ASX Announcement
FBR Limited

Broker Briefing Innovative Technology Investor Webinar

Thursday, 4th August 2022 – Robotic technology company **FBR Limited (ASX: FBR)** ('**FBR**' or '**the Company**') is pleased to advise that the Company participated in the Broker Briefing Innovative Technology Investor Webinar, today, Thursday, 4th August 2022, where FBR Executive Director and CTO, Mark Pivac presented the slides enclosed below.

This announcement has been authorised for release to the ASX by the FBR Company Secretary.

Ends

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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®).

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

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

Broker Briefing
Investor Presentation

ASX:FBR

Mark Pivac

Executive Director & Chief Technical Officer

FBR Limited

August 2022

Disclaimer

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All amounts stated within this presentation are stated in Australian Dollars unless otherwise stated. Figures stated within this presentation may contain immaterial rounding differences.

FBR designs, develops, builds and operates dynamically stabilised robots

About FBR

- Our flagship robot, **Hadrian X®**, is the world's most advanced construction robot, capable of building a block house in as little as a day
- **Hadrian X®** is designed to build structures safer, faster, cheaper, more accurately and with waste virtually eliminated
- Enabled by **FBR**'s **Dynamic Stabilisation Technology® (DST®)**, the **Hadrian X®** takes the precision of traditional indoor robotics into outdoor environments on a fully mobile truck-based platform
- **FBR** and the Hadrian X® technology currently offers a **Wall as a Service®** commercial model, where builders can order robotically erected walls with certainty on timing, cost, safety and waste
- **Hadrian X®** prototypes are in the field building for top-tier builders in Perth, Western Australia on commercial terms
- Global brick/block low-rise construction market is approximately 525 billion bricks per year, estimated to >A$500 billion/year to supply and lay

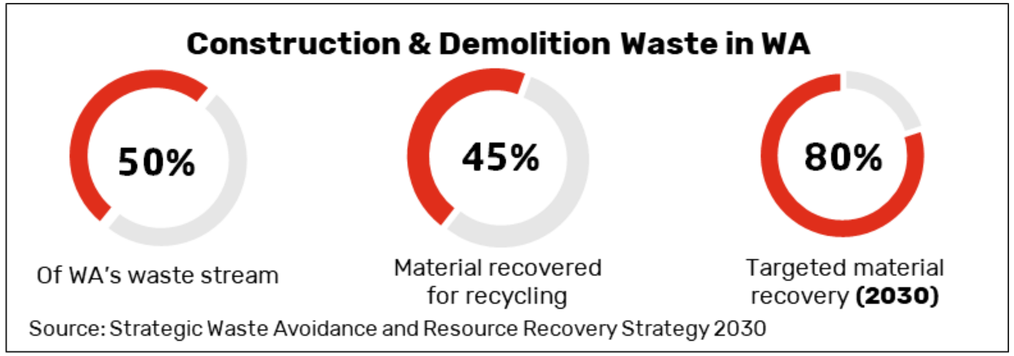
Automation is widely regarded as the future of construction

FBR Solution

- **Hadrian X®** is the only solution that is fully mobile without sacrificing utility, versatility, de-automation or speed of completion
- **Faster mobilisation** – no gantry setup, minimal site footprint, can build from the road or any other side of a construction site, using existing building materials
- Architectural software automates conversion of existing plans to generate **Hadrian build file**
- **Compliant with building codes** in some jurisdictions, working toward certification in others (ICC certification in the United States; CE certification in Europe)
- Prototypes are **currently providing Wall as a Service® for top tier builders** in Western Australian on commercial terms, delivering structures faster, more accurately, safer and with less waste than traditional construction methods
- **Preliminary DST testing complete on potential 3D concrete printing** application – results extremely promising using existing technology and platform

