plan have been funded, and which have not.
- The composition of the property building asset portfolio is broad and contains purpose built civic and heritage buildings such as Council House, Perth Town Hall, City Library and the Perth Concert Hall in addition to operational depot assets, commercial buildings, community use building assets and public toilets.
- Lycopodium was awarded this project in December 2016 with completion in May 2017.



# Project Reviews (Continued)

**Project Maud St Shared Pathway**

**Client:** Newcastle Council  
**Location:** New South Wales  
**Sector:** Infrastructure

Newcastle City Council (NCC) is committed to enhancing cycling in Newcastle with the objective of making cycling a safe and attractive travel option, thus enabling more people to use bicycles for more of their trips. To achieve this, it has identified a range of infrastructure improvements and social initiatives.

A key regional route in Newcastle’s cycle network is the route between the University of Newcastle and the Newcastle city centre. A new city centre campus has recently opened, which will likely increase demand for a safe cycling route between these sites.

However, the current route involves negotiating a refuge crossing of Maud Street in the suburb of Waratah which renders the route unsuitable for novice riders. Not only are sight lines obstructed by a rail overbridge, but the road carries approximately 24,000 vehicles per day.

High on its list of priorities, NCC is progressing investigations into a long standing, well supported proposal to develop a cycleway onto the rail corridor, under the rail overbridge and along the rail corridor to meet the current University cycleway. Based on works delivered to date, NCC awarded Lycopodium additional scope to include:

- Concept design of the shared pathway
- Detailed design of shared pathway
- Detailed design of adjacent road network and traffic signals
- Participation in and facilitation of workshops to progress the design.

These studies started in August 2015 and are scheduled for completion by December 2017.



**Project Power Plant Detail Engineering Design**

**Client:** Citic Pacific Mining  
**Location:** Western Australia  
**Sector:** Infrastructure

CITIC Pacific Mining (CPM) is a wholly-owned subsidiary of Hong Kong listed company CITIC Limited. Headquartered in Perth, the company was established to manage the construction and operation of the Sino Iron project, an integrated magnetite mining, processing and port operation that supplies quality magnetite product to the Chinese steel mills.

Sino Iron is the largest magnetite mining and processing operation in Australia and represents China’s largest-ever overseas investment in the resources sector.

The massive Sino Iron project has been developed at Cape Preston, 100 km south west of Karratha in Western Australia’s Pilbara region.

Production of magnetite concentrate started in late 2012 with the first shipment being sent to China in 2013. In 2016, the last of six processing lines entered commissioning.

Lycopodium’s involvement with the project has been to provide detailed engineering design (using 3D modelling approach) of the warehouse, workshop, roads and drainage as well as site technical support services during construction for the Power Plant area.

Located on the coast of Western Australia’s Pilbara region, the project site is subject to cyclonic activity and also exposed to ambient temperatures reaching 50°C, very high solar radiation intensity and corrosive seawater spray during windy periods. All engineering designs and equipment selection had to be completed in compliance with relevant cyclone procedures and design requirements to address and withstand the particularly harsh external environmental factors.

The assignment commenced January 2016 and construction is due for completion September 2017





**Project Sissingué Maintenance System Development**

**Client:** Perseus Mining Limited  
**Location:** Côte d'Ivoire  
**Sector:** Asset Management

Perseus Mining Limited (Perseus) is a diversified West African-focused gold production, development and exploration company. Projects include the Edikan mine in operation in Ghana, with Sissingué well advanced in construction in Côte d'Ivoire and Yaoure, also in Côte d'Ivoire, at an early development stage. First gold is planned for Sissingué 1Q2018.

Currently Lycopodium is working with Perseus to provide the engineering, procurement and construction (EPC) services to deliver the process plant and related project infrastructure, as well as providing services to develop a Maintenance System for Sissingué's fixed plant.

In development of this maintenance system, Lycopodium's focus has been one that will drive the efficiency and accuracy when performing maintenance at the Sissingué plant operation.

There are three main areas for the Maintenance System:

- Equipment Register
- Preventative Maintenance and Inspection Strategies and
- Recommended Spares.

Lycopodium's scope of work is to:

- Build the Equipment Asset Register hierarchy of approximately 400 equipment items which will form the complete asset register for the project
- Develop planned preventative maintenance and inspection strategies, using Lycopodium's in-house maintenance development software
- Develop recommend spare parts data, based on documented repair and spare part holding strategies
- Create load sheets for maintenance system data migration into the Perseus's maintenance management system.
- Lycopodium was awarded the contract by Perseus in early 2017, with completion due August 2017.



