



## Hadrian X Global Market Study Complete

### Highlights

- EY-Parthenon assists in analysing global addressable market for Hadrian X construction robot
- Up to 150,000 Hadrian X construction robots needed to replace all low-rise wall-building labour globally
- FBR to target 2% of the addressable market over next five years

**Thursday, 26 April 2018** - Australian robotic technology company **Fastbrick Robotics Limited (ASX:FBR)** ('FBR' or 'the Company') is pleased to provide the following update on the global market opportunity for its Hadrian X construction robot.

### The Global Market Opportunity

As announced on 8 January 2018, FBR appointed EY-Parthenon as its global strategic business advisor. The focus of the appointment was to assist FBR with analysing the global market opportunity for the Hadrian X, to develop an appropriate market entry strategy and to evaluate various business models to maximise the value captured from the technology FBR has created.

After extensive research, data collection and analysis by EY and FBR, FBR now has a significantly deeper understanding of the global addressable market and potential global demand for the Hadrian X. This market analysis indicates that a stock of approximately 140,000 to 150,000 Hadrian X's would be required to build all low-rise buildings globally in 2018, based on the set of assumptions outlined below. Of those 140,000 to 150,000 construction robots, 90,000 to 100,000 relate to demand stemming from the brick and block construction sector, with the balance associated with alternative construction methods.

The Hadrian X presents a low-rise construction solution that has never been commercially available before and provides end users with the competitive advantage of reducing building time, cost and waste while improving safety and building accuracy. Most importantly, the Hadrian X provides certainty with respect to building cost, delivery time, risk and quality which is presently a major challenge in the construction sector globally.

As a result, the Hadrian X is set to provide strong competition to alternative construction methods, such as concrete tilt-up panel, timber frame and veneer construction, modular construction methods and traditional manual brick laying. The Hadrian X is also being strategically positioned to work in conjunction with and enhance some of these alternative methods.

To capitalise on its first mover advantage, the increasing rate of technology adoption globally and the efficiencies that the Hadrian X is expected to bring to the construction industry, FBR is initially targeting a minimum of 2% of the addressable market for the Hadrian X over the next five years. This initial market share target is consistent with the significant in-bound interest in the Hadrian X from parties all over the world. Demand side interest in the Hadrian X continues to emanate from a diverse range of parties, including builders, developers, construction companies, governments and a range of strategic partners.

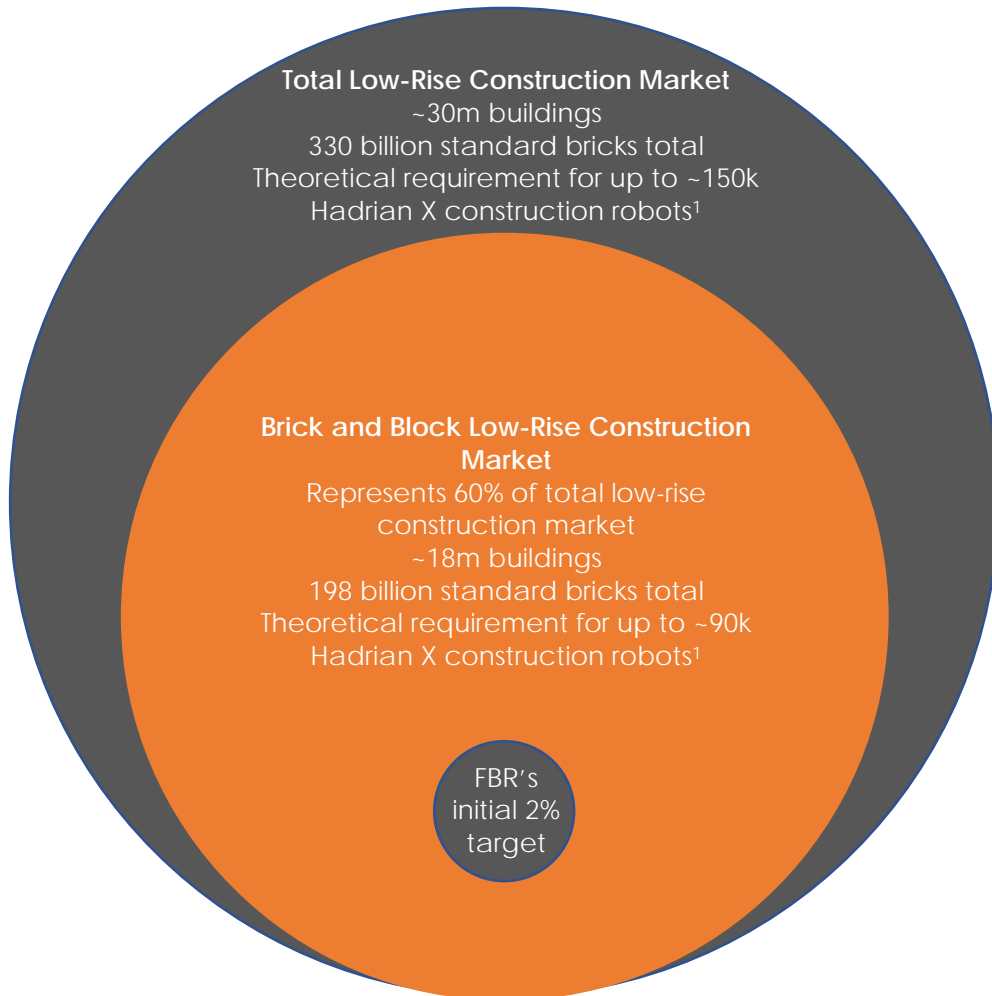
EY-Parthenon and FBR have now commenced the next phase of analysis which is focused on internal business modelling and external end user value analysis. In particular, FBR and EY-Parthenon will be working with a select group of strategic international parties to analyse the potential benefits and value created through the utilisation of the Hadrian X. This activity is focussed on demonstrating how this technology will assist various end users to increase their profitability and efficiency, improve safety, enhance their environmental responsibility, better manage risk and improve their bottom line.