Improving environmental impact

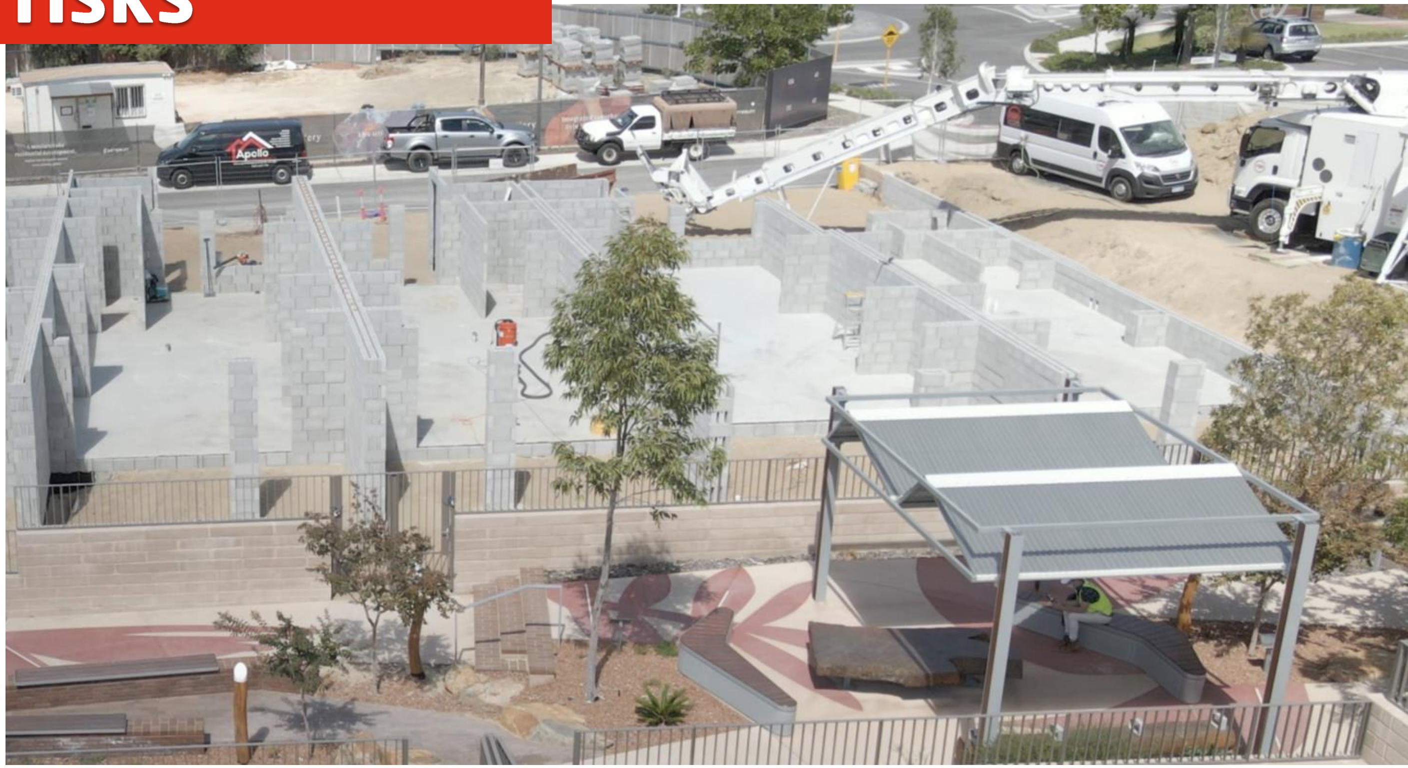
- Reduced environmental impact of construction process through **zero-waste sequenced pallet** capability:
  - maintains site cleanliness, massively reduces water use, waste generation and subsequent cost of waste removal to landfill
- Up to **10% of brick/blocks are wasted** in manual bricklaying from overordering, logistics and handling, and cutting bricks onsite :
  - This equates to **~A$15 billion waste** in the A$175 billion of global brick/blocks produced and sold annually
  - **Hadrian X®** could save >50% global brick/block waste per year
- **Able to lay green building products** like Xella's AAC and calcium silicate blocks, which have exemplary thermal and acoustic performance, reducing carbon footprint and improving energy efficiency