## Project Reviews (Continued)

### **Project** Evaluation Services for Infrastructure Delivery Directorate

**Client:** Main Roads WA

**Location:** Western Australia

**Sector:** Infrastructure

Main Roads WA (MRWA) is the State road authority of one of the most geographically distributed road networks in the world comprising more than 18,500 km of road spread over 2.5 million square km.

MRWA's role is to plan, build, operate and maintain Western Australia's state road network valued at almost \$48 billion. Working across all levels of government, they ensure WA's road network meets the needs of the community, industry and stakeholders.

In March 2014, Lycopodium was engaged by MRWA for 24 months duration to deliver services for the evaluation of proposals for the delivery of major infrastructure projects. In March 2016, Lycopodium secured a 24 month extension to this engagement.

Lycopodium provides a senior independent industry participant to be part of evaluation teams in the procurement phase for various major infrastructure projects.

To date, Lycopodium has assisted MRWA in the procurement phase of twelve major projects with a combined project value of \$1.56 billion and is engaged to provide these services for a further four major projects.

The services include:

- Assistance in preparation of evaluation criteria and scoring guidelines
- At the Expression of Interest stage, assessment of applications submitted by contractors (for the design and construction of the projects) in order to shortlist those companies who demonstrate superior financial, technical and managerial capacity to deliver the works
- At the Request for Proposal stage for a Design and Construct contract, evaluation of the proposals submitted for the design and construction of the project, to select a preferred proponent that not only demonstrates superior capacity to deliver the works but offers a proposal that meets appropriate standards and presents superior value for money in terms of cost and risk sharing profile.
- At the Proposal stage for an Alliance contract, evaluation of proposals submitted in order to select a preferred proponent who demonstrates superior capacity and capability to deliver the works. This stage includes desktop evaluations of proposals as well as participation in various alliance workshops and interviews.
- At the Proposal stage for an Integrated Project Services contract, evaluation of proposals in order to select a preferred proponent who demonstrates superior financial, technical and managerial (including organisational, contractual, social and environmental) capacity to deliver the work.
- Preparation of evaluation reports.





# Financial Results

## Consolidated

	2017 \$	2016 \$
Revenue	216,616,442	124,460,218
Employee benefits expense	(61,898,213)	(57,853,816)
Depreciation and amortisation expense	(1,171,764)	(1,329,095)
Project expenses	(9,843,966)	(4,370,898)
Equipment and materials	(74,207,912)	(12,080,173)
Contractors	(38,255,322)	(28,417,150)
Occupancy expense	(8,052,368)	(8,082,301)
Impairment of goodwill	(263,242)	(500,000)
Other expenses	(9,540,001)	(7,768,302)
Loss on disposal of asset	(1,634)	(1,254)
Finance costs	(93,651)	(33,324)
Share of net profit of associate and joint venture accounted for using the equity method	1,019,251	1,191,724
Profit / (Loss) before income tax	<b>14,307,620</b>	5,215,629
Income tax (expense) / benefit	(3,934,091)	(1,889,219)
Profit / (Loss) for the year	<b>10,373,529</b>	3,326,410
(Dividend (fully franked) (cents		
Interim	9.0	1.5
Final	9.0	4.0
Total Dividend	18.0	5.5
Shares on issue	39,732,373	39,732,373
(\$ Share price as at 30 June	3.15	2.10
(Earning per share (cents	25.9	8.0
Price earnings ratio	12.2	26.3
(Net tangible assets per share (cents	155.5	142.0

