

Managing Director's Letter to Shareholders

Friday, 18 December 2020

Dear Shareholders,

As we approach the end of an extraordinary year of challenges, it is timely to give you an update on the activities and achievements of 2020, and a broad insight into what we aim to achieve in 2021 and beyond.

The year ahead will involve the FBR Team working on important tasks in parallel to ensure we position the Company for continued success.

We currently have a large shipment of European produced Wienerberger blocks en route to Perth where we will undertake pilot build activities for both single and multi-storey structures. This work was initially planned to be undertaken in Europe, but with the travel restrictions in place this was not possible.

Earlier this month, FBR purchased five residential land lots in Wellard, south of Perth, to build a variety of different houses for sale. We will be aligning with a number of builders to complete these homes which will allow us to work closely with them during the build process and further align our product offering to meet their needs.

I am confident that in 2021 you will see Hadrian X® machines on many different sites around Perth, building single detached, multi-storey, multi-unit and commercial structures for a range of recognised builders and end use customers. Perth, Western Australia will be the first city on earth to see the regular commercial use of Hadrian X® construction robots to build homes and buildings for real families and businesses, and I look forward to you seeing the machines undertaking this work.

From the outset, FBR has strived to make improvements in four important metrics for builders: **Speed, Accuracy, Safety and Waste**. Improvements in these metrics lead to lower costs. FBR first set out in 2005 to address a skilled labour shortage with bricklayers, which has only intensified over time, and is projected to continue to increase into the future exponentially.

In 2005, we saw a 300% increase in bricklaying rates due to high building activity and demand. Bricklaying rates in WA are rapidly rising now, due to the Federal and State Government stimulus which has put pressure on builders to deliver record high numbers of homes over a short period to meet the parameters of the grant scheme.

During this high period of demand, it is challenging for builders to pivot toward new innovations such as the Hadrian X® due to the need for their planners, designers, site managers and those responsible for the timely delivery of homes to meet their targeted output. FBR understand the environment that we are in and are cognisant of the hard work underway by the WA building industry to deliver homes in this boom time. We are currently working with a number of builders who are positioning themselves to take full advantage of what we have created at FBR, and we should see this come to fruition during 2021.

There are lead-times involved in scheduling of works, materials and trades necessary for the timely delivery of homes to customers. With volume builders it is often months before site works begin that a decision is made on the design, brick type and slab dimensions of the structure, which equates to months of lead-time before FBR gets the green light to undertake a particular build.

For this lead-time reason, we have not been able to publicly put the Hadrian's to work immediately after our Dayton and Byford demonstration builds. Following those builds, we have conducted many site visits with builders who are watching and inspecting those structures being completed, while gaining an understanding of what processes and materials may benefit from variation to take full advantage of what the Hadrian X® can deliver. From this, we expect to see the uptake of Wall as a Service® limited by the availability of Hadrian X® machines shared between ongoing development, local and global marketing and local residential and commercial building projects. FBR intends to become a service provider of choice, and to do this we must work hard, deliver results, and be price competitive and reliable.

The Dayton display home is almost complete, with final cosmetic items to be fitted in early January 2021 before being handed back by the builder to FBR where the home will be displayed and then sold on the open market.



The Dayton home built using the Hadrian X® in July 2020

The Byford commercial centre is also nearing completion.



The Byford commercial and community centre built using the Hadrian X® in September 2020

FBR builds the walls for homes and structures using bricks or blocks just as they are designed and built today, for today's customers and today's needs. We see ourselves as a different offering to other 3D printing companies globally where structure designs and materials need to change to accommodate their technology.

Construction companies, financial institutions and governments globally are increasingly focused on improving ESG (Environmental, Social, Governance) targets and they are excitedly seeing how FBR is moving toward zero masonry waste, zero silica dust, no working from heights, no heavy lifting, no repetitive strain, no cement dust, no shovelling or pushing wheelbarrows, and being waterless and mortarless as important outcomes.