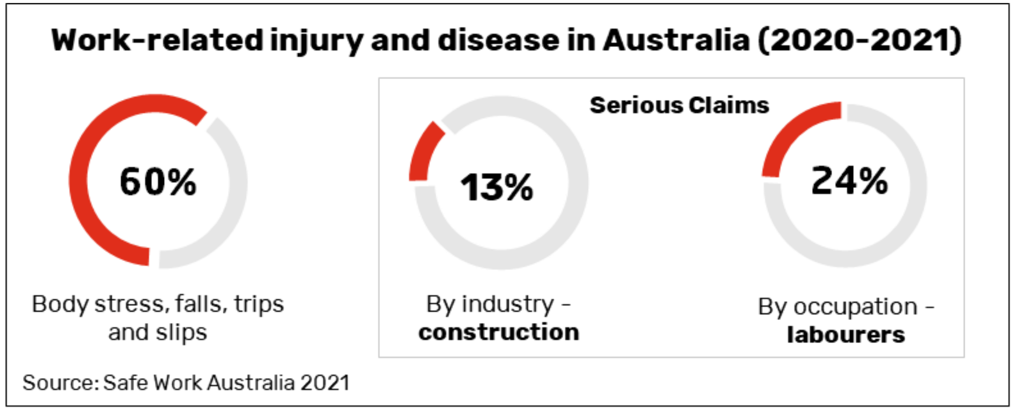
No sand, cement or water required on site, eliminating;

- impact of extraction, soil screening, removal and management of leftover waste; and
- potential exposure to hazardous silica dust, protecting the local environment, workers and public within vicinity

Reducing health & safety risks



- **Removes the repetitive work, stress and injury** including sprains and strains from the industry that many bricklayers suffer from due to years of hard labour
- **Removes all manual labour** from construction site during structure build (except minimal FBR quality control interactions)
- **No working at elevated heights** during blocklaying process. Removes the need for scaffolding, trestles or boards to reach the top courses and second storey
- Use of construction adhesive eliminates exposure to and inhalation of cement and sand dust while mixing mortar
- No inhalation of dust through dry cutting bricks manually (when a brick saw is used)
- **Less people required at work site** during construction and less trips to site required by workers
- No injuries due to manual handling of products and use of hand tools. **Hadrian X®** completes all necessary brick cuts



Commercial progress – FY21-22

- Two-phase MoU with Liebherr-Mischtechnik (LMT) signed in March 2022, to collaborate on the delivery of the next-generation Hadrian X®
  - Phase 1: suitability for scalable industrialisation/commercialisation, leveraging LMT expertise in componentry, design, control systems and operating environment
  - Phase 2: execution of long-term manufacturing and commercialisation agreement appointing LMT as exclusive manufacturer of Hadrian X® with joint activities to include supply, service and lease structure
- FBR expects to commence discussions around long-term manufacturing agreement for the next generation Hadrian X® once the first prototype has completed site acceptance testing

- **International clay block market unlocked** – first time in the world Wienerberger's Porotherm (R12 & R25) clay blocks have been laid by a robot in the undertaking of commercial, real-world work
- **AAC and calcium silicate block testing complete** – Xella product successfully used to build structures with the Hadrian X®
- **H01 laying zero waste** pre-cut blocks of multiple types on sequenced pallets in a suburban environment, as precursor to the future of block production
- **Non-binding term sheet for up to 5,000 homes** in Mexico with GP Vivienda
- **Market entry feasibility study for UAE** – MOU with Ministry of Energy and Infrastructure executed

Next-generation Hadrian X

- **Mechanical assembly of the first next-generation Hadrian** is underway and scheduled for completion at the end of **September 2022**
- Full commissioning expected in **March 2023**
- The next-generation Hadrian is targeting a lay rate **>500 blocks per hour**
- Handles block up to 600 x 400 x 300mm (23 standard brick equivalents, 45 kgs)
- **Speeds of ~120m²/hour** of wall with largest format block
- 32m boom reach **capable of building three storey structures from the road**
- **Distributed control architecture improves reliability**
- Interchangeable modules to allow for **customisation and quick repair**
- Saw module capable of cutting to height, mitre and gable cuts
- **Completes a standard house in less than a day**
- Designed in collaboration with Liebherr-Mischtechnik to be **suitable for mass manufacture**
- The next-generation Hadrian will feature a **shuttle delivery system capable of adapted to lay roof tiles**, opening a new market for FBR using its existing technology