# Balance Sheet

*Consolidated*

	2017 \$	2016 \$
<b>ASSETS</b>		
<b>Current assets</b>		
Cash and cash equivalents	85,334,769	41,547,757
Trade and other receivables	36,919,288	26,525,309
Inventories	327,430	703,686
Derivative financial assets	164,994	-
Current tax receivables	1,344,040	1,008,816
Other current assets	2,149,687	1,793,028
<b>Total current assets</b>	<b>126,240,208</b>	<b>71,578,596</b>
<b>Non current assets</b>		
Investments accounted for using the equity method method	2,227,735	1,768,751
Available-for-sale financial assets	102,963	102,953
Property, plant and equipment	3,174,174	2,343,796
Intangible assets	7,421,173	7,907,733
Other receivables	442,616	521,898
Deferred tax assets	3,797,930	2,782,541
<b>Total non current assets</b>	<b>17,166,591</b>	<b>15,427,672</b>
<b>Total assets</b>	<b>143,406,799</b>	<b>87,006,268</b>
<b>LIABILITIES</b>		
<b>Current liabilities</b>		
Trade and other payables	64,080,967	21,436,955
Borrowings	509,731	89,879
Current tax liabilities	3,978,266	508,544
Provisions	4,280,795	-
<b>Total current liabilities</b>	<b>72,849,759</b>	<b>22,035,378</b>
<b>Non current liabilities</b>		
Borrowings	832,912	-
Provisions	500,796	639,873
<b>Total non current liabilities</b>	<b>1,333,795</b>	<b>639,873</b>
<b>Total liabilities</b>	<b>74,183,467</b>	<b>22,675,251</b>
<b>Net assets</b>	<b>69,223,332</b>	<b>64,331,017</b>
<b>EQUITY</b>		
Contributed equity	20,823,772	20,823,772
Reserves	(988,042)	(840,944)
Retained earnings	46,412,369	41,285,494
Parent entity interest	<b>66,248,099</b>	61,268,322
Non-controlling interest	2,975,233	3,062,695
<b>Total equity</b>	<b>69,223,332</b>	<b>64,331,017</b>

# Shareholder Information

The shareholder information set out below was applicable as at 6 September 2017.

## A. Distribution of equity securities

Analysis of numbers of equity security holders by size of holding:

		Total Holders
1	-1000	352
1001	-5000	452
5001	-10000	136
10001	-100000	150
100,001+		25
		<b>1,115</b>

There were 80 holders of less than a marketable parcel of ordinary shares.

## B. Equity security holders

The names of the twenty largest holders of quoted equity securities are listed as:

Name	Number held	percentage of Units
1 Reesh Pty Ltd	9,104,367	22.91
2 HSBC Custody Nominees (Australia) Limited	7,504,153	18.89
3 Luala Pty Ltd	3,167,332	7.97
4 JP Morgan Nominees Australia Limited	2,496,478	6.28
5 Caddy Fox Pty Ltd	2,354,215	5.93
6 Selso Pty Ltd	1,808,148	4.55
7 Accede Pty Ltd	1,272,332	3.20
8 Citicorp Nominees Pty Ltd	844,000	2.12
9 Monadelphous Group Limited	603,511	1.52
10 Mr David James Taylor	447,635	1.13
11 De Leo Nominees Pty Ltd	407,900	1.03
12 Mr Peter De Leo & Mrs Tiana De Leo	401,390	1.01
13 De Leo Nominees Pty Ltd	354,481	0.89
14 Botech Pty Ltd	305,405	0.77
15 Lycopodium Share Plan Pty Ltd	272,500	0.69
16 RBC Investor Services Australia Nominees	252,484	0.64
17 Citicorp Nominees Pty Limited	246,390	0.62
18 Mr Timothy John Kelly & Mrs Lisa Annette Kelly	180,000	0.45
19 Nancris Pty Ltd	175,000	0.44
20 Rubi Holdings Pty Ltd	175,000	0.44
<b>TOTAL</b>	<b>32,372,721</b>	<b>81.48</b>

## C. Substantial holders

Substantial holders in the company are set out below:

Name	Number held	percentage of Units
1 Reesh Pty Ltd	9,104,367	22.91
2 HSBC Custody Nominees (Australia) Limited	7,504,153	18.89
3 Luala Pty Ltd	3,167,332	7.97
4 JP Morgan Nominees Australia Limited	2,496,478	6.28
5 Caddy Fox Pty Ltd	2,354,215	5.93




Photo by: Arnand van Heerden

# Corporate Directory

## Directors

Michael (Mick) John Caratti  
Peter De Leo  
Rodney (Rod) Lloyd Leonard  
Robert (Bob) Joseph Osmetti  
Lawrence (Laurie) William Marshall  
Bruno Ruggiero  
Steven (Steve) Chadwick

## Company Secretary

Keith Bakker

## Registered and Principal Office

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E: [limited@lycopodium.com.au](mailto:limited@lycopodium.com.au)  
[www.lycopodium.com.au](http://www.lycopodium.com.au)

## Share Registry

Computershare Investor Services Pty Limited  
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T: +61 (0)8 9323 2000  
Direct line for Investors: 1300 764 130  
[www.computershare.com.au](http://www.computershare.com.au)

## Lawyers to the Company

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Level 28, 197 St George's Terrace  
Perth WA 6000  
T: +61 (0)8 6145 1700

## Auditor

Grant Thornton Audit Pty Ltd  
Level 1, 10 Kings Park Road  
West Perth WA 6005  
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