## Market Size Calculation Methodology

The diagram below illustrates the breakdown of the current total addressable market for the Hadrian X (being the total low-rise construction market). It is noted that this overall market reflects the current market size and does not account for growth in future years.



Notes: 1. Stock of Hadrian X Construction Robots theoretically required to replace all wall-building labour for estimated 2018 construction

Source: UN; World Bank; EY-Parthenon Research & Analysis





## Key Inputs

- 4 billion square metres of new floor space to be constructed in 2018 (UN Global Status Report)
- 75% or 3 billion square metres assumed to be low-rise floor space based on existing global proportion (low-rise construction is comprised all buildings three storeys or less)
- Assumed each new building represents an average of 100 square metres floor space
- 30 million new low-rise buildings will be constructed in 2018, 18 million of which will be brick and block buildings specifically

A number of sources were relied upon for the preparation of the analysis on the theoretical global demand for the Hadrian X, including UN and industry publications, and interviews with highly experienced industry contacts.

The UN Global Status Report estimated new floor space of approximately 4 billion square metres will be constructed in 2018, 75% of which (3 billion square metres) is estimated to be low-rise construction based on the proportion of existing buildings globally that are low-rise.

With the assumption that each new building represents an average of 100 square metres of floor space on a global basis, this corresponds to approximately 30 million new low-rise buildings being built in 2018.

The average 100 square metre building requires approximately 11,000 standard bricks, assuming that the building is double bricked and both interior and exterior walls are constructed of brick.

**Fastbrick Robotics Chief Executive Officer Mike Pivac:** "This analysis demonstrates just how large the global market opportunity for the Hadrian X is, and that this opportunity will continue to grow over the coming decades. As a globally focussed industrial robotics company, FBR is on an unwavering mission to accelerate the commercialisation of its unique technology. As the only company in the world building construction robots capable of doing what the Hadrian X can do, capitalising on our first mover advantage is crucial. The opportunity for the Hadrian X to generate significant productivity improvements in the building and construction sector continues to fuel the acceleration of our technology commercialisation process.

We will continue to work closely with EY-Parthenon and development partners to develop our market entry strategy and business model, ahead of completing the Hadrian X programme."

## Ends

**For more information please contact**

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ASX ANNOUNCEMENT

## Fastbrick Robotics Limited (ASX:FBR)



### About FBR

Fastbrick Robotics Limited (ASX:FBR) is a globally focussed Australian robotic technology company developing and commercialising digital construction technology solutions. FBR's revolutionary bricklaying machine Hadrian X represents the first application of the Company's underlying intellectual property portfolio. Hadrian X is a globally patented 3D robotic bricklaying system and marks the transition to dynamically stabilised robots operating outdoors in uncontrolled environments.

Fastbrick is currently advancing its robotics technology through a Memorandum of Understanding (MOU) with Caterpillar Inc. (NYSE:CAT) demonstrating global scalability and a MOU with the Kingdom of Saudi Arabia highlighting customer demand for FBR's technology. FBR is committed to improving the safety, speed, accuracy, cost and waste management in the global construction industry through utilising the world's latest innovations in mobile robotic technology.

To learn more please visit: [www.fbr.com.au](http://www.fbr.com.au) and to watch Hadrian X in motion please visit <http://tinyurl.com/y7yrgz82>