Next 12 months for FBR

- **Obtain binding orders for robots** to be sold to appropriate entity partners and then leased back into operating entities
- **Establish US entity** and complete scheduled demonstrations with assistance from market leading block supplier
- **Establish European entity**
- **Complete International Code Council (ICC) certification** of Fastbrick Wall System in the United States currently in progress, followed by Miami Dade County certification for Florida operations
- **Further develop BIM architectural software** to enable integration into construction design and planning with customers and allow for full handover of software to future partners
- **Complete further 3D concrete printing testing** to determine whether to license existing technology / platform to gantry-reliant market incumbents or compete
- **Complete roofing robot testing** with new shuttle architecture of next-generation Hadrian
- **Complete rollout and demonstration of Hadrian X®** capabilities in international markets to commence demonstration to royalties-driven businesses

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Appendices

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Appendix

Corporate **snapshot**

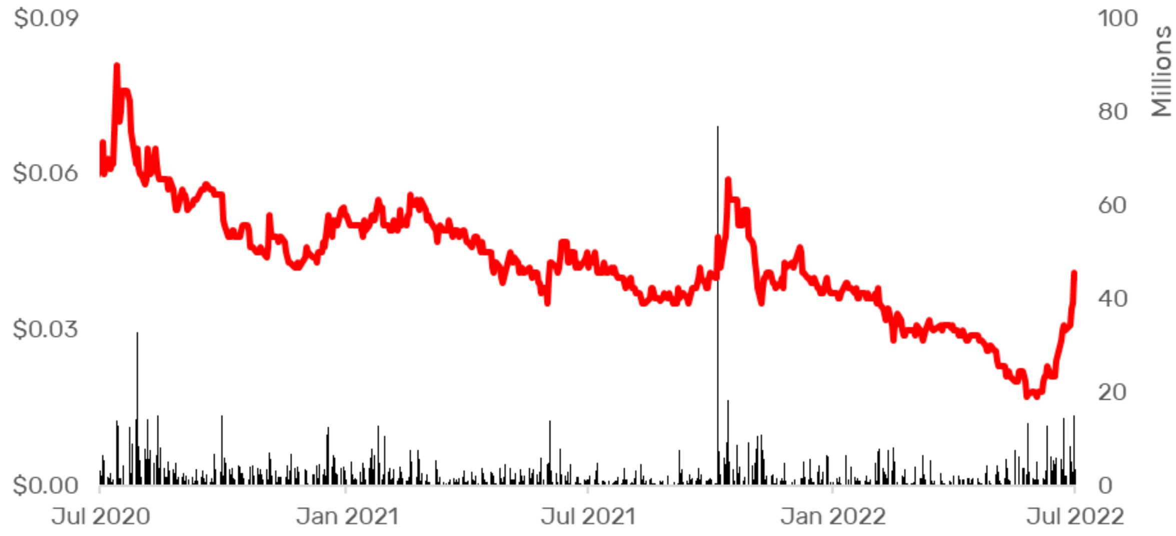
Capital structure

Market capitalisation (as at 29/07/2022)	$111.2m
Ordinary shares on issue	2.8b
Average daily volume (last 3 months)	3.3m
Gross cash balance (30 June 2022)	$11.5m

Directors & Management

Richard Grellman AM	Non-Executive Chairman
Grant Anderson	Non-Executive Director
Greg Smith	Non-Executive Director
Nancy Milne AOM	Non-Executive Director
Mike Pivac	Executive Director – MD & CEO
Mark Pivac	Executive Director – CTO
Aidan Flynn	CFO & Company Secretary
Kiel Chivers	Chief Commercial Officer
Jonathan Lawe Davies	General Counsel

Share price performance

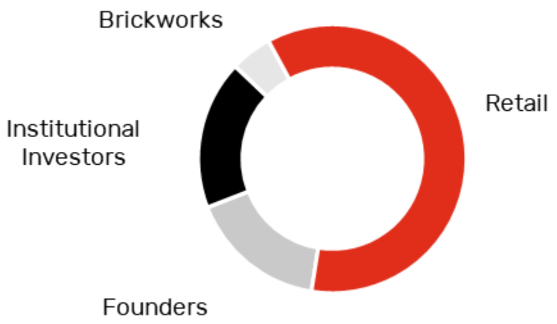


Shareholders

Mark Pivac (Founder)	12.0%
Fidelity	9.9%*
M & G Investments	9.3%*
Brickworks/WHSP	5.1%*
Mike Pivac (Founder)	4.6%