For many reasons, the regulators in every country of interest to FBR are likely to increase the pressure on builders to reduce waste, improve site safety, reduce risk to workers and increase output whilst improving the overall environmental efficiency of the homes and structures. In Australia, the building community is facing regulatory changes in this area that have not yet been finalised. This is putting additional pressure on them to find home efficiency gains where they can, without clarity on what the regulators will arrive at.

The construction industry globally accounts for over 10% of all jobs. It is projected to grow to over US\$15 trillion in value in the years ahead, with a global population of over 9 billion people expected around 2055. Housing around the globe has immense opportunity for improvement and growth. FBR believe it is the right time to be developing construction machines for the housing needs of the future.

At the start of the FBR journey, we put considerable effort into the proprietary software platform TAD (The Architectural Designer), that underpins the delivery of Hadrian-built structures. TAD has a number of important functions for a house model or design to be converted to Hadrian X® machine code. It has been designed to reduce masonry waste to a minimum, create lay paths that reduce the overall build time, reduce the amount of cut bricks required and therefore produce the least amount of waste that must be disposed of.

TAD allows for the exact quantity of bricks or blocks to be purchased, with JIT (Just In Time) delivery, accurate machine arrival and departure times and enables the ability to schedule following trades in a way that has not been achievable in the past. This is a very unique platform and a world first in capability and design, and we are working to take it to the next level where builders and designers will be able to access parts of TAD online themselves and book the machine for a particular start date, with a choice of block types, with stability and certainty in laying price.

Hadrian 1 is undergoing brick delivery and software upgrades to increase the speed yet again. Both of our commercial prototypes will be busy throughout 2021.



In parallel to all of this work, we are approaching the start of the assembly of two new Hadrian X® machines. Some long lead items have already been ordered and we expect to take delivery of a 8x4 truck chassis in Q1 2021. The next Hadrian X® will have extended “road reach” capability with a boom length of 32m, meaning it may be loaded and operated from the road or verge and not just the side of a large house. It will have the ability to lay blocks up to 600mm in length, 350mm high and 250mm wide and up to 35kg in weight, allowing for an uplift in productivity of over 50%, and will build up to three storeys high. The machine operator will have the ability to work from the truck cab, or externally using the Hadrian X® HMI (Human Machine Interface). We are aiming for a two-person operation, and with all current ancillary equipment eliminated from the worksite and integrated into Hadrian X®. Assembly of the next two Hadrian X® machines is expected to commence in earnest in the first half of the 2021 calendar year.

FBR has accepted the opportunity to present the Hadrian X® to the world at Expo 2021 in Dubai as the Australian Federal Government’s official robotics partner, but only if global travel returns to normal will we be able take up this unique opportunity. Many millions of people are expected to pass through the Expo and view the amazing technologies that have been developed around the world, including the Hadrian X® and FBR’s DST. FBR also hopes to exhibit at Bauma 2022 in Germany, the world’s leading construction machinery trade fair, held every three years.

From the FBR Team, we wish you all a safe and enjoyable festive season.

Mike Pivac
Managing Director and Chief Executive Officer
FBR Limited

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For more information please contact:

FBR Limited
Rachelle Brunet
Company Secretary & Executive Officer
T: +61 8 9380 0240
rachelle.brunet@fbr.com.au

About FBR Limited

FBR Limited (ASX:FBR) designs, develops and builds dynamically stabilised robots to address global needs. These robots are designed to work outdoors using the company’s core Dynamic Stabilisation Technology® (DST®). FBR is commercialising products for the construction sector together with DST®-enabled solutions for other industries.

The first application of DST® is the Hadrian X®, a bricklaying robot designed to build structural walls faster, safer, more accurately and with less wastage than traditional manual methods. The Hadrian X® will provide Wall as a Service®, FBR’s unique commercial offering, to builders on demand.

To learn more please visit www.fbr.com.au