*as per last substantial holding notice

Register



Appendix

Commercialisation **timeline**

2015
- ✓ **Technology demonstrated**
- ✓ Hadrian 105 demonstrates automated bricklaying process
- ✓ Hadrian 109 concept
- ✓ Listed on ASX

2016
- ✓ **Proof of concept**
- ✓ World's first multi-room block structure from a 3D CAD model with no human intervention

2017
- ✓ **Hadrian 109 design and procurement commences**

2018
- ✓ **Mechanical assembly of Hadrian X**
- ✓ DST testing complete
- ✓ Hadrian X builds 3 bed, 2 bath home in < 3 days

2019
- ✓ **First outdoor home structure built**
- ✓ FBR's technology proved in range of environmental conditions with precision
- ✓ Second Hadrian X assembled to build structures under various pilot programs

2020
- ✓ **First display home and first commercial building in suburban environments**
- ✓ Hadrian X builds its first two storey structure

2021
- ✓ **First display home sold**
- ✓ First childcare centre built
- ✓ 8 townhouse contract announced
- ✓ First multi-home Wall as a Service™ contract signed

2022
- ✓ **Assembly of next-generation Hadrian commences**
- ✓ Hadrian X demonstrates capability to lay largest clay blocks (R25), AAC and calcium silicate blocks
- ✓ MOU with Liebherr-Mischtechnik on pathway toward long-term commercial manufacture


Hadrian 105

Hadrian 109 Concept (CG)

Hadrian 109 (Actual)

Appendix

Global scaling **strategy**

- **Strategic partners access equity in local operating entities** by purchasing Hadrian X® robots from FBR
    - Machines then supplied to WaaS® operating entities, allow **rapid, capex-free scaling for FBR**
    - Operating entity profits for local partners will be **invested in growing the fleet of Hadrian X® robots**
- **Non-binding term sheet signed for up to 5,000 homes in Mexico** with GP Vivienda
- FBR working closely with market leading block supplier to execute US market entry strategy
- **Hadrian X® projected to be economically viable for all labour cost markets**
    - Access to low-cost machine operators
    - Higher build volume in greenfields developments
    - Ability to operate the Hadrian X® 24 hours a day, seven days a week
- **Software play in developing markets likely to be a long-term benefit**
    - FBR will track data from creation of block to placement in a wall according, with applications for builders, home-owners, insurers, aftermarket sellers of household items
- **ESG mandates to adopt cleaner, more sustainable construction methods**
- **Liebherr-Mischtechnik positioned to be granted exclusive long term manufacturing rights for Hadrian X®**

Potential global **demand**

- **Wall as a Service®** operating entities to be established in key target markets around the world
- **Hadrian X® units to be sold** to local entity partners and then leased back into operating entities in-line with market demand and utilisation
- **Selection process for entity partners in key regions has commenced**

Appendix

Completions & WIP **Australia**

Job	Comment	Type	Standard Brick Equivalents (SBEs)
Dayton	• The first display home built by an end-to-end autonomous bricklaying robot anywhere in the world • Sale settled in July 2021	Single Residential (now occupied)	13,759
Byford	• FBR's first non-residential structure featuring cavity walls with slab step down • Currently tenanted by real estate company	Single Commercial (now occupied)	20,300
Amberton Beach	• Largest single structure built by Hadrian to date requiring five different building positions and comprising walls up to 4.8m high • Childcare centre completed in early 2022	Single Commercial (now occupied)	36,496
Wellard #1 -5	• Structures owned by FBR, with walls completed and following trades at staggered stages of completion on #1, #2, #3, and #4 with works on #5 due to commence shortly. Build #4 completed utilising Wienerberger Porotherm blocks in world first • Sales expected in FY23	Single Residential (FBR inventory)	Approx. 103,000
Willagee	• Ground floors completed, with construction of top floors, much less dependent on the availability of other trades for completion, to commence imminently	16x Residential (in progress)	315,707
St James	• Due to commence siteworks shortly	8x Residential (commencing shortly)	174,391
		32 structures	**663,644**